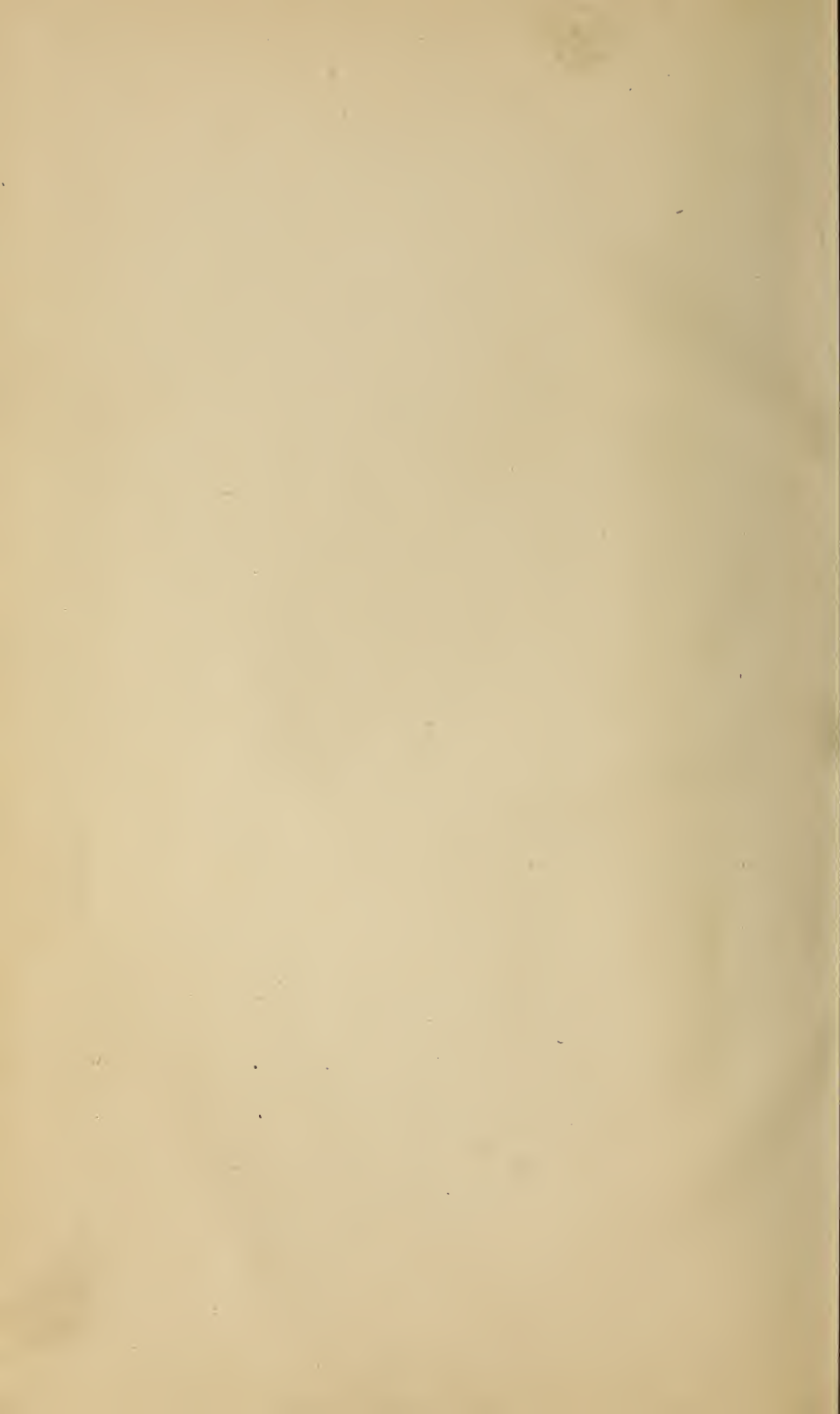




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ABSTRACT

OF

AIRCRAFT INVESTIGATION

BY

HON. CHAS. E. HUGHES

AND

THE ATTORNEY GENERAL

114
1366

WITH

SUBJECT INDEX AND REFERENCES TO HUGHES
INVESTIGATION AND SENATE SUBCOMMITTEE
INVESTIGATION HELD IN 1918



WASHINGTON
GOVERNMENT PRINTING OFFICE
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GENERAL INDEX AND SYNOPSIS.

[Figures following entries refer to volume and page numbers.]

AIRPLANE COMPANIES:

Curtiss Airplane & Motor Co., Buffalo, N. Y.—

Advances and payments by Government—

Four million dollars advanced by Government. (H 4, 338.) Buck.

(See H 15, 371; T 1, 501, 502.)

Ten million dollars advanced by Government. (H 7, 367.)
Potter. (See H 24, 447.)

Four million dollars through Col. Montgomery. (H 5, 453.)
Borglum.

Statement of disposition of Government advances. (H 15, 544.)
Moss.

Contracts—

Contract for 3,000 Spads; 500 Caproni; 1,400 JN 4 D's, September
19, 1917. (H 3, 449.) Morgan.

Contract for 2,000 Bristols, at \$13,500,000, not started in April,
1918. (H 5, 208.) Hall.

Toying with contracts. (H 5, 409.) Borglum.

Disloyalty and sabotage—

Subtle influence to retard things. (H 7, 160.) Butts.

Sabotage. (H 7, 182.) Butts. (See H 10, 421; H 15, 12; H 17,
697, 706; H 18, 415.)

Disloyalty. (H 15, 44, 48.) West. (See H 16, 35, 36; H 17, 120,
134, 141; H 17, 426.)

Germans in plant cheered victories of Germany. (H 16, 371.)

O'Connell. (See H 17, 247-311; H 17, 643-659.)

Inefficiency—

Fifty-five per cent efficient. (H 3, 47.) Miles. (See H 17, 108;
H 17, 359.)

Bristol delay due to engineer department mistakes. (H 5, 241.)
Hall. (See T 1, 98-99.)

Men asleep under desks. (H 15, 40.) West. (See H 16, 11-14.)

Man did only three days' work in three months. (H 15, 41.)
West. (See H 15, 720; H 16, 46-77; T 1, 149.)

Defective workmanship. (H 15, 59-70.) Coburn. (See H 15,
202; H 16, 33.)

Sufficient material scrapped to build 550 planes. (H 15, 123.)
Coburn.

Stop order went no further than engineer department. (H 15,
124.) Coburn.

Twenty men inspected a plane, yet there were four serious defects.
(H 15, 150-155.) Rohlf's. (See H 17, 342.)

Government paid for material three or four times. (H 15, 215.)
Winterbottom. (See H 15, 248.)

Excessive cancellations. (H 15, 410.) Moss.

Inaccuracy caused Navy work to be charged to Army. (H 15,
703.) Mulholland.

No work but put in overtime. (H 15, 734.) Donovan. (See
H 15, 735; H 15, 746; H 16, 38; H 16, 160; H 16, 495; H 16, 635.)

Furnaces burned all day—nothing in them. (H 15, 734.) Dono-
van. (See H 15, 740.)

Airplane companies—Continued.

Curtiss Airplane & Motor Co., Buffalo, N. Y.—Continued.

Inefficiency—Continued.

Government inspects only 30 per cent of material. (H 16, 751.)

Cole. (See H 17, 87; H 21, 562-563.)

Forty-nine thousand seven hundred obsolete parts. (H 17, 154.)

Weller.

Statement by British expert as to unnecessary changes. (H 17, 229-246.) Feberry. (See H 17, 358.)

Built one plane as per S. C. drawings—would not go together. (H 17, 480.) Mueller. (See H 19, 50.)

One continuous change down to cancellation. (H 17, 620.) Kepperley.

Fifty per cent off on chemical analysis. (H 7, 691.) MacGregor. (See H 7, 695; H 20, 519, 521, 525, 527; H 21, 510.)

S. C. directed production of machine for three months that should have been discarded. (H 15, 197.) Rohlfs.

Production—

No combat planes built up to March 1, 1918. (H 3, 612.) Morgan. (See T 1, 107.)

Acreage and man power to turn out 565 planes a day. (H 5, 410.) Borglum.

Production methods very bad. (H 13, 501.) Rose.

Model received in August. Only 25 produced in next four months. (H 15, 59.) Coburn.

Two thousand five hundred and fifty-three training planes shipped up to June, 1918. (H 15, 80.) Coburn. (See H 15, 563.)

Instead of 500 parts would make 5,000. (H 15, 126.) Coburn.

Great many shop changes held up production. (H 15, 718.) Darget.

Tried to keep busy on scrapped materials. (H 16, 98.) Harris. Plant instructed by Deeds to get out 25 Bristols regardless of cost and system. (H 16, 412.) Cole.

Production superintendent not even engineer or mechanic. (H 16, 718.) Darget.

Seventy-five per cent ahead on Navy schedule. (H 17, 43.) Sanderson.

Bristol could have been made to carry Liberty within four weeks. (H 17, 585.) Mueller.

Miscellaneous—

Remarkable confusion. (H 3, 2.) Miles. (See H 7, 280; H 11, 146.)

First Bristol tried January, 1918; would not fly. (H 3, 5.) Miles. Blue prints incomplete; whittled out 25 Bristols. (H 3, 25.) Miles.

Government would not use Curtiss machinery. (H 3, 48.) Miles. Building thousands of machines for British Government. (H 3, 425.) Kirkman.

Plant for Government business cost \$5,500,000. (H 3, 489.) Morgan.

Bristol tested April 1, 1918; unsatisfactory. (H 3, 600.) Morgan. Had trouble getting metal parts because they did not meet bills. (H 4, 232.) Bahr. (See H 11, 142; T 1, 147.)

One million dollars monthly earnings. (H 6, 143.) Stagers. (See H 7, 367.)

Bought material below grade. (H 7, 166.) Butts. (See H 7, 168; H 17, 461.)

Demoralized condition. (H 15, 6.) West. (See H 15, 37; H 15, 287; H 16, 57-74; H 17, 163-168.)

Machines caught fire several times. (H 15, 70-75.) Coburn. Great number of falls in planes. (H 15, 99-100.) Coburn.

Defective wood used because Government inspected and they not responsible. (H 15, 108.) Coburn.

Not one good thing came out of Washington. (H 15, 191.) Rohlfs. Government obligated to amount of \$2,500,000 on Bristol. (H 15, 408.) Moss.

Financial statement. (H 15, 501.) Moss. (See H 15, 552-556.)

Airplane companies—Continued.

Curtiss Airplane & Motor Co., Buffalo, N. Y.—Continued.

Miscellaneous—Continued.

- Bogey price on Bristol originally \$6,750. (H 15, 507.) Moss.
 Navy pays profit of \$1,625 per plane. (H 15, 566.) Moss.
 Navy rejections greater than Army. (H 15, 583.) Moss.
 Company exhibits. (H 15, 591-632.) Moss.
 Details of accounting system. (H 15, 659-670.) Daily. (See H 15, 690; H 16, 720.)
 Explains time-keeping system. (H 15, 726.) Anderson.
 Seemed to employees Government had lots of money it wanted to dispose of. (H 15, 756.) Donovan. (See H 16, 30.)
 Barbers, bartenders, etc., employed. (H 16, 50.) Harris.
 Employees made clock stands, jewelry boxes, etc. (H 16, 74.) 96.) Harris.
 Employees sold passes for \$1 apiece. (H 16, 88.) Harris.
 "Crime the way Government had it put over on them." (H 16, 96.) Harris.
 Load of 2 by 4s, 8 to 10 feet long, sold as scrap for 50 cents. H 16, 104.) Harris. (See all the testimony of Chester A. Harris. H 16, 45.)
 Requests by politicians to put men in plant though not needed. (H 16, 310.) Nutt.
 Reason cost of production unnecessarily high. (H 16, 316.) Reed.
 Method of approving vendors' invoices. (H 16, 438.) G. A. Thomas.
 Report of scrap disposed of or sold. (H 16, 600-615.) O'Connell.
 Pay roll for May, 1918, \$1,031,000. Productive labor \$50,000. (H 16, 685-690.) Sparks.
 Salvage department run by plant, not Government. (H 16, 786.) Sessions. (See H 17, 26.)
 British captain had impression Bristol not intended to be successful. (H 17, 119.) Rogers.
 Demanded \$75,000 for plans of JN 4. (H 18, 436.) Jordan.
 Charges a disposition to accommodate Curtiss Co. (H 19, 243.) Ryan. (See H 19, 245.)
 Col. Mixer does not recall whether he has Curtiss stock. (H 20, 374.) Mixer. (See H 20, 375.)
 Used silver solder at expense of Government. (H 21, 579.) Oakes.

Dayton-Wright Airplane Co., Dayton, Ohio—

Advances and payments by Government—

- One million dollars advanced by War Credits Board. (H. 1, 431.) Newman. (See H 9, 378.)

Contracts—

- Four thousand battle planes at \$12,000 each. (H 2, 309.) Borglum.

Disloyalty and sabotage—

- Deharbor, secretary-treasurer, German spy, interned. (H 5, 430.) Borglum.
 No indication of disloyalty. (H 7, 527.) Mixer. (See T 1, 280.)

Inefficiency—

- Seventy-five to 80 per cent efficient. (H 3, 46.) Miles.
 Utterly incompetent. (H 5, 411.) Borglum. (See H 20, 326.)
 Plane sent to France, but no one could fight with it. (H 10, 390.) Schoonmaker.

Overhead—

- Government paid overhead. (H 1, 434.) Newman.
 Wanted Government to pay for tennis courts, baseball suits, etc. (H 8, 211.) Brown.
 Traveling expense of president paid by Government. (H 8, 493.) Newman. (See H 8, 498; H 9, 625; H 10, 56; H 10, 470.)
 Telephone service paid by Government. (H 8, 507.) Newman.
 Also welfare, garage, and general office expense. (H 8, 509-515.) Newman. (See H 10, 62; H 10, 57.)
 Experimental costs charged to Government. (H 9, 597.) Smart. (See H 9, 624; H 10, 9.)
 Government paid for temporary buildings which eventually will be part of plant. (H 10, 32.) Howell.

Airplane companies—Continued.

Dayton-Wright Airplane Co., Dayton, Ohio—Continued.

Overhead—Continued.

Forty-one thousand, eight hundred and eighty-three dollars paid by Government as depreciation up to June 1, 1918. (H 10, 48.) Howell.

Everything to be paid by Government. (H 10, 63.) Howell.

Two hundred and fifty-five thousand, two hundred and fifty-five dollar voucher paid by Government without audit. (H 10, 65.) Howell.

Payroll padding. (H 10, 456.) Hiller.

Chauffeurs, oil, gasolene on free list to company officials (H 10, 457.) Hiller.

Production—

No shipments before January 1, 1918. (H 1, 437.) Newman.

Splendid production basis. (H 3, 24.) Miles.

Shipped 5 De Havilands a day March, 1918. (H 3, 28.) Miles.

Capacity not utilized on April 1, 1918. (H 3, 74.) Colvin.

Shipped planes overseas without flying them. (H 21, 609.) Arnold.

Salaries—

One hundred thousand dollars divided as salary between three officials. (H 1, 403.) Newman.

Eighteen thousand dollars paid Orville Wright as salary. (H 1, 411.) Newman.

Salaries allowed through oversight. (H 8, 191.) Brown.

Schedule of salaries. (H 8, 465.) Newman.

Salary of \$35,000 paid Kettering by company. (H 9, 145.) Smith.

Miscellaneous—

Company always given preference. (H 2, 322.) Borglum.

Scrapped 90 per cent of spruce. (H 3, 25.) Miles.

Deeds a stockholder. (H 3, 40.) Miles.

Talbotts and Kettering real heads. (H 4, 86.) Miller.

Longacre of approvals section refused admittance by Talbott, jr. (H 4, 104.) Miller.

Barlow to inspect Liberty but unable to gain objective. (H 4, 501.) Barlow.

Albert Barlow sold company cotton for linen. (H 5, 430.) Borglum.

H. E. Talbott, jr., vice president, formerly Deed's secretary in Washington. (H 5, 459.) Borglum.

Montgomery orders broad viewpoint in passing vouchers. (H 8, 520.) Newman.

Contract excuses company from testing their product. (H 10, 66.) Howell.

Government authorization came from Deeds. (H 10, 69.) Sherer. Telegrams. (H 10, 84-176.)

Tried for six months to get information from Signal Corps to finish drawings. (H 10, 358.) Schoonmaker. (See H 19, 33.)

H. E. Talbott, sr., testifies in re organization of company. (H 10, 488.)

Charles F. Kettering testifies in re organization of company. (H 10, 665.)

H. E. Talbott, jr., testifies in re organization of company. (H 10, 721.)

Four million dollars profit on De Havilands and spares. (H 10, 751.)

Compelled to sign cross license agreement. (T 1, 291.) Kettering (See T 1, 302.)

Fisher Body Corporation, Detroit, Mich.—

Advances and payments by Government—

Paid \$250,000 by Government. (H 1, 391.) Newman.

Three million sixty thousand nine hundred and sixty-eight dollars in vouchers paid. (H 11, 221-22.) Holmes. (See H 11, 534.)

Two million dollars advanced by Government. (H 11, 493.) Louis Mendelsohn. (See H 11, 539.)

Three million twenty-three thousand four hundred and forty-nine dollars paid by Government. (H 11, 568.) Scott.

Airplane companies—Continued.

Fisher Body Corporation, Detroit, Mich.—Continued.

Contracts—

Contracts to Metal Products Co. influenced by Talbotts. (H 11, 356-357.) Fred J. Fisher.

Refused contract with British Government. (H 11, 412.) Fred J. Fisher.

Three million two hundred thousand dollars paid by Government on contracts. (H 11, 529.) Westcoat.

Disloyalty and sabotage—

Fishers not Germans for several generations. (H 11, 47.) Heaslett. (H 11, 537.)

Inefficiency—

Finest plant ever in. (H 11, 185.) Patterson.

No one experienced in airplane production. (H 11, 473.) Simpson.

Overhead—

Chart of depreciation. (H. 11, 567.) Scott.

Production—

Idle waiting for information. (H 11, 14.) Heaslett. (See H 11, 20; H 11, 420.)

Three months behind Dayton-Wright because information held up longer. (H 11, 30.) Heaslett. (See H 11, 42; T 1, 244; H 11, 479.)

Never promised to deliver 1,500 De Havillands by end of July, 1918. (H 11, 437.) C. T. Fisher.

Probably ship 25 planes in July instead of 250. (H 11, 447-448.) C. T. Fisher.

Salaries—

Statement of salaries. (H 11, 226-227.) Holmes.

Miscellaneous—

Bogy cost \$630, too high. (H 7, 708.) Downey. (See H 11, 237.)

Six Fisher brothers and five Mendelsohns in firm. (H 11, 290-291.) F. J. Fisher.

Price of \$6,500 for plane. (H 11, 300.) F. J. Fisher.

Deeds and Waldon request Fisher place contract with Dayton-Wright. (H 11, 334.) F. J. Fisher.

No control over National Cash Register situation. (H 11, 335.) F. J. Fisher. (See H 11, 364.)

Talbotts in on all conferences with Deeds and Waldon in Washington. (H 11, 344.) F. J. Fisher.

Statement of corporation. (H 11, 515.) Aaron Mendelsohn.

Eugene Meyer has an interest in firm. (H 20, 168.) Meyer, jr.

Metz Co., Waltham, Mass.—

Mr. Byng, German born, forman of sheet-metal department. (H. 4, 525.) Lee Mason. (See H 4, 552.)

Out of stock; no attempt to get more. (H 4, 527.) Lee Mason.

Men sat around, smoked, read, and spent hours in toilet. (H 4, 528.) Lee Mason.

Mason paid 30 cents per hour; good Germans got 37, 37½, or 40 cents. (H 4, 532.) Lee Mason.

Only three Americans in plant. (H 4, 532.) Lee Mason.

Superintendent of plant German. (H 4, 533.) Lee Mason.

Older Metz born in German. (H 4, 533.) Lee Mason.

Blue prints laid around; anyone could take them. (H 4, 534.) Lee Mason. (See H 4, 556.)

Three Signal Corps officers there. (H 4, 539.) Lee Mason.

Production manager German. (H 4, 539.) Lee Mason.

Pro-German put on Government work. (H 4, 555.) Luther Mason.

Would close factory rather than produce munitions. (H 6, 149.) Stagers.

Standard Aero Co., Elizabeth, N. J.—

Built several machines for Japanese Government. (H 13, 292.) Mingle.

Fifteen per cent profit, later 12 per cent. (H 13, 421.) Meenan, jr.

Seventy-three thousand six hundred and forty-nine dollars profit on spares for J-1. (H 13, 423.) Meenan, jr.

Airplane companies—Continued.

Standard Aero Co., Elizabeth, N. J.—Continued.

- Five thousand three hundred dollars fixed price for 100 J planes. (H 13, 428.) Meenan, jr.
- Material scrapped here which was passed at other plants. (H 13, 444.) (H 13, 446-447.) Sullivan.
- Thirty per cent delay due to Government inspectors. (H 13, 476.) Waterhouse.
- Producing machine not tested with Liberty motor. (T 1, 351.) Mengle.
- Much material bought and then contract canceled. (T 1, 367-369.) Mengle.
- Navy negotiations satisfactory. (T 1, 381.) Mengle.
- Requisitions sent to jobbing concern. (H 20, 222.) L. H. MacLaughlin. (See H 20, 228.)

Standard Aircraft Corporation, Elizabeth, N. J.—

Advances and payment by Government—

- Government paid for idle employees. (H 3, 45.) Miles.
- Four million two hundred and sixty-two thousand nine hundred and one dollars paid by Government. (H 13, 279.) Mengle.
- Statement of cash from War Department. (H 13, 374.) Finklestein.
- Statement of money paid firm under contracts. (H 13, 588-589.) Conaty.

Contracts—

- Order cut from \$120,000 to \$35,000. (H 3, 672.) Lewis.
- Contract totals \$9,000,000. (H 7, 555.) Mixer.
- Order received for 500 De Haviland 9s. (H 13, 16.) Day.
- Signal Corps used bad judgment in placing order for only 500 planes. (H 13, 551.) Cookson.

Disloyalty and sabotage—

- Graft on part of Government inspector. (H 4, 137.) Daych.
- Thought Government representatives pro-German. (H 13, 417.) Finklestein.

Inefficiency—

- Haphazard; extremely disorganized (H 4, 110.) Daych.
- Signal Corps never gave valuable information. (H 13, 78.) Day.
- Defective material furnished by Dayton Metal Products Co. (H 13, 488.) Dean. (See H 13, 518.)
- Plant does not justify larger order. (H 13, 125.) Rose.
- No two files of prints alike. (H 13, 533.) Cookson.

Production—

- Five motors shipped Japan direct August 20, 1917. (H 4, 156.) Daych. (See H 4, 159; T 1, 347.)
- No production by late March, 1918, because of lack of drawings. (H 13, 26.) Day. (See H 13, 506; H 13, 547; T 1, 357-58; T 1, 529.)
- Ten machines a day within five months if on De Haviland 4. (H 13, 54) Day.

Salaries—

- Mingle's salary, \$62,000. (H 5, 460.) Borgium. (See H 6, 411; H 7, 295; T 1, 514-16.)
- Statement of salaries and amounts allowed. (H 13, 330.) Finklestein.

Miscellaneous—

- Great confusion. (H 3, 44.) Miles. (See H 7, 292; H 7, 553.)
- Manipulation by Mingle of Government finances. (H 4, 113.) Daych.
- Under control of Mitsui Co., agents of Japanese Government. (H 4, 124.) Daych. (See H 8, 203; H 13, 120; H 13, 135; T 1, 340.)
- Financial statement. (H 4, 140.) Daych.
- Mengle general counsel for Mitsui Co. (H 4, 155.) Daych.
- Machine cost company \$2,354; cost Government over \$6,000. (H 4, 157.) Daych.
- Coffin did not know planes were condemned. (H 7, 25.) Coffin.
- Mengle denied owning stock to Deeds. (H 7, 292.) Potter.
- Government furnished 53 accountants. (H 8, 200.) Brown.
- Succeeded Sloane & Co. (H 13, 3.) Day.

Airplane companies—Continued.

Standard Aircraft Corporation—Continued.

Miscellaneous—Continued.

Designed Standard J plane. (H 13, 6.) Day.

Signal Corps made changes without consulting designers. (H 13-14.) Day.

Discrimination in inspection as compared with Dayton Wright. (H 13, 35, 36.) Day.

Told Navy work more important than Army work. (H 13, 57.) Day.

Installing Liberty did away with superior qualities of Bristol. (H 13, 88.) Day.

Capital increased to \$10,000,000 July 24, 1918. (H 13, 135.) Mingle. (See H 4, 139.)

Aero Corporation leases to Aircraft at big profit. (H 13, 139.) Mingle.

Correspondence between company and Signal Corps. (H 13, 177-251.) (See H 13, 306.)

Five hundred thousand feet of spruce purchased for orders which did not materialize. (H 13, 335.) Mingle.

Difficulty because heads of company are not manufacturers. (H 13, 507.) Rose.

Wright-Martin Corporation, New Brunswick, N. J.:

Advances and payments by Government—

Advanced \$12,000,000. (H 4, 338.) Buck.

No advances from Government. (H 14, 82.) Houston.

Expect \$7,500,000 through War Credits Board. (H 14, 82.) Houston.

Seventy-five thousand dollars paid by Government for machinery on contract later canceled. (H 14, 136.) Houston.

Statement showing amount paid by Government. (H 14, 322.) Benstead.

Contracts—

Cost-plus contract of 42 to 50 million dollars, 1917-18. (H 1, 806.) Byllesby.

Col. Byllesby says contract "most extraordinary ever heard of." (H 1, 811.)

Contract for 3,000 Hispano-Suiza motors explained. (H 14, 7.) Houston.

Other contracts. (H 14, 1, 11, 12, 13, 15.) Houston.

Four hundred and fifty motors for French Government. (H 14, 75.) Houston.

One hundred and twenty million dollars too small a contract on fixed price. (H 14, 123.)

Paid \$1,000 additional for planes in Los Angeles plant. (T 2, 718.) Jordan. (See T 2, 720.)

Inefficiency—

Thousands of dollars a month spent in expressage and messenger service. (H 14, 60.) Houston.

Production—

Produced Hispano-Suiza motors for foreign Governments. (H 3, 59.) Miles.

Two thousand five hundred Hispano-Suiza motors made from July, 1917, to July, 1918. (H 14, 84.) Houston.

Discontinue Sunday work in heaviest production. (H 14, 370.) De Belleuse.

Salaries, \$150,000 a year for Goethals & Co.'s supervision. (H 14, 143.) Houston.

Miscellaneous—

Col. W. B. Thompson, part owner. (H 6, 312.) Lockhart.

Capitalization outlined. (H 14, 4.) Houston.

Increase in wages adds \$280 per motor. (H 14, 52.) Houston.

Correspondence with Aircraft Board. (H 14, 61, 72.) Houston.

Hispano-Suiza foremost motor in France. (H 14, 107.) Houston.

Over \$2,000,000 in profit on 2 contracts. (H 14, 142.) Houston.

Correspondence with Signal Corps. (H 14, 160.) Houston.

No interference by Government an advantage in building Hispano. (H 14, 258.) Crane.

Signal Corps failed to send details. (T 1, 307.) Hand. (See T 1, 320.)

Appropriation:

- Four million dollars left June 1 out of \$750,000,000 for year 1917-18. (H 1, 2.) Wolff. (See T 2, 1152, 1155.)
- One billion one hundred and thirty-seven million dollars asked of Congress for 1918-19. (H 1, 4.) Wolff.
- Never over \$2,500,000 up to end of fiscal year 1916. (H 1, 10.) Wolff.
- Presidential order No. 7 makes allotment of \$750,000,000. (H 1, 78.) Wolff.
- Twenty million dollars allotted March 14, 1918. (H 2, 23.) Edgar.
- Six hundred and forty million dollars, summer of 1917. (H 3, 370.) McConaughy.
- Statement showing distribution of appropriations. (H 18, 667.) Col. Jones.

AVIATION FIELDS:

Carlstrom field—

Cost \$799,212. (H 2, 34.) Edgar.

Dorr field—

Cost \$674,206. (H 2, 34.) Edgar.

Langley field—

Buildings 100 feet high and 150 long impossible to operate. (H 2, 35.) Edgar.

Will cost \$15,000,000. (H 2, 36.) Edgar.

McCook field—

Estimated cost, \$1,059,052. (H 2, 104.) Bennington.

Flooded. (T 2, 746.) Col. Arnold.

Col. Vincent instrumental in getting this field. (H 22, 145.) Vincent.

Col. Deeds directed Col. Edgar to acquire this field. (H 22, 382.) Edgar.

Leased from Dayton Metal Products Co. (H 22, 464.) Edgar. (See H 22, 469.)

Deeds and Kettering owned 120 acres of this field. (H 22, 487.) Deeds.

Morrison field, Virginia—

Estimated cost \$1,892,000. (H 2, 36.) Edgar.

Wilbur Wright field—

Contract cost, \$2,922,061. (H 2, 74.) Edgar. (See T 2, 748; H 22, 444.)

Extremely expensive. (H 0, 36.) Allen.

Eighteen thousand dollars in unclaimed wages. (H 2, 107.) Bennington.

Rumored Talbot identified with contract. (H 2, 232.) Grannis.

Lumber put through several hands to raise price. (H 2, 469.) Sligh.

Flood possibilities. (H 7, 196, 216.) Edgar. (See 22, 378.)

Abandoned as flying school. (H 18, 246.) Col. Jones.

No military need for over 2,000 acres. (H 20, 683.) Waldon. (H 20, 679; H 22, 369.)

Part of field swampy. (H 22, 447.) Edgar.

Baker, Hon. Newton D.:

Refused to furnish mechanics. (H 7, 78.) Coffin.

Lengthy discussion on Council of National Defense. (H 21, 354.)

Lengthy discussion on Aircraft Production Board. (H 21, 359.)

Does not recall being told Deeds, Squire, or Montgomery were unfit. (H 21, 383.)

Letter to President in re production not referred to Baker. (H 21, 383.) Baker.

Did not know Deeds was responsible for production. (H 21, 391.) (See H 21, 393, 395.)

Never saw programs regarding production of planes. (H 21, 403, 404.) (See H 21, 407.)

Baker personally approved voucher of \$861,000 for General Vehicle Co., real estate. (H 24, 592.) Montgomery.

Coffin, Howard E.:

Selected civilian members of Aircraft Board. (H 6, 422.) Coffin.

Selected Waldon, Deeds, and Montgomery. (H 6, 423.) Coffin.

Contracts:

Foreign contracts made by Gen. Foulois. (H 1, 4.) Wolff.

Contract with French to equip 30 squadrons. (H 1, 5.) Wolff.

Contract with British to assemble planes. (H 1, 5.) Wolff.

Twelve million dollar contract for material let in September, 1917. (H 1, 7-8.) Wolff.

Depreciation of plants element of cost in contracts. (H 1, 17.) Wolff.

Contracts—Continued.

- Cost determined after work was done. (H 1, 25.) Wolff.
 Contracts provided advancement of money for additions, raw material, etc. (H 1, 100.) Wolff.
 No provision for damages in case of delays. (H 1, 106.) Wolff.
 No time limit. (H 1, 105.) Wolff.
 Confidential experimental work let at 12½ per cent profit. (H 1, 106.)
 Forty million dollar contract with concern having no buildings. (H 1, 191.) Jones.
 Depreciation covered cost of buildings. (H 1, 223.) Wolff.
 Ten million dollar contract with White Co. for construction of Langley Field. (H 1, 814.) Jones.
 Col. Jones criticizes Langley Field contract. (H 1, 824.) Jones.
 Lowest bidder did not get contract. (H 1, 827.) Jones.
 Unauthorized contracts let at 10 per cent instead of 7 per cent. (H 2, 24.) Edgar.
 One million dollars for acetone. (H 2, 26.) Edgar.
 Always above estimate. (H 2, 47.) Edgar.
 No limit as to cost. (H 2, 47.) Edgar.
 Two million dollars paid for the Wilbur Wright Field. (H 2, 91.) Bennington.
 Eight dollars per acre for 1,200 acres of coral and swamp land in Florida. (H 2, 140.) Jones.
 Capt. Sloan made unauthorized contract at Langley Field. (H 2, 160.) Smith.
 Contracts let for castor oil though not used. (H 2, 186.) Edgar.
 List of castor-bean contractors by Col. Jones. (H 2, 211.)
 Four thousand battle planes at \$12,000 by Dayton Wright Co. (H 2, 309.) Borglum.
 Bid of \$3,000 by Lewis Co., but not allowed to bid if under \$5,500. (H 2, 339.) Borglum.
 Contract by Col. Disque "huge joke." (H 2, 391.) Sligh.
 No contract let for propellers late in November, 1917. (H 2, 422.) Sligh. (See T 2, 829-839.)
 Grand Rapids Airplane Co. thought to get contract through congressional influence. (H 2, 595.) Fletcher.
 Firm bid 75 cents; contract let for \$1.05. (H 3, 92.) Colvin.
 Legal department, Signal Corps, originated cost-plus system. (H 6, 543.) Coffin.
 Could not obtain fixed-price contracts. (H 7, 96.) Coffin.
 Twenty-five per cent saving below bogey cost went to contractor. (H 7, 101.) Coffin.
 Overhead included income tax, etc. (H 8, 323.) Brown.
 First contract let to firm without buildings. (H 11, 81.) Heaslet.
 Fowler with no factory received order. "Miraculous." (H 11, 164.) Patterson. (See H 11, 169a.)
 List of cost-plus contractors. (H 11, 219.) Holmes.

Cross license:

- Lawyer Hill makes statement on cross license. (H 21, 1.)
 Manufacturers pooled their patent interests. (H 21, 6.) Hill.
 Four million dollars to be paid by Government contracts. (H 21, 8.) Hill.
 Government pays royalties on cost-plus contracts. (H 21, 10.) Hill.
 Inventors had to submit to this manufacturers' association. (H 21, 13.) Hill. (See H 21, 17-18.)
 Government will yet have to pay damages. (H 21, 24.) Hill.
 Maj. Downey fought cross license. (H 7, 717.) (See H 7, 718-734; T 2, 720-723-729.)

Deeds, Col. E. A.:

Disloyalty and Irregularities—

- Admits being German and sympathies with Germany. (H 2, 532.) Borglum.
 Appointed many Germans. (H 2, 534.) Borglum.
 Directs no inspection of materials from his firm. (H 5, 398.) Borglum.
 Boasted ability to name 80 officers. (H 5, 412.) Borglum.
 Reference to "Deeds" for "Dietz." (H 5, 426.) Borglum.
 Thirty seaplanes built on verbal order of Deeds. (H 5, 427.) Borglum.

Deeds, Col. E. A.—Continued.

Disloyalty and irregularities—Continued.

“Deeds is a crook.” (H 5, 431.) Borglum.

Blocked production of lenses. (H 5, 483.) Borglum.

Protecting partners in their delay by holding other plants back. (H 5, 490.) Borglum.

Arrangements for confidential telegrams to Talbot. (H 10, 596.) Talbot. (See H 23, 86.)

Ford Co. profited through Deeds. (H 12, 224.) Wills.

Influenced Waldon in contracting with Dayton-Wright. (H 20, 670.) Waldon. (See H. 20, 679.)

Certified voucher for \$104,500 to Packard Co. (H 23, 97.) Deeds.

Other interests—

Interested in Dayton Metal Products Co. (H 2, 289.) Borglum.

Delco system is Deeds's. (H 2, 542.) Borglum. (See H 22, 355.)

Owner of McCook experimental field, Dayton. (H 5, 352.) Borglum. (See H 22, 148; H 22, 365.)

Part owner of buildings, Dayton-Wright Co. (H 5, 354.) Borglum. (See H 9, 83.)

List of firms in which Deeds is stockholder. (H 5, 379.) Borglum.

Delco system on Liberty is Deeds's work. (H 5, 394.) Borglum.

Vaucain, associated with Deeds, should be investigated. Borglum.

Owens 55 per cent of Bijou Electric Co. (H 5, 467.) Borglum. (See T 2, 875.)

Transfer of Deeds's stock. (H 9, 36, 79.) Smith.

Record of stocks. (H 9, 273.) Smith.

Connected with Talbot, of Dayton Lumber Co. (T 1, 37.) Edgar.

Deeds owns south field individually. (H 22, 673.) Deeds.

Heavy beneficiary in contracts, increases one. (H 5, 373.) Borglum. (See H 5, 399.)

Miscellaneous—

Authorized statement of February 21, 1918, in re production. (H 3, 348.) McConaughy. (See H 23, 137.)

Informs Curtiss Co. they must cancel \$30,000,000 Spad contract. (H 3, 528.) Morgan.

Stated planes on way across February 10, 1918. (H 3, 637.) Sweetzer.

Told Senator Hitchcock \$10,000 set aside for Martin. (H 4, 511.) Barlow.

Indicted; under sentence. (H 5, 359.) Borglum.

Sought place on Aircraft Production Board. (H 5, 367.) Borglum.

Tied up \$320,000,000 available for plane production. (H. 5, 373.) Borglum.

Borglum is investigated. (H 5, 426.) Borglum.

Congressman Howard had interesting experience with Deeds. (H 5, 439.) Borglum.

Statement in re Deeds's administration. (H 6, 508.) Coffin.

Did not have requisite information. (H 7, 248.) Potter.

Responsible for delay in engineering decisions. (H 7, 513.) Mixer.

Mr. King, president of Dayton Lumber & Manufacturing Co., cites business relations. (H 10, 612.) King.

Albree-Pidgeon Co. refuses to deal with Deeds. (H 12, 34.) Albree.

Brainiest man ever in contact with. (H 12, 36.) Albree.

Waldon and Deeds strongly opposed to contracts on Pacific coast. (H. 18, 427.) Jordan. (See H 18, 428.)

Corrections in previous testimony. (H 24, 90.) Deeds.

Squier did not authorize Deeds to certify \$104,500 voucher. (H 24, 328.) Squier.

Disque, Col. Brice P.:

Impressed by Disque. (H 7, 469.) Howe.

Contract officer on Pacific coast. (H 8, 244.) Ryan.

Responsible for all moneys, etc. (T 1, 19.) Edgar.

Expenditures—Domestic:

Large amount spent in development of plants. (H 1, 52.) Wolff.

Overcontracted \$11,000,000. (H 1, 96.) Wolff.

Statement of advances to companies. (H 1, 103.) Wolff.

Reimbursed Carl Fisher for unauthorized aviation field in Florida on authority of Col. Deeds. (H 1, 125.) Jones. (See T 1, 60; T 1, 50.)

Expenditures—Domestic—Continued.

- Fisher not reimbursed to extent of \$40,000. (H 1, 132.) Jones.
 Nine hundred and seven million dollars spent or obligated. (H 1, 171.) Jones.
 Two hundred and fifty thousand dollars paid Fisher Body Corporation. (H 1, 391.) Newman.
 Eighteen thousand dollars paid Orville Wright as salary, 1917-18. (H 1, 411.) Newman.
 One million dollars advanced Dayton-Wright Co., 1917-18. (H 1, 431.) Newnan.
 Fifty thousand dollars paid Glen Martin for planes. 1917-18. (H 1, 455.) Barlow.
 One hundred and ninety-one million nine hundred and six thousand five hundred and eighty-four dollars beyond allotment. (H 1, 514.) Lehman.
 Ten million dollars for Langley field. (H 1, 814.) Jones.
 One million fifty-nine thousand and fifty-two dollars for McCook field. (H 2, 104.) Bennington.
 Two million dollars paid on Wilbur Wright field. (H 2, 91.) Bennington.
 One million eight hundred and seventy-three thousand three hundred and ninety-four dollars paid up to June 1, 1918, on Morrison field. (H 2, 36.) Edgar.
 Seven hundred and ninety-nine thousand two hundred and twelve dollars paid for Carlstrom field. (H 2, 34.) Edgar.
 Six hundred and seventy-four thousand two hundred and six dollars paid for Door field. (H 2, 34.) Edgar.
 Eight hundred and four thousand two hundred and nine dollars at Painsville and West Point. (H 2, 26.) Edgar.
 Five million dollars for castor bean. (H 2, 31.) Jones.
 One hundred thousand dollars on Miami gunnery field. (H 2, 203.) Edgar.
 Paid bonus of \$750,000. (H 2, 344.) Borglum.
 One million dollars spent on spruce plant. (H 2, 394.) Sligh.
 Unnecessary expenditure of money. (H 4, 94.) Miller.
 Beautifying of grounds came under overhead. (H 4, 101.) Miller.
 One hundred and forty-five million dollars advanced for new companies. (H 4, 337.) Buck.
 Two million five hundred thousand dollars advanced Willys-Overland. (H 8, 151.) Sloan.
 Thirty-four thousand one hundred and thirty dollars and fifty-three cents overhead salaries for November. (H 8, 348.) Haag.
 Statement of estimate of cost of all projects. (T 1, 19.) Edgar. (See T 1, 21, 22, 23.)
 Avoidable waste of money at all fields. (T 1, 28.) Edgar.
 One million dollars cost of acetone plants should have been \$60,000. (T 1, 51.) Edgar.
 Four million five hundred thousand dollars in original cross-license agreement. (T 1, 475, 476.) Downey.
 One billion dollars expended, only small number of planes abroad. (T 2, 939.) Kenley.
 Record of expenses. (T 2, 1189.) Ryan.
 Forty thousand dollars on firm having \$20,000 contract. (H 20, 447.) Landon.
 Eight million nine hundred and thirty-eight thousand eight hundred and twenty-five dollars to White Corporation for materials. (H 21, 463.) Chilson.

Expenditures—Foreign:

- Appropriated \$47,000,000 in 1917-18. (H 1, 5.) Wolff.
 Obligations, 1917-18, of \$300,000,000. (H 1, 6.) Wolff.
 Obligations cabled by Pershing contradictory. (H 1, 76.) Wolff.
 Error of \$38,000,000 in one cablegram. (H 1, 88.) Wolff.
 Commitments over appropriation 1917-18 of \$173,307,012. (H 1, 89.) Wolff.
 One hundred million dollars beyond amount given by Congress, 1917-18. (H 1, 94.) Wolff.
 Fifteen million one hundred thousand dollars appropriated by Signal Corps for foreign contracts, 1917-18. (H 1, 533.) Lehman.
 Six hundred and forty-two thousand four hundred and ninety-one dollars for aviation fields in May, 1918. (H 2, 44.) Edgar.

Expenditures—Foreign—Continued.

Twenty million dollars on overseas items to June 1, 1918. (H 2, 28.) Edgar.

Nine million five hundred thousand dollar order on hand for field hangars. (H 2, 29.) Edgar.

One hundred million dollars for aircraft. (H 4, 596.) Marmon.

Statement of construction abroad. (T 1, 23.) Edgar.

Expenditures—how controlled:

Accounts audited in field, then scrutinized. (H 1, 11.) Wolff.

Five hundred auditors; three traveling supervisors. (H 1, 11.) Wolff.

Foreign service:

Unsatisfactory results by cable. (H 1, 80.) Wolff.

Request no accounting until end of war. (H 1, 271.) Wolff.

Rolls-Royce the best engine. (H 4, 589.) Marmon.

English planes made by women, no experience. (H 5, 101.) Owen Thomas.

French to deliver 5,000 planes before July 1, 1918. (H 6, 4.) Addas.

British to deliver 20 squadrons of machines. (H 6, 6.) Addas.

French annul contract because raw material delayed from this country. (H 6, 31.) Addas. (See H 8, 36; H 19, 158; H 20, 579; H 21, 415.)

Four hundred cadets without training planes. (H 6, 33.) Addas. (See T 1, 660; H 19, 160.)

Lack of planes at training centers. (H 6, 39.) Addas. (See H 20, 541; H 21, 432.)

Col. Bolling is superseded by Gen. Foulois. (H 6, 47.) Addas.

Lack of cooperation from America. (H 6, 52.)

Could purchase Fiat machines but did not. (H 6, 64.) Addas.

Men at head of departments too young. (H 6, 88.) Addas.

Resigns because of deplorable conditions. (H 6, 92.) Addas.

British Government led to believe they would have thousands of planes. (H 6, 166.) Workman.

American Handley-Paige one-third as efficient as British machine. (H 6, 169.) Workman. (See T 2, 753; H 6, 243.)

British erect building and furnish men, but no parts came. (H 6, 206, 208.) Workman. (See H 7, 277.)

Part of delay due to French methods. (H 6, 322.) Lockhart. (See H 7, 81.)

Secretary Baker refused to send mechanics. (H 7, 78.) Coffin.

Bristol used extensively in England. (H 7, 273.) Potter.

Foulois did not send specific list of requirements. (H 7, 584.) Mixer.

No American planes in France in March, 1918. (H 8, 31.) Diffin. (See T 2, 750, 752.)

Plane destruction on front close to 100 per cent a month. (H 8, 35.) Diffin.

Germany kept up with plane production. (H 8, 41.) Diffin.

Hispano-Suiza foremost motor in France. (H 14, 107.) Houston.

Difficulty in dealing with France. (H 18, 356.) Lieut. H. Emmons.

Duties of Bolling Commission outlined. (H 18, 506.) Col. Clark.

No De Haviland 4's received August 15, 1918. (H 18, 544.) Col. Clark.

One million dollars' worth of material shipped abroad, but only 240 planes made. (H 19, 23.) Col. Horner.

Conditions acute in October, 1917. (H 19, 161, 162.) Churchill.

One thousand two hundred cadets awaited training for three months. (H 19, 208.) Hoffman.

Submits copy of contract with French Government. (H 19, 386.) Kenley.

Liberty engine just reached France June, 1918. (T 1, 609.) Douglas.

Americans all equipped with British machines. (T 1, 617.) Rice. (See T 1, 647.)

Americans had to use discarded French machines. (T 2, 862.) Jones.

Exchange of information chaotic. (H 20, 655.) Waldon.

Forestry:

Only one mahogany plant furnished bond. (H 1, 294.) Otis.

Embargo placed on battle-plane wood. (H 1, 299.) Otis.

Mahogany men accused by Otis of trying to handle whole thing. (H 1, 303.)

Two hundred and fifteen dollar offer for aeroplane lumber refused. (H 1, 306.) Otis.

Forestry—Continued.

- Walnut and mahogany not absolutely necessary. (H 2, 434.) Sligh.
 Paid \$300 for walnut worth \$160. (H 2, 434.) Sligh.
 Dayton-Wright Co. scrapped 90 per cent on spruce. (H 3, 25.) Miles.
 Lots of spruce should not have left the coast. (H 3, 81.) Colvin.
 Col. Disque let spruce contracts. (H 6, 325; H 7, 326.) Lockhart, jr.
 Mahogany contract price, \$320. (H 6, 336.)
 Requirements balance of year, 21,000,000 feet. (H 6, 344.) Lockhart, jr.
 Federal Trade Commission not consulted in re prices. (H 6, 370; H 6, 375.) Lockhart, jr.
 Endeavored to ascertain fair profit. (H 6, 389.) Lockhart, jr.
 Heard 60 per cent of spruce rejected. (H 7, 284.) Potter.
 Chicago, Milwaukee & St. Paul contract. (H 7, 298-319; H 7, 494.) Potter.
 Quantity of spruce so great not worth much. (H 7, 328.) Potter.
 Nine to twelve thousand military men at work. (H 7, 333.) Potter.
 Mahogany men formed association. (H 7, 399.) Williams.
 Thirteen per cent a thousand, profit of Otis Co. (H 7, 431.) Williams.
 Three million one hundred thousand feet from Africa. (H 7, 435.) Williams.
 Twenty-six million seven hundred and three thousand total purchases up to June 27, 1918. (H 7, 446.) Williams.
 Williams will not state cause of Otis's discharge. (H 7, 462.) Williams.
 Cut-up plant advisable. (H 7, 472.) Howe.
 Large supply hinged on building railroad. (H 8, 240.) Ryan.
 No limitation on profit. (H 8, 255.) Ryan.
 Contractors financed by Government. (H 8, 262.) Ryan.
 Little trees in Germany make plane material. (H 8, 268.) Ryan.
 Seventy-five miles additional railroads. (H 8, 269.) Ryan.
 Controversy in re African mahogany. (H 19, 277-279-282; H 19, 321; H 19, 326; H 21, 349.) Ryerson, jr.
 Report covering all mahogany matters. (H 19, 511.) Ryerson, jr.
 Navy would not use African mahogany. (H 19, 344; H 19, 346; H 19, 352; H 19, 511.) Homer Hoyt.
 Three million four hundred and twenty-five thousand six hundred and twenty-five dollars cost of African mahogany. (H 19, 424; H 19, 451; H 19, 455.) Lieut. Sack.
 Cuban mahogany only \$160. (H 19, 466.) Weber.
 Wilcox was told he had no chance to sell outside "Big 11." (H 20, 252; H 20, 258-290.) Wilcox.
 Mr. Wickliffe receiving salary from other sources while on Government board. (H 23, 406.) Wickliffe.
 Mr. Siemms cites contract arrangement for spruce and railroad. (H 23, 552; H 23, 689.)
 "Senator Chamberlain will cancel contract." (H 23, 654.) Siemms.
- Inefficiency:
 One thousand men at stations with no accommodations. (H 1, 143.) 1917-18. Jones.
 Contracts with British and French confused. (H 1, 7.) Wolff.
 Squier and Deeds tried to block use of flying torpedo. (H 1, 563.) Barlow.
 Col. Edgar complains to Squier. (H 1, 821.) Jones.
 Changed heads of Air Division 12 times. (H 1, 822.) Jones.
 Col. Wolff charged with irregular and unbusinesslike methods. (H 1, 824.) Also J. G. White Corporation. (H 1, 828.) Jones.
 Unauthorized construction work. (H 2, 18-19.) Edgar.
 Schools without tools. (H 2, 51.) Edgar.
 On order of 97 articles only 1 shipped in six weeks. (H 2, 53.) Edgar.
 No organization or discipline in divisions. (H 2, 55-57.) Edgar.
 Pay rolls at Wright field untrustworthy. (H 2, 120.) Bennington.
 Increased acreage after use of substitute for castor oil. (H 2, 129.) Jones.
 Terrible confusion and irregularity. (H 2, 308.) Borglum. (See Borglum.)
 Self-interest interfering with air program. (H 2, 313.) Borglum.
 Six to eight months' time wasted. (H 2, 327.) Borglum.
 Allen knew nothing about lumber, placed in charge of spruce. (H 2, 368.) Sligh.

Inefficiency—Continued.

- Men inspecting who never had a board rule in their hands. (H 2, 439.) Sligh.
- Machine fell and break struck at principle of its construction. (H 2, 505.) Borglum.
- Fifty per cent of delay due to changes. (H 2, 601.) Trego.
- Scrap 50 to 75 per cent in Trego plant. (H 2, 613.) Trego.
- Tremendous inefficiency. (H 3, 46.) Miles.
- Plane would not go together. (H 3, 78.) Colvin. (T-1-105.)
- Ill-advised inspection. (H 3, 82.) Colvin.
- Paid \$415 for gauge that should cost \$35. (H 3, 88.) Colvin.
- Not much else done for months except watching changes. (H 3, 715.) Taylor.
- Four hundred thousand dollars wasted on Handley-Page plane. (H 6, 163.) Workman.
- Knew parts were wrong, yet continued making them. (H 7, 157.) Butts.
- Lengthy discussion on Col. Clark's inefficiency. (H 7, 271-72.) Potter.
- Vigorous charge of wasted time. (H 7, 687.) MacGregor.
- Six months in furnishing information to Dayton-Wright Co. (H 10, 358.) Schoonmaker.
- Gun-sight information requested October 9 not given until February 13. (H 10, 387.) Schoonmaker.
- Three hundred and twenty-one changes on De Haviland plane in 12 days. (H 10, 652.) Schoonmaker.
- Fifteen drawings for same part, yet all different. (H 11, 160.) Patterson.
- Signal Corps made promises; no means to carry them out. (H 11, 442.) Fisher.
- Red tape in priorities cause long delays. (H 12, 192.) Wills.
- Never given information of value by Signal Corps. (H 13, 78.) Day.
- Government-inspected material found defective at Standard Co. (H 13, 369.) Day.
- Not one good thing came out of Washington. (H 15, 191.) Rohlf.
- Signal Corps drawings not accurate. (H 16, 130.) Brooks.
- Three weeks before machine that would not fly is investigated. (H 3, 5.) Miles.
- Two thousand Bristols ordered January 11, but no go-ahead order till April, 1918. (H 3, 35.) Miles.
- Kellogg placed order for 1,300 radiators already condemned. (H 18, 10.) Budd Gray.
- Many firms charge Signal Corps failed to supply drawings. (H 18, 120.) Hughes.
- Padded pay roll involving thousands of dollars. (H 18, 227, 228.) Col. Jones.
- Many "rejected" tags found under "accepted" tag. (H 18, 267.) Col. Jones.
- Drawings not received from Signal Corps until after expiration of contract. (H 18, 434.) Jordan.
- Material condemned by chief chemist later accepted. (H 19, 128.) Car-dullu.
- No better off June 25, 1918, than six months prior. (T 1, 452.) Workman.
- Planes valued at \$500,000 ruined for lack of care. (T 1, 569.) Parish.
- Six million dollars' loss on Hall-Scott motor. (T 2, 929.) Kenlay.
- Liberty motor:
- Rolls-Royce replaced by Liberty. (H 3, 55.) Miles.
- "Thoroughly splendid." (H 3, 55.) Miles. (See T 2, 11-94.)
- Bogey price \$6,000. (H 3, 291.) Blackall.
- "Frightful risk" taken in attempt to develop motor. (H 3, 224.) Blackall.
- Deeds against magneto system on motor. (H 3, 231.) Curtiss.
- Motor more efficient with magneto system. (H 3, 232.) Curtiss.
- Not good for combat plane. (H 1, 495.) Barlow.
- Eight-cylinder obsolete. (H 3, 522.) Morgan.
- Delay because everything was tied up in Liberty motor. (H 3, 622.) Morgan.
- Spad contract canceled because it was not adapted to Liberty motor. (H 3, 622.) Morgan.
- Liberty 8 test not satisfactory. (H 4, 27.) Dickinson.
- Liberty 12 satisfactory. (H 4, 38.) Dickinson.

Liberty motor—Continued.

Possibly all right for bombing plane. (H 4, 77.) Holmes.

Can not use magnetic system. (H 4, 271.) Martens.

Perfect engine. (H 4, 274; H 8, 76.) Martens.

Kettering one of three leading men in designing. (H 4, 376; H 4, 381.)

Leland.

One thousand changes between September 1 and February 15, 1918. (H 4, 479.) Leland.

Change in design caused three months' delay. (H 4, 484.) Leland.

Rolls-Royce or Sunbeam better engines. (H 4, 519.) Barlow.

Sunbeam already through experimental stage. (H 4, 520.) Barlow.

Absolutely good motor. (H 4, 621.) Marmon.

Commander Briggs, of England, approves ignition system. (H 4, 631.) Marmon.

Delay due to design not being complete. (H 5, 14.) Joy.

Main difference between Liberty and Mercedes is lubrication. (H 5, 82.) Owen Thomas.

Perfecting motor should have been done in six months. (H 5, 145.) Hall.

Shipped abroad in dangerous condition. (H 5, 171; H 14, 276.) Hall.

Estimated cost, \$2,400. (H 5, 177; H 7, 705; H 11, 282.) Hall.

Overhead 200 per cent, entire cost would be \$4,800. (H 5, 193.) Hall.

Lowest consumption of gas and oil. (H 5, 313.) Hall.

Foreign criticism. (H 6, 58.) Addas.

Explanation of bogey cost. (H 7, 703.) Downey.

No Liberties in England in March, 1918. (H 8, 33.) Diffin.

Profit on cost, 33.6 per cent. (H 8, 93, 94.) Smith. (See Exhibit H 8, 101.)

Profit on cost of La Rhone, 92.8 per cent. (H 8, 105.) Smith. (See Exhibit H 8, 105.)

One hundred to one hundred and fifty hours' life of Liberty. (H 11, 107.) Heaslet.

Question whether Hall and Vincent had control of motor. (H 11, 118.) Heaslet.

Chief engineer Packard Co. gives reason for use of Delco. (H 12, 5.) Hunt.

Actual cost, \$3,960.43. (H 12, 68.) Robinson.

Ford says "it is a very fine motor." Hard to make. (H 12, 275.) Ford.

Progress as good as if foreign engine had been used. (H 12, 283.) Ford.

Seven hundred pounds heavier than the Hispano Suiza. (H 13, 116.)

Day.

Best motor of its type in the world. (H 14, 282.) Crane.

Too heavy for Bristol. (H 15, 56.) Coburn.

Contracts for production before experiments are completed. (T 1, 196.) Jandron.

Defective material in valves. (H 20, 494, 495.) Beans.

Miscellaneous:

Bond furnished by only one contractor. (H 1, 293.) Otis.

Embargo placed on battle-plane wood. (H 1, 299.) Otis.

One hundred thousand dollars divided between three officials of Dayton Wright Co. (H 1, 403.) Newman.

Unauthorized construction. (H 2, 24.) Edgar.

Miami, Fla., selected as gunnery school because girls and dancing were available. (H 2, 182.) Edgar.

Want to abandon Miami field after spending \$100,000. (H 2, 202.) Edgar.

Receipts from material men, but goods not paid for. (H 2, 243.) Grannis.

Not informed castor oil not used; increases acreage. (H 2, 259-270.) Carrington.

Borglum refused data. (H 2, 289.) Borglum.

Bristol success in Europe. (H 2, 329.) Borglum.

Maj. Sligh's dismissal caused by lumber interests. (H 2, 373.) Sligh.

Maj. Leadbetter tries to bribe Sligh. (H 2, 412.) Sligh.

Lumber handled by several people to raise price. (H 2, 469.) Sligh.

Discrimination between Curtiss and Dayton plants. (H 3, 34.) Miles.

Signal Corps afraid of congressional investigation. (H 3, 496.) Morgan.

Mr. Lewis is not aware his company was instructed to raise its bid \$3,000. (H 3, 698-701.) Lewis.

Miscellaneous—Continued.

- Not much else done for months except to watch for changes. (H 3, 715.) Taylor.
- Automobile crowd seemed to decide things. (H 3, 741.) Thomas.
- Germans using all-steel planes. (H 4, 165.) Greer.
- Fiat Co.'s facilities offered to Government. (H 4, 199.) Gormully.
- Borglum presents record of order of Delco system for 20,000 motors. (H 4, 244.) Borglum.
- Sunbeam engine most favorable in Europe. (H 4, 304.) Homer. (H 4, 312.)
- Russia standardizing Hall Scott. (H 5, 112.) Hall.
- Bureau of Standards inexperienced. (H 5, 152.) Hall.
- Lewis machine gun only a rifle. (H 5, 298.) Hall.
- Firm advised to raise their bid. (H 5, 456.) Borglum.
- Lieut. Lufkin too honest; dismissed. (H 5, 471.) Borglum.
- Military organization dropped initiative, due to investigations. (H 6, 505.) Coffin.
- Called for resignation of Green and Butts. (H 7, 361-363.) Potter.
- Cost per plane should not exceed \$3,525. (H 8, 109.) Smith.
- Memorandum of fair cost of De Haviland 4. (H 8, 114-115-116.) Smith.
- One hundred and fifty dollar bonus paid, though contract not lived up to. (H 8, 146.) Sloan.
- President King, of Dayton Lumber & Manufacturing Co., asked to produce missing ledger pages. (H 10, 632.)
- Government paid subcontractor for Dayton-Wright. (H 11, 241.) Holmes.
- Crowell refers to "automobile gang." (H 12, 35.) Albee.
- Test of plane called unfair. (H 12, 59.) Albee.
- Wonderful preparations in Germany. (H 12, 468.) Leland.
- Kettering one of greatest mechanics in the world. (H 12, 475.) Leland.
- Men asleep under desks in daytime at Curtiss plant. (H 15, 40.) West.
- Mueller, engineer, Curtiss Co., appointed by Deeds, Potter & Coffin. (H 18, 167.) Budd Gray.
- Talbott interested in Dayton Lumber & Engineering Co. (H 18, 229.) Col. Jones.
- Attempt to get contract described. (H 19, 175.) Loughead. (H 19, 196.)
- Cable in re African mahogany. (H 19, 271.) Ryerson, jr.
- Firms signed cross license almost under duress. (T 1, 477.) Downey. (T 2, 818.)
- Officers at field very incompetent. (T 1, 548.) Davis.
- Bad conditions at Gerstner Field. (T 1, 560.) Davis.
- Waldron exposes confidential contract to Curtiss Co. (T 2, 721.) Jordan. (T 2, 723.)
- Letter to President on aircraft production. (H 20, 460.) Stratton. (H 20, 480; H 20, 483.)
- Statement of General Vehicle Co. contract. (H 21, 39.) Col. Thompson. (H 21, 60; H 21, 179; H 21, 258.)
- Montgomery does not know why contract was not given Singer Co. (H 21, 289.) Montgomery. (H 21, 400.)
- Gen. Saltzman cites cases where Signal Corps men had contract with manufacturing concerns. (H 22, 305.)
- "Chaps in Signal Corps carrying on system of graft." (H 22, 390.) Wild.
- Signal Corps approved of Mengle Co. paying Wickcliffe a salary. (H 24, 518.) Huddleson.

MOTOR COMPANIES:

Buick Co., Detroit, Mich.—

Four hundred and sixteen thousand six hundred and sixty-nine dollars paid by Government up to July 6, 1918. (H 11, 277.)

Cadillac Co., Detroit, Mich.—

One million fifty-six thousand six hundred and ninety-six dollars paid by Government up to July 6, 1918. (H 11, 277.) Capt. Holmes.

Owned by General Motors Co. (H 12, 370.) R. H. Collins.

No advances. (H 12, 379.) R. H. Collins.

Bogey price never over \$5,000. (H 12, 382.) R. H. Collins.

No charges for preliminary work. (H 12, 405.) Kinnee.

Depreciation part of overhead. (H 12, 416.) Kinnee.

Expended \$2,521,782. (H 12, 421.) Kinnee.

Total of \$63,000 not allowed by Government. (H 12, 423.) Kinnee.

Motor companies—Continued.

Ford Motor Co., Detroit, Mich.—

Advances and payments by Government—

One million three hundred and twenty-five thousand and forty-three dollars paid by Government up to July 6, 1918. (H 11, 276.) Holmes. (H 12, 297.)

Received no advances nor sought any. (H 12, 297.) Norlin.

Contracts—

Contract let in November; not tooled up July 16, 1918. (H 11, 73.) Heaslet. (H 12, 159.)

Details arranged in September; contract let in November, 1917. (H 12, 163.) Lee.

Disloyalty and sabotage—

Reference to disloyalty. (H 12, 174.) Lee. (H 12, 178-179; H 12, 230-233; H 12, 304-308.)

Defective spark plugs from Champion Co. (H 12, 237.) Wills.

District attorney would not act. (H 12, 239.) Wills. (H 12, 303-311.)

Military Intelligence Bureau takes no action. (H 12, 318.) Clemett.

Production—

Not producing latter part of March, 1918. (H 3, 64.) Colvin. (H 12, 164.)

Produce tools for Liberty 8, but it was abandoned. (H 5, 149.) Hall.

Fell down badly on estimate. (H 11, 66.) Heaslet. (H 22, 112.)

Could have advanced production two months except for changes. (H 12, 199.) Wills.

Salaries—

Reference to salaries. (H 12, 212.) Wills.

Government forbids charging salaries direct. (H 12, 254.) Leister. (H 12, 256-258.)

No salaries allowed on experimental work. (H 12, 292.) Norlin.

Miscellaneous—

Three million two hundred and fifty thousand dollars profit on 5,000 Liberties. (H 7, 127.) Coffin. (H 12, 222.)

Fuel Administrator denies coal to crankshaft people. (H 12, 194.) Wills. (H 12, 195.)

First 70 motors cost about \$37,000 apiece. (H 12, 205.) Wills.

Company profited through Deeds. (H 12, 224.) Wills.

One million dollars cost of machinery loaned to aircraft work. (H 12, 252.) Leister.

Mr. Ford knew bogey price of \$6,087 was high. (H 12, 271.) Ford.

No trouble with Signal Corps in re decisions. (H 12, 282.) Ford.

General Motors, Detroit, Mich.—

Contracts total \$14,000,000. (H 5, 216.) Hall.

Contract for 2,000 Liberties. (H 12, 371.) R. H. Collins.

Lincoln Motor Co., Detroit, Mich.—

Advances and payments by Government—

Four million dollars paid by Government up to June 1, 1918. (H 4, 389.) Leland. (T 1, 526.)

One payment of \$4,000,000 by Government in December, 1917. (H 4, 402.) Leland.

Eight million four hundred and twenty-three thousand nine hundred and sixty-six dollars paid by Government. (H 4, 410.) Leland. (H 11, 276; H 12, 547.)

Contracts—

First contract calls for 6,000 motors. (H 4, 392.) Leland.

Cost-plus contract plus 15 per cent. (H 4, 408.) Leland.

Only two contracts from Government. (H 4, 408.) Leland.

Coffin does not recall order for 6,000 parts at \$5,950,000. (H 7, 120.) Coffin.

Overhead—

Cost of testing plant allowed. (H 4, 396(b).) Leland.

Forty per cent depreciation provision. (H 12, 559.) Nash. (H 12, 563.)

Motor companies—Continued.

Lincoln Motor Co., Detroit, Mich.—Continued.

Production—

Produced 1,000 engines, shipped 400 overseas by January, 1918. (H 3, 56.) Miles.

Production was 5 or 6 a day; should be 70. (H 3, 67.) Colvin.

Changes in Liberty caused three months' delay. (H 4, 484.) Leland.

Evidence of production being retarded. (H 11, 45.) Heaslet. (H 11, 124-127.)

Produced 763 motors up to July 15, 1918. (H 11, 91.) Heaslet.

Delays because of changes. (H 12, 428-430(b), 431, 432, 433, 442.) Ellis.

Salaries—

Salary of officials. (H 4, 420.) Leland. (H 12, 554.)

Mr. Leland and father each paid \$25,000 salary by Government. (H 4, 479.) Leland.

No executive salary paid. (H 8, 372.) Haag.

Executive salaries charged to Government back to July, 1917. H 12, 570.) F. C. Thompson.

Miscellaneous—

Nine hundred and thirteen dollars and five cents profit on each motor. (H 4, 397.) Leland.

Bogey cost \$6,087, then \$5,000. (H 4, 398.) Leland.

Total expenditures \$6,200,000. (H 4, 401.) Leland.

Delay in getting blue print. (H 4, 431.) Leland. (T 1, 231.)

Five million dollars clear profit. (H 4, 478.) Leland. (H 7, 120.)

Expected to pay 80 per cent of profit in taxes. (H 4, 491.) Leland.

One hundred per cent on capital within a year. (H 7, 123.) Coffin.

Enormous return on capital. (H 7, 382.) Potter.

List of 89 shops producing tools. (H 12, 450.) Ellis.

Ninety-one thousand eighty-seven special tools built. (H. 12, 464.) Ellis.

Capital stock \$1,500,000. (H 12, 508.) Henry M. Leland.

Dayton Metal Products Co. owns \$100,000 of stock. (H 12, 509.) Leland.

Col. Montgomery advises \$6,087 too high. (H 12, 517.) W. C. Leland.

Financial record clean. (H 12, 574.) F. C. Thompson.

Nordyke Marmon Co., Indianapolis—

"Wonderfully fine factory." (H 3, 57.) Miles.

Just coming into production July 15, 1918. (H 11, 95.) Heaslet.

Contract for 3,000 Liberties dated August, 1917; 24 delivered August 15, 1918. (H 18, 363.) Lieut. Emmons.

Fixed-price contract of \$2,366 an engine. (H 23, 496.) Marmon. (H 23, 553.)

Contract for 3,000 Liberty motors September 28, 1917. (H 23, 531.) Marmon.

One million dollars by Government for machinery in plant. (H 23, 547.) Marmon.

Pay 5 per cent on \$2,000,000 advanced by Government. (H 23, 594.) Marmon.

Real estate included in depreciation. (H 23, 596.) Marmon. (H 23, 601.)

Chief Engineer Jeffers explains delays. (H 23, 636.)

Packard Motor Car Co., Detroit, Mich.—

Advances and payments by Government—

Secures advance of \$2,500,000. (H 4, 397b.) Leland.

Seven million four hundred and thirty-seven thousand six hundred and eighty-one dollars paid by Government up to July 6, 1918. (H 11, 274.) Holmes. (H 11, 639.)

Overhead—

Depreciation figures explained. (H 12, 77.) Robinson.

Production—

Two months' start on tools when called off. (H 11, 592.) Macauley.

Schedule of shipments made. (H 11, 612.) Macauley.

Could have produced Hispano quicker than Liberty. (H 11, 674.) Macauley.

Motor companies—Continued.

Packard Motor Car Co., Detroit, Mich.—Continued.

Salaries—

Salaries in bogey cost. (H 7, 706.) Downey.

Salary distribution in August; no contract until September. (H 12, 143.) Williams.

Miscellaneous—

Lieut. Col. Joy largest holder of securities. (H 5, 2.) Joy.

Liberty outgrowth of Packard Co. (H 5, 4.) Joy. (T 1, 162; T 1, 169.)

Shipped some motors not up to standard to appease public demand. (H 5, 40.) Joy.

Liberty motor "life-saver." (H 5, 180.) Hall.

Five million four hundred thousand dollars' profit on 6,000 motors. (H 7, 113.) Coffin. (H 12, 103.)

Substituted magneto for Delco system Liberty. (H 11, 578.) Macauley.

Decided to offer their facilities to Government May, 1917. (H 11, 588.) Macauley.

Agreed to sink their identity with Liberty. (H 11, 590.) Macauley.

One hundred and sixty-two Government men in plant at a time. (H 11, 631.) Macauley.

Montgomery & Deeds named bogey price of \$6,087. (H 11, 643.) Macauley.

Capital of firm, \$20,000,000. (H 11, 654.) Macauley.

Eleven million eight hundred and eight thousand four hundred and four dollars devoted to aircraft. (H 11, 656.) Macauley.

Hughes refers to vouchers. (H 12, 100; H 22, 325 and 334; H 24, 159.)

One engine billed to Government for \$25,000. (H 12, 127.) Robinson.

No information covering items under check for \$104,500. (H 12, 129.) Albree.

Cost arrived at in a secretive way. (H 12, 149.) Williams.

No record of contract involving \$250,000. (H 24, 198.) Ewing.

Willys-Overland Co., Elyria—

Delivered 4,072 motors up to July 1, 1918. (H 8, 301.) Brown.

One hundred and fifty dollars' bonus paid; the contract not lived up to. (T 1, 471.) Downey.

Pershing:

Caused order of 4,000 geared motors to be placed. (H 14, 101.) Houston.

Obligations cabled by Pershing contradictory. (H 1, 76.) Wolff. (T 2, 945.)

Cables—

Cablegrams in re finance. (H 1, 83-87.) Wolff.

Cables from Pershing landed in hands unfamiliar with subject. (H 18, 192.) Budd Gray.

Cable not to build 5,000 Gnome engines, October 12, 1918. (H 18, 334.) Lieut. H. Emmons.

Cable recommends no single seater be built. (H 18, 612.) Col. Clark. (H 18, 614; T 2, 936.)

Cable in re training for pilots. (H 20, 50-54.) Harmon.

Cable relating to propeller wood. (H 20, 235.) Parker.

Cables increasing and decreasing production of Spad. (H 20, 607-609-614.) Waldon.

Production:

Four hundred and fifty thousand bombs under production May 31, 1918. (H 1, 551.) Barlow.

No synchronizer in production May 31, 1918. (H 1, 792.) Barlow.

Statement of planes shipped to embarkation points up to June 4, 1918. (H 2, 221.) Jones.

One hundred and ten thousand acres castor beans. (H 2, 126-129.) Jones.

No spruce purchased until August, 1918. (H 2, 352.) Sligh.

Five De Havillands a day at Dayton-Wright, March, 1918. (H 3, 28.) Miles.

Three thousand Spads ordered January 19, 1917, but called off. (H 3, 35.) Miles.

Production—Continued.

- Five hundred bombing planes ordered September 19, 1917. (H 3, 36.) Miles.
- No battle planes built here before war. (H 3, 60.) Miles.
- Ford Co. not producing latter part of March, 1918. (H 3, 64.) Colvin.
- Production at Lincoln plant, 5 or 6 a day, should be 70. (H 3, 67.) Colvin.
- Delayed because of changes. (H 3, 73.) Colvin.
- Delayed because of unnecessary details. (H 3, 79-80.) Colvin.
- Planes on time had we used foreign model. (H 3, 221.) Blackall.
- Splittorf Electric Co. main source of supplies for allies. (H 3, 227.) Curtis.
- Progress hampered by too many people butting in. (H 3, 285.) Mason.
- Two thousand six hundred Spad drawings nearly complete, then canceled. (H 3, 532.) Morgan.
- No combat planes built by Curtiss plant up to March 1, 1918. (H 3, 612.) Morgan.
- Five thousand Sunbeam engines could have been completed in two months. (H 3, 734.) Thomas.
- Production held up because location of tack was changed one-eighth of an inch. (H 4, 131.) Daych.
- Production delayed because Signal Corps did not pay bills. (H 4, 231.) Bahr.
- Engle Co. well up in production when order is canceled. (H 4, 290.) Baker.
- No bombing machines made in this country up to June 1, 1918, except experimental work on Handley-Paige. (H 4, 515.) Barlow.
- Five or six months to get Mercedes motor into production. (H 5, 68.) Owen Thomas.
- Planes could have been turned out last fall. (H 5, 84.) Owen Thomas.
- With breakdown test Ford and Packard could have produced 10 motors each daily in January. (H 5, 169.) Hall.
- Radical variance in production scale. (H 5, 272.) Hall.
- Could have had machines on front in 90 days. (H 6, 165.) Workman.
- Does not believe Signal Corps wanted to produce Handley-Paige. (H 6, 213.) Workman.
- Workmen could have had 5,000 Handley-Paiges across now, June 20, 1918. (H 6, 256.) Workman.
- Submits number of planes delivered by each company. (H 6, 292.) Chamberlain.
- No American scout planes on front. (H 7, 62.) Coffin.
- Fiat engine had best chance for production. (H 7, 70.) Coffin.
- First De Haviland shipped from factory late March, 1918. (H 7, 243.) Potter. (H 7, 244.)
- First training plane delivered October 1, 1918. (H 7, 518.) Mixer.
- Fifty Bristols may be scrapped. (H 7, 537.) Mixer.
- No reason for planes not being in production in 1917. (H 8, 49.) Diffin. (T 2, 910-912.)
- Foreign engines could have been produced. (H 8, 57.) Diffin.
- Possible to get into production on Liberty quicker than on foreign motor. (H 8, 79.)
- Ninety per cent of production at Dayton-Wright in November, 1917. (H 10, 324.) Schoonmaker.
- Chief engineer Dayton-Wright Co. cites reasons for delay. (H 10, 326-337.) Schoonmaker.
- No shipments abroad between February 4 and April 3, 1918. (H 10, 393.) Schoonmaker.
- First bona fide schedule from Signal Corps on April 9, 1918. (H 10, 395.) Schoonmaker.
- List of motors from date to date at Packard. (H 11, 58.) Heaslet. (H 11, 59.)
- Cadillac and Buick could have handled larger orders. (H 11, 72.) Heaslet.
- Two regiments of mechanics held idle in camp. (H 11, 83-85.) Heaslet.
- Seven hundred and fourteen motors produced out of 1,950 contemplated. (H 11, 100.) Heaslet.
- Only 1,625 engines instead of 4,620 estimated. (H 11, 134.) Heaslet.

Production—Continued.

Heslet Exhibit 6, July 16, 1918, shows total production. (H 11, 137.)
 Earlier production by using existing motor. (H 12, 503.) Henry M. Leland.
 If handled different, could have had all planes needed. (H 13, 76.) Day.
 Production impossible because of so many changes. (T 1, 485-487.) Adams.
 Sufficient material in United States to complete program in 12 months. (T
 1, 678.) Woodhouse.

Purchases:

Government bought General Vehicle Co.'s plant, Long Island City, leased to
 Wright-Martin Co. (H 1, 61.) Wolff.
 Paid Curtiss Co. \$1,500,000 for machinery. (H 1, 239.) Wolff. (H 3, 517.)
 Department of Justice requests New York Legislature pass bill so as to per-
 mit Government to acquire land. (H 3, 493.) Morgan.
 History of negotiations in purchase of General Vehicle Co. (H 24, 560.)
 Montgomery. (H 24, 575; H 24, 578.)

Sales:

Salvaged material sold to public. (H 1, 63.)
 One hundred and sixty-three million dollars expected from sale of material.
 (H 1, 90.)
 Eight hundred thousand dollars worth of material sold to Standard Co.
 (H 8, 197.) Brown.

Signal Corps (organization):

Capt. Preston and Lieut. Small in charge of money advanced since February
 1, 1918. (H 1, 101.) Lieut. Col. Wolff.
 Advances passed by Finance Department and War Credits Board. (H 1,
 101.) Lieut. Col. Wolff. (H 4, 338.)
 Supervision of cost by officer at plant. (H 1, 106.) Lieut. Col. Wolff.
 Material section passes on requests for construction. (H 1, 113.) Lieut.
 Col. Jones.
 Chaotic conditions. (H 1, 124.) Lieut. Col. Jones. (T 2, 785.) Lieut.
 Col. Jones.
 Policy to start something and then drop it. (H 1, 133.) Lieut. Col. Jones.
 Bills from railroad audited by Supply Division. (H 1, 161.) Lieut. Col.
 Jones.
 Accounting controlled by Lybrant, Ross Bros. & Montgomery. (H 1, 407.)
 Newman.
 Criticism of Squier or Deeds disastrous. (H 1, 456.) Barlow.
 Deeds German and in summer of 1917 admits sympathy with Germany. (H
 2, 532.) Borglum.
 Deeds appointed many Germans. (H 2, 534.) Borglum.
 Inspectors unintelligent, too rigorous. (H 3, 422.) Kirkman. (H 5, 202;
 H 5, 203; H 5, 212; H 7, 360; H 10, 415; T 1, 437-447; T 1, 630; T 2, 10-17.)
 Letter from office of Chief Signal Officer says program is very thoroughly
 covered. (H 3, 428.) Kirkman.
 Names of those ordering changes would make long list. (H 3, 598.)
 Morgan.
 Changes and specifications by Col. Clark. (H 3, 600.) Morgan.
 Incompetent, perhaps malicious intent. (H 4, 161.) Greer.
 Men of inaction, mathematical moles, not fitted to act. (H 4, 172.) Greer.
 Expediting section could not get information. (H 4, 235.) Bahr.
 Weak on engineering end. (H 5, 107.) Owen Thomas. (H 7, 154; H 7,
 260-262; H 7, 510; H 22, 136; T 2, 842.)
 Nobody responsible for delays. (H, 5, 202.) Hall.
 Production Board purchased different design each day. (H 5, 241.) Hall.
 (T 2, 763.)
 Rulings Board passed on salaries. (H 6, 414.) Langmuir.
 Aircraft Production Board. (H 6, 440.) Coffin. (H 6, 470, 473, 474, 482,
 483, 540; H 21, 359; T 2, 761.)
 Waldon, Deeds & Montgomery produced bogey cost of \$6,087. (H 7, 97.)
 Coffin.
 No program. (H 7, 224.) Potter. (H 7, 238-241.)
 Underorganized, needed production man. (H 7, 491.) Howe. (H 20,
 195.)
 Opinion 99 out of 100 organizations will be failure under Kellogg. (H 7,
 580.) Mixer.
 Col. Hall "star performer." (H 7, 606.) McClelland.

Signal Corps (organization)—Continued.

- Lengthy criticism on engineering department. (H 7, 612.) McClelland.
- Military supervision delayed program. (H 8, 44.) Diffin.
- Lack of knowledge and organization. (H 11, 623.) Macauley. (T 2, 853, 859-860.)
- No criticism by Ford. (H 12, 281-282.) Ford.
- Not much trouble getting decisions from engineering department. (H 12, 541.) Abbott.
- No knowledge of military equipment. (H 13, 20.) Day.
- British captain states high officers did not want information. (H 17, 108.) Rogers.
- Changes by Curtiss plant not gone over by Signal Corps. (H 17, 351.) Maj. Moore. (H 17, 478.)
- Had no efficient engineering organization. (H 18, 95.) Budd Gray. (H 18, 98.)
- Serious situation, reflecting on United States military administration. (H 19, 161.) Churchill.
- Four agencies controlling production cause duplication. (T 1, 531.)
- Signal Corps ridiculed statement there was waterproof glue. (H 20, 362.) Mix.
- Improper influence on Advisory Board. (H 21, 68.) Col. Thompson.
- Chief signal officer advises tests not necessary. (H 21, 590.) Arnold. (H 21, 600-602.)

Squier:

- Advises Coffin to say very little before Senate investigating committee. (H 1, 488.) Barlow.
- Leased 1,200 acres unsuitable land in Florida. (H 2, 140.) Jones.
- States charges on Senate floor were German propaganda. (H 3, 396.) Pew.
- States 180 battle planes delivered in France in February, 1918. (H 3, 405.) Pew.
- States Sunbeam engine first ray of hope. (H 4, 308.) Horner. (All of 308.)
- Said if Germany was using Barlow aerial torpedoes they could wipe out London and Paris in one night. (H 4, 513.) Barlow.
- Estimates cost of campaign at \$1,000,000,000. (H 4, 514.) Barlow.
- Made only one report to Borglum. (H 5, 488.) Borglum.
- Sent men over with no provisions. (H 19, 171.) Churchill.
- Absolutely satisfied with Col. Deeds. (H 22, 302.) Salzman.
- Had no executive duties in Signal Corps. (H 24, 272.) Squier.
- Did not give authority to anyone to disburse the \$250,000. (H 24, 330.) Squier. (H 24, 635.)
- Did not know Vincent was Packard stockholder. (H 24, 333.) Squier.
- Does not recollect calling Senate charges German propaganda. (H 24, 392.) Squier.

White, J. G., Engineering Corporation:

- Langley Field construction unsatisfactory. (H 2, 34.) Edgar.
- Cleaned out company twice; no graft. (H 2, 34.) Edgar.
- Went beyond estimate more than others. (H 2, 48.) Edgar.
- Delay of raw materials fault of White Co. (H 6, 319.) Lockhart, jr.
- Contract satisfactorily filled. (H 7, 353.) Potter.
- This firm selected by Aircraft Production Board. (T 1, 36.) Edgar.
- Over 1,000,000 pounds of material at embarkation point 300 days. (H 21, 457.) Chilson.
- \$8,938,825 paid by the Government for material. (H 21, 463.) Chilson.
- Submits report on materials shipped by J. G. White Co. (H 24, 673-676.) Campbell.

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DIGEST
OF THE
TESTIMONY OF WITNESSES IN THE
HUGHES AIRCRAFT INVESTIGATION

MAY TO OCTOBER, 1918

WILLIAM STROOP (Dayton, Ohio, June 11, 1918; Book 0).

Principal business is representing the American Cigar Co. in Ohio. 1.

Is vice president of Dayton Power & Light Co. and president of the City National Bank. 1.

Gives names of directors of bank. 1.

Became president of the City National Bank in March, 1918. 1.

His predecessor was Mr. H. E. Talbott. 1.

Government Secret Service man asked him about certain transactions in the bank in regard to financing of contractors who had the contract for the Dayton Wright Aviation Field, who was S. S. King. 2.

Mr. Talbott called a meeting one day and said he thought it would be a good thing if 13 would finance Mr. King to the extent of \$10,000 each; and for doing that Mr. King would take over the Rouzer Co., which owed the bank some \$60,000 or \$70,000.

Mr. Talbott claimed he went to Florida for his health, but witness does not think so. Has heard it said it was in connection with another Government contract. 3.

Mr. Talbott called witness to his office and told him a building cost \$1,000,000 or more would have to be put up at Moraine City and was very anxious that his (witness) company should have that building. After the engineer had left Mr. Talbott said to me to "Let no one know anything about this until I tell you to go to Washington to see about closing the contract." 5.

The million-dollar building was never built. Troubles came on. 12.

CLARENCE KIEFER (Dayton, Ohio, June 11, 1918; Book 0).

Vice president of City National Bank. Has held this office for 21 months. 16.

Questioned as to the financing of Mr. King or the Dayton Lumber Co. in connection with Government contract which he had. 17.

WALTER GEORGE DAVIDSON (Dayton, Ohio, June 11, 1918; Book 0).

Cashier of City National Bank. 22.

Has been connected with bank for 16 years. 22.

Mr. King never banked with them previous to this loan. 23.

Mr. Carl Scherer requested to remain at bank one Saturday afternoon in October, 1917, when some very large checks passed. 25.

WALTER GEORGE DAVIDSON—Continued.

Mr. Scherer is treasurer or assistant treasurer of the Dayton Metal Products Co., and is also connected with Dayton Wright Airplane Co. 26.

Funds transferred totaled about a million dollars or more. 27.

This transaction took place December 1, 1917, at about 2 o'clock in the afternoon. 28.

KENNETH B. ALLEN (Dayton, Ohio, June 12, 1918; Book 0).

Has been a civil engineer for 10 years. 35.

Was employed by the Dayton Lumber Co. on work on Wright Aviation Field. 35.

There was a great deal of incompetency and the work was extremely expensive. 36.

Witness was engineer in charge, but his advice was not followed. 40.

ALLEN R. SMART (Dayton, Ohio, June 12, 1918; Book 0).

Member of firm of Barrow, Wade, Guthrie & Co., Chicago, Ill. 45.

Questioned as to the capital stock of the Dayton Metal Products Co. and how it was paid for. 46.

Supervised the adjustments between Col. Deeds and his associates. 48.

His firm retained by the Dayton Metal Products Co. by the day. 52.

"In making an audit last winter I went through the minute book to see if there was anything in the minutes affecting the accounts, and I struck that minute (minute in the meeting of directors of May 21, 1917, of Dayton Metal Products Co.) off because it did not belong there." 55.

Lieut. Col. S. E. WOLFF (Washington, D. C., May 27, 1919; Book 1).

Charge of finance department, Signal Corps. 1.

Unable to procure clear statement of obligations under appropriations from overseas forces. 1.

Contracts abroad made under direction Gen. Foulois. 4.

Balance of \$4,000,000 out of \$750,000,000 to run to end of year. 2.

Twelve thousand planes under contract. 3.

Twenty thousand engines under contract. 3.

Congress asked for \$1,137,000,000 for next fiscal year. 4.

Contract with French Government to equip 30 squadrons—approximately 1,500 planes. 5.

Contract with British Government to assemble planes in England. 5.

Give authorities to purchase abroad for \$47,000,000. 5.

Obligations incurred abroad of possibly \$300,000,000. 5.

Disallowed certain requests from abroad, but authorities abroad made obligations for these larger amounts. 7.

Advised by cable revision of contracts with French Government involved more than \$30,000,000 in new obligations. 7.

Out of touch with situation—one of reasons for desiring to go over there. 7.

Certain contracts with French and British Governments confused. 7.

Lieut. Col. S. E. WOLFF—Continued.

Let contract in September for purchase of \$10,000,000 or \$12,000,000 of material incident to contract with French manufacturers through French Government; this material to be sent abroad part raw, part semifinished, and part entirely finished to complete certain number of planes and engines. One item was 3,000 Gnome engines. 7, 8.

Two hundred and odd cases of material in France; two hundred and odd cases on docks at Hoboken; additional quantity still in factories. 8.

Above contract canceled end of April. Unable to find out reason. 8.

Required that report be made on extent and terms of all contracts abroad, but this had not been done. 8.

Relieved of command finance department on May 14. 9.

Maj. H. S. Brown now in charge. 9. Formerly executive officer. 10.

Appropriation for Signal Corps up to end of fiscal year, June 30, 1916, had never exceeded \$2,500,000. 10.

Accounts audited in field; sent to department for administrative scrutiny and then paid. 11.

Five hundred men in various factories auditing accounts. 11.

Three traveling supervisors. 11.

Finance department represented in each factory have a cost-plus contract.

Employed accounting firm of Lybrant, Ross Bros. & Montgomery, of Philadelphia and New York, until own force could be organized. 13.

Most of employees of this firm relieved about April 15. 13.

Organized accounting force from enlisted men and civil-service employees. 13, 14.

In charge of Maj. Dean Langmuir until succeeded by Capt. Haag. 14.

Still retained some employees of Lybrant, Ross Bros. & Montgomery. 16.

Depreciation of plants figured as an element of cost. 17.

Two sections of finance department represented in each factory having cost-plus contract—accounts section and approvals section. 12.

Accounts section makes up estimates of cost from contractors' books and supervises his method of accounting and finally passes vouchers for payment. 12.

Approvals section passes on proposed expenditures by contractors under cost-plus contract. If proposal not disallowed within stated number of days, may be included as reasonable item of cost in final claim. 12.

Capt. Haag head of accounts section. Formerly a general auditor, member of firm of Henry F. Walbridge & Co., New York, who were public-utility operators and investment bankers. 14.

Approvals section in charge of Maj. Frank E. Smith. Organized entirely from governmental forces, commissioned officers, civilians, and enlisted men. 16.

Lieut. Col. S. E. WOLFF—Continued.

Tentative payments made to contractors account depreciation of plants; these payments subject to revision at the conclusion of contracts. 17.

Monthly return made to Auditor for War Department called an accounts current, together with a statement of the amount they had at 1st of month, amount they drew, and the balance, also vouchers received. 19, 20.

Finance department represented by 40 men at Curtiss plant. 21. In certain cases determination of cost on cost-plus contract made after work is done rather than concurrently with its doing. 25.

France department has representatives in six districts—New York district, Pittsburgh district, Dayton district, Detroit district, Buffalo district, Chicago district—each district being in charge of an officer. 26.

Capt. E. V. Lozier, in charge of New York district, was formerly a manufacturer of automobile parts, an engineer, and formerly with the Timken Detroit Co. 27.

Mr. E. D. Cole, in charge of Buffalo district, was an accountant, formerly with Lybrant, Ross Bros. & Montgomery. 27.

Maj. M. J. Butler, in charge of Dayton district, is a retired Canadian officer. 27.

Capt. Paul B. Holes, in charge of Detroit district, was an accountant for the American Telephone & Telegraph Co. 27.

These men calculate amount to be allowed for overhead. 27.

Data on file as to costs in each plant. Difficult to set standards, so data compiled from day to day and week to week. 33.

On training-plane program, planes made at Fisher Body Corporation, Curtiss Co., Dayton-Wright Co., Standard Aero Co., Springfield Aircraft Corporation, St. Louis Aircraft Co., Wright-Martin Co. at its Pacific coast plant, California Aviation Co. 34.

De Haviland bombing planes made at Dayton-Wright Co. 34.

De Haviland bombing planes made at Fisher Body Corporation and the Standard Aero Co. 34.

Bristol planes were made at the Curtiss Co. 34.

Figures in some contracts for training planes were \$4,125. 35.

Comparative data of costs statement kept on file to show where there was efficiency and where there was a lack of it. 35.

Data collated from reports by plant accountants. 36.

Capt. Frank E. Haag has charge of making comparative statements. 36.

Cost has varied frequently. 36.

Comparative statements of overhead charges at different plants kept in form of a weekly report. 37.

Salaries of executives figured in overhead in a cost-plus contract. 38.

Nothing on file to show at a glance how much money paid to Curtiss Co. and when they got it. 39.

Record of each contract kept on separate card. 39.

Lieut. Col. S. E. WOLFF—Continued.

General principles of estimating depreciation and overhead laid down in printed instructions to accountants. These are supplemented by rulings of ruling board, composed of Maj. Smith, Capt. Haag, and Capt. Rottschafer. 43.

General rulings apply to all contracts and special rulings to particular contracts. 45.

Rulings kept in loose-leaf binders. 45.

A good deal of money spent in development of plants. 52.

Statement kept in accounts section showing amount reported expended by a particular company in construction and equipment. 59.

Purchased plant of General Vehicle Co., Long Island City, and leased it to Wright-Martin Co. 61.

Contractor allowed for material abandoned account change in contract. 62.

Salvaged material sold to public, if no other use for it. 63.

Was an accountant or clerk from 1890 to 1902. 65.

Got into executive work about 1907. 65.

Associated with firm of Hodenpyl, Hardy & Co., 14 Wall Street, New York City, investment bankers and financiers. Was in department having to do with the management rather than financial work. 65.

Connected with above company until commissioned. 66.

Only two manufacturers—Packard Co. and Fisher Body Corporation—had an efficient and sufficient cost-accounting system. 68 and 70.

War Department warrants issued in cases where they were not advised of exact state of commitments abroad. 72.

Cabled statements from Gen. Pershing do not agree as to extent of obligations in France and England. 76.

Presidential Order No. 7 provides for allotment of funds, obligations involving \$750,000,000, to three separate organizations: The Signal Corps, Department of Military Aeronautics, and Bureau of Aircraft Production. 78.

Does not know whether existing appropriations have been exhausted, but thinks there may be a margin. 79.

Unable to get satisfactory results by cabling. 80.

Cables from Pershing relative to financial condition abroad. 83, 84, 85, 86, 87.

Total obligations as shown by cablegrams \$101,010,000, but addition of items enumerated in cablegrams is \$139,510,000. 88.

Statement of Signal Corps under date of May 9, 1918, shows commitments over appropriation of \$640,000,000 of \$173,307,012.38. 89.

One hundred and sixty-three million dollars expected to be realized by sale of material to contractors; also to other departments of Government and allied Governments, as well as to use some of materials for repairs and renewals. 90.

Excess of \$11,322,002.97 over total appropriation of \$640,000,000 due to estimates of cost. 92.

Lieut. Col. S. E. WOLFF—Continued.

- If Gen. Pershing's cable is correct, showing obligations overseas of approximately \$139,000,000, for which authorization has been given only to the extent of \$47,000,000, it would mean \$100,000,000 worth of contracts would have to be canceled in order to reduce obligations to an amount not in excess of amount appropriated by Congress. 94.
- Overcontracted on this side to extent of \$11,000,000. 96.
- Cancellation of contracts will delay program from 30 to 60 days on account of time consumed in making renewals. 97.
- Contractors advanced money to make additions to plant or his working capital, for raw material, machinery, or otherwise. 100.
- Interviewing and preparation of application of applicants for advances carried on by Capt. Lewis B. Preston and First Lieut. Sidney R. Small. 101.
- Application passed upon by finance department and final action taken by War Credits Board. 101.
- Memorandum kept in administration section showing basis for advances, etc. 102.
- Statement showing advances made various companies. 103.
- In cost-plus contracts no provision made by which companies would be compelled to pay damages or lose a part of agreed price in case of delay. 104.
- No requirements with respect to time of performance, the breach of which would expose contractor to any damage. 105.
- Only protection Government had under these contracts in case a plant was inefficiently managed and there were unnecessary delay was the taking over of plant or cancellation of contract. 105.
- Contracts for experimental work of a confidential nature let to Dayton-Wright Co. and Dayton Metal Products Co. on a cost-plus basis, allowing $12\frac{1}{2}$ per cent profit. 106.
- Detailed vouchers not always kept on work of this character. 106.
- The supervision of cost was carried on by an officer at plant who would check vouchers and send a memorandum voucher of the total number of amount for payment. 106.
- First Lieut. George Weir, employed by Col. Thompson in civil life, was detailed for this work. 107.
- Lieut. Col. E. LESTER JONES (Washington, D. C., May 28, 1918; Book 1).
- Assistant and executive to head of Department of Military Aeronautics, Col. Clinton Goodloe Edgar. 112.
- Matériel section passes on all requisitions for construction. 113.
- Equipment puts requests through and pay for them. 113.
- Col. Jones with Coast and Geodetic Survey before receiving commission February 28, 1918. 118, 119.
- Looked into question of how many planes had been shipped abroad and why more had not been shipped. 120.
- Got information from transportation department. 121.
- Testified before Senate committee and was questioned as to Creel statement as to program. Stated only one plane had been shipped overseas. 122.

Lieut. Col. E. LESTER JONES—Continued.

Chaotic condition existed. Unable to improve service. 124.

Civilian, representing Col. Deeds, without authority authorized a Mr. Carl Fisher to construct an aviation field on his own land. Was reimbursed by Government for expenditure. 125.

Mr. Fisher also directed to lay out flying course, costing \$40,000.

Never reimbursed by Government. 132.

Policy is to start something and then drop it, forgetting obligations to individuals. 133.

Dozen cases where a thousand men were sent to places where there were no accommodations for them. 143.

Commercial bill of lading used rather than Government bill of lading in purchasing by J. G. White Corporation, thereby netting this concern an additional income. 148.

Explains Government bill of lading. 156.

J. G. White Corporation only company authorized to purchase and handle shipments direct. 158.

Transportation section has information as to rates for shipping. 161.

Bills from railroad go to supply division for audit. 161.

Officers tried to sidetrack Col. Byllesby. 166.

Statement on expenditure of money prepared by Gen. Squier and Mr. Potter in error. 170.

All money appropriated and considerably more already provided for in contracts. 170.

Nine hundred and seven million dollars spent or obligated. 171.

Chief Signal Officer can redistribute allotments. 180.

Certain items in statement submitted by Lieut. Col. Wolff in error. 181.

Statement as to estimated cost of certain flying fields. 187.

Contract signed with manufacturing concern having no buildings involving \$40,000,000 on a cost-plus basis, plus 15 per cent. 191.

Maj. C. S. BENTON (Washington, D. C., May 28, 1918; Book 1).

Commissioned June 27, 1917. 194.

Formerly traffic manager for W. H. Edgar & Sons, Detroit, Mich. 194.

In charge of traffic section of the supply division. 194.

Issues Government bills of lading on shipments for Signal Corps, arrange for placing of cars and getting shipments to destination. 194, 195.

Describes Government bill of lading and usage. 196.

Questioned as to J. G. White Corporation. 199.

J. G. White Corporation receives commission on money paid railroads covering freight shipments from Government. 209.

Lieut. Col. S. E. WOLFF (Washington, D. C., May 28, 1918; Book 1).

Government bill of lading only procurable through Quartermaster Department. 217.

Questioned as to cost-plus contract form. 219.

Government was to either purchase new buildings or contractor was to furnish them and have them depreciate over the life of the contract. 223.

Lieut. Col. S. E. WOLFF—Continued.

Amount allowed by Government on increased facilities is not figured part of cost of contract in arriving at percentage of profit. 228.

Bought a million and a half dollars' worth of machinery for Curtiss Co., which Government owns. 230.

Controlling ledger, trial balances, and subsidiary ledgers all kept at plant. 232.

Cost plus contracts included in flat price contracts for reason that authorities were issued by outside contract officers. 234.

Col. Disque authorized to expend for spruce what would be recouped on sale of spruce. 235.

All authorities issued overseas are included in fixed priced column. 236.

Many contracts for construction of fields were on a cost plus basis but carried in wrong column. 242.

Authorities overseas request to be relieved of keeping any accounts by allotments, and given authority for blank million dollars with no accounting for it until after war is over. 271.

With respect to obligations abroad, puts minimum at \$75,000,000, and maximum at \$200,000,000.

Interrogated quite extensively as to reasons for desiring to make trip overseas on temporary duty.

Maj. C. S. BENTON (Washington, D. C., May 29, 1918; Book 1).

Referring to contract with J. G. White Corporation, Justice Hughes points out that under Item B cost of delivery to required points should not be considered in figuring percentage of profit to contractor. 278, 279.

Vouchers do not show that commission on freight charges was paid by Government. 283.

In conversation with officials of White Co. was led to believe they were receiving commission. 284.

JOSEPH S. OTIS (Washington, D. C., May 30, 1918; Book 1).

Associate general manager of Otis Manufacturing Co., New Orleans, La. Importing and manufacturing mahogany lumber. 287.

Left company December 31 but still retained stock. 288.

Offered services to Government free of charge. 291.

Was assigned to work in equipment division, propeller section, in charge of mahogany and hardwood. 293.

Saw one contract he thought was of any value, which was with a firm in Philadelphia that did not even own its own mill. 293.

None of concerns having contracts, except one, Louis Thompson, had put up a bond. This is concern referred to above. 294.

One of concerns having \$300,000 contract was rated at \$3,000, and poor pay. 294.

Maj. Sligh, of Grand Rapids, Mich., had let contracts. 295.

Louis Thompson & Co. only concern which had delivered lumber under these contracts. 296.

Embargo placed on shipment of wood for battleplane propellers. 299.

JOSEPH S. OTIS—Continued.

Made up set of figures for purchase of propeller lumber and made prices such as he thought the poorest-equipped manufacturer —. 303.

Was told by a Mr. Wycliff that they were too low, and that mahogany business had changed greatly since he had left—two weeks previous. 303.

His opinion mahogany men were working through Mr. Lockheart, of raw materials department, Signal Corps, with a view to getting mahogany men in their department to handle the whole thing. 303.

On October 1 or 2 Otis Manufacturing Co. offered to sell 3,000,-000 feet of suitable aeroplane lumber of a very strict grading at \$215. Was not accepted. 306.

Louis Thompson & Co.'s offer of \$200 was accepted. 306.

Bids of other companies for same amount were accepted but bonds were not put up, and deliveries were not made. 307.

Purchased 300,000 feet from Cobbett & Co.'s representative below \$300 a thousand. 309.

Mr. Wycliff figured on \$350 for selects (firsts and seconds, airplane), and \$280 for No. 1 common. Maintained No. 1 common not an economical grade for Government to buy. Mahogany alliance insisted that Government should also take what he classed as rejects and pay an enormously high price for them. 309, 310.

British Government paying Otis Manufacturing Co. \$395 on logs coming out of Belize, British Honduras. 311.

Average price on airplane lumber of Otis Co. for 1917 was \$200 a thousand, and company made \$200,000 at those prices. 311.

Conditions had not changed since that time, but labor had possibly gone up 5 per cent. 311.

Was relieved from duty, and given commendatory letter for services rendered. 312, 313.

Mr. Wycliff made an assistant buyer. 314.

Interrogated as to cost of mahogany logs to manufacturer, price paid by Government, and profit. 320, 366.

Capt. JAMES J. NEWMAN (Washington, D. C., May 30, 1918; Book 1).

Commissioned September 28, 1917. 385.

Assigned to Fisher Body Corporation of Detroit. 390.

Company clamoring for money. 390.

Dayton-Wright Co. approved voucher for approximately \$250,-000. 391.

Had not turned out any produce for Government up to this time. 392.

Voucher was for material, labor, and overhead. 392.

Overhead accounts amounting to about \$90,000 not verified. 393.

Contract was for 400 J-1 machines, 1,000 De Haviland 4s, and 3,000 De Haviland 9s. 396.

Three officials of concern to divide \$100,000 as salary during term of contract. 403.

Capt. JAMES J. NEWMAN—Continued.

R. A. Perry of Lybrant, Ross Bros. & Montgomery stated anything he approved would be paid by the Government whether or not o. k.'d by Capt. Newman. 404.

Mr. Perry in direct charge of accounting work at plant. 406.

At that time whole of accounts end of finance department practically controlled by men of firm of Lybrant, Ross Bros. & Montgomery. 407.

Col. Thompson of Signal Corps kept very private file. 408.

Wrote letter to ascertain if salaries of officials should be included on voucher and paid, but did not receive any reply. 409.

Put salaries on voucher and they were paid. 410.

Orville Wright paid a salary of \$18,000 a year by this concern. 411.

Consulting engineer. Other people on officers' pay roll, but were not officers of company. 413.

Addressed letter to Maj. Langmuir asking if it was his duty to investigate as to who was to share profits as contract states that no Member of Congress or other persons should participate in profits of contract. 413.

Was advised that it was not; that that clause was practically extinct. 413.

Engle Aircraft Co. had contract for \$2,500,000 for J. N. 4 spares. 420.

Lybrant, Ross Bros. & Montgomery had 12 to 18 men at Dayton-Wright plant. 423.

\$1,000,000 advanced by War Credits Board to Dayton-Wright Co. 431.

All overhead expenses allowable under Dayton-Wright contract. 431.

First shipment of planes (10) was made by Dayton-Wright Co. after 1st of January. 437.

40 J-1s shipped up to 1st of May. 437.

During April approximately 90 planes shipped. 437.

300 training planes shipped prior to 1st of April. 437.

Signal Corps agreed not to have further changes in next 1,000 planes. 439.

Col. Montgomery proposed \$7,000 as bogie price for De Havilland planes. 443.

LESTER P. BARLOW (Washington, D. C., May 30, 1918; Book 1).

An engineer.

Developed present type of shell United States Government has accepted as their official munitions. The Barlow heavy drop bomb. 447.

Bomb could have been manufactured over a year ago, but Government did not place order until January of this year. 449.

Glen Martin only had order for six experimental machines. To be paid \$50,000 apiece for them without engines. 454, 455.

Mr. Martin had to raise \$2,500,000 private capital and \$2,000,000 of that was withdrawn owing to uncertainty of Government negotiations. 455.

To say anything to Col. Deeds or Gen. Squier on methods they have pursued would have meant disaster for Mr. Martin. 456.

LESTER P. BARLOW—Continued.

Up until a few months before war was declared more hours had been flown by United States Army in Martin's machines than all other machines combined in the service. 456.

Plant adaptable to making J. N. and De Haviland machines. 456.

Has not had backing of Government. 457.

Purchased two machines equipped with 100 horsepower Gnome engine from Mr. Heinrich at \$15,000 apiece. 457.

Gave Mr. Heinrich contract for scout machines at fourteen thousand some hundred dollars each, without motors. 457.

Engineers given something to do to keep their mouths shut. 458.

Col. Deeds negotiated contract. 459.

Heinrich plane could have been built for \$2,000 to \$3,000 without motors. 460.

Martin could have produced planes rapidly had Signal Corps backed him. 462.

Equipped with Hispano-Suiza engine. Arranged with Gen. Squier to develop his aerial torpedo, but nothing ever came of it as Signal Corps failed to advance money or make contract. 480, 481.

Col. Deeds intimated no more newspaper publicity desirable if Barlow was to get contract. 484.

Gen. Squier told Mr. Coffin to tell Senate committee investigating aircraft production as little as possible. 488.

Liberty motor not high order of combat engine. 495.

Capt. HAROLD M. LEHMAN (Washington, D. C., May 31, 1918; Book 1).

With finance department, equipment division. 501.

Assigned to appropriations section. 403.

Duty to see that amounts allotted and amounts charged against allotments were properly entered. 505.

Supervised making up of weekly statement as to condition of appropriation. 506.

Had not been notified by anyone as to error in statement of May 9. 508.

Overobligation appears in allotments of construction division, amounting to \$13,632,259.50. 570.

Excess over allotted appropriation in equipment division stated to be \$191,906,584. 511.

Amount of excess obligations actually incurred in equipment division over and above allotted appropriation, \$37,940,901.38. 513.

Authority issued to disbursing officer abroad for \$15,100,000 to pay foreign contracts. 533.

LESTER P. BARLOW (Washington, D. C., May 31, 1918; Book 1).

Col. Deeds advises about middle of February not ready to take up bomb dropping or bombs yet. 542.

No planes for carrying these bombs. 543.

Saw Government experimenting with bomb traps in December at Langley Field. 544.

Promised contract July 2, 1917, for 10,000 bombs and 1,000 traps. 546.

LESTER P. BARLOW—Continued.

- Order given on January 1, 1918, for bombs, but not for traps. 546.
- It is necessary to take plane into consideration in designing of bomb traps. 550.
- Four hundred and fifty thousand bombs under production on May 31, 1918. 551.
- Bombs manufactured will lie idle until used by Allies or by us in planes obtained from Allies. 552.
- No bombing planes of our own. 552.
- No bombing planes being constructed except Handley-Paige being experimentally produced. 553.
- Bomb trap designed by Ordnance Department could not be used universally in our bombing program. 556.
- Barlow bomb can stand sleet, snow, and mud, and is practically fool proof. 559.
- Records will show Gen. Squier and Col. Deeds tried to block use of flying torpedo. 563.
- Flying torpedo held up four months. 565.
- Had traps, bombs, and planes for training of men. 566.
- Government accepts his trap and is to take 500. 566.
- Would train men gratis on own field. 568.
- Spoke to Col. Horner about synchronizing aircraft gun, but he did not seem to be interested. 579.
- Marlin gun and synchronizer was 150 shots faster than Marlin gun and synchronizer ordered by Government from National Pneumatic Co. 784.
- (In numbering 200 pages skipped in volume.)
- Seven synchronizers built by National Pneumatic Co. accepted by Government, but proved unsatisfactory. 790.
- Mr. Nelson, technical expert in employ of Government, develops very satisfactory synchronizer. 791.
- No definite synchronizer under production yet. 792.
- Takes several months to complete 20,000 synchronizers. 792.
- Lieut. Col. HENRY MARISON BYLLESBY (Washington, D. C., May 31, 1918; Book 1).
- Original commission dates November 15, 1917. 795.
- Past 16 years president of H. M. Byllesby Co., of Chicago and New York, operating public utilities. 796, 795.
- First assigned to recruiting service for Signal Corps. 797.
- Later transferred to administrative division of the Signal Corps. 797.
- Generally administering special matters. 797.
- Served six weeks on special committee endeavoring to point out most obvious losses of time and money in War Department's conduct of affairs in city of Washington. 798.
- Was cabled for by Gen. Pershing and ordered overseas shortly after taking up above work. 798.
- Going across to assist Brig. Gen. George H. Harries, a business partner in civil life. 799.
- With reference to his observation of organization of Aviation Department, Signal Corps, impression he formed was not what it was desired he should. 799.

Lieut. Col. HENRY MARISON BYLLESBY—Continued.

Impossible to secure information worth while in reply to inquiries. Officers in charge of Production Department did not desire to take up time to confer with him on subjects brought up. Col. Montgomery one officer mentioned. 799.

Desired to take up with Col. Montgomery the question of manufacture and construction in program for building airplanes, progress of program, and general engineering details. 800.

Endeavored to arrange meetings at convenient time for Col. Montgomery without result. 800.

Similar results with other men prominent in Signal Corps. 801.

Col. Deeds always kindly and complimentary, but talks with him never resulted in getting information desired. 802.

Young men promised commissions as first lieutenants in Air Service after qualifying as flyers, but Government issued commissions as second lieutenants, causing much complaint. 803.

Received no complaints in regard to aircraft production that had come to other parties. 804.

Estimated Wright-Martin Co. cost-plus contract would total \$12,000,000, but due to rise in cost of labor and material, and it possibly would reach \$50,000,000. 806.

Estimated two years required to fill contract, which was for manufacture of two sizes of Hispano-Suiza engines. 706.

Wright-Martin Co. turned into Government every month statement of their entire expenses, labor, material, and overhead of every description, to which was added 15 per cent, and probably received a settlement therefor. 807.

Every dollar of cost defrayed by Government. 807.

No reason why Government should have given a contract bearing so large a percentage. 809.

Stock of Wright-Martin Co. before war was looked upon on Street as a "skyrocket" proposition (prior to our entry into war). 810.

Regarded contract as most extraordinary one ever heard of, from any standpoint. 811.

Engineering company of which Maj. Starrat was head did large amount of constructing of barracks and cantonments and roads and waterworks. 813.

Lieut. Col. E. LESTER JONES (Washington, D. C., May 31, 1918, Book 1).

In re J. G. White Engineering Corporation contract for Langley Field, definite construction already made amounts to \$3,785,000, and on that project an expenditure of probably \$10,000,000 will be necessary. 814.

Col. Edgar in better position to talk intelligently with regard to contracts. 816.

Contracts referred to all over \$1,000,000. 816.

Great delay in filling requisitions, due to red tape. 817.

Col. Edgar complained in writing to Chief Signal Officer regarding delay and seriousness of condition. 821.

Changed heads of Air Division twelve times since aircraft program was started. 822.

Charges Lieut. Col. Wolff with irregular, unbusinesslike methods. 824.

Lieut. Col. E. LESTER JONES—Continued.

Langley Field contract would bear criticism. 824.

Contract was broad, loosely drawn, and very susceptible to any interpretation contractor might put on it. 825.

Partiality shown—lowest bidder did not get contract. 827.

Allowed concern to submit bid after bids were closed. 827.

Accused J. G. White Engineering Corporation of unbusiness-like methods. 828.

Some of J. G. White's former employees in Signal Corps. 829.

Col. CLINTON GOODLOE EDGAR (Washington, June 1, 1918; Book 2).
At this time head of what was the Supply Division of the Signal Corps. 1.

Duties consisted of viséing requisitions drawn up by Air Division for Supplies. 2.

Traffic Division had charge of transportation of all aircraft material.

Construction Division was created on May 21, 1917. 4.

Had charge of all construction work of Signal Corps. 4.

Albert Kahn, Detroit, was advisory architect. 5.

Col. Starratt selected contractors for Government work. Commenced in June. Under National Council of Defense. 5.

Dr. Walcott, of Smithsonian Institute; Dr. Stratton, of Bureau of Standards; and Mr. Durand, of Cornell, constituted advisory committee on aeronautics. 6.

Early in May, 1917, finished plans for aviation training camp. 8.

Col. Edgar, together with Gen. Foulois, submitted a report to Chief Signal Officer recommending fields be put at Dayton, Mount Clemens, and near Champlain. 9.

Attorney Whaley, of Council of National Defense, develops plan of contract on cost-plus basis for construction work. Adopted. Has not copy then of contract. 14.

Form of contract. 15.

Had no supervision at Dayton-Wright or Lincoln Motor Co. plant. 18.

Original order re control of all construction work again brought up. 19.

Unauthorized construction work. 18 and 19.

Acetone plants—Pennsylvania, Tennessee, and Missouri. 20.

Additional allotment made March 14; amount, \$20,000,000. 23.

Information as to items of unauthorized construction. 24.

(These contracts let on 10 per cent basis, whereas old ones let at 7 per cent, Government thereby losing 3 per cent by handling this way.)

Acetone proposition ran somewhere around \$1,000,000. 26.

Contract form modified by making it 7 per cent for \$100,000, and from that down. 26.

New form of contract in effect at Painville and West Point, Miss. Have spent \$804,209 to date on that at maximum of 7 per cent. 26.

Submits memorandum to Mr. Potter, of Equipment Division, on making contracts with maximum of 10 per cent, limited to \$100,000. Attached sheet showing percentages. 27.

In ignorance of terms of the airplane contracts. 27.

Col. CLINTON GOODLOE EDGAR—Continued.

Came here to confer with Col. H. H. Hutton and Col. Waldon; spent so far this year (June 1, 1918) \$48,000,000 on organization of his own proposition. Shows original copy of moneys spent; total, \$48,334,349.28. 28.

This for construction work in United States and overseas, altogether \$20,000,000 on overseas items. 28.

Amount overseas charged against allotment by Equipment Division. He had nothing to do with payment. 28.

Mentions notification from Equipment Division that France had called for \$9,000,000 worth of their funds for construction abroad. Reduces their surplus of \$5,000,000 to \$6,000,000 to a deficit. Have on hand order for \$9,500,000 field hangars for overseas. 29.

In case of construction overseas they are simply notified on piece of paper that so much money has been called for, and it is then taken out of their allotment. They are given no estimates. 29.

Except an item of \$1,082,000, all work done in this country, amounting to about \$28,000,000 up to now, has been done on a basis of cost-plus, the percentages shown in the standard form of contract, as modified last spring in the way stated. 29.

Stated contracts made under the basis of these percentages could have been shaved more. 30.

Through orders of Secretary of War they took such contractors as Maj. Starratt sent, he in each case sending an alternate also for their final choice. 31.

Some of the contractors furnished were good and some bad. The United Construction Co. of St. Louis, for instance; dilatory and poor work and not sufficient funds to float the work. 32.

J. G. White Engineering Corporation, who had Langley Field, unsatisfactory on that job. Also built Morrison, Va., and they did a good job there. 34.

Built camp at Carlstrom Field—cost, \$799,212.01—and camp at Door Field—cost, \$674,206.21. These considered very cheap aviation fields. 34.

Cleaned out organization of J. G. White Engineering Co. twice; could not detect any graft. Maj. Harold Bennington in his office, trained auditor, watched this job at Langley, but could not nail down the place where something had been done wrong. 34.

Langley Field, a large contract, laid out by Gen. Squier and Maj. Souder and the Aircraft Production Board. 35.

Built buildings 100 feet high and 150 feet in length, which were impossible to operate. 35.

Estimated cost of Morrison Field was \$1,892,000.60, of which \$1,873,394.82 has now been paid. 36.

Langley Field was estimated to cost \$3,785,000, but if finished on original plan will cost \$15,000,000. 36.

Can not explain discrepancy, as he had nothing to do with plans of these tremendous buildings. Did not make estimates. Were under what they should have been. 36.

Col. CLINTON GOODLOE EDGAR—Continued.

Estimates made by Capt. Stieger, Coast Artillery, and Capt. Sloan, of Signal Reserve Corps. Forest had to be cut down, expensive drainage laid out, concrete road built to railroad, etc. 37.

Contract for construction of Langley Field was placed with the J. G. White Co. 41.

J. G. White Co. also made purchases of materials for the Government overseas. 44.

In May, Secretary of War started building aviation fields abroad. Sent in an order, for which J. G. White was retained on job on 3 per cent basis, to purchase and assemble in New York all material necessary for aviation training camp. This was furnished for \$642,491.06. 44.

Plans are laid out to do something, and it is a continual increase. This without exception. More buildings have been added, and contracts have gone right on. 46.

The Quartermaster General draws a line and says on such a day the contract ceases and then lets a new contract. 47.

White Co. heard of this and brought contract down to them, saying they had reached the limit, wanted old contract closed and new one given them so that they could procure a larger fee. 46.

No limit was placed on amount of cost that could be incurred under these contracts. 47.

Every contract has exceeded its estimate, J. G. White Co.'s overrunning more than any. 48.

Was asked if he had completed the audit of the work up to the present and could say that there was nothing irregular in what had heretofore taken place. 48.

States funds were wasted; gives reasons. 49.

With reference to facilities for schools to house Canadian unit. 27.

In the way of planes, engines, etc., has correspondence showing that first fields were finished and there were not enough planes, and after planes got there there were not enough spare parts. Found schools where they did not have monkey wrenches and screw drivers, some of which were coming from anywhere. 51.

The requisition order reaching the Equipment Division on December 11 was followed on January 24 by another, in which time only one article on the entire list of 97 items had been shipped.

This condition considered typical. 53.

Describes memorandum of data secured on methods of Equipment Division, showing what happened to an order after it reached there. 53.

After much trouble with officials in Equipment Division, succeeded in getting authority for all fields to expend \$300 a day. 55.

Specifically states there was no organization and discipline in any of the divisions with which he was connected. 55-57.

Col. CLINTON GOODLOE EDGAR—Continued.

Shows lack of judgment in orders, stating Equipment Division bought training planes at a terrific rate, but no spares or other necessities, which kept these planes from flying. 58.

Col. Montgomery, when he was division chief in Equipment Division, almost impossible to see. Often waited three quarters of an hour for interview, then nobody would see him. 59.

Drew their attention to the fact that the man who spent the money should not have control of the payments. The system there was to give them money and let them spend it. 59-60.

Give facts relating to flying course from Rantoul to Dayton. Col. Deeds was responsible for this venture, as also buying flying field at Miami, for which they now have to get money to pay for it. 61.

Relates experience of having 500 or 1,000 men dropped in on them at the fields and no place to house them. 63.

States one camp called Palo Alto, in California, was stopped in the midst of construction. 64.

S. S. King was president of the Dayton Lumber & Manufacturing Co., which company had the contract for construction of buildings at Wilbur Wright Field. Poor contractor; no experience. Recommended by Col. Deeds. 66.

Col. Deeds's position at this time was civilian advisor, a member of Aircraft Production Board. 67.

Col. Deeds had some position or office with the Miami Conservancy Commission, which owned the ground the Wilbur Wright Field was constructed on. 69.

Also the two Talbotts, senior and junior, were interested in this deal. Procured money for them when they could not get their accounts straightened out. The Talbotts are in the Dayton-Wright Airplane Co. and the Dayton Products Co. Were financing King, the contractor, who was writing to the trade that the Government was holding up his payments. 70.

Contract for Wilbur Wright Field was \$2,922,061.80. 74.

Q. What other matters have you that I should be informed upon? 78.

The instruction of commanding officers and others; expenditure of Government money through disbursing officers at these camps and fields without authority, which became of great worry and trouble. 78.

Talking about the Air Division. Commanding officer goes out and gets money for maintenance of his fields, spends it on a clubhouse or something else that suits him. 79.

Also commanding officer comes to a field and without authority takes, for instance, a machine shop, tears out partitions, and makes other changes involving large sums of money to turn it into a carpenters' shop. 79.

Maj. HAROLD BENNINGTON (Washington, June 4, 1918; Book 2).

Been in Army since June of last year, coming from civil life. 81.

Public accountant, in partnership with Ernest Reckreutt in Chicago about 12 years. Came from England. 81.

Maj. HAROLD BENNINGTON—Continued.

Came to Washington after war broke out and took charge of the accounting for Construction Division in the Signal Corps. 82. Audited all accounts relating to bills having to do with costs of construction of various aviation camps. 82.

J. G. White Co., who had the contract for Langley Field, came to him about contract entered into by Maj. Stieger. Had made contract with Hampton Roads Construction Co. for roads and temporary buildings. J. G. White Co. stated this was an irregular company scrambled together for the purpose of getting said contract. 84.

Store at Langley Field very loosely supervised. 87.

Not possible to make comparison of estimates of excesses coming up, as they were not what would be called engineering estimates, only drawn up in rough way. 88.

Audited work of Supply Division exclusively. 89.

Mentions Wright Field, Dayton, Ohio. 90.

Contractor, Dayton Lumber & Manufacturing Co., S. S. King president. 90.

Over \$2,000,000 paid on Wright Field contract with Dayton Lumber & Manufacturing Co. 91.

Mr. Grannis was employed as superintendent of building operations of the Signal Corps in Dayton. 96.

No provision in contracts where contractor was liable to any penalty for failure to complete work within stated time. 98.

Describes dragging along of work at Dayton. 99.

Mr. Grannis eventually taking charge of this work. 99.

King utterly spineless and others had to make his decisions for him. 99.

Dayton Lumber & Manufacturing Co. were financed by their bankers in Dayton, of which Mr. Talbott is president. Also financed through an attorney at Dayton. 100.

Mr. Smith exclusively engaged in supervising the engineering matters in connection with Langley Field. 101.

Vouchers were made payable to the contractor himself. 103.

Mr. King kept an active bank account in bank of which Mr. Talbott was president. 103.

Total amount of payments made to Dayton Lumber & Manufacturing Co. is over \$2,000,000 for Wilbur Wright Field alone. 103.

Dayton Lumber & Manufacturing Co. had a contract to do construction work in connection with McCook Field; estimated cost to be on May 24, \$1,059,052. 104.

Same inefficiency in management, and weak personnel. 105.

Q. Was there in connection with this McCook Field contract an attempt made from time to time to get money on receipts where money had not been paid by the contractor? 105.

Relates one very grave instance. 105.

Unclaimed wages amounting to \$18,000 in connection with Wilbur Wright Field. 107.

States item of \$18,000 could not have normally been paid out. 111.

Maj. HAROLD BENNINGTON—Continued.

Pay rolls were acknowledged untrustworthy, and it was a fair inference that somebody actually paid out amounts in excess of the money they really earned. 112.

Name of attorney at Dayton, in connection with Wilbur Wright Field is O. F. Davisson, and the bank the City National Bank. 116.

Manner of checking up pay rolls. 118-119.

Agrees that pay rolls were untrustworthy. 120.

Where you find records never agreeing you have an organization that is inefficient. 122.

Cites one instance in particular of man who got away with four jobs in collusion with the timekeeper at Mineola. 123.

Did not believe there had been any intentional effort on the part of anybody, either in the service or out of it, to retard the work in aircraft production. 124.

Lieut. Col. E. LESTER JONES (Washington, June 4, 1919; Book 2).

Authority is given for the planting of approximately 94,000 acres of castor beans. Subsequently it was shown that the oil would not be needed, already had castor oil on hand that they were not using, but still further orders were placed. Government agreed to pay farmers \$3.50 a bushel. 126.

Had made no provision for plants to extract the oil from the beans. 127.

Contract were made by officers in the castor-oil section of Equipment Division. Civilians before this country entered the war. 128.

Gives Col. Edgar as authority for the statement that contracts were still being made with the farmers for additional acreage to be planted after the discovery of the substitute for castor oil. 129.

Castor-bean item, apart from the expense of reduction, would aggregate in neighborhood of \$5,000,000. 131.

Reduction plants located at great distances from where they made the plantings. 131.

Aerial gunnery school at Miami, Fla. 132.

Board's report evidenced a great outlay of money that could have been saved in selecting another location. 137.

Second board sent down to report on Miami. 138.

Col. Edgar recommended if anything were done to start on a small scale. Chief Signal Officer went ahead and leased 1,200 acres on his own recommendation, cost to be \$8 an acre, annually. 140.

\$300,000 authorized for construction of buildings, filling in, etc., Whole thing formed of coral, impossible to dig through. 140.

Cites instance of plane which had to be pulled out of the mud by a mule, the mule afterwards having to be pulled out by mud hooks. 141-142.

Thinks one man leased, or obligated himself, to a lot of small farmers for the planting of castor beans. Thought there were written contracts with certain parties agreeing to take these beans. 150.

Lieut. Col. E. LESTER JONES—Continued.

Mr. Hughes brings up the matter again of the going on of making contracts for the planting of castor beans after it had been learned that they would not be needed. 152.

Failure to provide reduction plants, assuming even that the castor oil would be needed. 153.

Gen. Squier reported that 286 planes had flown to a point of embarkation. No facilities there to receive planes arriving by flight. 154.

JOHN HENRY SMITH (Washington, June 4, 1918; Book 2).

Resides in Washington, D. C.

Came here from Youngstown, Ohio, where was with the Truscon Steel Co., manager of the railroad department. 156.

Requested by Col. Edgar to take charge of construction of Langley Field.

Albert Kahn, of Detroit, Mich., consulting architect. 157.

Supervised the purchase of all material that goes into the field, and the personnel of the field. 158.

Irregularities brought to his attention. Case of the Hampton Roads Engineering & Construction Co. Capt. Sloan made this contract without permission or authority from anyone. 159.

Capt. Sloan was from Front Royal, Va. 160.

This case was investigated by Capt. Castell, who found that the firm were capitalized at \$5,000. They were a group of local men at Newport News. One a lumber man, another a barber, etc. 161.

Profit under this contract, 10 per cent. 162.

The J. G. White Engineering Corporation, already on the ground, should have done the work, which would have saved one profit. 163.

Minor irregularities in purchasing. Things bought at the last minute, and on a spot market. 167.

Capt. Sloan is in France now. 170.

Col. CLINTON GOODLOE EDGAR (Washington, June 5, 1918; Book 2).

The gunnery school at Miami, Fla. 172.

Meeting in the Air Division to discuss this proposition. 174.

Second board sent down. 174.

Chief Signal Officer asks for estimate on small scale. 176.

Kissimee, Fla., stated to have been better location in every way for a field than Miami. Believes reason for putting location at Miami was because of local attractions for officers and aviators. All that was asked in regard to the situation of these aviation camps was with reference to young ladies and dancing, etc. 182.

Castor-oil situation. 184.

Evidence of further contracts being made for castor-oil plantings after advices had been received that no more would be needed. 186.

Cites memorandum calling attention to the fact that contracts for two acetone plants had been placed by the Equipment Division at a profit of 10 per cent for the work. 188.

Col. CLINTON GOODLOE EDGAR—Continued.

Contracts were let at a 10 per cent basis to people who would have taken it on the 7 per cent basis, but were not informed that they would have to by the Equipment Division. 190.

Submits memorandum recommending the abandoning of Miami as gunnery field. 202.

Between \$75,000 and \$100,000 had already been spent there, and would still need at least \$66,000 more, and at best would only be a patched-up affair. 203.

Field at Lake Kissimee would have cost around \$250,000. Miami before it is finished will run over \$400,000. 206.

Col. E. LESTER JONES (Washington, June 5, 1918; Book 2).

Gives names of E. F. Sewell, and Frank B. Shutts, of Miami, as two business men who prevailed upon the Chief Signal Officer to establish gunnery school at Miami. 207.

Presents memorandum showing acreage secured for cultivation of castor beans, with cities to be shipped to. 209.

List of castor-bean contractors. 211.

History of castor beans. 213-218.

Statement referring to number of planes that have been shipped to points of embarkation for overseas. 221.

Numbers of and dates of shipment. 223-225.

JAMES KIDWELL GRANNIS (Washington, June 5, 1918; Book 2).

Superintendent of construction in Signal Corps, in operations at Dayton, Ohio, and vicinity, under Col. Edgar. 227.

Employed since last August, and as subordinate 30 days prior to that time.

Formerly in civil employment as superintendent of construction. 228.

Repeated rumor of Mr. Talbott being identified with the contract for the Wilbur Wright Field. 232.

Criticizes methods employed in construction of Wilbur Wright Field. 237.

Labor conditions at Wilbur Wright Field. 241.

Practice of getting receipts from material men when, in fact, the goods had not been paid for. 243-244.

JOHN S. CARRINGTON (Washington, June 5, 1918; Book 2).

As secretary and manager of the Chamber of Commerce of San Antonio, Tex., gives details of the part Texas played in the raising of castor beans. 250-258.

Tells about going ahead and increasing acreage, as Signal Corps did not inform him of the fact that no more castor beans would be needed. 259-270.

GUTZON JOHN DE LEMOTHE BORGLUM (Washington, June 6, 1918; Book 2).

Sculptor from Stamford, Conn. 271.

Will I. Ohmer, Dayton, Ohio. 284.

Mr. Borglum could never get any data; was being interfered with. 289.

Could not get permits to visit the factories. 285.

Mr. Ohmer misses Borglum and runs across King, who tells him that if he gives any information to Ohmer he will do so at his peril. 286.

GUTZON JOHN DE LEMOTHE BORGLUM—Continued.

Receives note to appear before Aircraft Board. 288.

Learns from this interview that Col. Deeds was interested in the Dayton Metal Products Co., and was a partner with Talbott. 289.

Mr. Carpenter had legal information in respect to Deeds's relationship in this business. 291.

Mr. Nichols, Mr. Witteman, and Mr. Miles reported to him about various factories. 293.

Visited The Standard, Fisher Body Corporation, Lincoln Motor Cos., The Curtiss, and Fisher Body Corporation. 295.

Reports submitted to President. 299.

Report "Exhibit 1" states general situation; indicates a terrible state of confusion and irregularity, due to self-interest and intrigue. 308.

Talbott tells him they are asked to leave bridge building and build aeroplanes; that they did not know a "damn" thing about it, any of them. Twelve thousand dollars apiece for the battle planes, and to build 4,000 of them. 309.

All contracts cost plus. So-called bogey, or constant cost, put in contract. 310.

Mr. Talbott said he had been promised \$72,000,000 worth. 312.

Self-interest interfering with the aircraft program. 313.

The ability of the Curtiss interests to have handled the entire program. 319.

Dayton is always given preference. Battle-plane side of production always landed there. 322.

Curtiss plant held back in interests of the development of the Liberty motor. 322.

Lieut. Emmons. 323.

Maj. Gray, of Dayton. 324.

Deeds claimed to have been one of the inventors of the Liberty motors. 325.

Bristol fighter; could have built a plant in 60 days, instead six to eight months of time were wasted. 327.

There was nothing related to the Bristol fighter that could have prevented them in November from delivering 500 of those planes, 150-horsepower engines, by the 1st of April. 328.

Trying to put Liberty motors in Bristol fighter. 329.

Bristol fighter success in Europe. 329.

Delay in blue prints. 333.

Maj. Gray, Dayton. 334.

More evidences of self-interest and intrigue. 337.

Lewis Co. offers to produce Liberty motors for \$3,000 apiece. 339.

Further evidence of intrigue. Price fixed for so many thousand Curtiss training planes at \$1,950. 343.

Bonus of \$750,000 promised. 344.

Stated to be paid to them as reimbursement for new machinery they had to purchase. New machinery actually \$40,000. 345.

Maj. Downey interested in helping finance the Curtiss factory. 346. (Means, seemingly, Col. Montgomery.)

- Maj. CHARLES R. SLIGH (Washington, June 6, 1918; Book 2).
President of Sligh Furniture Co., Grand Rapids, Mich. 349.
Placed in charge of purchase of wood for aircraft purposes.
350.
Came to Washington in June. 350.
Urges establishment of airplane grade of spruce. 351.
Not a dollar's worth of spruce bought in name of the Government
until August. 352.
International committee convened in July. 353.
Asked permission to buy 6,000,000 feet of spruce. 353.
Arrived at estimate by United States having program for
building 20,000 machines, based on war to end 1917. 355.
Could not get authority until 10th of August. 10.
Precise relation of proposition to buy so much timber to the
progress of the aircraft program. 360.
Attended meeting in Aircraft Production Board, Gen. Squier's
office.
Minutes of the meeting of the Aircraft Board. 363.
George S. Long, representative of lumber people. 366.
Lumber committee, subsidiary committee of the Council of Na-
tional Defense. 367.
Mr. Allen, knew nothing about lumber, was asked to take charge
of the spruce matter by Mr. Coffin. 368.
Mr. Wernicke recommended by Mr. Sligh to go to coast to take
charge there. Mr. Allen sent instead. 371.
Mr. Allen disgrace to service all the way out. 372.
Mr. Allen asked to resign middle of September. 373.
Lumber interests caused Mr. Sligh's dismissal. 373.
Col. Disque. 375.
Col. Disque selected to take charge of spruce matters on Pacific
coast. 378.
Russell Hawkins finally appointed. 379.
Col. Disque goes out to take charge. Supply decreases. 380.
Statement presented to Mr. Coffin regarding this, giving figures.
380.
Explanation of his assuming charge after Hawkins had been
appointed. 381.
His character was such that when he was given chance to go to
France in a position that could come but once in a lifetime,
he worked day and night to get an appointment 7,000 miles
from firing line. 382.
Col. Disque issues statement that 30,000,000 feet a month will
be required, when 10,000,000 feet are proved sufficient. 385.
Col. Disque parcels out Pacific coast to three contractors, giving
them absolute authority to do all logging of spruce. Contract
huge joke. 391.
Goes through Vancouver plant established by Col. Disque. 392.
One of the most extravagant and unnecessary proceedings in-
augurated in lumber proposition. 393.
A million already spent on plant, and this only a small portion
of what had been squandered. 394.
Government order in which one man had shipped \$289,000 worth
of lumber and made a profit of \$89,000. 396.

Maj. CHARLES R. SLIGH—Continued.

- Maj. Leadbetter instrumental in having Col. Disque appointed.
 Maj. Leadbetter owned old abandoned sawmill on 20 acres adjoining mill established by Col. Disque there. 409.
 Raises price from \$35,000 to \$150,000, telling prospective customer he could sell his property to the Vancouver plant. 409.
 Maj. Leadbetter tries to bribe Sligh. 412.
 Leadbetter bribes Sligh's assistant, gets him commission. 413.
 Purchase of propellers. 417.
 Mentions to Gen. Squier latter part of November no contracts let for propellers. 422.
 Combat planes which were expected to have been built in January. 425.
 Maj. Sheppler in charge of Plant Production Section. 425.
 Joseph S. Otis, Otis Manufacturing Co., New Orleans. 427.
 Mr. Wycliffe, of C. C. Mengel Bros. Co., Louisville, Ky. 431.
 Walnut and mahogany are not absolute necessities. Refused to buy it at prices of \$300. Afterwards secured propeller wood at \$150 a thousand. 434.
 Through reason of not ordering earlier paying \$300 for stock that is worth \$160. 434.
 Sending inspectors of wood who never had a board rule in their hands. 439.
 Another rejects, through ignorance, the best and takes the poorest. 440.
 Sends man to South Bend about propeller stock. Drunk all the time. Asks inspection department to have him removed. Nothing done. Gives details of mess of his work. 442.
 Maj. George Henry, from Illinois, head of the inspection department. 443.

WILFRED I. OHMER (Washington, June 6, 1918; Book 2).

- Residence: Dayton, Ohio. 448.
 President Recording & Computing Manufacturers of time fuzes, optical instruments. 448.
 Machines Co. stockholder and depositor in City National Bank at Dayton. 452.
 Mr. Talbott retired from presidency of bank. 453.
 Connected with stock brokers' establishment. 453.
 Offers plant to Government. 450. (Without dollar of profit.)
 Orders given to other people who did not make a good fuze. 456.
 Sends protest to Gen. Crozier. Suggests engineers to point out defects of those being ordered. No answer. 457.
 Sees Senator Pomerene. Gets appointment with Secretary of War. 457.
 Nothing comes of it; they did not have time to go into matters of that kind. 458.
 Mr. Deeds and Mr. Talbott on fuse committee. 458.
 Later Deeds and Talbott go to New York, consult attorney, and try to throw Mr. Ohmer into the hands of a receiver and then take over the plant themselves. 459.
 Mr. Talbott makes remark that Ohmer would get no orders, as he was on the fuse committee. 460.

WILFRED I. OHMER—Continued.

Starts tearing down plant. 461.

Other charges against Talbott in Dayton. 463.

Mr. George B. Smith, secretary to Deeds and secretary of the Delco Co.

Clarence Kiefer, cashier of the City National Bank. 466.

Mr. William Strupe, president City National Bank. 468.

Lumber sold through more than one person in order to reach Wright Field at a high price. 469.

Capt. Geraghty, Government inspector in Ordnance Department. 477.

P. J. Connelly, president of P. M. Harmon Co. and director in City National Bank. 477.

Col. F. T. Huffman, president of Davis Sewing Machine Co. 478.

O. B. Brown, attorney, of Dayton, and legal officer of City National Bank. 480.

CHARLES A. CRUQUI (Washington, June 6, 1918; Book 2).

President and general manager of Sterling Engine Co., Buffalo. 487.

Builder of marine engines; best builder of high-class motors in country. 487.

GUTZON JOHN DE LEMOTHE BORGLUM (Washington, June 6, 1918; Book 2).

Lawrence Driggs. 500.

Refers to machine that fell at Mineola, due to a break that struck at the principle of its construction. 505.

Aircraft Board did not hesitate to advance money to interests where member or members were connected with them. 51.

Fisher Body Corporation's connections. Fuselage that would kill the first man that went up in it. 522.

Eugene Meyer financed them and is connected here with the Government. 524.

Deeds admits he is a German, and his sympathies are with Germany. 532.

His name was Dietz, changed to Deeds. 533.

Deeds appointed many Germans; Dayton a German town; understood secretary of Dayton-Wright Co. was a German; confined in Atlanta at this time. 534.

Reports from workmen that there was sabotage at the Curtiss Co., at the Dayton-Wright Co., and the Standard Co. 535.

Built cylinders so that the magneto system could not be used. 539.

Delco ignition system was Deeds's. 542.

Bureau of Standards stated no tests had been made. They would not let the Bureau of Standards make one. 542.

Memorandum of interview with Lieut. Col. E. LESTER JONES (Washington, June 7, 1918; Book 2).

Reads letter concerning arbitrary prices charged by the Signal Corps to those who are fixed-price constructors for Navy sea-planes. 545.

Reads letter drawing attention to ascending scale of prices for spruce lumber supplied through the Signal Corps on Navy order. 547.

- JOHN BENNER FLETCHER (Washington, June 7, 1918; Book 2).
 No. 50 Cathedral Parkway, New York City. 550.
 At present assistant to manager of the Handley-Paige department of Standard Aircraft Corporation. 550.
 Old Dominion Co. 555.
 Organized to build airplanes. In existence since this country entered the war. 555.
 Lieut. Farwell, assistant to Mr. Coffin. 556.
 Rejected Old Dominion Co. because they could only build 300 planes a year. 556.
 Had all the tools necessary to produce all the most difficult parts of airplanes. 557.
 Mr. Swindell, attorney for the Southern Aircraft Co. and also attorney practicing in Washington. 560.
 Mr. David Pelton Moore, Real Estate Trust Building, in Washington. 562.
 Southern Aircraft Co. 559.
 Fletcher chosen to act as chief engineer. 561.
 Letter to Giant Furniture Co., High Point, N. C. 565.
 Manufacturers' Aircraft Association. 566.
 Formed partly by the Standard, the Curtiss, and, he thought, the Wright-Martin. 567.
 This association developed the cross-license agreement. 567.
 Mentions subcontract idea, as put forth by Maj. Shepler, to help out the Standard. 570.
 Mr. Mengle, president of Standard Aero Corporation. 571.
 Stated would be glad to let them have contracts to build the machines, but they were all up in the air, did not know what Government wanted, and there would not be any motors to put in them if they built them. 571-572.
 Mr. Fletcher makes arrangement to get output of Dusenber plant. 572.
 Arranged meeting with Mengle and sales manager of Dusenber Co. in Washington. 572.
 Mengle tries to take over the Dusenber contract. 573.
 Maj. Shepler declared the Dusenber motors would not be satisfactory. 574.
 Further efforts to be able to use the Dusenber. 582.
 Tries to introduce the Farman machine. 583.
 Capital stock Old Dominion Co., \$1,000,000. 591.
 Capital stock Southern Aircraft Co., \$200,000. 591.
 Grand Rapids Airplane Co., Grand Rapids, Mich. 592.
 Received contracts from Maj. Shepler at the time Southern Aircraft people were trying to get contracts. 593.
 States they got the contracts through political influence; were represented to Maj. Shepler by their Senators and Representatives. 595.
- FRANK N. TREGO (Washington, June 7, 1918; Book 2).
 Managing vice president of Trego Motor Co., at New Haven, Conn. 596.
 Organized on 20th March, 1917. 596.
 Interview with Mr. Deeds. 598.
 Stated changes in design responsible for 50 per cent of the delay in turning out engines. 601.

FRANK N. TREGO—Continued.

Relates experience with ignition system in Liberty motor as compared with Delco ignition. 603, 604.

Sunbeam contract moved from Elmira to Toronto. 610.

Scrap in their plant ran from 50 to 75 per cent. 613.

Cost of work that has been rejected has been paid for by Government. 614.

Government has paid his company a little over \$600,000 to date.

Bogey price fixed in their price. 616.

Liberty motors and the 50-hour test. 617.

HERBERT JENNINGS (Washington, June 7, 1918; Book 2).

Resides at Mount Vernon, N. Y. 622.

General manager of the United Eastern Airplane Corporation. 622.

Organized in 1915 to build airplanes. 622.

Reasons for being connected with United Eastern Airplane Corporation. 623.

Made application to the Aviation Corps in August, 1917, to obtain contracts. 626.

Report by inspector on United Eastern Aeroplane Corporation. 629.

States they were told no contracts would be let because of lack of appropriations. 633.

When in Washington assured by draftsmen there were plans to be forwarded to them. 639.

Mentions another letter in which orders were assured them. 642.

Capital of the company, \$1,000,000. Large plant idle, with five or six men going only. 643.

This field especially adapted for airplane manufacture. 644.

No estimate made by Government as to their efficiency in building planes. Had plenty of financial backing that could have been availed of. 647.

Plant idle a year. 648.

HERBERT EDWIN MILES (Washington, D. C., June 7 to 10, 1918; Book 3).

Mr. Miles, of Racine, Wis., retired manufacturer; now chairman of committee Council of National Defense on training factory workers for war production. 1.

Visited Standard Aircraft Corporation at Elizabeth, N. J.; Wright-Martin Co., New Brunswick, N. J.; Curtiss Co., Buffalo; Lincoln Motor Co., Detroit; Dayton-Wright Co., Dayton; Nordyke Marmon plant, Indianapolis. 2.

Found remarkable confusion at Curtiss plant in November. Great number of idle people. Work done in a remarkably amateurish way. 2. Acting manager states: "Can not get orders from Washington." 3.

Got order for 2,000 Bristol fighting planes, says manager, but ordered not to make them until specifications were completed. "Specifications do not come." 3. Release from Washington did not come for months. 4.

First Bristol tried in January. "Would not fly." 4. Three weeks later experts came to investigate why machine would not fly. 5.

HERBERT EDWIN MILES—Continued.

Just before January 22 order came to make 25 planes out of 2,000. 5.

Informed by Kepperley, toward 1st of April—"still waiting for changes." 8.

Approximately 15,000 employed in five plants at Buffalo on first visit. Below training room were seen a hundred idle employees. This condition corrected by 1st of April, largely. 11.

Idleness existed because they expected orders at any moment and would then need employees. 12.

Miles did not make inquiry of Signal Corps officers as to why orders or specifications were not furnished. 14.

Did not have blue prints for months at Curtiss plant. 16.

Mr. Hughes. "What blue prints were you successful in getting?"—A. "We did not get any." 17-18.

Miles personally tried to get blue prints through Maj. Shepler and others in Washington. No prints. 19.

Mr. Mengel, president Standard Aircraft Corporation, promised several times to furnish blue prints. Would either get them from Washington or Curtiss Co. 20.

In asking for blue prints Maj. Shepler replied, "I think you ought to have them." But was referred to Col. Montgomery. 22.

Mr. Hughes. "How did Curtiss make Bristol fighters without blue prints?"—A. "Did not have complete set; sort of whittled out 25." 22.

Visited Dayton-Wright Co. "Splendid production basis" in March. In November had just moved in. No production. Making De Haviland and training planes. Had similar trouble with specifications as Curtiss people. 24.

Had to throw away 90 per cent of spruce. "Used considerable judgment in reading orders from Washington," says official of Wright Co. 25.

Piano factories hundreds of miles around making small pieces for plane. Put together at Dayton. 25-26.

Shipping about five De Havilands a day in March. 28.

Letter by Miles on March 13, praising production methods and speed at Dayton Wright Co. 29-30.

Men laid off at Dayton for want of specifications or orders and partly lack of material—"waiting for Washington." 31.

Had trouble because of changes from time to time. 32.

Miles alludes to discrimination between Curtiss plant and Dayton plant. Possibly due to different machine. 34.

De Haviland was accepted model, Bristol not, by Washington. Curtiss people had no orders for De Haviland. 34.

Order to Curtiss Co. for 2,000 Bristol January 11, 1918. But did not have "go-ahead" orders till March or April.

Order for 3,000 Spad planes January 19, 1917. But were called off. 35.

Order for 500 heavy bombing planes September 19, 1917. Miles has no knowledge about them. 36.

Curtiss plant "trifling along on Army hydroplanes." 36.

All these machines were to have Liberty motor. Motor was in same position. 37.

HERBERT EDWIN MILES—Continued.

Training planes were to have motors made by another Willys Co. 38.

Could not understand why they did not have an order to go ahead and make them. 38.

Curtiss plant had organization and facilities to produce same as Dayton plant. 39.

Did not get orders to do anything at Curtiss plant. 39.

Mr. Deeds stockholder in Dayton Co. Did not know Deeds had transferred interests. 40.

Dayton-Wright Co. assemblers, not makers. 44.

Visited Standard Aircraft Corporation, Elizabeth, N. J. Same confusion as at Buffalo. Mr. Mengle president of this company. This visit in November. 44.

Scrap thrown away when orders were changed. Little salvage practiced in Buffalo.

Cost plus, terms of contract.

Government bore cost of idle employees.

Rejected wood at Dayton-Wright Co. cut into small parts when practicable. Very great percentage would be sheer waste.

Very little salvage possible in plane. 45.

Government paid for rejected material. 45-46.

Five thousand six hundred employees at Standard plant. Number increased. 46.

During five visits there was little idleness, but there was tremendous amount of inefficiency. Efficiency estimated at from 40 to 50 per cent among workers. At Dayton-Wright efficiency was 75 to 80 per cent. 46.

At Curtiss plant approximately 55 per cent. 47.

At Curtiss and Standard they were cutting pieces of steel by hand at a cost of from 80 cents to \$1; would cost but a few cents to buy a machine.

Had heavy machines, costing a lot of money, but no little fixtures to put on those machines so they would work. 47.

Curtiss plant did rig up machines for heavy production, but Government told them they did not want any of those machines. 48.

"Did not have orders to run us a week." 48.

Order for 650 planes of same type. 49.

One thousand one hundred to one thousand five hundred changes in these planes while in process. 49.

To speed up production concentration should be on one thing, as Ford has done. This is done at the Canadian factory. Not in America. Not one American factory can run 50 per cent efficient unless it is done. 50.

Mr. Mengle asked for 150 planes. 51.

"Idiocy to have one plant making a number of different types of planes." 52.

On several occasions orders were given not to proceed. 54.

Rolls-Royce engine replaced by Liberty motor. In test Liberty required 62 minutes and Rolls-Royce 72. 55.

Liberty motor "thoroughly splendid." 55.

Lincoln Motor Co. made a thousand engines and had shipped 400 beyond the water. 56.

HERBERT EDWIN MILES—Continued.

Nordyke & Marmon Co. "wonderfully fine factory." No criticism to be made. "That does not necessarily mean the machine is good." 57.

Hispano-Suiza motors being turned out by Wright-Martin plant at Brunswick, N. J., for foreign governments. 59.

Cross-examination by Attorney General: No battle plane built in this country prior to the war. 60.

FRED H. COLVIN (Washington, D. C., June 7 and 10, 1918; Book 3).

Residence in East Orange, N. J. Editor of American Machinists since about January. With paper 11 years. Prior to that in publishing business, and prior to that 10 years in a shop as mechanic. An observer of manufacturing ever since. 62.

Visited Ford motor, Packard motor, Lincoln motor, and Dayton-Wright plane plant; also Curtiss plant. 64.

Ford plant latter part of March not producing motors. 64.

Lincoln plant put through six on the 29th of March. Expected same number next day. 64-65.

Delays was reason for visit. Found delay due to changes in design and orders. First order specified 8-cylinder motors, but before they got into production a change was made to 12-cylinder, necessitating new machinery. 65.

Other changes also made. 66.

Production five or six a day. Expected to increase. Original plan called for 70 a day. 67.

Motor was tested and accepted. 68.

Packard plant completed 50 that week. Great many cylinders held up on account of connecting rods. 69.

Official of plant felt that if they quit making changes production would get under way. 71.

Mr. Wells, member of President's committee of three on investigation, informed him 700 planes had positively been ordered without any further changes. 72.

Motors coming faster than planes, "but not all right." 72.

Production delayed because of these many changes. 73.

Intended article in Machinist "killed" because they were doing what the article would try to accomplish. 73.

Visited Dayton-Wright on April 1 and observed they had a capacity which they were not utilizing. "Waiting, in other words." 74.

Waiting for orders from Washington. 74.

Thirty planes could be shipped on very short notice providing they would stop making changes. 74.

"Signal Corps would change bottom sights; change location of different instruments, and so on. They had one machine there wired off in a cage, which they called the goat, on which they made these changes, one after the other." 75.

Plant ready to complete De Haviland planes on order to complete. 75, 76.

Training planes had been delivered into the thousands. Difficulty was with De Havilands and Bristols. 76.

Mr. Mueller, chief engineer of Curtiss plant, states they had been entirely ignored. Built more machines than anyone else, yet not asked for advice or anything else. 77.

FRED H. COLVIN—Continued.

- Attempted to assemble Bristol plane from Signal Corps drawings, but it did not look much like a modern aeroplane. 78.
- Built one plane and found it would not go together. Was modified so it would go together, but burned up. 78.
- No fighting plane had been in the air. 78.
- Delay due to changes. "Same story I got everywhere." - 79.
- "A great many changes appeared absolutely unnecessary" to this mechanic. 79.
- "Mr. Mueller told me that they came up there and took some carriage bolts and tested them for tensile strength and made microphotographs of the metal, and so on, and all the carriage bolts did was to hold slats in place on a seat, and a shingle nail would hold it just exactly as well. Details on that kind constantly coming up." 79.
- "Unnecessary details, and at times things which interfered seriously with production, because you could not exactly meet specifications which were unnecessary specifications," would come up. 79-80.
- "It is simply foolish specifications demanding the same high grade of material for stream lining a tube as though the strength did depend on it. 80.
- Lack of appreciation of particular need to be served. This was noticeable all through in everything. 80.
- Lots of spruce should never have left the coast; it should have been rejected there. 81.
- Rejection was very high by Dayton-Wright plant. 81.
- Rejected because the holes varied a thirty-second of an inch in their regular spacing by Signal Corps inspector. 81.
- Ill-advised inspection. 82.
- Absolute inability to discriminate between vital needs and non-essentials. 82.
- Same was true at Curtiss plant.
- Military arm had taken to itself a considerable civilian arm. 82.
- Signal Corps blamed for inefficiency; nobody seemed to know who the individual was. 82.
- Curtiss plants had not shipped a plane. No go-ahead orders. But they were praying for them. Plants not in full operation by any means. 83.
- Fifty per cent in operation. Working on Navy stuff. 84.
- Shops appeared pretty empty, except over in Navy side. 84.
- Delay comes under two words—"constant changes." Was told this at every plant. 85.
- Ford man told him they had 700 connecting rods which were ordered scrapped. 85.
- Government inspection unnecessarily rigid where it did not matter. 87.
- Plant would make other parts in place of those rejected and would be paid for them. 88.
- Changes would mean a loss to the Government. 88.
- A number of gauge makers declared a certain gauge should not cost more than \$35. Cost at plant was \$415. 88.
- "That is only one of a dozen things of that kind that they showed me."

FRED H. COLVIN—Continued.

Does not think Government had anything to do with subcontractor. 91.

Informed board selects contractors acceptable to Government. 91.

One firm made a price of 75 cents apiece for a bolt, but contract was given to a concern at \$1.05. 92.

Plants did not suffer because of excessive price paid to subcontractor. 93.

Exhibit covering a diagram was left by the witness. 94.

(An error occurred in the page numbering of the transcript at this point, going from 94 to 194.)

FREDERICK STEELE BLACKALL (Washington, D. C., June 7, 1918; Book 3).

Residence in New York City. General manager Taft-Pierce Manufacturing Co., Woonsocket, R. I. Produce precision machinery and tools. An engineer. With company 15 years. 195-196.

This plant secured a contract and manufactured 300 Gnome engines for Aircraft Manufacturing Co., of England. 196.

Chairman of a committee appointed by the Signal Corps to pass on reasonableness of upset prices quoted by concerns on a cost plus basis. That is a bogy cost for estimates. 198.

Thirty million dollar contract for Le Rhone engines. 199.

Determined price by inspection of drawings and of engine. Not advised of changes subsequently made. 202.

Was of the conclusion that the Bogaci engine could not be made for several months. Had opportunity to figure on this, but "threw up his hands." 204.

Dusenbergs people had an engine they were making themselves which could have been adapted to aeroplane work. 204.

Shortage of men would make it difficult to make delivery of engines on order given for Hispano-Suiza motors in May or June before the end of the year. 205.

Reads from a statement in which he recommended that the engineers at the Bureau of Standards should be allowed all the time needed for perfection of design. Also that while engine was being perfected we should follow foreign designs that we know are right, and that manufacturing should not remain dormant while experimental work was in process. (This pamphlet is known as Blackall Exhibit No. 1.) 209.

Engine drawings were being constantly modified. 210.

Condemns scheme of development of an engine that is hatched in five days. 211.

Argues that it would have been better to have adopted a foreign engine, and brought Mr. Snook, managing director of Aircraft Manufacturing Co., of England, to help in this scheme. 213.

Three hundred foreign Gnome engines were built by the General Vehicle Co., of Long Island. They were a success—the best that had ever been made. These were for the British Government. 214.

FREDERICK STEELE BLACKALL—Continued.

One hundred Gnome engines subsequently ordered by the Signal Corps. Cites this as to what could have been done had we built foreign engines. 214.

Regards the Gnome as the limit of difficult manufacture. 215. No opportunity to become informed as to the development of the Liberty motor. 215-216.

Rolls-Royce engines being built by Stearns or Peerless Co. in America. 216.

Approximately 1,000 have been built. 216.

Slow progress laid to difficulty of getting skilled men, not in making that engine in this country. 217.

Thinks it the height of absurdity to put Liberty motor in production until perfection has been ascertained. This would also refer to any other machine. 217.

Contract for 300 Gnome engines was let about August, 1915, and completed the beginning of 1917. 218.

Delivery was started within six months after contract was let. 218-219.

Bogy price for Liberty motor was \$6,000. 219.

Planes would have been in the air on time if we had brought from England and France one engine and plane of each type, together with men and under Government direction made Chinese copies, with no glory for anybody on this side of the water. 221.

Declares that if engines and planes would have been brought over quantity production could have been had within 18 months. 222-223.

"A frightful risk" was taken in attempting to make a new motor. (Liberty.) 224.

Under this plan quantity production would have been expected by the end of 1918. 223.

It is brought out that Liberty motor, if satisfactory, will be on quantity production about the same time as if foreign models had been brought here. 224.

CARLOS W. CURTIS (June 7, 1918; Book 3).

Director and general manager Splittdorf Electrical Co., Newark, N. J. Manufactures magnetos and spark plugs. 226.

This company was the main source of supply for magnetos of the allied governments. 227.

Sold between 800,000 and 100,000 magnetos to Italian Government; 50,000 to British; 10,000 to 20,000 to French and Russian companies. 228.

This company's magnetos used by Wright-Martin Co. for the Hispano-Suiza motors; the Wills-Morrow Co. and the Curtiss Co. for their Curtiss O X 5 and 6 motors. 228.

Also by the Hall-Scott Co., etc.

Supply magnetos for all motors except the Liberty motor, although ignition system can be used on Liberty. 224.

In a test on 12-cylinder Liberty 12 to 20 more horsepower was developed than with the other ignition system, which was the Delco system. 229.

CARLOS W. CURTIS—Continued.

Never invited to develop the system of ignition for Liberty. Several attempts to no avail. Then went to see Col. Deeds personally in October. (Splitdorf system standardized for all 8-cylinder motors in aviation in the Signal Corps just recently.) 231.

Was told by Col. Deeds that they had decided to use battery system on the advice of Mr. Kettering. Curtiss suggested that it might have been better to have inquired from a magneto manufacturer, and Col. Deeds admitted the contention was probably right. 231.

A magneto installation was worked out and a test showed the motor to be more efficient than with the ignition used at that time. Unable to get further than a preliminary test, however. 232.

Col. Deeds stated that magneto system could not be used on the 12-cylinder motor. 233.

Advised by censor that no mention could be made of anything in connection with the Liberty motor. 234.

Interview with Col. Deeds after being referred from one to another. This in re censorship. 234-235.

Letter from Col. Arnold. (Ex. Curtis No. 1.) 236.

Article filed known as Exhibit Curtis No. 2. 237.

No reason for this secrecy or censorship. 238.

Double supply of current in magneto system, therefore it was preferable to battery system. 239.

Magneto system used almost exclusively abroad. 240.

With battery system in looping the loop the fluid would spill out and the system go dead. 243.

Representatives of foreign Governments contend magneto system is superior. 244.

Delco System owned by the United Motors. General Motors owned United Motors. 245.

Mr. Vincent asked the engineers of the Splitdorf Co. to develop a 12-cylinder magneto, as he had much trouble with the Delco system and was willing to pay the additional cost. After being called to Washington he seemed to have no further interest in the magneto ignition. (Mr. Vincent is with the Packard Co.) 246.

CARL THOMAS MASON (June 7, 1918; Book 3).

Residence in East Orange, N. J. Chief engineer of the Splitdorf Electrical Co. With company since they took on the Dixie magneto. 247.

Called to Washington in regard to getting magneto equipment on Liberty engine. 248.

Letter from Signal Corps asking for assistance to remount magnetos on 8-cylinder to 12-cylinder. 250.

Correspondence back and forth. 251-259.

Preliminary test not applied to Liberty. 266.

Mr. Upton stayed at Dayton "practically for months for the simple reason that we would get excuse after excuse" (for testing purposes). 266.

Exhibit Mason No. 8 was filed. 21.

CARL THOMAS MASON—Continued.

Letters written in regard to test and no answer. 270.

Substantiates Mr. Curtiss's statement that magneto system is superior to battery system. 281.

Blue print filed, marked "Exhibit Mason No. 15." 282.

Maj. Vincent, at Detroit, complains: "So many damned people butting in on this thing that they would never get anywhere." 285.

Specially mounted bracket, etc., for mounting magneto furnished by company, but nothing has been done to this time. 286.

CHARLES K. WITTEMAN (JUNE 8, 1918; Book 3).

Residence in Jersey City, N. J. Building aeroplanes since 1906. Constructed about 300 machines. 289.

Constructed one machine which was put to a severe test, with the result that it outclassed Army machines on adjoining fields. However; this machine was practically condemned by Capt. Martin. 308-309.

Four training machines offered to Government, but were advised the Curtiss was the standard machine. 309.

Consistent effort to get Government to accept this plane seemed without avail. 310.

Were able to contract for and deliver 600 machines in the first 12 months and 100 machines per month thereafter. 311. (This page out of place.)

Part of a letter read, marked "Exhibit Wittemann, No. 1." 314.

Plane referred to on page 308-309 rejected because of color, and also because of light radiator. 314.

And because of a flaw in steel of exhaust manifold. Also because a bolt was curved to conform to the curve of the fuselage. 315.

See list of men testing machine. 315.

Told by Aircraft Production Board that the Curtiss JN4 and Standard training tractor had been standardized. 316.

Negotiations with Aircraft Production Board since its start offering developed training planes. 317.

In making offer of facilities, was referred from man to man. 318.

To make spare parts for Signal Corps they would have to enter into a contract with Curtiss Co. 322-323.

Agreement provided that Wittemann Co. would have to pay royalty on their own design. Attempted to amend the contract, but were unsuccessful. 324.

Organization declared in excellent shape for the production of aircraft. 325.

Wittemann director of Aeronautical Society four years. 328.

Wittemann plant first on list in case of further appropriation, but never received an order. 328.

Orders offered to manufacturers who could not take any more. 329.

Statement of number of machines that could be turned out submitted to Col. Deeds. 331.

Curtiss plant visited and looked very disorganized. 333-334.

Visited Canadian Airplane Co. and Fisher Body Co. 335.

CHARLES K. WITTEMAN—Continued.

Told by man in Fisher Body Co. it was not necessary to have an experienced aeronautical man. 336.

Visited Ford plant and was told they were held back on account of "enormous lot of changes." 336.

Ford disgusted. 336.

Motors shipped out, but not satisfactory. 337.

Ford stated that a part of engine was designed so no other ignition system except Delco could be used. 338.

"According to him, it seems it was deliberately done, so it would be impossible to put any other ignition system on there except Delco." 338.

Diversion of machinery. 340.

JOHN WILLIAM McCONAUGHY (June 8, 1918; Book 3) :

Residence, Washington, D. C. Employee of Committee on Public Information. Director of the Division of News. Prepared or collected from department officers matters of public information for the press of the country. 344.

Statement issued for morning papers of Thursday, February 21, 1918, produced and marked "Exhibit McConaughy No. 1." 345.

This statement was changed. Corrected copy produced and marked "Exhibit McConaughy No. 2." 346.

First part of the statement of Exhibit 2 was gotten from Col. Deeds. (Second paragraph.)

Reads statement as he personally got it from Deeds. 348.

This statement given out around 10th of February. 349.

Statement taken to Secretary of War. 350.

Was informed at Bureau of Standards that Liberty 8 was in bad shape, but was later told that the Liberty 8 was not being produced any more, efforts being directed to the Liberty 12. 353-355.

Interview with Col. Deeds. 355-357.

Statement submitted to Col. Deeds and Secretary of War for their approval. 360, 361.

Exhibit 3 approved by Secretary of War. 362.

Statement held up several days by Secretary of War, as he wanted to refer it to Gen. Squier. 363.

Col. Deeds did not inform McConaughy there was any inaccuracy in statement. 364.

Interview with Secretary of War with respect to inaccuracy of statement. 366.

"Good deal of big league lying all through this business." See all of page 367.

Exhibit McConaughy No. 4 introduced. 367.

Gens. Salzman and Squier had to do with this statement. 369.

Exhibit McConaughy No. 5 was introduced. 369.

\$640,000,000 appropriated in the middle of the summer and it disappeared from public view. 370.

McConaughy Exhibit No. 6 introduced. 371.

Got all information from Col. Deeds at that time. 372.

Understood that whatever Deeds and Salzman did had the approval of Gen. Squier.

McConaughy Exhibit No. 7 introduced. 374.

MARLEN E. PEW (June 8, 1918; Book 3).

Employed with the Committee on Public Information in the news division since November 4, 1917. Later went into the War Department to represent the Secretary of War for the Committee on Public Information. Had charge of publicity matters in the War Department. 375.

Recognized McConaughy Exhibit No. 2 as authorized by Col. Deeds. 376.

Were not enjoying candor in the Signal Corps. 377.

Interview with Col. Deeds. 378, 379.

Refers to original manuscript of Capt. Sweetser. 382.

Interview with Col. Deeds continued. 382-384.

Refer to paragraph which was pasted on. 386.

Col. Deeds read story as written up and made certain corrections. 386.

Col. Deeds authorizes statement. 388.

Recognizes McConaughy Exhibit No. 3. 389.

Took McConaughy Exhibit No. 3 to Secretary of War and was told to publish it. 390-392.

Refers to charges made in United States Senate. 393.

Recites interview in Secretary Baker's office after charges were made in Senate. 394.

Interview with Col. Deeds—shows him statement in the Star, over which he became very much excited. 394-395.

Interview with Col. Deeds continued. 396.

Gen. Squier enters and declares charges made on Senate floor was German propaganda and paid for with German money. 396.

Gen. Squier produces advertisement pertaining to Rolls-Royce motor and declared that was some more of the German money. 397.

Lot of vague and rambling statements. 397.

Refers to interview with Dr. Keppel with regard to false statement which was issued. 399.

Interprets notes taken at the interview with Gen. Squier, Gen. Salzman, and Col. Deeds. 403.

Squier is quoted as follows: "I paced the floor perfectly wild because I could not get training planes, then they came with a rush, and I got so many I did not know what to do with them, and we think it will be the same thing with combat planes. 404.

Continues quoting these men as to Signal Corps appropriation. 405.

Gen. Squier quoted as follows: "One hundred and eighty battle planes have been delivered in France." 405.

Continues interpretation of notes taken at this interview. 406, 407.

J. E. KIRKMAN (June 8, 1918; Book 3).

Residence, High Point, N. C. President Giant Furniture Co. 409.

Giant Furniture Co. contemplating turning over its property to Southern Aircraft Co. 409.

J. E. KIRKMAN—Continued.

Came to Washington to take up with officials the production of aeroplanes by the Southern Aircraft Co. 410.

This visit was "possibly a little more than a year ago." 410.

States briefly facilities of his company. 411.

Is referred to Curtiss plant in Buffalo for observation. 412.

Maj. Sheppler had statement of plant conditions and pronounced them good. 413.

Report of inspectors not good. 414.

"I did not see anything much but scrap," referring to trip through Cutler Desk Co. 418.

Refers to a very large amount of rejected material. 420.

Inspection by Government inspectors "unintelligent"—too rigorous. 422.

Told by Maj. Sheppler at Washington that they could not give the Cut Giant Furniture Co. a contract to build planes complete, "but they needed what we had at High Point." 423.

Told to go to the Standard people and Curtiss people, and informed they had large contracts with the Government. On arriving at Curtiss plant found only 350 machines contracted for. 424, 425.

Were building for the British Government thousands of machines and did not care whether he built for the United States or not. 425.

"Identically the same way at Plainsfield." 425.

Letter written from the office of the Chief Signal Officer, stating in part: "Our program is very thoroughly covered * * *." 428. (This was marked "Exhibit, Kirkman, No. 1.")

Recites conversation which took place in Senator Swanson's office. 430.

Maj. Sheppler quoted as saying: "Kirkman, I just want to tell you that our facilities will get out more parts for making planes than the United States will want for 25 years. Your facilities are too immense for us to consider."

Mr. Burman Asch charges there is a combine. 433.

Contract finally let for 500 propellers at \$85 each. 435. This contract let about February. 435.

GEORGE R. COLLINS (June 8, 1918; Book 3).

Residence, Saulsbury, N. C. Stockholder in Giant Furniture Co. Also interested in formation of the Southern Aircraft Co. if they could secure any business from Washington. 436.

Agrees with Mr. Kirkman as to his recollection of interviews with Maj. Sheppler. 436.

Referring to Kirkman Exhibit No. 1 and the inspection made September 24, states he could get no information from Maj. Sheppler as to whether the plant was accepted or rejected. 437.

Lieut. Farwell states that "it would not be right to start any new people into the manufacture of airplanes as long as they did not have enough airplane business for the plants that were already going." 438, 439. (This on October 5.)

GEORGE R. COLLINS—Continued.

Was referred by Howard Coffin to Maj. Shepler again with regard to contract work, but on seeing the major got the same results as on his previous visits. 439, 440.

Mr. Coffin again states "program is fully covered." 441.

Contract agreement, Exhibit Collins No. 1, produced and filed. 442.

Recites part of contract. 443.

WILLIAM ARTHUR MORGAN (June 10, 1918; Book 3).

Residence, Buffalo, N. Y. At one time (July 16, 1917, until March 1, 1918) vice president and general manager of Curtiss Co. 449.

Contract let Curtiss Co. for 3,000 Spad machines and 500 Caproni or other type, and a contract for 1,400 J N 4 D training planes, dated September 19, 1917. Was told on November 7 by Col. Deeds that Spad and Caproni contracts would have to be canceled. 449, 450.

Asked Col. Deeds what should be done about large plant erected for this contract. Was told something would have to be done, as it was not the fault of the company. 450.

Col. Waldon informed Curtiss people they would want a 3,000 contract. Few days later Signal Corps engineers stated Spad machine would have to be done away with. Finally came cancellation of entire program. 451.

Recites meeting with Mr. Coffin, Col. Montgomery, Col. Deeds, and Col. Waldon. 452, 453.

Produces letter of Col. Waldon confirming entire conversation, Exhibit Morgan 1. 455. (This letter given in transcript.)

Produces his reply to above letter marked "Exhibit Morgan No. 2." 465. (This letter given in transcript.)

Produces reply to last above marked "Exhibit Morgan No. 2." 467. (This letter also given in record.)

Produces reply to letter last above dated July 28, 1917. 468. (This letter also given.)

Produces reply of office of Chief Signal Officer to letter last above, marked "Exhibit Morgan 6." 485. (This letter also quoted in record.)

Thoroughly of the understanding they would want plant to handle every machine they could. 488.

Under that understanding a building was practically completed at a cost of \$5,500,000. 489.

At a later conference a request by Wright-Martin representative for one or two million dollars to put into buildings was denied. 490.

Morgan then informs board it was his understanding they should have an advance. 490.

Informs board that if advance would not be made he would have to wire Curtiss plant and stop all work, but was told not to. 491.

Morgan was turned over to a brother of Col. Montgomery, an attorney for the board, and with other men outlined a contract whereby the Government was to pay for buildings, land, and equipment. 492.

WILLIAM ARTHUR MORGAN—Continued.

Wire sent by head of the Department of Justice requesting that the New York Legislature pass a bill which would permit the Government to acquire land. 493.

It was the understanding that the above contract would be signed, but were finally informed it could not be carried out; that they had no authority to purchase land or buildings and could not get a satisfactory answer from Secretary Baker. 493.

Whole proposition "kicked" over. 494. (See page 494 for detail of conversation.)

Another conference on September 8. (See all of page 496.)

They kept saying "they were afraid of a congressional investigation." 496.

Letter produced, marked "Exhibit Morgan 7," containing new suggestions. 498. (Letter read into record.)

Another letter produced, marked "Exhibit Morgan 8," addressed to Chairman Coffin, National Council of Defense. (This letter read into record in full on page 503.)

Reads (Mr. Hughes) from minutes of Aircraft Production Board. 508.

Reads from minutes of the next meeting on September 14, 1917. 513.

Board decides to give out a contract. 514.

Morgan, on offering to personally negotiate loan to pay for plant, was embraced by Gen. Squier. 515.

Contract signed on September 19 for 500 Capronis or other type of bombing plane. Government to pay for the machinery and equipment, amounting to approximately a million and a half dollars or option of advancing money. 517.

Contract called for delivery of 3,000 Spads between January 1, 1918, and July 1, 1918. 519.

"They said the eight-cylinder Liberty motor was obsolete." 522.

Three changes made. 524.

Changed from the Vickers gun to Marlin and then changed back to Vickers. 524.

Only part of order Curtiss people were permitted to go ahead with was for 750 Spads. 525.

Wired Lieut. Emmons on October 31 for definite go-ahead order for production, but did not get it. 527.

Col. Deeds informs Morgan they would have to cancel the Spad contract and all of that \$30,000,000 contract. 528.

Government had not reimbursed Curtiss Co. for all work done on Spad planes under contract up to the time Morgan left the firm. 529.

Practically all the 2,600 drawings necessary for the 750 Spads were completed when order was stopped. 532.

Seven hundred and fifty Spads could have been completed in March. 533.

Mr. Hughes reads resolution of Aircraft Board at meeting of October 30. 534.

Less than a hundred behind on the contract of 2,000 or more at the end of the year. 541.

After test of plane an order of 600 was received. 544.

Great many changes to be made. 545.

WILLIAM ARTHUR MORGAN—Continued.

Letter produced, marked "Exhibit Morgan No. 9." 553.

Letter produced, marked "Exhibit Morgan No. 11." 558.

Morgan does not believe women were sitting around knitting in his plant, as was stated by a previous witness. 580.

Does not think pay roll covering men held in readiness was paid by the Government. 583.

Recites conference on November 23 with Mr. Coffin and Col. Deeds. 584.

Letter covering conference directed to Mr. Coffin produced and marked "Exhibit Morgan 12." 586.

Recites conversation with Gen. Squier in Buffalo. 590.

Aircraft Board agreed to finance Curtiss Co. 591.

Minutes of meeting held in Mr. Coffin's office on December 6, 1917. 592.

Sample Bristol Fighter received in December. Very incomplete; no motor or radiator. 596.

Would take a long list of names to enumerate those who ordered changes. 598.

Bristol Fighter made by Curtiss Co. tested around the 1st of April. Some trouble with oiling system and exhaust. It went up and caught fire and burned up. 600.

Changes and specifications to be followed in production usually came from Col. Clark's department at Dayton. 600.

Recites different persons who ordered changes to be followed in production. 601.

Does not think there was a head as to just what should be constructed on a plane. 603.

Reads minutes of a meeting of the Aircraft Board of December 7. 604.

Reads resolution of Aircraft Board of December 13, 1917. 609.

No planes (combat) had been built up to the time Morgan left. 612.

Reads minutes of Aircraft Board of December 27, 1917. 613.

Production program submitted by Col. Deeds is read. 617.

Morgan states Signal Corps men would come to Buffalo and say, "We will release everything," and the next day it was all up in the air again. 618.

Design of Bristol Fighter never settled. 618.

A statement of payments shows Government paid Curtiss Co. on an estimated cost of \$4,800,000 for 800 planes, the amount of \$4,776,046, etc. 621.

Morgan's conclusion as to the cause of the delay was that "everything was tied up in Liberty motor. 622.

That Spad contract was canceled because the Liberty motor was not adapted to it. 622.

Speed of Spad and Bristol in a flight were practically the same. 622.

ARTHUR SWEETSER (June 10, 1918; Book 3).

Captain in the Army since September 5, 1917. Prior to that Associated Press correspondent in Washington. 625.

First duties were gathering historical data in Signal Corps, then on work in connection with recruiting, and on January 1 went to Equipment Division to make history for Col. Deeds. 626.

ARTHUR SWEETSER—Continued.

Collected data about the sending of cadets to France, England, Italy, and Canada. 626.

Data collected as original documents, of which some were lost, bringing on an investigation showing Sweetser had no written authority and was transferred. When retransferred back to this work sought papers covering this data and was told by Col. Arnold that "they had all dissipated through the files." 627.

"There were not records kept," referring to Equipment Division. 628.

Got only three pages as a report from the Plane Production Section. 628.

Submitted a report about February 1. 630.

Refers to a "control board." 632.

Recites work of statistical section. 633.

Recognizes McConaughy Exhibit No. 2. 636.

Misleading publicity coming from Congress. 637.

Col. Deeds stated planes were on their way across about February 10. 637.

Recites an interview with Col. Deeds. 638.

Acknowledges authorship of McConaughy Exhibit 2. 641.

Interpreted Col. Deed's statement to say that planes were en route. 642.

Admits that the statement, "The first American-built battle planes are to-day en route to the front in France * * *" was submitted to Col. Deeds. 645.

Admits "One hundred of the first American-built battle planes are to-day en route to the front in France" was the headline in most of the papers throughout the country. 650.

Lieut. Grant, second in charge of plane production, "whispered in my ear with extreme confidence and considerable alarm that story was incorrect." 651.

In speaking of shipment of one plane thinks reference was to shipment from Dayton. 653.

Charges a "perversion in spirit of the whole point and purpose of the story" by the Associated Press. 655.

Has prepared a chronology of the Bristol and DeHaviland battle planes. 656.

J. W. McCONAGHY (June 10, 1918; Book 3).

Produces further papers and recites circumstances in the preparation of the statement. 658.

Recital shows attitude of Gen. Squier as to making a report to the public as to the progress of production and expenditure of money.

Exhibit McConaughy No. 8 and Exhibit McConaughy No. 9. 661.

States in substance where he got data for Exhibit 9. 662.

MARLEN E. PEW (June 10, 1918; Book 3).

States that his testimony stands unchanged. 684.

M. W. GREER (June 10, 1918; Book 3).

Mechanical engineer, graduating from Massachusetts Institute of Technology, Boston. 665.

M. W. GREER—Continued.

Student of aeronautics since 1907. 665.

Recites details at the time he was seeking employment with the Government. 666.

FRED H. LEWIS (June 10, 1918; Book 3).

Residence, Jackson, Mich. Manufacturer of aeroplane parts and formerly automobile parts. Began the manufacturing of plane parts just after we entered the war. 668.

Recites incidents leading up to contract with Curtiss people for the manufacturing of plane parts. 670.

Entered into a contract with the Government direct. Government to supply the Standard Aircraft Co. Original order about \$120,000. Arbitrary change on part of Government cut order down to about \$35,000. 672, 673.

States there were continuous changes in specifications and were never "sure of our blue prints being right at any time." Continues explanation of delays. 674-677.

Delay in filling order will be about 60 days. 682.

Complete prints on another large order were to have been furnished by February 1, but have not as yet. 683.

Original Bristol was not designed for Liberty motor, necessitating a great many changes, "and they have been changing it continually ever since." 686.

Signal Corps and Curtiss Co. continually making changes every week. 686.

Changes made everything obsolete that "we had manufactured." 687.

Requested set of samples, and when second set came were not much good because they had changed machine. 688.

Out of 1,700 prints changes were made in about 900. 688.

When changes were made "we had to dig up the information ourselves." 689.

Does not know anything about a rumor that their company was advised to raise their bid of \$3,000 on each Liberty motor to \$6,000, which was the amount that had been determined on. 698.

Also denies any knowledge of Maj. Shepler having informed that Lewis Co. would have to raise their price about \$1,500 on a couple of items in order to conform with others of that nature. 701.

WILLIAM P. TAYLOR (June 10, 1918; Book 3).

Residence, Chelsea, Mich. Factory manager of Lewis Spring & Axle Co. since August 1, 1917. 705.

States Mr. Lewis's testimony is in accord with his recollection, but adds a few facts. 706, 708.

States that it is his opinion the Bristol plane could have been used and produced as it was and that he knew they were using the machine effectively abroad. 709.

Some changes that were being made were necessary in order to install the Liberty motor in Bristol plane, but does not think all changes were necessary. 711.

"Lot of changes that would not effect an improvement in the machine."

WILLIAM P. TAYLOR—Continued.

Was told the Bristol was used by England just as it was. 715.

When asked to describe a certain change answers that there were so many hundreds of them that it was difficult to do so.

“Practically all we have been doing for months, just watching these changes.” 715, 716.

Lieut. TOM B. MILLER (June 10, 1918; Book 3).

Second lieutenant, Aviation Section, Signal Reserve Corps, since December 28, 1917. Property officer at Dayton-Wright airplane factory. Prior to commission was chief accountant, department of insurance and banking, State of Texas. 717.

Duties at Dayton involves checking incoming material, and planes when completed. 719.

ULYSSES S. THOMAS (June 10, 1918; Book 3).

Residence, Buffalo. Lawyer in Buffalo for 22 years. Is a part owner of the Sterling Engine Co., which has a license to manufacture Sunbeam engines. 721.

Recites attempts at getting contract from Maj. Squier in 1915, etc. 722-726.

On page 727 Gen. Squier cancels order placed for the Sunbeam engine.

Assured, however, about August, 1917, that Mitzui, one of the biggest Japanese houses in the world, wanted full capacity of plant for the Sunbeam engine, they having a market with a British ally. 729-731.

Contradicting statement of Mr. Waldon. 732-735.

Sunbeam tested by Government and accepted. 736.

Could have completed an order for 5,000 machines within a couple of months. 734.

Could have completed 1,500 Sunbeam engines of 350 horsepower by January, 1918. 740.

Sunbeam engine was driving Bristol plane and used exclusively in Handley-Paige. 741.

Seemed like automobile crowd was deciding things for themselves. 741.

Mr. Stettinius gives as his reason for the Sunbeam being thrown out of the program that it was not satisfactory, but machine was nevertheless flying in many thousands of machines. 742.

Reads minutes of Aircraft Board of October 17, 1917. 745.

“Mr. Willys is now building a thousand Sunbeam motors.” 749. States why he felt there was favoritism in letting contracts for motors. 751.

Expected to lower cost of engine below \$10,000. 757.

Would have made a proposition with Government for the production of 12-cylinder Sunbeam at between eight and nine thousand dollars. 758.

Quarter of a million loss on the Sunbeam proposition. 761.

Promised production of Liberty motors if not Sunbeam. 765.

Dr. H. C. DICKINSON (Washington, June 12, 1918; Book 4).

Connected with the Bureau of Standards in capacity of physicist nearly 15 years. 1.

Tested various engines among them the Hispano-Suiza. 2.

Considered one of the “most typical” engines obtainable for research work. 4.

Dr. H. C. DICKINSON—Continued.

Considerable changes were necessary in adapting the French model to American practice. 5.

Had a perfect Wright-Martin model. 6.

Model was in shape to have been used in quantity production. 7.

Wright-Martin factory was already making more than 100 motors a month for the French Government of the American method. 7.

Did not think facilities could have been provided to manufacture Hispano-Suiza motors in other plants in less than a year. 10.

Wright-Martin Co. had actually been engaged in perfecting its facilities for the manufacturing of the Hispano-Suiza motor some time prior to the entry of United States in the war. 12.

Could have produced 50 engines a day if pressure had been brought to bear on the work. 14.

Tested Liberty 8 and results not satisfactory. 27.

States Liberty motors of the 12-cylinder type were subjected to the 50-hour test. 30.

Did not test the motor at the bureau on 50-hour test, as they were not requested to. 32.

Considers Liberty 12 a satisfactory and successful engine. 38.

Could not state positively that Liberty motor had been tested in long hour flights. 39.

States what he knows between the merits of the magneto and battery systems of ignition. 40.

Tests put to the Liberty 12. 43-44.

Capt. ARTHUR SWEETER (Washington, June 11, 1918; Book 4).

Produce historical record referred to heretofore. 47.

This to be a record or complete summary of the battle plane situation. 49.

CHARLES WESLEY HOLMES (Washington, June 11, 1918; Book 4).

General manager of Motor Compressor Co. 51.

Was inspector of the inspection section, inspector of airplanes and airplane engines of Signal Corps. 51.

First assignment Bureau of Standards. 52.

Never any tests of Liberty motor made during his stay there. 53.

One Liberty motor brought to Bureau of Standards, he and another inspector were refused permission to see it, although in possession of cards of authority signed by Maj. Souder. 54.

First test he saw was at Dayton, Ohio, at McCook Field laboratory, by Mr. Wahl. 55.

Made at request of Splitdorf Electrical Co. 55.

Was only allowed to watch the inspection for three or four minutes when requested to leave laboratory by Mr. Wahl. 56.

Lieut. Testoni, Italian Special Military Commission and Lieut. Mezzatisti, Italian Military Aeronautical Commission at later date stated they thought magneto ignition far superior to battery ignition. 57, 58.

Relates further experience with Delco ignition system in which difficulties were encountered. 59.

Relates faults of Liberty motor as witnessed by him. 62.

CHARLES WESLEY HOLMES—Continued.

- Aeronautical testing laboratory—testing of a Liberty motor. 65.
- Lubricating system not sufficient. 67.
- This remedied, but as much trouble as ever. 68.
- Explains danger of having motor in actual flight which was not sufficiently cooled. 70.
- Liberty motor for test purposes used means not possible to use if in air. 73.
- Statement from Lieut. Testoni. 74.
- Lieut. Taylor present when motor referred to blew up. 76.
- Possible all right for bombing machines. 77.
- Capt. Marmon, was with the Nordyke-Marmon Co. at Indianapolis. 78.
- Could not get a test for their aeroplane starters. 78.
- Use a hand crank for Liberty motors. 81.
- TOM B. MILLER (Washington, June 11, 1918; Book 4).
- Relates visit to Dayton Wright Aeroplane factory. 85.
- The Talbotts and Mr. Kettering the real heads. 86.
- Scrapped material. 91.
- Government did not take over any material unsuitable for use. 92.
- Stuff called "dope" an overbuy. 92.
- Unnecessary expenditure of money. 94.
- Target practice for guards. 95.
- Gas masks for the guards. 96.
- The Dayton-Wright, the Delco, and the Dayton Metal Products called the "Triangle." 99.
- Expenses of beautifying the grounds comes under overhead expenses. 101.
- Signal Corps refuses to pay for this. 101.
- Trying to get rid of approvals section, because they objected to expenses. 103.
- L. V. Bedell not allowed to work any. H. E. Talbott told them not to allow any more purchasing orders to come to him for approval. 103.
- Maj. Frank E. Smith, in charge of approvals section in Washington. Overrules Mr. Talbott. 104.
- Mr. Longacre, sent out by approvals section to look into lumber conditions, refused admittance by Mr. Talbott, jr. 104, 106.
- Lybrant, Ross Bros. & Montgomery. 106.
- Lieut. Ong. 107.
- Promoted out of factory; did not want him there. 108.
- HERMAN C. DAYCH (Washington, June 11, 1918; Book 4).
- With the McCready Publishing Co., Cranford, N. J. 109.
- Associated with Standard Aircraft Co. one year. 109.
- Assistant to Mr. Mingle, president. 110.
- Everything haphazard, extremely disorganized. 110.
- Plant at Plainfield, N. J.
- Took over the Elizabeth, N. J., plant. 112.
- Technical name of the Standard Co. There are two corporations, one the Standard Aircraft Corporation and the other the Standard Aero Corporation. 113.

HERMAN C. DAYCH—Continued.

- Instance of manipulation by Mr. Mingle of Government finances. 113.
- Benefits from adding subsidiary to Standard Aero Corporation. 117.
- Salaries of officers of Standard Aero Corporation. 122.
- Increases in these salaries. 122.
- Corporation entirely owned and controlled by Mitsui & Co. 124.
- This a dangerous situation. 125.
- Reports rendered to Mitsui by Mr. Mingle Thursday of every week. 126.
- Unger Bros., contractor for the Standard. 129.
- Next-door neighbor to Mr. Mingle. 129.
- Maj. Arnold. 130.
- Change tack one-eighth of an inch, and thereby hold everything up. 131.
- No particular irregularities noticed in the course of production, excepting general disorganization of place. 135.
- Men working overtime, Sundays. 135.
- Case of graft by Government inspector; that is, holding up production. 137.
- Methods of inspection department tending to retard production merely through ignorance. 138.
- Capitalization of Standard Aircraft Co., \$5,000,000. 139.
- Produces papers marked "Daych Exhibit 1, June 11, 1918," which he had kept, showing financial statement of the company, a statement of which was refused the Government. 140.
- Statement exposes Mitsui's connection with Standard. 140.
- Bought only Hall-Scott motors. 142.
- Resigns from Standard. 147.
- Mr. Mingle kept his bank account (one of them) at Broadway Trust Co., in Woolworth Building. 149.
- Mingle interested in building operations covering several hundred thousand dollars for the new plant for which Mitsui furnished the money to purchase the property. 152.
- General antagonism to Government interests, done in ignorance, though private ownership of plants. 153.
- Produces, among others, exhibit marked "Daych Exhibit 4, June 11, 1918," which was filed away. This is a life history of Mr. Mingle, dictated by himself, in which he says he is general counsel for Mitsui & Co. 155.
- Produces statement, filed and marked, "Daych Exhibit 6, June 11, 1918," being day-to-day production sheets. 155.
- Produces statement, filed and marked, "Daych Exhibit 6, June 11, 1918," showing that on August 20, 1917, five motors were shipped to Japan direct from California. 156.
- Presents name of man who was connected with Mingle during the early part of the company's history, who can give a great deal of information about manipulations then. (This paper filed and marked "Daych Exhibit 7, June 11, 1918.") 156.
- Presents two cards of high Japanese officials who called to see the plant. Others also, lieutenants and generals, one in Imperial Japanese Navy. These filed and marked "Daych Exhibits Nos. 8 and 9, June 11, 1918." 157.

HERMAN C. DAYCH—Continued.

- Shows paper setting forth cost of machine to the company and cost to the Government. Cost to company, \$2,354.17; to Government, over \$6,000, besides to this is added overhead charges. 157.
- Presents paper showing approximate cost of the new additions to the plant. 159.
- Presents another statement showing another machine destined for Japan. 159.
- M. W. GREER (Washington, June 11, 1918; book 4).
- Facts in case will show incompetency, with perhaps malicious intent. 161.
- Not a Dayton man. 161.
- Letters read showing Mr. Greer's status as an aeronautical engineer, and urging the use of metal in planes. 162-164.
- Germans using all-steel planes. 165.
- Letter submitted to Director Aircraft Production urging all-metal planes, citing two "Lufberry and Potter," which have just come down in flames. 168.
- Reply. 169.
- Submits further letter showing reasons for all-metal planes. 171.
- Men of inaction. "mathematical moles" men not fitted to act sent to service in this great emergency of the world. 172.
- Was asked by Mr. Durance for a written proposition in September of the year before for making tests. 172.
- Never received an answer. 173.
- Shows performance of persons who are set to serve in positions beyond their experience and capacity. 177-178.
- Mr. W. B. Stout. 178.
- Later learns they are trying to develop an all-steel framework by the Empire Art Metal Co., of Brooklyn, N. Y., College Park. 182.
- Mr. Diffin, who had made numerous promises to test the sample, has a brother in New York who goes to the Conger office. 183.
- His plane tested at Bureau of Standards, which test was convincing to every engineer without exception, except this group of men in the Government. 183.
- ALFRED ROBERT GORMULLY (Washington, June 10, 1918; book 4).
- Former business automobile and sugar machinery, New York. 185.
- Comes to Washington to represent the Fiat Co., of Italy. 186.
- An American corporation of the Fiat Co., Mr. Josephs, president. 187.
- In use on the Italian and French fronts. 188.
- Been in actual use in battle planes for several years. 189.
- Horsepower raised from 325 to 360 by continual improvements. 189.
- Q. Have any steps been taken to have that engine used for planes in the United States for our forces?—A. I was here for that purpose, but did not accomplish anything. 189.

ALFRED ROBERT GORMULLY—Continued.

Tried to present a proposition that the Fiat engines should be used until American production came along. 190.

Presented to many of the representatives of the American Government, including Mr. Baker. 190.

When he first came connected himself with the equipment division. 190.

Col. Waldon. 190.

Fiat Co. had done business with the American Government in Paris. 191.

Was never able to talk to but one man about the United States placing orders for the Fiat engine. 193.

Called upon him 30 or 40 times, but could never see him. Tried to make an appointment with him a dozen times, but always failed. 193.

Had already made a statement of his mission. 193.

Again told by Mr. Baker, as did all others, to see Col. Deeds and also talk with Gen. Squier. 194.

Has interview with Col. Montgomery. Told him Fiat Co. were capable of much greater production; that the engine was accepted and recognized as the primary motor of the world, etc. 196.

Plant at Turin, Italy, 38,000 employees, financially independent, did not need any help from America. 196.

Fiat Co. from the very beginning could have turned out several hundred a month. 199.

Saw Mr. Coffin, he referred him as everybody else did to Col. Deeds. 201.

Mr. Atkins, of the Navy, was enthusiastic, took up the matter with the board, as he needed the engines badly. Finally he told Mr. Gormully he had been "blocked" and could not get it through. 202.

Sees Mr. Daniels. 203.

Plan was to bring 10 engines over here and try them in boats they had, and if by that time the Liberties were not coming through, ship our boats over and put these engines in them. 206.

Fiat engine tested in this country. 211.

Tests at Langley Field with De Haviland planes. 211.

Lieut. Emmons tells him to go back to New York. 213.

FREDERICK C. BAHR (Washington, June 10, 1918; book 4).

Formerly in security business in Detroit, Mich. 218.

Morcron & Co. 218.

Assigned to finance division of Signal Corps. 219.

Asked to put in follow-up system for Signal Corps. 220.

This was developed in fall of 1917. 221.

This system was described to succeeding executors of that division and is on file in equipment division. 221.

Specification section was a part of the inspection division. 224.

Maj. Gray at the head of this section. 224.

FREDERICK C. BAHR—Continued.

Says there is historical account in files of Signal Corps which would show actual state of production under the cost-plus contracts?

Speaking of his own section which is the follow-up, or expediting department. 225.

Q. How could there be an expediting department or follow-up section which, if in successful operation, did not have all the information of changes in specification relative to cost-plus contracts? 225.

No production had come through up to the time he left Washington. 226.

The follow-up section did seek to find out why, and amongst a thousand orders difficult to remember answers, but in a general way never got any answers. 227.

Changes always in the departments higher up. 228.

Had met Col. Deeds and Col. Waldon. 229.

Did not think all information they needed was available, or if it was, was not given to them for reasons which those higher up knew better. 230.

Was informed that so far as cost-plus contracts were concerned the administrative work was being done by the district managers of equipment. 230.

Much delay in Signal Corps on account of not paying their bills. 231.

Curtiss Co. having trouble in getting metal parts, as they were not meeting their bills. 232.

Curtiss Co. dilatory in production with respect to planes contracted for under cost-plus contracts. 233.

Expediting section could not get information with regard to production of planes and engines that were being made on a cost-plus basis. 235.

Heads of divisions did not seem to be aware of this expediting department, as they tried to start another department entirely opposed to this one in some respects. 236.

Too aggressive in trying to get information, ordered to Detroit. 237.

Was getting in control of all such things as goods for export. Knew by night from a report on his desk how many tons of freight and its cubic volume was ready to be moved to any part of the country and where it was located. 238.

Sent to Detroit by Col. Horner and Lieut. Col. Horner. 239.

Asked to have an organization put in the field as it was necessary to control the situation. After submitting this report he was sent away. 240.

GUTZON JOHN DELEMOTTE BORGLUM (Washington, June 11, 1918; Book 4).

Presents records covering ordering of the Delco system for 20,000 motors. 244.

CONRAD CHARLES MARTENS (Washington, June 12, 1918; Book 4).

Highland Park, Mich. 245.

Foreman of testing department of Lincoln Motor Co. 245.

Was with Cadillac Car Co. in similar position. 245.

CONRAD CHARLES MARTENS—Continued.

Began assembling and testing marine motors about 18 years before. 246.

Goes to Pacific coast to Hall-Scott Motor Co. to get acquainted with their methods of building airplane engines. 247.

Looks up tools required in their department for building the engines. 248.

Changes in horsepower. 251.

The testing was very satisfactory, as they learned a great deal about tools. 254.

Changing to a heavier crank shaft. 255.

Did not have any motor to work on. 257.

Government had no perfected motor they could hand to the manufacturers and say to build that one. 257.

After engine tested, make some changes in the locks in the oil pump and the water pump. At first not secured by a lock of any kind. 267.

No report of any endurance test in the air has ever been sent to the factory. 267.

Thinks the trouble with overheating as much the trouble of the aviator as with the engine. 269.

States Delco system can be used on Liberty engines. 271.

Can not use the magnetic ignition. 271.

Says since change in connecting rod it has turned out to be a perfect engine. 274.

Mr. Martens is shown something which came from a Liberty motor. 275.

Admits that it looks flimsy and that at one time he thought it looked serious. 275.

If it should break a man would lose his oil. 276.

Shows he does not entirely approve of it. 277.

Relative to the 50-hour test. 279.

After strengthening it Signal Corps did not feel it was necessary to subject it to 50-hour test, as the new rod had been tested at different plants. 281.

Wanted to test it on his own initiative, as had never been satisfied. 282.

HARRY E. B. BAKER (Washington, June 12, 1918; Book 4).

Business man and manufacturer of Cleveland. 284.

Organized the Engel Aircraft Co. 284.

Was president and general manager. 284.

Had a contract with the Government for supplying standard parts. 285.

Recites contracts that were placed with the company and afterwards canceled. 285-286.

These contracts reinstated. 288.

Maj. Gray head of Engineering Division of Aircraft Board. 290.

Were fairly well up in production at time of cancellation of orders. 290.

States reasons of his withdrawal from Engel Co. and reason for cancellation of orders. 292.

- ARTHUR P. HOMER (Washington, D. C., June 12, 1918; Book 4).
Naval architect and marine engineer. 302.
Represented Pierce Oil Corporation, Lloyd's Register of Shipping, Valentine & Co., the Odorless Refrigerator Co., and Sterling Engine Co. 302.
Goes to Europe in 1915, in September, to investigate the aircraft engine situation for them. 302.
Relates result of visit to Great Britain, in which Sunbeam is called most favorably to his attention of all other engines. 304.
Sails again for Europe in January, 1916, where contracts are completed with Sunbeam Co. 306.
British Admiralty refuse at first to let the Sunbeam Co. make the contract as they considered Sunbeam a Government secret. 307.
Finally returns to this country with Sunbeam engine, with plans, specifications, etc. 307.
These drawings had to be changed into American figures. 307.
Under Mr. Souther's orders they accepted preliminary order for two engines. 308.
In June, 1917, tested the first Sunbeam engine and presented results of test to United States Navy Department and Maj. Souther. Also reported test to Gen. Squier, who stated that it was the first ray of hope he had seen. 308.
Try to see Mr. Walton and appear before the Aircraft Production Board. They refused to see them. 308.
Arrange in June to get large plant in Buffalo after consultation with Maj. Souther. 309.
In July Maj. Souther asks to be informed what production the Sterling Co. could give on Sunbeams. 309.
Could arrange production at any amount they required. 309.
Get option on King Sewing Machine Co. 309.
Maj. Souther changes his plans and tells them to build Liberty motors. 310.
Having been promised an order and then to have this order changed in face of all the things that could be promised them, they would not buy the plant contracted for. 310.
Tries to secure from Sterling Engine Co. at actual cost to them, for the Sunbeam license, and offering same to the United States Government which would have placed the United States Government in a position of having engines of an accepted type. 312.
Offer was turned down on strength of statement by Col. Bolling in August and no investigation as to worth of the Sunbeam was made in any way. 312.
In the meantime, the Marling-Rockwell Co. sent representatives to Europe to investigate aircraft situation and are informed that the Sunbeam engine is the best engine in Europe for adaption to American methods. Was of highest type. 312.
Mr. John Willys also was informed by his representative that the Sunbeam was the best type of machine then existing. 312.
Willys endeavored to secure a license, but could not. 313.

ARTHUR P. HOMER—Continued.

- Mr. Willys offered the Navy Department to go into production on Sunbeam engines within four months on a large scale if it were desired. 313.
- Reports interview with Maj. Vincent and Capt. Marmon just returned from Europe with regard to Sunbeam. 316-317.
- No changes could have been made in motor that would have retarded production here as it had already passed the breakdown test in Europe, which took seven months. 319.
- Col. EDWIN S. GEORGE (Washington, D. C., June 12, 1918; Book 4).
Lieutenant colonel, Signal Corps. 325.
- Duty, procurement of the motor transport equipment for the Signal Corps. 325.
- Has nothing to do with the production of aircraft. 326.
- Velie Motor Corporation, at Moline, Kelly Springfield Co., at Springfield, Ohio, Federal Motor Truck Co., at Detroit, etc., furnish the heavy aviation trucks. 327.
- Dr. FREDERICK W. BUCK (Washington, June 12, 1918; Book 4).
Maker of airplanes, torpedoes, and gas engines, Pueblo, Colo. 329.
- The Buck Aircraft & Munitions Co. 329.
- Organized January, 1917. Could have built airplanes a year ago if they could have gotten the order. 330.
- Brought out an all-metal airplane. 330.
- Wrote to Washington; no results. 331.
- Gave him as their reason for refusal to consider metal planes there was so much head resistance. 333.
- Company incorporated for \$3,000,000. 334.
- Aircraft Production Board state in letters they have already advanced \$145,000,000 for new companies. 337.
- Understood that they had advanced four million to Curtiss, some twelve million dollars to the Wright-Martin Co. 338.
- Did not understand that War Credits Board had been organized for purpose of determining amount of advances that were made. 338.
- Can not secure an engine to put in their model. 340-341.
- WILFRED C. LELAND (Washington, June 12, 1918; Book 4).
Manufacturer, Detroit, Mich. 342.
- Vice president and general manager of Lincoln Motor Co. 342.
- Looks to securing of plant for manufacture. 346.
- Fails, consults with authorities at Washington. 346.
- See Mr. Vandervort, Col. S. D. Waldon, and Mr. Deeds. 356.
- Turn in resignations at Cadillac Co. on strength of assurance that their high-grade work would naturally put them in a position to receive contracts, and relying on honesty of purpose and desire to get only the best. 347.
- Have further interviews in the meantime with members of the Aircraft Board with respect to the contracts to be allotted. 349.
- No definite motor in mind; would build whatever was decided to be best. 351.
- Mr. Charles F. Kettering, of the company, came with them. 351.
- Belonged to Dayton, Ohio, Delco Ignition Co. 351.

WILFRED C. LELAND—Continued.

- Helped to bring out self-starter for car called the Delco starter, or the Delco ignition system. 352.
- Cadillac owned no interest in Delco Co. 352.
- Delco system was pioneer system. 354.
- Mr. Ernest E. Sweet, consulting engineer of Cadillac Co. 356.
- Mr. D. T. Conley, engineer with Cadillac Co. 356.
- Mr. Frank Johnson, motor engineer, Cadillac Co. 356.
- Has some stock in United Motors. 358.
- Knew United Motors owned the Delco. 359.
- Lincoln Motor Co. incorporated in August, but in meantime had to get another company out which had same name. 359.
- Gives list of stockholders. 360.
- Dayton Metal Products Co. had \$100,000. 361.
- Mr. Kettering's stock comes in Dayton Metal Products. 363.
- Had met H. E. Talbott, sr., and his son, Mr. Talbott, jr., and Mr. McCann. 364.
- Designed the plant for postwar production. 366.
- Gen. Squier's name on list of those they consulted in Washington. 367.
- Discuss in general way Rolls-Royce, Sunbeam, and Gnome as type of motors to build. 369.
- Mr. Kettering had been with Cash Register people. 371.
- See Gen. Squier. 372.
- Never been financially connected with Mr. Kettering or Mr. Deeds. 374.
- Mr. Kettering was one of the three leading engineers in designing the Liberty motor. He was chosen to handle the ignition system for the Liberty motor. 376.
- Mr. Vincent, of the Packard Co., and Mr. Hall, of the Hall-Scott Co., were also selected to design the Liberty motor. 377.
- Cadillac Co. built connecting rods for first 10 Liberty motors. 378.
- Mr. Hall comes to Cadillac Co. and tells of progress in designing Liberty motor, and reasons for believing it was adapted to American methods. 380.
- Mr. Kettering called up to work out ignition system for Liberty motor. 381.
- Assured by Government authorities if plan worked out well Lincoln Motor Co. would be called upon to furnish 20 motors a day. 383.
- When further assurance held out proceeded to buy plant. 385-386.
- Buy Holden Avenue plant, costing \$20,000 or \$30,000. 386.
- Approximately \$4,000,000 been paid to Lincoln Motor Co. to date. 389.
- Mr. Nabel is property officer of Government. 391.
- Contract with Lincoln Motor Co. on cost-plus basis. 392.
- First contract calls for 6,000 motors. 392.
- War Department now decides they will need to have 100 a day turned out of eight-cylinder type instead of 20. 393.
- Go to Detroit to seek new plant for enlarging purposes. 393.
- Decide they will have to erect buildings. See their bankers in Detroit First National and Peoples' State Bank. 393b.

WILFRED C. LELAND—Continued.

Agreement reached. 394.

Mr. William H. Murphy and Mr. David Boyer and Mr. Leland indorse paper so that \$4,000,000 may be available. 394.

Resolution of Aircraft Board read giving terms of order placed with Lincoln Motor Co. for 6,000, etc., engines at a price to equal the cost thereof plus \$913.05 as a fixed profit for each motor so ordered, plus 25 per cent of any sum by which the estimated cost of each motor, fixed at \$6,087 per motor, shall exceed the actual cost. 397.

Bogy cost first fixed at \$6,087, but later changed to \$5,000. 398.

Gives reasons for setting it originally at \$6,087. 398.

Reads further resolutions of Aircraft Board. 393b.

Reads minutes of meeting of Aircraft Board further in reference to estimated cost of \$5,000 for each engine, fixing profit at 12½ per cent on each engine. 395b.

That the Government make an allowance for depreciation of company's heat treating plant. 396b.

That the cost of the company's testing plant be allowed as part of the production cost of the engines to be manufactured. 396b.

That an advance payment of \$4,000,000 be made to the company on account of the contract. 396b.

Packard Co. secures an advance of \$2,500,000 on its contract. 397-398b.

(As you will notice, paper incorrectly numbered here, as pages go to 398 and then start in again on 390.)

Leland not interested in Packard Co. at all. 398b.

Total expenditure of plant \$6,200,000. 401.

Get the \$4,000,000 from the Government in one payment early in December. 402.

Five per cent interest on first advance. 405.

Also two other loans from banks in neighborhood of \$1,750,000 or \$2,000,000. 406.

A second contract with the Government for spare parts. 406.

No additional contract for motors. 406.

Reads minutes of Aircraft Board recommending this contract with Lincoln Motor Co at cost-plus profit of 15 per cent and providing for depreciation clause. 408.

The first contract for 6,000 motors for the Government and this last-mentioned contract only two Lincoln Motor Co. ever had with Government. 408.

Estimated cost of the 6,000 Liberty engines. 409.

Estimate by Government that the spares to be produced would cost \$6,000,000. 410.

Possibly \$40,000,000 involved in the two orders. 410.

Statement is produced showing sum of \$8,423,966.38 paid by Government to Lincoln Motor Co. 410.

In March two more advances made by Government, bringing total up to \$6,500,000. 411.

Leland Exhibit No. 2 shows payments amounting to \$4,177,076.75 from the Government to Lincoln Motor Co. exclusive of advances. 411.

WILFRED C. LELAND—Continued.

- Can not seem to state what method, if any, had been employed to determine cost of making of these motors. 414-415.
- Mr. Leland's attorney states accounting system not built up yet when started production, and that it was laid for determining cost in lots of 800 motors, which is not yet reached. 417-418.
- Mr. F. C. Thompson was Government accountant in charge. 419.
- Chief accountant for Lincoln Motor Co. William T. Nash. 419.
- Furnishes salaries of officials of company. 420.
- Increases in force. 421.
- Explains delays in production. 422.
- Change made from 8 cylinder to 12. 423.
- Question is asked what reason there was for failure to get any engines at all because they were going to try for increased horsepower. 424.
- At time orders were received to change had not completed tools for motors they were then planning to build. 425.
- Later finish making of these tools to use up stock on hand. 426.
- One hundred and sixty-nine motors are finished with lighter connecting rod. 430.
- Some delays in getting blue prints. 431.
- Go along for six week or two months experimenting on connecting rod. 431.
- In February find they will need heavier connecting rods. 432.
- Change in a particular part many times affects 10 or 50 or 100 other parts. 434.
- Tool-making establishments not adequate for work thrown upon them. 437.
- In many instances seem to have been motives for holding up, willfully holding up the making of the tools. 438.
- Gave a list of these tool-making concerns in Detroit to Department of Justice. 438.
- Understanding is given that Signal Corps follow a policy to standardize entire output of motors; not put into production different types of motors, but to have one type which is finally reached as a result of all the work of development. 441.
- Did not have full supply of labor. 443.
- Shortage of aluminum castings. 443.
- Government pays cost of all scrapped material. 455.
- Amount would be large, although would not state even approximately. 456.
- Factory tests to which motors are subjected. 458.
- Connecting rod change, in February, last important change. 460.
- Could not state that the Liberty motor was yet standardized. 462.
- Buy the Delco ignition system and install it when they make an engine. 463.
- All special tools that apply particularly to Liberty motor are charged to this motor. Amount for special tools runs possibly a million and a quarter. 464.
- In case of special tool account, the tools will be the property of the Government, but in the case of machinery and equipment the same will belong to the company. 467.

WILFRED C. LELAND—Continued.

Can not recall debit balance against Government under their system at end of April. 472.

Government pays all the salaries of officers and employees of the company of every kind. 477.

The company itself, during the time this contract is being carried out, bears absolutely no expense except whatever interest it pays on borrowed money. 477.

Contract contemplated this order would be completed in 10 months. 478.

\$5,000,000 clear profit for the company under contract. 478.

In addition, Mr. Leland and father each getting salary of \$25,000 from the Government. 479.

Statement says that between the 1st of September and the middle of February over a thousand changes made in the Liberty motor. 479.

Acknowledges probably only 10 per cent in some years, perhaps 20 in others, was written off on machinery and equipment in the Cadillac Co. at end of year when inventory taken. 481.

Changes in design of Liberty motor have caused three months' delay. 484.

In spite of all these delays that have occurred, company still safe with respect to the limit. 484.

No estimate made of what they could produce in 1918. 487-488.

Had never heard of an estimate by Signal Corps figuring that the Packard, Lincoln, and Ford Cos. would produce a total of 32,626 Liberty motors. 488.

Can not recollect any estimate ever being given to Signal Corps in February that they could turn out 9,850 motors in the year 1918. 489.

General Motors owns the Cadillac Co. 490.

Figured that if contracts were to be closed out for 6,000 engines and the spare parts, they would have a debt on their hands of \$4,000,000. 491.

Expected to pay about 80 per cent of the \$5,000,000 profit in taxes. 491.

This constituted the \$4,000,000 of indebtedness to the Government. 493.

LESTER P. BARLOW (Washington, June 13, 1918; Book 4).

When last testifying stated he expected to go to Dayton for purpose of examining workings of Liberty motor. 501.

Was sent by instruction of Col. Bane, of technical division of Department of Military Aeronautics. 501.

Two hours getting a pass to hangars. 501.

Sent him to another field, when they had three motors at the field he could have used. 502.

Returns to Washington with nothing accomplished. 504.

Is told by Col. Bane to return and all will be fixed up all right.

Wires Col. Hall to be allowed to use motor at Bureau of Standards. 505.

Drops whole thing. 506.

Gets plane with motor, so that he can conduct test in actual flight. 506.

LESTER P. BARLOW—Continued.

Gives details of L. W. F. machine. 507.

"W" stands for Willard, "F" is for Fowler, and "L" the old original company, Lawrence. Known as L. W. F. Co., of Long Island City. 508.

Built a number of training machines for the Government. 509.

Engines turned out by Government could have had this system of radiation attached to them without difficulty. 509.

Col. Deeds tells Senator Hitchcock that \$10,000 had been set aside authorizing Martin to expend that sum on drawings. 511.

Received letter from Director of Military Aeronautics informing him that that section did not at that time desire to test such an arrangement. 511.

Not one man on the board qualified to make such a statement. 512.

Did not call him to explain the device; they had no blue prints to look at; could not have possibly given it any consideration. 512.

All prominent men connected with aeronautics said it should be tried out. 512.

Gen. Squier stating that if Germany were using it they could practically destroy and drive the people out of both London and Paris in a single night. 513.

Gen. Squier thought the cost of this campaign would probably be a billion dollars. 514.

Practicability of the device could have been determined for \$150,000. 514.

No bombing machines being made in this country excepting some experimental work on Handley-Paige. 515.

Is asked while at Dayton if he had any simplified trap in mind, as the one they had was very complicated. 515.

To get the most efficiency out of a machine, bombs should be determined before the plane is built. 516.

No machines being built by the Government to carry the accepted type of bombs. 516.

Ordnance Department stops work on certain type of bomb, which throws 70,000 practically finished ones into junk. 517.

Believes Liberty motor has reached point of development or use in military aeronautics for combat purposes, but not as bombing machine. 518.

Considers that either the Rolls-Royce or Sunbeam motors are better engines. 519.

Liberty motor may in time prove equal to them, but as to these motors they were certain, as they had been in active service. 520.

Principal thing against the Liberty motor was throwing the eggs all in one basket right in the middle of the war. 520.

Sunbeam would not have had to go through an experimental stage. 520.

LEE MASON (Washington, June 13, 1918; Book 4).

Lives at 1414 B Street NW., Washington. 523.

Followed the automobile trade and electrical trade. 523.

Metz one of the companies he has worked for. 523.

LEE MASON—Continued.

Makers of airplane parts. 524.

Factory at Waltham, Mass. 524.

Had contracts with the Government. Make all the wooden parts and all metal parts except the motor. 524.

Goes to Metz factory to work, working in sheet-metal department, and finds he is working under a German-born foreman. 525.

Name was Byng, and did not think he was naturalized. 525.

Reported twice a week to the police. 526.

Ran a standing ad in Boston local paper every day for 50 sheet-metal workers. 527.

Out of stock and did not seem to try to get any. 527.

Men sit around and loaf; he was told not to go home; read a newspaper or anything; go to the toilet and spend a few hours, or anywhere, but not to go home. 528.

Goes home, and then goes back to go to work. Same condition of affairs. Told he might have to lay around for a month, but not to go home. Did not know when they would get stock. 528.

He received 30 cents an hour. 531.

Good Germans got 37, 37½, or 40. 532.

He with about two others were the only Americans around. 532.

The Germans never talked with him; always seemed to meet in groups so far out he could never reach them. 532.

Superintendent of the plant was a German. 533.

Understood that older Mr. Metz was born in Germany. 533.

Blue prints were allowed to lay around on benches so that anyone could have taken them home at night and return them in the morning. 534.

Woodworkers' department running same way. Men idle, but ad running in Boston papers for 100 woodworkers. 535.

Asked to "just stall around." 536.

Enormous office force. 537.

Three Signal Corps officers there. 539.

Production manager, Mr. Schaufler, was a German. 539.

Holding up airplane work by finishing off automobiles. 541.

These men were skilled to do airplane work, but they would not put them on it. Bring in some old clodhopper or stonemason and put him on filing parts down assembling. 542.

LUTHER MASON (Washington, June 13, 1918; Book 4).

Lives at 1414 V Street. 544.

Been living in Waltham, Mass. 544.

Was in the automobile assembling at Metz factory. 546.

Finally gets in airplane department, but is immediately taken back to helping on automobiles, and green hands put on airplane work. 547-548.

Got in lumber by carloads, but never turned out any parts. 549.

Official of the company told him the reason they did not accomplish more was because they were always getting a new outfit of blue prints. 552.

Mr. Pickens, business manager of the company. 552.

States Mr. Byng was unnaturalized German. Police had his picture and finger prints. 552.

LUTHER MASON—Continued.

- Lieut. Boehm represented the Government at the plant. 553.
- Man making pro-German remarks was given work in department doing Government work. 555.
- Mentions idle office force, and blue prints lying around. 556.
- Cites instances of sabotage at plant of Sturtevant's, near Waltham. 558.

JOHN A. WILSON (Washington, June 17, 1918; Book 4).

- Resides Franklin, Pa. 561.
- In the oil business. 561.
- Working for the Aircraft Board. 561.
- Gentleman calls to see him with stabilizing machine. 562.
- Every step opposed by colonel in charge of the Signal Corps. 562.
- Make demonstration at Mineola of a perfect stabilizer. 563.
- The Macey Engineering Co., at Franklin. 566.
- Have contract with Government. 566.
- Col. Deeds makes the contract for the Equipment Division. 567.
- Waiting for the motors. 568.

Maj. HOWARD C. MARMON (Washington, June 17, 1918; Book 4).

- Major, Signal Corps. 572.
- Prior to this, civilian. 572.
- With Nordyke & Marmon.
- Went to Europe to study aircraft with Col. Gorrell, Col. Bolling, Col. Clark. 573.
- Report turned in to Secretary Baker (Sept. 1). 574.
- Called the Bolling Commission. 574.
- Examined Rolls-Royce, Sunbeam, etc. 576.
- Sunbeam criticized by fliers at the front. 577.
- Two or three thousand Sunbeams in use over there. 578.
- Found the Rolls-Royce the only engine that at that time was really filling the bill. 589.
- Did not think there had been a fundamental change in the Liberty engine. 591.
- Understood when over there that American machines would not be over until July, and in the meantime our forces would be supplied by European manufacturers. 595.
- That was their excuse for obligating the United States for \$100,000,000 spent for aircraft while over there. 596.
- Thought it was unnecessary to put into production a foreign engine to meet an immediate need, as thought there was plenty of time to develop the Liberty. 596.
- Bolling Commission went abroad again in June; found over there that it was desired that the American Government should devote its attention to high-power engines. 604.
- Changing rod on Liberty delayed them about two weeks. 606.
- Trouble with respect to lubrication caused two or three weeks' delay. 606.
- Col. Vincent was at head of engine design section of the Signal Corps, which made the drawings for the Liberty motor. 607.
- Cablegram from Gen. Pershing on March 15 asking for revised estimate schedule of motor production by months, etc. 608.

Maj. HOWARD C. MARMON—Continued.

- American Government asked to have motors shipped to other side, where they could be tested. 612.
- States that outside of changes in connecting rods there has been no delays in production of Liberty motors. 614.
- Last October or November the Government had a set of drawings for the Liberty that were at least 99 per cent complete. 616.
- No lack of blue prints that would cause delay in production. 617.
- Everyone having a contract should have gotten started into production in October, 1918. 619.
- Think it an absolutely good motor. 621.
- Is of opinion there will be less difficulty with the Liberty engine than the Allies have had with any of their engines. 625.
- Commander Briggs, in charge of engine-building work for England, thinks this a thoroughly satisfactory ignition. 631.
- Part of delay in the Liberty engine output ascribed to severe specifications and inspection requirements. 640.
- Maj. Haizlett in charge of Government office at Detroit.
- Lieut. Col. HENRY B. JOY (Washington, D. C., June 17, 1918; Book 5).
- Previous to connection with Signal Corps actively engaged with Packard Motor Car Co. 1.
- Became associated with Signal Corps in October. 1.
- Now is largest individual owner of Packard Motor Car Co. securities. 2.
- Assigned to duty in connection with raising 12,000 to 15,000 industrial troops for service in France. 2.
- Acquainted with development of Liberty motor. 3.
- Liberty motor outgrowth of work of Packard Motor Car Co. 4.
- Obtained from Ralph de Palma the German Mercedes airplane motor. 4.
- Packard Co. developed a 300-horsepower and plus motor and notified Government such a motor was ready to show them about time war was declared. 6.
- Work on this motor was all done prior to April, 1917. 6.
- English and French officers thought motor behind times because more power and lighter motor desired. 8.
- Liberty motor evolved from sketches made by Mr. Vincent and on experimental work conducted by Packard Co. 9.
- Feeling in August or September that eight-cylinder motor was most important. 13.
- Trend of opinion toward higher power. Does not know whether any eights were contracted for. 13.
- Reason for delay in production of Liberty motor is because design was not completely and satisfactorily finished and O. K'd in all details before it was turned over to factory for production. 14.
- Have been changing design of motor all the time. 15.
- Great difficulty in spark plugs. Power and ability of motor to-day is limited to spark plugs. 18.

Lieut. Col. HENRY B. JOY—Continued.

Changes in motor while under production causes a large amount of scrappage of material and wasted money. 18.

Liberty motor changed with respect to bearings, lubrication, and connecting rods. 22.

Thought Packard Co. going ahead too fast. 23.

Private manufacturers could not do it. Can only do it with Government's till behind you. 23.

Thought Delco ignition system best. 27.

Did not think air program of having 3,500 planes on battle front in spring could be lived up to, but for expressing his opinion was called pessimistic. 37.

Packard Co. shipped some motors in December to appease public demand, which were not up to standard. 40.

OWEN THOMAS (Washington, D. C., June 17, 1918; Book 5).

Engaged in Government work under Gen. Johnson in Department of Purchase and Supplies. 62.

In charge of collecting drawings, engineering data, and specifications of all Government equipment. 62.

Previously a consulting engineer. 62.

Been two years in England and Canada on war work for English Army. 63.

Was a lieutenant colonel in British Army.

Was consulting engineer of Mercedes Co., a German concern, previous to war. 64.

Practical to build motors of Mercedes type from Mercedes motor Packard Co. had. 68.

Taken about five or six months to get into production. 68.

Mercedes type of forced-speed lubrication better than anything else. 70.

British copied Mercedes motor in Rolls-Royce. 73.

Mercedes motor was built in Germany with American tools. 77.

Germans beneficiaries to-day of American experience in manufacturing of Mercedes engine. 78.

Main difference in Mercedes motor and Liberty motor was in lubrication. 82.

No question but what planes in quantity could have been turned out last fall in both 6 and 12 types. 84.

Discussion on change in lubrication system of Liberty motor took months rather than weeks. 85.

Was at front until January, 1917, making study of engineering matters for British Army. 86.

Commendatory letter from Lieut. Gen. Hughes inserted in record. 87.

Offered services to Council of National Defense, but was advised under date of May 2, 1917, by Mr. Coffin that did not think situation warranted his making the sacrifice. 88.

English nationality objected to. 90.

Found Delco ignition system good. 94.

Mercedes is not handmade design like other European motors. 100.

English planes made by women labor who had not had any experience previous to war. 101.

OWEN THOMAS—Continued.

- Services accepted by General Staff as stated in telegram of November 23. 103.
- Very familiar with production of planes in Europe, but had very little to do with it in this country. 104.
- Natural difficulties in manufacturing planes augmented by lot of experimentation not warranted. 105.
- Considers Liberty motor on light side of safety, due to sacrificing strength to lightness. 105.
- Thought it was possible to obtain production of De Haviland planes before 1st of January. 106.
- Does not think Hispano-Suiza engine a practical American manufacturing design. 106.
- Signal Corps weak on engineering end. 107.
- Lieut. Col. ELBERT JOHN HALL (Washington, D. C., June 18, 1919; Book 5).
- Charge of production engineering on Bristol and De Haviland fighting planes at all factories. 109.
- Been on that assignment about 90 days. 109.
- Previous to that was consulting engineer on Production Board. 109.
- Duty was to organize all factories, help organize them to build the Liberty motor, and clean up design of motor itself. 110.
- Previous to entering service was vice president and general manager of Hall-Scott Co., on Pacific coast. 110.
- Has had about 20 years of gas-engine designing. Has probably designed 100 different types and about 13 different types of aviation motors. 111.
- All aviation motors known as Hall-Scott motors. 111.
- Russia standardized on Hall-Scott motors during war. 112.
- Up until war was declared United States Government had about 200 of their motors. 112.
- Since entering war has about 3,000 training motors. 113.
- Familiar with every type of motor that exists. 113.
- Knew more about what was going on in Germany with respect to motors than our own Government. 114.
- Col. Vincent and himself designed Liberty motor. 114.
- Came to Washington for interview upon receipt of telegram from Col. Deeds. 115.
- Knew Col. Deeds through business connections. 116.
- Bought Delco starting equipment for railway motor cars, which he built, from Col. Deeds and sold him original 8-cylinder automobile which he built and Cadillac used for their first experiments. 116.
- Never had met Col. Vincent. 118.
- Col. Vincent had come to Washington to make arrangements with Government to purchase engine designed by Packard people. 118.
- Motor was impracticable for aviation. 119.
- Went to Willard Hotel with Col. Vincent to design new motor. 119.
- Conferred with English and French mission as to what was desired in way of motor. 121.

Lieut. Col. ELBERT JOHN HALL—Continued.

Army and Navy Technical Board appropriated \$250,000 to complete six engines of each type (8 and 12) of design accepted. 123.

Four-cylinder motor was about 375 pounds and would develop 120 horsepower. Six-cylinder motor about 480 pounds and would develop 220 horsepower. Eight-cylinder was to weigh 600 pounds and develop 270 horsepower. Twelve-cylinder motor was to weigh about 780 pounds and develop 380 horsepower. 124, 125.

Mercedes engine owned by Packard Co. not suitable for aviation and was only used by Germans in experimental work. 162.

Never thought it possible to develop or build up an engine from that motor which could be used for aviation work in high powers. 127.

Liberty motor is same type as German Mercedes. 129, 130.

Thought Hall-Scott lubricating system best, but was changed because of mission coming from abroad and the Rolls-Royce engineer coming over and selling his system. 131.

Does not approve present lubricating system on Liberty motor. 132.

Aside from Liberty motor, Rolls-Royce engine regarded better than any other. 134.

Has had no trouble in cooling Liberty engine. 136.

Only got radiator suitable to Liberty motor within last couple of weeks. 137.

Now uses same type of radiator used abroad by French and English. 138.

Other battery systems that could be used on Liberty motor. 143.

Perfecting of motor should have been done in three months. 145.

Delay in production due to lack of machinery. 146.

Real production has not begun yet. 147.

Col. Vincent in charge of perfecting motor during his absence. 148.

Ford Co. had gone ahead producing tools for the manufacture of 8-cylinder Liberty and were building 5,000, when it was abandoned. 149.

Bureau of Standards inexperienced and not capable of making good block test of motors. 152.

Motor was not air tested sufficiently. 152.

Delay of probably three months in preliminary production, because instead of perfecting design went ahead on production and testing products in air, and not sufficiently at that. 153.

Delay in larger production due to lack of equipment and tool-makers and to manufacturers miscalculating. 154.

Report of breakdown tests marked "Hall Exhibit 1, June 18, 1918." 156.

Part of report inserted in record. 157, 158, 159, 160, 161, 162.

Instead of giving first experimental engines breakdown tests, were sidetracked for exhibition flying and show purposes.

Had to redraw a great many of drawings and practically rewrote all specifications. 164.

Continued down to February. 165.

Lieut. Col. ELBERT JOHN HALL—Continued.

Bad feature was manufacturing limits set, which also caused waste. 165.

Tried to make machine like watch—impossible. 166.

Would have been possible to have run breakdown tests on all motors between June and September. 167.

If breakdown tests had been made before manufacturers started to make tools, it would have been much easier, as then they would not have had to make changes in tools. 168.

Packard plant and Ford could have been turning out 10 motors each daily in January if breakdown tests had been made. 169.

First 1,000 engines faulty by reason of having light crank shafts, light connecting rods, and light bearings. 170, 171.

Dangerous condition, but motors were shipped abroad.

Life of motors in service will probably average 50 to 75 hours, when it should be 300 hours. 171.

Always against cost-plus contracts. 176.

Do not create initiative to go ahead. 176.

Estimated cost of Liberty motor \$2,400, without overhead. 177.

This price included manufacturing losses, such as parts spoiled and rejected.

Manufacturing concern like Packard Motor Co. would incur no risks whatever in making Liberty motor under contract. It would have been a wonderful contract to get. 179.

Thinks Liberty motor was a life-saver for Packard Co. 180.

Up to two months previous Hall-Scott Co. built more motors than anybody else in this country. 182.

Was offered contract for 1,000 Liberty 12's by Navy, but plant could not handle it. 182, 183.

Under cost-plus contracts seems to be a tendency to use too many people to do a certain thing. 187.

Looks to him as though some plants were loading up on machinery. 189.

Engine manufacturers were claiming his figures were too low (\$2,400). 190.

Basing overhead at 100 per cent, entire cost of engine would be \$3,600. 192.

With overhead 200 per cent, it would make entire cost \$4,800. 193.

Plant using Taylor or similar system would probably have 200 per cent overhead. 193.

Would not build Liberty motor himself on a bogey price under \$10,000 for two or three hundred motors. His price of \$2,400 was for a large production. 194.

Five thousand motors would justify his price of \$4,000, which includes overhead, for cost of a Liberty motor. 194.

Mentioned this price (\$4,000) to Col. Montgomery and Col. Deeds. Was told by them that manufacturers thought he was too low. 195.

Was given full responsibility to get production in any way he could get it. 196.

Got into production end through a meeting held in Maj. Gray's office, who had charge of production engineering. 197.

Lieut. Col. ELBERT JOHN HALL—Continued.

- Only 75 per cent of drawings ready for machines because there was nobody who could complete the job. 199.
- Made model machines for each of plants, finishing Dayton-Wright model first, as they were only people who could complete job at this time.
- Machine guns and necessary mounting of them, method of putting in ammunition boxes, the radio and method of putting it into plane, photographic apparatus, and all other necessary apparatus was information lacking, and was holding back completion of planes. 200.
- Difficulty to get information accountable to lack of organization. 200.
- Great deal of prejudice at Dayton-Wright plant to overcome. People in plant engineering organization and production men do not like an outsider to come in. 201.
- Signal Corps puts their men in plant and actually taught men how to do the work. 202.
- Inspection Department of Signal Corps very poor. 202.
- Way it was lined up would hold up production, and there was nobody actually responsible. 202.
- First machine produced was sent abroad without any equipment. Probably put it on over there. Anybody who knows business can put on equipment in two or three days. 202.
- Supposed to be shipped complete. 202.
- Government inspectors did not inspect during assembling of machine, but waited until it was complete. They then generally found 50 or 100 things wrong. 203.
- Dayton-Wright people had done a great deal to try to get information and necessary equipment. 204.
- No one connected with Equipment Division who knew business well enough to coordinate all that stuff. 204.
- Had to get appropriation to buy \$195,000 worth of stuff which Ordnance Department should have furnished. Also helped Ordnance people to redesign their bomb-dropping apparatus. 205.
- Concentrating on De Havilands first. 206.
- Took up Bristol job about April 11. 206.
- Curtiss Co. had contract for 2,000 Bristol planes, at estimated cost of \$13,500,000, and had not started work on them in April. 208.
- They would have stayed in that same position for weeks and months if somebody had not taken it up. 208.
- Had made an effort to make headway, but practically all they did was to get in a row so that when he went there everybody was damning everybody else. 209.
- Curtiss Co. have not gotten into production of Bristol planes yet (June 18, 1918.) 209.
- Built two machines for testing purposes; break-down test; but two boys got killed because of failure of cloth. Grade A linen, specified by Specification Department of Signal Corps, is not strong enough. 210.

Lieut. Col. ELBERT JOHN HALL—Continued.

Does not know whether this fact was known before specification was made. 210.

Considered original linen used (50 threads per inch) much better than linen called for in the specifications (98 threads per inch). 211.

The linen was lower in quality than it should have been and should not have been passed by inspectors. 212.

Q. "How did it happen that linen of that unsatisfactory quality was ordered?"—A. "From a laboratory standpoint they think is is the best. From a cloth-quality standpoint anybody would say it was the best. But the engineers, who have been in the airplane game from the practical side of it, think it is poor. We object to lots of things which the Signal Corps specify, just as we do in regard to the engines." 214.

Engineers at work on specifications had no experience with airplanes. 215.

Thinks Orville Wright knows more about aerodynamics and airplanes than any other man in this country. 215.

Believes there will be a shortage of motors. 216.

Contracts with General Motors, of December 28, for 1,000 United States, 12; March 29, 1,000 United States, 12; April 1, 1,000 spares, at a fixed price of \$2,000,000 for spares, and an estimated cost on the cost-plus basis aggregating nearly \$14,000,000 for the engines. 216, 217.

Jobs handled under Government inspection are doubly difficult. 217.

Does not like Government system of inspection. Should have a man in the plant who is big enough to have a very small force and merely check the factory's inspection force. 218.

Gradually turning his work at Dayton-Wright plant over to a Mr. Shepler, put there by the Government. 219.

The average life of an engine (time beyond which it is not advisable to repair) would be about 300 hours or 30,000 miles in the air. 221.

Production on OX-t engine is more than necessary for program. 222.

Availability of Le Rhone rotary engine more than can be used. Made all drawings, specifications, and everything for that engine, and tried to keep them from building it; feeling it was too expensive, but foreign representatives impressed on them the necessity of building it. 222.

No reason for maintaining the manufacture of rotary engines for airplanes in this country. Good secondary training engine, but cost is awfully high. 223.

Hispano-Suiza engines available for practically secondary training and single-plane fighters. 224.

Curtiss Co. just started making an English single-seater fighter SE-5. 224.

SE-5 is very small machine, while Bristol is a two-seater fighter and more of a reconnoissance plane. 224.

Practically all Fiat parts, such as crank shafts, connecting rods, and valves are made in this country. 227, 228.

Lieut. Col. ELBERT JOHN HALL—Continued.

Referring to plan to developing an all-American motor, minutes of the Aircraft Production Board of May 31, 1917, contain the following: "It is not intended that this plan should interfere in any way with the present production of training machines or the plan to bring designs of French motors here at once for production." 228.

Q. "Do you recall any reason why foreign engines that had stood satisfactory tests in the actual conduct of the war should not have been put in production here in 1917?"

A. "Well, there were no motors, as I understand, which actually gave any real service, except the rotaries, at that time to my knowledge." The Navy was practically using the Rolls-Royce. 231.

Germans had come out with a 6-cylinder, 160-horsepower Mercedes and maintained it ever since the war, and it is still in use in combat planes. 231.

Condition at Curtiss's plant with respect to production of Bristol fighter on March 18 was a job-shop condition rather than a manufacturing condition. 235.

Instead of redesigning Bristol plane to receive Liberty motor, should have ended it by stating plane was not suited to motor. 237.

Government engineers at that time were not very practical, but more or less green. 238.

One of the mistakes of the Production Board to insist upon Bristol. 239.

Bad selection of engineering talent, given as explanation of delay. 240.

Delay in production of Bristol fighters at Curtiss's plant due to mistakes of Engineering Department. 241.

One day the French would go to the Production Board and sell them one of their designs, next day the English would sell them their design, next day the Italians, and the next day the Russians, and that made it very difficult for anyone over here, who did not know, to be advised. 241, 242.

Practically rebuilt Bristol plane from one end to other but still called Bristol fighter. 242.

Released 400 and intends to release 800 of old Bristol plane to hold Curtiss organization together. Can be used for secondary training. 243.

Mr. Marlin brought back synchronizer from England in undeveloped state last September but practically nothing was done on it. 245.

Plane program held up work on synchronizers and vice versa. 246.

McCook Field organized for experimental work first and making all installations and changes. 248.

Lincoln Motor Co.'s contract for Liberty motors very advantageous to them. 252.

Reason for waiting for the development of a new plant for the manufacture of Liberty motors was Mr. Leland's reputation as a manufacturer of high-class articles. 253.

Lieut. Col. ELBERT JOHN HALL—Continued.

Policy of Ford plant not to manufacture anything until they know just exactly what they are going to do, and are sure of their ground. 256.

Expect to get 1,500 motors this month, but he does not believe they will get a thousand. 256.

Packard Co. promised 700 engines for month of June, Lincoln 650, Ford 500, and the Buick and Cadillac 300, but from what he knows of their estimates, he has cut them all on an average of 50 per cent, but thinks he can gamble more on Ford's production of motors than anybody else. 257.

It takes one and a half motors per plane. 261.

Do not ship planes abroad without extra motors. 261.

Present program for Liberty motors something like 150 motors a day. 262.

Q. "What is being produced, or will be so in 30 days?"—

A. "Thirty days from now not over 60 or 70 a day." 262.

Thinks Dayton-Wright Co. would increase their production of planes to 40 a day within 90 days if enough pressure was used. 264.

Program for De Haviland planes overestimated. 266.

Was in charge of getting production speeded up in the Dayton-Wright, Fisher Body Co., and Curtiss plants since February. 270.

Would not have been any production unless he had been doing this work. 270.

Never furnished Planning Department any information which would justify them in making an estimate of production as appears to have been made under date of March 18, 1918. 271.

Paper referred to was filed and marked "Hall Exhibit 4, June 18, 1918." 271.

Program of Planning Department that total in view of De Haviland 4's on August 2, 1917, was 8,000; on August 10 it was 7,500; on August 22 it was 5,000; August 24 it was 6,000; and on August 25 it became 15,000; six days later, August 31, it was reduced to 6,000; on September 4 it was increased to 15,000; on October 17 it fell to 250; on October 29 it was increased to 1,000; on January 18 increased to 2,600; on February to 4,500; and on February 19 to 8,000, at which it remained. 272.

Does not know of any reason why a program should change so. 273.

Minutes of meeting of Aircraft Board on April 18, 1918, shows Ford Motor Co. and General Motors Co. were encouraged to prepare for production 150 motors a day, without regard to the size of their outstanding contracts, and with Government's assurance of protection in the necessary investments. 274.

Letter from Capt. Rowe setting forth reasons for necessitated delay in producing present DR-r machines over time which might have been required to reproduce the English machine. 283.

Lieut. Col. ELBERT JOHN HALL—Continued.

In order to get planes out, it was necessary to have some of them made in more or less of a crude form rather than made from tools. Could not wait to make up dies. 289.

Considers job was getting worse every day up to the time he went on it due to lack of coordination. 294.

Does not know why Dayton-Wright Co. did not go ahead on Col. Deeds's order for 250 planes. 295.

Thinks it would have been advisable to go ahead with manufacture of these planes in October. 296.

Lewis gun only being used on single-seater fighters by British. 297.

Lewis gun is nothing more than a rifle. It is not really a machine gun. 298.

Manufacture of a bullet-proof gas tank is a considerable job. 299.

Would say there have been 2,500 corrections in last 60 days on D H 4's. 301.

Thinks they had a great deal more training planes than were necessary. 302.

Fisher Body Co. to build Caproni planes in addition to De Havillands. 303.

Parts for Caproni's planes being made by a lot of small furniture concerns in Michigan. 305.

JN planes made at Standard Co. withdrawn from service. 306.

Believes he could have accelerated production, if he had had opportunity. 309.

Made as high as 453 horsepower for seven hours with Liberty engine. 310.

Average horsepower of Liberty was 420. 311.

Liberty motor has lowest consumption of gas and oil of any motor ever built, except possibly special stationary engines. 313.

Considers Liberty most economical engine to-day. 314.

Propaganda at Dayton-Wright plant that Signal Corps was a pretty rotten organization. 315.

Did not blame them for this propaganda in a way, because it was really brought about by the general organization scheme that existed of the Signal Corps. 315.

Under date of February 9 Col. Deeds directs the taking the DH 9 out of production for Vincent to change design. 316.

Twelve-cylinder Liberty motor is faster than the Rolls-Royce. 317.

Gives names and uses of various aviation fields near Dayton-Wright plant. 318, 319, 320, 321.

Engineering department could have been located at field adjoining Dayton-Wright plant. 321.

Now uses McCook Field, which is used entirely for this class of work. 320.

A million dollars invested in McCook Field. 323.

GUTZON JOHN LEMOTHE BORGLUM—Recalled. (Washington, D. C., June 18, 1918; Book 5.)

Letters from President to Mr. Borglum regarding his investigation. 327 to 348, inclusive.

GUTZON JOHN LEMOTHE BORGLUM—Continued.

- Col. Deeds one of the owners of Dayton Metal Products Co. 350.
- Col. Deeds owner of McCook's Experimental Field at Dayton, upon which the Government is spending considerable money. 352.
- States Col. Deeds is part owner of the buildings and properties occupied by Dayton-Wright Airplane Co., with which he placed Government contracts for over \$50,000,000. 354.
- Col. Deeds, as managing vice president of National Cash Register Co., was indicted and convicted, with a jail sentence, etc. 359.
- Col. Deeds, as chairman of subcommittee on fuses and detonators of Council of National Defense, had committee pass a resolution allotting fuses only to companies that had made Russian fuses. 365.
- Dayton Metal Products Co. was only company that had made such fuses. 365.
- Col. Deeds sought and secured a place on Aircraft Board. 367. (Aircraft Production Board.)
- Col. Deeds made statement to witness that he would tie up \$320,000,000 available for plane production before week's end. 373.
- Preliminary report of Mr. Borglum states: "He further (supported by documentary evidence and witnesses) to be a heavy beneficiary in contracts and directs that there shall be no inspection of materials from his company. He increases in a pencil stroke a contract for his ignition system from 15,000 to 20,000, and excludes this item from further consideration and forbids competition by other makers. This item alone appears to run into something near four millions." He—referring to Col. Deeds. 373, 374.
- Witness questioned as to evidence he has to substantiate above. 374, 375, 376.
- Letter from Col. Deeds to Aircraft Production Board, under date of August 28, 1917, setting forth his corporate interests. 377, 378, 379.
- Witness questioned as to truth of statements in this letter and his reasons for believing them not correct. 380, 381, 382, 383, 384, 385, 386, 387.
- Col. Deeds was a stockholder and officer in the following:
- United States Motors Corporation, of New York.
 - Dayton Engineering Laboratories Co., of Dayton.
 - Dayton Metal Products Co., of Dayton.
 - Domestic Building Co. of Dayton. 378.
 - An incorporator of Dayton-Wright Airplane Co.
 - President and large stockholder in Domestic Engineering Co., of Dayton. 379.
 - Owens ground embraced in Moraine Experimental Flying Field, near Dayton, used for aviation purposes. 379.
- Has severed connection with first four of above-named corporations. 378.
- United States Motor Corporation has order for 2,000 motors. 388.

GUTZON JOHN LEMOTHE BORGLUM—Continued.

Col. Deeds and Mr. Kettering made three and a half million apiece on transfer of stock to United States Motor Corporation. 389.

Has no other documentary evidence than typewritten statement by a Mr. Ohmer. 393.

Use of Delco ignition system in connection with Liberty motor all a part of Deeds's work. 394.

Col. Deeds was allowing Splitdorf people to go to great expense in experimenting with system for application of magneto ignition system to Liberty motor when he had already ordered 20,000 of those systems on 20,000 motors. 395.

No tests had been made of Delco ignition system. 396.

Lieut. Sloane of accounts section gave him information. 397.

Col. Deeds "directs that there shall be no inspection of materials from his company" (the Delco Ignition Co.). 398.

Deeds increased order from 15,000 to 20,000 by pencil stroke. 399.

Deeds left room and had order signed by some one else. 400.

Ford says that Kettering stated—either Kettering or Vincent—that they literally placed cylinders so that no other system could go in there. 401.

Deeds, Waldon, Montgomery, and Coffin created cost-plus form of contract. 403.

Cost-plus system has "been the agent for more general dissatisfaction, waste of money, excessive overcharges, and establishment of an unnatural, if not corrupt, relationship between the board and contractors than all other conditions prevailing." 404.

Q. "Have you any information that in the actual working out of the cost-plus contract there has been any corruption anywhere?" 404.

"I mean by that an intentional inflation of costs, laxity in the sense of intentional looseness in inspection in order to permit an undue allowance by the Government, computing of pay rolls, or anything at all which would give you a basis for a charge of corruption in the execution of the cost-plus contract." 405.

A. "There are wagon loads of that." 405.

Cites Trego factory as an instance. 405.

Does not know what Mr. Talbott's salary was before he started in, but he is now getting \$30,000 or \$35,000 a year, his son the same, and possibly Mr. Kettering the same. 406.

Mingle, president of the Standard Co., got \$62,000 a year. 406.

Trego got contract for three and a half million dollars, went to New York and borrowed a million five hundred thousand dollars from bank, stating he would make that amount on his contract. 407.

Has used up six or seven hundred and odd thousand dollars and 75 per cent of it wasted. 407.

Curtiss plant has been carrying 13,000 to 14,000 people on its pay rolls under a cost-plus contract and has been suffering from 60 to 70 per cent idleness; it has been toying with our contracts and yielding us nothing. 409.

GUTZON JOHN LEMOTHE BORGLUM—Continued.

Curtiss plant has acreage and man power enough to turn out 565 planes a day if it were put into the hands of a good organization and were allowed to go forward. 410.

Dayton-Wright plant utterly incompetent. 411.

Never could satisfy himself why the Fisher Body Corporation got any order. 414.

Eugene Mayer financed the Fisher Body Corporation. 414.

June 19, 1919:

Col. Deeds soon after his entrance on the aircraft work boasted ability to name 80 officers in the Signal Corps. 412.

Albert Badlow sold the Dayton-Wright Co. cotton for linen. 422.

Lieut. E. C. Charles Comston, an appointee of Deeds, assisted Hayward to prepare a report for the Senate investigation report. 423.

Capt. A. W. Corndorf knows of connection of Deeds with fuze committee. 424.

Capt. Christy, Production Department, Signal Corps, appointee of Deeds. 425.

Dr. Orlando Ducker, examining physician of the Signal Corps, knew a family in northern Maryland by the name of Dietz, who had a cousin by the name of Dietz, who changed his name to Deeds, that lived in Ohio. 426.

Ralph M. Easley, Metropolitan Tower, a Government agent, investigated Mr. Borglum. 426, 427.

Flint L. W. F. Co., College Point, claimed to have built 30 sea-planes on verbal order of Deeds. 427.

Mix stated that Deharbor, secretary and treasurer of the Dayton-Wright Aeroplane Co., was a German spy and had been arrested as such and interned in the Federal Prison at Atlanta. 430.

Quoting Mix, "Deeds is a crook." 431.

Lieut. Harly, private secretary of Deeds. 438.

"Congressman William Schley Howard had some very interesting experience with Deeds and the board in trying to get them to accept a plane that was invented by one of his constituency. Howard's people were to build this plane at no cost to the Government." 439.

Deeds appears to be interested in J. G. White Co. 450.

Lieut. Ryerson, in charge of propellers, appointee of Deeds. 450.

Was told that Col. Montgomery obtained a loan of \$4,000,000 for Curtiss people and got it through his own financial connections, but does not implicate him. 453.

Loan was afterwards taken up by Government loaning them money and the loans finally amounted to something like eight or nine million dollars. 453, 454.

Maj. Charles Sligh had charge of spruce for Aircraft Board; was associated with Deeds in the early part of activities. 454.

William H. Schlott well posted on Deeds and board's activities.

Was told by Vincent to raise his price on figure submitted.

Vincent told him to base his figures at \$25 per horsepower. 455.

GUTZON JOHN LEMOTHE BORGLUM—Continued.

Refers to contract of Lewis Spring & Axle Co. on Liberty motors. Stated would make any number for \$3,000 and make a great deal of money out of it. 455.

Did not get an engine order. 455.

Mr. Harris, of Contract Department, with reference to a bid of Lewis Spring & Axle Co. for spare parts, stated, "You had better raise your figure \$500. We are going before the Military Committee and we do not want to show any discrepancy." 456.

Awarded contract for 400 sets of spares for Bristol fighters at a fixed price of \$1,890,000 under date of February 4, 1918. 457.

H. E. Talbott, jr., vice president of Dayton-Wright Co., at salary of \$30,000 a year, was Deeds's private secretary when he first came to Washington. 459.

Vauclain, associated with Deeds in fuse contracts; should be investigated. 459.

Capt. Marmon was under Deeds's control. 463.

Col. Deeds reported to own 55 per cent of the stock of the Bijou Electric Co., of Jersey City. 467.

Made a mistake in stating yesterday that United Motors had a contract with Government; should have been General Motors. 470.

Lieut. Lufkin, formerly at the testing laboratory of the Signal Corps at the Navy Department, too honest and was sent away. 471.

Col. Deeds "Blocked the production of lenses in America and succeeded in ordering their estoppel while under manufacture in a rival company in Dayton, so that now the metal parts of the range finders are completed without the lenses—therefore rendered useless. 483.

Gen. Squier only made one report to him. First report was good and useful. "Then I began to meet obstacles everywhere." 488.

Lieutenant assigned to him as stenographer. 489.

"Owing to almost complete failure of Deeds's immediate associates and partners in Dayton to deliver standard machines, he is protecting them, it is believed, by holding back production in other companies." 490.

Referring to Mr. Coffin, "He has, however, issued and is daily causing to be issued, statements hostile, untrue, unfounded, deceiving our own people, excepting those who understand, but not deceiving allies or enemies." 496.

Refers to article in Saturday Evening Post. 496.

Has quite a little stuff that corroborates what he has gone into. 502.

CHARLES M. ADDAS (June 20, 1918; Book 6).

Residence, Highland Avenue, Newark, N. J. Employed as service manager with New York Lubricating Oil Co. in 1915. On French front and later connected with American Air Service. Services consisted of collecting and classifying various papers, confidential documents in connection with the French Government. 3.

CHARLES M. ADDAS—Continued.

Speaks of a contract for five or six thousand planes from French Government to be delivered before July 1, this year. 4.

Understanding that United States was to supply raw materials and necessary machine tools. 5.

Arrangement with British Government to deliver 20 squadrons of machines. 6.

Knows that shipment of raw material and machine tools had been greatly delayed. 8.

No deliveries made at all up to the time he left for tour of inspection, January 26, 1918. 8.

Referring to machines.

Mr. Hughes read statement of airplanes and engines ordered in France. 8.

Goes into detail about tour of inspection. 12.

(Recital of inspection trip continues to page 27.)

Estimates the total number of planes delivered under the contract on the completion of his tour to be about 900. 28.

French Government directly influenced in annulling the contract of August 30 through the delay in sending raw material from this country. 31.

Four hundred cadets without training planes at Saint Traxient due to failure of French Government to supply training planes. 33.

Charges that failure of French Government to make delivery was due to lack of foresight on the part of the American Expeditionary Forces. 33.

Lack of planes at training centers. 39.

Resigned position with Air Service because of these bad conditions. 45.

Col. Bolling lost his administrative power on the arrival of Gen. Foulois in France. 47-48.

Writes letter to John D. Ryan stating that he would like to inform him of conditions in France. 48.

"Necessary cooperation from America seemed to be lacking." 52.

Lack of personnel; took weeks to answer an important cablegram regarding production, 53.

Things wanted over there did not seem to arrive from America. 54.

Cites foreign criticism on Liberty motor. 58.

(This evidently pertains to the first lot of motors.)

Gen. Foulois did not seem to approve of inspection trip by Maj. Greene in Italy. 60.

Afraid this information might be used against Foulois. 60.

Had opportunity of purchasing Fiat Co. Scia machines (2,000), "but for some reason no action was taken." 64.

Mr. Hughes reads minutes of Aircraft Board. 66.

Unable to discover a contract for Scia machines, although that should have been a part of the record. 71.

(Many papers that could not be found. Files in poor condition. 72.

Mr. Hughes reads from minutes of Aircraft Board. 77.

CHARLES M. ADDAS—Continued.

Lost on an average of two men a day at one of the French camps, due to accidents. 84.

(At this point there is a page missing in the record.)

Considers the men at the head of different departments were too young. 88.

Because there was a change in the head, Gen. Foulois taking charge, Col. Bolling's personnel and Maj. Greene's personnel had nothing to do for several weeks. 90-91.

Foulois took charge, and the work that Col. Bolling had been doing was duplicated, throwing Bolling's personnel out of work, and they did nothing. 91.

Addas gives as his reason, on cross-examination, for resigning, that his department was thrown out of work and soldiers not being protected by proper airplane service.

Capt. ALLEN H. ZACHARIAS (June 20, 1918; Book 6).

Residence Detroit. Occupation before commission in Signal Corps was that of a manufacturer, buider and designer of houses. Was placed in charge of planning department of the Signal Corps, and is also liaison officer in Gen. Johnson's office. 93-95.

Judge Hughes: "Have you any original data in your office which will show how it happened that on August 24 it was contemplated that there would be 6,000 De Haviland 4's, and on August 25, 15,000, and on August 31 it is back to 6,000, and on September 4 it is up to 15,000, and on October 17 it is down to 250?"—A. "I have not." 101.

Asked further as to similar variations. 103.

States that shifting of program was due to optimism. 111.

Is asked to show data setting forth that there was any reasonable expectation by anyone in the Signal Corps that these planes would be delivered in accordance with expectation. 113.

Exhibit Zacharias No. 3 produced. 116.

Exhibit Zacharias No. 4 produced. 117.

Exhibit Zacharias No. 5 produced. 118.

In making up programs of production he would go to his executive officer, Col. Horner, to have them approved. Also to Col. Montgomery. 119.

Col. HENRY B. JOY (June 20, 1918; Book 6).

Letter written by Col. Joy to Mr. Hughes filed and marked Exhibit Joy No. 1, June 20, 1918. 128.

History of Liberty Motor, with photographs, filed and marked Exhibit Joy No. 7, June 20. 128.

Quotes from notebook in which he said no product would be forthcoming until well after the first of the year.

Offers explanation of testimony on a previous day when he stated that the reason why the motor was made so light was because the French engineers pressed for it. 130.

Explains how the Packard Co. acquired through Ralph de Palma the Mercedes motor, due to the fact that de Palma could not get any more parts from Germany. 136.

Did not make any estimate of the cost of the Liberty motor, 12 cylinder in its development. 137.

JOHN W. STAGERS (June 20, 1918; Book 6).

This consists of a description of papers produced by Mr. Stagers. 140.

A pamphlet was produced which showed the earnings of the Curtiss Co. to be \$1,000,000 monthly. 143.

A weekly market letter covering the Curtiss Aeroplane Co. is filed. 144.

Residence, Washington and New York. Member of the Washington Bar. Also Missouri, Colorado, and the Supreme Court of the United States. Represents Gutzon Borglum. 147.

Recites statement of Mr. Metz, of the Metz Motor Co., that he is "a German through and through, and I would close my factory before I would allow munitions of war to be manufactured to be shot at my own people," this statement being made a considerable time before the United States entered the war. 149.

The information that the Metz Motor Co. was manufacturing depth bombs and other war work "struck me like a dagger," says Mr. Stagers. 150.

Made a report to the Department of Justice in November. 151.

Cites a case where a manufacturer with several hundred thousand feet of spruce ready to build aeroplanes was somewhat discourteously "turned down" when he applied for a contract. 151.

WILLIAM HAROLD WORKMAN (June 20, 1918; Book 6).

Temporary residence, Hotel Biltmore, New York. Lived in England for past six or seven years. Home is in Cleveland, and is an American citizen. Since May 4 of last year has been in this country representing Mr. Handley-Paige, of Handley-Paige Aircraft Co. of England. 154.

States Handley-Paige machine is in the course of production and that the first machine will be flying in about three weeks' time. Machine produced at the Standard Aircraft Corporation. 155.

Standard Co. only corporation assembling the machine, but about 20 other concerns are making different parts. 155.

Told by Mr. Waldon and Mr. Deeds last May that there would be no bombing planes in the program. 156.

Offers to sell the rights of Handley-Paige Co. in United States. 156.

(Goes into lengthy recital.)

Found that everything that had been done would have to be corrected and that about \$400,000 had been wasted. 163.

Cites a considerable agreement increase in wages of six men from England which had already been stipulated before coming to United States. 164.

These six men taken from under the supervision of Mr. Workman—"should not communicate with me whatsoever on any subject." These men, however, were brought here by Mr. Workman as his staff. 165.

WILLIAM HAROLD WORKMAN—Continued.

Claims he could have had machines on the western front within 90 days, but that the Signal Corps even in January and February and up to the middle of March 50 per cent of the parts for the production of this machine had not been contracted for. 165.

British Government led to believe they were going to have thousands of airplanes to assemble and made arrangement to do so. 166.

Schedule was drawn up months before that calling for at least 50 sets of Handley-Paige parts by the 1st of May. 167.

Several officers came back from England in an endeavor to speed up program, but states "I have only seen one of them for a few hours since I got here Tuesday morning."

Changes made against Mr. Chamberlin's recommendations, even though he was the chief of the staff of six men. 169.

The cruising radius of the American-built Handley-Paige had been reduced and the American machine was $33\frac{1}{3}$ efficient compared with plane turned out in England. 169.

Produced a copy of offer made on May 31, 1917. Marked "Workman Exhibit 1, June 20, 1918."

Gen. Cormack arrived here with certain drawings. 172.

Recites details of attempt to get drawings. 173.

Declares if they had any intention of making the machine they should have come to him first. 180.

Declares they were showing hostility toward every effort that he was making. 181.

States they did not want to make the Handley-Paige plane or make it a success. 182.

Signal Corps did not seem to contemplate making parts appropriate to the Handley-Paige and sending them to the other side for assembly. 183.

Exhibit Workman No. 2 produced, which is an agreement between United States Government and Workman. 186.

Handley-Paige machine United States is now trying to produce is obsolete. British put new machine in air four weeks ago. 189.

Reiterates the statement that within 90 days he would have been making at least 100 machines a week. 193.

Would use either Rolls-Royce or Sunbeam engine. 193.

Was not his idea Rolls-Royce engine could be put into production in 90 days in this country. 193.

German Gotha plane is a reproduction of Handley-Paige. 199.

Were using Sunbeam engine satisfactorily in England. 199.

Reiterates that due to the Signal Corps officers not having proper drawings there was a loss of approximately \$400,000 in wasted work and materials. 200.

Reads from minutes of Aircraft Board of January 17, 1918. 201.

British Government, acting under the impression that the Signal Corps was going to produce 1,500 Handley-Paige machines, sent men abroad to get the assembly plant ready. 205.

This building has been standing since the 1st of May and are waiting now to get the parts. 208.

WILLIAM HAROLD WORKMAN—Continued.

- Mr. Hughes gives it as his understanding that the production of these 1,500 Handley-Paige machines was going on with incomplete drawings when Workman returned to the United States in December, 1917, and that the work had to be done all over again. And Mr. Workman states that is correct. 211.
- Does not believe the Signal Corps intended producing any Handley-Paige planes, because they ignored technical advice, help, and assistance of Handley-Paige in person. 213.
- Mr. Hughes reads letter from office of Chief Signal Officer to Col. Blomfield, Air Division. 216.
- Mr. Hughes reads extracts from minutes of several meetings of the Aircraft Board. 220-222.
- Letter from chief of Mr. Workman's mechanical staff is produced. 226.
- Mr. Workman is unable to account for the fact that the salary of the men of his mechanical staff was increased by the Signal Corps and that they were notified not to have anything to do with him. 230.
- Mr. Workman is told by Col. Montgomery that he had nothing to do with the construction of the Handley-Paige machine. 233.
- Provision in contract that salary of men was to be paid to Mr. Workman was not carried out. 235.
- Likens driving a bombing plane with a high speed motor, such as the Liberty, to driving a 5-ton truck with racing car engine. 237.
- Report by Mr. Chamberlain covering present state of production at Standard Works produced. 238.
- In the production of Handley-Paige machine they have ignored mature advice from England. Result is, machine is heavy and dead. 243.
- Cites comparative test of Liberty motor and Matabele motor. 251.
- States he could have had 5,000 Handley-Paige planes "over there" by this time. 256.
- Makes a final statement that Signal Corps can not know as much about a foreign machine as those who produce it and that they should take into consultation the original designers of the Handley-Paige plane. 257.
- Capt. ALLEN H. ZACHARIAS (June 21, 1918; Book 6).
Certain program schedules produced. 259.
- Capt. ROBERT LEWIS CHAMBERLAIN (June 21, 1918; Book 6).
Holds rank of captain in Signal Corps. Duties since first of year that of keeping production record of the planning section. 285.
- Quotes from book contemplated production from month to month and states this information came from Capt. Zacharias. 289.
- This book will show exactly the number that have been delivered by any company. 292.

Capt. CLEMENT R. FORD (June 21, 1918; Book 6).

Holds rank of captain in Aviation Section. Is assistant to Col. Horner, chief of executive staff. In this position about 10 weeks. Duties; general office administration. 293.

Lieut. EDWARD W. CLARK, 3d (June 21, 1918; Book 6).

Worked in Approvals Section, finance department of Equipment Division, in charge of property officers. Since March 1, acted as aid to Col. Wolff, in the Finance Department. 297.

Later duties were to take charge of property officers at the various plants. 300.

HENRY LOCKHART, JR. (June 21, 1918; Book 6).

Residence, New York (city). "New York, Rye." In charge of materials department in Bureau of Aircraft Production of Signal Corps. Duties of the department are to procure materials necessary in production of airplanes, except motors and instruments. In this work since January 31. 308.

Files Lockhart Exhibit No. 1, which shows history of activities of his department. 308.

President of Goodrich Lockhart Co., New York. 310. At one time president of Wright-Martin Co. 311.

Col. W. B. Thompson and others own the Wright-Martin Co. to-day. 312.

Has no connections with any company doing business with Government. 313.

Instructed to furnish raw materials abroad. 315.

Shipped British, French, and Italians their requirements regularly. 316.

In certain instances made discrimination between materials needed by these countries for either their own production and that of the United States forces. 316.

States that in his opinion the fault lies with the J. G. White Co. in delays to provide raw materials for production of planes in France. 319-320.

Not the slightest reason, in his mind, why raw materials should not have been provided. 320.

Claims that part of the delay was due to the French methods being slow. 322.

Says Col. Disque (under Gen. Squier direct), had to do with the letting of spruce contracts. 325.

States how he got into relation with the Signal Corps. 326.

Also has to do with the purchase of propeller woods. 327.

Cites method of purchasing hardwoods. 329.

Filed Lockhart Exhibit No. 3. 332.

Also cites discussion which took place at a meeting called in Washington to take up the mahogany situation. 335.

Contract price about \$320 per thousand feet. 336.

Manufacturers submitted statements to him showing their cost of operation. 338.

Explains how it is that the price at the higher figure per thousand feet of cost is no greater than previously. 341.

HENRY LOCKHART, JR.—Continued.

States they will use substitutes. Oak. 343.

States requirements for balance of year will be about 21,000,000 feet, excluding England. (There is a large discrepancy in figures at the bottom of this page.) 344.

This amount should take care of about 140,000 propellers. 345. Thirty thousand planes would be supplied with this amount of propellers. 346.

Files Lockhart Exhibit No. 4 showing complete list of contracts. 347.

Reads amount of woods under contract at this time. 353.

States supply depends a great deal on the ships that will be allotted them by the Shipping Board. 361.

Boats taken out of charter that had been chartered for the work of carrying food to the natives producing the wood. 365.

Twenty million feet required this year yet to be shipped from foreign ports. 370.

Has not consulted Federal Trade Commission in regard to establishing cost. 372.

Has not been to Federal Trade Commission on any woods, but has gone to War Industries Board. 370.

Mr. Legge or Mr. Chamberlain, of War Industries Board, passed on costs of this material. 375.

Files in Lockhart's office would show data with respect to contract for mahogany. 377.

Reads minutes of Aircraft Board of March 7. 381.

Recites accident the other day due to quality of linen, or supposed linen. 382.

It was claimed cloth had been reduced to a tensile strength of only 30 pounds. 383.

Never had any dealings with Joseph S. Otis except on two occasions, one with regard to work and another with regard to statement by Otis that Lockhart was connected with some hardwood company. 385.

Has no memory of any communications from Otis regarding price of mahogany or that it was exorbitant. 387.

Endeavored to ascertain a fair price giving a reasonable profit. 389.

Cites shortage of linen and hardwood lumber for propeller-blade stock. 392.

Capt. ALLEN H. ZACHARIAS (June 21, 1918; Book 6).

Files report (weekly) marked "Exhibit Zacharias No. 38." 395. States different classes of information at his office which are available. 396.

Files schedule for February 8, Exhibit Zacharias 39. 398.

Statement of promised and actual deliveries of orders placed in France of planes and engines marked "Exhibit Zacharias No. 40, June 21." 399.

Translates pages 7 and 8 of Exhibit 44. 400.

Maj. DEAN LANGMUIR (June 21, 1918; Book 6).

Holds rank of major, Aviation Section, Signal Corps, since August 29. In civilian life was an accountant. Up to March 29 had charge of all accounts in connection with production of airplanes and engines. Since March 20 has been waiting to go to Europe. 401.

For past few weeks has been absolutely idle. 405.

Vouchers coming in from plants submitted to accounts section. 406.

Is somewhat evasive when questioned as to what should go in as salaries. 407-408.

Acted under orders from Col. Wolff with respect to salaries. 410.

Salary of Mr. Mengel, president of Standard Aircraft Co., \$62,000 a year. 411.

However, salary has never been allowed, although Maj. Langmuir passed the voucher. 413.

All salaries came before rulings board, whose duty it was to consider the salary paid. 414.

HOWARD E. COFFIN (June 24, 1918; Book 6).

Mr. Hughes reads resolution of Council of National Defense creating Aircraft Production Board. 418.

Mr. Coffin was left at liberty to select the civilian members of the Aircraft Production Board, but does "not think" he was as regards official personnel. 422.

Waldon, Deeds, and Montgomery were designated by Mr. Coffin. 423.

Col. Montgomery knew nothing of aircraft or aeronautics before his connection with this board. 424.

Discussion of the selection of men continued up to page 436.

Cites the origin of the production program. 437.

Tells what Production Board had to do with organization of Signal Corps for securing production. 440.

States how work was divided between Deeds, Montgomery, and Waldon. 446.

Gen. Squier was Col. Deeds's immediate superior. 446.

Makes a brief statement up to Mr. Potter's coming in. 448.

Now continues statement from the time Potter came in. 459.

Makes statement as to information and supervision of aircraft production. 468.

States that board did nothing as interference was resented by the Army, particularly coming from a civilian quarter. 470.

Kept in touch with existing conditions, that is, as to rapidity of work, designs, etc., only in a general way. 473.

Board relied practically entirely upon the information given by representatives of Army and Navy. 473, 474.

Understood work was going forward satisfactorily. 474.

Visited several plants. 476.

States that manufacturers hesitated to talk to him as chairman of the Aircraft Board when their accountability was to the military department. 476.

Did not think he should go thoroughly into the question of a concern's production on his visits. 480.

HOWARD E. COFFIN—Continued.

Did not regard it the duty of the Aircraft Board to see that production was brought along in accordance with the program. 482.

Mr. Hughes enters on the record an order regarding the functions of the Aircraft Board signed by Gen. Squier and approved by Secretary Baker. 483.

Understood that the equipment division was responsible with respect to the performance of contracts. 490.

Mr. Hughes asks what possible value the recommendation of the Aircraft Board could have. 497.

States situation with regard to the anticipation of the successful carrying out of the program. 499.

Reads minutes of Aircraft Board of January 3, 1918. 501.

Was informed by Signal Corps that 1,900 combat planes would be ready by July 1, and which was the testimony given to Senate committee. 502.

Thinks military organization dropped their initiative due to investigations. 505.

There seems to be a break in the testimony at this point. (See pp. 506, 507.)

Thinks the injection of Potter, Fletcher, and Kellogg was an advantage. 508.

Makes a statement in re Col. Deeds's administration. 508.

Made no serious inquiries into equipment division. 509.

Questioned as to whether any inquiry was made as to whether the equipment division would accomplish its results. 512.

Tells whole history of article which appeared in the Saturday Evening Post on January 5, 1918, written by Mr. Coffin. 513.

Knows nothing of the picture which headed his article illustrating a certain make of aeroplane.

Does not recall supplying any specific facts in connection with this article. 518.

Mr. Hughes refers to minutes of Aircraft Board of December 13 referring to an article in the Saturday Evening Post of January 19, 1918. 519.

Mr. Hughes further reads minutes of Aircraft Board under date of December 5, 1917, pertaining to publicity. 521.

Had nothing to do with preparation of Zacharias Exhibit No. 1, pertaining to a program of De Haviland 4's. 523.

Conversant with program contained in Zacharias Exhibit No. 5, which states that 2,000 machines would be delivered by the end of June. 531.

Admits that statement of McConaghy Exhibit No. 9, was misleading. 538.

Informed substantially to the same effect by Col. Deeds. 538.

Explains the fact that efforts on the part of Aircraft Board was regarded as butting in. 540.

Legal department of Signal Corps originated cost-plus system of contracting. 543.

Explains how he got the so-called bogey cost. 544.

Mr. Hughes reads minutes of board on August 24, 1917. 545.

HOWARD E. COFFIN—Continued.

Also of minutes of Aircraft Board on August 31, 1917. 546.

Above minutes pertain to cost of motors and a set profit of \$913.05. 548.

Says he urged a larger number of sources of supply. 550.

HOWARD E. COFFIN (June 25, 1918; Book 7).

Goes on citing his attempts to develop the source of supply, submitting the names of various companies to the Signal Corps. 1.

States that Eugene Meyer, representative of the Secretary of War disapproved of having too many companies engaged. 2.

Cites, however, reasons which would probably have some weight against having a large number of small concerns. 4.

Does not know of a recent order condemning planes turned out by the Standard Aero Co. 25.

States there was no other course at the beginning but to introduce foreign engines. 26.

Asked by Mr. Hughes to take up each engine (foreign) and follow it through. 27.

During this recital Mr. Hughes reads several excerpts from minutes of the board. 30-34.

Continues recital of Sunbeam motor on page 36⁹.

Asked to explain why a big change in the delivery of Hispano-Suizas took place. 43.

States that 180 Hispanos are in quantity production and had been delivered this month. 52.

Questioned by Mr. Hughes as to whether it was not understood that there would be a continual development in planes so that almost any plane which was selected would be varied and modified, and Mr. Coffin admits there was. 57-58.

A patent difficulty existed with respect to Hispano-Suiza motor. 59.

Is asked why it would take longer to produce the Hispano-Suiza motor than to produce Liberty Motor. Admits it would take about the same length of time. 60.

No scout planes manufactured in the United States that are now in use on the front. 62.

Admits if Army had settled upon a plan for planes and the 180 Hispano-Suiza engine last August scout planes would now be in use on the front. 62.

Mr. Hughes reads minutes of Aircraft Board, quoting cablegram from Col. Bolling. 64.

Gives history of Sunbeam engine. 66.

States in his opinion the Fiat engine had the best chance for quantity production in this country. 70.

Thinks Navy had to do with nonadoption of that engine. 70.

Cites difficulty of producing foreign engine. 72.

Says representations of French were they could easily take care of all of our needs in aviation. 74.

States he has never seen any chart showing foreign production. Makes lengthy statement. 76.

Says Secretary Baker refused to send mechanics. 78.

HOWARD E. COFFIN—Continued.

Says cause of nonfulfillment of French contract was due partly to the French administration and partly to the Signal Corps. 81.

Cites knowledge of orders given to the Italian Government. 82. Admits Owen Thomas, of the Ministry of Munitions and the Imperial Munitions Board of Canada brought to his attention Thomas's experience with the Mercedes motor. 89.

Makes confidential statement regarding Mr. Thomas to show why his offer of his services were not favorably looked upon. 92.

States they could not obtain bids from contractors on a fixed price basis, and therefore the cost-plus system was used. 96.

Signal Corps seemed to think a price of \$20 to \$30 per horsepower was about right. 97.

Thinks Montgomery, Waldon, and Deeds were in charge of negotiations which brought about the bogey cost of \$6,087. 97.

Thinks bogey cost in the Ford Co. was \$5,000. 98.

Contract originally made November 22, 1917, was on a bogey cost of \$6,087. 99. Later reduced. 99.

States exactly what happened in the case of the Lincoln Motor Co., where, in consideration of assistance by the Government, the bogey cost was reduced from \$6,087 to \$5,000. 99.

In case the cost was less than the bogey costs the manufacturer received 25 per cent of the saving. If the cost exceeded the bogey cost, there was no penalty. 101.

Mr. Hughes cites abstract of terms of Packard contract. 103.

Agreement or rule laid down that profits of manufacturers in this field were permitted to vary 10 or 15 per cent. 108.

Cites where fixed profit was \$913 per motor for \$6,087 motor, and where it was reduced to \$625 when bogey price was reduced to \$5,000.

Five million four hundred thousand dollars would be profit to Packard Motor Co. at a profit of \$913 per motor on a contract of 6,000 motors. 113.

Goes into provisions of contract as to depreciation, etc. 115.

Mr. Hughes reads into record resolution of Aircraft Board covering contract with Lincoln Motor Co. 117.

Mr. Hughes goes into detail about depreciation clause. 118.

Asked if he recalls contract with Lincoln Motor Co. for 6,000 spare parts at \$5,950,000 he answers in the negative. 120.

Did not know that if Lincoln Motor Co. complies with its contracts it would make at the end of the year 1918 approximately \$5,000,000. 120-121.

Admits it would appear that these concerns could realize 100 per cent on their capital within a year. 123.

Admits Mr. Ford's contract for 5,000 United States Liberties provides a profit of \$3,250,000. 127.

Does not know what brought about such contracts.

Mr. Coffin states his knowledge of the Delco system. 130.

Was not aware there was a limitation as to the type of ignition to be used. 131.

HOWARD E. COFFIN—Continued.

Thinks there are good reasons why the cost of Liberty should be four or five times as much as the highest grade of automobile motor. 133.

Thinks outlay for new equipment by the Packard Motor Co. would be great, due to the difference in the size of their motor and the Liberty.

EDWARD P. BUTTS (June 25, 1918; Book 7).

Residence, Springfield, Mass.; office in Buffalo. Manager of the Ferguson Shipbuilding interests. Also employed by the Government as manager of engineering in the Signal Corps on the production of battle planes from early December until 20th of April. 137.

Trained in engineering at Pennsylvania State College. 138.

Gave careful study of situation and offers to outline the causes of delay, which he does beginning on page 139.

Maj. Shepler never recognized the Signal Corps organization in Buffalo; would never go into the office of the district manager. 147.

Here continues narrative about production at Curtiss plant. 149.

States engineering plan was very cumbersome. 154.

"Mr. Webber's influence there has continually interfered with production in that plant." 155.

Charges that men knew parts were of wrong dimensions, and yet they went on making them. 157.

These instances were quite common. 159.

Mr. Webber never able to give a direct answer. 160.

Had positive sensation of there existing some subtle influence in the Curtiss plant to retard things. 160.

One hundred and eighty orders placed not in conformity with Signal Corps specifications. 162.

Government would pay for rejected parts under certain conditions. 165.

Charges that Curtiss Co. repeatedly bought material of a lower grade than required by Signal Corps in the hope it might pass inspection. 166.

Charges there was an order issued under which material not in accord with Signal Corps specifications would actually be used with the assent of the Government for the manufacture of planes. 168.

Found various fittings on machines that had holes drilled in them. 174.

Does not know of actual sabotage at Curtiss plant, outside of cases "I have cited." 182.

Cites cause of bad conditions at Curtiss plant. 184.

Gives his reasons for leaving the Signal Corps. 189.

Finally stated reason was lack of confidence in the organization of Signal Corps. 190.

Goes into lengthy explanation of what he means by management, as relates to "lack of confidence in the organizing of the operating management." 190.

- Col. CLINTON GOODLOE EDGAR (June 26, 1918; Book 7).
 States that he returned yesterday from a trip to Dayton. 196.
 Is asked to state conditions of Wilbur Wright field. 196.
 Outlines possibilities of floods. 196, 197.
 States that majority of field (1,200 acres) would be under 10 feet of water in case of 1913 flood. 203.
 Here produces several papers as exhibits. 205.
 Gives results of investigation of supplies. 208, 210.
 Continues recital of investigation, up to page 216.
- WILLIAM C. POTTER (June 26, 1918; Book 7).
 Residence, New York City. Before being employed by the Government was a member of the firm—Guggenheim Bros.—who are copper people, miners. Appointed as chief of Equipment Division of Signal Corps on February 20. Brought here by a number of suggestions by Col. Montgomery and Mr. Stettinius. 217, 218.
 Performed miscellaneous duties in Equipment Division unofficially between early January and February 20. 219.
 Continued as chief of Equipment Division until it was abolished under the Overman bill. 220.
 On the entrance of his duties in Equipment Division he found no program at all. 224.
 Reviews with Mr. Hughes exhibits of programs. 224–230.
 Outlines what he found situation to be after coming to the conclusion organization was not according to correct lines. 230, 231.
 Shows the duties of various heads. 232–236.
 Redesigning of De Haviland done by Dayton-Wright Co. with assistance of Signal Corps. 237.
 Gives his reasons for lack of production, which includes “Lack of knowledge * * * of design, lack of experience in construction of airplanes, the immaturity of the Liberty motor.” 238–241.
 Approximate date first De Haviland 4’s were shipped from factory was late in March. 243.
 Found certain things were not right with these planes, however. 244.
 Thinks planes with “proper complement of equipment” were completed in April. 244.
 Lack of theoretical knowledge and experience cause of delay. 245.
 Finds it difficult to explain why this knowledge was not gained earlier. 246.
 Col. Deeds did not have requisite information. 248.
 Much information and personal help from England. 249.
 De Haviland plane was built at Dayton-Wright as early as October 29, 1917, and “was supposed to be satisfactory.” 251.
 Knows it to be a fact that a redesign of gun mount was ordered after it was in production. 252.
 Prepared to believe that several changes causing delays were made. 253.
 Takes four to five months after first design to get into production, according to foreign information. 254.

WILLIAM C. POTTER--Continued.

- Without delays in equipment quantity production could have been had perhaps in February. 255-256.
- Thinks gun chute should have been completed last fall. 258.
- Had engineers, but did not know much about this subject. 260.
- Mr. Hughes referring to engineers: "They might know as much as those who knew nothing?" Answer by Mr. Potter: "Absolutely." Not much effort made to get the best men. 260.
- Cites qualifications of Col. Hall. 261.
- Also other men. 261-262.
- Outside of foreign representatives engineers did not know more about putting on a machine gun than a man who might be in the hardware business. 262.
- When Potter took charge, immediately secured Commander Briggs, of British Navy. 263.
- In spite of lack of knowledge in this country, Commander Briggs went ahead, and the result was planes began to be produced. 264.
- Tells what he knows about synchronizer delays. 265.
- Cites causes of delay on gun sights. 266.
- Delay in camera and camera mounts taken up. 268.
- Also pertaining to oxygen apparatus. 269.
- Recalls delay in furnishing radio equipment. 269.
- Delay in Bristol worse than in De Haviland. 271.
- Asked for transfer of Lieut. Col. Clark, because of inefficiency. 271.
- Goes into lengthy discussion on Clark's deficiency. 272.
- Goes into detail about Bristol plane. 272.
- Cites failure of Bristol machine. 273.
- Bristol plane used extensively in England. 273-274.
- Reason we can not use Bristol is because of engine. 274.
- Bristol program will have to be discarded and substitute De Havilands until time comes when we can make Bristols. 274.
- Defect in Bristol has killed two men and smashed one plane. 275.
- Takes up construction of Caproni plane.
- Contradicting orders about the production of Capronis. 276.
- Speaks of Handley-Paige and contract with England for the assembling, building of plant, and furnishing of bricklayers. 277.
- Is questioned about the men coming from England under Mr. Workman to assist in the building of the Handley-Paige. 278-279.
- Examined conditions at Curtiss plant and found them "a little chaotic." Goes on citing conditions in Curtiss plant. 280-281.
- Gives records of Mr. Mueller, Mr. Webber, and Mr. Schwebel. 282.
- Training-plane production at Curtiss factory had gone very well. 283.
- Speaks of scrapped materials. 283-284.
- Has heard that 60 per cent of spruce was rejected. 284.
- Since establishment of cut-up plant, quality better. 285.
- Goes into a further statement about delays of planes and immaturity of Liberty motor. 285, 286.

WILLIAM C. POTTER—Continued.

- Recites difficulty with Hispano motor. 287-288.
- Sets forth contradicting orders by Gen. Pershing relative to the building of single seaters. 290.
- Examined conditions at Standard Co. and found conditions bad, due to incompetent management and insufficient finances. 292.
- Mr. Mengel denied to Mr. Potter that he owned any stock in Standard Co. 292.
- He seemed to have reference to actual ownership, however, or to the point as to whose name it stood in on the books. 292.
- Gives reasons for the discarding of Standard J. Planes. 293.
- Disposition of overhead charges is taken up, and the question of salaries. 294.
- Mr. Mengel's salary is being held up. 295.
- Gives Maj. Gray's reasons for leaving Signal Corps. 296.
- Discusses report of Capt. Preston on the spruce situation, in which cut-up plant is criticized. 298-299.
- Continues discussion up to page 319, which includes Chicago, Milwaukee & St. Paul Railway proposition.
- Mr. Hughes asks for copy of railroad contract. 322.
- Mr. Hughes quotes from contract with Siems, Carey-H. S. Kerbaugh Corporation providing for the sale of 250,000,000 feet spruce-lumber fitches. 322.
- Each airplane requires about 2,000 feet of first-class spruce. 323.
- Twenty-eight million feet of spruce per month required for America and the Allies. 325.
- Not familiar with protests due to the appointment of Mr. Blodell or Mr. Long. 325-326.
- Col. Disque had charge of price fixing. 326.
- So much spruce that it is not worth much and stumpage question is not serious, according to Pacific coast claims. 328.
- Mr. Hughes reads letter from Aero-Marine Plane & Motor Co. with regard to price of spruce. 329.
- High cost of spruce from cut-up plant is due to the cost of the cut-up plant. 330.
- Nine thousand to twelve thousand military men in spruce production on west coast. 333.
- Inadequate supply of spruce during June, July, August, and September expected. 336.
- Gives actual production of spruce and fir per month. 338.
- Mr. Hughes reads further from Capt. Preston's letter. 341.
- Mr. Potter thinks probably Capt. Preston's report is exaggerated. 343.
- Should have approximately 8,000 De Haviland 4's by the end of this year, but they will not all be on the front. 345-346.
- Liberty motor now in a fairly satisfactory state of development. 349.
- Testifies as to what is being done with regard to pursuit planes. 350.
- Understands contract by J. G. White was quite satisfactorily filled. 353.
- Ought not to rely on the French to fill out our complement of planes this year.

WILLIAM C. POTTER—Continued.

Going to send Hispano-Suiza 180 engine, starting in July. 358.
 Recites facts in connection with accounting department. 359.

"We started out with a lot of bad inspectors, but they have gotten better now." 360.

Inspectors had very little knowledge of their work. 360.

Regarded it as necessary to call for the resignation of Mr. Heatley Green. 361.

The same is also true of Mr. Butts. 363.

Cites friction between Maj. Shepler and Messrs. Webber, Butts, and Green. 364.

Explains why he overruled Maj. Shepler's recommendation that what Mueller and Webber said should control. 365.

Ten million dollar advance to Curtiss Co. explained. 367.

Mr. Hughes reads market letter with respect to Curtiss Co.:
 "Earnings now running at the rate of \$1,000,000 monthly."
 367-368.

Did not know of systematic effort on part of Curtiss plant to buy material of poor quality. 369.

Finds difficulty in connection with Standard Aero Co. that does not exist in other plants. 371.

Mr. Frierson asks for correct information as to the number of airplanes and engines now under contract. 372; also, 373-377.

Questioned as to whether 12½ to 15 per cent net profit is in accord with general practice. 378.

Lincoln Motor Co. "is getting an enormous return on its capital." 382.

Mr. Potter goes into an explanation of these profits. 382-383.

Thinks if manufacturers had been induced to take contracts at a lower percentage it might have lessened their enthusiasm. 383.

Mr. Hughes quotes from Lincoln Motor Co. contract. 388.

Five million dollars is total profit of Lincoln Motor Co. 390.

Ready turning over of the capital ought to be taken into consideration. 393.

Was never familiar with a cost-plus contract until he came to Washington. 393-394.

Knows of no reason why Packard plant should need a greater capital than the Lincoln Motor Co. 394.

Working capital being supplied by Government. 395.

Ford's profit being \$3,125,000, together with allowance for depreciation, is admitted by Mr. Potter not to be a serious risk. 396.

HENRY K. S. WILLIAMS (June 27, 1918; Book 7).

Residence, White Plains, N. Y. Retired for over six years. Prior to that was a member of the lumber firm of Ichabod T. Williams & Sons, dealing in "native woods, mahogany, and foreign woods." That firm is still very large importer of mahogany. Mr. Williams, however, has no connection with any lumber firms. 397-398.

Became connected with Signal Corps 5th day of February, 1918.

Engaged by Mr. Lockhart. 398.

Thinks mahogany interests formed into an association about that time. 399.

HENRY K. S. WILLIAMS—Continued.

Produces memorandum of consultations with committee of mahogany men. 399.

Continues outlining his early activities with Signal Corps. 402.

Tells what contracts were made. 403.

Speaks of arrangement with British merchants. 404.

Asked for average prices, quotes I. T. Williams & Sons, contract was at \$300 for the firsts and \$220 for the seconds. 406. Continues quoting contracts. 406-407.

States Maj. Mixer drew up specifications for propellers. 410.

Proceeds with statement as to the way in which prices were determined. 412.

Contracted on the basis of \$350 for firsts and \$280 for No. 1 common. 413.

Speaks of Mr. Wycliff as being the most able man he had come across. 419.

Refused to consider a price of \$400 a thousand. 421.

Goes into much detail from page to page relating to price and contract.

Otis Co. will make 13 per cent a thousand on their cost on this mahogany. 431.

Three million one hundred thousand feet minimum comes from Africa. 435.

All manufacturers paid about the same price. 436.

States difficulty of getting boats to bring out this wood. 442.

Seven million five hundred thousand under African mahogany contract. 443.

Walnut production increased through the assistance of the Boy Scouts. 443.

Relates affiliation with Boy Scouts. 444-445.

Twenty-six million seven hundred and three thousand total purchases to date. 446.

Mr. Hughes reads Mr. Ryerson's statement. 447.

Purchasing for all the Allies except the British. 452.

No arrangement by Signal Corps to establish whether or not a fair basis is used. 453.

Questioned as to whether there is not a way of being absolutely sure in respect to the cost of a log to the manufacturer. 454.

Cites why Government should pay more for logs in 1918 than they did in 1917. 456.

Reads from minutes of Aircraft Board pertaining to the letting of mahogany contracts. 457.

Mr. Wycliff, secretary of Mengel Co. was here in consultation on prices. 461.

Does not want to state why Joseph Otis was discharged. 462.

Cites facts in regard to Mr. Wycliff; what led to his appointment and his duties. 463.

Impossible to figure out profit until deliveries are made. 465.

RICHARD F. HOWE (June 27, 1918; Book 7).

Member of Aircraft Board November 14. Prior to that a manufacturer in harvesting machinery. Has not had any experience in aeronautics. 468.

Board was purely advisory and not an executive board. 468.

RICHARD F. HOWE—Continued.

- Was sent to the Pacific coast in January with reference to spruce production. 469.
- Was considerably impressed by Col. Disque. 469.
- Gives personnel of commission named to assist Col. Disque. 470.
- Several members of committee interested in lumber business. 471.
- Cut-up plant seemed advisable. 472.
- Visited Dayton, Detroit, and Buffalo plants. 473.
- States delay at Dayton-Wright was due to getting accessories. 474.
- Had a general knowledge of the form of contracts. 477.
- Visits to factories was before members of Aircraft Board were advised not to hold communication with the manufacturers. 479.
- Aircraft Board, in initiating proposals for contracts, acted upon proposals presented by the members representing the Army and Navy. 481.
- Independent investigations made at times by Aircraft Board. One of these covered the Liberty motor by Engineer Creigh. 482.
- Relied entirely upon the Army as to requirements for wood, metal, engines, and different types of planes. 483. Likewise pertaining to the Navy. 483.
- Mr. Hughes reads from minutes of Aircraft Board covering a forecast of production of United States, 12 engines. 484.
- Did not get program of production from Signal Corps regularly. 487.
- Explains why three civilians, including Mr. Howe, should attempt to secure facts for presentation to the General Staff. 488.
- States Signal Corps was underorganized and recommended a production man. Produces letter. 491.
- Recommendation by Aircraft Board on the acquisition of the General Vehicle Co. 493.
- Discussion with respect to contracts for the building of a railroad in the State of Washington. 494.
- Mr. Hughes reads letter from Mr. Howe to Mr. Coffin. 496.
- Mr. Hughes asks if it was understood that railroad development added greatly to the value of timberlands. 498.
- Reads resolution of board in re the building of railroad. 499.
- Discusses cross-license matter. 501.
- Had no opportunity to take part in the formulating of cost-plus contracts. 503.
- Lieut. Col. GEORGE W. MIXTER (June 27, 1918; Book 7).
- Connected with the Army since July 10, 1917. Received his commission about August 15. Formerly vice president of Deere & Co., manufacturers of agricultural machinery. Engaged in that work about 20 years. 505.
- Was placed in charge of the inspection department of the Signal Corps. 506.
- Inspection related purely to purchases. 507.
- Took position as production manager about May 1. 508.

Lieut. Col. GEORGE W. MIXTER—Continued.

Cites distinction between inspection department and the department of district offices. 509.

Visited Dayton-Wright factory, producing the De Haviland planes. 510.

Found delay primarily due to lack of engineering decision. 510.

Under impression that after January 1, through efforts of production engineering department, created about that time, engineering decisions were reached as rapidly as possible. 511.

Responsibility for a lack of engineering decision before January 1 laid to Col. Deeds as chief of division. 513.

Gives facts which led him to think delay at Dayton was due to lack of engineering decision. 514.

Took three months to get certain difficulties in production cleaned up. 515.

Six hundred changes necessary in the production of J-1 training plane. 515, 516.

Trouble at Dayton due to defects in drawings furnished by Standard Aero Co. 516.

First training plane delivered by Dayton-Wright Co. approximately October 1. 518.

No further production, however, between October 6 and 25, due to change in landing gear and gasoline supply. 518. Also failure to get metal parts.

National Cash Register Co. slowed up on production of parts to get out a new cash register. 519.

Chart produced showing very slow progress in the completion of planes by Dayton-Wright Co. 520.

These planes not satisfactory in the field. 521.

Recent order withdrawing about 1,600 Standard planes. 521.

Last above represents an investment by the Government of approximately \$10,000,000. 521.

Thinks withdrawal was due to number numerous accidents with this plane. 521. Trouble with Hall-Scott engine. 521.

Nature of engine trouble was such that it would mean a complete tearing down. 522.

Gives his opinion as to nature of engine trouble. 522.

Four hundred planes made by Dayton-Wright and those made by Fisher also subject to withdrawal for same reason. 523.

No indications of disloyalty at Dayton plant. 527.

Gives reasons for delay in the training plane at Curtiss plant. 528.

Delay in fighting planes at Curtiss plant due to failure to furnish anything definite to produce. 528.

Gives course of production of Bristol Fighter. 529.

Matter taken out of the hands of the Government at one time and put into the hands of Curtiss people. 532.

No cooperation between Green-Butts combination and Maj. Sheppler. 533.

Many branches of Government operating directly on the plant. 534.

States it is pretty nearly true to say that the job was undefined on the Bristol Fighter from November 1 up to date. 537.

Lieut. Col. GEORGE W. MIXTER—Continued.

- Serious question as to whether 50 Bristol Fighters practically complete at this time will not have to be scrapped. 537.
- Gives his opinion of Mr. Butts. 539. Also of morale of working force.
- Large number of employees working only part time. 540.
- Describes two cases of sabotage. 541.
- Trouble with Bristol Fighter the last month is whether it is a flying machine or not. 542.
- Explains how neglect can be attributed to the Curtiss Co. itself. 545.
- Fisher plant best run plant. 549.
- Very bad organization at Standard plant. 553.
- Main trouble is Mr. Mengel. 553.
- Goes into ownership of Standard Co. 554.
- Contract let to this company amounts to over \$9,000,000. 555.
- States who passes on the letting of contracts. 556.
- Selection of manufacturer is left practically to the production manager, who is Mr. Kellogg. 559.
- Price is fixed by Mr. Fletcher. 559.
- Mengel's salary over \$60,000. 562.
- Speaks of contract recently given. 562, 563.
- Two hundred and fifty thousand dollars fixed price on four Caproni planes. 564.
- Signal Corps has no engineering organization to stand the strain. 565.
- Gives engineering organization of Signal Corps and says it is not efficient because it is disorganized. 566.
- Very serious and fatal lack. 568.
- Worse shape to-day (production engineering) than on March 1. 570.
- Opinion is shared by 99 out of 100 that under the leadership of Mr. Kellogg organization will not be efficient. 580.
- Refers to elements of destruction existing. 580.
- Asked to state how it is that difficulties have been overcome in the production of engines and not in planes. 582.
- Thinks decision could have been reached with regard to gun chutes, shell chutes, etc. 583.
- Gen. Foulois did not send specific list of requirements. 584.
- Goes into "training-plane list." 589.
- Col. CLINTON GOODLOE EDGAR (June 28, 1918; Book 7).
- Produces statement showing number of training planes shipped week by week. 592.
- JAMES FARLEY McCLELLAND (June 28, 1918; Book 7).
- A mining engineer. Received training at Columbia and also taught at Columbia in mining branch. Was editor in chief of specification section of engineering department of equipment division. Covered both planes and engines. 595, 596.
- Had charge of material specifications, etc. 597.
- Describes condition of department as "fine." 598.
- Does not think conditions were as bad prior to reorganization under Overman bill as they are now. 604.
- Describes Col. Hall as "a star performer." 606.

JAMES FARLEY McCLELLAND—Continued.

Engineering department not interested in the planes which were then being produced. 610.

Not adequate engineering attention given to development of planes. 612.

Delay of two weeks in getting reply to a request for a decision. 615.

Claim by Dayton-Wright that they did not get certain information "is a quibble." 621.

Man named Sergt. Klemin one of the parties relied on to make decisions. 623.

Engineering decisions would have caused more rapid progress. 625.

Delays due to lack of knowledge. 626.

Overheard discussion as to what instruments should go on a plane. 629.

Mr. Hughes questions about a request for synchronizing device in November which was not billed February 14. 633.

Maj. Barr, of Ordnance Department, appeared with a bombing gear in January. 640.

Gives understanding as to why Col. Hall was put in charge. 642.

Goes into reasons for delay in production of Bristol Fighter. 642.

Gives reason why the taking away of De Havilands from his section would demoralize his section. 650.

JAMES S. MACGREGOR (June 28, 1918; Book 7).

Residence, Pelham Manor, N. Y. With Signal Corps since September 1. In inspection section. Had occasion to observe production. 654.

States function of his department. 654.

States what he thinks contributed to the delay of the De Haviland 4's. 655. Continues to page 675.

Knows Sergt. Klemin to be a very young man. 676.

Gives his idea as to why Standard J planes were withdrawn. 682.

Speaks of efforts made to get material for plants. 684.

Makes vigorous charge of wasted time. 687.

Cites difficulty in furnishing stress sheets. 689.

Is questioned further by Mr. Hughes as to training and experience. 690.

Curtiss plant 50 per cent off in its chemical analysis. 691.

Great many spurious specifications. 695.

Maj. A. C. DOWNEY (June 28, 1918; Book 7).

Major in Signal Corps. Previous to that in the office of the Auditor of the War Department. Prior to that in the office of the Comptroller of the Treasury. Assigned to Aircraft Production Board as contracting officer and disbursing officer. 697, 698.

Explains duties. 698.

States what he actually done with respect to contracts that have been let. 699.

Explains variation in terms of contract. 701.

Gives names of those who conducted negotiations. 702.

Maj. A. C. DOWNEY—Continued.

Explains how bogey cost of \$6,087 on Liberty motor was reached. 703.

Tells what led to reduction of bogey cost to \$5,000, saying in part that it was ridiculously high. 704.

Estimated cost of Liberty motor \$3,200. 705.

Bogey price includes part of salaries at Packard plant. 706.

Cites bogey cost by other plants. 707.

Bogey cost \$630 too high at Fisher Body Co. 708.

Salaries at Fisher Body Co. covered in bogey price. 708.

Mr. Mengal's efforts in the way of financing the company. 709.

States who developed the cost-plus contract. 709.

No provision of penalties covering delivery. 711.

Speaks of Fowler Co. on Pacific coast. 712.

States why provision for liquidated damages was not in large contracts. 713.

Inducement to manufacturers in saving which could be made on bogey cost. 714.

Speaks of "a sharing of the excess cost." 714.

Gives names of those who made negotiations. 715.

States why contract was recently let to Standard Co. 716.

"Fought agreement" of cross license. 717.

States substance of cross-license agreement. 718.

Continues this in much detail up to page 734.

ALEXANDER MCKINNEY, JR. (Washington, D. C., July 1, 1918; Book 8).

Special agent for Office of Naval Intelligence. 1.

Been on duty there one year. 1.

Has investigated Aeromarine Plane & Motor Co. 1.

Contract given to Aeromarine Plane & Motor Co. by Navy Department signed October 30, 1917. 2.

Item 1 is for 200 seaplanes at \$6,750 each. 2.

Item 2 is for 200 power plants for same, without engines, starting machines, and thermometers to be furnished by Government, each at \$1,000.

Item 4 is for 20 spare radiators at \$85 each. 2.

Item 5 is for 20 gasoline tanks at \$80 each. 2.

Item 6 is for 40 groups of seaplane parts at \$7,900 each. 2.

The contract in total amounted to \$1,869,300. 2.

Testimony of this witness relates solely to the Navy.

FRANK G. DIFFIN (Washington, D. C., July 1, 1918; Book 8).

Assistant to A. A. Landon, chief of production. 23.

In charge of entire production of aircraft. 23.

Principal duty of witness is to determine the matter in regard to crank-shaft failures on engines; to eliminate failures and bring about a greater percentage of acceptable crank shafts for use in the Liberty engines. 27.

Previous to this had charge of the standardization work. 28.

Attended meeting in London early in February as representative of United States, which had to do with the standardization of aircraft specifications among the Allies. 28, 29.

No American planes in France when he was across in February and March. 31.

FRANK G. DIFFIN—Continued.

Reported it was absolutely imperative that we supply the Allies, primarily England, with engines. 31.

Week before he left, England shipped 762 machines to the front. 31.

On or about February 25, on his recommendation, England placed order with United States for 3,000 Liberty engines, calling for 1,300 to be delivered in July and increasing monthly thereafter. 31.

Liberty motors had not begun to arrive in England when he left. Only had three sample engines. 33.

We had 56 second-rate machines at front about March 18 obtained from France. 34.

France and England at that time would not deliver planes to us unless we were occupying a big percentage of the front, because the destruction at that time was enormous. 34.

Destruction very close to 100 per cent a month. 35.

Q. "Did you ascertain the causes for the nondelivery of planes by the French Government in accordance with their contract?"—A. "I could not answer that definitely. My impression was that we had failed to make good on our own contracts with the French Government."

Q. "In what respect?"—A. "Raw materials." 36.

French specifications impossible of fulfillment. 36.

Material being furnished French Government now under J. G. White contract. 37.

France practically scraped clean of raw materials. Practically impossible to get keg of nails over there. 38.

French did not plan abandoning their own requirements in our favor. 38.

England's total minimum requirements for spruce from February 1, 1918, to February 1, 1919, is 120,000,000 feet. 40.

On March 14 England had less than a 30 days' supply of spruce on hand and unless instant steps were taken by United States to supply England with spruce it would mean that production must stop.

Upon return to this country secured a million feet for immediate shipment to England; a percentage of spruce which was going to our own factories was largely diverted to England. Allies were getting 50 per cent of spruce and we were getting 50 per cent. 41.

Germany is keeping up with the airplane production. 41.

Germany uses other kinds of wood. 41.

We now have metal under development and will shortly go into the production of metal to take the place of spruce in the spars and ribs. 42.

"If there is any one thing that has delayed production, it has been the military supervision of it, and I think we have succeeded in spite of the military supervision instead of with it." 44.

Too much red tape. 45.

Great number of men with great deal of ability hedged in by authority and rules and regulations. 45. 46.

FRANK G. DIFFIN—Continued.

His contention we should always produce airplanes in quantity irrespective of quality. 48.

No reason why combat planes could not have been put in production during year 1917. 49.

Dayton-Wright plant produced a satisfactory plane at end of October, 1917.

Could have put that into production in December without unnecessary supervision. 54.

From his observation on both sides, a quick decision as to equipment and the putting of those planes into production would have resulted in serviceable planes which could have been used satisfactorily on the front as early as last April. 55.

Q. "From your observation abroad, were there engines which could have been put into production in the United States, pending the development of the Liberty engine?"—

A. "Yes, sir." 57.

During the winter months conditions were almost absolutely prohibitive in this country as to production and also the supply of manufactured products, due to embargoes of every possible kind. Had to meet them on every hand to get priorities over what we termed negligible stuff. 60.

Condition as to priorities actually affected the production of either planes or engines. 61.

Pretty well mixed up during the winter months as to what constituted real priority. 61.

They had so many priority orders they did not stop to read them. 61.

The reason for such a situation existing was due to the railroads being taken over by the Government, our War Industries Board getting into operation, and all the various boards here starting to function in Washington, some of them to varying degrees of efficiency. 62.

Holds no brief for the Dayton-Wright Co., although thinks they are an admirable manufacturing organization. 63.

Something like 800 changes have been made on Bristol machines since they went into production. The majority of them would interfere with production. 65.

Does not regard Bristol as being developed as a practical serviceable machine. 65.

They are trying to put a 400-horsepower motor into a machine originally designed for a 180-horsepower engine. 65.

If it is true that a satisfactory De Haviland 4 had actually been built as a sample machine at the Dayton-Wright plant by the end of October, they would have been in production within 60 days after that. 65, 66.

The only practicable Handley-Paige built to-day is the Handley-Paige we are at present starting to build in this country. 66.

Was not practicable last year to put Handley-Paige into production in this country. 66.

FRANK G. DIFFIN—Continued.

Does not believe in Sunbeam engine. England uses them as a last resort now. 67.

Sunbeam engine, as designed in England, is not a commercial engine, to our methods of production. 67.

Came to Washington a little over a year ago from Meadville, Pa. Started building aircraft parts in Pennsylvania, which he sold out before he came down here. 67.

Twenty-one or twenty-two years' experience as a manufacturer and engineer.

Reason for not letting contracts on a fixed-price basis was due to fact that manufacturers in this country did not know what they were required to produce. In many cases entire heats of steel have been lost, due to the fact that we had to reject them as not being up to aeronautical requirements. 68.

Would not, as a manufacturer, have undertaken the manufacture of the Liberty motor on a fixed-price basis. 68.

All depends on honesty of individuals to contract as to what constituted a reasonable or unreasonable profit. Ten per cent plus cost can be worked so it would be cost plus 100, if you want to work it that way. 69.

If the entire cost is borne by the Government and all financial obligations—the Government advanced capital on it—the percentage of profit ought to be a fixed one. 71.

Synchronizer had not been adopted July 1. 75.

Bomb-dropping devices were in use. 75.

Q. (By Attorney General.) "What would be your judgment in a general way as to whether, in the matter of production, say, which was started on July 1 of last year, it was desirable to impede production by adopting these more important changes as have come along, or whether it would have been better, possibly, to have proceeded with the construction in accordance with the plans in existence July 1 and to put into subsequent planes the improvements which were developed. Which, in your judgment, would have been the better policy?"—A. "My personal judgment is that the better policy would have been to put into production a given type or model or design of equipment and any improvements made thereon be put into subsequent machines. That is simply good commercial practice." 75, 76.

Thinks Liberty motor best engine built to-day. 76.

Can not ordinarily use it for training planes; it is too big a motor. 76.

The 12 is the only one in production to-day. 77.

The purpose was not the development of an American engine, but was the development of an engine that could be made in America. 78.

Cylinder is essentially a copy of the Mercedes cylinder. 78.

Got into production on Liberty engine quicker than they could have on the foreign engines. 79.

Most successful battleplane used abroad was probably the Supwroth. 79.

FRANK G. DIFFIN—Continued.

Could have put that plane into production in America. 79.

Q. "What was the best foreign engine on July 1, 1917, used on the battle front at that time that, in your judgment, could have been produced in this country?"—A. "Two engines there, each in a class by itself—the Rolls-Royce and the Hispano-Suiza." 79, 80a.

In one of the Rolls-Royce factories in England it took 40,000 operators to produce 46 engines in the last week there. 80.

Handwork feature enters into the production of any foreign engine. 81.

Up until the time of this war England had relatively few automatic machines in the entire country, where we have thousands and thousands of them here. All of our work is done on automatics. England did not have them. They did not exist. Their work is almost entirely handwork; certainly 95 per cent of it. That is the reason for our production here that they do not get there, and never will, until they adopt American methods of manufacture. Their labor guilds and labor organizations will not let that kind of machinery go into their plants. 82, 81.

Machine-made parts are interchangeable and hand-made parts are not. 84.

Pretty well along in the fall before synchronizers were really commercially practicable. 86.

Planes we are now sending over all contain synchronizers. 86.

The Handley-Paige in the Curtiss is designed for both the Rolls-Royce and the Liberty. 89.

Maj. FRANK E. SMITH (Washington, D. C., July 1, 1918; Book 8).

In charge of the field forces of the finance division of Bureau of Aircraft Production and also have charge of the approvals and appraisals department of the finance division. 91.

Been engaged in this work since early last October, 1917. 91.

Has had long experience in manufacturing, particularly in automobiles. 91.

Been connected with several companies and also been receiver for several motor companies at different times. 91.

Some time prior to his going into Signal Corps was in Ordnance, finding producers of munitions. 92.

Has received estimate on cost of manufacturing Liberty motor. 92.

Costs are surveys made by our men in the field in the Detroit district. 93.

Had a complete survey of the Packard Co. 93.

Survey shows, first, that the cost is divided between material, \$1,300; labor, \$500; and the overhead expense of 200 per cent of the productive labor, amounting to \$1,000; or a total shop cost of \$2,800 per motor. Added to this is the miscellaneous cost of shop tools and equipment, amounting to \$125 per motor, and various contingencies estimated, including the probable cost of specification changes, amounting to \$275 per motor, or a total estimated miscellaneous cost of \$400 per motor, making a grand total cost per motor, in accordance

Maj. FRANK E. SMITH—Continued.

with this survey, of \$3,200 each. The fixed profit under the contract is \$625 per motor, and the contractor's share of the saving effected between the cost of \$3,200 per motor and the bogy cost of \$5,000 per motor, or 25 per cent on \$1,800 per motor, is \$450 per motor, thus making the total profit to the contractor, based on the cost of \$3,200 per motor, \$1,075, or 33.6 per cent profit on the cost. 93, 94.

This would make total profit on 5,000 motors ordered of the Packard Co. of over \$5,000,000. 94.

Q. "Have you any reason to believe the cost is greater or less in any of the other plants making the Liberty motors?"—

A. "The Packard Co. was really the first company to get into production on the Liberty motor, and we will have in the very near future costs at all the plants, and my opinion is that the cost will be under this figure. I think this is a liberal figure, and it is predicated on a small production." 94, 95.

This cost included an analysis of the motor, taking it part by part, and figuring out the total productive cost, material and labor, and overhead expense. 95.

Figure based upon a small production. 95.

Always at the start of a new job a considerable time is taken in experimentation and getting under way, and all that experimentation cost in preparing and getting ready for this job is included in the estimated production, and it makes the earlier cost quite high. 95.

It takes the cost of experimentation and spreads it over all the motors manufactured up to that date. 95.

Q. "Have you any rough estimate of the amount to which you think the cost per motor will finally come when it is spread over the entire production of 5,000 motors?"—A. "My own judgment in the matter has been that the cost would be around or a little less than \$3,000 per motor." 96.

Q. "What amount would that give for overhead expenses in the Packard plant on the entire 5,000 engines?" 98. A. "It would give about \$5,000,000." 98.

Q. "What would be embraced in the overhead cost thus estimated?" 98. A. "It would take in all of the nonproductive expenses, all of the operation of the Packard plant, including administration, shop foremen, superintendence, power, heat, light, and everything that is not productive in the manufacture of those motors." 98.

District manager of finance in the Detroit district, Capt. Holmes, submitted estimate. 100.

Packard Co., has not seen it to his knowledge. 100.

Does not know whether it accords with Packard estimates, as he has no knowledge of what they figured. 100.

Statement of cost referred to was marked "Frank E. Smith, Exhibit 1, July 1, 1918." 101.

Has no estimates made at Lincoln Motor Co. 101.

His opinion that cost should be less at Lincoln Motor Co. than at Packard Co. 102.

Thinks it also would be much less in the case of the Ford Co. 102.

Maj. FRANK E. SMITH—Continued.

Has made survey of cost of La Rhone 9-cylinder rotary motor. 103.

A recent survey made at the plant of the Union Switch & Signal Co. 104.

La Rhone motor contract was let with the Union Switch & Signal Co. for 2,500 motors on the basis of a bogy of \$5,500 per motor.

A cost survey made at this plant came to him under date of June 21. 104.

This was a cost-plus contract. 104.

"The cost survey showed that the direct cost of material was \$432.07; direct labor, \$379.67; the overhead expense 200 per cent of the productive labor, amounting to \$759.34, or a total shop cost of \$1,571.08, added to which is the miscellaneous cost, consisting of special tools and equipment amounting to \$160 per motor, a liberal estimate of depreciation on special buildings amounting to \$120 per motor, making a total estimated miscellaneous cost per motor of \$180, or a grand total cost per motor, as per this survey, of \$1,761.08. The profit for this motor, fixed under the contract, was \$687.58 per motor, in addition to which the contractor is entitled to 25 per cent of the saving effected between the bogy price of \$5,500 and the cost per motor of \$1,751.08, or 25 per cent of a total of \$3,748.92, amounting to \$937.23, making a total estimated profit under this survey of \$1,624.73 per motor, or 92.8 per cent profit on the cost." 105.

Paper containing summary of these figures marked "Frank E. Smith Exhibit No. 2, July 1, 1918."

Union Switch & Signal Co. only concern in this country making the La Rhone engine. 105.

The survey of the La Rhone cost is under date of June 21, 1918, and 46 motors had been completed up to that time. 106.

The cost submitted is very liberal, and when company gets into production it should be greatly reduced. 106.

Have had a good deal to do latterly with the De Haviland 4 plane. 107.

Dayton-Wright Airplane Co., Fisher Body Corporation, and the Standard Airplane Co. were given contracts for construction of this plane on the basis of a bogy price of \$7,000. 107

Had a committee appointed to go to Dayton and take all the available parts and by a comparison between those parts and parts of other airplanes arrive at some reasonable figure in the way of determining the cost, which was completed in February. 108.

Figures submitted are on a basis of 15 of these planes per day.

The total cost, including direct labor, material, and overhead, with a profit of 15 per cent, would not exceed \$3,525. 109.

Does not include overhead as it was actually being incurred by the Dayton-Wright Co. because they were operating very inefficiently at that time; it included a smaller percentage of overhead, such as was thought would be fair. They had a large nonproductive force and a large number of clerks, foremen, and all that sort of overhead running on without any production in the factory. 109.

Maj. FRANK E. SMITH—Continued.

Was not a necessary force, but expense of it included in the cost the Government was paying. 110.

Condition in all the three large airplane factories has been anything but efficient up to date—the Curtiss, the Standard, and the Dayton-Wright. Last survey made showed the Dayton-Wright Co. had twice as many, in dollars and cents, of non-producers as the Fisher Body Corporation. 110.

Committee which investigated costs was composed of a man named Bourne, of the accounts section; an engineer from the approvals section named Randolph; a representative of the production department named Kehoe; an outside industrial engineer, who had made a specialty of airplane investigation, named Mead.

Mr. Henry E. Mead has been quite a number of months with Lybrant, Ross Bros. & Montgomery, investigating the cost in Canadian aircraft corporations and other plants, and was well qualified for such an investigation as this. 111, 112.

He is what is called an industrial financial engineer. 112.

Cost of De Haviland plane as estimated by Dayton-Wright Co. prior to fixing of bogy, \$6,900. 112.

Memorandum by Maj. Smith, setting forth in detail what should constitute cost of De Haviland 4 airplanes minus motor. 114, 115, 116.

Overhead in case of planes figured at 100 per cent, and 200 per cent in the case of motors. 116.

Dayton-Wright factory is more an assembly proposition. 117.

Q. "Do you know whether there is any other plant owned by the Dayton-Wright Co. as a separate corporation which makes anything?"—A. "Yes, sir; they have a plant in Miamisburg and they have the Dayton Metal Products in Dayton, and I do not know what others. I have those in mind." 118.

Dayton Metal Products makes principally metal fittings for Dayton-Wright Co. 118.

Greater part of scrap losses confined to lumber. The percentage saved of lumber is very small. In some cases it has not exceeded 3 per cent of the cost of the lumber that came into the plant. 119.

Separate account kept of scrapped material at each plant and the amounts, if any, of the saving effected. 119.

Loss at practically all the airplane factories is mainly due to the fact that the spruce delivered is not up to specifications. People who are producing and shipping spruce do not seem to have the same idea of what is needed as the people who are using it. In other words, the inspection department at both ends of the line did not seem to do that work exactly the same. 121.

Maj. DEAN LANGMUIR (Washington, D. C., July 1, 1918; Book 8).

"My problem was organization almost entirely. Dealing with actual figures was left with the plant accountants, and had to be. In other words, I had a terrible problem in building up a force of 400 men out of nothing at all, getting the organization together and prescribing its functions, and things of that kind,

Maj. DEAN LANGMUIR—Continued.

so I am not very familiar with those figures." Witness was asked whether all the provisions with respect to depreciation in the various plane contracts were substantially the same. 124.

Lieut. JOHN EYRE SLOAN (Washington, D. C., July 1, 1918; Book 8).

For four or five years was building airplanes and gas engines and just prior to entering the Army was with the Guaranty Trust Co., in the trust department. 125.

Was owner and operator of Sloan Manufacturing Co., Plainfield, N. J., which was organized in 1915. 125.

Made biplanes for exhibition purposes and some military-type machines. 126.

The Standard Co. was successor to his company. 126.

Sold the Sloan Co. to Mizui & Co. 127.

They first formed the Standard Aero Corporation of New York, and then the Standard Aircraft Co., but whether they dissolved the Sloan Manufacturing or not unable to state. 127.

When war broke out was given a position in the equipment division, Signal Corps. 127.

Was assigned to the specifications section. 127.

Wrote specifications for the materials, etc., for going into airplanes, motors, and other equipment.

Carl Zimmerschied was head of section. 128.

Later transferred to approvals section, Finance Department. 128.

Had supervision of all work Maj. Smith did not handle personally. 128.

Acquainted with original specifications made for Liberty motor. 124.

Q. "Will you state how the various accessories were arrived at?"—A. "Why, I was writing the specifications, I guess it was about the end of October, probably, and I was told to draw specifications for various parts and told to put in on the bottom of the specifications that inasmuch as certain parts had been used in the experimental motor and found satisfactory they would be used on the first 20,000 motors." 124.

At the time he was told to draw up specifications a number of papers were handed to him as authority for doing that by Maj. Gray. 124.

Parts referred to were the ball bearings, gaskets, carbureter, high and low tension cables, valves, spark plugs, spark plug terminals, battery ignition apparatus. 130.

Did not put memorandum on specifications, as they were not completed when he left specifications section. 130.

Recognized Borglum Exhibit 23-A as a memorandum prepared for the signature of the chief of the equipment division. 131.

Col. Deeds refused to sign it; Delco ignition was there. 131.

Memorandum was then turned over to Lieut. Emmons to obtain his opinion as to whether these parts should be used on the first quantity of motors. 131, 132.

Attention was called to Borglum Exhibit 23-C relative to changing to number of motors orders from 15,000 to 20,000. 132.

Lieut. JOHN EYRE SLOAN—Continued.

Had alteration on when given to him. 132.

Did not make statement, that he can remember, that Col. Deeds had signed that paper. 132.

Borglum Exhibit 23-E was recognized as being one of the papers handed him. 133.

Duplicate of Borglum Exhibit 23-A with numerals opposite the various accessories, apparently indicating the order in which they were to be placed, was identified. 133.

Does not know significance of the arrangement. 133.

Borglum Exhibit 23-E was also with papers handed him with regard to specifications. 134.

This exhibit was a suggestion to advise the motor manufacturers sent to Lieut. Emmons by Maj. Gray.

Q. "Do you know whether Maj. Gray got any instructions with respect to that?"—A. "Well, there was another sheet with these papers." 134.

This sheet was identified as Borglum Exhibit 23-D, which was a memorandum from Lieut. Harvey to Lieut. Emmons. 134.

Lieut. Harvey was secretary to Col. Deeds. 135.

Maj. Gray told him Col. Deeds had refused to sign what is known as Borglum Exhibit 23-C. 136.

Lieut. Harvey did no other work except as secretary to Col. Deeds. 136.

Q. "Note the arrangements of the dates, or the order of dates; that under date of October 6 we had a memorandum for Col. Waldron; then, under date of October 7, a memorandum for specifications section, with the number changed from 15,000 to 20,000, drawn apparently for the signature of colonel. Signal Corps. Then, under date of October 8, a memorandum as follows: 'What do you think of the attached? Is it O. K.?' '(Signed) Harvey,' apparently addressed to Maj. Gray, with the words 'L. K. Emmons'; and last, under date of October 13, that is five days later than the one of October 8, the statement: 'Would it not be well to advise manufacturers of the Liberty motor of the decision to use only certain accessories on the first 20,000? Specifications will be prepared or revised, as the case may be, within the next few days; but advance information to avoid mistakes in the placing of orders seems desirable.' * * *." 137.

Memorandum of October 6 was prepared for Col. Waldron by Maj. Gray. 138.

Col. Waldron had just ceased to be chief of equipment division. 138.

Had no information as to what consultations preceded the suggestions that particular accessories should be put in the specification. 141.

Contract offered Willys-Overland for supplying the Curtiss Co. with OX-t engines called for \$1,950 a motor with a bonus of \$150 a motor. 141.

Later changed to two delivery dates, one at \$1,950 and one at \$2,100. 142.

Lieut. JOHN EYRE SLOAN—Continued.

Changed because contracting officers refused to sign it as first drawn, as he did not think it was proper to pay a bonus for making the delivery that they had agreed to make. 142.

Resolution of Aircraft Board relative to matter. 143.

Deliveries not made on schedule, and Aircraft Board made recommendation to Chief Signal Officer that \$150 bonus be still paid to insure Government against destruction against one source of supply. 146.

To do this would cost \$750,000, while duplicate set of tools would cost about \$40,000 or \$50,000. 147.

Aircraft Board adopted resolution recommending that \$2,500,000 be advanced to Willys-Overland Co. on account of this contract. 151.

Understands no payment of \$750,000 was ever made. 154.

WILLIAM HENRY SCHOTT (Washington, D. C., July 1, 1918; Book 8).

Engineer and contractor. 156.

At present time engaged at Lewis Spring & Axle Co., Jackson, Mich. 156.

A year ago came to Washington, called at office of Board to ascertain requirements to qualify on contract for either engines or planes. 156.

Got one of first sets of drawings on Liberty 8-cylinder engine. 157.

Bid on 1,525 at either \$5,000 or \$5,500 or would meet any other price fixed as being fair. 158.

Price fixed on delivering all of them before July 1 of this year. 159.

No contract awarded. Could never find out reason. 159.

Had built 6,000 or 7,000 engines at Chelsea plant and had every facility for building 8-cylinder engine. 161.

Offered to build any kind of airplane on either a fixed price or cost-plus basis. Could start deliveries in 90 days and give them five a day. 163.

Mr. Lewis very familiar with airplanes. 163.

Never got contract for planes. 164.

Was given part of Handley-Paige program in September or October, but was not given go ahead until 8th day of May. 164.

Contract was not written up for above until April 13, 1918. 165.

Contract was for wings, fuselage, and all that sort of thing. 167.

In excellent shape to produce DeHavilands. Now making a very large number of parts for DeHaviland as a subcontractor. 172.

Can take DeHaviland or any of machines and in 90 days' time give them five a day. 173.

Could have done that during the winter. 173.

Twenty-four or 25 Government inspectors at his plant. Over-inspected. 180.

Government has not made any advances; furnishing own capital. 180.

Maj. HIRAM STANTON BROWN (Washington, D. C., July 1, 1918; Book 8).

Commissioned October 31, 1917. 185.

Formerly in public utility business for over 13 years, last 7 years as a member of firm of H. D. Walbridge & Co., 4 Wall Street, New York City. 185.

Was associated with Lieut. Col. Wolff as an employee in same firm.

Sent for by Wolff and accepted commission. 186.

Was connected with management and organization of appropriations section of finance department. 186.

Promoted to executive officer of the finance department. 187.

Asked to explain methods he has at present time with respect to vouchering claims of contracts for overhead expenses, particularly with regard to the claims for salaries. 187.

Salaries of officials of Dayton-Wright plant allowed from September to either March or April through an oversight. 191, 193.

Got Capt. Frank E. Haag to come in and displace Maj. Langmuir, wholly from inefficiency. 194.

Familiar from a financial standpoint of conditions at Standard plant. 196.

Signal Corps has right, under act of October 6, 1917, to purchase materials used in aircraft manufacture and sell same at not less than cost to airplane manufacturers. 197.

Sold Standard Aircraft Corporation \$800,000 worth of material and Mr. Mingle stated he was surprised when he was called upon six or eight weeks ago to reimburse Government for large amount advanced. 197.

Received frequent requests from commercial vendors to expedite Standard Aircraft Corporation's payments to them. 198.

Credit of this concern was very poor. 198.

Explained to Mr. Mingle Government had 53 representatives in his plant checking up vouchers, doing accounting work for him, when he ought to have an organization doing it himself. 200.

Had great deal of trouble with Mr. Mingle, of Standard Aircraft Corporation, from a financial standpoint. 201.

Mr. Mingle has referred to the fact repeatedly that the Mitzui are back of him. 203.

Mr. Mingle's company not successful in getting together an efficient accounting organization. 203.

Submits vouchers to them with wrong extensions, with high prices. Did not catch them in first instance. 205.

Dayton-Wright Co. insisted on Government paying for welfare work, baseball uniforms and tennis courts, and expenditures of that character, shotguns and shells for guards to practice with, etc. 211.

No such thing as account for commitments abroad for the purchase of planes and engines. 215.

Cabled abroad asking permission to send Maj. Wolff and Maj. Langmuir to straighten out finances. 217.

Has total amount of commitments fairly well ascertained now. 214.

Maj. HIRAM STANTON BROWN—Continued.

- Production Department of Bureau of Aircraft Production should be able to inform committee relating to the performance and nonperformance of contract. 225.
- French Government only delivered 250 planes out of several thousand, due to our failure to supply raw material. 226.
- JOHN D. RYAN (Washington, D. C., July 2, 1918; Book 8).
Took charge of Bureau of Aircraft Production morning of 26th of April. 228.
- Made Director of Bureau of Aircraft Production by order of President, under so-called Overman Act, and order was issued on May 20. 229.
- Explains conditions with reference to organization at time he took charge. 224, 225.
- States Mr. Potter's duties. 231.
- Mr. Landon has been made chief of production division. 231.
- Mr. Landon was formerly vice president of American Radiator Co., being in general charge of production. 233.
- Mr. Kellogg in charge of production engineering. 235.
- Have just selected Mr. Hunt, formerly chief engineer of the Packard Co., to be in charge of the Liberty engineering. 237.
- Whole question of large supply of airplane wood seemed to hinge upon building a railroad into the Clallam County spruce tract on Olympic Peninsula in Washington. 240.
- Col. Disque made contract with Siem, Carey—H. S. Kerbaugh (Inc.), to get out a maximum of 300,000,000 feet. 241.
- Corporation was formed to take over this particular business. 242.
- Col. Disque was contracting officer of Signal Corps on Pacific coast. 244.
- Approved this contract without reference to Washington. 244.
- Stated he was director of Chicago, Milwaukee & St. Paul Railway Co. and member of executive committee, and could have no part in negotiations. 248.
- Mr. Stettinus negotiated with railroad and was unable to get them to build. 249.
- Did not think Government properly safeguarded with spruce contract. 251.
- Provision in contract that Government would increase price paid to these contractors if prices generally of lumber products in Northwest increased during period that they were in production. 253.
- Government had no control over price contractor might pay for stumpage and he could have that included in his cost if he saw fit to take advantage of clause in contract, providing that he could ask for a cost-plus basis if he was losing money on contract. 254.
- No limitation of profit in this contract. 255.
- Agreed contractor should have 7 per cent in any event. 255, 256.
- If contractor would do certain things, agreed to waive right to fix their profits. 257.
- Estimated production of spruce to be obtained under this contract was 300,000,000 feet. 261.
- Contractors financed by Government. Needed \$6,000,000. 262.

JOHN D. RYAN—Continued.

More favorable a contract is to Government, more difficult it is to get advances from War Credits Board. 264.

Feels contractor is taking a great deal of risk and his chance for profit is practically limited to 7 per cent. 265.

Considering the use of substitute woods. 266.

Little trees in Germany make airplane material because they have been planted carefully and grown carefully. 268.

Germany much better provided than any of Allies in matter of woods. 268.

Thinks Carey-Kerbaugh will have to build 65 or 75 miles of logging railroad in addition to one to be built for Government. 269.

That will be their own railroad. Will be paid for as part of cost by Government. 269.

He will be able to hold the railroad, unless the Government wants to fix the profit, limit his profit to 15 per cent. 269.

A number of owners control the acreage of timber in that section, but the great bulk of area is controlled by three or four large concerns. 284.

Q. "How will the contractor and the owners of the timberland be left when this contract operation is concluded? You have said that the contractor would have the railroad, would have the mill, assuming, of course, that the Government had not taken it over, and the timber people would have a better outlet to market?"—A. "But it all depends on what kind of a trade we make with the owners, or what we do under our authority to commandeer the stumpage. * * *." 286.

Does not think Government has got a right to make any part of the profit on something that it does not need. 287.

Whole country will be opened up through this operation. 288.

Does not think contractors had any advance information as to plan of Government to open up this tract. 288.

As far as he knows, there has been no syndicate or organization taking advantage of situation. 289.

Liberty engine production last month was about 1,200. 290.

In negotiation with a man who is best fitted man in world to take particular charge of inspection. 291.

Any interest paid by contract or any advance from the War Credits Board would be considered as a part of his cost. 291.

Maj. HIRAM S. BROWN (Washington, D. C., July 2, 1918; Book 8). Wyllys-Overland Co. have delivered to date 4,072 motors; 2,400 have been paid for at \$2,100. 294.

Premium of \$150 per motor paid to them in March on 700 motors. 301.

When Aircraft Board determined that cost-plus contracts were desirable, it was realized immediately that the Government would need a corps of accountants to administer them, and determined to employ firm of Lybrant, Ross Bros. & Montgomery. 303.

It started on an original authorization of around \$10,000, and on May 15 volume of expenditures had exceeded over \$30,000. 303.

Maj. HIRAM S. BROWN—Continued.

- Col. Thompson, first chief of finance department, created Government organization to displace Lybrant organization. 304.
- Called to his aid some members of his own firm, of whom Maj. Langmuir was one; his most intimate personal friend, S. E. Wolff, now Col. Wolff; and Col. Wolff wrote for him. 304.
- Weakest point was accounting department. 305.
- On May 15 completely displaced Lybrant organization. 307.
- Interdepartmental costs committee formed. 310.
- Question of allowance of executive salaries referred to that committee. 311.
- Committee did not act, so he urged that finance division shoulder responsibility. 311.
- Had not allowed salaries to executives except in case of Dayton-Wright Co. 312.
- Has no evidence to show that voucher is other than an adjustment of expenditures made by Dayton-Wright Co. 314.
- Dayton-Wright Co. had proceeded with work in anticipation of formal contract under verbal instructions or assurances of Col. Deeds.
- The contractors had gone ahead expending money, making experiments and tests, merely on their confidence in Col. Deeds and their friendship for him. 316.
- Overhead expenses to include interest, rent, and such taxes as income taxes and excess-profits taxes imposed by Government. 323.
- Col. Waldon informed Capt. Coleman he did not know who in the United States approved a list of property and the specifications therefor, and we have not been able to obtain such a list and specifications. 332.
- Knows Mr. Tilson, purchasing agent for J. G. White, quite intimately. 332.
- Have placed an officer or representative in J. G. White & Co.'s office. 334.
- No check as to the property itself other than J. G. White & Co.'s. 334.
- No one representing the Government undertook to ascertain whether J. G. White & Co. had bought the material desired or not. 335.
- Col. Thompson at present is chairman of War Credits Board. 339.
- Col. Thompson's business has been that of fine lawyer and accountant. 340.
- He assisted in drafting nearly all of cost-plus contracts. 340.
- Capt. FRANCIS E. HAAG (Washington, D. C., July 2, 1918; Book 8).
- Chief of Accounts Department, Finance Division of the Aircraft Production Board. 342.
- Held position since March 21, 1918.
- Prior to that time had charge of field forces, acting as supervisor at different plants, to determine questions of accounting that arose. 342.
- First three months was really getting acquainted with work and practically did nothing but assist Mr. Sweet to lay down rules. 342.

Capt. FRANCIS E. HAAG—Continued.

- Asked to produce certain vouchers on file which relate to payment of executive salaries at Dayton-Wright plant. 343.
- Can not explain why voucher covers period from April 1 to August 31. 343.
- Allowed 75 per cent of each item. 343.
- Overhead expense of Dayton-Wright Co. in voucher referred to amounted to \$76,452.40; allowed \$57,339.30. 344.
- Deducts 25 per cent as factor of safety. 345.
- Voucher No. 10 contains expenditures for overhead to October 31, 1917, amounting to \$325,610. 347, 348.
- Voucher No. 12 shows overhead salaries for month of November of \$34,130.53. 348.
- Itemized statement of executive salaries for month of November. 349.
- Certain payments made for executive salaries in case of Fisher Body Corporation, Standard Aero Corporation, and Wright-Martin Aircraft Corporation. 353.
- In number of cases salaries have not been paid at all. 354.
- Practice of office not to pay any salaries since May 3. 354, 355.
- Was no practice prior to May 3. 355.
- Has a man making special report on corporate relations of Standard Aircraft Corporation to the Standard Aero Corporation and H. B. Mingle. 364.
- Charges made on books against H. B. Mingle Co. which are being investigated. 365.
- Standard only company having an adjustment of salaries. 369, 370.
- No executive salaries paid to Lincoln Motor Co. 372.
- Natural thing for other companies to do would have been to present vouchers for general overhead, and have them allowed to the extent of a percentage as the Dayton-Wright Co. did, and the fact that they did not do that leads to the natural inference that somebody must have suggested that it would be better to wait. 382.
- Dayton-Wright voucher No. 1, including \$76,452.40 for overhead expenses, not thoroughly audited before payment. 382.
- Duty of accountant before certifying, to verify and make a test check of the amount shown by contractor's books. 384.
- Voucher No. 1 does not bear evidence of anyone having been over it and checked anything on it. 386.
- No indication that voucher was checked at plant. 386.
- Vouchers marked Haag Exhibits 1 and 2, July 2, 1918. 387.
- Total overpaid of \$54,960.17. 388.
- No other adjustment except with the Standard. 391.
- Salary allowed president of Standard was \$15,000 and president of Dayton-Wright Co. \$35,000. 392.
- Lieut. Reik in charge of vouchers in accounts department. 394.
- Has nothing from Dayton-Wright Airplane Co. indicating that it did not consider it what it purported to be, an adjustment as to these prior vouchers. 399.

Q. "I simply want to know what reason there is, if you know of any, why there should have been an adjustment in May,

Capt. FRANCIS E. HAAG—Continued.

1918, or any other time, of the overhead expense of the Dayton-Wright Airplane Co. for the period from April to October 31, 1917, while it appears that in the case of no other company has there been an adjustment of overhead for the period antedating October 31, 1917, and the amount, as adjusted, allowed at 100 per cent. Can you give any reason for it?" 401.

Voucher No. 30, of May 18, 1918, marked Haag Exhibit No. 3, July 2, 1918. 406.

Policy from May 3 to hold up all vouchers for executive salaries until approved by approvals section. 411.

Vouchers taken up with Capt. Rotshafer in contract section. 417.

Experimental contract with Dayton Metal Products Co. under which executive salaries were allowed. 424.

Quotation from letter addressed to Capt. Haag from Lieut. Weir referring to contract with Dayton Metal Products Co., "The amount representing costs of Packard truck as shown in my previous letter was erroneous and should have read '\$3,574.62,' which is the Government price plus the tax. This we will handle after getting further advice from Col. Edward A. Deeds, as per Maj. C. M. Hall's conference last Saturday." 428.

Experimental contract supposed to be of such a nature that no one excepting Maj. Hall and possibly Col. Deeds knew what work they were doing. 429.

Maj. Hall is same man who is now Col. Hall. 429.

Maj. Hall is Signal Corps engineer who is out in Dayton and under whose direction this secret experimental work is being conducted. 429.

Maj. DEAN LANGMUIR (Washington, D. C., July 2, 1918; Book 8).

Data concerning payments for executive salaries of Standard Aero Corporation was marked "Langmuir Exhibit 1, July 2, 1918."

Data concerning general method and procedure of paying executive salaries marked "Langmuir Exhibit 3, July 2, 1918."

Data concerning payments for executive salaries of Dayton-Wright Airplane Co. marked "Langmuir Exhibit 2, July 2, 1918."

Capt. JAMES J. NEWMAN, Washington, D. C., July 3, 1918; book 8.

Recalls that on or about October 31 he asked for a ruling on the question whether or not the company should be reimbursed for the expenses of executive officers. 439.

Also requested a ruling as to whether rent of offices would be allowed. 440.

Was told that Dayton-Wright Co. were going to make a request for this allowance. 444.

Voucher for office rent, etc., was presented to him, but he held it awaiting a decision or ruling from Washington. No ruling ever made up to time he left. May 13. 445.

Mr. Hiller succeeded him at Dayton-Wright Co. and Maj. Butler in the district. 446.

Capt. JAMES J. NEWMAN—Continued.

Objected to payment of voucher as he thought offices were not necessary in connection with production of airplanes. 450.

Contract with Dayton-Wright Co. excludes rent as an item of cost. 451.

Col. Deeds and his personal secretary had offices in same building. 452.

Clean-up voucher of May 13, 1918, marked "Newman Exhibit 6," was finally adjusted for period from April to October 31, 1917, and the salaries of Mr. Talbott, sr., at rate of \$35,000 a year; Mr. Kettering, at rate of \$35,000 a year; Mr. Talbott, jr., at rate of \$30,000 a year; and Mr. Orville Wright, at rate of \$18,000 a year were included as amounts to be paid for the period from August 1, 1917, to October 31, 1917. 465, 466.

Supporting vouchers prepared by Lybrant, Ross Bros. & Montgomery. 467.

Salaries were passed, subject to the determination by the Rulings Board as to what was to be done with them. 468.

Q. "Will you explain how it happened that this amount was allowed for salaries in this clean-up voucher of May 13, 1918, when no ruling had yet been made with respect to the amounts to be allowed for executive salaries?" 464.

A. "We were informed when the first salaries were paid that they would be paid and we should continue to pass them until we were told otherwise; until a ruling had been made." 470.

Mr. Sherer had asked him when he was going to pay any executive salaries. They were very short of money during this period. 471.

Accountant in charge put it through and he decided to let it go to Washington. 471.

Allowed executive salaries to go through in November, but wrote letter with voucher stating he had gotten no response to previous request on subject. 475.

Had had interview with Maj. Langmuir, Lieut. Col. Wolff, Col. Thompson, Maj. Smith, and Capt. Haag, also Capt. Trax, regarding this matter. 476.

Mr. R. A. Perry was replaced at plant by a Mr. A. A. Vaughn. 481.

All expenses incurred by president of Dayton-Wright Co., traveling on company business, to be paid by Government, even in June, 1917, before they had any contract at all. 493.

That period very hazy to him and most of those who were on duty. 493.

First contract company had is under date of September 7, 1917. Traveling expenses of \$4,648.60, all antedating August 31, 1917, were allowed. 498.

Talbotts, Kettering, and Orville Wright, with possible exception of Mr. Orville Wright, are the only stockholders of the Dayton-Wright Air Plane Co., and salaries mentioned are for a part of their time only, they being affiliated with several other companies, from which they also drew salaries. 502.

Capt. JAMES J. NEWMAN—Continued.

Also with Dayton Metal Products & Domestic Engineering Co. 503.

Q. "On what possible basis was the telephone service for April, 1917, allowed to the Dayton-Wright Airplane Co?"—A. "I do not remember any particular circumstance in connection with it. The items in question are so small in connection with the general total that we probably did not give them the attention we might have."

Q. "They are very small items, but they are very significant items." 507.

Tried not to include anything relating to the expenses of getting the contract. 508.

Welfare account commences with August 18, 1917. 509.

General office expense items aggregating \$3,957.71, attributable to period prior to October 31, 1917, allowed in final clean-up voucher. 512.

Garage expense down to October 31, 1917, a total of \$2,232.65 allowed in final clean-up voucher. 515.

Took figures of Lybrant, Ross Bros. & Montgomery. 519.

Was told by Col. Montgomery in November to use as broad a viewpoint as possible in passing vouchers for any of these companies and to avoid looking at things narrowly that might tend to create friction between the Signal Corps and the contractors. 520.

Contract refers back to certain expenses prior to its being made and says they shall be reimbursable. 527.

GEORGE BANCROFT SMITH (Dayton, Ohio, July 8, 1918; Book 9).

Resides at 635 Salem Avenue, Dayton, Ohio. 1.

Personal and confidential representative of Col. E. A. Deeds and Mr. C. F. Kettering. 1.

Mr. Deeds's interest in Delco Co. 2.

Mr. Deeds held 38 shares of \$100 par value in Delco Co. 3.

Sold preferred stock to Mr. Kettering. 4.

Repeats conversation in which Col. Deeds stated that such stocks as were owned by him in corporations that would be engaged in filling contracts for the Government should be disposed of. 9.

Specially mentioned the Delco stock. 14.

Mr. Kettering gets stocks at par value. 16.

Circumstances of the transfer of this stock over to Mr. Kettering. 26.

No charge against Kettering for the Delco stock. 27.

Deeds disposes of all his common stock in the Delco Co. to United Motors Corporation. 33.

Mr. Deeds held 30,000 shares in United Motors Co. 33.

Sells part of this stock in 1916. 44.

Final 17,500 given to Col. Deeds's wife as gift. 35.

(Pages 36 to 79, inclusive, give detailed information concerning transfer of Deeds's stocks.)

Domestic Building Co.'s stock did not reach books until December, 1917. 80.

Col. Deeds never a stockholder or director of the Dayton-Wright Airplane Co. 83.

GEORGE BANCROFT SMITH—Continued.

- Sold stock of Dayton Metal Products Co. on May 22. 84.
Certain details handled at this period by Mr. Allen R. Smart, a chartered public accountant. 86.
Produces memorandum compiled by Smart. 87.
Consideration for Deeds's stock in Dayton Metal Products Co. was to be determined as the result of Mr. Smart's examination of the accounts and determination of the book value. 95.
Did not think there was ever any written agreement for the sale of the stock in the Dayton Metal Products Co. by Mr. Deeds to Talbott, sr., Talbott, jr., and Mr. Kettering. 109.
No bill of sale or memorandum of sale. 109.
Points to Deeds's ledger showing personal account with Kettering. 110.
Joint transactions in which Mr. Kettering and Mr. Deeds are engaged in in a general way. 113.
How long Col. Deeds and Mr. Kettering have been associated in enterprises. 114.
Notes given for Dayton Metal Products stock by Kettering and the Talbotts were not paid or renewed. 116.
Domestic Building Co. built building now used by the Dayton-Wright Airplane Co. 116.
Original stockholders of Dayton-Wright Airplane Co. 117.
Stockholders of the company at the present time. 118.
Entire stock, with certain exception, is held by the Dayton Metal Products Co. 118.
Produces paper showing adjustment of the accounts between the Talbotts, Mr. Kettering, and Col. Deeds. 119.
Agreement with respect to Dayton Metal Products Co. 122.
H. E. Talbott, C. F. Kettering, and H. E. Talbott, jr., have joint account. 125.
Only way to finance the Dayton-Wright Airplane Co. to enable it to take the Government airplane contracts was through the Dayton Metal Products Co. 131.
Mr. Kettering gets salary of \$35,000 a year from Dayton-Wright Airplane Co. 145.
Produces memorandum relating to closing up Domestic Building Co. transaction and fixing of the adjustment, marked "George B. Smith Exhibit 22." 148-149.
Produces letter to Mr. Deeds. 150.
His attention is called to a letter from Office of the Chief Signal Office to Dayton-Wright Airplane Co., Dayton. "Subject, Erection of temporary buildings." 162.
Col. Deeds at present a director, stockholder, and an officer in Domestic Building Co. 166.
Nash Motors Co. stock was sold by Col. Deeds to Mr. Kettering. 168.
Mr. Deeds sold his stock in National Cash Register Co. to Mr. Kettering. 169.
No written agreement or memorandum of understanding or any paper relating to Nash Motors Co. stock. 171.
Deposit tickets of the City National Bank of the Dayton-Wright Airplane Co., Dayton Metal Products Co., and H. E. Talbott, C. F. Kettering, and H. E. Talbott, jr. 171.

GEORGE BANCROFT SMITH—Continued.

Land of McCook Field originally purchased by E. A. Deeds and C. F. Kettering. 174.

Col. Deeds sells his holdings to Mr. Kettering, Mr. Kettering subsequently selling his interest to the Dayton Metal Products Co. 175.

Auditors sent to audit the books of the Domestic Building Co. and these figures used by Mr. Smart. 175.

Letter from Mr. Deeds to Mr. Kettering, "George B. Smith Exhibit No. 25, July 8, 1918."

United Motors Corporation. 178.

Produce letter written by Mr. Smith to Mr. Deeds. 178.

In this letter he tells Deeds that National Cash Register stock, the Nash Motors Co. stock, and United Motors Corporation stock is now all taken care of and stock records clear of Mr. Deeds's name. 181..

MARY E. DEVINE (Dayton, Ohio, July 8, 1918; Book 9).

Resides at 15 Schantz Street, Dayton, Ohio. 184.

Bookkeeper, secretary to Mr. Talbott, sr. 184.

So employed eight years. 184.

Mr. Talbott is president of the Dayton Metal Products Co., is chairman of the board of the City National Bank. 184.

President of the Dayton Metal Products Co. and the board of directors. 185.

Receives \$1,048 semimonthly from Dayton-Wright Airplane Co. 185.

Mr. Talbott, sr., receives \$5,000 a month from the Dayton Metal Products Co. 186.

Mr. Charles Craighead, secretary of the Dayton Metal Products Co. 187.

Minutes of the meeting of the Dayton Metal Products Co., April 7, 1917. 187.

Another minute read in which Mr. Deeds has explained to them his call to Washington, and that he desired it that he might act as uninterested, directly or indirectly, etc. 190.

Other minutes read in which the request of the Aircraft Production Board is set forth that they should make a report as to the facilities of the Dayton Metal Products Co. for the manufacture of certain airplane parts. 192.

Another minute read in which meeting was called for discussion of buying entire capital stock of the Dayton-Wright Airplane Co. 195.

Minute relating to pledging of the shares of the stock of the Dayton-Wright Airplane Co. as collateral security for the notes of the Dayton-Wright Airplane Co. 197.

Agreement entered into on November 28, 1917, between H. E. Talbott, C. F. Kettering, and H. E. Talbott, jr., parties of the first part, and the Dayton Metal Products Co., party of the second part. 197.

Another entry in which it is agreed that the capital stock of the Dayton-Wright Airplane Co. be used as collateral security attached to the notes of the Dayton-Wright Airplane Co., said notes, \$2,500,000, being payable to Secretary of War on behalf of United States. 202.

MARY E. DEVINE—Continued.

Mr. Allen R. Smart present at some of the meetings. 206.

Transactions with respect to the payment by Mr. Talbott of stock of Dayton-Wright Airplane Co. 211.

Mr. Sherer, the treasurer, has details of account of Mr. Talbott, Mr. Kettering, and Mr. Talbott in reference to deposit slips in City National Bank, December 1, showing a deposit to credit of Dayton-Wright Airplane Co. by Messrs. Talbott and Mr. Kettering of a million dollars. 212.

Messrs. Talbott and Mr. Kettering give check on December 1 to the Dayton Metal Products Co. for amount of \$1,134,537.20 for securities. 215.

Points to entry in Mr. Talbott's account which shows his note given to Mr. Deeds for the Dayton Metal Products Co. stock. 215.

Stock-certificate book of the Dayton Metal Products Co. 225.

EDITH P. CUMMIN (Dayton, Ohio, July 8, 1918; Book 9).

Law clerk and stenographer for Craighead & Dowden, attorneys, in Dayton, Ohio. 238.

Have at times been engaged in connection with the work of keeping the minute book of the Dayton Metal Products Co. 238.

Wrote up all the original proceedings. 239.

Mr. Craighead's office represents the Dayton Metal Products Co. 243.

MARY E. DEVINE (Book 9).

Goes over, in summary way, the companies in which Mr. Talbott is interested and salaries which he receives. 245.

Mr. Talbott, sr., in all companies in which he is interested seems to be able to assist them very greatly in the financial end of the work. 247.

Mr. King. 251.

Mr. Talbott had small amount of stock in Dayton Lumber & Manufacturing Co. 253.

Miss Devine keeps contracts of the Dayton Metal Products Co. 255.

Asked to bring all the contracts between the Dayton Metal Products Co. and the Government. 256.

Reads contracts upon the record. 257.

Attention is called in contract of January 25, 1918, between the Dayton Products Co. and the United States, represented by Maj. A. C. Downey, of Signal Corps, in which experimental work is to be paid for in pursuance of the agreement. 261.

Transaction regarding the purchase of the Miamisburg plant. 261.

Mr. Craighead, trustee. 264.

Is asked to produce certificates shown on investment ledger of Dayton Metal Products Co. in an entry under the Lincoln Motor Co. of \$100,000 stock taken by the syndicate from Dayton Metal Products Co. 268.

GEORGE BANCROFT SMITH (Book 9).

Asked to state what companies, if any, Col. Deeds has been in receipt of a salary since April 1, 1917. 271.

Book of record of Col. Deeds's stocks. 273.

GEORGE BANCROFT SMITH—Continued.

Domestic Building Co. became indebted to Col. Deeds for the amount representing the value of his interest in the land known as McCook Field. 286.

Stock of the Domestic Building Co. worth \$1,000,000. 287.

Owned principally by Col. E. A. Deeds and Mr. C. F. Kettering. 287.

Settlement of the Domestic Building Co. arrived at on which notes were finally given by the two Talbotts and Mr. Kettering to the Domestic Building Co. 289.

Among other items they received the tract of land known as the Dayton-Wright Airplane Co.'s field. 291.

South Field owned by Col. Deeds. 294.

Adjoining land belongs to John H. Patterson, formerly president of the National Cash Register Co. 294.

Asked if it is not correct that when notes had been executed by Messrs. Talbott and Kettering to the Domestic Building Co. the plant and property to which they became entitled were at their direction transferred directly to the Dayton-Wright Airplane Co. and the consideration from the Dayton-Wright Airplane Co. for that transfer was embraced in acquisition of the stock of the Dayton-Wright Airplane Co. by these gentlemen. 298.

Mr. Blose, private secretary of Mr. Deeds. 299.

Statement known as "Analysis of the transactions of the Domestic Building Co.," as of December 31, showing capital, stock, loans, interest, etc. 302.

Produces books of Domestic Building Co. 322.

Mr. Deeds does not hold any stock in the Lincoln Motor. Co. 320.

CHARLES J. SHERER (Federal building, Dayton, Ohio, July 9, 1918; Book 9).

Twenty-five Perrine Street. Dayton, Ohio. 330.

Treasurer of Dayton Metal Products Co. 330.

Been with the company since May, 1915. 330.

Also treasurer of Dayton-Wright Airplane Co. 331.

Mr. Craighead, secretary of Dayton-Wright. 331.

Mr. A. B. Hilton, jr., secretary of Dayton Metal Products Co. 331.

Also treasurer of Wright Field Co. 331.

Dayton-Wright Airplane Co., incorporated in April, 1917. 333.

Original subscribers to the stock Mr. Talbott, Mr. Talbott, jr., Mr. Kettering, Mr. Mead, and he thought Mr. Craighead. 333.

Original issue \$500,000 common stock. 333.

Subsequent issue \$100,000 common and \$400,000 preferred. 334.

Dayton Metal Products Co. subscribed for stock in the Dayton-Wright Airplane Co. 335.

Dayton-Wright gave check for \$955,071.25 to joint account for purchase of the building, the Moraine plant, and the Miamisburg plant. 338.

Check of the Dayton Metal Products Co. for \$183,459.55 to credit of Messrs. Talbott and Kettering. 339.

CHARLES J. SHERER—Continued.

Nine hundred and ninety-nine thousand five hundred dollars from Dayton Metal to the joint account. 353.

Deposits a check of the joint account to the order of the Dayton-Wright Airplane Co. for \$1,000,000. 353.

Item "E. A. Deeds, \$150,000" represents a certain note of E. A. Deeds to the Dayton Metal Products Co. 357.

"C. F. Kettering, \$150,000"; same explanation. 357.

"H. E. Talbott, jr., \$45,000"; same explanation. 358.

Is asked to get a statement from the books of the Dayton Metal Products Co. showing what the items are that enter into this item. "E. A. Deeds, \$150,000; C. F. Kettering, \$150,000; H. E. Talbott, jr., \$40,000." 365.

Dayton Metal Products Co. has contract with the Government for the production of 1,585,000 mark 2 detonating fuses. 366.

First contract of Dayton Metal Products Co. with the Government was August of 1917. 367.

Dayton Metal Products Co. had experimental contract with the Government. 368.

Mr. McGee, assistant in the executive office of Dayton Metal Products Co. 369.

Entry of \$999,500 relating to purchase of the stock of the Dayton-Wright Airplane Co. 369.

Government has paid all experimental charges that have been submitted. 375.

C. E. Stacey Co. 376.

Expenses in connection with Stacey & Co. are listed in the records of the Dayton-Wright Airplane Co. as an uncollectible item. 377.

Total amount paid by the Government to the Dayton-Wright Airplane Co., \$10,000,000. 378.

Two million five hundred thousand dollars of this as advances by the Government. 378.

The Government holds as security for collateral the stock of the Dayton-Wright Airplane Co., except the qualifying share, on part of that they have certain personal indorsements. 379.

Salaries of the Dayton-Wright Airplane Co. 380-383.

Salaries have been held for a couple of months; up to that time certain of these salaries allowed by the Signal Corps. 386.

The terms of the contract are such that any payments do not operate as final payments. 387.

Check of \$1,136,537.20 for purchase of securities by joint account. 393. (Deposited in City National Bank on December 1, 1917.)

Dayton Metal Products Co. purchase stock of Lincoln Motor Co. on October 8. 395.

Afterwards disposed of to Messrs. Talbott and Kettering. 396.

This stock again returns to Dayton Metal Products Co. 396.

Messrs. Talbott and Kettering get securities from Dayton Metal Co. for that retransfer. 398.

Finds records of the item "E. A. Deeds, \$150,000" referred to on page 357. 401.

CHARLES J. SHERER—Continued.

Dayton-Wright Airplane Co. charged for experimental work of Stacey & Co. (Stacey, an inventor supported by Kettering, 409) in favor of Dayton Metal Products Co., and Dayton Metal Products Co. pay the money to C. F. Kettering to reimburse him. 409.

ERNEST D. MARTIN (Dayton, Ohio, July 9, 1918; Book 9).

Auditor for Dayton Metal Products Co. 418.

Adjustment made as to the price to be paid for Mr. Deeds's stock in Dayton Metal Products Co., which was transferred to Messrs. Talbott and Kettering. 418.

The items "E. A. Deeds, \$150,000," and "C. F. Kettering, \$150,000" are demand notes. 425.

ALLEN RICH SMART (Washington, July 9, 1918; Book 9).

Resides in Chicago. 427.

Certified public accountant. 427.

Associated with Barrow, Wade, Guthrie & Co. 127.

Consulting accountant of the Dayton-Wright Airplane Co. 427.

Have been the auditor of the Dayton Metal Products Co. 428.

Has made an investigation of the Dayton Lumber & Manufacturing Co., for an attorney in town, Mr. Warren James. 428.

Directs his attention to the adjustment that was made at time of taking over by Messrs. Talbott and Kettering of the plant which had been provided by the Domestic Building Co. 430.

Mr. Geo. Smith, representative of the Domestic Building Co. 432.

Miamisburg plant had been purchased by Mr. Talbott, sr., individually. 434.

Transferred to Dayton-Wright Airplane Co. 435.

The sum at which the Miamisburg plant was sold to the Dayton-Wright Airplane Co., showed a profit of \$67,202, for the Messrs. Talbott and Kettering.

Government had no hand in the appraisal of this property. 440.

Government had no written statement that they could have this property at its real value, \$60,000. 440.

Particulars regarding purchase of Moraine plant which was deemed to be suitable for Dayton-Wright Airplane Co. by Messrs. Talbott and Kettering and made over to that company. 450.

Smith Exhibit 31 are the syndicate books, or Messrs. Talbott and Kettering. 457.

Moraine plant figured a total of \$836,401.08. 458.

Mr. Talbott, sr., Mr. Kettering, and Mr. Talbott, jr., subscribed for stock of Dayton-Wright Airplane Co. 466.

Original amount of the stock \$400,000 but now increased to a million. 466.

The syndicate subscribed for the \$1,000,000, entire preferred stock as well as the entire common stock. 468.

Explains construction of financial arrangement which permitted the payment of these shares to be made without cash. 468.

Charged the Domestic Building Co. with Col. Deeds and Ketterings debts. 480.

ALLEN RICH SMART—Continued.

Refers to provision of the contract between the Dayton Metal Products Co. and the Government regarding experimental work. 494.

Col. Deeds at end of settlement owed \$79,963.17 to Domestic Building Co. 499.

Asked if he made an examination of the books to ascertain book value of stocks of Dayton Metal Products Co. transferred by Mr. Deeds to Messrs. Talbott and Kettering. 500.

Knows nothing of the actual transfer. 502.

Minutes of meeting wherein Col. Deeds offered for sale, etc., his stock in Dayton Metal Products Co., his entire holdings of stock at book value, less 15 per cent to cover costs and possible losses. 503.

Explains why he crossed this minute out. 506.

Agreement of purchase by Dayton Metal Products Co. of the Dayton-Wright Airplane Co.'s stock. 516.

Calls attention to agreement of November 28 wherein it is stated that option be given to said parties of the first part to repurchase all of said stock, etc. 523.

GEORGE BANCROFT SMITH (July 9, 1918; Book 9).

Produces trial balances of Domestic Building Co. 528.

Domestic Building Co. had no transaction with the Government, but has transaction with the Dayton-Wright Airplane Co. 532.

Moraine Development Co. 536.

Officers of the Moraine Development Co. 537.

Asked to state as succinctly as possible the facts in connection with the purchase of 97 acres of land by the Domestic Building Co., from the Moraine Development Co., and two sales of portions, with respect especially to those used for aviation purposes, who were the original owners, etc. 545.

Col. Deeds was reimbursed for the moneys which he expended upon the improvements of North Field with respect to hangars, etc. 549.

Another field leased from Kettering which has been referred to as the Acceptance Field. 552.

Explains way in which the word "Moraine" is used in community. 552.

Gives details regarding "Acceptance Field." 554.

Ten thousand dollars paid to C. E. Stacey in order to cover expenses of his work, when book showed expenditure of only \$9,000.

BENJAMIN FRANKLIN McCANN (Dayton, July 10, 1918; Book 9).

Attorney, practicing in Dayton, Ohio. 560.

Local, private counsel for Col. E. A. Deeds, and also for Mr. C. F. Kettering. 560.

Produces letter addressed by Col. Deeds to Secretary of War. 560.

Col. Deeds's statement filed with Council of National Defense. 563.

Mr. McCann goes over details connected with above papers. 566.

Letter in which he hands in his resignation to Dayton Engineering Laboratories Co. 570.

BENJAMIN FRANKLIN McCANN—Continued.

Resignation from United Motors Corporation. 572.

ALLEN R. SMART (July 10, 1918; Book 9).

Produces settlement sheet of December 1, which filed and marked "Smart Exhibit 1, July 10, 1918." 581.

Explains how the different items for preliminary expenditures on various fields, etc., figures in the ultimate adjustment, and how these matters passed to the books of the Dayton-Wright Airplane Co. 582.

States what temporary buildings have been included in the submissions to the Government. 589.

The expenses of the Research Division after the 1st of July, 1917, and the expenses of the South Field after July 1, 1917, were submitted to the Government. 593.

He is asked with whom the question had been raised, under the contract of September 7, 1917, that there was any right on the part of the Dayton-Wright Airplane Co. to charge the Government with the items for experimental work and hangars. 597.

Knew there were discussions with reference to the boggy cost to be fixed. 601.

Dayton Wright Airplane Co. had no complete cost system. 603.

On a trip to Washington was shown the terms of contract or general form of contract which was proposed to be entered into with the various concerns contracting with the Government for aircraft. 610.

Asked for modifications principally in regard to depreciation and amortization of the plant. 611.

Company's outlays in getting a contract satisfactory to itself were included in the cost to the Government contemplated by the contract. 624.

Four thousand dollars for traveling expenses. 625.

Take up experimental work on Standard J-4 planes on June 1, although the contract was dated considerably afterwards—August 1. 628.

Mr. Smart's attention is called to the computation he made for the purpose of determining the amount to be paid to Mr. Deeds by Messrs. Talbott and Kettering for Deeds's stock in the Dayton Metal Products Co. 635.

Presents original figures. 639.

To Dayton Metal Products Co., research division. 660.

CARL J. SHERER (Dayton, Ohio, July 10, 1918; Book 9).

Asked to produce a file of the contracts of the Dayton-Wright Airplane Co. Asked to state on the record the contracts which the Dayton-Wright Airplane Co. has had and now has with the Government seriatim and chronologically. 631.

Asked to give the substance of the advance contracts. 682.

E. D. MARTIN (July 10, 1918; Book 9).

Asked date of entry on folio 109 of journal of Dayton Metal Products Co. 690.

Calls attention to trial balance of June 30, in which entry has been made over an erased amount. 391.

ALLEN R. SMART (Dayton-Wright Airplane Co. plant, Dayton, Ohio, July 11, 1918; Book 9).

Produces book or ledger of the Dayton-Wright Airplane Co. 701.

Turns to accounts which show what items entered into the adjustment in the fall of 1917 between the Messrs. Talbot and Kettering and the Domestic Building Co. 701.

Takes up balance sheet of December 29, 1917, "Smart Exhibit 11." 716.

Produces paper entitled "The Dayton-Wright Airplane Co., Dayton, Ohio." Contents: Estimated valuation of J-1 planes and J-1 spares delivered, etc. 722.

To a final cost of \$192.87 per plane is added 10 per cent on material for waste and floor loss. 727.

Statement is noticed in one of the sheets of metal fittings sent to Fisher Body Corporation. 731.

Explains special manner of treating depreciation of the plant by Miamisburg plant. 733.

Balance sheet of December 29, 1917, making total charges to the United States Government, contracts down to December 29, 1917, of \$1,950,800.32. 736.

Next sheet shows estimated profit on Standard J airplanes shipped of \$18,600. 736.

Down to December 29, 1917, date of the balance sheet, the number of Standard J planes shown as having been shipped were 32. 739.

Asked with respect to 8.34 acres of land adjoining property of company on the north which was purchased after main plant. 740.

Schedule I covers the entire amount deemed by the company to be chargeable to the Government under all its contracts down to May 31, 1918. 744.

HARLEY M. HOWELL (Dayton-Wright Airplane Plant, Dayton, Ohio, July 11, 1918; Book 10).

Auditor since 18th of June, 1917, with Dayton-Wright Airplane Co. 1.

Fourth page of "Smart Exhibit No. 11," items under head of "Experimental." 1.

On what basis were these items made payable by Government before any contract had been made. 2.

Character of the work which went into experimental voucher paid by Government. 5.

Had a contract which called for the antedating of work—experimental work—that had been performed previously up to the time of the date of the contract. 9.

What purpose was in view in treating these experimental charges during the fall of 1917 as separate from the cost under the main contract. 9.

Voucher submitted under contract No. 2713 dated January 25, 1918, is dated May 21, 1918, being submitted for experimental expenses. 11.

Asked to explain how they presented vouchers and received payment on vouchers under the main contract for work that did not belong under that contract. 15.

HARLEY M. HOWELL—Continued.

Produces depreciation accounts in ledger. 22.

Temporary buildings carried in ledger at cost value, no depreciation. 25.

Distinguish between a temporary building and a permanent building by the purpose for which it was intended. 26.

Employment building, the commissary building, and the Moiraine hangars on South Field styled temporary buildings. 26.

\$7,611.33 expended on commissary building. 27.

Employment building, expended on it \$2,459.31. 28.

Testing building, \$3,810.74. 28.

Produces statement showing an analysis of permanent assets as of May 31, 1918. 29.

Other temporary buildings. 30.

Net result will be that at end of the contract they will have very substantial building usable as part of the plant which Government will have paid for. 32.

Asked why these are charged as temporary buildings to the Government when they are just as permanent as main plant. 32.

Temporary commissary building experimental work under the contract of January 25, 1918. 34.

Was passed by Government accountant. 34.

Experimental motor and gun test building, \$7,717.02. 34.

Contract calls for a completed plane, but nothing is said about testing it. 36.

Submits voucher showing submission for depreciation. 41.

This was paid by the Government. 43.

Actually in the plant at work as early as August, 1917. 46.

Total of \$41,883.75 been charged for depreciation to May 31, 1918. 48.

Ledger accounts show that \$54,252.35 has been expended for office furniture and fixtures down to May 31, 1918. 49.

All this account at plant No. 1. 49.

Office furniture account at plant No. 2, Miamisburg. 50.

Office furniture account at Golden Street factory. 50.

Office furniture account at South Field experimental station. 50.

Asked to produce vouchers of outlays under administrative and general expenses shown in balance sheet of December 2?, 1917. 51.

Takes voucher and tells when, in the adjustment, the salaries were allowed and paid. 53.

Traveling expenses. 54.

Mr. Bourne, of Lybrant, Ross Bros., and Montgomery, represented the Government in this matter. 55.

All traveling expenses of executive officers included in this account before the date of any of the contracts. 56.

All postage, telephone, and telegraph charges charged to the Government. 57.

Government allowed full amount, \$2,717.37, down to October 31, 1917. 58.

HARLEY M. HOWELL—Continued.

Western Union Telegraph bill of E. A. Deeds for May, \$51.38.
59.

(As of May, 1917.)

Principle of these charges. 60.

No special instructions from any one as to what should be submitted to Government. 61.

Office furniture and fixtures submitted to Government under office expenses instead of under the head of office furniture and fixtures. 62.

The plan they worked on was that everything they laid out from the inception of the company, barring incorporation expenses, was to be paid by the Government. 63.

Capt. James A. Newman, accounting officer, was assigned to this plant and he acknowledged these matters. 64.

Voucher of \$255.255.85 allowed by Government without any audit. 65.

(Reference, p. 4.)

Anything not paid for in this voucher ultimately went into the clean-up voucher, No. 30, which was settled on May 3, 1918. 66.

Government contract with the Dayton-Wright Airplane Co. contains provision which excuses them from the necessity of testing anything they made or even being assured what they made would do the work expected of it. 66.

See article 12, entitled "Protection against infringement." 67.

This the reason for the "Experimental work" contract. 67.

Asked to produce memorandum with respect to amount expended in connection with the building of the first De Haviland plane. 69.

Authorization from the Government comes from Col. Deeds. 69.

Asked when Dayton-Wright Airplane Co. obtained title to this plant. 71.

Produces copy of original authorization under which experimental work done prior to January 1, 1917, was submitted for payment. 73.

Executive salary list of voucher No. 2. 77.

(Salaries put under certain numbers.)

Various matters held in abeyance for a considerable time between the company and the Government. 81.

Produces telegraph file of April, 1917. 84.

(Pages 84 to 176 contain telegrams.)

CHARLES A. CRAIGHEAD (Federal Building, Dayton, Ohio, July 12, 1918; Book 10).

Member of the Ohio bar. 177.

Secretary to Dayton-Wright Airplane Co. 177.

Attorney and counsel to Dayton Metal Products Co. 178.

Name of his own firm, Craighead & Cowden. 179.

Attorney for Mr. Talbott 20 years. 185.

Minutes of meetings pasted not pasted in proper place. 18.

Dayton-Wright Airplane Co. purchases plant formerly owned by Enterprise Carriage Co. at Miamisburg. 198.

Charles A. Craighead trustee of company. 199.

CHARLES A. CRAIGHEAD—Continued.

Asked about acquiring it for \$60,000 and turning it over for \$127,202. 200.

Money seems to have been paid by Mr. Talbott. 203.

Turned it eventually over to Dayton-Wright Airplane Co. 204.

Record shows property was turned over to Dayton-Wright Airplane Co. for \$127,202. 205.

Questions him about telegram from Deeds, of Equipment Division, to H. E. Talbott about having worked out a lease for the North Dayton field. 207.

Acted as trustee in this matter. 209.

Asked to get details that will enable him to give a clear account of this transaction. 209-210.

Minutes of November 28 state that property is held by Dayton-Wright Co. from the Enterprise Carriage Co. 212.

GEORGE BANCROFT SMITH (July 12, 1918; Book 10).

Produces correspondence of Col. Deeds from his file, one for 1917 and one for 1918. 215.

(Pages 216 to 227, inclusive, letters and telegrams.)

Special attention called to one on page 223, in which reference is made to loan secured by an officer connected with McCook Field. 224.

MARY E. DEVINE (Dayton, Ohio, July 12, 1918; Book 10).

Produces Mr. Talbott's file of correspondence with Mr. Deeds. 228.

(Pages 229 to 280, inclusive, letters and telegrams.)

HOWARD SMITH TAYLOR (Dayton, Ohio, July 12, 1918; Book 10).

Engineer with Dayton-Wright Airplane Co. 281.

Produces certain correspondence, telegrams and letters, taken from the executive office file. 281.

(Pages 282 to 316, inclusive.)

JAMES M. SCHOONMAKER (Dayton, Ohio, July 12, 1918; Book 10).

(Resides Pittsburgh, Pa.)

Chief engineer of Dayton-Wright Airplane Co. since June of last year. 317.

In Ordnance Department at Washington before coming to Dayton. 317.

Had been with the Talbott Co. previous to going to Washington. 318.

Describes condition of affairs as he found them when he came to Dayton-Wright Co. in 1917, about June. 318.

Drawings for planes received early in July very incomplete. 320.

Chief difficulty in connection with production of the Standard J planes was in getting the material which had been made from the Standard blue prints to assemble properly. 321.

Had to make drawings from these and the model before they could be released to the manufacturers. 322.

Factory was not then in shape to go ahead, because they could not make the tools until they had received the drawings. 323.

Began to tool up on some parts in latter part of July, but some parts were not released to the factory until as late as October. 323.

JAMES M. SCHOONMAKER—Continued.

Standard J planes in 90 per cent production during November, but had been held back by defects discovered. 324.

First plane delivered on 8th of December. 325.

Production from then on averaged about eight planes per day. 325.

The entire 400 called for by the contract 1st of August, 1917, were delivered April 11, 1918. 325.

Chief reasons for delay. 326.

Two types of training planes, Curtiss and Standard. 329.

Asked, if Curtiss was in quantity production, why they did not take that up and make all the planes they needed from that type. 329.

Telegram to Col. Deeds from Dayton-Wright Airplane Co., giving schedule of deliveries to be counted on of the Standard J planes. 331.

Explanation of failure to make delivery of any Standard planes at all until two months later. 332-334.

Engineer not consulted with respect to estimates set forth to Col. Deeds in telegram. 335.

Shortage of material principal cause for delay. 336.

Gives further and more complete reasons for delay. 337.

Calls attention to letter from Col. Deeds of November 26, 1917, in which he makes mention that too much time has been wasted over Standard J changes. 338.

Asked to produce files which would show these changes. 339.

Attention drawn to telegram from Col. Deeds to Mr. Talbott crowding production. 340.

From December 5 were in condition to produce as fast as their capacity would permit. 341.

Shipments fall down to small quantity per day. 341.

Engineering difficulties had even been solved up to about 90 per cent during the summer. 342.

Shipments held up by failure to deliver by subcontractors. 342.

Dayton-Wright Airplane Co. made all the wood parts, fixing of linen for the wings, etc. 343.

Dayton Metal Products Co. made turnbuckles, perhaps a few bolts. 343.

Shown telegram from Col. Deeds addressed to Dayton-Wright Airplane Co. in which Standard J planes withdrawn. 344.

Difficulty with the Hall-Scott motors. 345.

First De Haviland 4 completed and flown October 29, 1917. 345.

No changes in design, excepting a few minor details which could not delay production. 345.

Necessary to redesign the De Haviland to take the Liberty motor. 346.

Attention called to telegram from Col. Deeds, August 5, 1917, stating sending De Haviland to Dayton. 346.

Telegram from Col. Deeds stating sending drawings (dated August 14, 1917) of De Haviland 4. 347.

Asked if apart from the adaptation of the plane to the Liberty motor there was anything to delay production of the machine. 348.

JAMES M. SCHOONMAKER—Continued.

- Some parts of the machine never made in this country before, therefore experimental stage necessary. 348.
- Lack of spruce would not account for any considerable delay. 349.
- Had Liberty motor in plenty of time. 351.
- All through with engineering difficulties by October 29. 352.
- No information could be obtained on the equipment. 355.
- With the Standard J planes in shop also could not have gone ahead on big production, but could have produced at least 150 a month in December, January, and February; also March, if could have obtained equipment information. 356.
- Reads part of history of De Haviland. 357.
- Reads further part of history. 358.
- Endeavoring from October, 1917, to some time in April, 1918, to get statement of the equipment that was needed in order to finish the drawings. 358.
- Conducted correspondence with Col. Vincent at McCook Field, 358.
- Gives summary of course of production of the De Haviland plane. 359.
- Did not reach definite results until April, 1918. 360.
- In correspondence practically only with production engineering department head, Maj. Gray. 361.
- States as his testimony detailed course of the production of the De Haviland plane. 361. (Pp. 362-374).
- Drawings for changes in the double gun mount and the redesign of the cartridge boxes furnished by the Signal Corps were not correct and designs not satisfactory. 375.
- Thinks that these delays have really been caused by honest mistakes. 378.
- Recites delays which have been occasioned by mistakes of Dayton-Wright Airplane Co. 379.
- Delay in furnishing information as to equipment in the particulars described cost this country three months in getting the production which was achieved in April and from April on. 381.
- Assumed they had knowledge as to equipment, as they did not know whether equipment was to come, as they had never heard anything. 385.
- Requested information of Signal Corps October 9, 1917, as to gun sights, without which they could not make up any program for delivery, but no bill of particulars or drawings in connection therewith was received until February 13. 387.
- Equipment of the first plane that went out from the factory incomplete. 398. (No gun that would work.)
- Asked how they could get along without a drawing of the gun they were to use in making the first plane for it. 389.
- This plane finished and sent to France, and yet it was incomplete and no one could fight with it. 390.
- Telegram from Mr. Talbott to Col. Deeds asking for recall of first 100 planes. 391.
- That first incomplete plane intended for the American Expeditionary Forces in France. 392.

JAMES M. SCHOONMAKER—Continued.

- No shipments for the Expeditionary Forces between February 4, 1918, and April 3, 1918. 393.
- Produces photographic exhibit of the program for the D. H. 4 from the Planning Department, Equipment Division, of the Signal Corps, marked "Zacharias Exhibit 1," purporting to show program from August 2, 1917, to May 3, 1918, which brings out admission that they had only one bona fide program but lots of others that were not. 393.
- Schedule made up on April 9 first bona fide schedule based on accurate information. 395.
- This schedule produced which shows they did not take into account what had been shipped prior to April 9, thereby making May 2 as the date on which quantity production commenced. 406.
- Shipping planes in which nuts have been admitted in securing the bolts. 413.
- Bolts and shackles and cotter pins throughout the machines badly fitted. 415.
- Thirty or forty inspectors, but only 4 or 5 have had experience. 415.
- Jammed pulley wheels and bad joints at the landing gear structure. 416.
- From October to the present time inspectors and engineers and employees all alike have been getting their experience in the producing of airplanes. 418.
- This does not in a considerable measure explain the delay. 419.
- Disloyalty on part of men working in the plant. 421.
- AUGUST HILLER (Dayton, Ohio, July 12, 1918; Book 10).
- Plant accounting officer, Bureau of Aircraft Production. 427.
- Arrived at plant on April 11, Capt. Newman, his predecessor, was working on the clean-up voucher No. 30. 428.
- Credit balances due the Government of approximately \$94,000. 429.
- Question of traveling expenses. 433.
- Voucher No. 1 under which \$255,255.85 was paid the contractor. 434.
- Present attitude of the Government accounting office with respect to salaries at this plant. 437.
- Shifting sums from one contract to another. 438.
- Attitude of the Government with respect to temporary buildings and the allowance of vouchers for temporary buildings. 445.
- Operation of a commissary an actual necessity. 448.
- Depreciation ratio of the cost of the Miamisburg plant. 449.
- Always an effort on part of the contractor to get everything out of costs he can. 455.
- Padding the pay rolls. 456.
- Private chauffeurs carried on the pay rolls of the company. 456.
- These chauffeurs entitled to get oil, cars, gasoline, etc., on free list for use in running the private cars of all officers of the company to and from Dayton. 457.
- Ruling issued on this June 8 from Washington that no more money shall be allowed for such purposes. 458.

JAMES M. SCHOONMAKER—Continued.

Produces list of the officials, with signature of president of the company, who are supposed to be on free list for oil, gas, and tires. 458.

Mr. Butts, oil, gas, and tires; Mr. Talbott, sr., gets oil, gas, and tires; Mr. Talbott, jr., also, etc., 465.

Expense accounts sent in for railroad fare, moving of furniture, etc., for employees. 467.

Baseball nine maintained. 467.

Officers submit bills for traveling expenses to Washington and otherwise, and then will not give details. 470.

Difficulties encountered in trying to install a proper cost accounting system. 471.

Officials of the company would not cooperate in helping anyone to put in adequate cost system. 472.

Scrapped material. 474.

Getting at the cost of the airplanes shipped. 475.

LOUIS CRIST LUENEKE (Dayton, Ohio, July 12, 1918; Book 10).

Engineer, general aeronautical engineer. 477.

Went with Dayton-Wright Co. in 1915. 479.

Started in with D. W. R. Airplane Co. on experimental work on March 1, 1917, at South Field, headquarters at the Delco. 480.

Held position of airplane designing when this company was formed. 480.

Designed the F S, now at South field. 480.

Started on the construction of these the latter part of March. 481.

Connection with the Standard J. 481.

Now assistant chief engineer. 482.

Factory manager, Mr. Sutton. 482.

Mr. Williams, assistant to the president. 483.

States causes of delay in production of the Standard J 1 planes. 484.

Chart shows number of planes in final test on July 12, 1918, as 729, and number of planes shipped 654, while according to Mr. Lueneke's statement only 632 had passed into final test. 486.

H. E. TALBOTT, Sr. (Dayton, Ohio, July 12, 1918; Book 10.)

Actively identified with Dayton Metal Products Co. and the Dayton-Wright Airplane Co. Also in the paper business and chairman of the board of directors of the City National Bank in Dayton. 488.

President Dayton Metal Products Co. 488.

Dayton Metal Products Co. organized to carry out a contract for making detonating fuses for foreign Governments. 489.

Mr. Talbott, his son, Deeds, and Kettering were asked by the Government to take over construction of some trading ships. 490.

Thinks they called themselves a company. 490.

Dayton-Wright Airplane Co. grew out of this. 491.

This matter of obtaining contracts from the Government was suggested to them by Mr. Waldon, connected with Gen. Squier's office, or with Howard Coffin's department of aircraft production. 491-492.

H. E. TALBOTT, Sr.—Continued.

In spring of 1917 they were asked to take over the building of the Domestic Engineering Co. 492.

Probably suggested by Waldon and Coffin and Mr. Deeds. 492. Domestic Building Co. by Mr. Deeds and Kettering. 494.

Mr. Deeds and Mr. Kettering interested in Moraine Development Co. 494.

Asked as to the situation with respect to Dayton-Wright Airplane Co.'s interest in this building during summer and fall of 1917. 495.

Had no written statement or exchange of papers, but in this joint statement it was agreed to provide Domestic Engineering Co. with quarters. 497.

Dayton-Wright Airplane Co. organized in April, 1917. 497.

Understanding by Mr. Talbott, sr., Mr. Kettering, and Mr. Talbott, jr., as to transfer ultimately of the Domestic Building Co. to Dayton-Wright Airplane Co. 499.

States when this matter of obtaining a contract for planes was first taken up on behalf of the Dayton-Wright Airplane Co. 499.

Some prior to the date of the contract that the order was given. 501.

Asked about telegram from Mr. Deeds under date of May 11, 1917, saying, "Think your whole plan ideal." 501.

Further telegrams from Deeds. 502.

Mr. Kuhns is secretary of the conservancy board of directors. 504.

Had been an attorney or secretary at the National Cash Register Co. 504.

Telegram from Deeds to Ezra M. Kuhns, "Option should be rushed in vicinity of a fir field, raising prices, if necessary. 504.

Gives explanation of measure of which he asked approval of Col. Deeds in telegram of May 11, 1917. (Page 501.) 508.

Col. Deeds stopped publicity in matter on account of increase in land which would have resulted had it become known Government was going to purchase it. 509.

Mr. Talbott had an idea that expenses in connection with flying field would be \$150,000 or \$200,000 in buildings. 510.

Dayton Lumber & Manufacturing Co. received contract for work to be done on this field, which has already run into several millions of dollars. 511.

S. S. King, one of leading stockholders in this company. 511.

Secured the capital to invest in this company through the City National Bank, \$60,000. 512.

Acquired most of the stock. 513.

States how he negotiated the contract for King in the name of the company for this work. 513.

Reads telegram to Mr. Talbott from Mr. Deeds, under date of May 25, regarding King's inability to take care of this contract alone. 515.

Finds out he has recommended a man too small for the job. 516.

H. E. TALBOTT, Sr.—Continued.

- Telegram from Deeds to Talbott, in which he asks his discretion in regard to making public a statement about King's contract. 517.
- Asked how Deeds anticipated criticism with regard to King's being given this contract if they were innocent of any conniving. 518.
- Dayton Metal Products Co. loaned King several hundred thousand dollars, indorsed his paper, and introduced him to their bank in New York, the American Exchange. 519-520.
- Said Dayton Metal Products Co. did not get any compensation for its service to King. 521.
- Explains reason for carrying this big loan in New York. 522.
- Local lumber man known to Ezra Kuhns recommended by Deeds as a person to whom should be handed contracts in connection with this work. 526.
- Telegram from Mr. Talbott, sr., to Mr. Deeds, although he still insists he was not interested in the contract. 523, 534.
- Still further interest displayed. 535.
- His attention again called to telegram from Deeds, in which he says, "Think your whole plan ideal," all this being 12 days before King got the contract. 538.
- Calls attention to telegram from Mr. Deeds, dated June 7, to Mr. Talbott, jr., mentioning purchase requisition for 500 planes that had been started by Government. 540.
- Telegram asking Mr. Talbott to come to Washington for conference on form of contract. 542.
- Concerned over the article in the contract on depreciation. 545.
- Telegram from Talbott to Col. Deeds asking if it would be possible to have Government officers come first of week to conclude contract, this being on September 15. 547.
- Their contract not the same as Curtiss Co. 549.
- Thinks Col. Deeds transferred and sold his stock in the Dayton Metal Products Co. to him in May. 552.
- Settlement made by notes. 553.
- Reason of the two-fifths, two-fifths, and one-fifth arrangement. 553.
- No written agreement or any form of agreement to show that there was an agreement. 556.
- Barrow, Wade & Guthrie to determine on the book value less 15 per cent. 557.
- Arrangement in November, 1917, with respect to the Dayton-Wright Airplane Co. stock when that was transferred to the Dayton Metal Products Co. the D. M. P. Co. should only have the profit on that stock to the extent of a certain percentage. 557.
- After giving a certain percentage to the Dayton Metal Products Co. the rest divided in a proportion which gave Mr. Kettering one-twentieth more than either of the two Talbotts. 559.
- Goes over their salaries. 561.
- Is again shown note dated May 22, 1917 (see p. 555), and asked to state when it was delivered. 563.
- By June 30, 1917, Mr. Talbott had through indorsements and direct paper loaned \$550,000. 566.

H. E. TALBOTT, Sr.—Continued.

- Lays conception of Wilbur Wright Field on Mr. Deeds. 567.
Is again asked to fix the date of the delivery of the note mentioned on page 555. 570.
Hold joint meeting to discuss disposal of Deeds's stock. 575.
Minutes written up later. 577.
His attention is called to his personal ledger regarding this note of May 22, 1917, in which entry is made as of September 30, 1917. 595.
Was asked if he had a special arrangement for the receipt of telegram from Mr. Deeds. 596.
Acquisition by the Dayton Metal Products of the Dayton-Wright Airplane Co. 597.
Purchase of this stock was considered some time in the summer. 599.
Note to Deeds for \$207,706 for 200 shares of his stock in Dayton Metal Products Co. overdue. Only \$7,706 ever been paid on it. 601.
In the arrangement for the sale of the Dayton-Wright Airplane Co. to the Dayton Metal Products Co. provision is made for repurchase by the Messrs. Talbott and Mr. Kettering. 602.
No written agreement with Deeds on any subject. 604.
No memorandum regarding transfers of these different stocks with reference to payment of the notes or the reacquisition of any interest as represented by these notes. 605.
Is shown salary account of Dayton Metal Products Co. in which is entered salary for E. A. Deeds for June, 1917, as well as May and earlier months. 606.
Reasons for buying or paying \$60,000 for Miamisburg plant and then turning it over to himself practically again for greatly increased valuation. 607.
Stated that Mr. Schoonmaker's testimony was in accordance with his understanding of facts, but not complete. 610, 611.
- SIDNEY SCOTT KING (Dayton, Ohio, July 13, 1918; Book 10).
Lumber business. 612.
President Dayton Lumber & Manufacturing Co. 612.
Formed in 1894; been president about a year. 612.
Became principal owner in April, 1917. 613.
Acquired 521 shares in April. 613.
No large contracts between 1908 and 1917. 615.
Owned a planing mill and lumber yard; also bought through Mr. H. E. Talbott's influence as president of the City National Bank. 615.
Recites the same feature as Mr. Talbott as one of the reasons for this loan to him of \$60,000 from Mr. Talbott. 615.
The first he heard of any buildings to be erected at Wilbur Wright Field was on May 16, 1917. 617.
Signed this contract for this field on May 23. 619.
Went to Mr. Deeds's office and Deeds took him to Col. Edgar. 621.
Contract signed on May 23 was just letter signed by Chief of the Signal Corps, Marshall, instructing them to proceed with the work pending final contract. 633.
Expected to get his capital from Mr. Talbott. 624.

SIDNEY SCOTT KING—Continued.

First pay roll was a thousand dollars a week; in four weeks it had grown to \$158,000 a week. 625.

Saw Col. Deeds a great deal in Washington. 627.

Cost of aviation up to November 1, 1917. 629.

Dayton Metal Products Co. advanced him money on July 16. 630.

Dayton Metal Products Co. advanced \$825,000 down to October 27. 631.

Asked to produce missing sheets from ledger. 632.

EZRA M. KUHN (Book 10).

Secretary of the Miami conservancy district since July 7, 1915. 633.

This district acquired Wilbur Wright Field practically all in 1917. 633.

Was advised 1st of April that Government was interested in this tract. 637.

Terms of leasing to the Government. 644.

JAMES M. SCHOONMAKER (July 13, 1918; Book 10).

Produces file which shows the numerous changes in the Standard J-1. (Reference p. 339.) 647.

Complete set of drawings ready for manufacture of De Haviland 4 on January 5, 1918. 649.

Reads letter addressed to Mr. H. E. Talbott, in which he explains to him how the engineering department had to drop work on the DH-4 and start on the DH-9, and then eventually go back again to the D-H4. 650.

First 12 days in July they had 321 changes on the De Haviland plane. 652.

ALFRED J. TINGLE (Dayton, Ohio, July 13, 1918; Book 10).

Manufacturing engineer with Dayton-Wright Airplane Co. 655.

Produces minutes of engineering data, containing record of the shipments of the J-1 machine, also showing some of the causes of delay. 656.

This too technical, and is asked to make up a statement which would be better understood, which he does. 659-664.

CHARLES FRANKLIN KETTERING (Dayton, Ohio, July 13, 1918; Book 10).

Vice president Dayton-Wright Airplane Co. 665.

Vice president Dayton Metal Products Co. 665.

First came to Dayton in July, 1904, and took a position at the National Cash Register Co., and was a designer there then in the engineering department. 666.

Col. Deeds was then vice president. 666.

Was the inventor of the Delco system. 667.

Short history of the Delco system. 668.

Made the development through corporation known as the Delco Co.—The Dayton Engineering Laboratories Co. 668.

Sold the stock of the Delco Co. to United Motors Co. in latter part of 1916. 670.

Preferred stock not made over. 671.

Still president of the Delco Co., at salary of \$50,000. 672.

Relates story in connection with his association with Mr. Deeds in Dayton Metal Products Co. 672.

CHARLES FRANKLIN KETTERING—Continued.

- Still vice president of the Dayton Metal Products Co. at a salary of \$20,000. 674.
- When the Delco Co. stock was transferred to United Motors in 1916 Col. Deeds still continued as vice president of United Motors and also as president of the Delco. 674.
- In the winter of 1915-16, along the first of the year, did their first work at the South Field, in which were associated Mr. Talbott, Mr. Deeds, and Mr. Talbott, jr.; this afterwards developing into the Dayton-Wright Airplane Co. 676.
- Relates visit of Col. Foulois and Mr. Howard Coffin and several others to look over this field. 677.
- Can not recall the date when Col. Deeds approached him on the subject of the transfer of his stock in the Dayton Metal Co. 680.
- No memorandum or statement of any which would show the transfer. 680.
- Does not remember the time when Barrow, Wade & Guthrie completed their adjustment and made a statement. 682.
- No records of any kind to show the way in which the transaction regarding the purchase by the Dayton Metal Products Co. of the Dayton-Wright Airplane Co. from Mr. Kettering and Mr. Talbott. 685.
- Asked about the arrangement of the proportion of two-fifths, two-fifths, and one-fifth. 686.
- Asked about the note of November, 1917, for \$273,000, which he gave to the Domestic Building Co., also Mr. Talbott for same amount, and Mr. Talbott, jr., for one-half the amount. 689.
- Does not know whether it has ever been paid or not. 691.
- Does not know whether Mr. Talbott has ever paid his note or not. 692.
- Does not recall anything about giving a note to Col. Deeds for \$206,706 for 200 shares of the Dayton Metal Products Co. stock. 692.
- Could not state if it had been delivered. Did not know it was overdue. 693.
- Mr. Kettering's attention called to agreement of repurchase. 694.
- Asked why the note to Mr. Deeds for \$207,706 has not been paid. 696.
- Speaks of the delays occasioned by changes in design, etc., mentioned by Mr. Schoonmaker. 708.
- Defines the different purposes of the Wilbur Wright field, the North field, the McCook field, and the South field. 711.
- His attention called to his note under date of May 22, 1917, for \$207,706 payable to E. A. Deeds. 714.
- Is shown his bills-payable book, which shows this note entered after the date of August 3, 1917. 715.
- His attention called to ledger of the Dayton Metal Products Co., showing minutes pasted in wrong places, also others; withdrawn. 717.

- HAROLD E. T. TALBOTT, Jr. (Dayton, Ohio, July 13, 1918; Book 10).
 After occupying various positions, arrives in Dayton in November, 1914. 721.
 Took up work with Dayton Metal Products Co. 721.
 First took up matter of airplane construction early in spring of 1917. 722.
 His work is confined entirely to personnel of the organization. 724.
 States what is embraced under head of personnel. 725.
 Mr. Sherer has charge of the system of vouchering to the Government. 726.
 Gives companies in which he is an officer, with salary. 720.
 Has some recollection of a date when he joined with Mr. Kettering and his father in the signing of a check for a million dollars to the Dayton-Wright Airplane Co., in payment of its capital stock. 731.
 Does not recall the actual cost of the land on which the Dayton-Wright airplane plant is built. 735.
 Heard that "they" paid \$60,000 for the Miamisburg plant. 735.
 Asked what accounts were taken into consideration in this transaction. 736.
 Gave his note approximately for \$100,000 for his share of Mr. Deeds's stock in the Dayton Metal Products Co. 739.
 Can not state when he signed it or when it was delivered. 740-741.
 Asked for explanation of the two-fifths, two-fifths, one-fifth plan. 749.
 Gives \$4,000,000 as total profits on whole contract made out of De Havilands and spares. 751.
- Maj. JAMES GOODRICH HEASLET (Detroit, Mich., July 16, 1918; Book 11).
 Major, Signal Corps, since last September. Prior to that was vice president of Studebaker Co. Had production engineering work of the Studebaker Corporation, 1-2.
 Employed in inspection service. 2.
 States what concerns he had jurisdiction over. 3.
 Outlines what he observed at Fisher body plant. 7.
 Gives reason for delay at Fisher Body Co. 10.
 "I saw a very efficient organization standing around waiting for information." 14.
 When they were ready to take something up a change would come. 15.
 Concerns making fittings for the Dayton-Wright Co. were incompetent. 16.
 States why contract for parts was let through the Dayton-Wright Co. instead of to the National Cash Register Co. direct. 17.
 Mr. Hughes quotes delivery contract and Maj. Heaslet testifies that the Fisher Body Co. could have gotten this work out promptly if they had the necessary information. 20.
 Situation similar with De Haviland planes. 21.
 Fisher Body Co. had their first De Haviland in the air about three weeks ago. 21.

Maj. JAMES GOODRICH HEASLET—Continued.

Dayton-Wright Co. switched from De Haviland 9 to De Haviland 4. Took until April to get under way with 4s. 22.

Believes Fisher Body Co. proceeded as well as they could. 26. Outlines production of Fisher Body Co. 26.

Fisher Body Co. capable of producing 40 planes a day. 28.

There will be a shortage of motors. 29.

Fisher Body Co. three months behind Dayton-Wright Co. because he thinks they did not receive information as quickly. 30.

Received up to date 61 motors. Seemed to be no lack of motors at Dayton-Wright plant. 34.

When they were well into the tools a change would come and they would have to start over again. 38.

Is questioned as to the cause of this delay of many months at the Fisher Body plant to which he answers that minor changes have been made from time to time. 39.

Mr. Hughes states that he can not understand why the Fisher Co. had not produced a plane before July 1, and continues, "For I confess I do not understand your statement." 42.

Is asked again what reason there can be why the Fisher Body Co. should not have gone ahead as rapidly as the Dayton-Wright Co.

Answers it may be because the Engineering Department is located at Dayton and Fisher is "isolated up here, away off." 43.

Some evidence of retarding production at Lincoln plant. 45.

Again Maj. Heaslet states that Fisher Body Co. has not intentionally delayed the work. 46.

States Fishers themselves are not Germans for several generations. 47.

Estimates that four planes will be ready for shipment during "the present week." 57.

Gives number of Liberty motors produced from date to date by Packard Co. 58.

Also gives number of motors with respect to other plants. 59. "Labor condition frightful." 61.

Due to lack of production of crank shafts will not have a thousand motors from Packard in August. 62.

Cites trouble with cam shaft housing which may delay production. 65.

Ford "has fallen down on his estimate badly." 66.

Can not give any reason why well-equipped concerns like the General Motors, Cadillac, and Buick got no orders before December. 68.

Tooling up in six months "was a wonderful piece of work." 69. Cadillac and Buick plants were in as good shape to make an airplane motor as any other concern. 69.

Could have handled larger orders. 72.

Other companies got orders for 6,000 and they got orders for only 2,000. 72.

Contract for 5,000 with Ford let in November, 1917; tooling up not accomplished yet. 73.

Ford produced 97 motors up to date. 77.

Maj. JAMES GOODRICH HEASLET—Continued.

Optimism greater about Ford plant than Packard because Ford has greater facilities. 79.

Asked for an explanation as to the reason the first contract was let to a concern that did not have a plant. 81.

Describes great scarcity of toolmakers and struggle with Adjutant General's Office in getting 87 toolmakers out of Camp Custer. 83.

Two regiments of men were refused by the General Staff that could have been used. (2,800 men.) 83.

Held in camp near to five months (motor mechanics) and "taken away from the factories in this country." 85.

Continuous discussion of this matter up to page 88. 91.

Sending of these men to Detroit would have aided in getting planes. 91.

Lincoln Motor Co. produced 763 motors up to July 15. 91.

Estimate for August is 700. 92.

And for December, 1,250. 92.

Nordyke Marmon plant just coming into production. 95.

Their contract was let in September, 1917. 96.

Hall-Scott contract had to be finished before Liberty motor could be taken up. 97.

Seven hundred and fourteen motors produced thus far in July out of a contemplated production of 1,950. 100.

Thinks they may get 2,500 in September. 101.

One hundred to one hundred and fifty hours is supposed to be about the life of certain parts of the Liberty motor. 107.

Thinks a new engine can be produced with less men than it takes to repair one and therefore does not favor reestablishing an engine. 108-109.

Life of a plane is not over 90 to 120 days, therefore requiring probably three motors to the plane. 109.

Spare parts holding them back from schedule. 110.

Makes statement relative to Liberty motor. 112.

Had motor been run as originally designed at 330 to 350 horsepower there would have been no serious change. 114.

Col. Hall will state the scupper system was adequate. Col. Vincent will tell you we had to have pressure system. 115.

Propeller head on crank shaft changed three times. 116.

Great deal of question during fall and winter as to whether Hall or Vincent had control of the Liberty motor. 118.

Hazard an estimate that had no engineering changes occurred, would not have had over 1,000 engines more than we have. 118.

Had 595 engines the 1st of May. 119.

Thinks manufacturers were misled by believing that this was an automobile problem and not a totally different problem. 121.

Only saved twelve one-hundredths of a pound per horsepower in order to bring it up to 400. 124.

The heads of tool room at Lincoln plant apparently had banded together with certain subordinates, and thinks there was a deliberate case of retarding tool work, which, of course, was the important work. 124.

Maj. JAMES GOODRICH HEASLET—Continued.

Barrel dropped on a propeller one day and we never have discovered where the barrel came from. 127.

English claim they can not get the results with the Zenith carburetor that we supply with the engine and they want the Clotele. 130.

About 1,200 engines shipped with light connecting rods. 133.

Estimates on March 25 was that we would have 4,620 engines by the end of June. Only had 1,625. 134.

Had counted on Ford for 1,200 and they really had not produced anything. 135.

J. H. Walker Co. of Cleveland, fell down flat on cam-shaft housing. 136.

General Motors production sheet marked "Heaslett Exhibit 3, July 16, 1918." 136.

Ford production sheets marked "Heaslett Exhibit 4, July 16, 1918." 136.

Lincoln Co. sheet marked "Heaslett Exhibit 5, July 15, 1918." 136.

Sheet showing total production marked "Heaslett Exhibit 6, July 16, 1918." 137.

Capt. J. NEIL PATTERSON (Detroit, Mich., July 16, 1918; Book 11).

Has been an officer of the Signal Corps about 10 months. 138.

Went to Washington in middle of August and offered services. Finally succeeded in connecting up with motor production department under Lieut. Emmons. Given rank as aeronautical mechanical engineer. 138.

Was told to go to Buffalo and visit motor plants in district and find out some means of hurrying up production of planes at Curtiss, Hammondsport, and Buffalo, and later at Elmira, N. Y. 139.

Had been in Packard shops for nine months and then went with Packard deal in Pittsburgh on technical work. Later became salesman for Packard dealer in Detroit. From there took charge of Detroit factory branch of Lozier Motor Co. Had various other positions in connection with motor business. 139, 140.

Found companies that were not working on the Curtiss equipment with the energy and capacity they could. The main reason being the Curtiss Co. did not pay their bills. 142.

Transferred to inspection department, Signal Corps, and sent to San Francisco to be district manager of inspection there. 143.

After work completed there reported back to Washington and then ordered to report to Maj. Heaslett, Detroit. 144.

Conditions at Curtiss plant at that time very chaotic. 146.

There was no one man there who was boss. 146.

They had enough men but not enough assistants in the executive department. 150.

Makes statement as to how conditions were remedied. 151.

Had as many as 15 drawings up and down the State of California for the same parts that were all different. 160.

Fowler, in some miraculous way, received an order for training planes. He did not have any organization and he did not have any factory. 164.

Capt. J. NEIL PATTERSON—Continued.

He had conversational capital. 165.

Pretty much handicapped through the Curtiss Co. not sending drawings and drawings not checking with one another. 167.

United States Aircraft Corporation was a body of men who had a contract; they had had a plant and they were going to use that if they could get somebody to put up the money to build airplanes. 168.

They found a man who would put up enough money if he could take 51 per cent of the stock. 169a.

Fowler Co. finally closed its doors because of lack of finances. 169a.

Company is now well financed and they are building a very good plane. 170.

Understands Standard planes at different flying fields have been retired. 177.

California Aviation Co. made spare parts. 178.

Curtiss Co., with organization they had, did all they could to furnish accurate drawings. 181.

The climate out West is such that they can work practically all the year round. They needed no coal for factories, and you could get a factory quick. 182.

Western fields needed equipment. 182.

Did not believe anyone figured that there would be a tremendous overstocking of orders into the plants in the East that would sort of eliminate the little fellows. 183.

At Fisher Body Corporation he found one of the finest plants he had ever been in for what he thought was the building of an airplane. 185.

Fisher Body Corporation working toward 40 planes a day. 189.

Body of men in Washington controlling all deliveries of what the Signal Corps furnish to the plane manufacturers. 195.

Capt. Bayne controls the purchasing of that equipment. 195.

Allotment is done in Washington and man in charge of that is Mr. Hena, working in Col. Mixer's office. 196.

Fisher Body Corporation entirely out of synchronizers; possibly out of navigation light equipment. 198.

Charles Fisher knows most about finances of the company. 209.

Only Hall-Scott and Curtiss motor used on machines built in West. 213.

Only Standard and Curtiss planes built in California. 213.

Liberty Iron Works in Sacramento and Fowler Airplane Co. in San Francisco are adequately equipped, financially and in their personnel, and in factory equipment, to carry out any reasonable orders and deliver the right kind of an article. 214.

Western fields need 40 training planes a month. 214.

Fisher Body Corporation also supplying bodies to motor companies. 215.

Capt. HALL B. HOLMES (Detroit, Mich., July 16, 1918; Book 11).

Entered service October 1, 1917. 217.

Prior occupation was auditor of American Telephone & Telegraph Co. 217.

Capt. HALL B. HOLMES—Continued.

Previous to that was on staff of Patterson, Teele & Dennis, certified accountants. 218.

Spent summer of 1907 in automobile plant. 218.

Assigned as district accounting officer, Detroit, upon receiving a commission. 218.

Had charge of Government accounting in all plants operating under cost-plus contracts. 219.

Packard Motor Car Co., Ford Motor Co., Lincoln Motor Co., Fisher Body Corporation, Lewis Spring & Axle Co., Wilson Body Corporation, Grand Rapids Airplane Co., Hays-Ionia Co. of Grand Rapids, Mich., and the General Motors Corporation were all operating under cost-plus contracts. 219.

Lewis Spring & Axle Co. has contract to manufacture spare parts for Bristol fighter. 219, 220.

Wilson Body Co. make spares for De Haviland 4s. 220.

Grand Rapids Airplane Co. manufacture wood parts for the Handley-Paige. 220.

Grand Rapids Chair Co. is one of subsidiary companies of Grand Rapids Airplane Co. 220.

Grand Rapids Airplane Co. is an association of furniture manufacturers. 220.

Got contract for 1,000 spare parts for Handley-Paige and parceled out the performance of it. 221.

Up to July 6 vouchers had been passed in field for payment to Fisher Body Co. amounting to \$3,060,968.42. 221, 222.

Plant accounting officer, Leon S. Wescoat, supervises vouchers. 223.

Witness supervises accounting. 223.

Any question on which the Government's attitude is not clear to plant accounting officer is referred to him and he rules upon it or forwards it to Washington, or he may rule upon it tentatively and forward it to Washington. 223.

Salary payments have not been finally approved. 226.

Statement of salaries paid by the Fisher Body Co. to its officers. 226, 227.

A portion of these salaries only is charged to the work under Signal Corps contract. 229.

Enumerates just what salaries and percentage charged to Government. 229, 230.

Been informed by Washington that all salaries are subject to approval in Washington. 231.

Dispute at Fisher Co. as to costs and work done by Dayton-Wright Airplane Co. for them on 400 J-1 planes. 232.

Fisher Co. has a cost system in operation, but it has not produced accurate and reliable results. 233.

Fisher Co. claims a percentage of profits on parts made for Dayton-Wright. 235.

Dayton-Wright also claim a percentage of profit on parts made for Fisher Co. 235.

Bogy in Fisher Body Co. for J-1 Standard planes is \$4,130. 237.

Roughly estimate cost of manufacture to be about \$3,400 or \$3,500. 237.

Capt. HALL B. HOLMES—Continued.

Fisher Body Co. get 15 per cent, or an equivalent amount of the sum of \$4,130 fixed as the bogy cost for the Standard J plane. 238.

In addition, it gets 25 per cent of saving effected. 238.

Fisher Body Co. supplied Dayton-Wright Co. with cowling on the basis of cost plus 15 per cent, and that cost to Dayton-Wright Co. went into its cost which Government was to pay. 241.

Allowed as part of cost by special ruling issued by the Rulings Board in Washington. 241.

Enumerates contracts Fisher Body Corporation has with the Government. 251, 252.

When Fisher Body Co. submits vouchers for profits, they do not show how much is due the Government on all advances and what should be retained to meet those advances. 257.

Sheet, dated July 6, 1918, giving a summary of the nature of expenditures on 400 J-1 planes marked "Holmes Exhibit 1, July 16, 1918." 258.

Letter sent to Washington relative to salaries of officials at Fisher plant. 267.

Payment of executive salaries began with October 1, 1917. 269.
Down to July 6, 1918, payments made to Packard Co. amounted to \$7,437,861. 274.

Payments per engine accepted amounted to \$4,302. 276.

Payments to Lincoln Motor Co. down to July 6, 1918, amounted to \$5,711,204. 276.

Payments per engine accepted amounted to \$8,855. 276.

Case of Ford Co. total payments down to July 6, 1918, amounted to \$1,325,043. 276.

Payments per engine amounted to \$19,486. 277.

Total payment to Cadillac Co. down to July 6, 1918, amounted to \$1,056,696. 277.

Payment per engine accepted, \$16,257.

Total payment to Buick Co. down to July 6, 1918, amounted to \$416,669. 277.

Payments per engine accepted, \$4,190. 277.

Number of engines delivered takes no account of the application of cost that is included in payment to contractor. 279.

Statement of "Estimated cost of Liberty motor, exclusive of profit and bonus, March 22, 1918," made up by Lieut. Purdy. 281, 282.

Lieut. Purdy on staff of witness as technical man. He is familiar with automobile construction and efficiency. 282.

Formerly with General Motors Corporation as a planning-department man in connection with time studies, planning, production, and statistical plant accounting. 282.

Estimated cost of Liberty motor, exclusive of profit and bonus, is \$3,200. 284.

FRED J. FISHER (Detroit, Mich., July 17, 1918; Book 11).

Been connected with Fisher Body Corporation for 10 years. 290.
President and manager. 290.

Six brothers of Fisher family identified with company. 290.

Five Mendelsogns in the organization. 291.

FRED J. FISHER—Continued.

- Concern engaged in building bodies for automobile trade at time we entered the war. 291.
- At time we entered the war had all the plants but the two taken on since; built one and took second plant on lease. 291.
- The new plant is on an 11-acre site, covering practically the entire ground, and was completed in 48 days after work started. 292.
- Government advanced money to build the building. 293.
- Mr. Waldon first brought to his attention the idea of building airplanes for Government. 293.
- First contract was for 400 Standard J planes, dated about August 1. 299.
- Set-price contract of \$6,500 for each training plane. 300.
- Price was arrived at at meeting in Washington with Mr. Mingle, of Standard Aircraft Co., Mr. Deeds, Mr. Waldon, Mr. Talbott, Mr. Montgomery, Mr. Mendelsohn, and himself. 300.
- Price was arrived at through figures mentioned by Mingle more than anybody else. 301.
- Contract was subsequently canceled. 301.
- New contract, dated November 6, embraced 400 training planes (Standard J-1 planes), 3,000 De Haviland 9's, and 1,000 fuselages complete for DH 9's and 1,500 sets of all fabricated parts. 303.
- New contract was on cost-plus basis. 304.
- At a meeting in Dayton, Ohio, about January 18 or 20, Maj. Hall, Col. Vincent, the two Talbotts, Mr. Deeds, and Mr. Simpson being present, it was decided to be the policy to have Fisher Body Corporation build a small lot of De Haviland 4's instead of 9's, until 9 was properly designed and all changes incorporated to take new Liberty motor. 311, 312.
- No change made in contract, but it was understood he would proceed on the DH 4's in same way contract provided for 9's. 312.
- Letter from War Department relative to changing bogey price on Standard J-1 planes. 314.
- Mr. Fisher's reply. 315.
- Made statement that if Government paid them 15 per cent (the Fisher people) and the others 12½ per cent, their planes would cost less than the rest of them. 321.
- "We make our drawings all over. We work from nobody's drawings."
- Production retarded on first contract by failure to furnish him drawings. 330.
- Was delayed getting into production through failure of contractor to deliver metal parts. 333.
- Contracted for all-steel fitting for the entire plane. 333.
- Mr. Waldon and Mr. Deeds told him Cash Register Co. was a wonderful organization and that they would be in a position to make these metal fittings very much better and quicker than he would. 334.
- Mr. Deeds and Mr. Waldon requested him to place contract for fittings with Dayton-Wright Co. 334.

FRED J. FISHER—Continued.

Dayton-Wright had given Cash Register Co. contract to furnish fittings, and they thought it best to have fittings furnished through Dayton-Wright Co. He had no control of the fittings situation with the Cash Register Co. 335.

"In all our early negotiations the Talbotts were always in on every conference, practically, that we had in Washington with Montgomery and Deeds." 344.

Really inability to get fittings that delayed completion of contract for 400 Standard J planes. 350.

Made contract with Dayton Metal Products Co. for turnbuckles. 351.

The matter of giving contract to Dayton Metal Products Co. first suggested at conference in Washington with Talbotts, and later, when on inspection of plants connected with Dayton-Wright Co., accompanied by Mr. Talbott, Mr. Kettering, and Mr. Deeds. 356, 357.

The Fisher Body Corporation was to furnish certain materials to Dayton-Wright Airplane Co. 358.

Terms were not discussed. 359.

Government's man decided on what basis they were to build these supplies. 359.

The amount of profit is still open. 362.

Went to Cash Register Co. and took out the unfinished parts they had on hand, in order to complete planes. 364.

File of correspondence between Dayton-Wright Airplane Co. and Fisher Body Co. with respect to these matters. 366-374.

Report of meeting held at Dayton, July 8, relative to changes to be made in airplanes. 388, 392.

Only a few metal fittings for the DH 4's that can be used on DH 9's. 396.

Told by Mr. Deeds he was to wait and get drawings from Dayton-Wright Airplane Co. 397.

Had absolutely no work. 399.

Had to let all help go when training plane contract was completed because could not build the De Haviland 4's. 402.

English Government said they wanted to make a contract with Fisher Co., but he said no, to make a contract with the American Government. 412.

Only change in the DH 4 and DH 9 was in the cockpit and taking the gasoline tank and moving it forward or backward. 415.

Were questioning Mr. Deeds and Mr. Montgomery about the 9. 416.

Kept. Messrs. Deeds and Montgomery informed that they were not able to proceed with the DH 9. 417.

Started to tool up for production of De Haviland 4 in January. 418.

Have about 7,000 people on pay roll right along. 419.

Plant was practically idle. 419.

Plant was idle from some time in April, when first contract was completed, until within the last five of six weeks. 420.

FRED J. FISHER—Continued.

Had an order, but it was a question of changes on parts and things of that sort. 420.

Q. "Is it not better to have manufacturers getting out planes, even though some of the parts were obsoleted, than to have no planes at all?"—A. "That is the way we looked at it."

Q. "Why did you not do it?"—A. "We were not permitted to do it." 421.

"They sent a De Haviland 4-plane up here from Dayton about six weeks ago that was supposed to be an up-to-date plane, with everything on it, but it was not, but a long ways from it." 428.

Did not think it right to ship those planes across to the front in that condition. 430.

Did not feel like sending planes over that had light connecting rods. 431.

Knew that planes going from Dayton-Wright were to a considerable extent in an unsatisfactory condition. 433.

Did not give Mr. Deeds or Mr. Waldron, or anyone else any program for the De Haviland 4's. 436.

Never told Col. Deeds or Gen. Squier, Col. Waldon, Col. Montgomery, or anyone connected with the Government that he would have 2,000 planes, or 1,500 planes delivered by the end of July, 1918, that is, De Haviland 4's. 437.

Under date of November 5, 1917, sent telegram to Col. Deeds advising him that he was unable to get any information, drawings, or specifications which would allow him to proceed with program mapped by board. 439.

Received reply next day stating two DH engineers on way and that some DH drawings had been forwarded on Saturday. 440.

Never saw the DH engineers referred to. 440.

They were making promises which they did not have means of carrying out. 442.

CHARLES T. FISHER (Detroit, Mich., July 17, 1918; Book 11).

Vice president of Fisher Body Corporation. 443.

Production manager. 443.

Went into production on DH 4's as they could, according to the way they got information. 443.

Dates will be shown in diary. 444.

Thought they were going to ship 250 planes in July. Will probably ship 25. 447, 448.

It was up to the Signal Corps to come in and pass on a plane and say, "Now, that is all right. Go ahead with it." 461.

Takes four or five months from the time you get your information to produce the tools and produce complete planes. 465.

If we had gotten the information when we were through with the training-plane drawings, and the engineering end was through with them, and had turned the engineering on battle planes, and they had let us go right on, there would not have been any intermission between the production of training planes and the battle planes." 468.

E. GLENN SIMPSON (Detroit, Mich., July 17, 1918; Book 11).

Been connected with the Fisher Body Corporation about six years. 472.

Now chief engineer, airplane division. 472.

Had never had any experience with airplane construction. 473.

No one connected with Fisher Body Corporation had had any experience with airplane construction in the beginning. 473.

Got an aeronautical engineer soon after they started. 473.

Name of engineer referred to is Verbile, and he was with the Curtiss people. 473.

Mr. Verbile now in France, working under Mr. Beshorow for the Government, supposed to be the best aeronautical designer in the world. 474.

First undertook to make De Haviland 4's about January 23. 475.

Has not got complete drawings yet. 475.

Simply running a shop proposition now. Put up a sample ship in shop and then follow that up with drawings. 478.

Explains why they have not kept up with Dayton-Wright people in production. 479, 480.

Had trouble on installation of bomb gear. 482.

Had to change all ship in production because of later information as to bomb gear. 482.

Lack of information prevented them from going ahead with construction of De Haviland 9's prior to January 23, when they were told to switch to the 4's. Information was not in this country at that time. 485.

New bomb drop was received from Lieut. McCardis, of production engineering end at Washington. Drawings were dated May 7, but they did not receive final changes until Lieut. McCardis came on July 2. 490.

Up to that time had been working on an entirely different installation. 490.

Lieut. McCardis said they were all wrong and out of date and furnished the new drawings. 490.

LOUIS MENDELSON (Detroit, Mich., July 17, 1918; Book 11).

Treasurer of Fisher Body Corporation. 492.

Held that office nine and one-half years. 492.

Capital of corporation is \$5,000,000 of preferred stock and \$20,000,000 of no par value stock. 492.

Present capitalization took place a year ago, when company was refinanced and all small companies amalgamated. 492.

Government advanced them \$2,000,000 for specific purposes; \$1,200,000 for units 2, 3, and 4; \$800,000 to pay back the money they had expended on unit 1. 493.

Government really had title to this property. 494.

Plants Nos. 10, 14, 17, and 18 are used in making planes for the Government. 495.

Plant No. 10 is a new plant, a reinforced concrete building, one-third of it being used for Government work. 495, 496.

No. 14 is old plant built about 25 or 30 years ago. 496.

No. 17 is a new plant used entirely for Government work, and leased from a man by the name of Shiffman. 496.

LOUIS MENDELSON—Continued.

Plant 18 consists of units 1, 2, 3, 4. Units 2, 3, 4 cost between \$1,000,000 and \$1,200,000. Unit 1 cost a good deal more because of power plant, water switch, etc. 497.

Balance sheets of Fisher Body Corporation as of April 30, 1917, and 1918, were filed and marked "L. Mendelsohn Exhibits Nos. 1 and 2, July 17, 1918." 500.

Total cost of plant 18 about \$1,760,000. 505.

Pages in volume mixed here and testimony seems to be that of Mr. Macauley, of the Packard Co., 509-512.

Understood Mr. Vincent had authority to deal with experimental payments relating to a period during which he was connected with the Packard Co. 511.

Mr. Vincent suspended from the Packard connection. 511.

His salary continued until August 10, the date of his resignation. 511.

Somebody at Washington approved Mr. Vincent's action in allowing these amounts. 511.

AARON MENDELSON (Detroit, Mich., July 17, 1918; Book 11).

Secretary to Fisher Body Corporation. 513.

Statement of Fisher Body Corporation, Aeroplane Division, investment in fixed assets, material, and labor, May 31, 1918. 515-521.

Net amount expended by Fisher Body Corporation in its airplane division down to May 31, 1918, totaled sum of \$2,443,555.46. 524.

PRIVATE LEON S. WESCOAT (Detroit, Mich., July 17, 1918; Book 11).

Been engaged as plant accountant since April 25. 528.

Came there in subordinate capacity. 528.

Prior to that for one year was general manager of Horn & Hardant Manufacturing Co. 528.

Prior to that was appraiser of the Hoffman Co. 528.

Prior to that was chief accountant of Felix Isman (Inc.) 529.

Government has paid Fisher Body Co. on account of contracts, separate from advances, approximately \$3,200,000. 529.

Estimates cost of Standard J plane at \$3,400. 531.

Executive salaries allowed from 1st of October. 533.

Apparently dealt fairly with Government in presenting requests only for amounts to which they were entitled. 534.

Very clean record with respect to their vouchering. 534.

Has not observed any intentional delay of production. 536.

Fishers and Mendelsohns impress him as being thoroughly loyal. 537.

Government has paid approximately \$2,000,000 on account of De Haviland 4s and has not got a plane yet. 539.

A great deal of spruce rejected after it has been accepted as a part of the cost. 541. Approximately 60 per cent. 542.

Understands there is an agreement in existence with the underwriters of the present Fisher Body Co.'s stock, by which the executive salaries shall not be increased during the period of underwriting. 547.

H. H. SCOTT (Detroit, Mich., July 17, 1918; Book 11).

Auditor for Fisher Body Corporation. 550.

H. H. SCOTT—Continued.

Explains statement referred to in testimony of Aaron Mendelsohn. 551.

Has no completed costs on the Standard J-1 planes. 563.

Has kept a system of cost control in plant. 564.

Charts showing depreciation to May 31 marked "Scott—

"Exhibit 1, July 17, 1918." 567.

"Exhibit 2, July 17, 1918." 567.

"Exhibit 3, July 17, 1918." 567.

"Exhibit 4, July 17, 1918." 568.

"Exhibit 5, July 17, 1918." 568.

Statement of vouchers submitted and amounts paid by the Government marked "Scott Exhibit 6, July 17, 1918." 568.

Shows \$3,023,449.94 paid by Government and \$638,431.10, including \$75,000 for special tools, not paid. 568.

ALVAN MACAULEY (Detroit, Mich., July 18, 1918; Book 11).

President of the Packard Motor Car Co. 569.

Has held that position for a little over two years. 569.

For six years was general manager and part of that time vice president. 569.

Prior to that general manager of Burroughs Adding Machine Co. 569.

Makes statement in relation to what is known as the Liberty motor. 570.

About three years ago last November Packard Co. decided definitely to go extensively into the development of air motors. 570.

Designed approximately ten or a dozen motors and spent close to \$400,000 in development work up to the time of the so-called Liberty production. 570.

Had one of the Mercedes motors imported by Ralph De Palma. 575.

Thoroughly familiar with the Mercedes as they knew very thoroughly every motor of prominence in the world. 575.

Had used Delco ignition system in their regular product for number of years, having also used the magneto, and the Delco had given much more satisfactory results. 576.

Substituted magneto for Delco ignition on experimental motor on advice of such aeronautical authorities as our Government had and of visitors from Europe familiar with aeronautical matter. 578.

Was not practicable, taking engine as it stood, to use magnetos unless you used two. 580.

Would have required a good many changes in design to drive four. 579.

Motor 299 used by De Palma in making world's record. 588.

Motor 905 used by William Rader in making world's record. 581.

The 905 motor was seen by very many officers when exhibited at the aeronautical show in New York City in January, 1917. 582.

Pamphlet regarding motor published at time was marked Macauley Exhibit 1, July 18, 1918. 582.

ALVAN MACAULEY—Continued.

905 motor, model 2, developed 267 horsepower at about 2,500 revolutions per minute. 587.

267 horsepower was obtained in July, 1917. 588.

By latter part of May, 1917, had so far accomplished in development of their motor that at a Sunday morning conference on May 27, 1917, it was decided that Mr. Vincent should go immediately to Washington with their prints, drawings, and photographs and lay them before Government officials, and state plan they had for manufacturing them in large quantities, etc. 588.

Mr. Vincent arrived in Washington May 28. Met Mr. Deeds and Mr. Waldon, and others. 589.

Mr. Vincent told him over telephone on Monday or Tuesday authorities in Washington were highly pleased with their tender of their development and facilities; that they were gladly accepted and would be made the best possible use of. 599.

Within a few days Mr. Vincent told him it was considered by Government authorities to be highly desirable to increase horsepower of motor, as designed by Packard Co., and get more horsepower with lighter weight per horsepower. 589.

Heard nothing more from him for several days. He finally told him (witness) that he had made some sketches in conjunction with Mr. E. J. Hall enlarging the motor and improving it in some respects. 590.

Also told him Packard Co. should sink their identity with motor because Congress would not be interested in appropriating hundreds of millions of dollars to build Packard motors, and this was assented to. 590.

Mr. Vincent came back to Detroit with sketches made at Washington and asked them to build wooden model of motor, which was done in three days. 591.

Asked to build a full-size operative model, which was complied with, and shipped it to Washington on the second, arriving the third, and set it up in the Bureau of Standards on July 4. 591.

This was an 8 cylinder engine. 591.

Eight-cylinder project abandoned within about 90 days. 592.

Had about two months' start on making tools for the 8 when they were called off and told to make the 12. 592.

Correspondence of company relating to development of motor and Mr. Waldon's connections with Packard Motor Car Co. 594-611.

Contract for Liberty 12's let to Packard Co. under date of September 4, 1917, calling for 6,000 motors. 612.

Contract schedule called for 50 in November, 200 in December, 500 in January, 800 in February, 1,000 in March, 1,200 in April, 1,200 in May, and 1,050 in June. 612.

One motor shipped in November, 25 ready for shipment in December, 43 in January, 96 in February, 153 in March, 314 in April, 439 in May, 599 in June, and July to date 377. 612, 613.

Expect to finish 6,000 engines in November. 613.

ALVAN MACAULEY—Continued.

Summary of statements made in letter to Mr. Frierson, Assistant Attorney General, under date of May 22, 1918, relative to obstacles encountered in bringing the Liberty motor up to point of production. 614.

Delay was occasioned by a great many things, a part of it by lack of drawings. 619.

Contract was made on September 4, 1917, before Government had decided definitely just what it was to have made. 620.

Trouble in Washington was lack of knowledge and lack of organization. 623.

Delayed a good deal by lack of organization in Signal Corps. 625.

Lack of legal authority to provide an organization to do anything that should be done in a business way in this matter. 627.

Have had as high as 162 Government men in plant at various times. 631.

Delco equipment complete cost \$117.45. 634.

A total of \$5,000,000 advanced to Packard Co. up to date—July 18, 1918. 639.

Total of unpaid advances about a million dollars. 639.

In order to get motors ahead, had to run up an inventory of \$23,000,000. 639.

Refers to publication known as "Packard Inner Circle," issue of November 22, 1917, and statement therein relative to the amount of motors assembled for Twin-Six motor carriages as one reason for this tremendous inventory. 637, 640.

Borrowed two and a half million dollars from Government in connection with Liberty motor contract. 641.

Something over a million dollars still due on advances. 642.

Original bogey cost of \$6,087 had been arrived at when he reached Washington to negotiate contract. 643.

Col. Montgomery, Col. Deeds, and he does not know who else, arrived at this figure. 643.

Matter of bogey cost had all been talked over with Lelands (by Col. Montgomery and Col. Deeds) before he got to Washington. 648.

Bogey cost was reduced to \$5,000 by contract dated December 12, 1917. 649.

There was also a reduction of the rate of fixed profit in this contract. 649.

Col. Montgomery and Mr. Harris came to Detroit and told him that from later information they had reason to believe price established was too high; that they had seen all the other contractors and that the other contractors had agreed to this reduction, and so he agreed to it. 649.

An important change in engine in process now. 653.

Capital of Packard Motor Car Co. approximately \$20,000,000. 654.

Has an outstanding issue of debenture notes amounting to \$7,500,000. 654.

On June 1, 1918, company had issued common stock of \$11,815,930 and preferred stock of \$8,000,000; had no bonded indebtedness, but had \$7,500,000 in debenture notes at 5 per cent. 654.

ALVAN MACAULEY—Continued.

Two million five hundred thousand dollars was an increase in the issue of debenture notes issued in November, 1917, and delivered to the Signal Corps as security for an advance. 655. Eleven million eight hundred and eight thousand four and four dollars and forty-seven cents devoted to aircraft motor manufacture by Packard Co. 656.

Under date of January 29, 1918, had further advance of \$2,500,000, making total of \$5,000,000 referred to previously. 662.

At the end of contract a committee of three shall value the heat-treating building, having in mind its value to the Packard Motor Car Co. for its own business, and the difference between that and the cost of it shall be treated as depreciation. 668.

The Government buys the equipment; it buys the test field and everything on it. 669.

His salary increased from \$40,000 to \$50,000. 672.

Sure he could have produced the 150-horsepower Hispano-Suiza engine. 674.

Could probably have produced it a little quicker than the Liberty. 674.

Went ahead on experimental work totaling \$249,159.10 on verbal orders of Lieut. Col. Vincent. 691.

Thinks he discussed matter of allowance of this amount with Mr. Vincent. 698.

Judge Hughes stated that of the invoices, of which Mr. Robinson produced a list, which total \$249,159.10, there appear to be only two that antedate August 11, 1917, one of \$2,500 for 8-cylinder wood model and another for \$25,000 for an 8-cylinder engine, making a total of \$27,500. Requests explanation as to how, prior to the other invoices, the amount of \$104,500 was obtained from the Government. 703.

Understood Mr. Vincent was passing these payments on somebody's authority at Washington. 707.

ORMUND E. HUNT (Packard Motor Car Co., Detroit, Mich., July 18, 1918; Book 12).

Chief engineer of the Packard Co. 1.

Liberty motor: why 8-cylinder was selected as the type. 2.

Relates reasons for adopting the magneto ignition for Model No. 2, or 905 engine. 4.

Reasons for making the change to Delco. 5.

Further considerations in favor of the Delco. 6.

Most of the magnetos had been imported from Germany, or made in this country by German workmen under German patents. 7.

Also states that Packard, without any outside influence, would have eventually used the Delco. 8.

Date of discovery of the unfitness of the crank shaft and the connecting rods for the 12-cylinder motor. 9.

Asked for information about vouchers for \$104,500 or total amount of \$249,000. 12.

Makes general statement concerning these vouchers. 14.

Not Packard experimental work, but developing of the Liberty motor. 17.

ORMUND E. HUNT—Continued.

Accumulated figures on overhead at the time order was closed would indicate 110 per cent. 19.

Asked how they could make such an arrangement with Mr. Vincent who was at that time in the employ of the Packard Co. 19.

Did not care whether Mr. Vincent could give an order for the Government or not, work had to be done, trusted some one would be square enough to pay them for it afterwards. 21.

Talked with Col. Deeds over telephone. 21.

Vincent left the Packard Co. on May 27, but they paid his salary until August 10. 23.

Did they get this money ultimately through Mr. Vincent exclusively, or whether through Col. Deeds, and how. 23.

GEORGE ALBREE (Detroit, Mich., July 18, 1918; Book 12).

Resides Concord, Mass. 26.

President of the Albree-Pidgeon Co. 26.

Interested in the monoplanes which were ordered by the Government, one of which was delivered at Mineola field, and the other branch of the business, the glue part of it. 27.

Hands over copy of concise statement of their investigations made under suggestion of Assistant Secretary of War, Mr. Crowell, marked "Albree Exhibit No. 1, July 18, 1918." 27.

Relates experiences in dealing with the Government. 28-34. (All these experiences connected with Col. Deeds.)

Mr. Albree immediately sends statement to Mr. Crowell asking as one of four things that they would under no circumstances be asked to have further dealings or conferences with Col. Deeds. 34.

Mr. Crowell assented to these propositions, and also refers to the "automobile gang." 35.

Considers Col. Deeds one of the brainiest men he had ever done business with; so it was no fault of his lack of intelligence that things were not accomplished. 36.

Is asked to meet officers of Advisory Committee on Aeronautics, but none of them appear. 37.

Their glue has been a matter of investigation by the Government for one year, and the investigation is not concluded yet. 37.

Have had 20 years' practical use of this glue. 37.

Can produce letter over signature of Dr. Stratton, of the Advisory Council, in which he states the Bureau of Standards reports it the best glue ever tested for the Signal Corps. 38.

Col. Deeds's connection with the glue matter. 40.

States what he knows about Mr. Klemin, instructor in the Massachusetts Institute of Technology. 41.

Mr. Klemin in charge of the tests of the monoplane. 46.

Mr. Klemin's approval of the plane. 47.

Thought Klemin displayed hostility by placing Mulloy as supervisor of the work at the Pigeon factory. 48.

Mulloy delayed progress in the construction of the machines. 49.

One plane delivered in September, and the other in November to Langley Field. 50.

GEORGE ALBREE—Continued.

Pilot states it to be the fastest machine he had ever flown in his life, and perfectly safe. 52.

Col. Clark, in writing, reports that it is unsafe. 52.

Finally, in February, get the data upon which this report is based. 52.

Col. Clark states they tried to hold up the Government on the price of the glue. 53.

Test of the machine made at McCook field, or rather of the glue in connection with the machine. 54.

Explains sand test, and how his two machines were destroyed. 55.

Test unfair. 59.

Col. Clark tells him the machines will be accepted, and paid for, and junked. 56.

Col. Clark now gives three other reasons for not accepting the machine for final flight, none of which are true. 57.

Mr. Klemin in charge of the sand test. 60.

Repeats, for purpose of record, how he happened to come to Detroit. 60.

Klemin's connection with the sand test may be the explanation of the failure of the machine. 62.

FREDERICK R. ROBINSON, (Detroit, Mich., July 18, 1918; Book 12).

Connected with the Packard Co. eight years, always in connection with accounting. 64.

Gives their system of arriving at the cost of the Liberty motor. 64.

Bogey cost in contract, \$6,087. 67.

Actual cost, \$3,960.43. 68.

Cost, of course, on 6,000 engines would be reduced more than on 600 engines. 71.

Percentage of 220 on overhead, covering a number of years back. 74.

Produces ledger sheet showing estimated depreciation for fiscal year ending August 13, 1918. 77.

Goes through process of arriving at different depreciation values to be credited to each department. 77-78.

Corrects himself in stating that he had included a certain amount for depreciation in an additional overhead charge of 50.4 per cent. 80.

Asked to produce sheet by which he calculated this additional 50.4 per cent overhead charge. 81.

Produces three sheets to show the calculation of this cost. 82.

What is included in the item of overhead under discussion. 84.

Depreciation is calculated by divisions. 88.

Explains this computation by divisions. 89.

Produces sheet showing figures actually used, what the depreciation was he took for this period of the 600 engines, and how he got this percentage. 91.

Allowed certain amount for depreciation under contract, and they again make allowance for depreciation in calculating the cost. 96.

Classes of items which come under the head of administration engineering expenses. 97.

FREDERICK R. ROBINSON—Continued.

Mr. Hughes, by going through the statements of cost and adding up the different items, arrives at the final cost of \$3,960.43 per engine. 98-103.

Figuring fixed profit under the contract, this would give them \$3,750,000 profit on 6,000 engines, and, calculating savings under bogey cost, this adds \$1,500,000 in addition. 103.

When they get through they will have included depreciation in addition to profit. 104.

Produces vouchers, dated July 2, 1918, showing salaries for December, 1917, being correct statement as they then stood, and paid by the Government. 106.

Shows final total of \$27,694.01 in salaries charged to the Government for the months of August, September, October, November, and December. 109.

Mr. Hughes says he wishes the record to show that in reading the foregoing figures reference was had to contractor's voucher No. 107, supplement No. 23, public voucher, July 2, 1918, contract No. 1646, supporting voucher No. 6. 110.

Vouchers which have been presented to the Government covering total overhead charges. 113. (Under contract 1646.)

The total for the entire contract, No. 1646, for overhead expenses down to May 1, 1918, amounted to \$872,946.63. 114.

Certain proportions of the salaries were charged to the aircraft expenses. 116.

Overhead expenses of \$61,791.87, included in the special item of \$249,159.10, began with the start of the work on the 11 experimental engines, June, 1917. 118.

Nothing was included in this estimate of cost of 600 engines on account of experimentation. 119.

Amount paid for the 11 engines, \$249,159.10. 119.

Gives statement showing how this cost was arrived at. 119.

This order was their own order and did not come from the Government. 122.

Traveling expenses, design section at Bureau of Standards, \$16,852.93. 122.

ORMUND E. HUNT (Book 12).

This comprised some 16 detail men, Mr. Vincent, and one other engineer. 123.

Asked if Mr. Vincent's expenses are covered in this. 123.

Refers to force of men working in Washington, which includes Mr. Vincent. 124.

Mr. ROBINSON (Book 12).

Explains why this is called Packard overhead expense and what it was on. 124.

Estimate for engines is made out on date they billed the last two engines, January 14, 1918. 125.

First engine billed at \$25,000 on July 3. 126.

These 11 engines delivered to various points for use of Government as specimen engines, on no order from the Government; just understanding. 126.

When the first engine was billed for \$25,000 it was accepted and paid for by the Government. 127.

Mr. ROBINSON—Continued.

Paper is produced showing shipments of the 11 engines that entered into this billing comprising the \$249,159.10. 128.

Also explains what the \$104,500 was presumed to cover. 128, (See p. 12.)

Asked why they left out three engines supposed to have been shipped in September in this estimate of \$104,500. 129.

Request for payment was evidently not supported by invoice, and not supported by goods delivered either. 130.

Does not think it likely they will have any information which will show the make-up of the voucher. 131.

Mr. Hughes reminds him this is a very important matter, getting \$100,000 when they did not have an order and did not have a contract. 132.

Mr. Hunt sent to obtain further information. 133.

FRANCES LESTER JANDRON (Detroit, Mich., July 18, 1918; Book 12).

Assistant secretary to the Packard Co. 134.

Asked if he knows anything about the check for \$104,500 from the Government, as it bears his name. 134.

Understands the check came through the Council of National Defense. 135.

As the Council of National Defense was hardly a disbursing agency, how could they obtain the check through them? 135.

E. A. Deeds and R. L. Montgomery. 135.

Lieut. WALTER D. WILLIAMS (Detroit, Mich., July 18, 1918; Book 12).

Plant accountant, officer in charge of the Packard plant. 137.

Everything to do with contract 1646, but none of the others. 137.

Nothing to do with vouchers paid by the Government aggregating \$249,000. 138.

States no overhead or cost charges including overhead in the vouchers submitted called K-9199 of \$249,159.10 and the vouchers for 1646. 139.

Were told to leave the matter of the K-9199 account alone. 141.

Salary distribution begins with August, and the contract was made in September; asked to explain. 143.

Allowances for depreciation have been paid by the Government on an estimated basis. 144.

This estimate fixed on the basis of 12 per cent of productive labor. 145.

Not according to basis fixed by Rulings Board. 145.

Took the matter up with Capt. Brooks's department in Washington, and it was agreed to. 146.

The scrap problem. 148.

Estimate made of the cost of making Liberty motors in March, but he was not consulted about it. 149.

Men sent down by the Government. Used the figures in a secretive way. Meeting in his office one night at which cost was arrived at, and said nothing to him about it. 149.

Understood cost was around \$3,200 after adding 250 per cent overhead. 150.

In the estimate of cost they have included depreciation, and have also increased their original estimate of overhead cost. 151.

In matter in the nature of holding up the work reported to Mr. Black, who was in the Dime Savings Bank. 154.

- JOHN RANDOLPH LEE (Ford Motor Co., Detroit, Mich., July 18, 1918; Book 12).
- Assistant to Mr. Wills in the manufacturing department. 159.
- Has had charge of the work being done for the Government by the Ford Motor Co. under Mr. Willis. 159.
- Ford Motor Co. has two contracts with the Signal Corps, one for the Liberty engine cylinder forgings No. 2899, dated January 30, 1918, and one for 5,000 standardized 12-cylinder engines, No. 2129, dated November 24, 1917. 159.
- Commencing about September, 1917, they made some preliminary experiments under direction of Col. Deeds. 160.
- Started actual work in anticipation of receiving a contract in latter part of September in making general layout of the plant for the work. 160.
- Asked why, in view of the above, first deliveries were not made until April. 161.
- Had no knowledge which would have enabled them to state what time they could have put any foreign engines into production. 162.
- Their agreement was to build a motor as per prints and specifications, presumably did not anticipate changes in design. 163.
- Could not explain why contract was not made until November, when they had all details arranged in September. 163.
- Col. Deeds conducted negotiations on behalf of the Government; Mr. Wills, Mr. Ford, and Mr. Mayo, on behalf of the company. 163, 164.
- Delay in execution of contract did not retard production. 164.
- Has to look up in the books the time they began to date their costs. 164.
- Delivered first Liberty motor under this contract on the 14th of June. 164.
- Delivered up to the present time. 123. 165.
- Expect to have 300 this month prepared for the final test. 165.
- Gives rate of production for August, September, October, and November. 166.
- This shows that under the new contract they will be prepared to produce at the rate of 1,500 a month. 167.
- States difficulties which arose in the course of production, which delayed things. 168.
- Their orders entirely for the 12-cylinder engine. 170.
- Refers delay by strengthening of connecting rods to Mr. Wills, 170.
- Lubricating system caused a delay of four or five weeks. 170.
- Other changes causing delay. 170.
- Will produce memorandum showing the causes of delay. 170.
- Adds that they have made a comparative study of the changes involved, and the changes meted out to them, as compared with their regular work. 171.
- The designing, the tool designing, and drafting room is under charge of Mr. Carl Emde. 174.
- Has heard a great deal at different times that was antagonistic to the patriotic spirit on the outside, with regard to Mr. Emde's loyalty. 174.

JOHN RANDOLPH LEE—Continued.

Tells what has been repeated to him, Mr. Lee. 175.

Was not removed from this position in which he had power to slow up or handicap the first stages of the work. 176.

Held this position for six or seven months. 176.

Were not sure whether he was or was not pro-German, therefore Mr. Lee said he should have been removed right at the start. 178.

Others in the shop disloyal who were associated with Mr. Emde. 178.

Mr. Ford's pleasure that Mr. Emde should remain. 178.

Read statement made by Mr. Ford. 179.

At this meeting Mr. Clemett read reports from the various members of the drafting department who felt that the department was practically a pro-German institution. 180.

Relates several instances of things that have come up showing disloyalty somewhere. 181.

Thinks the policy of giving a man a fair chance in normal times not a wise policy in war times. 182.

Taking things more into "their own hands" and not consulting Mr. Ford so freely. 183.

C. HAROLD WILLS (July 18, 1918; Book 12).

Factory manager of the Ford Motor Co. 184.

Has had charge of the production of the Liberty motor since the beginning of the work. 184.

Work of preparation begun in September, 1917, but contract not signed until November. 184.

After 10 days' work on 8-cylinder motors, word was received that they were to build 12-cylinder motors. This took about 10 weeks to get the data together. 186.

At the end of seven weeks they were just getting the drawings completed. 187.

Explains in detail what they did during those seven weeks. 187.

Thinks delay in signing the contract was caused by Mr. Lucking bringing up some legal details. 188.

Thinks Mr. Lucking had information from the Packard Co. that the estimated cost at that time was about \$6,000. 189.

If there had been no changes in the design, they would have reached the amount produced in July two months earlier. 191.

States what in his experience caused delays, to what extent, and what caused them. 192.

States that through red tape at Washington two or three weeks is always lost in making arrangements to secure priorities and get the transportation they needed. 192.

Fuel Administrator would not let the people making the crankshafts have coal. 194.

When they found they could not get the fuel they decided to use oil, and the railroads would not move the oil. 194.

Closed down for a week or five days on order of the Fuel Administrator, and they did not regain their impetus for two weeks afterwards. 195.

Asked why they released their men before communicating with Washington. 196.

Same let up all along the line through this order. 198.

C. HAROLD WILLS—Continued.

Notwithstanding all these other impediments, they would have been able to have advanced their production a couple of months if there had been no changes. 199.

Describes a little more in detail the nature of the changes and what were the most important ones. 199.

They made a practice of not starting on the production of what was developed, but waited until a perfected plan was developed, and thereby saved time. 200.

At one time were delayed by what they believed would be a necessary change and for which they waited. 200.

Did not think they could have hastened production if they had of had the designing to do themselves. 201.

Packard Co. went to work four or five months prior to the Ford Motor Co. 203.

No delay because of the lubricating system. 203.

No delays because of radiation. 204.

No delays due to disloyalty in the plant. 204.

No noticeable indications among the workmen of a desire to delay production. 204.

First 70 motors cost about \$37,000 a piece. 205.

Does not know what proportion of their capital is invested. 207.

All the work of the Liberty motors kept separate from the regular plant. 208.

Thinks accurate statement of their investment in this work could not be ready for 120 days. 209.

Government will reimburse them from time to time, but Ford Motor Co. has up to this time financed all these Government contracts itself entirely. 210.

One hundred and seventy-eight thousand dollars, first material and machinery charges, was charged against the Signal Corps in the month of November. 211.

Salaries. 212.

Packard Co. stated the bogy cost. 213.

Did not know the occasion of the reduction of the bogy cost from \$6,087 to \$5,000. 213.

Had nothing to do with depreciation in the plant. 213.

States what the contract made in January, 1918, No. 2899 was for. 214.

Are now making cylinders for all the Liberty engines excepting the Nordyke-Marmon. 216.

Furnish these forgings on a fixed price of \$8.25. 216.

First 50,000 the Government ordered they paid \$19 for. 217.

Only make profit of 75 cents a cylinder. 217.

Produces figures showing the total up to the end of August, September, October, and November. 218.

Understands arrangement has been made for 4,000 more. 219.

The price stipulated in this contract are terms the Government handed up. Neither sought the work nor stipulated the price. 220.

Took the work at the price the Signal Corps said they had made other contracts. 220.

Price as reduced from the bogy cost being \$5,000. 221.

C. HAROLD WILLS—Continued.

Fixed profit was made in the supplement document at \$625. 221.

Date of this supplemental document, May 17, 1918. 221.

At that time knew more than when they started, but now they know less. 221.

The profit on the price which the Government hands them will give them profit of \$3,125,000 on 5,000 engines. 222.

Figuring 25 per cent of the saving under the \$5,000 cost will make the profits upward of \$5,000,000. 222.

Terms with respect to the new order left entirely in the hands of the Signal. 223.

Does know that the company were profited in the first contract by being guided entirely by what Col. Deeds said as to the general price arrangements he made with everybody else. 224.

Maj. Downey and Mr. Fletcher have conducted the negotiations for the new contract on the part of the Government. 224.

Mr. Ford always went ahead when he found out what they wanted and did not wait for the contract office to go through the details. 225.

States how they took contract for spare parts and would not insert a bogey price. 226.

Mr. Emde, in charge of drafting department. 229.

Drafting department had all the designing of the Liberty motor. 229.

Was possible for anyone in the drafting department who was out of sympathy with the work of the Government to delay the drafting work. 230.

Greater proportion of the men in the drafting department of similar pro-German tendencies (50 or 60). 231.

Mr. Ford did not think this department ought to be reorganized with different men. 231.

In plain English, they had a man who was in sympathy with the German Government in connection with the designing of the Liberty motor. 233.

While there were hold-ups in the tools and they were late, they were never able to lay it to any given reason. 234.

Reads statement Mr. Ford is reported to have made at meeting on November 5, 1917. 236.

Champion Co. at Flint, Mich., put mica in the spark plugs to prevent contact. 237.

No steps taken to prosecute them. 238.

Mr. Wills states that they tried in other cases to have prosecutions made, but they have been turned loose. 238.

United States district attorney, Mr. Kinnane, stops everything. 239.

• Reports case of man taken to Federal district attorney with a lot of photographs and drawings in his possession, and they had to insult the officer before they could get him to call up the police department. 241.

District attorney refused even to take the matter up. 241.

Is asked for a full statement of these facts in writing 242.

This man a great friend of Emde's. 247.

LOUIS M. TERRELL (Detroit, Mich., July 19, 1918; Book 12).

Auditor of Ford Motor Co. 248.

Refers Mr. Hughes to Mr. Leister for figures in the vouchering under contract No. 2129 for 5,000 12-cylinder Liberty engines with the Government. 248.

HERBERT L. LEISTER (Detroit, Mich., July 19, 1918; Book 12).

Auditor of Ford Motor Co. 249.

States the Government has paid the Ford Motor Co. \$1,774,000.33 up to June 17 on contract No. 2129. 249.

Will get later statement. 250.

Presents statement of the total amount of their cost to date. 250.

No voucher has been submitted for special tools. 252.

Plant machinery loaned by the company to the aircraft work amounts to approximately \$1,000,000. 252.

Charged depreciation that at rate of $7\frac{1}{2}$ per cent per year. 253.

This voucher for overhead charges dated for machines in January. 253.

Government would not allow any portion of salaries to be charged direct. 254.

Salaries of executives go in as items of labor—based on the productive hours. 255.

Can not keep track of the time expended by executives, so there is practically no charge. 256.

Vouchers submitted which contained amounts for executive salaries and they have been turned down. 256.

As a basis of comparison with other plants, he is asked to tell just when this was submitted, who turned them down, and what was turned down. 256.

Is not acquainted with what has been done with respect to salaries at other plants. 258.

No salaries of executives have been submitted to the finance division of the Signal Corps for payment; had been told they would not pay on that basis. 258.

Expect to submit a voucher on basis of pay rolls. 259.

Questions in dispute between them and the accounting officers of the Government. 260.

Government allows either Packard or Lincoln \$1,500 for a machine containing a fixture on which they failed, and will only allow the Ford Motor Co. the same amount after they have made it successful for \$700 more. 261.

Signal Corps hands them ruling that they want them to separate the overtime allowance, and charge that into overhead. 262.

Government refuses to pay for overhauling the machinery they put into shape for doing a good job. 263.

Other questions under dispute. 263-265.

Signal Corps informed them they would hold up any voucher they rendered unless it was on a meter basis. 266.

HENRY FORD (Detroit, Mich., July 19, 1918; Book 12).

Mr. Deeds represented the Government in the negotiations for the contract for the 5,000 Liberty motors. 269.

Knew the bogey price of \$6,087 an engine was high. 271.

HENRY FORD—Continued.

Had no separate negotiations with respect to his company which related to that amount. 271.

Did not know what the occasion of the lowering this cost to \$5,000 was. 271.

No estimate has been made up to this time by his company of the cost of making the Liberty motors. 272.

Understands there is a new contract to follow up the completion of old one. 273.

Has not had any negotiation with respect to compensation under this contract. 274.

If the rate of production were only 1,500 a month it would take but little over two months for the production of the 4,000. 274.

Thinks the Liberty motor is a very fine motor; a very good motor. 275. (Very hard to make.)

Never used the Delco at all in making the Liberty engine. 275. He thought the angle was wrong in the first place, and refused to make the motor that way. 276.

This he later corrects. 278.

Mr. Ford denies that he ever stated that the cylinders were set at a certain angle in order that the Delco ignition should be used. 279.

Never even had that opinion. 279.

Mr. Ford is asked about their expected production, and states there is nothing in that estimated production that furnishes an element of uncertainty; that they can count on a production after two or three months of anywhere from 1,500 to 2,500 motors without any reasonable expectation of difficulty. 280.

No difficulty in getting labor; some little difficulty in getting necessary material. 280.

Mr. Ford does not think that changes in design have been the cause of delay, because the main principle was laid down in the beginning. 281.

Thinks there has been as much progress as could be expected. 281.

Has had no trouble with Signal Corps in obtaining decisions with respect to engineering questions. 282.

Thinks they have made just as good time in getting modifications on the Liberty motor as if they had put one of the foreign engines into production. 283.

Might have saved some experimentation, but would not have had anything near the power. 283.

Asked for his opinion from a manufacturing standpoint as to other side of problem; would not have to have much experimentation, but was there any compensating feature in developing an American machine, as to saving time. 283.

Gives reasons for thinking so. 283.

Explains why he thinks it would of even been a great mistake to use a foreign motor temporarily while the Liberty was being developed. 284.

- Lieut. CHARLES E. NORLIN (Ford Motor Co., Detroit, Mich., July 19, 1918; Book 12).
- Rank of first lieutenant, Aviation Section, Signal Reserve Corps. 290.
- Commissioned as first lieutenant on November 8, 1917. 290.
- Assigned to Ford Motor Co. on December 3, 1917. 290.
- First vouchers on behalf of the Ford Motor Co. on February 22, 1918. 291.
- First vouchers were for direct labor and material, and began from the signing of the contract. 291.
- Had no charge against the Government prior to November 17. 291.
- Would not allow the Ford Motor Co. any part of the salaries of those engaged on experimental work. 292.
- Would not pay any of the salaries, or parts of them, rather, unless shown exact proof of the time spent on aircraft work. 294.
- The whole matter is still under consideration. 296.
- Up to and including July 8, \$1,576,917.89 has been paid to the Ford Motor Co. 297.
- Ford Motor Co. has received no advances and have not sought any. 297.
- Ford Motor Co. asked Government to loan \$100,000 to the H. J. Walker Co., who supplied the Ford Motor Co. with crank cases, but the Government refused. Ford Motor Co. had already loaned them \$275,000, themselves. 297.
- Nothing allowed yet for depreciation. 297.
- No payments included in the vouchers so far, as Ford Motor Co. able to support themselves during the course of the contract. 298.
- The unsettled question in accounting of power. 301.
- States 400 men of German ancestry employed in Ford plant. 302.
- One man from the plant caught down town saying, "To hell with the President," etc. Took this man to Mr. McClure, assistant United States district attorney, but could do nothing. 303.
- All their communications to the Department of Justice in Washington sent through the military intelligence people. 304.
- Mr. Lee and Mr. Willis try to help all they can with this question but are afraid of incurring Mr. Ford's displeasure. 304.
- Mr. Emde; any slight variation in his drawings would slow up the work. 305.
- Thinks this was what was the trouble when for a month or two the work slowed up. 305.
- This happened in March and April. 306.
- There has been something; everybody felt it, but they could not definitely prove anything, and Mr. Ford they knew wanted to keep these men on his staff. 306-307.
- Instead of having 20 a day, have only had 20 the last 3 or 4 days; for a while 10 or 12, and then it fell down to nothing. 307.
- Inspectors report to Maj. Haeslet. 308.

Lieut. CHARLES E. NORLIN—Continued.

Has 400 affidavits from men in the plant who have heard other men make statements and remarks derogatory to the United States. 309.

Filed in the educational department of the Ford plant. 309.

Dean Marquis, in charge of the welfare outfit Ford plant. 310.

Mr. Clemett, assistant to Dr. Marquis. 310.

Mr. A. B. Jewett, head of the photographic department. 310.

Ask military intelligence to send down men to arrest these men and they said they would as soon as they got sufficient hold. Never showed up. 311.

Had the Ford Co. arrest a man and took him down to Mr. McClure and he threw the matter out and said he could do nothing. 312.

Lawyers in general do not seem favorably disposed to Mr. Kinane or Mr. McClure. 312.

Thinks these 400 affidavits would cover at least 260 men who have pronounced German feelings. 312.

No representative of the intelligence service at the plant. 313.

Mr. Clemett and Mr. Jewett tired of getting men because nobody will arrest them. 313.

Management of the plant, with respect to loyalty, excellent, but Mr. Ford objects to eliminating a man unless you can prove he has done something wrong. 314.

EDWIN FRANCIS CLEMETT (Detroit, Mich., July 19, 1918; Book 12).

Doing special work for Mr. Klingensmith in the factory. 315.

Left educational department about three months ago, but still keep in touch with it. 316.

American Protective League has 100 representatives in the Ford plant. 316.

States his experience in submitting reports and affidavits to Military Intelligence Bureau. 317.

Always, no action taken. 318.

Have not received 400 affidavits with respect to disloyalty; have received 400 reports, but not supported by affidavits. 319.

Submitted these reports to the head of the American Protective League, at Detroit.

Hands over portfolio containing about one-third of the reports. 320.

Dr. Marquis submits folder containing reports submitted by members of the American Protective League in the Ford plant to Mr. Clemett. 320.

Reports on trouble on Liberty motors had been confined practically to the drafting department. 322.

These half dozen men were recognized as serious cases. Report made by Mr. Willis to Mr. Ford, but no change took place in the make-up of the department. 323.

American Protective League did nothing. 323.

Gives names of the half dozen men in this department. 324.

Mr. Hughes reads upon the record extracts with regard to Mr. Emde. Pages 325 to 340.

Mr. E. P. Martin, superintendent of drafting department. 342.

Further evidences. 343 to 356.

EDWIN FRANCIS CLEMETT—Continued.

Two hundred men in plant whose disloyalty is open to question. 357.

Dr. MARQUIS (Detroit, Mich., July 19, 1918; Book 12).

Became associated with the Ford Motor Co. two years ago last January. 361.

In charge of the educational department, formerly known as the social department of welfare work. 361.

His information regarding disloyalty of employees is based upon what has been reported to him by Mr. Clemett and Mr. Rounds. 364.

RICHARD H. COLLINS (Cadillac Motor Car Co., Detroit, Mich., July 19, 1918; Book 12).

President and general manager of the Cadillac Motor Co. 370.

Prior to 13 months ago was vice president of the General Motors Co., in Detroit. 370.

General Motors Co. owns Cadillac Motor Co. 370.

General Motors Co. has contract with Government for 2,000 Liberty engines. 371.

Work evenly divided between its subsidiary companies. 371.

At time of delivery Cadillac Co. is expected to deliver 1,000 and the Buick Co. 1,000. 372.

Got contract on December 11, 1917.

Contract called for 25 in May, 125 in June, etc. 372.

Contract changed from 1,000 to 2,000. 373.

Combined production of the Buick and Cadillac would be 50 a day on the peak of capacity. 376.

No experimental work. 378.

Have received no advances from the Government. 379.

No contract with the Government other than the 2,000 and an additional 2,000 made in contract a few days ago. 379.

A large building which had been erected and never used was taken over for building of Liberty engines. 381.

This not charged to Government as temporary building; it is a part of their property. 381.

Their bogey contract \$5,000 never was any higher. 382.

No reason why they should not have undertaken building Liberty motors back in the early part of the year instead of starting in December. 385.

Lateness in getting contract provided them with a great handicap in getting in their orders for special tools, jigs, etc., as so many others ahead of them. 387.

Lateness in receiving the contract worked to their advantage in that they did not have to change as much as the others did after they had tooled up. 389.

Takes six months as a fair estimate of the time required for a company to get into production on engines like the Liberty engine. 389.

Thinks any foreign engine of accepted design could have been put into production within six months also. 391.

Disloyalty at plant; these people removed. 392.

Biggest job they ever had was the Liberty engine connecting rod. 396.

Labor troubles. 398.

HERMAN M. KINNEE (Cadillac Motor Co., Detroit, Mich., July 19, 1918; Book 12).

Comptroller of the Cadillac Motor Car Co. 402.

Government accountant up to the 13th of July had passed public vouchers amounting to \$1,611,912. 402.

First voucher passed on February 16, 1918. 403.

All specially designed machinery for the contract charged to the Government. 403.

No charges made to the Government for preliminary work, with the exception of work in the engineering department in preparing designs for tools they had to make to perform the contract and drawings necessary in the manufacture. 405.

Executive salaries. 406.

Ratio of overhead expenses to the productive labor at 175 per cent. 406.

Administrative salaries. 409.

Has been no presentation to the Government yet of executive salaries, as they have not yet determined on a basis. 411.

Depreciation charges are a part of the overhead estimates. 416.

Have made tentative presentation on account of depreciation, but have made no final presentation of overhead expense. 416.

Vouchers for increased facilities. 417.

Cadillac Co. has expended up to this time under terms of its contract, \$2,521,782.85. 421.

Have presented voucher for the restaurant building and the equipment of it, but it has not been approved by Signal Corps, \$23,000. 422.

Expenditure of \$40,000 for heat-treating building, which has not been allowed. 422.

Also a tear-down building, which cost \$71,000, which they think will be allowed by the Government. 423.

HORACE T. ELLIS (Lincoln Motor Co., Detroit, Mich., July 20, 1918; Book 12).

Tool superintendent for Lincoln Motor Co. about one year. 424.

Started in on the design of the tools for the eight-cylinder motor they were to construct. 424b.

First important change noticed was from the 8-cylinder motor to the 12-cylinder motor. 427.

Some of the cylinder tools drawn were usable. Final production delayed to extent of a week and a half of labor thrown away. 428.

Next serious change was the change in the propeller hub. Had 75 per cent of the tools in connection with this delivered. Had to begin all over again. 428.

On October 4, 1917, delay occasioned, about a month. 430b.

These changes had a very serious effect on production. 430b.

Change in the crank shaft on November 21, 1917. 431.

On 27th of November another change in the crank-shaft cheek, necessitating complete new forging dies. 431.

On November 27 the propeller hub was again changed to the standard Army type. New forgings again. 432.

On 4th of January, 1918, crank shaft again changed. 432.

Other changes. 433.

HORACE T. ELLIS—Continued.

On 6th of February a change was made in the distributor driving flange, which was not settled, the final design, until March 10. 433, 434.

Other serious changes. 435-442, inclusive.

Thinks these changes caused delay anywhere between two to three months. 443.

Thinks every change was well taken. 444.

Sabotage. 446.

Produces list of 89 shops who have been producing the tools for them. 450.

Delay in delivery of the tools explained by inability to get trained workmen. 451 to 455.

Sabotage. 455.

Traffic or transportation difficulties. 458.

Did not lose time on account of stop orders, during February, of the Fuel Administration. 460.

Difficulties in getting stock for tools. 460.

Difficulties in getting the particular tool designers. 462.

Double work of designing caused by starting out to build the motors in a small plant established to make 14 a day. 463.

Total number of special tools built is 91,087; the total number of orders issued that involved new tools and changes, etc., amounted to 14,948. 464.

HENRY M. LELAND (Detroit, Mich., July 29, 1918; Book 12).

President of the Lincoln Motor Co. 466.

Organized the Cadillac Co. in 1902. 466.

Gives statement of his reasons for leaving the Cadillac Co. and organizing the Lincoln Motor Co. 467.

In a visit to Germany saw the wonderful preparations that were being made. 468.

Go to Washington and see Gen. Squier, Col. Montgomery, and Col. Thompson, and Col. Deeds. 470.

First interviews were in July. 475.

Had slight acquaintance with Col. Deeds, as they bought their ignition system from the Delco people. 475.

Considers Mr. Kettering one of the greatest mechanics in the world. 475.

Did not get contract until latter part of August. 486.

Col. Deeds had been waiting for approval by the Government of the engine and waiting until appropriations were made for it. 479.

So being satisfied himself with the engine, and feeling the appropriation would come along, he asked Deeds if the engine were approved and appropriations were made if they would get a contract. On this understanding that they would, they went ahead of the contract. 479.

When contract was finally made it called for a 12-cylinder 300-horsepower. 481.

Produced list of the number of parts of the Liberty engine. 484.

Had every expectation of being able to deliver the first 80 in December. 487.

Delays in getting tools and fixtures ready and lack of skilled and experienced men. 487 to 491, inclusive.

HENRY M. LELAND—Continued.

- Difficulties of employing men in uniform. 492.
- Hispano-Suiza a very difficult motor to make. Wright-Martin people have been on job for nearly a year, and they have made very few of them. 497.
- Considers it would have been entirely impracticable to have tried to introduce another motor while the Liberty was being developed. 498.
- Thinks if he had attempted to use the Rolls-Royce, which he considers best, as a temporary expediency, he would be in about the same fix that they are in now. 501.
- Finally considers that they could have gotten into production a little earlier by using an existing motor that would have been serviceable at the front. 503.
- Original contract with Government provided bogy cost of \$6,087 per engine. 504.
- Consulted with the Packard people in arriving at the bogy cost. 505.
- Talked with Mr. Bealle and Mr. MacCauley of the Packard Co. 506.
- Bogy cost reduced to \$5,000 some time in December. 507.
- This reduction in cost proposed by the Signal Corps. 508.
- Capital stock of the Lincoln Motor Co., \$1,500,000. 508.
- Dayton Metal Products Co. subscribed for \$100,000 of stock in the Lincoln Motor Co. 509.
- Knows that with Mr. Kettering is associated Mr. Talbott on the \$100,000 deal. 510.
- W. C. LELAND (Resumed) (Detroit, Mich., July 20, 1918; Book 12).
- Col. Montgomery first suggested the reduction in the bogy cost. 512.
- In view of their pressing the Government for financial assistance the 15 per cent profit was reduced as was also the bogy cost. 513.
- No reliable estimate had been made at time of reduction of bogy cost. 516.
- Col. Montgomery advised them that he thought \$6,087 too high in view of the fact that uncertainties foreseen at the start were now clarifying themselves. 517.
- Explains the arrangement of the other part of the capital stock other than the \$800,000 issued. 517.
- Tells of talk with head of leading bank in Detroit. 521.
- Produces stock book and memorandum relating to agreement. 521.
- States sliding scale suggested, resulting in a price of \$7,000, this to include a 15 per cent profit, which resulted in \$6,087 as the cost. 532-534.
- Best belief of the cost of the motors is now \$3,600. 535.
- Produces program of production. 537.
- PAUL W. ABBOTT (Lincoln Motor Co., Detroit, Mich., July 20, 1918; Book 12).
- Chief inspector of Lincoln Motor Co., and also representing them on the Liberty engine committee. 541.
- Not much trouble in getting decisions from the Production Engineering Department of the Signal Corps. 541.

PAUL W. ABBOTT—Continued.

Is asked about change which occurred on February 6, in the distributor driving flange which was not settled until March 19, 1918. (See pages 433-434). 542.

This was entirely the fault of the Delco people. 542.

The change, No. 31 on the connecting rod, was the big change that held them up for about 10 days. 543.

WILLIAM T. NASH (Lincoln Motor Co., Detroit, Mich., July 20, 1918; Book 12).

Resides at Royal Oak, Mich. 546.

Has been secretary-treasurer with Lincoln Motor Co. since middle of August, 1917. 546.

Lincoln Motor Co. has received \$5,000,000 from the Government up to the present time. 547.

Government has advanced \$8,800,000, of which \$8,200,000 remains unpaid. 547.

Eight hundred and ninety thousand dollars of the total payment made by the Government to date is for special tools. 550.

Take the actual overhead in this case, there being no other work in this plant. 551.

This company, being organized entirely for the purpose of doing this work, charged as part of the cost all the work that had been done from the organization. 552.

Began charging executive salaries to the Government about the first part of September. 554.

Vouchers have been accepted in part. 554.

Executive salaries have not been allowed as charged to Government salaries. 555.

Have allowed such proportion of such salaries as could be charged to manufacturing operations. 555.

Gives amounts of executive salaries as paid by the Lincoln Motor Co. 557.

The item of executive salaries is still held for decision, also \$16,000 which was deducted from vouchers for special tools still unsettled. 558.

All machinery and equipment is subject to the 40 per cent depreciation provision of the modified contract. 559.

The heat-treating building is to be depreciated according to the value of the building to the Lincoln Motor Co. in the general motor business at the end of the contract. 560.

Outside of heat-treating building, they are to receive the depreciation as prorated by the Rulings Board on other buildings. 561.

The understanding of the Lincoln Motor Co. is that the Government, under the contract, will be bound to pay on machinery and equipment 40 per cent flat, regardless of the time that has elapsed at the time of the completion of the contract. 563.

And on the machinery and equipment there will be, in addition, depreciation to be allowed by the Government at the rates of approximately 10 per cent per annum on the entire cost of the building. 563.

F. C. THOMPSON (Lincoln Motor Co., July 20, 1918; Book 12).

Accounting officer for the Government at the Lincoln Motor Co. plant since about middle of November, 1917. 568.

F. C. THOMPSON—Continued.

Only a difference of \$1,689 between vouchers certified and vouchers submitted which have not yet been certified. 569.

The matter of \$27,000, covering executive salaries for period terminating in December, 1917, is still held in suspense. 569.

Executive salaries in one or two instances went back as far as July. 570.

Lincoln Motor Co. has made no charges for experimental work. 570.

Agrees with the Lincoln Motor Co.'s estimate of cost production at \$3,600. 571.

Thinks the Lincoln Motor Co. have endeavored to produce as quickly as possible. 573.

Regards the record of this plant, from a financial standpoint, as a perfectly clean record. 574.

CHARLES H. DAY (Standard Aero Corporation, Elizabeth, N. J., July 25, 1918; Book 13).

An engineer by occupation. 1.

At one time with Glen Martin as engineer and adviser. 2.

Has been with Sloane Airplane Co. and companies that have developed therefrom since the fall of 1915. 3

Standard Aero Corporation succeeded the Sloane Co. 3.

Standard Aero Corporation, until very recently, was exclusively an experimental plant, and the Standard Aircraft Corporation was a producing company. 4.

Originally had an order from Government for four of their model H3 machines, and an additional order was given for 12 machines. 5.

Their engineering department, headed by himself, designed what is called the Standard J machine. 6.

Design was perfected in the spring of 1917. 6.

Furnished designs for Standard J plane to Dayton-Wright Airplane Co. 6.

There were some inaccuracies in drawings furnished.

Would not say that his drafting room had at all times been satisfactory. 11.

So far as he has been able to find out, Standard J plane withdrawn principally because the Hall-Scott motor was entirely unsatisfactory. 13.

Signal Corps made changes on plane without consulting designers. 14.

Machine was designed to meet Signal Corps specification. 14.

Order received in December for De Haviland 9s. and a contract was made under date of January 24 or 26, 1918, for 500 De Haviland 9s. 16.

Was notified from Washington that De Haviland 9 drawings were ready. 16.

Was notified by the Equipment Division, of Production Engineering Department, Signal Corps. 17.

In forepart of January took a trip to Dayton to investigate situation, and found De Haviland 9 was nowhere near a point where it could be produced. 17.

Either he or Maj. Shepler suggested that he build 100 De Haviland 4s while awaiting the completion of the De Haviland 9. 19.

CHARLES H. DAY—Continued.

Signal Corps did not have knowledge of gun mountings, bombing equipment, wireless installation, camera installation, practically none of the military equipment. 20.

Amended contract for 100 De Haviland 4's made about February 1 and substituted contract embracing 500 De Haviland 4's in place of 100 De Haviland 4's and 400 De Haviland 9's appears to have been pursuant to an order of March 28, 1918. 21.

Made many trips to Dayton in attempts to get drawings for De Haviland 4's. 21.

On February 1 told Mr. Coffin and Mr. Potter that he did not think there was a possibility of getting the De Haviland 9's into production within six months' time and that De Haviland 4 was nowhere ready to produce. 24.

Stated to Mr. Coffin there would be no substantial production of De Haviland 4's in February and the best that could be hoped for was about 25 from Dayton-Wright in March. 25.

And possibly an equal number from Standard Aircraft Corporation in April. 26.

Q. "Now, with that anticipation about the 1st of February, why is it that you have not as yet, being now the latter part of July, 1918, been able to produce a single De Haviland 4?"—A. "Lack of information."

Q. "Of what?"—A. "Drawings, principally." 26.

Asked Maj. Gray, of Signal Corps, for drawings. 27.

When he was unable to get official drawings of the De Haviland 4 from Maj. Gray, Mr. Mingle took it up with higher authority in Washington. 29.

Inspection Department, Signal Corps, at Elizabeth, would not allow them to proceed with drawings furnished by Dayton-Wright Co. 30, 31.

Got from Dayton-Wright Co. a De Haviland 4 in February. 33.

Made drawings from that machine and built a machine which was flown in March. 33.

Made request of Mr. Kellogg that they be allowed to manufacture in accordance with that machine up to a given date. 34.

A Mr. Ruxtall, representing Col. Hall, came with a number of men, and it was discovered that the machine they had was not correct. 35.

Was same machine Dayton-Wright Co. was building and shipping abroad. 35, 36.

Tested wheels used on machine and found they were not sufficient. 39.

He was not allowed to go on using the Z 2 rims and the Dayton-Wright Co. was. 39.

Has repeatedly asked for a "go ahead," but it has never come through. 41.

Maj. Rose is the superior officer with respect to production. 45.

Provided there were no further changes, was ready to go ahead on production 10 days or a week ago. 46.

Producing six machines for Post Office Department to assist in keeping experimental organization together. 49.

CHARLES H. DAY—Continued.

- Entire engineering on Handley-Page machine in his hands. 52.
- If the De Haviland 4 had come direct to his plant from England and they were told to go ahead and make a machine with the Liberty motor installation, sees no reason why they could not have been producing at the very least 10 machines a day within five months. 54.
- Had been orders which had been retracted and it was rather questionable what his plant was going to build, so accepted order for seaplanes. 57.
- Was also told by Navy officers that he had to take it; that the Navy work was more important than the Army work. 57.
- Has been impossible for them to obtain a large enough order to actually know what they were going to do and to prepare for doing it. 62.
- Never been given a real experimental job to do at this plant. 63.
- Was told it was not desired that the manufacturers in this country develop any machine whatsoever; that the only machines which would be produced would be the English and French machines. 65.
- If the situation had been handled in a different manner, does not think there is any reason why we should not have had all the airplanes we desired to produce. 76.
- "We, as manufacturers, and I, as an engineer, have never been given any information from the Government that would be of any assistance to us in designing airplanes or in developing existing types of airplanes." 78.
- Thinks governmental work involves a series of dictatorial supervision. 83.
- Made a report on the Bristol fighter at request of Government. 85.
- Came to conclusion that the machine had no military value whatsoever as it then existed. 87.
- In installing the Liberty motor, with its excess weight, and the added weight incorporated in the machine, and making the machine reasonably safe, practically did away with the advantages of superior visibility and superior maneuver ability which had originally existed. 88.
- Thinks difficulties which have now resulted in the abandonment of the Bristol fighter should have been foreseen. 94.
- Handley-Page has been subcontracted practically over the Eastern United States. 102.
- The comparative cost will undoubtedly be excessive by this method of distribution. 106.
- Believes any of the large airplane manufacturing concerns could have equipped comparatively easy for the production of the Handley-Page complete. 107.
- The difference in weight between the Hispano-Suiza engine used on the Bristol in England and the Liberty engine used on the Bristol in this country is about 300 pounds. 115.

- HARRY BOWERS MINGLE (Standard Aero Corporation, Elizabeth, N. J., July 25, 1918; Book 13).
- President of the Standard Aircraft Corporation. 117.
- A lawyer by profession, of the firm of Mingle & Finklestein. 117.
- Been president since corporation organized, November 1, 1917. 117.
- Capital of organization is \$500,000. 120.
- Actual owner of preferred stock, which is issued to \$150,000, is Mizui & Co., a Japanese corporation organized and authorized to do business in State of New York. 120.
- Fifty-one per cent of the common stock is owned by Mizui & Co. 120.
- Government gave them an order in May, 1916, for three of their H3-type machines on condition that they eliminate the Sloane interests entirely from the organization. 121.
- Standard Aero Corporation leases from Standard Aircraft Corporation a portion of the plant at Elizabeth. 123.
- Order for Caproni planes with Standard Aero Corporation stands as follows: One delivered on May 1, and an order to build a second, and the incompleated parts of the other two are to be delivered to the Fisher Body Corporation. 126.
- Only other contract Standard Aero Corporation has with Government is a verbal order issued for 450 advanced training machines, known as their M defense machine. This contract was given them in May of this year by Mr. Fletcher. 127.
- Are now in process on that work and expect to make a delivery of them in the next few days. 127.
- Contract was taken on a fixed-price basis, with a bogey price of \$3,450. 128.
- Has a contract with Photographic Division, Signal Corps, for six JR 1B machines, given on May 3, 1918. 130.
- Have all been delivered at a fixed price of \$6,000 cash. 130.
- On June 5, 1916, order was given Standard Aero Corporation by Government for three of their H3 planes at a fixed price of \$9,400. 131.
- Received an order on October 4, 1916, for four machines, with Hall-Scott motors, at a fixed price of \$64,000 for the four machines. 132.
- On October 30 there were 18 machines of the J type at \$8,500. 133.
- On December 16, 1916, had an order with the Army for 32 hydroplanes at \$21,000 apiece, which was afterwards increased to \$23,100. 133.
- On February 3, 1917, furnished the Government with 16 motors. 133.
- All these orders down to November, 1917, when the Standard Aircraft organized, were given to the Standard Aero Corporation. 134.
- Organized the Standard Aircraft Corporation for the purpose of keeping the aircraft production distinct from experimental work on a cost-plus basis. 134.

HARRY BOWERS MINGLE—Continued.

Following are officers of the Standard Aircraft Corporation: Harry B. Mingle, president; Mr. Day is vice president and general manager, and Mr. Finkelstein is vice president and treasurer. 135.

Capital of Standard Aircraft Corporation was \$5,000,000 until yesterday, July 24, 1918, when it was increased to \$10,000,000. 135.

Two million dollars of preferred stock issued and is owned entirely by Mitzui & Co.; 23,500 shares of common stock, of which Mitzui & Co. own 51 per cent. 135.

Until very recently the Standard Aero and the Standard Aircraft have been absolutely distinct. In last few weeks, since the Aero Corporation received its order for 450 machines, Standard Aircraft have been assisting in the financing of that company by loaning them money. 136.

Got an absolute transfer from the Standard Aero Corporation of all its interests and drawings and its good will at time Standard Aircraft Corporation was organized. 137.

Leases plant at Elizabeth from Stephenson Co. at \$25,000 a quarter and subleases to the Standard Aircraft Co. at \$36,000 a month. 139, 140.

Standard Aircraft Co. has following contracts with Government: Five hundred De Haviland machines, with spare parts for 500 machines; 150 HS 1L boats for Navy; contract to warehouse 450 Handley-Paige machines and to assemble parts received from the warehouse on 50 additional Handley-Paige machines, making 500 in all. 146.

Have gotten practically \$1,700,000 worth of raw materials in plant that are not applicable to any contract they have to-day. 161.

Contract for 500 De Haviland 4s under date of March 28, 1918. 166. This was a substituted contract.

Contract for assembly of the Handley-Paige was dated April 1, 1918. 168.

Objects to the responsibility being taken from an organization that has done what they have done. 174.

Is not a manufacturing man, but has built an organization that has come through on everything they said they would do. 174.

Correspondence between company and Signal Corps relative to getting a go-ahead order. 177-225, 228-251. This correspondence also goes into the changes required on the De Haviland planes.

EDWARD E. PENNIWELL (Standard Aero Corporation, Elizabeth, N. J., July 25, 1918; Book 13).

Vice president and general manager of Standard Aero Corporation. 252.

Has been vice president since November 1, 1917, and general manager since May 1, 1918. 252.

Reason for De Haviland 4s not being produced is due to information lacking, necessary information to compile a bill of material from which to purchase supplies and materials and

EDWARD E. PENNIWELL—Continued.

to build machines; and lack of an official go-ahead on the manufacture of the first machine; and due to changes which Mr. Day has spoken of. 252.

Now building machines and parts of machines on drawings that have been approved. 254.

Now have correct drawings for 80 per cent of machines. 254.

Work on De Havillands considerably delayed in cleaning up J machine. 257.

Making an effort to get out 20 machines in July and 50 in August. 258.

Gave order for wood screws to a company in Providence and one in Dayton to "keep them sweet." 262.

Contract on Handley-Paige machines provides for a compensation of 10 per cent on the cost, which includes the cost of build-ings and materials supplied by the subcontractors. 264.

Contract was drawn by the contract department of the Signal Corps, No. 3439, order No. 20906, dated March 29, 1918. 265.

Recapitulation of payments made by War Department on all contracts from commencement down to date to the Standard Aircraft Co. 278.

Statement shows \$4,262,901.71, embracing the entire amount of the estimated cost and the profit on that work has been paid company on J1 training plane contract. 279.

Company still has claim pending against Government on J1 planes of from one to three hundred thousand dollars. 280.

Referring to a blue print (Day Exhibit No. 2, July 25, 1918) showing the distribution of the contracts for the making of parts of the Handley-Page, Mr. Mingle directed it to be made up. 284.

Blue print compiled on May 15, 1918. 284.

Judge Hughes: "How do you explain a chart made up with such glaring errors being presented here as an exhibit with respect to this work?" 286.

Standard Aircraft Corporation has only Government work. 292.

Standard Aero Corporation built several machines for the Japanese Government. 292.

Explains how Mitsuie & Co. became financially interested in the business. 292.

Col. Deeds is the only man in Washington with whom he has not come into close contact. 302.

Correspondence between Standard Aircraft Corporation and Signal Corps relative to future work. 306, 316.

Wright-Martin Co. in a position to make Hispano-Suiza motors all during last summer and fall. 316.

Government offered to sell for him material he had on hand. 324.

Lewis & Voight now making an advanced-training type of machine with the Hispano-Suiza engine. 326.

It would be the purpose of the company to put in a claim against the Government for what it does not realize from the sale of the material. 328.

EDWARD E. PENNIWELL—Continued.

Has been severely criticised and condemned, having taken the men at Washington at their word, and gone out, as they say now, and bought recklessly, and without any orders or definite contracts from the Government, and we have jeopardized our credit as the result of that. 334.

When the order was given them for Capronis, which did not materialize, he was instructed to go upstairs in the Signal Corps building and order from the spruce department, spruce to take care of the Caproni contract. As a result, he ordered 500,000 feet of spruce as shipped there per month. 335.

In April payments were held up and they were told in April or May they were indebted to the Government in some five, or six, or seven hundred thousand dollars for material which had been shipped there. 336.

Has got the spruce and fir on hand but can not sell it. 337.

Government has placed an embargo on it. 338.

Paid \$64,000 in royalties to Manufacturers Aircraft Association. 348.

Gen. Pershing has advised that all machines must be flown before shipping abroad. 359.

If he had any machines to-day, could not ship them because he has no place to fly them. 360.

CHARLES A. DAY (Elizabeth, N. J., July 26, 1918; Book 13.)

Contract for assembling 500 Handley-Page machines is on a cost-plus basis—10 per cent. 362.

Estimates a Standard J plane could be built under normal manufacturing conditions for as low as \$3,500. 364.

Contract in July, 1917, was for 250 training planes at a fixed price of \$6,450. 366, 365.

Price was reduced as to 100 machines to \$5,300 in October. 367.

Judge Hughes: "How does it happen that there was a contract for 100 at \$5,300, fixed price, when the estimated cost on the cost-plus basis, including the fixed profit, was \$4,725?" 367.

Knows of cases where defective material was received at plant which had passed Government inspection. 369.

MAX J. FINKLESTEIN (Standard Aero Corporation, Elizabeth, N. J., July 26, 1918; Book 13).

Vice president of Standard Aircraft Corporation since its inception and treasurer since about June 1. 373.

Mr. Daniel L. Meenan, jr., is treasurer of the Standard Aero Corporation. 374.

Produces a "Record of cash received from War Department account contract 1839, from November 1, 1917, to July 25, 1918, which is marked "Finkelstein Exhibit No. 1, July 26, 1918." 374.

Statement shows a total for overhead of \$957,978.49; total inventory amounts to \$894,285.14; total of raw materials, \$1,212,524.42; total for direct labor, \$777,266.39; total profits on J-1 machines, \$347,257.96; total profits on J-1 spares, \$73,649.37. 376.

Second part of Finkelstein Exhibit 1 relates to moneys received on account of contract 2692-A—the De Haviland contract. 377.

MAX J. FINKLESTEIN—Continued.

Government has never paid anything on the 9s, and this statement refers only to DH 4s. 377.

Total for raw material is \$571,184.21; total for direct labor, \$129,806.35; total for overhead, \$193,737.44; total for special tools, \$17,826.43; making a grand total of \$912,554.43. 378.

Next sheet of Finkelstein Exhibit 1 shows a record of cash received on account of contract 3439 down to July 25, 1918; Handley-Paige contract. 378.

Another sheet of this exhibit shows a record of cash received on account of contract 3904, Caproni contract, down to July 25, 1918. 379.

Salary of president of Standard Aircraft Co. is \$63,000; of chief engineer and vice president, \$25,000; of general manager, \$10,000; of treasurer, \$12,000. 380.

Government has allowed \$15,000 for president, \$10,000 for Mr. Day, \$7,500 for general manager; and \$7,500 for treasurer. These salaries are subject to adjustment or confirmation in Washington. 381.

Government has paid these salaries and is still paying them. 382.

Mr. Mingle's salary was raised from \$54,000 to \$63,000 last autumn. 383.

President of Standard Aero Corporation, Mr. Mingle, has no salary; vice president, Mr. Judkins, receives \$5,000; general manager receives \$100 a week; treasurer gets \$10,000 a year. 384.

Standard Aircraft placed an order with Dayton Metal Products Co. for gauge wires without competitive bids. 409.

Have bought material without competitive bids repeatedly. 411.

The cost-plus contract is now interpreted by some people at this plant or at another plant who yesterday was an automobile salesman or a tire man, and suddenly becomes a judicial officer. 414.

That condition absolutely prohibits healthy manufacture, and unhealthy manufacture means there is not the enthusiasm, there is not the desire, and there is not the push and go to get full results. 416.

"I want to say very frankly to you that at times some of our people here have thought that the Government representatives were pro-German, and that they did it purposely to hold up production." 417.

"We simply never, never got out cost, and it seems to me that the Government of the United States is able and should be the fairest of vendors, the fairest of contractors, and should see that the contractors gets a human, living profit on his effort and on his investments, and we do not get it now." 418.

DANIEL LEO MEENAN, JR. (Elizabeth, N. J., July 26, 1918; Book 13).

Has been associated with aircraft industry for last four years. 419.

Was with the Sloan Co.; now treasurer of the Standard Aero Corporation. 419.

The profits on spare for J-1 planes was determined at a conference. 420.

DANIEL LEO MEENAN, JR.—Continued.

Total estimated cost for 100 sets of spares was \$74,000. 421.

There was a provision of 25 per cent of saving in case the actual cost was under that. 421.

Fixed profit on first order for spares was 15 per cent and on later order for spare parts was $12\frac{1}{2}$ per cent. 421.

Total contract for spares for the J-1 contract would run up between \$800,000 or \$900,000. 423.

Total profit on spares figured at \$73,649.37. 423.

Has produced 30 or 35 machines at time bogey was arrived at. 426.

There was a fixed price of \$5,300 for the 100-J plane order given to the Standard Aero Corporation. 428.

LOUIS H. SULLIVAN (Elizabeth, N. J., July 26, 1918; Book 13).

Works manager of Standard Aero Corporation. 430.

Has held this position two months. 430.

Prior to that was assistant to general manager. Previous to that supervisor of employment, and during that time he also had charge of manufacturing. 430.

Has 19 machines on floor at point of completion which are waiting for the installation of the bomb-dropping device, the spark-throttle control, the shutter control, and all of them have been undergoing changes for the last three weeks. 432.

Has gotten parts from out West, which were scrapped in many instances. 444.

Have received tie rods with nuts and lock washers on them in a condition that our people, our inspectors, and the Signal Corps inspectors ordered the nuts removed, and scrapped or salvaged, and new nuts made and recapped, and still they bore Signal Corps inspection at the other plants. 446.

Bought some suage wires from the Dayton Metal Products Co., which had been passed by Government inspectors at that plant that were so crooked that they could not be passed by Government inspectors here. 447.

WILLIAM J. WATERHOUSE (Standard Aero Corporation, Elizabeth, N. J.; July 26, 1918; Book 13).

Assistant chief engineer Standard Aero Corporation. 454.

Formerly in the production engineering section of the Signal Corps. 454.

Represented the Government at the Standard Aero plant from October, 1916, to July, 1917. 457.

Came to the Standard Aero about February 15 or 20. 458.

The drawings in use at the Standard plant, which were furnished by the Standard Co. to the Dayton-Wright Co., were not suitable for production at the National Cash Register Co. of the parts they were supplying to the Dayton-Wright Airplane Co., and as a consequence the National Cash Register Co. made their own drawings, and when those parts were produced they would not fit. 461.

Represented the Government at the Dayton-Wright plant from August, 1917, to February, 1918. 469.

WILLIAM J. WATERHOUSE—Continued.

Dayton-Wright plant was very much delayed in the production of De Haviland 4's because of lack of information regarding various parts, in some cases materials, accessories, and drawings; that is, drawings expected from abroad which were never received. 471.

Government inspectors would not pass anything at the Standard plant unless there was an actual drawing with which to compare the parts made. 474.

Thirty per cent of delay at Standard plant due to Government inspectors refusing to pass anything without a drawing. 476.

FRED E. DEAN (Standard Aircraft Corporation, Elizabeth, N. J., July 26, 1918; Book 13).

Purchasing agent of company since November 1, 1917. 488.

Acquainted with difficulties experienced in connection with the suage wires received from the Dayton Metal Products Co. 488.

First shipment of this wire arrived early part of July. 489.

Wrote letter to Dayton Metal Products Company in respect to it. Dean Exhibit No. 1, July 26, 1918. 489.

Turnbuckles purchased from Dayton Metal Products Co. also defective. 491.

Maj. CHARLES B. ROSE (Standard Aircraft Corporation, Elizabeth, N. J., July 26, 1918; Book 13).

Major, Signal Corps. Entered Army September 29, 1917. 496.

Prior occupation was vice president of Velie Motors Corporation, of Moline, Ill. 496.

With that company for nine years. 496.

Upon entering the Army was assigned to inspection duty, to the inspection section on the aviation program. 497.

Came to Standard plant about May 1. 498.

Thought production methods at Curtiss plant very bad. 501.

Some of the trouble was due to a lack of drawings and some of the trouble to lack of proper organization at the Standard Aircraft plant. 506.

Difficulty with organization of plant is that the heads of the company are not manufacturers. 507.

No excuse for lack of inspection of suage wire rods received from Dayton Metal Products Co. 518.

Arrangement of building and distribution of work in Standard Aircraft plant is very poor. 522.

Plant is in a disorganized condition. 523.

The organization of the Standard Aircraft plant is such that it does not justify a higher order for planes. 525.

LEIGHTON A. COOKSON (Elizabeth, N. J., July 26, 1918; Book 13).

Been in the employ of the Government for nearly a year. (526.

Previous occupation was assistant engineer of Canadian Airplanes (Ltd.), Toronto. 526.

Was asked to come to Washington to work for Government by Mr. Diffin and Col. Mixter. 526.

Was assigned to the main office of the Inspection Department, in charge of planes and engine inspections. 527.

Has been at the Standard plant continually for last six weeks. 528.

LEIGHTON A. COOKSON—Continued.

When changes came through, Standard Co. started immediately to do the work and did not determine whether or not they had something almost identical with it being made in the plant. 530.

There were no two files of prints on the machines which were alike. 533.

Does not feel that if he allowed the drawings to come from Dayton-Wright and go into production at the Standard plant they would be handled properly. 538.

Maj. C. B. ROSE (July 26, 1918; Book 13).

Sees no reason why the Standard plant should not have produced airplanes within 30 days after the Dayton-Wright Co. produced them, because the Dayton-Wright information was available to the Standard Aircraft Corporation. If it was not available, the Standard Aircraft Corporation should have gone after it and gotten it. 540.

A plane called No. 30 of the Dayton-Wright Co. was shipped to the Standard Aircraft Co., and they were to make a "Chinese" copy of that. Went ahead along those lines. 542.

In a letter dated May 16, 1918, Col. Hall stated: "All planes are to be built exactly according to sample ship sent you, and no drawings are to be accepted changing these unless approved by the writer." 542.

LEIGHTON A. COOKSON (July 26, 1918; Book 13).

Thinks the responsibility for delay in production of planes by Standard Aircraft Co. was partly with the Government and partly with the company. 547.

Thinks Government used very bad judgment in placing 500 De Haviland planes in Standard plant, because that is not enough to allow any manufacturer to tool up and economically build 500 planes. 551.

About six weeks ago found this company had about \$1,000,000 in unpaid bills, which were overdue. As a consequence it was very hard for this company (Standard Aircraft Co.) to purchase material economically and expeditiously. 556.

Does not think there have been any changes since the model ship No. 30 was sent on by the Dayton-Wright Co. which have seriously interfered with production. 577.

It would help the Standard people to have an additional order. 581.

Would not recommend an additional order in plant unless a man was put in there who was thoroughly familiar with manufacture and organization. 582.

WALTER JOSEPH CONATY (Elizabeth, N. J., July 26, 1918; Book 13).

Has been employed by the Government in this particular branch of service since March 11, 1918. 587.

Formerly with the Chesapeake & Ohio lines, leaving them on March 9. 587.

In 1914 was an accountant in charge of the division of valuation, Interstate Commerce Commission. 588.

Government has paid the Standard Aircraft Co. under J1 contract No. 1839, \$4,167,211.09 to date. 588.

WALTER JOSEPH CONATY—Continued.

Government has paid to Standard Aircraft Co. to date on De Haviland contract No. 2698-A, \$531,091.38. 589.

Government has paid this company to date on Handley-Page contract No. 3439, \$89,772.10. 589.

Figures as furnished by company do not agree. 590.

Made a report on the corporate financial relationship of this company and its predecessor companies. 610.

GEORGE HARRISON HOUSTON (Wright-Martin Aircraft Corporation, New Brunswick, N. J., July 27, 1918; Book 14).

Consulting engineer and for past year has been in charge of the operations here at Wright-Martin Co. 1.

President and general manager of Wright-Martin Corporation. 1.

Has had following experience: Educated in Cincinnati; associated with father in Houston, Standwood & Gamble Co., manufacturers of steam engines and boilers, as factory manager; left them 10 years ago and became associated with Root & Vandervoort Engineering Co., of Illinois, in various positions, ultimately holding position of factory and sales manager. Left them to come East and take up consulting engineering work, first by himself and then associated with Mr. Charles Jamieson, constituting the firm of Jamieson & Houston, later taking in Gen. George W. Goethals as a partner. Present time the firm is known as the George W. Goethals Co. 2.

Has been something over two years actively in the production of aircraft, having entered the Curtiss Airplane Motor Corporation in summer of 1916 as general manager. 2.

Entered the Wright-Martin organization latter part of May, 1917. 3. As vice president and general manager and was to be the managerial head of the company. 3.

Capitalization of company outlined. 4.

Wright-Martin Co. has plant at New Brunswick, N. J., which is now owned directly by it, having been transferred to it on December 31, 1917, from the Simplex Co. for the purpose of carrying on the manufacture of aeronautical motors for the Government under cost-plus contracts; second, the plant of the Glenn L. Martin Co., known as the Wright-Martin Aircraft Corporation, of California, is operating a small factory in Newark, N. J., for the manufacture of tools and gauges for New Brunswick, and at present time is organizing and equipping a large factory on site of General Vehicle Co., Long Island City, to manufacture 300-horsepower aeronautical motors of Hispano-Suiza type for the Government at the Government's cost. 4, 5.

Explain contract of November, 1917, for three thousand 300-horsepower Hispano-Suiza motors. 7.

Wright-Martin Corporation at New Brunswick has been producing what is known in America as type A of the Hispano-Suiza motor. Has completed all of its contract for this specification and is now starting on the production of type E of the Hispano-Suiza motor. 10.

On July 31, 1917, received a contract No. 1487 for 500 of type A motors. 10.

GEORGE HARRISON HOUSTON—Continued.

- In September, 1917, received contract for 500 additional type A motors, which was canceled on October 2, 1917. 10.
- On August 28, 1917, received contract No. 1811 for spares for the first 500 of type A motors. 11.
- On October 2, 1917, received contract No. 1867 for 4,000 of type F Hispano-Suiza engines, which was canceled on November 13 and replaced by contract No. 2250 of November 13, 1917, for 1,000 of type A motor with spares. 11.
- On November 20, 1917, contract No. 1867-a for three thousand 300-horsepower type H Hispano-Suiza engines. 11.
- Contract No. 2250 has been supplemented by following contracts: On February 2, 1918, contract No. 2250-1 for 1,000 type A Hispano-Suiza motors and spares; on February 25, 1918, contract No. 2250-2 for 1,000 of type E or I Hispano-Suiza motors with spares. 11. On May 25, 1918, received contract No. 2250-3 for 1,000 type E or I Hispano-Suiza motors; on November 20, 1917, received contract 1867-a, which was modified by two contracts dated in 1918, No. 1867-b, setting back deliveries, and further supplemented on May 11, 1918, by contract No. 1867-c, arranging for the manufacture of the type H motors in Long Island City and still further setting back deliveries of type H motors. 12.
- Contract No. 2250-4, dated May 27, 1918, for the fabrication of motors for instruction purposes at New Brunswick from rejected parts under cost-plus contract. 12.
- In September, 1917, took contract No. 1494 for 50 J-1 military training planes, which were manufactured at Los Angeles, Calif. 13.
- In spring of 1918 negotiated another contract, No. 3088, for 200 JN-4 training planes for manufacture at Los Angeles, Calif., but after contract had been negotiated and order issued it was canceled by Signal Corps as not being satisfactory to them, and are now liquidating the western company. 13.
- Few miscellaneous small contracts for experimental motors, spare parts, etc., which have not been included. 15.
- Sets forth deliveries and compares them with contract schedule. 15.
- If it had not been for the power difficulties in the winter would have been up to the contract schedule by completion of contract No. 2250. 21.
- Contract 2250-1 will be only a few days behind schedule. 22.
- Would have been possible to have delivered the 300-horsepower motors at the times called for in contract 1867-a. 33.
- Government wanted them to continue with the production of smaller motor. 34.
- Discussed the matter personally with Lieut. Emmons and indicated that they were desirous of going ahead on this contract, and that company were thoroughly confident as to the utility of motor for military purposes and as to its soundness as a mechanical device, but were willing to abide by the department's decision as to what company should do. 38.

GEORGE HARRISON HOUSTON—Continued.

Proceed slowly, through the minimum of expense, to carry on the production of experimental engines and the preparation of all the details of design until the signing of contract 1867-c on May 11. 42.

Contract No. 1487 was for 500 motors at a fixed price of \$5,500 each. 48.

Contract No. 2250, November 13, 1917, for one thousand 150-horsepower Hispano-Suiza motors was on a cost-plus basis, fixed on the estimated cost of \$3,600 per motor, the profit being 15 per cent of said \$3,600. 48.

In latter part of March were directed by the Signal Corps to acquiesce in an increase in wages of workmen, amounting to about 27 per cent, which would make an increase of about \$280 per motor. 52.

Contract 2250-1 provided an estimated cost covering exactly same items of expenditure of \$3,200, instead of \$6,600, with a fixed profit of 15 per cent of this amount. 53.

Contract 2250-2 had an estimated cost, under the same conditions, of \$3,000, plus the amount that the labor had been increased by the adjustment mentioned earlier. 54.

Contract 1867-a was on a cost plus fixed profit, plus 25 per cent saving basis. The estimated cost was to be determined by arbitration. The profit was to be 15 per cent on such estimated cost. 55.

Contract 1867-c set the estimated cost as \$5,000 for the first thousand, with a profit of 15 per cent on this amount. 55.

In proposed contract 1867-d the estimated cost is adjusted at \$4,000 and the penalty, which is provided in all of these contracts, whereby the contractor agrees to stand half of any cost in excess of 33 per cent above the estimated cost, is waived. 56.

Cost of production at New Brunswick has, in his opinion, been substantially higher than it would have been if, at the beginning of their production last summer, they had been given a contract for a sufficient quantity of motors to keep them going for the period of 12 months. 59.

Were spending thousands of dollars every month for messenger service and expressage for ordinary materials that they should have been able to obtain normally if they had had their requirements specified far enough ahead of time. 60.

Made continuous representations verbally and otherwise with respect to the advantage that would be had by giving them larger orders, and as a result of a series of conferences in July, 1917, the following correspondence passed between the Aircraft Production Board and company. 60.

Correspondence. 61-72.

The Wright Co. was organized in 1909 for the purpose of manufacturing aircraft in this country and desired in 1915 to introduce into America foreign aeronautical motors. They considered the motor situation to be the most difficult of all problems facing aircraft production; and to this end they sent abroad in the fall of 1915 Mr. H. M. Crane, their engineer, and Mr. Henry Lockhart, jr., who was then president of the com-

GEORGE HARRISON HOUSTON—Continued.

pany, and who is now associated with the Bureau of Aircraft Production. These gentlemen returned in January of 1916 with American rights for the manufacture of the Hispano Suiza motor. 74.

In order to take this license, the General Aeronautic Co. of America was organized as a subsidiary of the Wright Co. and the license was taken in its name. 74.

In addition to the right to manufacture this motor, these gentlemen brought back a contract for the production of 450 of these motors for the French Government, this order being a portion of the first lot of 850 which had ever been made. 75.

The price of this motor was very low and the order was taken in order to obtain American rights, the acceptance of the order being one of the conditions upon which the French Government would permit of the removal from France of the engineering data necessary to its production. 75.

The delivery schedule for this French order was to be completed by the late summer of 1916, but, as a matter of fact, on the 1st of the following May less than 25 had been shipped. 76.

Thinks reason for delay was because an article of the finest workmanship and material and entirely new to American shop practice was being undertaken. 76.

It has been estimated that company lost in the development and production of this motor prior to May 31, 1917, \$1,269,000 and has lost in production of these motors since that date a very large additional sum. 77.

In October, 1917, were in a position to put this motor into large production just as rapidly as they could obtain the machinery, make the tools, and secure the material. 81.

If they had received orders in July, 1917, for 7,000 motors of this type, believes they could have produced them by July, 1918. 82.

Have not had any advances from the Government or financial help of any kind up to this time. 82.

Under these contracts expect to obtain an advance through the War Credits Board, based upon the property of the corporation, of \$7,500,000 of additional working capital. 82.

Have been able to carry a cash balance of about \$1,500,000 during the entire past year. 83.

From July, 1917, to July, 1918, have actually produced in New Brunswick plant approximately 2,500 Hispano-Suiza motors, exclusive of the motors for the French Government. 84.

Contracts of the 2,250 series have gradually increased the output required to 20 motors per day. 85.

Have stood ready at all times, under proper conditions, to provide such facilities in whatever quantities were necessary to meet the Government's demands for these motors. 86.

It would have been just as simple to have laid out the plant for 30 motors per day at the beginning and would have saved all the other work. 87.

GEORGE HARRISON HOUSTON—Continued.

Letter from Finance Department, Equipment Division, of Signal Corps to Wright-Martin Co., relative to development costs. 90.

Expected to make out of these two contracts about \$2,000,000.

Expected to recoup for their past losses. 93.

Q. That is, the two contracts aggregating 1,000 motors?—

A. Yes. But, as a matter of fact, 500 of these motors—one contract for 500 of them—was canceled; so that we lost the opportunity of recouping on this contract and we had to look for relief to later cost-plus contracts, except for something less than a million dollars that we ultimately made as profit on contract 1487. 93.

Undertook something that had never been undertaken before in America, and something which on the Liberty motor development was undertaken only by the United States Government. 94.

Strongly recommended that the Aircraft Production Board avoid giving contracts for the geared motor and go directly to the 300-horsepower direct drive. The board took this matter under advisement, and late in September we were told that instructions from Gen. Pershing made the placing of an order for 4,000 of the geared motors imperative. 101.

This contract was placed and signed October 2 and canceled on November 13. Was followed by the contract for the 3,000 300-horsepower motors. 101.

Gives history of Hispano-Suiza engine. 105.

While we were producing these 450, the Hispano Co. of Spain organized another French factory near Paris and began the active manufacture of this motor. It quickly became the leading motor in France, and up to the present time its manufacture has been introduced into 15 different factories in France, 2 in England, and the parent factory in Spain. 107.

The Hispano motor of the direct drive, and later of the geared drive, was used in a number of planes of both the pursuit and day-bombing types, but its great work has always been in a pursuit plane, the one application being that of the Spad, developed and engineered by a Frenchman named Berchereau. 109.

Would have produced the 300-horsepower motors for delivery early in the year 1918, and by this time could have been producing from five to seven hundred per month. 113.

There are a number of plants in this country that could have produced these motors successfully. 114.

The Pierce-Arrow Co. has just completed a contract for the production of 5,000 Hispano-Suiza 300-horsepower motors under a sublicense from this company. 121.

Made a proposition to the Signal Corps for the production of 9,450 of these motors, but, as we would not consider taking them on anything but a cost-plus basis, our contract has been limited to 5,000. 123.

GEORGE HARRISON HOUSTON—Continued.

- Have taken the position that a \$10,000,000 corporation could not safely take \$120,000,000 worth of work on a fixed-price basis in war time with anything like a reasonable percentage of profit and be safe in so doing. 123.
- Hispano-Suiza patents are not included in the cross-license agreement. 126.
- As soon as we saw we had sufficient business to make it possible we entered into negotiations with the Hispano-Suiza Co., upon our own initiative, and by their own sense of fairness we were told to reduce this royalty to 1,200 francs per motor for a quantity of 4,000 motors. 126.
- Hispano-Suiza people are willing to accept, under proper conditions, a contract all of which is in accordance with our present conditions and royalties on 150, 180, or 300-horsepower motors, for the United States, not to exceed 600 pesetas for each, a peseta being valued at the present time at 27 cents, as compared with a franc, which is valued at approximately 20 cents. That was on the first 4,000 motors, and for the following 4,000 motors 300 pesetas per motor; and for all motors after a total of 12,000 thus produced 150 pesetas each, thereby reducing the royalty to almost a negligible point. 127.
- The Splittdorf magneto used on Hispano-Suiza motor. 128.
- Net work of company at present moment is approximately \$10,000,000. It is all invested in the manufacture of Hispano-Suiza motors except about \$800,000 net book value of its Wright patents unabsorbed by royalties and about half a million dollars still tied up in automobile inventories. 131.
- Analysis of schedule of public vouchers of company inserted in record. 132.
- Statement of royalties paid Hispano-Suiza Co. 135.
- Seventy-five to one hundred thousand dollars allowed and paid by the Government for the outlay for materials and machinery and labor under contract 1867 for 4,000 geared motors, which was canceled. 136, 137.
- Company has earned about a million and a half dollars under contract 2250, and on earlier contract, 1487, about \$800,000. 141, 142.
- For the period ending March 31, 1918, the compensation paid for Goethals & Co.'s supervision, other than a percentage of the profits, was \$50,000 per year. Beginning March 31, 1918, this percentage was increased to \$150,000 per year, due to the enlargement of the program and responsibilities incurred and to the introduction into the organization of two additional representatives of Goethals & Co. 143.
- Gives salaries of other executive officers of the corporation. 145.
- GEORGE HARRISON HOUSTON (New Brunswick, N. J., July 29, 1918; Book 14).
- Correspondence between Signal Corps and Wright-Martin Corporation relative to building planes for the Government. 160-168.

GEORGE HARRISON HOUSTON—Continued.

Were particularly interested in the supplying of planes to use the Hispano-Suiza motor, and had in mind the advisability or possibility of building pursuit machines similar to those using the Hispano-Suiza motor abroad. 171.

File of correspondence relative to the Hispano-Suiza engine. 175-228.

HENRY M. CRANE (Wright-Martin Aircraft Corporation, New Brunswick, N. J., July 29, 1918; Book 14).

Chief engineer and vice president of the Wright-Martin Aircraft Corporation. 228.

Has been chief engineer since company was formed under present arrangement, and vice president for about three months. 228.

First interested in aeronautical motors in 1910 or 1911. 229.

Gives business experience. 229.

Was in Europe with Mr. Lockhard when contract was made for Hispano-Suiza motor. 230.

Explains why it took so long to complete French contract. 233.

No plant can reach a production of 40 a day on an order for 1,000. 238.

No foundry in this country was then willing, even if capable of making aluminum castings such as were required to successfully manufacture the motor. 240.

Had solved all the important difficulties, and were actually producing motors, but not in large quantities, in June, 1917. 242.

The Hispano-Suiza engine is adapted primarily to the Spad machine, designed by the French Government, and used in 1916 in France, when it was first brought out. It was also adapted to the SE-5 plane, which was brought out in England in actual use last summer. 24.

Mr. Houston has been giving 15 hours a day to this company. 250.

Makes statement regarding motor-design situation. 252.

Have had in the work of developing the Hispano-Suiza motors the advantage of their own plans and their own engineering, without any direction from the Government. 258.

Regarded it as an advisable project to design and build the Liberty motor. 266.

Government have under development at the present time a Bristol fighting machine. It is that general size and type of machine to take either the 300-horsepower Hispano or the 8-cylinder Liberty. 269.

Makes further statement in regard to Liberty motor. 271.

Understands some of the early Liberty motors sent over with the old lubricating system proved to be defective. 276.

The lubricating system, which was found to be defective, was installed as a result of a great many years of experience of Maj. Hall. 278.

The use of a 21-cylinder Liberty in the English Bristol plane was impossible. 279.

The Bristol machine was designed to take a motor of about 220-horsepower weighing slightly over 600 pounds, with a corresponding weight of gasoline, the flying weight being about 2,750 pounds. 279.

HENRY M. CRANE—Continued.

The 300-horsepower Hispano could have been used in the single-place fighting machines successfully. I do not think the 12-cylinder Liberty can. They can both be used in the two-place fighting machines. 280.

"The Liberty motor to-day, in my opinion, is the best motor of its type in the world, all things considered, the reason being that we have a large production, and I do not think we could have gotten a large production on the Rolls-Royce, the only other motor equal to it in quality." 282.

One hundred and eighty horsepower Hispano-Suiza engine is used for fighting in single seaters exclusively. 290.

JAMES H. ANDERSON (Wright-Martin Aircraft Corporation, New Brunswick, N. J., July 29, 1918; Book 14).

Vice president in charge of finance and accounts of the Wright-Martin Aircraft Corporation. 292.

Treasurer of the George W. Goethals Co., and is one of those assigned to the management of the Wright-Martin plant. 292.

Took active charge on June 1, 1918. 292.

Been connected with the plant since September 26 in a systematizing capacity in the factory. 293.

Has a Mr. Isenberg connected with the plant as assistant factory manager. 295.

EMMET S. KYTE (Wright-Martin Aircraft Corporation, New Brunswick, N. J., July 29, 1918; Book 14).

Has been employed at plant since May 16. 297.

Formerly in the United States Treasury Department. 297.

Came there to assume charge of the plant-protection phase of the plant on behalf of the company. 297.

Five alien enemies now employed in plant. 299.

About 125 Austrians and Hungarians employed in plant. 302.

Does not know whether these five Germans have permission to remain in plant. 303.

American Protective League not organized in plant to his knowledge. 305.

HORACE MELVILLE BENSTEAD (New Brunswick, N. J., July 29, 1918; Book 14).

Commissioned in the Army on January 11. Was a civilian employee from November 1, 1917. 320.

Prior to entering the Government service, was auditor and assistant secretary of the Edison Storage Battery and other Edison allied interests of West Orange. 320.

Upon entering Government employ was assigned to Detroit learning the cost-plus contracts. 320.

Was there one month and then assigned to the Wright-Martin Aircraft Corporation as accounting officer at New Brunswick, and has been there since December 4, 1917. 321.

Has charge of all the reimbursements to the Wright-Martin Corporation, to certify to their correctness. 321.

Produces statement showing the total amount paid to this company by the Government under the various heads under which these payments are divided which was marked Benstead Exhibit No. 1, July 29, 1918. 322.

Washington office expenses disallowed by Government. 323.

HORACE MELVILLE BENSTEAD—Continued.

Paid executive salaries tentatively, subject to a ruling of the finance board of the Signal Corps. 324.

List of salaries of Wright-Martin Aircraft Corporation marked Benstead Exhibit 2, July 29, 1918. 325.

Statement of payments made under contract 1867 produced by witness and marked "Benstead Exhibit 3, July 29, 1918." 331.

His contention that the Government owns the investment at Long Island City, getting in from the Wright-Martin Co. for a certain figure. 335.

Contractor claims that the labor increase made effective on March 18 was beyond its control and that it should be paid for by the Government and excluded from their cost in the computation of the bonus for savings effected. 337.

Cost of producing the 150-horsepower Hispano-Suiza motor approximately \$2,900 in January and \$2,600 in February. 342.

WILLIAM F. MCGUIRE (New Brunswick, N. J., July 29, 1918; Book 14).

Vice president of Wright-Martin Aircraft Corporation as one of the representatives of Goethals & Co. 34.

Looks after the production and arrangement of machinery, tools, etc. At present time specially engaged in the work of the Long Island plant. 347.

Supposed to deliver 50 engines of 300 horsepower in Long Island plant in September and he thinks they will do it. 349.

JAMES L. MCCARTNEY (New Brunswick, N. J., July 29, 1919; Book 14).

Holds position of draft clerk. Has charge of all draft matters connected with the employees of plant. 355.

About 800 men in plant have industrial exemptions granted to them. 355.

These men are motor assemblers and machinists. 358.

ALBERT J. C. DE BELLEUSE (New Brunswick, N. J., July 29, 1918; Book 14).

Employed by Duesenberg Motor Co., Elizabeth, N. J. 359.

Previously employed in the Long Island plant of the Wright-Martin Corporation. 359.

Had charge of the inspection of their tests for the Government. 359.

Born in France and came to America in 1910. 361.

Knew the man who had charge of the French commission, who told him he would give him a job. Had never had anything to do with motors before. 361.

Thinks production in Wright-Martin plant was stimulated by investigation of Mr. Borglum. 366.

Company ordered overtime when it was unnecessary. 367.

When they got into the heaviest production the Sunday work was discontinued. 370.

Prince Poniatowski is the representative of the Hispano-Suiza Co. 370.

States there was a wastage of \$15,000 a week since January 1 in the foundry department. 375.

Were putting young men in charge of departments after one or two months' apprenticeship. 378.

ALBERT J. C. DE BELLEUSE—Continued.

Louis Shuck, foreman in the connecting-rod department, was not a citizen. 387.

THOMAS H. SEDLEY (New Brunswick, N. J., July 29, 1919; Book 14).
Superintendent of foundry. 393.

In business for 15 years in the aluminum line. 393.

Has been no more wastage in foundry operations than was absolutely necessary. 394.

HANS O. C. ISENBERG (New Brunswick, N. J., July 29, 1918; Book 14).

Assistant factory manager of Wright-Martin Corporation. 395.

Held that position since June 10. 395.

Came with the Wright-Martin Co. on December 1, 1917. 393.

Was formerly chief engineer and production manager of the Scripps-Booth Corporation in Detroit. 395.

Went through a postgraduate course in Berlin on gas engines. 397.

In 1908 was chief engineer in production in Germany, in automobile factories. 398.

Left Germany in 1911 and went to Wilkes-Barre, Pa., as chief engineer of the Matheson Automobile Co. 398.

ORLAND J. RIDENOUR (New Brunswick, N. J., July 29, 1918; Book 14).

For three years was general manager of the Star Suspension Pulley Co. 423.

Came with Wright-Martin Aircraft Co. on March 5, 1918. 423.

Received instructions from the Chief of the Military Intelligence Department in Washington that alien enemies were not to be employed at plant. 424.

They are kept on because some of them were employed by this plant long before the war and were shop foremen and high-grade mechanics who are difficult to replace. 425.

CHARLES R. SAKIN (New Brunswick, N. J., July 29, 1918; Book 14).

Has been in the service since February 4, 1918. 444.

Prior to that was an accountant with Montgomery, Ward & Co., Chicago. 444.

Upon entering the service was sent to the Packard Motor Co., Detroit, remaining there six weeks. 445.

Came to New Brunswick on March 22. 445.

Has been in charge of spare sales. 445.

Makes audit of exemptions from draft of employees of Wright-Martin Corporation. 445.

JALMA WEST (Curtiss Airplane & Motor Co., Buffalo, N. Y., July 30, 1918; Book 15).

Agent in charge of the military intelligence plant production office in Buffalo. 1.

Mr. Edmund Leigh, chief of the plant protection of the military intelligence. 1.

His office is Col. Churchill's office in Washington, who is Chief of Military Intelligence.

Was immigrant inspector for nine years. 3.

Was sworn into the service on the 16th of October, 1917. 4.

Investigating parties who had been accused of being connected with German propaganda. 5.

JALMA WEST—Continued.

- Goes to Buffalo to the Curtiss plant. 6.
Found things in a demoralized state. 6.
One could enter the Curtiss plant without being properly identified. 7.
Hundreds of employees that were idle, doing nothing. 7.
Lack of system and interest in production. 8.
Curtiss Co. had six plants in Buffalo. 8.
Presents statement giving summary of conditions since he came to Buffalo. ("West Exhibit 1, July 30, 1918.") 10.
Recommends better fire and police protection. 11.
Hands over report on sabotage, marked "West Exhibit No. 2, July 30, 1918." 12.
Bristol Fighter was found, on February 19, 1918, with radiator bracket tampered with; vital part of it bored and filled with lead. 12.
Had never been reported to Col. Van Deaman, chief of military intelligence. 14.
Takes damaged bracket to Senator Overman. 14.
Leaves memo on his chief's desk telling him what he has done. 15.
Produces five letters received through the Washington office from Senator Overman. 16-29.
Various questions had been brought up and arguments regarding the poor material put into the Bristol Fighter, carelessness in construction of the same, which would go to make a faulty machine when it is finished. 32.
Presents report of Mr. Manley Harrison, who did wiring on the machine, marked "West Exhibit 9, July 30, 1918." 32-33.
Presents report by Victor O'Neill in relation to material, purchase and rejection of steels and steel tubing for the Bristol machine. 33.
This report marked "West Exhibit No. 10, July 30, 1918." 33.
Main facts in this report show that the manner of drawing steel from the steel depot made it possible for the United States Government to pay for the steel more than once. 34.
Mr. O'Neill erased the former purchaser's name from the slip and substituted his own. 36.
Things in such a demoralized condition from the standpoint of records it was impossible to verify anything. 37.
Col. Woods in Buffalo making an investigation of the Curtiss plant. 38.
Gave him a copy of all the reports he has just submitted. 39.
States he was told that Lieut. Col. Arthur Woods was making this investigation at the instance of the Signal Corps. 39.
Statement by Alex. H. Beggs, marked "West Exhibit No. 7," tells of the lack of effort to speed up production. Men sleeping under their desks in broad daylight. Could have gone to sleep on the general foreman's desk and no one would have said anything. 40.
Mr. Beggs refers in this statement to a letter to Mr. West in which he says he has not had three days' work during the three months he has been out there. 41.

JALMA WEST—Continued.

States that on one occasion, accompanied by Mr. Sweeney, chief of police, they observed five men pushing one truck; observed them for half an hour or more going from place to place and resting a while and then coming back. Nothing on the truck. 42.

Found 9 or 10 men sitting on barrels in one end of this plant; when questioned, laugh at you and walk away to another spot. 42.

Mr. Mueller, the chief engineer, parents German born. 44.

Many reports to show his father strong pro-German. 44.

Charles H. Webber, parents German born. 44.

Mr. Hoffman, parents German born. 45.

Mr. Schwebel, parents German born; assistant to Mr. Webber. 45.

Mr. West is asked about Capt. Oakleaf, which is the equivalent of Eichenbaum, who is representing the Government in connection with wood matters. 47.

Learns from his associates that his parents are German born; that he gloated over the sinking of the *Lusitania*, etc. 47.

Turns his report in to his chief, Edmund Leigh, and is called before a board of officers to pass upon Oakleaf's application for a commission. 48.

In spite of this he is commissioned first lieutenant and later a captain. 48.

The two officers that interrogated him were in the uniform of majors. 48.

Mr. Leigh was present. 49.

CYRIL R. COBURN (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., July 30, 1918; Book 15).

Resides, Buffalo.

Had charge or performed a part of the inspection of planes on the various models. 52.

Was in charge of the North Elmwood plant and of the Churchill Street plant on the J. N. models and on the Bristol here. 52.

Is then assigned to the production end. 52.

Change from the Bristol machine on account of so many falling. 54.

Relates two accidents occasioned by the Bristol machine. 54.

After 120 changes supposed the machine was about where they wanted it. 55.

Liberty motor too heavy for the wing area. 56.

Shipped 25. 57.

The 124 changes took place after the first 25 had been shipped. 58.

Company get the Bristol model along in August, and 25 planes only are produced in the next 4 months. 59.

Due to "faulty workmanship." 59-61.

A very good percentage of the wood was rejected because it was not well dried in the kilns. 62.

Signal Corps allowed them a plus-and-minus of a thirty-second of an inch. 62.

Explains this more fully. 63.

CYRIL R. COBURN—Continued.

- Never seemed to be able to get metal parts made right. 65.
Poor workmanship on them. 66.
Drill double holes in the wood, splitting the wood. 68.
Man that did this work makes no explanation. 68.
Something of this sort all the time. 69.
Finds difficulty with the wiring. 70.
Defective installation. 70.
Danger of igniting the fumes of the gasoline. 71.
First machine destroyed had two fires on it within an hour of each other. 71.
Battery in wrong position; underneath the gas tank. 73.
Mr. Coburn suggested to them to put a leather cover on the battery in case of a drip of gasoline. 74.
Did not do this, and also run the motor without the manifold on it. 74.
The second fire was due to ignition from the wiring. 75.
This happened on the 28th of March. 78.
Had been working on the Bristol Fighter ever since he had been there down to this time. 78.
It seemed to him that there was more idleness than was necessary. 78.
Made training planes at the Churchill plant. 79.
Charts supplied by Government from June, 1917, to June, 1918, show approximately 2,553 training planes as having been shipped by the Curtiss Co. 80.
These were produced at Churchill Street largely. 80.
Things went better over at the Churchill Street plant. 81.
Go ahead on building plane No. 2. 91.
First machine had six or seven flights, otherwise would have been sent abroad in this condition and the accident would have happened on the front. 92.
Got out second machine in 10 days. 96.
This machine fell at Dayton. 97.
The third, up to the sixth, were shipped to Dayton. 97.
Thinks remaining 19 were gotten out in 6 to 8 weeks. 98.
Have had six falls at the North Elmwood plant since the 1st of June. (The first one, two men were killed in. This due to weakness of the fabric used in the first 25 machines.) 99.
Relates details of the other five falls. 100-103.
One hundred and twenty-five changes on the second order for these planes and now finally discarded. 104.
Contemplate building the S. E. Five machine. 104.
Same organization to build this new plane as with the Bristol with chances of a similar result. 105.
Gives as his observation at the Curtiss plant that the Curtiss people have been very prone to put things over and see just how near they could come to getting things right and still get them across, etc. 106.
Used wood that they knew would produce defective plane, because it had passed Army inspection, and that relieved them of the responsibility. 108.
They did not seem to be able to work close to the blue print. 108.

CYRIL R. COBURN—Continued.

Mr. Kepperley and Mr. Guy in charge of this North Elmwood plant. 108.

Mr. Mueller is chief engineer for the production of the Bristol machine, and is engineer also of the J. N. models. 109.

Mr. Heatley Green was district manager for the Government. 111.

Maj. Moore in charge of production. 113.

Mr. Cole is district manager, having general supervision. 113.

Capt. Eding is manager of production. 114.

Capt. Weller is chief of inspection under the direction of Maj. Moore. 114.

Should have been Government control in this plant. 114.

Bristol fighter was adapted from the Bristol in England. 116.

It practically lost its identity in this country. 116.

Mr. Mueller was largely responsible for various changes of design. 116.

Imagines it was done at the request of the Government, as the Bristol plane could not possibly carry the Liberty motor. 116.

Mr. Butts and Mr. Green were in constant conference with Mr. Mueller when it was under construction. 117.

Defects of Bristol fighter due both to defects in design and manufacture. 117.

Was abandoned on Mr. Landon's advice. 118.

Thinks before it was abandoned it would have paid to go a little further into experimental work. 118.

One hundred were ready for completion when it was abandoned. 119.

In the shape they were getting stock in, they would have been able to put out 100 of them within the next, say, six weeks. 122.

Here is where he thought the Government should have stepped in and stopped the defective work. 122.

Could have been utilized at least on this side by the men learning to fly instead of having to wait until they reached the other side to learn. 122.

Enough material scrapped of some kinds to build 50 planes, of other material, enough has been scrapped to build 500 planes. 123.

This material can not be utilized entirely in other planes. 123.

Means a loss running into millions of dollars. 123-124.

He personally gave a stop order for certain work still going on and two weeks later in going through the metal shop found they were still making them and sending them through various operations and working overtime. 124.

Order had never gone any further than the engineering department. 124.

All the labor and material of these 10 days was lost. 125.

This change in the bracket that holds the synchronizer, oil pump, and air pump had been communicated to Mesner. 125.

Lack of cooperation the plaint among the various departments. 126.

CYRIL R. COBURN—Continued.

They would get an order for 500 parts and go on making them until somebody goes through and sees how many they have, when they would find 5,000 parts. 126.

Mr. Brooks designed the Liberty Battler, or at other times called the Curtiss Battler. 130.

Same situation now in connection with the production contemplated here of a fighting plane that was present in connection with the Bristol. 132.

States fully what was discovered in connection with the unnecessary drilling of holes in the strut. 133.

This man had built fully 16 fuselages in this way. 136.

CHARLES ROHLFS (Curtiss Aeroplane and Motor Co., Buffalo, N. Y., July 20, 1918; Book 15).

Been employed in connection with the work of the Curtiss plant since February 5, 1918.

In the woodworking department; senior inspector of wood parts. 141.

On behalf of the Army. 141.

When he came to the Curtiss plant, being used to shops, it looked like things were running wild and loose. Lots of people with nothing to do but walk around and look out. 143.

Has been nowhere but right at the North Elmwood plant. 143.

One man remarked to him, who had formerly worked for him: "Mr. Rohlf, if this thing was run for the Kaiser himself, he could not be running it to better advantage to himself than these people are." 143.

Creeping paralysis over the place, but what the cause of it was could not tell. 144.

Observed these conditions immediately, and same conditions still prevail, only they have more to do. 144.

There was nothing inherent in the difficulty of manufacturing a new plane that accounted for these conditions, as any mechanic knows all the old methods and processes. 146.

States that there was a model produced in January of 1918, and that on this model 25 other machines were constructed. 148.

His son, who came up to fly the machine, was told he need not look the machine over, 20 men had looked it over. 150.

He found the wings wrong in the first place, the front struts were on behind, the control was wrong, which fact alone would have resulted in his death. 150, 151.

Wings were defective in method of applying the canvas. Something wrong with the stuff they had put on the ribs that hold these in place, and it soaked through and made it soft, so that when there was a terrific force by the propeller against these wings it loosened the stuff and they were torn off. 154.

His son, with a fellow named Depew, discovered this. 155.

Copy of the report of serious defects marked "Rohlf's Exhibit 1, July 30, 1918." 156.

Method of using the glue all wrong. 163.

Their ability to make hydroplanes and their inability to make Bristol fighters was because the former was a tried thing. 167.

And further explained that the personnel of the organization was afraid of the cars. 169.

CHARLES ROHLFS—Continued.

Even the hydroplanes went slowly enough. What took 2,000 hours to do then is now done in 700. 169.

The whole thing inexplicable. 170.

Again asked why a plant that is the oldest in this line of work, successfully making planes before this country entered the war, and where you would suppose the best work could be done, has been the most lamentable failure. 171.

What they made before was Curtiss output and the Curtiss outfit. The results to be seen at Churchill Street plant. 171.

Mr. Glen Curtiss, a man named Coleman, an engineer, and Kirkman, an engineer, are at Mineola. 172.

Were not here long enough to get into this at all. 172.

Bad results from kiln drying for a long time. 176.

The kilns under Government control. 176.

Did not cause much delay in production. 177.

Were holding back work by the ignorance of methods of production. 177.

He secured information from Capt. Rogers, English representative here, that the SE-5 was the very latest of that type of machine and that it had done wonderful service. 178.

Working on experimental stuff, and they are going desperately slow. 178.

Thought the Bristol should have been discarded, as it was wrong, especially in connection with the Liberty motor. 179.

Overproduction of parts. 184.

Says the Government is not going to allow for any of the overproduction of parts. 184.

Cites an instance of an order being given to supply a shortage of 950 of certain things when there are already 600 in the storeroom. 186.

Some of the men who were enthusiastic and interested to do something overreached, and the thing was delayed and delayed and not one thing produced. 188.

They have not seen anything good come out of Washington there. 191.

Inefficient, and perhaps their argument would be to anything—“Well, I have not read up on that for several years.” 191.

Percentage of spruce lost, manufactured, has run from nothing once in a while to 50 and 60 per cent in manufactured products. 193.

Capt. Rogers, who represents the English Government, told him in February that he had washed his hands of the Bristol machine last November. 197.

November, December, January they went on making this machine that they should not have made. 197.

The Signal Corps directed them to keep on with the work. 198.

Maj. Moore was supervising things at the plant at that time for the Signal Corps. 198.

JOHN HENRY WINTERBOTTOM (Curtiss Aeroplane Motor Co., Buffalo, N. Y., July 31, 1918; Book 15).

Employed at the Curtiss plant and working with the Navy on the Navy costs. 200.

JOHN HENRY WINTERBOTTOM—Continued.

First worked at the South Elwood plant in inspection department. 200.

Came to the North Elmwood plant when it was first opened up for construction proper. 201.

Had inspection of all metal parts. 201.

One of the worst things he had to do with was the cases of waste material and the manner in which they did the work. 202.

Some material had been set at an angle of 45° , and it should have been only at 30° . Were going to put this piece of metal under the die to straighten it without treating it, which would injure the metal. These parts used. 202.

States the effect of using this material. 204-205.

His desk all cleaned out one night. 206.

Had notes and data on this instance and other occurrences like it. 207.

Mr. Herman, superintendent of production, takes him over and he has charge of drill-press and milling-machine department. 209.

In his department, when they were not busy, they would take sheet metal and drill holes in the sheet metal, but down in the punch press would work at all kinds of standard parts, and then an order would come for a change, and this would all have to be thrown in salvage. 209.

This work undertaken without orders from the planning department, but through an "S" order. 210.

Mr. Rogers gave these "S" orders, because he did not want to wait. 211-212.

Every time there was a change it affected the material some way or another. Either had to remachine the material on hand or had to scrap the material on hand or else to salvage it. 214.

This steel or excess material would be scattered around on the floors, every once in a while be gathered up and put back in the steel stores, and the Government in this way would pay for it three or four times. 215.

There was no blank form or slip of any kind to return the material on. 217.

Mr. Stubbs was in charge of the steel stores. 218.

This practice has been going on since plant was originated. 223.

Material was returned in this way to the steel stores once a month. 223.

When any of this material was to be used again they would make out a new issue slip for so much of a certain kind of material, and the slip would not show it was material that had been returned. 225.

Is asked how it happened that the Government paid twice for this material if the material it had passed was in the bins, and was simply returned and issued back under factory orders. 226.

JOHN HENRY WINTERBOTTOM—Continued.

Thinks that the Government does not pay for these materials on the basis of inspection of the materials when it is put in stores, but on the basis of the issue slips, which are stamped when that material is issued to the different parts of the plant for production. 231.

If there is a reissue of the same material there is a repayment by the Government for the same material. 231.

The Government cost-notification slip comes through at the same time the special issue slip comes through. 232.

This is a duplicate of the issue slip, is a notification to the Government office, a carbon copy of the original issue slip. 232.

Describes special issue slip. 232.

Tells how double payment by the Government could be avoided. 233.

This practice only stopped about two and a half months ago. 233.

Is asked to explain more fully how this special issue slip would correct this trouble. 235-239.

In all the production departments there was excess material lying around. 246.

Although it would be used up it would not be charged to proper orders. Material was used for Army stuff and on Navy orders, and Curtiss would use it for tools, or to repair stuff for themselves. 246.

The Army and Navy are given separate order numbers, and if you issue it out on one and credit it to another you can not keep the records straight. 247.

At one time there were 14 truck loads of excess material on the floor which went back to the steel stores without a cent of credit. 248.

Thinks this was about five months ago. 248.

If this material is used while on the floor there is no record to show where it has gone. 249.

Cites instances of material taken out for, say, Army work, and then being used for some other work causing great confusion. 249-254.

Spoke to Mr. McCaul, his superior, about the papers being rifled in his desk, but could get no information. 255.

Mr. Talbott directed his transfer. 255.

When material was bought specially for the Army and Navy it was entered on the Army and Navy ledgers. 260.

When material was not bought specially for the Army or Navy it was entered on the Curtiss ledgers. 260.

Material bought specially for the Army or Navy would be paid for outright. 260.

So the material that was bought for the Curtiss orders was the material that was paid for subsequently on requisition slips. 261.

Mr. Crawford was purchasing agent of all raw material. 262.

Mr. Douglas is present purchasing agent. 262.

States the raw material record would show what proportion was bought on general Curtiss orders. 264.

JOHN HENRY WINTERBOTTOM—Continued.

The metal parts, fabricated parts, that do not come up to specifications go into the salvage department. 266.

No system is maintained by which a credit for salvage of discarded parts can be had, because they did not have a part cost of any particular part. 266.

Is asked to explain how these special issue slips for shortages could be issued by anybody without any reference to the orders proceeding from the planning department. 274b.

Is transferred because he is holding up production. 278.

Relates instance of a man turning out 1,000 parts after he has been notified by the foreman that work on this production was to be stopped. 280.

Common occurrence to hear a man remark "I am acquainted with the fact that this is not the proper way, but it is the way of the pro-German system." 287.

Excess material left on the floor would be retained in the department for which it was ordered, the tag thrown away, so in case they scrapped some material this could be used to cover up their mistakes. 291.

One thousand two hundred stop orders in March on the Bristol fighter. 309.

These changes were made about the time they were delivering the 25 finished according to the accepted model. 311.

Made unnecessary changes because a sample part was not made to embody all the changes that would be needed in that part before it went to production. 312.

This proved a good method of keeping the factory employed. 313.

The persons in control of the engineering department should have known that this system created work at the expense of the Government. 315.

The whole matter can be reduced to a certainty by a study of the card index. 315.

Mentions Mr. Essinger, who had charge of the control and power units of the card index, as a man who would be particularly informing as a witness. 316.

This matter was taken up with Mr. Mueller. 316.

Enough parts have been produced and thrown away on account of this system to equip 600 planes. 317.

This can be verified in the card records which were at that time in Mr. Golden's department. 319.

The stock ledgers are intended to be a substantial inventory of the parts in stock. They have a credit and a debit. 322.

Changes all suggested at Washington. 327.

After interview with Mr. Mueller, improvements were not made to avoid the waste that has been described. 336.

Instead, he gets a letter from Mr. McCall that he should not take matters of such importance over his head any more. 336.

System of timekeeping very lax. 340.

WILLIAM WARD MOSS (Buffalo, N. Y., July 31, 1918; Book 15).

Vice president and comptroller of the Curtiss Aeroplane and Motor Corporation. 369.

WILLIAM WARD MOSS—Continued.

Recommended to the Curtiss Co. for appointment to this office by the Secretary of War and the Secretary of the Navy. 371.

War Credits Board loaned the Curtiss Co. \$8,000,000 and the Navy Department loaned them \$3,900,000. 371.

Had been previous advance of \$3,500,000, which was repaid out of this last loan. 372.

This amount is secured by first mortgage on all of the fixed assets of the company. 375.

The only cost plus contracts the Curtiss people have are at the North Elmwood plant. 379.

JN planes are all at the Churchill Street group. 380.

Fixed price for the JN-4D was \$4,750. 382.

Same price for the JN-4H. 382.

Mr. John N. Willys, president of the company. 396.

J. E. Kepperly, B. A. Guy, and Mr. Moss are on the finance committee. 397.

Mr. Wilson (C. B.) was in charge of production of all plants. 398.

Under his direction Mr. Ericson is in charge of the North Elmwood plant. 399.

Mr. C. M. Keyes, a broker of New York, is vice president of the company. 401.

Has not made an examination to ascertain whether estimate of cost was properly arrived at, because the accounting system was incomplete when he arrived at the plant. 403.

In connection with the Bristol Fighter has only the total amount of labor and of material and what that amounts to and not the actual cost. 405.

The Government has paid the Curtiss Co. to date on account of the Bristol Fighter, approximately a million dollars. 408.

There is also probably a million and a half of unvouchered invoices that will represent Bristol material. 408.

Asked to get a record of the amount of estimated cost of work on the Bristol Fighter. 409.

Bristol program unsatisfactory from the start to finish. 410.

Order would come to build a certain number of planes which would immediately be followed by orders to discontinue. 410.

Asked to produce cancellation order. 411.

Order came from Mr. Landon. 412.

Has not been asked yet, but will do so, to make a statement showing the amount which will be lost to the company by reason of this cancellation. 412.

The principal loss to the company will be in holding up of production and loss in profit. 413.

Loss to the company will be nothing in material and labor as that is all absorbed by the Government. 413.

Have new contracts with the Navy Department for \$7,000,000. 414.

Amounts to be paid by the Government under each contract is on amount due for materials purchased and the actual labor. 416. (The direct labor that goes into production.)

WILLIAM WARD MOSS—Continued.

Army and Navy accountants have agreed on an allowance of an arbitrary overhead, subject to adjustment. 416. (A certain percentage of direct labor.)

For January, February, March, and April, 200 per cent. 416.
For May, 100 per cent. 416.

Have two overheads. An overhead that is confined to all the plants, and an overhead applying to particular plants. 417.

Gives salaries. 418.

In the agreement there is a provision that after \$30,000,000 worth of work has been completed at the North Elmwood plant an appraisalment will be made of the property and the Government will allow the difference between its value then and its cost. 419.

Volume of work at the plant has been about \$5,000,000 a month recently. 419.

Curtiss Co. has no experimental contract as distinguished from the contract for planes and engines, excepting the building known as the Liberty battler, which might be regarded as an experimental contract. 419.

When the Curtiss Co. buys material that is to be used in any of the Government contracts on the cost-plus contract it is paid upon the delivery of the material to the plant and the checking up of the receiving slip and invoices. 421.

Explains checking up of the receiving slips and the invoices. 422.

Steel is bought in three different ways. 423.

The Curtiss Co. in general bought its material and paid for it and then used it for the orders to which it was applicable. 424.

If the Curtiss Co. makes a general order for steel, they will be entitled to payment from the Government for the material when it is disbursed from the steel depot onto the production floor. 424.

No billings have been made at the present time against the Government of any such materials. Now preparing a statement or claim against the Government from the issue slips. 424.

States that the question of the course that is taken in connection with the raw material, say, such as steel, is one of the biggest accounting problems now in the course of being solved. 425.

States the nature of an agreement between the Army and the Navy and the Curtiss Co. which provided for materials that were purchased being kept in consolidated stores. 426.

In the final accounting the requisition slip will determine what has been used and whatever has not been used of these purchases and the company will then have to account to the Government for their material, or for whatever difference there is. 439.

But if the whole amount is requisitioned then there is no accounting back by the company. 439.

Company must still further account for it in production. 440.
Accounts for it by issue slips. 440.

Has had some labor thrown out on account of overwork after stop-production orders had been issued. 465.

WILLIAM WARD MOSS—Continued.

Produces paper giving cancellation order for the Bristol machine. Marked "Moss Exhibit 3, July 31, 1918." 481. (With letters and telegrams following.)

Curtiss Aeroplane & Motor Corporation and Curtiss Aeroplane Co. are two companies of which a consolidation was effected on January 1, 1918. 491.

The Curtiss Aeroplane & Motor Corporation held the stock of the Curtiss Aeroplane Co., and the Curtiss Aeroplane & Motor Corporation was the operating company. 492.

The company set up a total reserve for taxes of \$538,646.97. 496.

Haskins & Sells set up \$1,700,000, approximately. 496.

Haskins & Sells report under date of March 30, 1918, for the year ending December 31, 1917, was marked "Moss Exhibit 8, July 31, 1918." 500.

Haskins & Sells report under date of July 18, 1918, for the three months ending March 31, 1918, was marked "Moss Exhibit 9, July 31, 1918." 501.

Company's own financial statement was marked "Moss Exhibit 11, July 31, 1918." 501.

Company's last balance sheet produced by Mr. Moss under date of June 30, 1918, was marked "Moss Exhibit 12, July 31, 1918." 501.

Bogey cost of Bristol Fighter originally \$6,750. Its cost is \$6,000, and the profit is \$750, with a provision as to slight increase in profit if they saved on the bogey. 507.

Memorandum of conference held in the office of Maj. Brown, subject to a call by Col. Deeds to consider ways and means of consolidating the handling of raw stores (other than lumber). 507-511. "Moss Exhibit No. 13, July 31, 1918."

Agreement arrived at by the Navy and War Departments at Buffalo cancel above agreement. 512-519. "Moss Exhibit No. 14, July 3, 1918."

Paper sent by Mr. Kepperly with respect to the instructions sent in the agreement by the Navy and War Departments. 521.

Further correspondence relating to these agreements. 524-531.

Understood that there were production orders issued, and that the requisitions were based on those production orders. 532.

It took three ledgers, under the old plan, in order to balance one account. 535.

None of the ledgers would balance. 537.

W. W. Moss (August 1, 1918; Book 15).

Produces contract, No. 2814, under date of January 19, 1918, relating to advances made by the War and Navy Departments on account of the current contracts. 540-544. Marked "Moss Exhibit 19, August 1, 1918."

Also produces statement showing the disposition of Government advances, continuing up to April 4, 1918. 544. Marked "Moss Exhibit 20, August 1, 1918."

Mortgage, securing the advance to the Curtiss Aeroplane & Motor Corporation was marked "Exhibit 21, Aug. 1, 1918." 545.

W. W. Moss—Continued.

Reads into record letter addressed to Col. Thompson as president of the War Credits Board, under date of March 4, 1918, a similar letter being sent at the same time to the Secretary of War and the Secretary of the Navy. Marked "Moss Exhibit 22, 1918." 545-551.

In this letter of March 4, 1918, it states that "no physical inventory of stock has been taken since May, 1917." 552.

As no inventory was taken which would enable Haskins & Sells to make out their statement for the year ending December 31, 1917, they made up their statement by the book records. 552.

On December 31, 1917, the funded debt of the company was a total of \$7,441,000. 552.

Inventory of March 31 by Coates & Bertrand, of Chicago, compared favorably with what was shown on the books, being within a few hundred thousand dollars. 555.

Haskins & Sells's statement of March 31, 1918, on their general balance sheet, shows a cost of sales as \$10,012,218.96, being the amount of outlays in January, February, and March. 555.

Mr. Moss produces statement entitled "Number of machines shipped during the year 1917." "Number of machines shipped during the year 1918 to July 1," and on the second sheet—"Motor production during the year 1917 and motor production during the year 1918 to July 1." These were marked "Moss Exhibit 23, Aug. 1, 1918." 556.

The JN-4A was a primary training plane for the Army. 557.

Some of the JN-4 planes were for the British Government. 557.

Out of the total of approximately 4,100 planes that have been shipped from January 1, 1917, to July 1, 1918, about 600 were for the Navy. 563.

Two hundred and forty-eight were on a cost-plus basis. 563.

Out of approximately 484 shipped in the first six months of 1918, that would leave about 240 shipped in 1918 for the Navy or for the British Government upon a flat price basis. 563.

Six hundred and forty-three planes were called for by the Navy on a cost-plus basis of the H. S. type. 564.

Delivered 1 in January, 11 in March, 29 in April, 77 in May, and 135 in June. Up to July 31 a total of 344 shipped, so the difference will be 97. 564.

The fact that they are up to Navy requirements in the deliveries is due to a substantial performance of their contract. 565.

So that, so far as the Navy planes are concerned, which have been made in the North Elwood plant on a cost-plus basis, they have been substantially up to contract. 565.

Submits substance of the H. S. contract 33192 which is marked "Moss Exhibit 23, August 1, 1918." 565.

According to the contract there is a provision that the Navy Department is to pay the Curtiss Co. a fixed profit of \$1,625 for each H. S.-1 flying boat. 566.

And further, that the estimated cost of the H. S.-1 flying boat, f. o. b. contractor's works, crated for overseas shipment, etc., is \$13,000. 566.

From indications it would seem that there will be considerable saving under the bogy cost of \$13,000. 567.

W. W. Moss—Continued.

Probably will exceed \$2,000. 568.

None of these planes have been returned and have not been advised that any were defective. 568.

Two-thirds of the North Elwood plant was active during the first six months of 1918 in the attempted production of the Bristol Fighter. 571.

The failure of the company in performance of its contract has been in connection with the Bristol Fighter. 573.

Have not got their cost accounting system in relation to the H. S.-1, the Navy plane, in good shape yet. 574.

Makes statement as of July 31 of moneys received from the Navy Department which shows that they are behind in their accounting and that they have done a great deal better in production than they have in accounting for the product. 575.

This is read into the record and marked "Moss Exhibit 25, August 1, 1918." 576.

Explains method of keeping track of the labor that was done under this cost-plus work. 579 to 582-583.

Produces sheet showing the amount rejected for the Navy from February 2 down to May 25, and for the Army from March 16 to May 25. 583.

Navy rejections seem to have been about three times as much for the period covered by the Navy report as to the Army during the period covered by the Army report. 583.

Thinks the explanation is that there was possible twice or three times as much work done for the Navy than for the Army. 583.

Both the Army and the Navy had a complete staff of accountants. 584.

When these rejections are reported they check them up and the Navy accountants on further examination and proof change their rejections. 585.

Clear, detailed statement of what happens in the checking up of time and labor. 586-589.

Factory records contain an account known as No. 98, into which all discrepancies or undetermined labor are entered, pending further check-up. 589.

Plant G, if the North Elmwood plant. 591.

Produces some working papers, cumulative as to production, i. e., special orders charged against the Army and Navy, which covers from January 5 to June 15. 591.

This statement shows the total pay roll for this period to have been \$3,775,155.49. 592.

This covers the entire labor cost in Plant G, the North Elmwood plant, for that period, with the exception of the "Treasurers' roll." 592.

This outline of the method of distribution of overhead expense by the Curtiss Aero & Motor Corporation produced by Mr. Moss is marked "Moss Exhibit No. 28, August 1, 1918." 595.

Produces paper which was marked "Moss Exhibit 29, August 1, 1918," being "memorandum in re method of paying for lumber furnished by the Government, under date of January 8, 1918." 603.

W. W. Moss—Continued.

Produces paper of the releases of the Bristol. 604.

This is read and marked "Moss Exhibit 30, August 1, 1918." 604.

The other release produced by Mr. Moss was marked "Moss Exhibit 31, August 1, 1918." 606.

Produces copy of a letter of May 4 to the Navy Department, in connection with consolidated stores. This is read and marked "Moss Exhibit 32, August 1, 1918." 607.

Produces statement showing the number of employees. This is just the Buffalo plants and does not include the Hammondsport plant. Is read and marked "Moss Exhibit 33, August 1, 1918." 610. (This is under date of July 31, 1918.)

This is after a considerable reduction of the force. 610.

Produces paper which shows the amount of purchases for orders for the Bristol, down to July 20, carrying forward everything from the very beginning, October 31, 1917. 611.

Calls attention to the fact that this is a purchasing-department record and not an accounting record. 613.

This record from the purchasing department will be subject to inaccuracies which may be ascertained on audit. 614.

This record is marked "Moss Exhibit 34, August 1, 1918." 614.

Another exhibit is added showing material transferred to the Bristol's use from the material that had been purchased generally by the Curtiss Co. and not specially for the Bristol. 614. "Moss Exhibit No. 35, August 1, 1918."

The amount shown in Exhibit 35 should be added to the amount in Exhibit 34, which covers the entire material that has gone into the Bristol or has been bought for the Bristol down to July 20. 616.

Adding a month and a half's additional labor and overhead, from June 15 down to the time of the cancellation of the order for the Bristol, would add half a million dollars more. 619.

In round figures the entire cost of the Bristol operations from January 1, 1918, to the cancellation of the order, would be approximately \$3,000,000, less what would be salvaged on disposition of material. 620.

Produces contract for Spad machines, marked "Moss Exhibit 36, August 1, 1918." 621.

Produces Bristol contract which is marked "Moss Exhibit 37, August 1, 1918." 622.

The first contract was canceled upon execution of the Bristol contract. 622.

Contents of the Bristol contract on page —. 622.

A letter showing that the issue slips were the basis of credit for material was introduced in evidence and marked "Moss Exhibit 38, August 1, 1918." 624.

Produces copy of the contract allowing for special depreciation in connection with the North Elmwood plant at the completion of the contract. Marked "Moss Exhibit 30, August 1, 1918." 625.

The contract—pages 626 to 631, inclusive.

W. W. Moss—Continued.

Produces extract from an agreement, dated September 19, relative to certain machinery that was purchased by the Government and is now owned by the Government and used by the company. 632. Marked "Moss Exhibit No. 40, August 1, 1918."

Under the contract the Government furnished something over \$1,000,000 worth. 635.

To this already estimated cost of the Bristol fighter from the beginning to the cancellation would have to be added an undetermined item for special tools and outlay for machinery, and also whatever would be added to it under the head of depreciation in connection with the North Elmwood plant. 637.

The outlay of over \$1,000,000 for machinery for the Bristol would be largely recouped by the ability to use this machinery in connection with other orders. 638.

ROBERT DAILY (Curtiss Aeroplane & Motor Co., Buffalo, N. Y., August 1, 1918; Book 15).

General factory accountant. 655.

The factory accountant under him, Frank A. Tooley (mentioned by Mr. Hughes on page 649), resigned through dissatisfaction. 656.

Mr. Tooley had the accounting of the plant subdivided into a good many divisions, had a man in charge of those divisions who reported immediately to him, such as the head time-keeper and the storekeeper and bookkeeper and pay-roll department, etc. 656-657.

Mr. Tooley had charge of all the labor cards and all the workmen at this plant. 657.

Quit because he did not feel that the effort "to come across" was worth while. 658.

Curtiss Co. has paid men for six weeks' work without having had that work distributed to particular orders or contracts. 659.

It is not distributed and filed or compiled in such a way that they can invoice the Army or the Navy for the amount for which they ought to reimburse them. 659.

Produces part of account known as No. 98 showing discrepancies between the labor on the attendance-card basis and the labor on the master-card basis. 660.

Produces part of it as of the period up to July 15 showing a debit of \$436,022. 660.

According to this account, taking the debit items down to May 1 to correspond to the different credit items to May 1, it shows \$48,131 which had been expended by the Curtiss Co. for labor in the North Elmwood plant from January 1 to May 1 for which they had not been able to make a claim against the Government under any contract. 663.

Exclusive of the Treasurer's pay roll, the amount in total expended by the Curtiss Co. at the North Elmwood plant for labor from January 1 to May 1, 1918, was approximately \$2,300,000. 665.

ROBERT DAILY—Continued.

This was all charged to Government work with the exception of \$48,131. 665.

It might, of course, been charged to the Government on a flat-price contract, but that would only be on the basis of the master card, showing the work done on the flat-price contract. 665.

Produces attendance card. 667.

Outlines the meaning of this card. 668.

So according to this system they charged the total amount for which the employee was paid against something, unless there was some lapse in their accounting, which would explain this discrepancy for the four months of \$48,000. 669-670.

States they paid the employees entirely upon the attendance-card basis. 670.

The way in which they were working during this time and the way in which the work was distributed was shown on the various master cards. 670-671.

Asked how he got the average of \$25 a week for employees. 671.

This would mean that from January 1 to May 1, 1918, the full time of 9 hours a day or 50 hours a week has been charged to some kind of work for all the 5,000 people with the exception of the 120. 672.

States that no man could get out without a special pass. 672.

There is a fixed pass book, so that if a man is excused prior to the regular quitting time it is supposed to be impossible for him to get by a guard without this pass. 673.

Reports of Secret Service agents and by some of the people caused them to be acquainted with the fact that men were going out without a pass. 674.

Dispatcher distributed the work on these master cards. 675.

Around 70, some departments having more than 1. 675.

Relied upon the appearance of the workman for a new job in distributing the hours of labor among different orders. 675.

The dispatcher had nothing to show in order to establish that the workman had worked all the time that was charged to a particular order upon that card. 676.

Reporting for a new job was voluntary on the part of the workman. 676.

Have an idleness account in the overhead account in the factory ledger. 677.

"Idle time," "idle power," light, waiting for orders, etc. 678.

Six idle accounts down to May 31 aggregate \$31,450. 681.

This is included in the overhead expense. 682.

The \$48,000, however, is entirely apart from this idle time and is an amount for which they can not account. 683.

The attendance card goes to the pay-roll department; then it is taken to the tabulating-machine department, holes punched in the card and compared with pay roll, and if it does not agree with the roll they compare each day's work. If the master card does not agree with that, it goes back on the job and they have to find out what happened. If they can not find out what happened it goes in "98" (which shows the balance of \$48,000 down to May 31). 686.

STUART L. MULHOLLAND (Curtiss Aeroplane and Motor Corporation, Buffalo, N. Y., Aug. 1, 1918; Book 15).

In charge of the general factory accounts of the Curtiss Co. plant at North Elmwood. 689.

Started with the company on March 30. 689.

In charge of labor and material distribution and expense accounts. 689.

Total pay roll is distributed by accounts and by departments. 690.

Was with Mr. Tooley in the record division before coming into the factory accounting department. 690.

This division kept a record of all employees and passes issued and a record of their applications, and all dates pertaining to the employees. 690.

Was never complete half the time he was over there. 690.

There was confusion in any respect you wanted to look at it. 690.

A lot of the records were lost. Great many instances where it was impossible to trace a record of an employee. 692.

Found that sometimes possibly 200 or 300 men would be without passes. 692.

Did not believe that once a man was in he could get out without being observed. 693.

Could not state that the men who were shown to be in attendance by the attendance card were always in the factory. 693.

This would come under the jurisdiction of the pay-roll department. 693.

Found that at the end of March there had been no distribution of labor among the various contracts with the Government from the 1st of January. 694.

That was a part of his duties when he went in there in April to see that it was distributed. 694.

The machines automatically ascertain the money spent by the Army or Navy. 696.

When he took charge the cards showing the distribution had already been filled out. 696.

Tells how the Labor Department distributed the time on these cards. 696.

The timekeeper put the information on the card which told whether he had worked on that particular order or not. 697.

The timekeeper gets his information as to what a man has done from the foreman in the particular department. 698.

When on March 30 he entered this department to place this amount on the books he did not have all the cards from the distribution on the sheets. 698.

Found that possibly 75 per cent of them were wrong. 699.

If after comparing the sheet with card it did not balance, an instance which he states never occurred, it was thrown into undistributed labor, or account 98. 701.

Inaccurate workmen in posting the cards to the sheets. 702.

Explains wherein the system was inadequate. 702.

Inaccurate work caused material to be charged to the Army when it should have been charged to the Navy, and vice versa. 703.

The issue slip is the Government's basis of charge. 706.

STUART L. MULHOLLAND—Continued.

With reference to the disappearance of records. 708.

The ledger lost and found. 708.

Cabinet or closet where a lot of issue slips were kept. These disappeared, and slips later found down in front of the stationery stores. Does not know whether they were all there or not. 708.

Believed a little friction between the Army and the Curtiss people was the reason for Mr. Tooley leaving. 711.

Had not been given enough authority to run his department properly, etc., and new system being put in which would not work reasons why Mr. Tooley left. 711.

This system put in by Mr. Hilton, assistant to Mr. Moss, and Mr. Mulholland himself says it is impossible to work. 712.

Knows of an item of \$2,600 made up and in the cashier's office in one month, in envelopes for which no men called for. 713.

This would indicate that the timekeeping was very irregular, because the men were not working. 713-714.

If this could happen, and they had attendance cards, this apparently was a case where the time was made up. 714.

And if this were so, in cases where the men did not go up to claim the money, it might be so in cases where the men did go up and get the money. 714.

Acknowledged that this put the whole time system under a very serious discredit. 714.

The cashier went through the journal voucher and took that amount of money into his funds and had it credited where it had been previously charged. 715.

Did not know whether that month was singular in that respect or whether they handled it in some other way in some other months. 715.

WILLIAM F. DARGET (Curtiss Airplane & Motor Corporation, Buffalo, N. Y., August 1, 1918; Book 15).

Assistant general foreman in the sheet-metal department. 717.

Had around 550 to 625 people prior to the stopping of work on the Bristol. 717.

Too many shop changes held up production on the Bristol. 718. (Changes in blue prints.)

Mistakes in blue prints. 719.

Prior to the 1st of May, when they were not in full production, there was a good deal of loafing. 720.

Sometimes would have from 5 to 20 men in the department idle for six or seven hours in the day. 720-721.

Then would come another spurt and another stop. 721.

During February and March, when there was so much loafing, there were about 350 to 400 men in his division, one-third of them loafing. 723.

All this time was charged. 724.

Has always been a difference in the timekeeping between the timekeeper and the pay-roll office. 724.

C. H. ANDERSON (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 1, 1918; Book 15).

Assistant timekeeper in direct charge of the time in the sheet-metal division. 726.

C. H. ANDERSON—Continued.

Execute the chief timekeeper's orders entirely. 726.

Explains how he keeps the time and how he checks it up with the men and how he distributes it. 726-728.

States that he had many conversations with Mr. Tooley. He is a practical man and wanted to install a practical system, but the men above him would not allow it. 730.

FRANK J. DONOVAN (North Elmwood Plant, Buffalo, N. Y., August 1, 1918; Book 15).

Employed in the sheet-metal department. 733.

All his work has been on the Bristol Fighter and the H. S. 733.

When he first started to work in the tubes, the plant was uncompleted. But after they got under way stuff was not really coming in fast enough to keep them busy. 734.

But they were asked to come back and work overtime from time to time, and then did nothing. 734.

This took place in the wintertime. Saw hundreds of girls come in in the morning, have their time cards O. K'd and then turn around and go home. 734.

Six or eight furnaces burning all day long and nothing in them. 734.

Would get pay for a full day's work on the O. K. of the head of the department. 735.

Had the attendance cards at this time. 735.

Furnaces in his department burning day after day for six or eight weeks without being used. 737.

Conditions of idleness all the time. 740.

Seemed like half of the men could have done the work and done it easily. 740.

Looked as if the company wanted to spend a lot of money, which on a cost-plus basis would do them a lot of good. 740.

If this would not be so under the percentage given the company for saving under the bogy cost, there was something wrong otherwise. 741.

Has stayed all Saturday and worked Saturday afternoons and it was considered overtime, and they were asked to come on Sunday, and simply sat at the bench and had absolutely nothing to do. 746.

Paid time and a half for this coming back on Sunday. 746.

Came back six or seven Sundays this way. 747.

Gives names of other men whose time they can get to show this overtime. 748.

When there is an O. K. on one of these cards it is O. K'd for the full time and no questions asked. 752.

Knew of instance where one man's card was O. K'd for a week. 752.

The foreman evidently had an order from some one higher up in asking the men to come back to work at night and then having nothing for them to do. 754.

Can not explain the possible motive for this when the increase in cost reduced the profit of the contractor. 755.

FRANK J. DONOVAN—Continued.

Looked to the men like the Government had amassed a lot of money and wanted to get rid of it, and they were in to get some of it. 756.

DANIEL W. SHULL (Buffalo, N. Y., August 1, 1918; Book 16).

Engaged in sheet metal department of Curtiss plant. 1.

Has been there since May 16. 1.

Was in same department at Niagara plant previous to that date. 1.

Observed a great deal of idleness in plant. 2.

Was not the same condition at the Niagara plant. 4.

EDWARD ROBERT FABLE (Buffalo, N. Y., August 1, 1918; Book 16).

Chief yeoman in the Navy. 6.

Was assigned to plant April 1, 1918, for the purpose of investigating labor. 6.

Was looking after master cards to see that labor was properly entered thereon. 10.

At the present time the Curtiss inspection is a joke. The men lie around, and this can be proven at any time, reading newspapers. 11.

Hours were from 1 to 7, and he caught men going off at 5.30 and 6 o'clock. 12.

Have caught men punching other people's cards and their own cards. 12.

Went into metal division and found a girl sitting back in the corner with a book down in front of her writing love letters.

The girls sit back there and do not have enough to do. 14.

Has noticed slack work all through the plant. 16.

Things have improved around the plant wonderfully, but far from perfect yet. 23.

Has seen many men come back to the plant on Sunday just to be able to charge extra time. 25.

In the propeller division, the glue room, oftentimes that place has been shut down; that division, say, two or three hours, or maybe four hours, and then in the evening a rush order comes through and they gets 25 or 30 propellers down there, and then they start in to glue those propellers up after quitting time. In other words, they work nine hours and then they come on and work until 8 or 9 o'clock at night and get time and a half for. 26.

Asked by Judge Hughes for his opinion as to the reason for these conditions that have existed, the witness stated, "I think it is a business proposition of getting all you can get while the getting is good. I believe it is a question of spending \$5 to make 50 cents for the organization." 30.

FRED L. DIBBLE (Buffalo, N. Y., August 1, 1918; Book 16).

Came to the Curtiss Co. in November or December. 31.

Been on duty in the dispatching department, the duty of which is to see that work is properly passed along. 31.

Waste of material in metal division due to poor management, incompetent help, and things of that sort. 32.

Would do a bungling job without waiting for tools. 33.

FRED L. DIBBLE—Continued.

Material would have to be scrapped for high-cost production, as Mr. Hendricks put it. He is superintendent of the metal division. 33.

Thought allied inspection department Inspector Christiansen was pro-German. 35.

Christiansen rejected 800 perfect metal parts out of a total of 1,000. 36.

Refers to 27 truckloads of metal parts which were scrapped. 37.

Lots of men brought back to work on Sundays when they had nothing to do. 38.

Could not see any good reason for working on Sundays for what they accomplished. 40.

Paid time and a half for all Sunday work. 41.

There was plenty of idle time all the time in all the departments. 41.

CHESTER A. HARRIS (Curtiss Aeroplane & Motor Corporation, North Elmwood Street plant, Buffalo, N. Y., August 2, 1918; Book 16).

Has been employed in the Curtiss plant a year the latter part of August. 45.

Had been on the regular police force for one month, then was made assistant chief, and then chief of the company's police. 45.

Two months ago organization was divided into three divisions and he was put in charge of the Churchill group. 46.

For two months has not had any official connection with North Elmwood plant. 46.

When he came out to the North Elmwood plant during the time he had supervision of that plant, he found a desire to put on a lot of help. Should show from the records that 150 or 200 and even better were being hired a day. At one time counted 32 men in one group doing nothing at all with their foreman entertaining them. 46-47.

Did not know why it was they were not working because he became accustomed to it—batches of 10, 15, or 20 all the time. 48.

Condition had continued since opening of plant. 48.

Had men come before them who were accused of making mistakes in their work and found that instead of being carpenters, assemblers, or mechanics, they had been barbers or bartenders, or something like that. 50.

Churchill Street group seemed to be working pretty well although the system was very ragged. 54.

Asked as to what advantage he thought it would be to the company to employ labor recklessly, witness replied, "Well, I have my own opinion. I do not exactly know how the Government is going on the purchases from the Curtiss Co., but I understand it is on a cost-plus basis, and my own honest idea, and nobody will ever be able to change it, is that they wanted to put on as much as possible, to make it look as expensive as possible to start with until they got a set figure, and then they would possibly start reducing afterwards, when they got a set figure from the Government." 54.

Drew his conclusions from the bonus system. 55.

CHESTER A. HARRIS—Continued.

- Cites Murphy case where a man punched two time cards and drew his pay twice for same period. 57.
- Tells of cases where time cards were punched for men not on duty. 57-60.
- This looseness with respect to the time cards continued until he left. 61.
- Understands there was a time when timekeepers were beating the bonus system over at the Churchill plant. 62.
- Letter from young Polish fellow relative to bad conditions existing at Niagara plant with respect to turning out work. 64.
- Saw plenty of evidence that men were working on other than airplane work, work for themselves and others, including the foremen. 73.
- Complained about them making toy propellers for clocks. 74.
- They made big fancy clock stands, cigar outfits, outagon shape Cleopatra jewelry boxes, and everything of that kind. Nearly lost his job over the clean-up. 74.
- Found a man with eight or nine passes on him. He would give them out to anybody for a dollar and they would come in and ring in in the morning and go home or go wherever they pleased. 88.
- "They (referring to the girls) would tell me what was going on. They would say, 'It is a crime the way the Government was having it put over on them.' She said, 'They must be a lot of dead ones in Washington, not to see and know what is going on.' I would say, 'What is the matter now?' She would tell me and I would go down and look it over. I found then for myself it was so." 96.
- Did not take up with Mr. Rogers and Mr. Hendricks the employment of the girls to drill holes in scrap because it was generally understood that was done to keep them busy, so that nobody would see they were idle. 98.
- Some of the girls were sent home and were paid while they were home, while other girls were kept at work drilling holes in scrap and were paid for that. 98.
- Man in charge of allied inspection department was a German by name of Keeppen. 100.
- Allied inspection department was a joke, as far as he could see. 101.
- Only a year ago Mr. Guy Talbert, the assistant production manager, was a \$30 a week stock chaser. 103.
- Made an investigation in regard to the salvage department. Saw a load of wood going out and asked driver to show his door pass. It said, "One load of scrap wood, 50 cents." Looked at load and found 1,000 feet of 2 by 4, from 8 to 10 feet long, and realized there was something wrong—looseness somewhere. 104.
- Mr. Tanner had laborers go to his house for a day or a day and a half or two days cutting wood and working around the house, and these fellows got their shop time for that. 109.

CHESTER A. HARRIS—Continued.

- Judge Hughes asked witness if he had ever heard of anyone from the North Elmwood plant by reason of his opportunities as an employee drawing material and using it in any business of his own. Witness replied, "Yes; they have been caught with all kinds of supplies, such as electrical supplies, bolts and nuts, and practically anything that could be carried out." 110.
- Found there was a fellow acting as salesman selling the salvage wood at a salary of \$25 a week, and the only man he was selling the wood to was himself. 113.
- Mr. Backhoff and Mr. Guy, of Curtiss Co., run restaurant at plant. 115.
- The book of the dispatcher who dispatches the automobile service would show that Curtiss Co. automobiles had been used to the extent of over \$400 for the personal use of Mr. Guy and Mr. Backhoff in their restaurant proposition. 116.
- Men working in restaurant carried on pay roll of plant. 117.
- The Erie Service Co., controlled by Mr. Sere Wheeler, who is sales manager of the Curtiss Airplane & Motor Corporation, does the majority of trucking around the plant. 118.
- Has been plenty of looseness in the garage. 118.
- FREDERICK AUGUSTUS BROOKS (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 2, 1918; Book 16).
- Has been connected with the Curtiss Co. since May, 1917. 120.
- Graduate of the engineering department of the University of Illinois and specialized in the aerodynamic courses that were given. 120.
- Came to the plant direct from the university. 121.
- Was assigned to the designing department in connection with the engineering division. 121.
- Was in complete charge of all the technical analysis of the Spads. 121.
- Made a complete analysis of the Bristol. 122.
- Then went to work on the Liberty Battler. 122.
- Liberty Battler was originally intended to be a redesigned Bristol. 122.
- Had considerable difficulty in various details of the Spad. Was a bad production proposition, but the tools were practically all made when they were ordered to stop it and the drawings were practically finished. 123.
- Effect of cancellation was to make useless all that work. 123.
- Spad was intended to be used with the geared Hispano-Suiza motor. 124.
- It was not necessary that there should be a geared motor. 125.
- Thinks it would have been advisable to have put Spad into production. 125.
- There were no difficulties created by American methods of manufacture which would have been obstacles to production of the Spad so far as he had observed. 128.
- Signal Corps drawings of the Bristol machine were not accurate. 130.
- Thinks Bristol plane discarded unnecessarily by the Government. 136.
- Made 2,600 drawings for the Spad in 30 days. 138.

FREDERICK AUGUSTUS BROOKS—Continued.

Have been on the Bristol drawings for eight months. 138.

Worked for a couple of months very hard on the Spad and got complete drawings, and they were canceled; worked on the Bristol for several months and made a great many changes and had many delays in consequence, and then that was canceled; have been working for several weeks on the Liberty Battler, and that is now stopped. 142.

Liberty Battler was so designed that the pilot could not see the ground when he landed, except through mica windows. 143.

WELLINGTON R. McGLUE (Buffalo, N. Y., August 2, 1918; Book 16).
Ceased to be an employee of the Curtiss Co. on July 26, having enlisted in the Navy. 146.

Had been employed by the Curtiss Co. since April 18, 1917. 146.

Employed in the Austin Street plant. 146.

Had charge of inspection of panel covering, doping, and painting for the Navy entirely. 147.

VICTOR MARTIN O'NEILL (Buffalo, N. Y., August 2, 1918; Book 16).
Was employed in the Curtiss plant from December 20, 1917, to July 1, 1918. 151.

Resigned to take position with the Wire Wheel Corporation, of Milwaukee. 151.

First came to work with the Curtiss Co. as stenographer to the employment manager. 151.

Enumerates different positions he had with company, the last of which was night shipping clerk in the steel depot. 152.

Changed the specification from 175 to 176, and signed Mr. Meno's name to it, and got the material out, calling for 2,000 feet. 153.

Had known in his time that these changes had been made, changing these specifications for all classes of material. 156.

There were something like 75 employees and 63 allied inspection department inspectors in charge of the same department. That is pretty close to one inspector to every employee. 159.

Usually were allowed to work Saturday night, because they received time and a half for it, but there was hardly 1 Saturday night out of 10 that they ever had enough work to keep them going for the whole 12 hours. 160.

Could not see any use of being there on Saturday night, because nobody worked in the shop. 165.

Ensign MERLE C. REED, United States Navy (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 2, 1918; Book 16).
Enlisted in the Navy as a first-class yeoman on July 12, 1917, and received a commission as assistant paymaster on February 8, 1918. 182.

Was in cost-inspection office, in the shipbuilding work, from July 15, 1917, until February 12, 1918. 182.

Was ordered to Curtiss plant on March 18 and has been at the North Elmwood plant ever since. 182.

In charge of labor distribution. 183.

This witness testifies to work on Navy orders and method of checking labor costs on naval contracts. 183-278.

- NELSON W. MARSHALL (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 5, 1918; Book 16).
Inspecting machine operations at plant of Curtiss Aeroplane & Motor Corporation. 278.
Has been so employed at the North Elmwood plant since May 30. 279.
Previous to that was with the Signal Corps for two months, and before that was salesman for the firm of Pallen & Burns, lumber dealers. 279.
Was employed at the Curtiss plant from November until March inspecting wood parts for the company. 280.
Came to the North Elmwood Street plant as inspector for Signal Corps. About May 30 there was a change in inspection and he was dismissed. 282.
Notice went out that the Government inspection of wood parts in the shop would not be continued any longer, and notice was given that they would be discharged that day. 286.
Mr. Rohlfs is supposed to be a Government inspector, but where the inspection goes on witness does not know. 287.
- PHILLIP N. NUTT (Buffalo, N. Y., August 5, 1918; Book 16).
Has been employed at North Elmwood plant by the company since February 15 as a write-up clerk, transfer clerk, and a rate clerk. 289.
At present time is interviewing applicants for different positions in the factory. 290.
Is in the employment department. 290.
Has employed men when there was no requisition for employment. 294.
Has employed men when there was no particular place for them, because some one in the management has requested that they be taken on. 295.
These are known as special requests. 295.
Did not dare protest. If Mr. Backhoff would sign a request, there was not any protest to it. 297.
Hired Mr. Gowey, an electrician, brought to him by a Mr. Tooley, head of the electrical department. Wrote his rate as 50 cents, but was sent back to him with his application marked "Special work, \$50," and O. K'd by Mr. Moss. 298.
It is a fact that incompetent men have been hired at plant. 300.
Mr. Fouhy was in charge of employment in February, when the factory was without sufficient work to keep them busy and additional men were hired in large numbers. 304.
Have been requests from politicians in Buffalo to have men placed in the plant. 310.
- Ensign MERLE C. REED (Buffalo, N. Y., August 5, 1918; Book 16).
Judge Hughes asked witness the reason for this company increasing the cost of production unnecessarily, in view of the fact that they had a percentage of the saving that might be effected under the bogy cost, in accordance with the terms of their contract, and witness stated: "* * * I remember a conversation I had with Mr. Todd, who used to have charge of the pay-roll and time-keeping department, who has since left the company, and he told me and Mr. Bruno, who was there, I think, as an efficiency man up until March, who is now at the

Ensign MERLE C. REED—Continued.

head of the Wright-Martin Co., and Mr. Bruno told him that a certain bunch of men in New York who had capital invested in this company here and who were desirous, as far as he knew, of increasing the costs under the cost-plus contract with a view of the Government withdrawing the cost-plus contract because of the high costs, and then they would submit fixed-price contracts on the basis of cost-plus costs." 316.

Witness then testifies regarding naval contracts. 328-356.

RUDOLPH JUERGENSEN (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., Aug. 5, 1918; Book 16).

Has been working for the Curtiss Co. since about September 1 or October 1. 356.

Witness is 26 years old; was born Schleswig-Holstein, Germany; took out first papers April 4, 1917. 358-359.

Is assistant general foreman of machine shop at North Elmwood plant. 358.

Parents living in Germany, where he was born. 359.

Has an elderly brother over there, but does not know whether or not he is in German Army. 359.

MATHEW F. O'CONNELL (Buffalo, N. Y., Aug. 5, 1918; Book 16).

Chief yeoman, United States Naval Reserve. 365.

Representing the Navy in the handling of salvaged materials. 365.

Mr. Sessions represents the Army in the handling of salvage. Get together and divide it to the best of their knowledge. 366.

Privates R. Wood and C. C. Sessions have charge of salvage for the Army. 369.

Mr. Woods is being sent down to the Pierce Arrow plant, and Mr. Sessions has taken back salvage. 369.

Every morning, at the time the Germans were making their great drive around April or May, any number of Germans collected out in the plant and discussed it and cheered over it. 371.

Witness told Mr. Backoff that by the small expenditure of \$1,850 they could make a profit on the handling of shavings of \$13,987. If they burn them, they will lose \$1,800. If they sell them, they will make something like \$20,000 if they install a separator costing \$1,800. 376.

ERNST OLEMAN (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., Aug. 5, 1918; Book 16).

Went to work in the Curtiss plant in February, 1917, on acetylene welding. Is now foreman of the welding department at North Elmwood plant. 380.

Born in Magdeburg, Germany, on October 14, 1888. 380.

Came to this country in July, 1910. 380.

Is not naturalized, but took out first papers on August 4, 1915. 380, 381.

Father and mother live in Magdeburg, Germany. 381.

Has two brothers, one of whom is in the German Army. 381.

Registered in the draft and did not claim exemption as an alien, but his superior made him chance it. 382.

ERNST OLEMAN—Continued.

Claimed exemption on the ground that he was a subject of Germany. 383.

JOHN E. COLE (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., Aug. 5, 1918; Book 16).

Has been directly connected with the Government since April 1; indirectly since July, when he was representing the firm of Lybrant, Ross Bros. & Montgomery at the Curtiss plant. 384.

Was sent to Curtiss plant to assist in making an estimate of costs which they had submitted on the JN 4 training plane and on the OX 4 engine. 384.

Remained there from latter part of July to September 21 in that capacity. 385.

Established an approximate cost of \$4,000 on the JN 4 machine. 385.

Made a verification of the cost which they had submitted in January, 1918, which approximated something like \$3,300 or \$3,500. 386.

Returned to Buffalo about the 10th of October as an employee of Lybrant, Ross Bros. & Montgomery, to look after the preliminaries for the start of the Spad contract. 387.

Continued in that relation to the 1st of April, when he was taken over by the Government. 387.

Government has never paid the company a penny on the Spad contract. 389.

They have attempted to submit claims, but they have never been able to get them in satisfactory shape. 389.

All of the contracts given the company were blanket orders on which to construct experimental machines to test out drawings, but that was part of the total order. 389.

Never got into production on the Spads; never made any. 389.

A great deal of time subsequently rejected on Army work and Government has not paid them for it yet. 397.

His labor audit department was working under instructions to to satisfy themselves, from the master cards, according to the order numbers and part numbers, that the times submitted were a reasonable claim for time expended. 399.

Cancellation of the Spad contract caused the company a great deal of embarrassment. 401.

The company was expected to keep a cost record showing the cost of production, which they never did. 404.

Company has from five hundred thousand to a million dollars owing to them by reason of their inefficient accounting. 405.

Were up against a proposition that the thing in the mind of the Government right along in connection with airplanes has been production. Their one thought has always been production, and they were not going to allow anyone to interfere with that production along the line of account. That thought was gotten into the company's head, through the different officials right down the line, that they wanted to get production out. Would go in there and tell them: "Here, we have got to have certain records, if you are going to get paid." They would come along and say we were interfering with them. 408.

JOHN E. COLE—Continued.

“The condition has been known to Washington, not only by my going down there, but by the representatives coming up here and getting out into the plant. 410.

“Col. Montgomery and Col. Deeds was there representing the Signal Corps. 410.

“Col. Deeds has a conference with the company later in January, and he said, “We must make a demonstration here; we must get out 25 Bristols in February. You must get them out at any cost and regardless of system.” 412.

“The company proceeded to do what he asked them to do. They hired a gang of 40 stock chasers, irresponsible individuals, and the plan was that they would give them a list of the parts they wanted. Those men would go out into a manufacturing establishment, and if they found anything with that kind of a number on it, they would grab it right off. The result was a number of these parts had to be put through production two or three times, and there was a lot of material which was brought to the plant through the front door without any record in the receiving department, and the company could not prove that the material was ever received. * * *” 413.

Judge HUGHES. “I can not understand how the chief engineer of the company should be the consulting engineer of the Government.”

WITNESS. “I can not either. Maj. Shepler can answer that question for you. It struck me as being an anomolous situation at the time, but I did not criticize it.” 417.

Mr. H. C. Thomas is his chief representative in the plant. (This refers to the chief representative of the witness). 420.

Started an audit of the company's stock ledgers on the 1st of April and found a very rotten condition, to use the language of the day. 425-426.

Relied upon the integrity of the company until it was found they had fallen down. 427.

Sales Department, Finance Division, Bureau of Aircraft Production, furnishes supplies to Curtiss Co. on fixed price contracts. 433.

Total payments to date approximate a little less than \$1,300,000 on account of the Bristol, which includes about \$30,000 worth of profit on the 25 Bristols completed. 436.

GEORGE A. THOMAS (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 5, 1918; Book 16).

Has been connected with the Government work at the North Elmwood plant of the Curtiss Co. since about the 10th of December under Lybrant, Ross Bros. & Montgomery, and since the 1st of April under the Signal Corps. 437.

Supervises the auditing of vendors' invoices covering the purchase of materials by the Curtiss Co. for use on the Bristol contract, also supervises the preparation of public vouchers that are certified to be sent to Washington for reimbursement to the Curtiss Co. 437.

States method of approving vendors' invoices. 438.

GEORGE A. THOMAS—Continued.

Thinks 100 per cent of materials purchased directly for Bristol contract were approved by the Government in advance. 446.
Curtiss Co. allowed \$95,316.48 by the Government for special tools for the Bristol. 456.

Total paid Curtiss Co. on Bristol contract to date \$1,489,520.63. 457.

Bulk of overhead allowed has been estimated. 458.

Difference of close to \$600,000 between what has been paid and what they say the total material claimed will be. That is in process of adjustment and he can not say what will be allowed. 463.

DEMERLE E. HART (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 5, 1918; Book 16).

Has been employed by the Curtiss Co. for about three years. 476.

Has charge of the checking of figures on invoices. 476.

Questioned as to a statement prepared by Mr. Moss, of Curtiss Co., but did not know much about it.

CHARLES A. KLADY (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 5, 1918; Book 16.)

Chief of labor auditing division for Government at North Elmwood plant of Curtiss Co. 481.

Audits pay rolls. 481.

Have only had six floor checkers for entire factory. 484.

In making a floor check they also had to cover the Army, as well as the Navy. 485.

Connected with the Government at Curtiss plant since March 6. 485.

If the company made any inaccurate representations of work, when men had not worked, the Government bore the loss. 495.

Had heard that there was a great deal of idleness in the factory, and yet men were receiving on their time cards a full day's pay; they were getting paid for overtime and for Sunday time when they were actually not doing any work or needed to do any work. All those payments made by the company during that period to men who did not actually work was charged by the company on the distribution cards against the Army work or the Bristol work, and were paid for by the Government. 495, 496.

No way now of making an audit to determine how much work was done. 496.

Substantially, the Government was paying just as though everybody was working on Government orders. 498.

They would or were paying overtime to a man coming in at 1 o'clock, who would work from 1 o'clock on and put in nine hours, getting overtime, getting more than the man putting in the legitimate number of factory hours from 9.30 in the morning. 500.

The Government, down to March 16, at least, did not have any way of determining whether or not that work was done. 509.

The actual overhead has not been determined and allocated, but it has been allowed simply on an arbitrary percentage of productive labor. 513.

CHARLES A. KLADY—Continued.

Rejected 20 per cent under direct labor for week of May 4. 515.
STUART L. MULHOLLAND (Curtiss Aeroplane & Motor Corporation,
Buffalo, N. Y., August 5, 1918; Book 16).

Was recalled and produced a copy of the journal entry showing the amount of \$2,692.65, overpayments in pay roll; that is the amount not called for by employees and returned. Entry referred to was marked "Mulholland Exhibit 2, August 5, 1918." 525.

PAUL LOVAS (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 6, 1918; Book 16).

Has been employed at the Curtiss plant at North Elmwood since June 18, 1918. 526.

Puts up machinery and building fixtures. Making safety guards around machinery. 527.

Thinks there are quite a few men employed at plant who are not necessary. 527.

HENRY D. DARGERT (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 6, 1918; Book 16).

Has been employed by the Curtiss Co. since a year ago last April, about 16 months. 533.

Enumerates different positions he has held with company. 533.
Came to North Elmwood plant as assistant mechanical superintendent. 534.

The 1st of December he was changed to assistant general superintendent of the assembly department. 534.

Was there until they tried to build so many boats in one week, and they could not do it, and he was discharged, which was on February 18. 534.

Was then made general foreman of the salvage department. 535.

There has been a big force of men out there working since December trying to produce Bristol machines. They make parts and they are obsoleted before they are used; they get them in the salvage division and try to make something good out of them, and if they can not they sell them. 539.

So far as material that goes to the salvage department is concerned, if it is not reclaimed, if it is not sold, there is no way of finding out how much that material which is finally scrapped has cost the Government. 550.

About 50 per cent of wood parts and 30 per cent of metal parts that go to the salvage department are finally scrapped. 551.

JULIUS HOFFMAN (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 6, 1918; Book 16).

Born in Germany; been in this country 34 years; naturalized through his father who ran away from the German Army and came to this country about six months before he and his mother came over. 559.

Lived in Buffalo practically all his life. 559.

Been employed in the Curtiss plant for four years. 560.

Organized the engineering department at North Elmwood plant. 560.

Asked to resign by Mr. Mueller on Saturday. 560.

Told him Government had insisted upon his resignation due to his German name. 562.

JULIUS HOFFMAN—Continued.

Had charge under Mr. Mueller of the work of designing the Bristol plane. 563.

No reason given to him why Bristol was discarded. 564.

Makes statement as to the difficulties encountered in producing the Bristol. 565.

Introduces diary of the different changes and recommendations, etc., which was marked "Hoffman Exhibit 1, August 6, 1918." 569. Diary of information received and changes recommended marked "Hoffman Exhibit 2, August 6, 1918." 570.

A release for production first goes to the record division and from there to 51 departments. 584.

MATTHEW F. O'CONNEL (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 6, 1918; Book 16).

Produces certain rejection reports taken for the week of July 13, 1918. 589.

Explains rejections due to faulty inspection. 590.

Wood is not properly kiln dried before sending it to the manufacturer and when worked it will shrink and be rejected. 593.

Does not know why Government inspectors have not stopped it. It is up to the production department. 593.

For week ending July 20 there were 1,962 logs rejected. 595.

Steel stampings sold at \$22 a net ton as salvage when it costs 3 or 4 cents a pound. 597.

Twenty-eight thousand and ten pounds of steel stampings sold in February at \$16 a net ton. 599.

Report of scrap disposed of or sold, with proceeds realized, covering period from February 1 to June 30, marked "O'Connell Exhibit No. 2." 600.

Folder containing inventory of scrap from March 1 to June 30, marked "O'Connell Exhibit 3 August 6, 1918." 600.

Found 2,000 parts sent to scrap which were actually all right. 602.

Forty-nine thousand seven hundred part No. 70430 rejected and scrapped on July 20; 6,000 rejected same date of part No. 71420; 1,000 rejected same date of part No. 104402, they being obsolete. 613.

Scrapped means being sold for what you can get for it. 615.

Reads other reports of material rejected and scrapped. 615.

ENSIGN MASON I. HAWKINS (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 6, 1918; Book 16.)

Testifies as to work on Navy contracts. 617-625.

CHARLES A. KLADY (Curtiss Aeroplane & Motor Corporation, August 6, 1918; Book 16.)

Produces letter relative to overtime, signed by a Mr. Kepperley, which is inserted in record. 625.

Quoting from a letter under date of March 14, 1918, addressed by Lieut. Underwood to Lieut. Berger, relative to overtime, " * * * this department alone, through either lack of system, or for some other cause, lost \$4,680 in a single week." 635.

Recapitulation of labor charges to the account of Bristol contract No. 2463, from January 5 to July 20, marked "Klady Exhibit 12, August 6, 1918." 664.

CHARLES A. KLADY—Continued.

Have received distribution cards reading \$90 which should be for 40 cents. Have also received duplicate distribution cards for the same master card. 678.

Paid man according to the master card and charged the Government according to the distribution card. 680.

DALE M. SPARKS (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 6, 1918; Book 16).

Has been in the Army four months. 682.

Before entering the Army was a public accountant in Boston. 682.

Came to the North Elmwood plant of the Curtiss Co. on April 12, 1918, two weeks after he entered the Army. 682.

Has charge of the distribution of overhead. 683.

Total pay rolls for May of North Elmwood plant were \$1,031,000. 685.

The total productive labor being \$50,000, there ought not to be as much as \$18,000 for overtime on Curtiss work. 690.

HENRY D. DARGERT (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 6, 1918; Book 16).

"We have had about eight plant engineers in the past year since we have been on this job." 703.

"The Allied Inspection Department have not had a chance in this plant." 709.

Thinks nine-tenths of the wood parts went into the kindling pile. 714.

The production superintendent is not an engineer, or even a mechanic or shop superintendent. 718.

JOHN E. COLE (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 6, 1918; Book 16).

Explains system of cost accounting established by the Curtiss Co. 720.

Mr. C. M. Keys, of New York, had a great deal to do with the financial history of Curtiss Co. 722.

Mr. Keys opened negotiations with Mr. John M. Willys, and sold the control of the company to the Willys-Overland Co. 726.

Judge HUGHES. "Was there any inherent reason why, if you had had the cooperation of the Government officials in Washington, you should not have been able to install a proper cost system here during those months of February and March, when there was relatively small production." 735.

Mr. Frary was interfering with the carrying out of instructions which would have given the Government a better cost control. 741.

At the present time the Government is only making an inspection of not more than 30 per cent of the material that goes into production. 751.

Curtiss Co. not in a position at present time to make any claim in excess of what is actually due them. 753.

Curtiss Co. have got a great deal of money coming to them they will never get, because they can not prove they are entitled to it. 753.

JOHN E. COLE (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 7, 1918; Book 16).

Has a partial record of the audit which has proceeded since May, as to the extent of the overproduction. 762.

EDWARD ATTERBY (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 7, 1918; Book 16).

Born in London, England, but is citizen of United States. 763.
Been employed at North Elmwood plant of Curtiss Co. since March 4.

Is investigator for Mr. Cawthra, assistant to Mr. Mueller. 764.
Has been investigating the manufacturing end. 764.

Does not know how it happens the engineering department is investigating the manufacturing part of the business. 764.

EDWARD ATTERBY (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 7, 1918; Book 16).

Is a practical metal man. Has had experience in metal business ever since he was 14 years old. 765.

Has made report on conditions in plant. 765.

Called attention of Mr. Cawthra to the very large quantities of perfectly usable new bolts and washers; millwright stock disposed of for no logical reason except to get rid of them. 773.

CHARLES C. SESSIONS (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 7, 1918; Book 16).

Entered the Army February 2. 777.

Prior occupation was a mechanical engineer. 777.

Came to North Elmwood plant February 4, 1918. 778.

First assigned as assistant property officer, having charge of segregating and listing the Government machinery, the machinery that had been paid for by the Government. 779.

While he was taking care of this machinery he was given charge of salvage. 779.

Material goes to scrap that does not go to the salvage room. 782.

Salvage department has no head on the Army side; it is run entirely by the Curtiss Co. 784.

Entirely up to the Curtiss Co. to determine what is usable. 786.

Since about six months ago the Government has had no way of telling whether any material in the salvage room was proper for other uses, or, at least, has not attempted to determine whether it is usable. 787.

Government has not any check at all on material sent to scrap. 801.

ERNEST H. CAWTHRA (Buffalo, N. Y., August 7, 1918; Book 17).

Been in the Curtiss plant since April 15. 1.

Came to the North Elmwood plant last October, when it was in the course of construction. 1.

Assistant to the chief engineer, Mr. Mueller. 1.

Knew Mr. Mueller since the day they came to the Curtiss Co., about 20 months ago. 2.

Has been Mr. Mueller's assistant on the production side. 2.

Says he asked Mr. Atterbury to make investigations, as complaints had been coming from the factory to his office that the engineering department drawings did not accurately show the information, etc. 3.

ERNEST H. CAWTHRA—Continued.

This report marked "Cawthra Exhibit No. 1, August 7, 1918." 3.
Other reports of Mr. Atterbury marked "Cawthra Exhibit No. 3, August 7, 1918." 6.

Orders for production went out from his department. 8.

Mr. Mueller desired to concentrate on the Bristol. 13.

Mr. Mueller, as chief, and Mr. Hoffman, as assistant, attended to the engineering work on the Bristol. 14.

Particularly confined himself to production matters. 16.

Ensign HAWKINS (Book 17).

Produces blue prints asked for. 19.

Is shown wood part, No. 64760, and asked how it came to be found at the scrap platform. 19.

Thinks these parts came direct from the mill and never went to salvage. 22.

Accounting men on the platform are not expert in airplane parts.

Would not know whether parts were good or bad. 23.

All Army work is rejected by Curtiss, although Government has a man that goes in the salvage every day and makes the final disposition of the woodwork in there. 26.

By the practice followed in this plant, at any time a careless or wrong-meaning foreman or any of his subordinates good material might be picked up and sent direct to the scrap platform. 26.

Explains the running system. 29.

Agrees as to overproduction. 29.

If an order for 500 parts resulted in 1,500 instead and an order for 1,000 parts resulted in 2,500 parts, there was nothing to prevent the foreman from sending these extra parts to the scrap pile and scrap them. 31.

Ensign MERLE C. REED (Buffalo, N. Y., August 7, 1918; Book 17).

Asked concerning the wood part, No. 64,760. 33.

Bears No. 51 as the number of the inspector. 33.

This inspector or number has been looked and there is no inspector No. 51. 33.

This marked "Hawkins Exhibit No. 1, August 7, 1918." 33.

Later finds the name of the "51" man. His number is 59175 and his name H. Cittel. Has been discharged. 34.

Produces letter asked for before from Mr. Sanderson to Mr. Moss. 36. (Regarding labor).

If distribution cards are checked with the master cards, would still have no knowledge as to whether the O. K. by the foreman is right or not. 39.

Letter as to treasurer's pay roll marked "Reed Exhibit 12, August 7, 1918." 40.

Correspondence following marked. 40-41.

Ensign JOHN SANDERSON (Curtiss Aeroplane & Motor Co., Buffalo, N. Y., August 7, 1918; Book 17).

In charge of accounts for the Navy at Curtiss plant at North Elmwood, under Paymaster Smith. 42.

Paymaster Smith has jurisdiction of all the cost-plus contracts for the Navy on aircraft work. 42.

Understood that the plant was 75 per cent ahead of the schedule on boats at this time. 43.

Ensign JOHN SANDERSON—Continued.

Has made payments for overhead on an arbitrary basis up to April 27; basis of 200 per cent on direct labor. 45.

April 28 to May 24 on basis of 100 per cent. 45.

Theoretical allowance of material on the basis of the amounts supposed to be required for a part, with a factor of waste. 46.

Down to 1st of July requisitions have not been in such shape that they could determine the amount of material issued. 47.

Most of the material that goes into the H. S.-1 boat is bought on requisitions which are approved within three days from the time they are submitted by the company, which is then received at the plant, etc., and the Government pays for it. 50.

Overproduction. 53.

Undoubtedly material could be sent to the scrap pile without their knowledge that had been overproduced. 56.

If a fabricated part is rejected the Government gets no credit, as contractor is supposed to use reasonable care. 60.

Company always had an excuse ready, in that there were so many changes and material was rendered obsolete by the changes. 64.

Has never observed any interest on the part of the Curtiss Co. in keeping the cost of the boats as low as possible. 68.

Have an indirect check through the records on labor, but have never had a direct check. 72.

Instructions from Washington are contained in a manual known as Cost-Plus Regulations—Manufacturing. 73.

The Government had to assume that the test reports made were sufficient. 76.

Produces statement showing payments made to the Curtiss Co. on contract 37826 for the H. S.-1. 84.

Thinks the estimated cost may be figured at approximately \$8,000. 86.

This contract has the usual provision for a 25 per cent saving under the bogy. 86.

Produces statement of the A. I. D. inspectors who turned rejections pads over to the Curtiss employees so they could pass material without any inspection at all. Marked "Sanderson Exhibit 2, August 7, 1918." 87.

Produces memorandum regarding payments for direct labor. 89.

Produces memorandum regarding rejected parts. 90.

HARRY V. KENNERSON (Buffalo, N. Y., August 7, 1918; Book 17).

Came to work at the Curtiss plant on May 29.

Came immediately to the North Elmwood plant. 93.

States what he has ascertained with respect to the cost-accounting methods of the Curtiss Aeroplane Co. 93.

After the Government had approved an invoice and checked the material as delivered according to invoice it was then paid for. 95.

Produces a ledger called direct material, in which is entered all material which the Government purchases and pays for direct from the vendor or any material which would be invoiced to them by the Curtiss people. 100.

HARRY V. KENNERSON—Continued.

Material rejected because of its being made obsolete would show on the ledger as a credit to the Army on the Army salvage account. 102.

If material is rendered obsolete for any reason or scrapped, then all the Government gets out of it is what may be made on its sale as scrap. 105.

Capt. ALFRED B. ROGERS (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 7, 1918; Book 17).

Captain in the British Army. 106.

Arrived on second visit on December 21, 1916; inspection duty on aircraft work. 106.

Represents what is called the allied inspection department. 106.

Been at the Curtiss plant at North Elmwood ever since it was built. 106.

Discontinued allied inspection department inspection early in May. 107.

Been looking after British contracts alone. Curtiss Co. was making the H-16 boats for them. 107.

Conditions of efficiency, very, very poor. 108.

No one wanted any information. 108.

True of high officers, every one. 108.

Relates instances of this. 108-109.

This early in the production of this plant. 109.

No one had any interest whatever in their work. 110.

Thought large quantities of material that was spoiled or rendered obsolete could have been reclaimed. 110.

Mr. Kepperley practically said he did not want any information carried from the plant to the United States Government officers, but to give all the information to his men. 114.

He predicted the downfall of the Bristol from what he saw. 116.

There was a difficulty in adapting the motor to the plane, but the attitude adopted toward it was entirely wrong. 118.

Should have made two or three to start with and have these thoroughly tested. 118.

First machine has never been properly tested to this day. 118.

Atmosphere created the impression that it was not intended that the Bristol should be successful. 119.

Thought those who represented more directly the interests of the stockholders of the company were incompetent to form a judgment, and those upon whom they relied to run the production were not desirous that it should be a success.

Pro-German influences in plant. 120.

Capabilities of the H. S.-1 boat very inferior to those of the Bristol, as the Bristol would be a far more important factor as being used by Gen. Pershing on the western front. 123.

The same engineers in charge of the Bristol are not in charge of the S. E.-5. 125.

Asked as to the changes in the Bristol. 129.

Mr. Rogers understood there was no written authority for the changes in the Bristol. 130.

Even if instituted by the Signal Corps, was the point explained to these representatives that if they put these on they were doing wrong. 131.

Capt. ALFRED B. ROGERS—Continued.

No one but an expert would know what the effect would be on the machine. 132.

Mr. Mueller was heard to express the opinion in Detroit that "I am a German to the word 'go.'" 132.

Pro-German statement of Mr. Weber, who was in general charge of production. 134.

Relates effects of Mr. Weber's method of buying cheap material. 136.

Asked why if the Engineers were charged with the knowledge of knowing whether it would fly or not, the Signal Corps were not charged with that knowledge. 140.

Those controlling the situation at that time were ignorant, but not so Mr. Mueller, the chief engineer. 140.

If he had the disagreeable duty of determining whether he was ignorant—Mr. Mueller—or whether he did what he did willfully, he would say the latter and not hesitate. 141.

Mr. Rogers stated that the Curtiss people might say they had actually taken the machine and flown it in the air, but he advised Mr. Rohlf's, the pilot, to keep out of the machine. 144.

Produces a letter addressed to Mr. Kepperley in which he informs Mr. Kepperley that work having been done on the Bristol without notifying the inspection department they would not take any further responsibility for the machine. 147.

LOUIS H. CHURGAY (Buffalo, N. Y., August 7, 1918; Book 17).

Born at Budapest, Hungary. 148.

Came to this country 1890; naturalized. 148.

Came to work at the Curtiss plant, North Elmwood plant, on 29th day of January, 1918. 148.

After three weeks at the plant was given the salvage division. 150.

Explains the records kept in this division. 150-151.

Keeps a stock ledger of every act, and also weekly reports. 152.

Weekly report would show how much had come into the salvage department and how much had been reclaimed. 152.

Asked to bring in the stock ledger. 153.

JOSEPH F. WELLER (Buffalo, N. Y., August 7, 1918; Book 17).

Entered the Army as a civilian August 20, 1917. 154.

Has been chief of the inspection for about the last two months. 154.

Speaks of the showing of 49,700 obsolete parts, and explains why there are so many of them. 154.

With only 2,000 Bristols in contemplation and with only 800 released to production how could there be 77,000 of certain clips made, 12 being needed for a machine? 156.

Thinks they were swamped with work in that department at that time and they overran on them. 156.

Frequent practice, putting into production a good deal more than was ordered. Took four or five days for a notice to get to the proper people in the factory. 161.

CHESTER A. HARRIS (Buffalo, N. Y., August 8, 1918; Book 17).

Relates incident of a visit made on March 15 by representative of the Military Intelligence Department on a tour of inspection of the plants. 163.

CHESTER A. HARRIS—Continued.

Mr. Sweeney asked him to show this man through, but not to show him any of the defects, as he was tired of giving them information. 163.

Mr. Sweeney tells him to stay from the Government offices. 165.

Mr. Sweeney will attend to all these cases now himself and take it up with Mr. Davies before it is turned in to the Government. 165.

Mr. Davies was supposed to be chief special agent for the Curtiss Co., with offices at Toledo, Ohio. 165.

Mr. Davies tells Mr. Harris that there would be times when he would have to do things that did not look right, but that they would have to do them just the same. 168.

Produces letter from Mr. Davies to Mr. Grow, relative to keeping track of Government men. 169.

CHARLES J. SIMEON (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 8, 1918; Book 17).

Has been with the Curtiss Co. since the 1st of November of last year. 179.

Is asked to state to what extent the entire system of cost accounting was defective, what suggestions he made to avoid these defects, and why they were not adopted. 181.

States further with respect to this plan and to what extent it fell down. 185.

When Mr. Webber was in charge, shop discipline was poor. 191.

Could not state why Mr. Kepperly never found out Mr. Webber was not maintaining shop discipline. 192.

Mr. Talbert knew nothing of the A B C of modern methods of production; was incompetent for the job. 195.

Was put in general control at end of February, then made assistant production manager. 196.

Herr and Swift, two competent men, leave. 196.

LOUIS H. CHURGAY (Buffalo, N. Y., August 8, 1918; Book 17).

Produces weekly reports showing how much had come into the salvage department and how much has been reclaimed. 209.

Proceeds to explain this, so that it will be easier to understand the procedure. 209.

Is asked to produce a statement of the salvage sales, scrap sales, etc., of material from the North Elmwood plant. 227.

THOMAS MARSHALL FEBERY (Buffalo, N. Y., August 8, 1918; Book 17).

Was one of two men selected by the British Government at the request of the United States Government that they should send two men across who were experienced on the Bristol plane—intelligent men and men who had had experience in assembling, etc. 229.

Trouble with the Bristol was that there were too many people trying to justify their positions. 230.

Everybody made alterations—some by the Signal Corps and some by the Curtiss people. Everything changed down to the smallest bolt. 230.

All these changes not necessitated by the use of the Liberty motor at all. 231.

THOMAS MARCHALL FEBERY—Continued.

Speaks of the changes made which had nothing to do with the use of the Liberty motor. 233.

First machine, the parts came through in such shocking manner the machine would not go together. 238.

Showed both factory deficiency and engineering deficiency. 239.

Was not allowed to pass to the flying field. 240.

States discussion with Mr. Mueller about the difficulties with the tail parts of the Bristol. 245.

Heard Mueller say, "There are too many Government men hanging around this machine altogether. We must get them cleared out." 246.

Also had trouble in getting passes into the factory. 246.

CHARLES E. FOUBY (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 8, 1918; Book 17).

Been employment manager in charge of the plant one year and four months. 247.

Been at the North Elmwood during the entire existence of the plant. 248.

Knows at a given time how many men are employed, how many new employees are being taken on, and how many are being discharged or relieved for other reasons. 248.

Alien enemies employed. 249.

Mr. Kepperly made a ruling on May 24 that no German, Hungarian, or Austrian or the allies of Germany should be employed. 254.

In papers which purport to deal with this subject, giving names of enemy aliens, the name of a German who has been advanced to a position of importance does not appear. 266.

Letter of October 10, 1917, submitting "list of aliens that Mr. John D. Lynn, United States marshal, Buffalo, has granted permission to continue in our employ upon the personal assurance of our factory foreman and superintendent." 273.

Submits further letters and data concerning enemy aliens. 276-288.

Asked how it happens that a man who has disclosed that he is a German and has served in the German Army could come into a plant of this description. 293.

Said this man was listed in the marshal's office and got permit to work in a barred zone. 293.

Was asked if, when a permit was granted by the United States marshal, the employer had not requested it, and some one representing the employer vouched for the man. 294.

No roster of the enemy-alien employees that can be relied on. 297.

Asked about ruling of the Secretary of War that no enemy alien should be employed in an aircraft plant. 297.

States did not hire any subject of Germany, although he had a permit from the United States marshal after around January. 302.

Can not answer how they came to employ Henry Victorin, born in Germany, on March 18. 303.

His attention again called to the case of Oleman. 305.

CHARLES E. FOUHY—Continued.

A letter is produced showing that the Curtiss people asked for permits for foreigners to work for them. 311.

ROBERT B. MASON (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 8, 1918; Book 17).

In charge of the pay-roll department of this plant. 313.

Was asked with regard to the making up of a list of enemy aliens employed at the plant. 313.

Says he can get a list with Oleman's and Jergeson's names on it. 320.

Is asked then to see if he can produce a list that is reliable. 321.

W. A. SLAUGHT (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 8, 1918; Book 17).

Connected with the boat-hull department in last four or five weeks, and before that in charge of the salvage of the boat work. 322.

Would write up requisition for new material for the stock cases. 322.

A. I. D. inspectors entered their results upon little pads. 323.

States he never had any inspection pads turned over to him by the A. I. D. inspectors. 323.

Kept about 20 on his desk and when he got to within about five or six of the bottom would call in an inspector and have them signed up. 324.

Great system to prevent delay. 324.

Which amounted to the same thing as if he did the rejecting. 325.

Not necessary to have the inspector around. 330.

William Boyle his superior. 335.

Maj. EDWARD S. MOORE (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 8, 1918; Book 17).

Permanent home, Chicago, Ill. 338.

Entered Army as civilian on January 25, 1918. 338.

Came to the North Elmwood plant in April, 1918. 339.

Represented the Signal Corps generally in the Buffalo district. 339.

District manager of production. 340.

Conditions chaotic when he got there. 340.

After the order for the Spads was recalled they gave the Curtiss Co. the order for the Bristol plane with a Liberty motor on it in order to help them out. 340.

Signal Corps and the Curtiss Co. did not get along very well together. 341.

Trouble about inspection. 341.

Production engineering department of the Signal Corps had been given authority over the first 250 ships. 342.

Did not get a complete inspection of the first 25 planes. 342.

The remaining 225 out of the 250 were never flown. 342.

Mr. Kellogg, of Washington, was responsible for releasing the 400 planes, along about April, when the machine was still in the experimental stage. 345.

Changes by the Curtiss Co. were not gone over by the Signal Corps for some time. 351.

Maj. EDWARD S. MOORE—Continued.

Until May the Curtiss people made changes of their own. At a meeting between Mr. Kellogg, Col. Hall, and Mr. Mueller in Mr. Moore's office it was decided that Mr. Mueller should act in a way as engineer for the Signal Corps. 352.

Mr. Moore was to O. K. changes suggested by Mr. Mueller unless he did not agree with him. 353.

Never agreed on anything. 354.

Could not understand the reason for making 25, and then before completing them and seeing whether the machine was satisfactory putting a total of 400 into actual production. 357.

According to every expert he talked with, the real trouble with the Bristol was trying to put a 450-horsepower motor into a plane built for a 200 or 225 horsepower motor. 358.

Compares trying to put a Cadillac engine into a Ford and then making the Ford strong enough to hold the Cadillac engine. Makes an unbalanced machine. 358.

Organization not even 50 per cent perfect. Orders for changes would come through, then an order to cancel it would come along which would not reach some of the departments for three or four days afterwards. 359.

Mr. Webber responsible for everything more than anyone else. 360.

Overproduction. 363.

Asked why, when there was the direct fashion of handling it, by letting the United States Government take it up with the Curtiss Co. and stopping these practices, it was not done. 368.

When Mr. Wilson was put in authority this was immediately stopped. 369.

Idleness of the men at the plant. 370.

MISS AGNES KIERNAN (Buffalo, N. Y., August 8, 1918; Book 17).

Employed in the record division of the Curtiss Co. since February 25. 402.

Asked with regard to list of enemy aliens employed in the plant. 402.

WILLIAM M. SWEENEY (Buffalo, N. Y., August 8, 1918; Book 17).

Will have been with the Curtiss Aeroplane & Motor Corporation two years in November, 1918. 406.

Captain of fire and police departments at plant "G." 407.

Up until two months ago was fire and police commissioner, which gave him charge of all the Curtiss plants. 407.

Place given to Mr. E. S. Davies. 407.

If enemy alien got through their lines, they endeavored to keep a watch on his activities. 411.

He had to defer to Mr. Harrington in those matters, as he was Mr. Sweeney's immediate superior. 411.

Made an attempt to get rid of Ernest Oleman. 417.

Mr. Ericsson said both Oleman and Jergeson were valuable men. 418.

Asked to explain how and through what system enemy aliens were employed at the plant contrary to the Secretary of War's ruling to the opposite. 426.

Attention called to the case of Henry Viktorin. 428.

WILLIAM M. SWEENEY—Continued.

Full report of the Jergenson matter obtained and marked "Sweeney Exhibit 3, August 8, 1918." 437.

CHARLES ROHLFS (Buffalo, N. Y., August 8, 1918; Book 17).

His resignation from the North Elmwood plant. 438.

Will bring in copy of letter he wrote to Weller regarding this. 441.

Capt. JOSEPH WELLER (Buffalo, N. Y., August 8, 1918; Book 17).

Said he asked for the resignation of Mr. Charles Rohlfs because he talked too much on the floor. 443.

Price, of the Curtiss Co., suggested getting rid of him 445.

Mr. Rohlfs recognized as an expert in wood; yes. 446.

Too particular about small matters. 447.

Took it up with Maj. Moore, and he approved of this action. 447.

As the Curtiss people had been letting out people who did not cooperate with the United States Government officers, they, in turn, wanted to reciprocate, and would put out Mr. Rohlfs, as he was too arbitrary. 448.

Is reconsidering the matter. 449.

EDWARD S. MOORE (Buffalo, N. Y., August 8, 1918; Book 17).

Yes; he instructed Capt. Weller to request Mr. Rohlfs's resignation. 450.

Was very "sassy" to Mr. Wilson. 450.

Mr. Price never asked them to get rid of Mr. Rohlfs, but said he was unsatisfactory. 452.

To have a smooth-running organization it is necessary to get rid of one of the few men who has been defending the United States from the start. 454.

Had not heard of an understanding that if they would get rid of Rohlfs the company would get rid of Boyle. 455.

Commander HOLDEN CHESTER RICHARDSON (Buffalo, N. Y., August 8, 1918; Book 17).

Reported for duty at the North Elmwood plant about the 7th of May. 459.

Took him about 10 days to get into run of things, and then he discovered some trouble which seemed to emanate from a tendency to want to substitute materials for those specified. 461.

Trouble with the kilns the most serious of anything that happened while he was there. 461.

Mentions Mr. Webber as hunting trouble. 463.

Observed no tendency to inflate costs, but where minor changes occur, as a rule their bills come in quite high for changes. 467.

GEORGE HENRY MUELLER (Curtiss Airplane & Motor Corporation, Buffalo, N. Y., August 9, 1918; Book 17).

Chief engineer at the Curtiss plants. 470.

Parents born in Germany. 471.

Is asked to give the whole history of the Bristol in his own way and his relation to it. 474.

Produces report of April 10 as a complete diary, showing the changes which were made. 475.

Could not make any changes on the drawings without the approval of some officer of the Signal Corps. 476.

GEORGE HENRY MUELLER—Continued.

Mr. Perrin was the first representative at Buffalo. 476.

Around the 1st of March, Col. Hall came with his staff. 477.

Thinks no changes were made by the Curtiss Co. during the course of production without the approval of the Signal Corps. 478.

They attempted to build one machine exactly in accordance with the Signal Corps, drawings, but it was impossible to get the machine together from the parts made from the details of the Signal Corps drawings. 480.

Had to make their own assembly drawing, or drawing of a complete plane, as distinguished from the detailed drawing. 481.

Is asked to produce correspondence in regard to the deficiencies of the blue prints and in regard to the assembly drawing. 482.

Explains from his point of view the inaccuracies in the drawings and the reasons for them. 485.

English machine furnished by England was not made in accordance with the English drawings. 486.

The shopmen always get away from the drawings somewhere. 487.

Every time he sent instruction to the shop also sent a copy to the Signal Corps. 493.

Knew that the Bristol would never be a success flown with the Liberty motor. 506.

Could not possibly carry so large a weight without structural changes. 506.

Never received any stress analysis from the Signal Corps at all. 506.

Company was not in a financial position to dictate to the Signal Corps what they should do regarding building or not building the models which they sent them to build. 510.

Discussed with the Curtiss people, from January to May, his belief that this job would not be a success. 511.

Asked if effective cooperation did not lie in his bringing this to the attention of those who had had but little experience and who were engaged in an endeavor to supply successful planes. 512.

States that the authority given him to deal with the engineering questions concerning the Bristol was never confirmed. 531.

Mr. Perrin was not in accord with the suggestion of making the Curtiss engineer the last word on decisions regarding the Bristol motor. 532.

At a conference on January 27 they went through and examined the machine and made a great many changes. 535.

Mr. Mueller initiated these changes. 535.

States he lost authority by not having that authority confirmed. 538.

Asked if he went on in authority without a confirmation to a certain length of time, what that lack of a confirmation had to do with subsequent events. 542.

States he had the growing opposition of the Signal Corps, but this did not appear so from the fact that Mr. Green and Mr. Butts were overruled and he was put in control by Maj. Shepley. 542.

GEORGE HENRY MUELLER—Continued.

The very object of the conference was to decide who should control. 543.

No one suggested to him that Maj. Shepley did not have the power to confer this authority on him. 544.

No one came to him and told him that this authority had been withdrawn. 544.

Asked why if vested with this authority he did not take it and use it to the utmost limit. 544.

Asked what changes would have made this a satisfactory battle plane 548-550.

Asked if after the changes were made on the first 25 machines which were released the machine was not found to be practically in the same condition. 560.

The machine was practically as it was from a flying standpoint right at the start. 563.

He says at the outset that it is necessary to establish a model which is satisfactory before starting into production. 577.

Then why did they go into active production on the 400 machines ordered when they had a machine in which its flying infirmities were still uncorrected. 578.

It was satisfactory to the Signal Corps. 578.

Made no complaint to the Signal Corps, did not advise them that the matter should be held up for a while. 578-579.

Did not think they would have paid any attention. 579.

Has tried to stop the production on the SE-5 and substitute the Spad, but this was not done. 579.

Still further explains the situation with regard to the withholding of too much comment by the Curtiss people on the Bristol machine. 581.

States he could have taken the Bristol and in a month turned out a machine that would have carried the Liberty motor if they had given him permission. 585.

Says it was the understanding in writing that the Government was designing the Bristol machine. 586.

Says battle-plane program was absolutely in the hands of the Signal Corps designers. 586.

Was asked if he had ever heard that the Signal Corps takes a different position and says that he was in charge of the design of the Bristol. 586.

Was absolutely no reason for ordering 400 additional machines when it was not a satisfactory flying machine from every standpoint. 588.

Took up the designing of the Liberty battler the latter part of March. 591.

This was built with the general idea of having it come right in after the Bristol should that prove a failure. 591.

The Curtiss people made this suggestion to Col. Hall and they were allowed to go ahead and design and build four machines against the Liberty contract. 592.

The one finished fell. 594.

Is asked to produce whatever correspondence he has had with officers of the Signal Corps which will show the plans or drawings that he had of the Bristol, etc. 607.

- JAMES EDGAR KEPPERLEY (Buffalo, N. Y., August 9, 1918; Book 17).
Vice president and general manager of Curtiss Aeroplane and Motor Corporation. 608.
Began practice of law in Indianapolis. 609.
Gives his impressions of the plant when he arrived. 610.
Thought Mr. Webber was just incompetent. 618.
Mr. Mueller was enthusiastic, but was inclined to be of a jealous disposition and had too much engineering and too much designing going on. 620.
Had just got started on the first 25 when along came numerous attachments to be fitted to the machine, photographic, wireless, heating apparatus, etc. 620.
It was just one continuous change down to the cancellation. 620.
Authority had already been given to Mr. Mueller when he came that his word was to be the final word on any changes. 622.
Mr. Kepperley took steps to have this changed, but it took some time. 622.
Maj. Hall is later sent and from that time on either Maj. Hall or some of his representatives were on the job all the time. 623.
Company pressed for authority to proceed on the machine in considerable numbers in order to hold the organization together. 625.
Had heard Mr. Mueller criticize the machine. 625.
One of the complaints was that they were trying to make this machine do everything. 626.
Thinks the Aircraft Bureau members lost confidence in the Bristol on account of the serious accidents they had. 627.
Whole organization lost confidence in the Bristol; the men would say there was no use in going to work, as they were going to change it, as So-and-so said the whole design was rotten. 630.
Enemy aliens. 643-659.
Everything seemed an interminable tangle that could not be unraveled. 668.
They would say they had the record division all fixed; he would come down the next morning, and the cards would be all mixed up. 670.
Is shown the poster which it was stated he refused to have put on the walls. 672.
States he only wanted one secret service on the plant. 672.
Was asked if he noticed that his secret-service men that he depended on had not advised him of a great number of things about which he was learning for the first time; production in excess of orders, and production of orders after the order has been canceled. 676.
States he never made a request that the representatives of the Military Intelligence Service should be taken out of the plant. 693.
- SEVERINO DISANDRO (Buffalo, N. Y., August 9, 1918; Book 17).
Came to the Curtiss plant the 17th of last February. 696.
Was put in the boat hull department, construction of boats. 696.
Saw lots of wrong work done. 697.

SEVERINO DISANDRO—Continued.

Would put the ribs in, then split the ribs and put glue on and sawdust. 698.

Would cut the metal parts, then drill holes in them and fill them with lead. 700.

Screws were put in so loose you could pull them out with your hands. Inspector did not see it, because he did not know enough. 703.

Foreman comes along and takes off the red mark, which shows a piece is rejected, and lets it pass. 706.

STEPHEN T. LOCKWOOD (Buffalo, N. Y., August 9, 1918; Book 17).

United States district attorney. 709.

Was asked if after being told by a man named Quinn that Webb was boring holes in parts of airplanes he came to make an investigation. 709.

Took the matter up with Mr. Quinn of the Military Intelligence. 710.

Considered the holes were bored by accident and lack of skill, and did not present the matter to the grand jury. 717.

JAMES A. QUINN (Buffalo, N. Y., August 9, 1918; Book 17).

Agent of the Military Police. 718.

Describes visit of Mr. Lockwood and demonstration following, in which it developed the men had to bore two or three times in order to hit the hole in the plate underneath the wood. 720.

CYRIL R. COBURN (Buffalo, N. Y., August 9, 1918; Book 17).

Further testimony regarding the longeron. 722-729.

CHARLES E. WILSON (Curtiss Aeroplane & Motor Corporation, Buffalo, N. Y., August 9, 1918; Book 17).

Came to the plant about middle of April. 730.

Assistant to the general manager, Mr. Kepperley. 730.

His own statement of condition of affairs as he found them and what has been done to remedy them. 732.

Fifty per cent of Mr. Kepperley's time spent in receiving letters of complaints and criticisms, being interviewed by Government officials, etc. 732.

States peculiar position he found Mr. Kepperley in. 733.

Calls up Mr. Willys on the telephone and explains conditions, stating that he must start to remedy the thing at its source. 734.

Makes statement of the methods which were from that time carried out to the present. 735-741.

LOUIS MENDLESOHN (Washington, D. C., August 14, 1918; Book 18).

Has been no change in progress of production, but of shipment.

Some wires that extend from the wings down on the fuselage, close to the gasoline tank. They were secured by twisting wires together at joint and then covered with solder. How it was discovered he does not know, but they discovered that in case of a fire in the gasoline tank it would melt the solder upon the joint, loosening the wings and lead to a catastrophe. They now insist upon a splice of about 4 or 5 inches and a regular cable splice is made. 1.

Judge Hughes requests that company furnish him with a list of all enemy aliens employed in plant of Fisher Body Corporation, showing what positions they hold, etc. 7.

BUDD D. GRAY (Washington, D. C., August 14, 1918; Book 18).

Was president of the Hess-Bright Manufacturing Co., of Philadelphia, until June, when he disposed of holdings in company and went in the Government service. 8.

At present time has no occupation. 8.

First position with Government was chief of the inspection of raw materials, instruments, etc., in the equipment division of the Signal Corps.

In fall of 1917 the specification section of the equipment division was turned over to him. 11.

Left Signal Corps because of interference, taking his authority away, and disrupting his organization, making it impossible for him to get results. 14.

Function of production engineering department was to supply manufacturers of planes, engines, and accessories with engineering information, drawings, specifications, etc., from which they could produce in quantity what they were to manufacture. Also to specify materials, to decide upon details of designs, etc. 14.

Mr. Kellogg put Col. Hall in complete charge of work on De Haviland 4's. 18.

Mr. Kellogg took production engineering matters on his own shoulders and disposed of them in some instances without saying anything to him about them and in some instances directly in opposition to an agreement he had with him. 18.

Found in March in some tests conducted in Lake Charles that the radiator which had been designed for the De Haviland 4 was not large enough to cool the engine, and Mr. Kellogg, in spite of the developments there, placed an order for something like 1,300 with the Livingston Radiator Co. of the original dimensions. 19.

Got hold of Livingston Radiator Co. and had order changed. 27.

Did not have very satisfactory cooperation on the part of the Dayton-Wright Co. 46.

Their attitude, presumably occasioned by delay on the part of the various branches of the Government in furnishing them information, was rather antagonistic. 47.

Did not agree with Mr. Kellogg's decision to place the De Haviland 4 work in the Fisher Body plant and in the Standard plant, also under Col. Hall. 50.

Impossible to keep in touch with Col. Hall's work and check him up. 51.

Did not know Dayton-Wright Co. wanted drawing of gun. 61.

Responsibility lay with the Government inspectors in permitting the delivery of trigger motors which were not satisfactory. 85.

McCook Field organization, under Col. Vincent, responsible for faulty synchronizing generator. 85.

One of the representatives of the Trench Warfare Section had no difficulty in securing those parts from the New Haven concern. made to the same drawings, which to his mind is a further indication of lack of cooperation or inability on the part of the Dayton-Wright Co. 88.

BUDD D. GRAY—Continued.

Never knew there was any misunderstanding as to who was to furnish the Holt flare lamps, because it was thoroughly understood the Signal Corps was to furnish them. 90.

Radiator is generally considered a part of the plane and the propeller a part of the engine. 91.

Questioned as to his relation to the production of the De Haviland 4's by the Fisher Body Corporation. 92.

Department had to secure drawings for this machine from the Dayton-Wright Co. 92.

The Fisher Body Corporation followed the practice of laying out every part full sized on aluminum sheets, and they followed that practice in connection with the DH 4, and naturally it took some time to do that. 94.

It was felt by those in charge of the equipment division that the Dayton-Wright Co., with its facilities, was in a better position to make drawings of the DH 4 than any department of the Government. 94.

Signal Corps did not at that time have what he would call an efficient engineering organization. 95.

Neither Mr. Kettering nor Mr. Wright, whose names lent luster to the Dayton-Wright Co., could be actually depended on in this work of drawings in order to proceed with production. 97.

Col. Clark handled the engineering work on aeroplanes for Signal Corps in schoolboy fashion. 98.

Important work of getting drawings, in order that work of production might begin, was practically left to Mr. Schoonmaker, of the Dayton-Wright Co., and Col. Clark, who were without capacity for the work. 98.

From March 1, 1918, only knew in a general way of the changes ordered in connection with the production of the De Haviland 4's at the Standard Aircraft Co. 109.

Government did not have any contract or any obligation whatever imposed upon the Dayton-Wright Co. to furnish drawings of the DH 4 to other manufacturers. 111.

Signal Corps officers, who were charged with this particular function, simply relied on the good nature and friendliness of the Dayton-Wright Co. to furnish drawings for the Standard Co. and the Fisher Body Co. 112.

Judge Hughes: "Manufacturer after manufacturer has charged the Signal Corps with failure to supply it with working drawings, with proper plans, with instructions which could be followed by a manufacturer in building." 118.

Department did not succeed in giving the Dayton-Wright Co. the information they required to make the DH 4 a complete machine. 120.

Does not think Col. Clark particularly energetic about going after information. 121.

Never knew that the Government was to supply the drawings. 143.

Relative to specifications for Liberty motor, talked with Col. Deeds about it and asked him how he felt about specifying those accessories. 149.

BUDD D. GRAY—Continued.

- It was a little bit delicate for Col. Deeds to specify the Delco ignition and a little bit delicate for him to specify the Hess-Bright bearings. 149.
- Col. Vincent recommended these particular makes of accessories. 150.
- Witness questioned as to Borglum Exhibits 23-A, 23-B, and 23-D. 154. 23-C. 159. 23-E. 162.
- Question relative to the Bristol under contract with the Curtiss Aeroplane & Motor Corporation. 164.
- Mr. Kellogg felt Hall had made such a good job of the DH 4 that he would turn the Bristol over to him also, and that was done in the latter part of April. 166.
- Mr. Mueller, chief engineer of the Curtiss plant, was appointed by Maj. Sheppler, on instructions issued by Mr. Potter and in consultation with Col. Deeds and Mr. Coffin, to take care of the design and engineering work on the Bristol. 167.
- Maj. Sheppler told him he appointed Mr. Mueller on his own responsibility. . 170.
- Always a grave doubt in his mind as to the ability of some of the men at the top of the Curtiss organization. 175.
- Bristol was discarded because it failed to measure up to requirements in speed, climbing ability and structurally. 177.
- The arrangement for the responsibility of making these changes was made with the Curtiss Co. when Col. Clark turned the Bristol (British) over with drawings to that company. 184.
- Mr. Perrin and Mr. Butts, of his department, approved the changes made by Mr. Mueller. 187.
- If there was any faulty work in connection with the redesigning then it was the work which was approved by Mr. Perrin. 187.
- The lack of balance was an error of judgment on the part of Mr. Mueller, who inaugurated it and on the part of Mr. Perrin, who thought it was all right. 188.
- The Production Engineering Department specified the materials to be used in the various parts of the planes and engines. 189.
- Witness gives his reasons as to why airplane program was delayed. 190.
- When cablegrams arrived from Gen. Pershing they were distributed not with great intelligence, and they frequently landed in the hands of men who were not at all familiar with the subject matter, and apparently remained there, and ridiculous answers were sent back to the other side. 192.
- Lieut. HAROLD H. EMMONS (Washington, D. C., August 14, 1918: Book 18).
- Lieutenant in the Navy, National Naval Volunteers. 193.
- Prior to entering the service was a lawyer for a good many years, and a manufacturer for four years. 193.
- Was secretary and treasurer of the Regal Automobile Co. 194.
- For two years made ammunition for the Allies. 194.
- Reported for duty with the Equipment Division, Signal Corps, on the 15th of August, a year ago. 194.

Lieut. HAROLD H. EMMONS—Continued.

Came to Washington as attorney for H. M. & W. C. Leland, who were going to take a contract to make Liberty engines. 195.

Thinks Col. Waldon was responsible for asking for his detail to the Equipment Division, Signal Corps. 195.

Was with Messrs. Leland when he was so detailed. 195.

Devoted his time principally to the Liberty engine. 195.

Terms of contract for Liberty had been established, to a large extent, before he entered the service. 196.

States how the sum of \$6,000 was selected as to bogey price for the Liberty motor. 197.

Col. Montgomery was responsible for reducing the bogey price on the Liberty motor. 202.

Thinks advances were made by the Government to everyone except the Ford Motor Co. 204.

Questioned as to Borglum Exhibits 23-A, 23-B, 23-C, 23-D, 23-E. 207.

Hall-Scott engine vibrated so furiously that it disarranged the connections for the gasoline, water, and oil, and made it a very hard and unsatisfactory plane to use in the air (referring to standard J.) 213.

Have something like 1,800 Hall-Scott engines in storage and in use. 214.

Explains reasons for delay in the production of Liberty motor. 215.

From the time he came until now there have been 15,780 engines made and delivered. 219.

Lieut. Col. E. LESTER JONES (Washington, D. C., August 15, 1918; Book 18).

Accounts with respect to Wilbur Wright Field kept in his department. 223.

Has reason to believe that Government has paid Dayton Lumber & Engineering Co. for labor which was not earned. 227.

Mr. J. K. Graniss, now in charge there, caught a padded payroll involving a large number of thousands of dollars. 228.

Has information that Mr. Talbott is interested in the Dayton Lumber & Engineering Co. 229.

Found Mr. Graniss not very well liked, which was a good recommendation to him, because he is trying to protect the Government and get at the bottom of things. 231.

Changes were being made on planes at Wilbur Wright Field to suit the flyers and recommended through proper channels that the factory follow out their suggestions, and this has not been done. 234.

Spirit that existed around Dayton was anything but productive of good results. 240.

"My principal point was, Why should these ships be turned out by a manufacturer and be paid for by the Government as being acceptable and all right, and then be taken to a field, placed in their repair shops, and days spent making repairs that should be made in the factory before they came out." 244.

Lieut. Col F LESTER JONES—Continued.

Paying double prices for labor, fabric, and dope on Canadian-Curtiss machines. 246.

Witness questioned people at Dayton as to why they had abandoned Wilbur Wright Field as a flying school. It struck him as being a very unwise and unbusinesslike proposition. 246.

Condition at acceptance park at Springwells, Detroit, with reference to work of Fisher Body people was very bad. 255.

Lapere, two-seater, combat plane unanimously commended by officers as one of the best types brought out. 259.

Dope used on DH 4 not satisfactory. 265.

Found 50 or 60 cases where one would find a rejected tag right underneath an accepted tag. 267.

Lieut. H. H. EMMONS (Washington, D. C., Aug. 15, 1918, Book 18).

Gives epitome of his business experience. 290.

Explains more fully his connection with the engine-production department; also how the bogey cost of Liberty motor was arrived at. 293.

Relates difficulty in procuring signatures of manufacturers to contract. 298-299.

Gives dates on which contracts for Liberty motors were signed (manufacture of). 304.

Not a single engine contractor on list wanted to go into business of manufacturing Liberty motors. 307.

"A Government production agency could not tell these men how to run their business; they knew more about it than we did." 312.

Man with rotary engine wins fight every time because the engine is small and compact, etc. 330.

On October 12 received cablegram from other side not to build 5,000 Gnome engines. 334.

Mr. Wagner, of General Vehicle Co., felt the Union Switch & Signal Co. had not been treated fairly. 335.

Under coercion the Westinghouse Co. took the job of building 2,500 LeRhone engines. 343.

Not manufacturing any four-cylinder engines now. 352.

Orders out covering what has already been delivered, 3,500 of 150-horsepower Hispano-Suiza, 4,000 of the 180 Hispano-Suiza, and 10,000 of the 300 Hispano-Suiza; and on the 150-horsepower Hispano-Suiza 2,494 have been delivered. 354.

Took away from Duzenberry Motor Corporation their contract for Liberty 12s and gave them a contract for 2,000 Bugattis—500-horsepower engine. 355.

"France is full of patriots of that type." "When some of the executives tell you about their negotiations for patent rights and for royalties on anything that we wanted from France you will get some idea of what they had to do and what they had to contend with in dealing with that country." 356.

Can not tell why Hispano-Suiza has come into favor. 357.

Does not know why Spad contract was abandoned last fall and the S. E. 5, a similar type of machine, put into production. 358.

Lieut. H. H. EMMONS—Continued.

Has no information why, contemporaneously with the developing of the Liberty motor, production of the Hispano-Suizas for pursuit machines was not encouraged. 358.

Contract with Trego Co. for Liberty motors assigned to Ordnance Department; motors to be used in tanks. 358.

Trego Co. could not build an aviation engine that could pass muster. 359.

Questioned as to why contract was given Trego Co. 360.

Contract with Nordyke-Marmon Co. for 3,000 Liberty motors was dated August 15, 1917. Has delivered 24 motors to date. 363.

Total program of 50,000 Liberty motors, of which 25,000 have been contracted for. 363-364.

Chart showing aviation engine shipments to and including August 13, 1918, marked "Emmons Exhibit 4." 367.

Four pages of details about experimental engines which have been made and delivered down to May 31, 1918, marked "Emmons Exhibit 5." 368.

Cablegram from Maj. Brett, of the Department of Military Aeronautics, states there are three squadrons on the front lines equipped with the De Haviland 4 planes and Liberty engine. Consider them the best equipped squadrons on front. 370.

Does not know of any great change they would make if they had to do it over again. 371.

EDMUND LEIGH (Washington, D. C., August 15, 1918; Book 18).

In charge of plant protection section of military intelligence. 373.

Held that position about a year. 373.

Prior to that was general superintendent of police of the Baltimore & Ohio Railroad for five years. Previous to that 19 years in the detective bureau of New York City. 372.

Mr. McCarren, his agent at Buffalo, at the Curtiss plant, left because of a concerted attack and obstruction to all his endeavors by the agent in charge in the Department of Justice. 374.

Col. Van Demon, then in charge of Military Intelligence, directed him to remove Agent Jalma West from Buffalo, as West could not get along with the Curtiss people. 376.

Col. Horner has requested that this be done. 376.

Mr. Kepperly stated he had paid Mr. Sowers, of the Niagara Defense League, a good deal of money and he had never seen as much as a scrap of paper to show for anything Mr. Sowers had done for these bills he paid. 380.

Reports relative to conditions existing in Buffalo plant were forwarded to Mr. Ryan, Aircraft Production Board, and previous to his appointment to Col. Deeds. 383.

To his knowledge nothing was done on reports submitted relative to Curtiss plant. 384.

Questioned as to various reports received and forwarded in re conditions at Curtiss plant. 385-397.

EDMUND LEIGH—Continued.

Mr. Ford became very much perturbed when Government agents went through his plant of 38,000 employees and found that 18,000 of them were foreign born and 1,100 of them were German and Austrian enemy aliens. 409.

Lieut. Col. ARTHUR WOODS (Washington, D. C., August 16, 1918; Book 18).

Formerly police commissioner of New York City. 412.

Entered Army early in March of 1918. 412.

Assigned to Aviation Section, Signal Corps. For several months up until about three weeks ago, did most inspection work in the fields and special work as called upon from time to time. 412.

Spent about a week at Curtiss plant looking into the matter of German interference. 414.

Conclusion was that every single thing that pointed to sabotage could be explained more easily in some other way than attributing it to the Germans. 415.

There was no system of identification of employees; not proper protection against fire; perfectly possible for ill-disposed people to do anything they wanted to do. 416.

There were several enemy aliens in important positions, and the conduct of these people was about the kind that would be carried out by enemy aliens. 416.

Looked to him as though either a strong and capable management should be put in the Curtiss plant or the Government should take the plant over. 422.

Judge Hughes questioned him as to why this information he collected was not placed at his (Mr. Hughes's) disposal. 423.

JOHN A. JORDAN (Washington, D. C., August 16, 1918; Book 18).

Is a constructing engineer and a stockholder in the Liberty Iron Works. 426.

General manager of Liberty Iron Works for approximately six months. 426.

Had a contract for 300 JN-4 planes. 427.

Took him three months to get the contract, as Mr. Deeds and Mr. Waldon opposed very strongly the letting of a contract to anybody on the Pacific coast. Had to fight it down through Senators and Congressmen. 427.

Aircraft Board had already selected all the manufacturers of airplanes who would be given contracts, and Mr. Deeds stated to him that he did not purpose to enlarge the list. 428.

Senator Phelan was making an appeal for him. 429.

Did not get drawings until long after expiration of contract. 434.

Mr. B. W. Guy, secretary of the Curtiss Co., demanded \$75,000 for plans of JN-4. 436.

Extract of minutes of Aircraft Board under date of January 31, 1918: " * * * three contracts for training planes had been placed on the Pacific coast solely upon the strong recommendation of Senator Phelan and Representative Kahn, all three having failed in their deliveries." 438.

JOHN A. JORDAN—Continued.

Deliveries delayed on planes due to disruption of the organization of Liberty Iron Works, and contract cut to 100 planes. 446.

More or less trouble with planes delivered. 446.

Government sent his company a sample machine from which they were to check their machine. Sent them a JN 4-A when they were manufacturing a JN 4-D. 451.

Capt. Patterson, the chief inspector, did not know anything in connection with an airplane. 453.

The organization of the Liberty Iron Works was contingent upon getting this contract. 457.

Planes were not produced because they could not get these small metal parts. 463.

Thinks if he had paid the \$75,000 everything would have been smooth sailing with the Liberty Iron Works. 464.

Factory had been using parts in planes there that ought not to have gone in. 469.

All of the planes from the Liberty Iron Works were overhauled at Mather Field and found defective, after they had passed inspection. 477.

United States Aircraft Corporation was a joke. 479.

Mr. Howell, the original chief inspector out there, was a heavy stockholder in the Vogelsang concern, which made bolts and things of that kind. 481.

Lieut. Col. VIRGINIUS EVANS CLARK (Washington, D. C., August 16, 1918; Book 18).

Has been in the Army since October, 1909. 488.

A graduate of the Naval Academy. 488.

Was transferred from the Navy to the Army 1909. 489.

Six flyers in the United States Army when he entered the Aviation Corps in 1913. 490.

Learned to fly at North Island, San Diego, Calif., in 1914-1915. 491.

Took a course in aeronautical engineering at the Massachusetts Institute of Technology in the fall of 1914. 493.

Met Alexander Klemin very soon after he went to Technology. 493.

Klemin enlisted as a private in the Army when he ceased to be an instructor in Boston Technology. 496.

Is now a lieutenant, and is located at McCook Field, Dayton, Ohio. 496.

Army did not have any combat planes prior to our entering the war in April, 1917. 499.

Army had, all told, about 300 planes when we entered the war, and these were either training or scouting planes. 500.

Upon our entry into the war he was in charge of design of airplanes. Worked on design for a single-seater for the Hispano-Suiza until June, 1917, when he went to Europe with Maj. Bolling's commission. 500.

Mr. Bolling had been a corporation lawyer, prior to that time, for the United States Steel Corporation. 502.

Navy had not more than 40 planes when we entered the war. 502.

Lieut. Col. VIRGINIUS EVANS CLARK—Continued.

- Army had between 75 and 100 flyers and the Navy probably 35 or 40 flyers in April, 1917. 503.
- Thinks they could logically have expected to expand even more rapidly than that, even though there had been no war. 504.
- Gives outline of duties performed by Bolling Commission in Europe. 506.
- Made recommendations, as a result of experiences abroad, at conferences with Col. Deeds, Col. Waldon, Col. Montgomery, Maj. Vincent, Maj. Horner, and Capt. Marmon and himself in attendance. 510.
- Thinks report made by Maj. Bolling to Gen. Squier under date of August 15, 1917, very accurate. 512.
- Gives outline of recommendations he made with regard to aircraft program. 513.
- De Haviland 9 was far better suited for bombing than the De Haviland 4. 514.
- Canceling orders for De Haviland 9 was done against his recommendation. 515.
- Does not consider that the abandonment of the De Haviland 9 for the De Haviland 4 in any way a dereliction on the part of the authorities. 517.
- Thinks De Haviland 4 is better adapted to use as a bomber than a combat plane. 524.
- The Bristol was the machine known as the fighter on the British front. 527.
- Not so sure it is a wise policy to order so many machines when the development has not even been started with any particular factory. 529.
- Nothing about the De Haviland 9 which would make the adaptation of the Liberty engine more difficult than for the De Haviland 4. 531.
- Was at McCook Field in fall of 1917 until January of 1918. 531.
- Tried to get sample of De Haviland 9 over to McCook Field to work on it, but Col. Deeds's orders were to leave it at Wright factory. 532.
- Laid out a machine which was later called the *U. S. D-9*. 533.
- Thought the machine was loaded too heavy per square foot. 533.
- While in Italy arranged to have Mr. Caproni send over one of his triplanes, also a biplane, and those two machines arrived in September or October and were sent to Langley Field, but there was no attention paid to them. 534.
- Triplane was crashed in January of this year. 535. The only one we had in this country. 535.
- The Caproni biplane is now being put into production, and a triplane is what was wanted. 535.
- The triplane will carry about 3,500 pounds of bombs, with six hours' fuel, which is six times as much as the biplane will carry with the same fuel. 536.
- Does not consider Caproni biplane satisfactory machine to put into production. 539.

Lieut. Col. VIRGINIUS EVANS CLARK—Continued.

- Thinks it a fatal error to order two types of machines to accomplish the same function. 540.
- Saw cable that arrived yesterday stating that no DH 4s had yet arrived at the front. 544.
- Reason DH 4's have not reached the front is because they are rebuilding them to some extent on other side. 545.
- Did not have enough draftsmen to complete designs of the Bristol. 560.
- Thinks you could get away with 2,000 or 2,200 drawings for a Bristol fighter. 561.
- Reads extracts from diary of Mr. Perrin relative to work of Curtiss Co. on Bristol machine. 565-602. (20 pages in book skipped in numbering.)
- Against his urgent wishes the Bristol was taken out of the experimental stage and put into the production stage. 606.
- Recommended the Spad for fighting. 611.
- Col. Deeds told him that he got a cablegram from Gen. Pershing recommending that no single seaters be built in this country. 612.
- Paragraph from cablegram received from Gen. Pershing relative to above. 614.
- Recommended production of Martinsyde, but British Mission did not favor it. Now planning to build them. 616.
- For the past six or seven months has been commanding officer of a concentration camp in Morrison, Va. 625.
- They go into production regardless of the approval or disapproval of the technical section. 634.
- Alexander Klemin is as well qualified from a theoretical and mathematical standpoint as any man in the country as an engineer with aeronautical experience. 638.
- Col. Deeds went on his note for \$1,000 at a Dayton bank. 641.
- Capt. ELMER J. CLARKE (Washington, D. C., August 16, 1918; Book 18).
- Entered the Government service last September, and was commissioned in January. 644.
- Prior to that was connected with the Portland Motor Car Co., Portland, Oreg. 644.
- Was asked to get into the Army by Maj. Tourney. 644.
- Was told to get together an organization and office for the inspection of lumber in the Northwest. 645.
- Recalled from that duty and assigned to Buffalo, relieving Capt. Ferguson. 647.
- Noticed Curtiss Co. was getting the largest quantity of lumber of any company in the East. 648.
- Noted that there were men at the Curtiss plant far in excess of requirements. 650.
- Was relieved from duty at Buffalo by Maj. Moore. 652.
- Put in new department at Washington called Plants and Factories. 655.
- EDMUND LEIGH (Washington, D. C., August 19, 1918; Book 18).
- Produces letter addressed to him by Col. Horner under date of April 6, 1918, relating to fire protection, which was marked "Leigh Exhibit No. 17," August 19, 1918. 659.

EDMUND LEIGH—Continued.

Produces forwarding paper from agent in charge at Buffalo carrying with it certain statements of facts of work alleged to have been done upon a previous recommendation, which was marked "Leigh Exhibit No. 18," August 19, 1918. 659.

Lieut. Col. LESTER JONES (Washington, D. C., August 19, 1918; Book 18).

Total paid by Government on account of Wilbur Wright Field to August 14 is \$3,115,161.94. 663.

Statement of all complete planes DH 4s shipped overseas to and including August 7, 1918, marked "Jones Exhibit No. 7," August 19, 1918. 666.

Financial statement to June 30, 1917, showing the distribution of appropriations and an analysis of obligations, marked "Jones Exhibits No. 8-A and No. 8-B," August 19, 1918. 667.

Memorandum of acetate depot contracts for July, 1918, marked "Jones Exhibit No. 9," August 19, 1918. 667.

Produces various cables with respect to corrections in defects of DH 4s on the other side, which were marked "Jones Exhibit No. 11," August 19, 1918. 669.

Maj. JOHN ARMSTRONG DREXEL (Washington, D. C., August 19, 1918; Book 18).

Entered the Army in October, 1917. 673.

Has been in active service as a flyer with the French Flying Corps. 673.

Returned from France on June 10. 673.

Radiators on DH 4 plane were supposed to be a bad production job. 678.

Have changed DH 4s on other side. 679.

Consider Liberty engine very good on other side, except for carburetion. 680.

Thinks DH with Liberty is a wrong conception. It is too high-powered for that plane, but thinks they will have the finest plane on the front with the DH 9-A wings. 681.

Lieut. Col. LEONARD SHERMAN HORNER (Department of Justice, Washington, D. C., August 19, 1918; Book 19).

Thinks he entered the Army in August, 1917. 1.

Was asked by Col. Deeds to come to Washington. 4.

Took up the work of the ordnance and instrument section in July, 1917. 5.

When Col. Waldron was sent overseas to form an aircraft production over there, he was made executive officer under Col. Deeds and afterwards acted in same capacity under Col. Montgomery. 6.

Asked if he knows anything about orders that were placed in France for delivery by the French Government of planes for our forces. 7.

These were largely canceled. 8.

Is asked for a statement of the planes and engines actually delivered to date by the French Government on contracts placed there by the United States Government. 9.

Lieut. Col. LEONARD SHERMAN HORNER—Continued.

Thinks reason why the French Government did not complete contract in accordance with anticipations was that the French agreed to make certain deliveries to this country of planes, so many per month, provided the United States Government furnished them certain raw materials at a given time. This time had expired when contract received. 11.

Is asked to furnish these contracts. 11.

This country also in default in not being able to live up to promises made in this connection. 13.

Gives statement of the whole matter relating to the various orders. 14-20.

He had a distinct understanding, as did others, that when Col. Bolling made this contract with the French Government that the French Government actually expected to make these deliveries to the United States Government, and that the material asked for was to fill up their depleted stocks more than anything else. 20.

Had a clear idea also that the French Government was short on some materials, so some rush orders were gotten off in remarkable time. Is to furnish contracts which will show orders placed on a certain date and the date on which they started shipping. 21.

Asked what has become of this stuff, as it did not come back in planes. 22.

Have shipped at least \$1,000,000 worth of material and only have 230 or 240 planes. 23.

Substituted contract was made sometime in May, and states on account of not being able to meet deliveries that the contracts are reduced hereby a certain amount, etc. 24.

Three hundred machines from the British. 24.

Asked about the delays on the De Haviland 4s. 26-32.

States that inability of Dayton-Wright people to get accurate information with regard to equipment, changes, etc., did produce a long and serious delay. 33.

People on the other side knew what they were putting in a machine, but their specifications and drawings could not be put together. 35.

The sample planes that were sent over by the commission were equipped in most cases, not complete, which explains, he stated, why it was so difficult to get definite and accurate information from the other side when the subject of the inquiry was something that was in actual use. 36.

Drawings and specifications accompanied these sample planes, but they did not check up with the actual plane. 36.

In addition to all this, cables and information were continually coming over to the various departments as to certain other pieces of apparatus to be added, which they in their ignorance took to be facts, and they made the changes accordingly, sometimes coming out right and sometimes wrong. 37.

Lack of airplane engineering knowledge was at the root of all the trouble. 37.

Did not know what a synchronizing device was in this country until some engineer came over here and told them. 39.

Lieut. Col. LEONARD SHERMAN HORNER—Continued.

Started to use a synchronizer on the other side latter part of 1915 or 1916. 39-42.

Asked why Col. Clark of the engineering department, who had devoted a good deal of attention to airplane matters, was relieved of that work when the production engineering department was organized. 42.

Matter was taken out of the hands of the airplane engineering department so as to expedite getting of information to the factories and the changes in the drawings and designs. 43.

Is shown by the statement from the Dayton-Wright Co. which complained of the lack of these very things. 44.

Lack of clearly placed responsibility. 49.

He understood that in the case of the Bristol the designs originally given to the Curtiss Co. did not permit of the pieces properly going together, and that therefore the Curtiss Co. were instructed to make such changes in the drawings as were necessary for a complete plane. 50.

After that the matter at the Curtiss plant handled by the Curtiss Co. in conjunction with the local representatives of the production engineering department who had had no experience whatever in designing aeroplanes. 50.

Again explains the displacing of Col. Clark. 54.

Submits paper entitled "Cause of delay"; is marked "Horner Exhibit 1." 56.

Bristol motor redesigned for use of Liberty engine under direction of Col. Clark, which proved to be a failure. 57.

Asked why the Government did not do something to correct the condition of things existing at the Curtiss plant. 63.

States Mr. Potter, Col. Montgomery, and Col. Deeds were all well acquainted with these conditions. 69.

Asked Col. Van Deman to remove Mr. West from the Curtiss plant. 72.

Admitted he was very prolific in obtaining information, but that this was not correct information. 75.

States he didn't mean it was not correct, but that he was not discreet in obtaining this information. 76.

Don't know who told him so. 76.

Asked if he was more interested in his discretion than the information, than he was in correcting the conditions which the information disclosed. 76.

Can not answer why they removed a man who was supplying the very information they were supposed to want. 78.

The reason sifts down to Mr. Kepperly, of the Curtiss plant, who does not want Mr. West to carry an annual pass, which admits him to all parts of the plant at any and all times. "Wants this stopped." 79.

Follows letters and telegrams from the Curtiss people regarding this "nuisance." 79 to 95.

Is asked for all information that exists in letters that passed between the department in Washington and Maj. Moore or Mr. Green which would show that these conditions disclosed in the reports were taken care of, an effort made to remedy them. 109.

Makes statement on his own account. 110 to 115, inclusive.

FORREST E. CARDULLO (August 19, 1918; book 19).

Has been employed at the plant of the Curtiss Airplane & Motor Corporation since the 1st of December, 1913. 116.

Engineer of tests. 117.

Knows nothing about the purchase by the Curtiss Co. of dope from the Celluloid Zapon Co. 119.

Came to his attention by people from the Celluloid Zapon Co. appearing one day saying there was a lot of dope they wanted to correct. 119.

Whole quantity was returned to Celluloid Zapon Co. to be fixed right. 121.

Mr. Crossley had condemned a great deal of dope which they used subsequently with the full consent of the Signal Corps and the Government people. 122.

States that he had never seen the report which showed it cracked with two weeks' exposure. 124.

Asked how it happened that material condemned by the chief chemist should be accepted later and passed. 128.

Gives a statement in regard to his individual relation to it. 132 to 135.

Mr. GUY LEONARD (August 19, 1918; book 19).

Supervising the construction of the acetate of lime and acetone plants and wood chemical plants. 136.

Just recently built the acetone plant for the Standard Chemical Co. in Sault Ste. Marie, in Canada, and then came over to the Curtis Bay Chemical Plant. 137.

Mr. O. W. OTT (August 19, 1918; book 19).

In the chemical section of the Bureau of Aircraft Production, having charge of disposition of dope. 145.

Asked to send in whatever their records show in regard to the Celluloid Zapon Co. 149.

EDMUND LEIGH (August 20, 1918; book 19).

Alien enemies. 150.

Col. MARBOROUGH CHURCHILL (August 20, 1918; book 19).

Been in the Army since September, 1901. 152.

Gives resumé of the duties he has been assigned to since the beginning of the war until June 1, when he arrived in Washington and was detailed as chief of the military intelligence branch. 152-155.

Asked to state what he learned in respect to the delivery of planes in France by the French Government under contracts made by Col. Bolling. 155.

Was told that one of the ostensible reasons for the failure of the French Government to produce the planes was the failure of this country to supply raw materials. 158.

Knows it to be a fact that for a long period there were schools with a large number of American flyers who had no machines in which to be trained and were in virtual idleness. 160.

Serious situation of affairs that reflected upon the military administration of the United States. 161.

These conditions existed at Toul and Issouden, the two largest schools. 161.

Situation began to be acute in October, and in January it began to be corrected. 162.

Col. MARBOROUGH CHURCHILL—Continued.

Asked to turn in the reports of the Standard and of the Dayton-Wright. 166.

Arrangements had been made with the British and French to receive a certain number of men for training, which went on satisfactorily, but in addition to that large numbers of American aviation students were sent over who were not to be trained in those camps and for whom no provision had been made by the French or English. 168-170.

Gen. Squier had to do with the sending over of men at that time. 171.

VICTOR LOUGHEED (August 20, 1918; Book 19).

Resides in Chicago, Ill. 172.

Mechanical engineer and technical writer. 172.

Been actively interested in aeronautics since 1903. 172.

In connection with other work of this nature published in 1909 a book entitled *Vehicles of the Air*, which sold within two years about 30,000 copies in three editions. 173.

In 1912 wrote *Airplane Designing*, which, in 1915, half of it was published in an Austrian flying magazine. 173.

This book for amateurs, is now in use in the German and Austrian flying corps as a text book. 173.

Is also informed that half of it has been translated and published and is on file in the Chicago Library. 174.

Also does technical writing for *Popular Mechanics*. 174.

Testifies as to his ability in building airplanes and designing of large planes. 175.

Describes machine built big as Caproni, and flying with two-thirds less power. When five hours old flew from Santa Barbara to San Diego, 211 miles in 281 minutes, without mishap with 1,600 pounds deadweight and enough gasoline left to have flown six times that far. 176.

Was completed within six months' time of designing. 176.

Built in a plant that had less than \$5,000 worth of facilities in the way of machine tools. 177.

Testifies as to the negotiations he has had with officers of the Government. 180.

Application was canceled by the United States Civil Service Commission on November 19, 1915, because he was not a graduate in mechanical engineering. 181.

Takes up case with Mr. Sidnev Waldon in Detroit. 181-183.

Writes to Mr. Marmon, and produces the answer he received. 185.

Try to sell the machine to the Navy, 189.

Brother gets an order for two Curtiss seaplanes to build. 191.

Introduces this contract into the record. 191-193.

His point is that the Curtiss Co. could better have built two more machines of that type for the Government than a little plant. On the other hand two boys with brains on the matter could better have been developing something better than making an arbitrary copy of that machine. 194.

Puts a proposition to the Government, in which it would have cost the Government nothing, to demonstrate them the im-

VICTOR LOUGHEED—Continued.

provements that can be made in the wings of the machine as to get an increased efficiency with a lower-powered engine. 196-199.

Could not go ahead and build the machine first and then demonstrate to the Government, because you could not get materials and labor unless you were doing Government work. 199.

Capt. W. WICKHAM HOFFMAN (August 20, 1918; Book 19).

Been in the Air Service since August 21, 1917. 202.

Was never interested in aviation except as a civilian might be. 202.

Explains how he entered the Army and the duty to which he was assigned. 202-204.

Understood that developments later in regard to raw materials prevented the French from fulfilling their contract. 205.

There were no actual training camps absolutely idle because of lack of planes. 207.

One thousand two hundred cadets awaiting training at St. Maiseint at one time, some having waited three months without any flying whatever. 208.

JOHN D. RYAN (August 20, 1918; Book 19).

Asked to state conditions as he found them on a recent visit to the Pacific coast. 211-229.

Has found no evidences of any irregularities in the way of influencing the contracts for consideration, etc. 229.

Makes statement regarding efforts of the Government to correct conditions existing at the Curtiss plant. 235.

Reports running back to March reveal these conditions. Reports to Signal Corps disclose these conditions, and along with them they found a disposition to accommodate the Curtiss Co. by getting rid of those who disclosed the conditions, and the disposition on the part of the Curtiss Co. to resent activity of Government representatives which tended to reveal these conditions. 243.

Mentions the case of Mr. West, who made reports with detailed statements and was removed. 243.

Found excess production, excess orders, padded pay rolls, idle time, etc. 245.

Unable to understand what it was that give the Curtiss Co. authority apparently superior to the Government. No Government officer with the slightest knowledge of the facts should have permitted it for a fortnight. 245.

EDWARD L. RYERSON, Jr. (August 21, 1918; Book 19).

Captain of the aircraft service production. 253.

Since December 1, 1917, has had charge of the propeller work. 256.

In the requirements for propeller production African mahogany is put last. 270.

Cable from department of aircraft production of Great Britain to Gen. Cormack, British War Mission, regarding African mahogany. 271.

Another paper addressed to Chief Signal Office, Washington, D. C., giving comparisons of African mahogany with Central American species, saying it compared favorably. 274.

EDWARD L. RYERSON, JR.—Continued.

Imagines that this letter was suggested by one from Capt. Oakleaf, but could not say. 276.

Letter from Henry Lockhard, jr., to Office of the Chief Signal Officer, asking whether African mahogany has been approved for use in the manufacture of propellers. 277.

Telegram in reply from production engineering department saying department not favorably disposed toward African mahogany. Much poor African mahogany on American market. 279.

Telegram from production engineering department stating African mahogany suitable for use for combat and bombing airplane propellers. 281.

Was advised that the English did not use African mahogany except when it is reinforced with other more strong and reliable wood. 282.

Was aware that there were great quantities of quarter-sawed white oak in this country and that engineering department now states it is preferred to African mahogany for propellers. 283.

Produces memorandum referring to African mahogany. 284-294.

African mahogany was put ahead of quarter-sawed white oak in report of March 16. 295.

In report of August 7, quarter-sawed white oak was put ahead of African mahogany. 295.

Asked why use of it was not discouraged earlier. 295.

In addition to its inferiority, there were very serious shipping problems in connection with it. 299.

Asked for any information he might have with respect to way in which it happened that large orders were given for African mahogany in view of the above difficulties. 301.

Asked if he observed that the requirements were asserted far in excess of the actual requirements. 302.

The estimates referred to as being excessive were given to him for the purpose of producing propellers and were in turn transmitted by him to the hardwoods section, etc. 310.

Produces copy of report covering all other matters pertaining to the original negotiations for mahogany and his connection with it. Marked "Ryerson Exhibit 16." 310.

HOMER HOYT (August 21, 1918; Book 19).

Economist for the War Trade Board. 320.

Makes his own statement with regard to investigation of African mahogany. 321.

Requirements, after conference, were handed to him in memorandum from Mr. Williams. ("Hoyt Exhibit 1.") 323.

Could not find out in the conferences what the basis of the requirements was; they refused to tell for military reasons. 324.

Mr. Tower, of the Shipping Board, thought the requirements excessive since in order to require this large amount of propeller wood there would be something like 50,000 airplanes needed in the program. 325.

Mr. Tower tried to get information on the subject but was unable to, so was not able to advise the restriction of this African mahogany. 325.

HOMER HOYT—Continued.

About the latter part of May Mr. Hoyt is taken to Mr. Owen Thomas, who was at the General Staff. Mr. Owen declared that the airplane requirements as given out by Mr. Williams and Mr. Wickliffe were greatly overstated. 325.

Mr. Thomas knew the engine production, and said the Shipping Board was right, that the African mahogany was not necessary, and produced letters from a captain in the British Army saying the African mahogany was an inferior wood. 326.

Gives statement concerning concessions or a basis for operations in Africa of I. T. Williams & Sons. 332.

Maj. Adriance tells him that the Bureau of Aircraft Production have admitted that quarter-sawed white oak was a satisfactory propeller wood, but that they could not secure sufficient of it to substitute for African mahogany. 335.

Mr. Potter makes this statement. 336.

Mr. Hoyt immediately has the Forestry Service prepare to make an estimate of the available supply of quarter-sawed white oak available for propellers. 337.

Memorandum marked "Moss Exhibit 2, August 2, 1918." 337. Information was obtained in an hour's notice that 42,000,000 feet of airplane material could be secured within the course of a year. 340.

Lieut. Col. Botton and Maj. Adriance intimated that the Bureau of Aircraft Production had told them that only two or three million feet of quarter-sawed oak could be obtained, not enough to warrant cutting off African mahogany. 340.

General Staff not satisfied until they were shown definite manufacturers who would supply the wood. 341.

Call up American Propeller Co. by telephone and they state that they alone can furnish 2,000,000 feet. 341.

General Staff about convinced there is no need to go to Africa for mahogany. 342.

Gen. Potter now states in a letter that quarter-sawed white oak had not been tested under combat conditions, and thus they would not feel satisfied to use it. 343.

Set about to find out (Mr. Hoyt) what had been the experience with this wood. 343.

Ensign Monteith, of the Navy, tells them that the Navy has used oak propellers since 1909 with complete success. Mr. Heath, of the American Propeller Co., of Baltimore, stated that they had sold propellers to the Navy and none had ever been returned or rejected. 343.

Navy would not use African mahogany unless they could not get anything else, and then always reinforced by other woods. 344.

Said they considered "Oak to African mahogany about four to one." 344.

Company at Dayton makes 750 oak propellers for combat machines which prove very satisfactory. 345.

Facts laid before General Staff, but Bureau of Aircraft Production through Mr. Potter would not relinquish their claim for getting African mahogany. They only had about half of it through by this time. 346.

HOMER HOYT—Continued.

Mr. Williams stated that the British Government had contracts for 7,000,000 feet of walnut to be satisfied in this country which greatly reduced the supply in this country. He was always told there was plenty more. 349.

The British Government, Mr. Williams stated, had practically secured the output of Central American mahogany. 349.

Mr. Williams always insisted upon the great necessity of making sure that the airplane program should not fail, so he wanted to build up a reserve of 10,000,000 feet, so there would be no possibility of this happening, but he always found a way to not buy any domestic woods. 352.

When there was no obstacle in their way to buying quarter-sawed white oak they did not buy it. 356.

Understood from Mr. Weber that there had been an actual approval of quarter-sawed oak for propellers in December, 1917. 357.

Maj. Gen. WILLIAM B. KENLY (August 21, 1918; Book 19).

Director of Military Aeronautics. 385.

Submits copy of the contracts which were made in France for the supply by the French Government of planes. Marked "Kenly Exhibit 1." 386 to 394.

Furnishes list of those actually delivered. "Kenly Exhibit 2." 394.

Cause for the second contract was that the French had a sudden and great need for more airplanes and that in view of the fact that the United States Government were not ready to use the planes as per contract, they wished to modify it. 396.

Gen. Pershing did not at first approve of this plan, but later returns to it. 397.

With reference to the cadets from the United States held at training camps with nothing to learn with, he stated that as per schedule of Gen. Pershing the men showed up in France but not the planes. 405.

Considered the reason for discontinuing the Standard J was that it was unsafe. 407.

Lieut. ISADORE SACK (August 21, 1918; Book 19).

In the sales department of the finance division in the Bureau of Aircraft Production. 422.

Produces statement of orders for African mahogany, marked "Sacks Exhibit 1." 423.

Estimated cost of whole is \$3,425,625. 424.

WILLIAM HOYT WEBER (Washington, D. C., August 21, 1918; Book 19).

Forester by occupation. 431.

Asked by Mr. Owen Thomas to get all the information he could about mahogany and particularly to find out the amount of board feet of different kinds of woods that were used in propellers. 432.

Instead of 175 or 200 feet, which was being used at the estimate of the number of feet, 150 feet was an approximate basis. This concurred in by various factory managers of the plants visited. 435.

Estimate for quarter oak would be possibly less. 440.

WILLIAM HOYT WEBER—Continued.

- The reason that the Dayton-Wright were going ahead and making their propellers out of oak was because they were one of the firms not getting their material from the Aircraft Board at all. 441.
- Asked for his observation with respect to African mahogany. 447.
- Knows of no reason for getting African other than a shortage of wood in this country, which did not exist. 451-452.
- Submits reports on African mahogany which is marked "Weber Exhibit No. 5, August 22, 1918," then submits or substitutes another copy in its place as indicating sources of information on certain points. 454.
- In one of the paragraphs he inserts statement that C. C. Mengel and I. T. Williams owned some ships in which they could bring African mahogany over. 455.
- Found no shortage of mahogany in this country. Opposite was true. Out of Government orders, with stocks of mahogany on hand.
- Mentions firms who had greater propeller capacity than was being used. 461-462.
- Price for mahogany fixed at \$350 a thousand. Before the war the very highest price was around \$150. 465.
- Highest Cuban mahogany was only \$160. 466.
- Capt. E. L. RYERSON, Jr., (Washington, D. C., August 22, 1918; Book 19).
- States that when he places orders for contracts with companies for the production of propellers he specifies the kind of wood out of which the propellers are to be made. 471.
- Does not know of any cases in which one wood was specified in the contract and another wood actually used. 482.
- His information is that the propellers are built out of the wood specified in every case. 486.
- Produces memorandum, "Ryerson Exhibit No. 17, August 22, 1918"; is a memorandum of a meeting for the discussion of airplane propellers, etc. (This meeting held February 19, 1918.) 492-501.
- This meeting decided that there was to be no African mahogany. 501.
- Could not say what changed all this, for within three weeks orders for African mahogany were authorized—about the middle of March. 501.
- KARL K. DE LAITTRE (August 22, 1918; Book 19).
- Assistant to the director of planning and suggestions in the Shipping Board. 507.
- Takes up the position of getting definite information as to Army requirements from the Aircraft Production Department. 510.
- Submits summary of this conversation. "De Laittre Exhibit 1." 510.
- Is later asked by Mr. Wickliffe to add something like one million and a half feet to the requirements. 510.
- Goes back on the seventh day to have some matters cleared up. 511.

KARL K. DE LAITRE—Continued.

Is now asked to make some comments on extracts which are read to him before proceeding with his other conference. 511-521.

Now proceeds with his report of the meeting on May 7. 525.

This is marked "De Laitre Exhibit 3." 526.

Is questioned regarding certain extracts in this report. 526 to —.

Mengel & Co., of which Mr. Wickliffe was secretary; I. T. Williams & Sons, of which Mr. Williams was formerly a member; and the Astoria Co. were some of the firms who had African concessions or were interested in the African production. 534.

ADOLPH LODEVIK DELEEUW (Department of Justice, Washington, D. C., August 22, 1918; Book 19).

Mechanical engineer, Singer Manufacturing Co. 547.

Singer Co. of New York City, South Bend, etc. 547.

First appointment with Mr. Deeds and Mr. Waldon was on August 14, 1917. 548.

First asked to build 3,000 training planes, then this order changed to a thousand battle planes of the denomination DH-4, and then they were informed they would be asked to build something different from this. 548-549.

This was the last heard from the Signal Corps. 549.

States what the capacity of the Singer Manufacturing Co. was, its capital, equipment, and ability to construct planes. 549.

Had told Mr. Deeds they would accept any kind of a contract the Government saw fit and were willing to give them. 556.

BURCHELL CROCKER IKIRK (August 22, 1918; Book 19).

Is now inspector of the Osner Fare Register Co. at Dayton. 579.

Was with the Aircraft Production Board up to August 6, 1918. 579.

Discharged by Mr. Fitzgerald, assistant district manager. 580.

Wrote two letters to Mr. John H. Patterson, of the National Cash Register Co., relative to the shipment of certain instruments to the Wilbur Wright Field spare house that were under question for being defective without any question. 580.

Was representing the Government in inspecting them. 580.

Five hundred and twenty-five of these instruments. 580.

At least 75 of these instruments contained springs that were off. 581.

Were awaiting report from the Bureau of Standards regarding them. 582.

Twenty-five of them went direct to France. 583.

States the effect of the use of the 75 tachometers that were wrong. 585.

Lieut. Col. A. Woods (Washington, D. C., August 22, 1918; Book 20).

Produced memorandum reports of his investigation at the Curtiss plant. 1.

Woods Exhibit 1.

ALBERT H. FLINT (Washington, D. C., August 22, 1918; Book 20).

Is an airplane manufacturer by occupation. 3.

Vice president and general manager of the L. W. F. Engineering Co., College Point, Long Island. 3.

Building all Navy work at the present time. 3.

ALBERT H. FLINT—Continued.

- Built 150 of their own planes, the L. W. F., for Signal Corps previous to contract with Navy. 4.
- Company now known as Laminated Wood Fuselage. 4.
- Contract in October, 1917, for 18 L. W. F. planes on a fixed-price basis of \$12,600 each. 19.
- Contract in January, 1918, for 36 L. W. F. reconnoissance machines at a fixed price of \$8,600 each.
- Was building planes before we entered the war. 20.
- Government furnished the engines for the last 36 planes, accounting for the difference in price. 21.
- Refused to take an order for 500 Bristol fighters in September, 1917, because he did not consider it could be built with the Liberty engine. 22.
- Does not think DH-4 will make a successful battle plane. 25.
- Constructed a combat plane (L. W. F. model G) which carries a load of 2,208 pounds at speed of 134 miles an hour. 27.
- Has no contracts with Government for it. 29.
- Have an armor plate on machine of light helmet steel, covering two men and gas tank. 30.
- Machine is 500 pounds heavier with guns and everything than DH-4, but much faster. 31.
- Maj. MILLER HARMON, JR. (Washington, D. C., August 22, 1918; Book 20).
- Was in service overseas from March 26, 1917, until May 16, 1918. 37.
- When he first went over was detailed to take a course of instruction in French aviation schools at Pau and Alford for a period of two months. 37.
- On completion of that duty was assistant with chief aviation officer, American Expeditionary Forces, stationed in Paris. 38.
- Served as a pilot with a French squadron for about a month and a half. 38.
- Was then on board to recommend types of airplanes to be purchased in the United States in 1919, and on completion of that duty was ordered back to the United States. 38.
- Gives in a general way machines recommended. 39.
- Lieut. Col. T. F. Dodd was president of the board and members were Lieut. Col. Henry Harms, Maj. H. F. Martin, and Maj. M. F. Harmon. 40.
- Report was completed about 4th of May, 1918. 40.
- Lieut. Col. Carberry was in charge of training in France during all the time he was over there. 43.
- Report showing status of the aviation camps abroad, the number of students there, the number of training planes available, etc., as of July 17, 1918, marked "Harmon Exhibit 1." 45.
- They have Breguets for bombardment instruction and are using Nieuports for aerial gunnery instruction. 46.
- Number of aviation students held in depots or aviation camps for two or three months without facilities for training. 48.
- Copy of cable dated August 7, 1917, relative to offer of Italy to train 500 pilots. 49.

Maj. MILLER HARMON, Jr.—Continued.

Cable from Gen. Pershing dated July 30 stated that after September 15 French can not receive American pilots for training. 50.

Cable dated August 7, 1917, from Gen. Pershing stating, with reference to pilots, "Send them over and we will take care of them." 51.

About 1,000 aviators were at one time held for a period of two or three months because they could not get training facilities. 54.

Brighter aviation students in this country, by reason of their excellence, were given their choice of continuing their training in this country or going to France; supposing that they would have a better opportunity in France they went over there to find that those left behind got their tuition before they did. 56.

At one time they were considering sending some of those men back to the United States for training. 56.

They had to do guard duty and fatigue duty and things of that nature which they did not like and which really they were not expected to do. 57.

W. W. Moss. (Washington, D. C. (?), Aug. 23, 1918; Book 20.)

Questioned with regard to the method by which the restaurant of the Curtiss plant was established and conducted. 59.

Company got no compensation whatever from restaurant. 60. Employees of Curtiss plant were not supposed to be used by restaurant. 61.

Mr. Backoff operated both the North Elmwood and the Churchill Street restaurants, but under the new arrangement it will be taken over and operated under the welfare department as of September 1. 62.

Will be treated as part of the overhead, if there is any loss. 62.

Depreciation on restaurant will be charged in as overhead expense in connection with the Government contracts. 63.

Capt. EDWARD L. RYERSON, Jr. (Washington, D. C., August 23, 1918; Book 20.)

Specifications describing the kinds of lumber used in propeller construction marked "Ryerson Exhibit 18." 72.

ABRAHAM T. BALDWIN (Washington, D. C., August 23, 1918; Book 20).

General manager of the Precision Instrument Co. 79.

Has contract dated December 3, 1917, for 2,500 air speed indicators, 1,000 at \$60 and 1,500 at a price to be agreed upon. 80.

Instead of completing contract in early part of April, did not begin quantity production until July. 81.

Forboro Instrument Co. has contract with Government for air speed indicators. 85.

Have been led to believe method of inspection between his company and other companies are different. 94.

Instrument of Foxboro Instrument Co. had an error of 1 hour in first flight of 45 minutes, when it was supposed to be perfect. 95.

Has never heard a commendatory report of the Foxboro indicator from a flying field of the United States. 97.

ABRAHAM T. BALDWIN—Continued.

Bristol Co. were granted certain things in April, and his company were not granted a solitary thing until July, although they asked for the same things. 104.

Mrs. A. T. BALDWIN (Washington, D. C., August 23, 1918; Book 20).

Is wife of president of the Precision Instrument Co., vice president of same concern, and in charge of production. 136.

The testimony of this woman, as well as her husband, is an effort to show that favoritism was shown other companies manufacturing air speed indicators, and that delay in production at Precision instrument plant was due to the inspector not allowing certain tolerances allowed other plants. 136-165.

EUGENE MEYER, JR. (Washington, D. C., August 23, 1918; Book 20).

Director of the War Finance Corporation of the United States Government. 166.

Enumerates various positions he has held with Government since April, 1917, when he first became associated with Government. 166.

Is a banker and broker by occupation. 167.

Interested personally in the Fisher Body Corporation, of Detroit. 168.

Has an Orlando F. Webber in his employ, whose brother, Charles Webber, was interested in the Curtiss plant. 174.

Has discussed conditions in Curtiss plant with Charles Webber. 174.

Had Mr. Webber make an examination of the Wright-Martin Co., and he made a very drastic report as to the management, which was unfavorable to the management. 177.

Curtiss Co. put all their trouble at the door of incompetent management in the aircraft situation. 182.

Feeling was bitter on both sides between the Government departments and the manufacturing industries. 183.

Thinks Signal Corps acted without consideration toward people who had gotten themselves into a very tight situation, largely relying on the Signal Corps assurances. 185.

The Secretary of War asked him to investigate and make a report on the aircraft situation. (Then follows a conversation witness had with Secretary of War relative to nature of investigation.) 188.

In letter of the President to the Secretary of War he asked the Secretary or suggested that the Secretary give Mr. Borglum's report to somebody "to get the impressions on a fresh mind." 190.

Report of witness to Secretary of War marked "Meyer Exhibit No. 1, August 23, 1918." 191.

Later report made under date of February 20, marked "Meyer Exhibit No. 2, August 23, 1918." 191.

Gave his real reports to the Secretary verbally. 193.

Relates what he told the Secretary verbally. 194.

Told Secretary at one time he did not think he had a man in the whole organization (Government organization) who could be called a man. 195.

EUGENE MEYER, Jr.—Continued.

Felt that he sold the Secretary the idea of a production man against a lot of other men. 197.

Did not seem to have much idea of public policy down there. 199.

Told Mr. Stettinius he thought they ought to get rid of Col. Montgomery about as fast as it could be done. 200.

He said, "Mr. Secretary, war and military operations are based on contact, and in the aircraft program we lack contact." 204.

Making a product and entirely out of contact with the field of operations. 205.

Saw very poor manufacturing at the Dayton-Wright plant. 211.

Knows relationship of Secretary Baker's brother in regard to these contracts. 215.

LEWIS H. MACLAUGHLIN (Washington, D. C., August 23, 1919; Book 20).

Assistant to the vice president of E. F. Houghton Co., dealers and manufacturers of oils. 220.

Been in business about a year and one-half; formerly a newspaper man, as associate city editor of the Philadelphia Evening Bulletin and the Evening Telegraph. 220.

Familiar with operations of Standard Aircraft Co. in a general way. 220.

All requisitions of Standard Aircraft Co. were sent to a jobbing concern. 222.

Judge HUGHES. Your inference that there was likely some dividing with the jobber's profit so that the order went to the jobber?

WITNESS. Yes, sir. 226.

EBER W. FINKBINER (Washington, D. C., August 23, 1918; Book 20).

Has been connected with the Houghton Co. for two years and eight months. 228.

Had dealings with the Standard Aircraft Co. at Elizabeth. 228.

Prior to September or October of 1917 Houghton Co. sold Standard Aircraft practically all of the cutting oils. 228.

About a month after they moved their plant to Elizabeth they ceased sending orders. 228.

All orders for oils, etc., from the Standard plant were sent to Dingy, a jobber. first. 232.

Lieut. J. BROOKS B. PARKER Washington, D. C., August 23, 1918; Book 20).

Assigned to the office of the Chief of Staff, Purchase, Storage and Traffic Division, of the program section. 235.

Produces correspondence between Lieut. Col. Colton and hardwoods section of the Bureau of Aircraft Production and others including two cables from Gen. Pershing) relating to the purchase of woods for propellers. 235.

ALBERT L. WILCOX (Washington, D. C., August 26, 1918; Book 20.)

In the timber and lumber business since 1894. Deals in foreign hardwoods. Business is in Panama. Has been an importer of mahogany since 1903. 242.

His logs all shipped to New York and his brokers, Isaac Branden & Bros., 17 Battery Place, New York City, do business directly with concerns here in the States. 243.

ALBERT L. WILCOX—Continued.

- Good percentage of his logs are straight-grained wood, which would be suitable for airplane stock. 245.
- Had about 270,000 feet altogether, 246.
- Mr. Wickliffe, who passed on mahogany for the Government, requested that he sell his logs to one of the "11" who were contractors with the Government. 247.
- Had a talk with one of the buyers of C. C. Willey, who was one of the Big Eleven, relative to the mahogany market. 250.
- Told him it did not look right for the Government to be paying \$380 a thousand for first and seconds, and \$280 for No. 1 common. He said, "We have enough mahogany to last us for a couple of years. We covered that pretty well before the war. You can probably sell these logs to some of those boys in New York and probably get a little more, but I doubt if you can get over \$100 or \$120." 251.
- He was told he could not get a chance to sell outside of the Big Eleven. 252.
- Big Eleven seemed to have things pretty well fixed up. 254.
- Sold logs he had in New York to Willard, Hawes & Co. at \$140 a thousand. 258.
- Mr. Brown, of C. L. Willeys, of New York, and Mr. Dayton, of Montieth Co., told him Government was paying as high as \$380 for mahogany lumber. 275.
- Is in a position to make a contract with the Government for Panama mahogany suitable for airplane purposes and is perfectly satisfied to make \$5 a thousand to the Government. 290.
- Dr. WILLIAM FREDERICK DURANT (Washington, D. C., August 26, 1918; Book 20).
- Chairman of the National Advisory Committee for Aeronautics. 294.
- According to law, the committee exercises two functions, one of giving advice and one of carrying forward scientific investigation and research. 294.
- Gives brief history of organization, personnel, etc., of committee. 294-306.
- National Advisory Committee on Aeronautics had absolutely nothing to do with the formulation of the aircraft program. 306.
- Committee did not have anything to do with the Bristol machine and the adaptation of it to the Liberty motor; with the design of the De Haviland 4; with the design of the Standard J plane, or the design of any plane that formed a part of the aircraft program. 307.
- The Advisory Committee on Aeronautics have had absolutely nothing to do with the formulation of a program regarding engines or decisions regarding types and forms to be built. 307.
- Opinion of the National Advisory Committee was not requested with reference to the advisability of using any of the foreign types of engines nor in regard to the Liberty engine. 311.
- Relates what he observed in France with respect to engines. 316.

Dr. WILLIAM FREDERICK DURANT—Continued.

Does not think 12-cylinder Liberty engine can be fitted into a successful type of battle plane, a pursuit or combat plane. It is too heavy. 318.

Hispano-Suiza engine admirably adapted for pursuit or combat planes, especially the 300 horsepower. 319.

MELVILLE W. MIX (Washington, D. C., August 26, 1918; Book 20).

President of the Dodge Manufacturing Co. 321.

Manufactures machinery and wood parts, ply-wood parts for airplanes and things of that kind. 321.

Have orders through the Navy direct; others are indirect contracts such as with the Dayton-Wright Co. 321.

Had a contract for a supply of wing beams. 322.

Enumerates contractors he was supplying. 323.

Furnishes goods in accordance with specifications furnished by Government. 323.

Delayed through continual changes. 325.

Not anyone at the Dayton-Wright who was an aeroplane engineer. 326.

In the early part of the war offered the facilities of plant to the United States Government for manufacturing purposes. 328.

The personnel of the ply-wood division of the Aircraft Production Board were not practical men and did not know anything about wood. 348.

It was dangerous to use a nonwaterproof glue for an airplane. 352.

Orders were placed for nonwaterproof glue despite his protest. 353.

KENYON MIX (Washington, D. C., August 26, 1918; Book 20).

Son of M. M. W. Mix. 354.

Company developed a knocked-down wing slip at instance of Government, but never heard anything about it after submitting sample. 355.

Seven or eight months later Government stated they had just heard of it. 356.

When Signal Corps formed department 80, had to again go over the whole information that they had been giving the department for the last year, because they had none of it. 359.

Drew up charts for them showing them how the veneer industry in this country could be mobilized. 359.

Department laughed at them when they first told them there was a waterproof glue in this country. 362.

"In the ordinary De Haviland fuselage, * * * a shot goes through and collapses one of the braces—your machine collapses. You can take a Monocoque fuselage and shoot it full of holes, the strength being in the skin." 364.

Told Col. Horner about 60 days ago they were about at the end of their subcontracts, and asked if there was anything they could do for them. Col. Horner told them there was nothing he could use their plant for. 366.

It was through some agreement with the Allies that the pursuit machine was left out of the program of production on this side. 369.

Lient. Col. GEORGE W. MIXTER (Washington, D. C., August 26, 1918; Book 20).

Asked as to his relations to the Curtiss Co. 371.

When he first took up this work there were essentially no Government specifications or drawings in existence. 373.

Was head of the inspection department. 373.

Doesn't recall whether he is a stockholder in the Curtiss Co. 374.

Believes he had 25 shares of preferred stock. 375.

Has not disposed of any of his holdings since he became an officer of the Government. 375.

Has gone up to the Curtiss plant on inspection matters 10 times in the last year. 376.

There were instances where Curtiss inspection had rejected material that was perfectly safe and usable. 378.

He appoints district managers of production. 379.

First broad question referred to and determined by him was the multiplicity of inspection and difficulties relating to the four inspection forces at the Curtiss plant. 382.

Eliminated the Curtiss, Navy, and British inspection. 383.

Used Signal Corps inspection entirely at North Elmwood factory until about six weeks ago. 384.

Judge Hughes: "But an authority to dispose of the Signal Corps inspection and to take the Curtiss inspection in lieu of it would be an authority which a district inspection officer would hardly exercise, I should suppose." 385.

The function of the Government inspection is supervisory, providing 100 per cent inspection only for certain parts of the finished assemblies. 387.

HARLEY W. LAKE (Washington, D. C., August 26, 1918; Book 20).

Secretary of the Technical Joint Army and Navy Aircraft Board. 412.

Complete minutes of the board introduced and marked "Lake Exhibit 1." 412.

ARCHER A. LANDON (Washington, D. C., August 26, 1918; Book 20).

Chief of Production of Aircraft. 413.

Has been in that position since latter part of May or 1st of June. 413.

Was assistant last fall until October, 1918, to Mr. Coffin. 413.

Letter addressed to Mr. Coffin by the witness in which the lack of organization is pointed out and recommendations made. 415-422.

Curtiss plant was badly organized and a poorly conducted business concern. 436.

Was president of the Niagara Frontier Defense League. 439.

Judge HUGHES. We found men not only employed but promoted, one or two men that were actually foremen, who were alien enemies, reported as such by the Military Intelligence Bureau, discharged by the management; the Government apparently paid no attention to the reports of the Military Intelligence and the men were still there. 442.

ARCHER A. LANDON—Continued.

Knows of one particular case where there was a \$20,000 contract placed at 10 per cent, which gave a chance there for \$2,000 profit, and the minute that job went in the shop the Government ordered up a \$10,000 fence that was not needed in their regular line, and ordered about \$30,000 fire protection on a contract that was going to pay \$2,000. 447.

Dr. S. W. STRATTON (Washington, D. C., August 26, 1918; Book 20). Director of the Bureau of Standards, Department of Commerce. 451.

Law establishing the National Advisory Committee on Aeronautics provides that the Director of the Bureau of Standards shall be one of the members of the committee. 451.

Advisory Committee on Aeronautics did not have anything to do with the types of aeroplanes selected for production in the aircraft program. 451.

Joined with Dr. Walcott in a letter to the President on the general subject of aircraft production the latter part of January; letter inserted in record. 453-459.

Letter was sent pursuant to a resolution of the committee, in which it was stated a confidential memorandum containing figures to be prepared by Col. Deeds would also be submitted. 460.

Judge HUGHES. You were not purporting to state here of your own knowledge that any such thing as that was so?

WITNESS. No, sir. 464.

Judge HUGHES. Of course, I most cheerfully acquit you and them of any intention to state absolute falsehoods to the President of the United States. 464.

Committee was not asked to pass any judgment at all upon whether the Bristol was a good plane. 477.

Judge HUGHES. Did you attach seriousness to this statement to the President of the United States; did you intend he should take those statements at their face value, and if so, what information did you have warranting any such statement as this? (Referring to statement that six plants were in production on Liberty motor on January 24, 1918.) 480.

All statistics used by committee came from either the Aircraft Production Board or the Signal Corps. 482.

Judge HUGHES. This letter, signed by the most distinguished experts in the country, was to ease the mind of the President in regard to our aircraft program at the very time when he should have been posted in regard to the actual conditions.

WITNESS. It was intended to at least give some assurance at the time that things were not as black as they were painted. 483.

Draft of the letter was submitted to the members of the committee and discussed, and Gen. Squier was present. 486.

Prof. J. S. MACGREGOR (Washington, D. C., August 26, 1918; Book 20).

A number of conferences held to determine what woods were satisfactory for propellers and the order of preference. 488.

- Dr. H. T. BEANS (Washington, D. C., August 27, 1918; Book 20).
Has been in the employ of the Government since August 29, 1917. 490.
Was formerly professor of chemistry, Columbia University. 490.
Came to Washington to organize the laboratory, the analytical and research chemical laboratory, for the Signal Corps. 490.
Either tungsten steel or high chromium steel is used for the valves of Liberty motor. 494.
Steel has not been used in the valves of the engines, as required by the specifications. 494.
Analyzed the valve and found that it contained no tungsten and no chromium; that it was soft material, and had evidently given away badly in the service. The situation seemed extremely serious to them. 495.
These valves were made by the Rich Tool Co. for the Curtiss Co. The valve was constructed in violation of the specifications. Does not know whether it passed Government inspection. 497.
The inspector for the Government at the plant is supposed to ascertain whether or not the proper steel has been used in the production of the particular article. 510.
His impression that the most crude workman in the plant could at once detect the difference in working the material. 514.
Celluloid Zapon Co. is on the approved list. Has heard the statement that a shipment of dope had been received from them and been found to be defective. 518.
Curtiss Co. was absolutely incapable of making a correct analysis. 519.
In report of December 7, 1917, to Maj. Gray, tabulated the errors in a graphic way that the Curtiss laboratory had made for a period of a month on a few checked samples. 521.
Report referred to marked "Beans's Exhibit No. 1." 523.
Recommended that chemical results from the Curtiss laboratory no longer be used as the basis of judgment of aircraft materials for the Signal Corps, but this recommendation was not adopted by the Signal Corps. 525.
Curtiss Co. had their own way. 526.
Bureau of Aircraft Production absolutely deceiving itself in regard to inspection at the Curtiss plant because of Mr. Cardello's attitude. 527.
Why Mr. Cardello should be such a powerful factor in the Curtiss organization is difficult to understand, except just for one reason, that he is a man who permits them to get away with the material. 533.
Very little inspection in the dope room at the Curtiss plant. 535.
Has been compelled to finance the laboratory to the extent of over a thousand dollars. 563.
The cylinders on the Liberty motor are subject to erosion just over the intake valve. The aluminum pistons are all being burned at just that point. 570.
The attitude of the Detroit office and of the Aluminum Casting Co. is that impurities make no difference. 570.

Dr. H. T. BEANS—Continued.

Gives his opinion of personnel of Army Commodity Committees. 571.

Col. SIDNEY D. WALDON (Washington, D. C., August 27, 1918; Book 20).

One of the original members of the Aircraft Board. 577.

Board organized May 17, 1917. 578.

Went to France in October, 1917, and remained there until January 23, 1918.

Arrangements were made for the purchase of a considerable number of planes from the French Government pending the manufacture of planes on this side. 578.

Minister Luchere told Col. Bolling that the French Government would be unable to deliver planes in accordance with the agreement made, partly on account of the fact that our material had not arrived in time, but more largely on account of the fact that their program was going to be increased and the planes and engines would be needed for their own service. 579.

Contract with J. G. White Co. for the purchase and shipment of raw materials had been made before he left for France. 580.

Judge Hughes reads part of contract dated August 30, 1917, with French Government. 582.

Minutes of the Aircraft Production Board of September 7, 1917, relative to material to be supplied French Government, naming the J. G. White Corporation as the firm to handle the purchase, etc. 584, 585.

Thought agreement, as suggested by Mr. Luchere, to provide us with airplanes, engines, and equipment as fast as our squadrons were ready to go over the front a much fairer one to the French. 588.

His duty in France was in connection with the laying out and planning for salvage and repair of American-made airplanes. 591.

Offered the resolution at the meeting of May 25 under which the contract for the building of Langley Field was awarded to the J. G. White Co. 596.

Still retains his interest in the Packard Co., but has had no dealings with this company on behalf of the Government in any way. 600.

Navy would freely discuss and oftentimes criticize recommendations made by the Army. 602.

Cable signed "Pershing," but unquestionably Col. Bolling's cable, stated they would rather have more of the De Haviland and less of the Spad. 607.

Cable from Gen. Pershing received about December 14 that the single seater or Spad should not be put into production in this country. 609. Another cable dated October 5 on same matter. 610.

Question of producing the Spad in this country was resumed about the middle of February. 611.

SE-5 and Spad are both single seaters. 613.

Col. SIDNEY D. WALDON—Continued.

Contracts for 3,000 Spads to be made by the Curtiss Co. was made in September; question of advisability of production under that contract was questioned in October; that in December it was rescinded; that in February the advisability of having Spads was again suggested from the other side; was questioned here; and that later, in May, the single seater known as the SE-5 was ordered to be produced in this country. 613.

Col. SIDNEY D. WALDON (Washington, D. C., August 28, 1918; Book 20).

Cables to and from Gen. Pershing and copies of correspondence relative to production of single-seater plane in this country. 623-644.

Five hundred and twenty-nine De Havilands and 24 Bristols completed by July 1, 1918. 648.

Estimated there would be 1,300 De Havilands and 500 Bristols by July 1, 1918. 648.

Estimates made by witness naturally relied upon by military authorities on other side. 650.

Cables sent every month to Gen. Foulois by Chief Signal Officer forecasting deliveries. 650.

Judge HUGHES. We have found, both in regard to the commitments in France, in regard to the contracts made for engines in France, and the deliveries under those contracts, a most extraordinary lack of information which should have been immediately at the command of the authorities, and I want to know what system there was for an exchange of information between the authorities on both sides of the water.

WITNESS. The cable furnished the principal means of communication of information. Couriers were used to some extent. The situation in Paris when I arrived was little short of chaotic. 655.

Col. Bolling was not an organizer and he has seen better organizers than Gen. Foulois. 657.

Some contracts were placed under pressure. 659.

Questioned as to why contracts were granted certain concerns and not to concerns like the Singer Sewing Machine Co. and the Pullman Co., who had had a great deal of experience in woodworking. 661-669.

Col. Deeds influenced his judgment in the granting of a contract to the Dayton-Wright Co.; that is, the recommendation of it as a member of the Aircraft Board. 670.

Has no explanation as to why negotiations were not continued and definite proposals made to the Singer Co. for their building of planes. 672.

With reference to selecting a site for a flying field:

Judge HUGHES. Now, have you stated everything that is in your mind on that subject? Who suggested your going to Dayton?

WITNESS. I do not think Col. Deeds did, if that is in your mind.

Judge HUGHES. Decidedly in my mind. Is it not in yours? 675.

Col. SIDNEY D. WALDON—Continued.

Col. Deeds brought the site of what is now known as the Wilbur Wright flying field to his attention. 679.

Does not know what military requirement there was for the acquisition of over 2,000 acres of the Wilbur Wright field. 683.

Had known Mr. Deeds probably since 1912. 686.

Col. Deeds did not tell him he had already entered into the organization of the Dayton-Fright Co. when he went to get him to take an interest in aircraft work. 688.

Col. Deeds and he occupied the same office at one time. 690.

Judge Hughes inserts in the record the cable from Gen. Pershing to The Adjutant General, of date of June 25, 1918, together with letter of June 28, 1918, of the Acting Secretary of War relating to the same. 692-701.

Also places upon the record corrections to the testimony of Dr. Stratton. 701-706.

THOMAS A. HILL (Washington, D. C.; Book 21).

Practices law in New York City at 233 Broadway. 1.

Asked to make a statement regarding the cross-license agreement to the Manufacturers' Aircraft Association. 1.

This cross-license agreement contemplated an association of manufacturers who would pool their patent interests and exchange licenses. 6.

Government contracts to pay royalties of \$4,000,000 without any investigation, and then cuts it to \$2,000,000 without any reason at all. 8.

Also recently signed a contract on behalf of the Jenin Co. and the Curtiss Co. a contract giving the Curtiss Co. an option to purchase this very Jenin patent for \$70,000 in cash, etc., and \$1,000 is paid down on that contract. 8.

The Government to-day, then, is paying royalties to this association on its cost-plus contracts. 10.

Hundreds of inventors felt that the Government was not treating them right and they were not therefore working for the interests of the war. 12.

A man could not develop his own invention himself commercially unless he went to the association and abided by the findings of their arbitration committee. 13.

The difficulty arises from the fact that in the existing state of the art almost any infringement would be in the nature of things an improvement, and in order to be able to use the basic invention he would have to be a member of the association. 15.

Asked if during his study of the agreement anything has ever been brought to his notice showing that any of the parties to the agreement are required to get these materials from persons who are favored by the parties to the agreement. 17.

Relates case of Wittemann Bros. 18.

Asked for any information regarding a list, blacklisting, or anything done which hampers any party to that cross-license agreement in getting his materials where he pleases. 19.

THOMAS A. HILL—Continued.

Had a conversation with Mr. Potter, of the Signal Corps, in which he suggested hearing the inventors first and leaving the questions of damage and injury, etc., until after the war. 21.

The Government will yet have to account in damages for these patents. 24.

Government in same position as it would have been if it had accepted his suggestion, but in other words it is worse off because of the establishment of a standard. 26.

Explains looseness of plan of Federal Trade Commission as working in cooperation with the Patent Office with regard to patent applications which are believed to embody subject matter which might be of value to Germany or her allies.

Gives illustration in the case of the Tork Creek Shipbuilding Co. 27.

This practice held up work for several days. 30.

Col. MELVILLE W. THOMPSON (August 28, 1918; Book 21).

Been in the Army since August 25, 1914. 32.

Has practiced accountancy as a profession for some 15 years. 33.

Firm of Thompson & Black. 33.

At the close of February became president of the War Credits Board, which was formed on or about November 20, 1917. 38.

States the circumstances under which the General Vehicle Co. was obtained by the Government. 39.

This contract marked "Thompson's Exhibit No. —," August 28, 1918. 41-45.

Reads extracts from minutes of meetings of the Aircraft Board of October 19, 1917, stating that the company was willing to sell its plant, etc., to the United States for \$1,527,568. 45.

Col. Thompson caused the appraisal and examination of the books to be made. 46.

Reads further extracts from minutes of the meeting of the board of November 8, 1917, preceding the adoption of the resolution already mentioned. 46-50.

Result being that the \$1,527,000 paid by the Government would have gone to the General Vehicle Co. and that company would have that amount to discharge its notes of \$1,405,408.55. 53.

The company had assets amounting to approximately \$461,000. 54.

General Electric Co. had made some considerable advances to the General Vehicle Co. arising out of losses the latter had sustained in business. 55.

Got the idea some way that the General Vehicle Co. was an offshoot of the General Electric Co. 56.

Asked if he had ever heard of any offer of an option upon this property for any lower sum, or of any offer of the property at any lower sum. 59.

Gives knowledge of such a fact, and thinks it was considerably lower—several hundred thousand dollars lower. 60.

Thinks this other offer might have been made in the spring or winter of 1917. 62.

Col. MELVILLE W. THOMPSON—Continued.

A factor that would increase the difference still further is that in that other offer machinery was included in the offer which has since been sold. 62.

Col. Thompson is shown what purports to be a statement of the condition of the General Vehicle Co. as of September 30, 1917. There is an item of notes payable P. T. M., \$1,530,408. 63.

He does not know what this has reference to. This paper marked "Thompson's Exhibit No. 7, August 23, 1918." 63.

Asked if, in connection with his duties in the finance department, he became advised of any irregularities relating to the operations of any of the contractors with the Government. 67.

Took up the question of the agreement between the Government and the aircraft manufacturers or the Aircraft Manufacturers' Association on the subject of royalties. 67.

Satisfied himself that there had been improper influences on the board that arrived at those figures. 68.

Was later satisfied by a member of the Advisory Board on Aeronautics, whose integrity he had absolute faith in, that, though the facts were damaging, they did not have a material effect upon the price to be paid. 68.

The facts were, he stated, that a member of a legal committee on the advisory committee on recommendations was, in fact, a representative of the manufacturers—Mr. W. Benton Crips, of New York. 68.

Asked if he knew of anything which would justify criticism in connection with the operations of the Government relating to aircraft. 70.

Though he might have had somewhat different views as to the methods in which the business might have been conducted. 71.

Felt there had been a great deal of lost motion. 73.

States, for the purposes of the record, the advantages of a corporation. 73-80.

Asked if the corporation had not really been thought of as a means of evading the inhibition of the statute. 75.

In this connection, it was seven months after the country went to war before the machinery was provided for advancing money to manufacturers. 75.

In the Army a man is either a clerk or an officer. He had the most inordinate amount of trouble in getting a commissioned personnel suitable to handle his finance department. 78.

Could have handled the civilian work without encountering military requirements through a corporation. 80.

He attempted, in recommending men for commission, to classify them as to rank according to the ability of the men. 81.

Asked why it was that the equipment division of the finance department was not more successful in establishing in the various plants a suitable accounting system under the cost-plus contract. 81.

Asked what was the trouble in compelling contractors to keep the records and provide a system which would be adequate. 83.

Col. MELVILLE W. THOMPSON—Continued.

Thinks it was a great mistake that his status was changed in connection with the finance division. 83.

Instead of being able to report direct to the Chief of the Signal Corps he could not make any complaints beyond his superior officer. 84.

Col. Deeds was for a while his superior officer, then Gen. Squier and Col. Montgomery, no matter what organization had been had. 84.

Asked as to the confusion which existed at the Curtiss plant, in which you could not tell what is Curtiss's, what is the Army's, and what is the Navy's. 85.

Those who were interested in getting production were not the same outfit that had to do with holding the manufacturers down. His idea as to how many accountants he should have did not agree with the manufacturer's idea, and the manufacturer complained to the production people, and the production people looked upon him as a nuisance. 85-86.

He needed some 600 men for the accounting work, and was given 135. 86.

He was embarrassed a great deal by this, but thought he was impeded more by the refusal of the authorities above him to give him the number of commissions that he required.

No appropriations existed at the time he began to organize by which he could employ civilian accountants. 87.

Took him several months before he could get the Civil Service Commission to give him ratings under which he could employ men for several thousand dollars without examinations, and so on. 88.

Col. M. W. THOMPSON (resumed) (August 29).

Produces statement or argument with respect to the financial and economic machinery for providing the Army with airplanes in August, 1917. 89.

This paper marked "Thompson Exhibit No. 8, August 29, 1918." 89.

Does not think that this statement ever reached Gen. Squier. 90.

This paper formed the basis of John D. Ryan's request to Congress for the creation of such a corporation as is there recommended. 91.

Taking the cost-plus contract as it was, there was, of course, an extremely difficult auditing system required in the case of plants where different types of articles were in the course of production at the same time. 99.

But this was self-foreseeable. 99.

Production department feared the accounts section would tend to be too technical in their requirements and might thereby scare the manufacturers. 102.

The whole thing could only have been done by the method of giving him carte blanche to go ahead and do it and get competent men, regardless of the pay he had to give them and regardless of the military rank he had to give them when they came into the office. 104.

Col. M. W. THOMPSON—Continued.

Had the restrictions of the military requirements and the restrictions of the civil-service requirements to consider in a degree almost impossible to make clear. 105.

Says it is not a fact that the more advantageous the contract is to the Government the less chance the contractor has to get advances. 114.

States the history of the advances given to Siems-Carey, H. S. Kerbaugh Co., the amount originally suggested, and the amount by which it was reduced when the contract was arranged more favorably to the Government. 115 to 131.

Col. HENRY E. ARNOLD (Washington, D. C., August 29, 1918; Book 21).

On July 1, 1917, was made executive officer of the Air Division. 132.

In February, 1918, was placed on the control board of the Signal Corps. 132.

Air Service reorganized in May, 1918, and he was made assistant to the Chief of the Department of Military Aeronautics. 133.

Was also a member of the Joint Technical Board of the Army and Navy. 134.

Reads on the record certain extracts from the minutes of the Joint Army and Navy Board proceedings. 135 to 154, inclusive.

Reads also the report of the Joint Army and Navy Technical Aircraft Board to the Secretary of War and the Secretary of the Navy, under date of May 23, 1917, which appears to have been approved by both the Secretary of War and the Secretary of the Navy. 155 to 161.

Reads a report from the above board to the Secretary of War and the Secretary of the Navy under date of May 25, 1917. 162 to 164.

Reads in evidence a memo from Assistant Naval Constructor Hunsaker to Brig. Gen. Foulois, with inclosures of two page proofs of general specifications for airplanes. 164 to 166. (Dated Sept. 18, 1917; see p. 167.)

Asked what the Joint Army and Navy Technical Board was doing between the month of May and the month of September. 169.

The Joint Army and Navy Technical Board, having made its recommendations in May, was not called upon for further action until September. 170.

Mr. Hughes places on record the recommendations of the Army and Navy technical members of the aeronautical mission sent to Europe to the Secretary of War and to the Secretary of the Navy dated September 4, 1917. "Arnold Exhibit 9, August 29, 1918." 172.

At same time there was a report of Naval Constructor Westervelt, United States Navy, and Lieut. Child to the Secretary of the Navy on seaplane types in use in Great Britain, France, and Italy, and recommendations bearing on the United States naval aircraft manufacturing program. "Arnold Exhibit No. 10, August 29, 1918." 173.

Col. HENRY E. ARNOLD—Continued.

- Introduces report from the Joint Army and Navy Technical Aircraft Board to the Secretary of War and the Secretary of the Navy on the Curtiss Aeroplane & Motor Corporation and production of R-6 seaplanes, dated August 30, 1917. "Arnold Exhibit No. 11, August 29, 1918." 173.
- Report from the Joint Army and Navy Technical Aircraft Board to the Secretary of the Navy and Secretary of War on the subject of the Navy air program, dated September 18, 1917. "Arnold Exhibit No. 12, August 29, 1918."
- Memorandum of September 22, 1917, subject "Naval aircraft required to carry out program already authorized." 173. ("Arnold Exhibit No. 13, August 29, 1918.")
- November 1, 1917, memorandum of the naval production program from Assistant Naval Constructor Hunsaker. "Arnold Exhibit No. 14, August 29, 1918." 174.
- Protested against the purchase of the General Vehicle Co. in order to keep alive an organization for the making of rotary engines. 179-180.
- Thought it would have been much better to build fields or increase the facilities for training men rather than get engines that they could not see any use for. 180.
- The plant never was used for the manufacture of rotary engines, only for a matter of 200, then remained idle and is now manufacturing the Hispano-Suiza engine. 181.
- The Mono Avro, a plane which is particularly adapted for training, in that when a man has been trained on that machine, after he is through he is able to step into any kind of a service machine. 189.
- Memorandum from Lieut. Col. Jones, dated December 9, 1917, on the subject of 100 Mono Avros. 190. ("Arnold Exhibit 19, August 29, 1918.")
- Telegram to Gen. Foulois, recommending adopting Avro. 193.
- Telegram from Foulois saying Col. Lee, Royal Flying Corps, has Avro airplane and all training books with him, etc. 193.
- Next minute of January 11, 1918, from Joint Army and Navy Technical Aircraft Board to Secretary of the Navy quoting telegram from Gen. Pershing recommending adoption of Avro for primary training, etc. 195.
- It was resolved at this meeting that one aviation school be equipped with this type of airplane exclusively. 195.
- Never went into production; not any contracts even let for them that he knew of. 195-196.
- Asked with reference to the difficulty in getting equipment information regarding the DH-4, states that the machine was never tested with a military load between the 1st of December and the time it was turned over to the Department of Military Aeronautics in May, 1918. 209.
- When telling the Chief Signal Officer that nobody knew how many miles per hour or feet per minute or what its ceiling is he would say, "Well, it will fly, won't it?" etc. 210.
- Saw the machine in February and it looked like a Christmas tree. Anybody could take an instrument and put it on the machine. 211.

Col. ROBERT L. MONTGOMERY (August 29, 1918; Book 21).

States the reasons for the acquisition of the plant of the General Vehicle Co. 258.

Did not consider the phase of making compensation for the use of the plant during the war. 262.

Thinks that the Union Switch & Signal Co., who already had a contract for 2,500 rotary engines, were looking to the General Vehicle Co. for aid in making these engines. 265.

Asks whose initials those are that appear on the item "Notes payable, P. T. M., \$1,530,408." 266.

Knew nothing in any way which would furnish information that there were any individuals who were concerned in securing this purchase, to the end that the obligations of the General Vehicle Co. might be paid. 268.

Did not make any examination of the facilities possessed by the Dayton-Wright Aircraft Co. 276.

Took the word of Mr. Talbott, that he had a certain amount of money invested in it. 276.

Did not get a balance sheet from the firm. 278.

Did not know whether they had any capital stock paid in at the time this contract was awarded, nor whether they had any working capital or how they got it. 278.

Small concerns were subjected to a pretty rigid scrutiny because they did not have large and well-known organizations. 279.

It was his business to know, but did not know whether the contract in this case was actually made before the company had a title to a building or had paid up their capital stock, or had acquired any resources of a substantial character. 280, 281.

Knew Mr. Talbott two months; did not know Mr. Kettering at all. Relied upon the statements of Col. Deeds, Col. Waldon, and Mr. Coffin. 282.

Yes; thought the matter of capital and resources was a matter of serious importance. 287.

Does not know why a contract was refused to the Southern Aircraft Corporation, of High Point, N. C. 288.

Nor the Singer Co., the selection of plants being left to Col. Waldon, Col. Deeds, and Mr. Coffin. 289.

Asked why it would not have been just as easy to have doubled the number of De Havilands, or of any other type of plane it was desired to build, as to get the number of planes that were actually built for shipment to the other side if the facilities of the Singer Co. had been availed of. 290.

Can not answer this question. 299.

Asked as to negotiations in connection with the forming of a Government corporation for the purpose of handling various matters that would be connected with the conduct of the cost-plus contract. 294.

Remembers that he thought it impractical. 294.

Does not know whether an effort was made with Congress, but states that he personally, with Col. House and several others, urged Mr. Coffin very strongly to do this. 295.

Thinks Mr. Coffin simply could not get it through. 295.

Col. ROBERT L. MONTGOMERY—Continued.

Realized the difficulties which would be met in a military organization with rank determined according to military methods, etc. 296.

States that representations from Congress were against this method. 299.

Says there was a construction by the Secretary of War and Secretary of the Navy supplemental to the statute which held the board down to simply advisory functions. 300.

Does not think anything was ever done in the way of a recommendation to the Secretary of War and the Secretary of the Navy that the full scope of the statute should be permitted in operation. 300.

Asked if it was not a fact that the limitations of which he and others had spoken in respect to the activities of the Aircraft Board were in a large measure due to the definition of the authority of that board as made by the Secretary of War and the Secretary of the Navy and the authority reposed in them by the act of Congress. 302.

When Col. Deeds was the head of the Equipment Division, which was down to some time in January, 1918, he was his aide in connection with financial matters, dealing with contractors for that side, but not his aide in connection with engineering and production matters. 311.

Is shown exhibit called "Zacharias Exhibit 1," which shows the variations from day to day almost of the program for the De Haviland 4s. 322.

Asked who was responsible for getting up any such program as that, he replied he thought it was a guess of Col. Waldon, Col. Deeds, and Mr. Coffin. 324.

Is shown Zacharias Exhibit 3 regarding the Handley-Paiges expected. 324.

States that it was certainly not intended by whoever did it to be used as a definite program of production. It was their guess of what could be done. 325.

States he has never seen either of these programs. 329.

Placed the responsibility in a way on Maj. Sheppler and Maj. Gray. 334.

Yes; did remember a constant complaint from the Dayton Wright Co. that they did not give them full information to go ahead with production. 334.

Thinks the statement is largely correct, but not entirely; that the redesigning of these combat planes had been largely left to the manufacturers themselves. 339.

The Government had not organized and established an engineering department which was adequate to the undertaking of the complete design and had to rely upon the engineering departments of manufacturing concerns which had never become familiar enough with the undertaking to achieve prompt results. 339.

Asked if he could tell any reason why the Government did not establish in the very beginning of this a competent engineering department, and leave to it the rapid designing of the

Col. ROBERT L. MONTGOMERY—Continued.

planes so that the designs complete could be given to the manufacturers and quantity production accelerated. 340.

Says the Government did not have the men, and the manufacturers did not have the men, either. 340.

Says there were very few men who were capable of designing an airplane in this country when the war started. 340.

J. S. MCGREGOR (August 29, 1918; Book 21).

Asked to recall the statement he signed setting forth the woods that were satisfactory for the making of propellers for combat planes, and also stating the order of preference. 346.

In that statement he placed African mahogany last, and put ahead of African mahogany quarter-sawed white oak. 346.

Quarter sawn oak was first approved at a meeting of the International Aircraft Standards Board held some time during the summer of 1917. 348.

The objections to African mahogany is that it varies considerably in quality, some of it being very weak, and inspection would be so far from the source that it would be very difficult to be sure you were getting the species ordered. 349.

Hon. NEWTON D. BAKER (August 30, 1918; Book 21).

Go into résumé of conditions prior to the entry of this country into the war. 351.

Then takes up the question of what provision was made for the establishment of a program of aircraft production. 352.

After a few preliminary arrangements did not concern himself further personally with the organization of the aircraft activities. 354.

Gen. Squier reported to him through the Chief of Staff. 354.

Had many discussions with Gen. Squier regarding aircraft problems which ultimately turned, imperceptibly, he thought, into Mr. Coffin, who was a member of the advisory committee of the Council of National Defense. 354.

Mr. Coffin, then Mr. Deeds, and now Col. Deeds, and Col. Montgomery, then Mr. Montgomery, formed themselves into a group associated with the Chief Signal Office, Gen. Squier, and developed this large so-called \$640,000,000 appropriation which as he recalled it was broached to a group of newspaper editors in New York City before it was broached to him. 355.

This group was approached with his general knowledge as a means to inspire the Congress in its ideas with regard to aircraft, and the address to these men was intended as a prelude to presenting the matter to Congress. 355.

Mr. Coffin had prior to the war made a survey of the industrial concerns of the United States. Had catalogued the manufacturing facilities of the United States covering some 30,000 factories. 355.

Mr. Coffin was a manufacturing man and very expert in industrial matters. 356.

Did not know who selected Col. Montgomery, but it was doubtless done in conference with Mr. Coffin and Gen. Squier. 357.

Never knew Mr. Deeds until he saw him in the aircraft work. 357.

HON. NEWTON D. BAKER—Continued.

Council of National Defense had no executive function. 357.
Was purely an advisory body. Suggestions regarding every department poured in there. 358.

First says no, but later, yes, that the Aircraft Production Board originally was a mere committee or auxiliary of the Council of National Defense prior to the act of Congress establishing the Aircraft Board. 358.

The Council of National Defense could constitute such bodies as might aid it in its work. 358.

One of the bodies which was constituted was this organization called the Aircraft Production Board. 358-359.

Gives his understanding of the function of the Aircraft Board established by act of Congress. 359.

Aircraft Board when the act was passed, about the 1st of October, was approved by him as it was then constituted, with designations of the Army members. 360.

Had made no special inquiry outside the War Department with respect to qualifications of Mr. Deeds or Mr. Montgomery. Relied undoubtedly on Gen. Squier's recommendation, and Mr. Coffin's. 360.

Section 4 of the act and section 5 of the act are read to him, and he is asked if the construction of the act and the function of the board under these general provisions and the extent of his own authority in conjunction with the Secretary of the Navy to establish the limits of the activities of the board have been brought to his attention. 362.

Is read the opinion of Judge Ansell, etc., under date of February 14, 1918, which after reviewing the terms of the act just read (sections 4 and 5) says: "This office concurs with the counsel for the Aircraft Board in the opinion that only advisory functions with reference to these matters may be conferred upon the Aircraft Board." 362.

No; this was not the opinion Mr. Baker entertained. 363.

His idea was that subject to the awarding of contracts through regular channels they were permitted, with the consent and approval of the Secretary of War and the Secretary of the Navy, actually to supervise and direct, as the act reads, the activities of the board. 363.

Judge Ansell's opinion was given out at his request, in that he called for an interpretation of the act by the Judge Advocate General's office. 363.

Is read order issued on February 25, 1918, signed by Gen. Squier, and approved by him and also by Secretary Daniels, defining the functions of the Aircraft Board. 364-366.

His attention is called to the difference between the act of Congress and the provision of this order. Is asked who proposed the provision of the order referred to. 367.

Did not recall any discussion of the apparent limitation. 368.

Is asked concerning another provision of the order stating that all programs shall be made by the board from information which shall be furnished by the proper Army and Navy military and naval branches on the one hand, etc. Is asked the origin of the limitations as to the source of procurement. 368.

Hon. NEWTON D. BAKER—Continued.

Can not answer this. 368.

His understanding is that this order met with the approval of the Aircraft Board. 369.

Does not know of any complaint made of the limitation of powers of the Aircraft Board during the period of the board's activities prior to May. 369.

His attention had never before been called to the provision that the members of the Aircraft Board should have no direct communication with the manufacturing plants, which, with his authority and that of the Secretary of the Navy, they were supposed to supervise. 370.

The only explanation he can give is that they did not want to confuse the manufacturers as to who their bosses were. 370.

Is asked with respect to the provisions that were made here for the organization of a competent engineering department to act in the matter of the settlement of designs for the planes which this country was to build. 372.

Can not answer this. 372.

The Secretary of the Navy writes to him on April 27, 1917, proposing a joint technical board on aircraft, etc., to standardize designs and general specifications for aircraft * * * the board to be composed of technical and expert men, * * * all of which has Mr. Baker's hearty approval. 373.

The board being composed of technical and expert men, is asked if their recommendations were followed. 373.

Mr. Baker thinks their recommendations were supplemented by recommendations from abroad. 373, 374.

States why he thinks the lack of concentration of responsibility and the existence of various bodies with ill-defined functions was inevitable. 376.

Is further reminded of the failure to prepare designs and a division of responsibility with regard to the preparation and settlement of designs for the manufacturers to follow, and asked to keep it apart from voluntary activities. 378, 379.

Had never been brought to his attention when the contracts were let for the De Haviland 4s and for the production of the Bristol and it became apparent that it would be necessary to redesign these machines in order that they might be adapted to the Liberty motor, that the Government was largely depending upon the manufacturers themselves to aid in the redesigning, and that the Government had not provided competent and adequate engineering department to settle upon a design to be given to the manufacturers to produce. 380.

He regarded Gen. Squier as the authoritative person to inform him of any difficulties that existed and to see that such organizations were evolved as would accomplish the purpose. 381.

States he did, in the course of the winter, undertake to inquire what the needs for delaying production were. 381, 382.

Summarizes the results. 383.

He asked Mr. Eugene Meyer, for one, to visit the airplane factories, * * * consult with the members and find out if he could the difficulties they were having, etc. 382.

Hon. NEWTON D. BAKER—Continued.

He can not recall Mr. Meyer having told him that he did not regard Mr. Deeds or Mr. Montgomery or Gen. Squier as men who were adequate for the performance of the work. 383. (Mr. Meyer has testified to this in the course of the inquiry.)

Is read extract from a letter signed by the chairman of the national advisory committee on aeronautics and the chairman of the executive committee of that committee, addressed to the President, January 24, 1918, which is a very noteworthy statement. * * * Quantity production has been made in several large plants to such an extent that quantity production has begun and will be continued with satisfactory results. 383, 384.

Is also read extract concerning motors. * * * motors are now in production in six of the best equipped plants in the country. 385.

This was never brought to his attention. 386.

Gen. Squier was a member of the committee, and was present at the meeting at which this letter was adopted to be sent to the President. Col. Deeds also appeared before the board and gave the committee information on the matter. 386.

Considering the conditions with respect to the Bristol, thinks this was a serious matter. 388.

Further about Mr. Meyer's testimony. 388-391.

He never had in mind that he should consider the possibility of establishing Mr. Deeds, or Col. Deeds, as an independent or superior agent in this enterprise. 391.

Did not know that Col. Deeds, as the head of the equipment division, down to some time in January, 1918, was the actual executive in that matter to whom Gen. Squier delegated the authority relating to the production of aircraft. 391.

Relates what information he had of Col. Deeds relative to the very large number of activities that related to aircraft centered in Dayton, Ohio. 393-395.

Did not know that Col. Deeds had made transfers of his interests to his associates and had taken their personal notes without security, which notes remained unpaid. 395.

Will ask Inspector General to get any reports he has affecting this Dayton matter, etc. 399.

With regard to this general survey made of industrial facilities before the war, is asked with regard to the offer of the Singer factory with extensive facilities. 400.

Did not undertake to inquire why certain large concerns were not used, or why certain small concerns were used, or why the Dayton-Wright Co. was used ahead of others. 401.

Only kept in touch with matters relating to production to this extent, that a weekly report was made to him of the output of every war supply. 402.

When it appeared that production was seriously delayed, took the measure spoken of; that is, he consulted Mr. Eugene Meyer, a production expert, and asked him to tell him what the trouble was. 402.

Hon. NEWTON D. BAKER—Continued.

Then he went abroad; when he came back Snowden Marshall report had been made in his absence, and the so-called Borglum report had been completely made and supplemental papers to it had been filed with the President. All of the things alleged by Mr. Borglum had been inquired into by Mr. Meyer for Mr. Baker. 403.

Came back from Europe at the time President Wilson had determined to make a revision of the development of the department. 403.

Sailed for Europe on 27th day of February; returned between the middle and last of April. 403.

Is asked with regard to the various programs of the production of planes, with statements of the dates on which these programs were formulated, and the dates on which the deliveries on the planes were expected, as received from the planning department of the equipment division. 403.

Never saw them. 404.

Is shown the remarkable sheet on De Haviland 4's. 404.

Admits that the statements are striking, and says it was the most contagious disease that every struck any place. 404.

Says that the men engaged in production took the manufacturers' view. 405.

Would not say whether this statement just shown to him was the manufacturers' view or not. 405.

Is questioned about two statements by him, for release in the papers Friday, October 4, 1917, and one for release in the papers February 21, 1918. 405-407.

Object was to stop loose and misleading statements made from many sources. 406.

Second statement contained: "The first American-built battle planes are to-day en route to the front in France * * * marks the final overcoming of many difficulties." etc. 407.

Afterwards learned that it was an absolutely misleading statement. 407.

Mr. Baker relied entirely upon the facts as stated by Gen. Squier and Col. Deeds. 410.

Did not learn of the inaccuracies of this statement until he returned from Europe. 411.

Yes; had been advised that Col. Bolling had placed orders with the French Government for a considerable number of planes that could be used by this country before they could get into production on this side. 414.

States he knew that the French Government would be unable or were unwilling to fill these orders. 415.

Gives his reasons for the inability of the French Government to fill these orders as those of one who has been over there and knew the actual conditions. 415-418.

Asked for information as to failure to supply raw materials wanted by France. 418-423.

With reference to the De Haviland 4, representatives from the Signal Corps said that they could not get from the other side correct information as to what materials were needed for equipment or what the equipment was to be. 424.

Hon. NEWTON D. BAKER—Continued.

Mr. Baker explains the difficulties to be encountered. 426.

Mr. Baker is informed that those are not the difficulties presented in the report. Could not get definite information from the other side as to just what it was that was desired. 428.

Mr. Baker states this has never been called to his attention. 428.

Thinks if it had been brought to his attention he could have gotten the kind of information they wanted, but still he imagines that they, on the other side, not having seen the De Haviland 4 as it was being built on this side, and wanting as many guns on the machine as possible, might well have hesitated. 429.

Admits that if one hesitates as to what one wants one never would get the planes. 429.

Is asked regarding the large number of students sent over to France, and after they got there there being no facilities for training. 432-435.

Explains with reference to the cancellation of a contract with the Engle Aircraft Co., of Cleveland, Ohio, with which his brother was associated. 435-439.

EDWARD NORTON CHILSON (Washington, D. C., August 30; Book 21).

Manager of purchases for the J. G. White Engineering Corporation. 441.

Had a small contract with the Signal Corps for supply of materials in June, 1917. 441. (No. 1381.)

Next contract, No. 1694, covered materials to be sent to France 442.

Produces other contract that covers materials. 442.

Exhibit 4 or the main purchase contract, No. 1694, dated September 13, 1917, was entered into for the purpose of providing raw materials required for the manufacture of planes and engines in France under a contract which had been made by the Government there. 445.

Explains specifications for materials under that contract which it was impossible to comply with. 445-448.

Not finally met until after the first of the year. 448.

Explains one of the specifications hard to meet encountered by the Summerill Tool Co. 449.

The 1 per cent of the materials not yet supplied did not embrace anything required for the Hispano-Suizas. 452.

Only relates to the 1,500 Renault. 453.

They supplied everything required for the Breguet excepting the wood, and the Signal Corps contracts had to supply that. 453.

For the spads they only failed to have the tubing required, but they supplied enough tubing to have made 1,500 spads. 454.

They were not let have any further information after they delivered the goods to the point of embarkation. 455.

Reports show that these materials have been shipped far in excess of the amounts represented by the planes delivered. 455-456.

EDWARD NORTON CHILSON—Continued.

After giving figures relating to the percentages supplied states that there were sufficient raw materials in the 58 per cent furnished to the French manufacturers to have enabled the French Government to proceed at once had they received it promptly. 457.

He reports that one of the receiving men at the embarkation point of Brunswick, Ga., reported over a million pounds of material that had been there over 300 days and still there. 457. (500 tons.)

Some of the raw materials could have been devoted to other purposes, but most of it was material in connection with engines and planes. 460.

Their business upon completion of orders all transacted with the officer at the port of embarkation and had to notify the Signal Corps in Washington. 461.

Notified Col. Sidney D. Waldon, and after he went to France notified Maj. Leonard L. Horner. 462.

The Government has paid, to August 27, \$8,938,825.43 for these materials. 463.

Freight and miscellaneous charges amount to \$170,624.52. 463.

Did not put the Government to any added expense by using commercial bills of lading. 479.

Submitted a memorandum to the Signal Corps outlining the methods they proposed following in connection with all shipments for which they were responsible. 479.

Pages 480 to 507 contain copies of orders, total tonnage shipped, kinds of material used, etc.

EARL THOMAS OAKES (Washington, D. C., August 30, 1918; Book 21).
Chemist by occupation. 508.

Assistant to Dr. Beans in the general laboratory in the Bureau of Aircraft Production. 508.

Held this position since October 1, 1917. 508.

Was at the Curtiss plant, at Buffalo, from May 5 until September 30, 1917. 510.

Asked to state conditions, as he found them at the Curtiss plant during this stay, as regards tests and laboratory work. 510.

Very little attention was paid to what the Government wanted or what they did not want in regard to that work. 510.

Curtiss plant did not maintain a laboratory at all until the British refused to accept any more planes. 511.

Poorly operated and supervised when they did put it in; results of tests often disregarded and the material accepted anyhow. 511.

Supposed to pass on all raw materials. 512.

Poor chemical laboratory conditions not remedied. 512.

He was supposed to pass on raw materials on the basis of the laboratory tests, but often laboratory tests were not reliable enough to form a basis for passing on materials; and often, if rejected by him and the other Army of inspection, used anyway. 514.

Reports this condition June 8 or 10. The report. 515-518.

Nothing followed this report. Fixes another report and states that none of these things have been remedied, and senior inspector tells him his report can not go through. 518.

EARL THOMAS OAKES—Continued.

- Tests at the Bureau of Standards showed the Curtiss's tests to be unreliable. 522.
- This was reported to the Signal Corps. 523.
- Nothing came from any of it at all. 524.
- These conditions existed at the Churchill Street plant. 527.
- Improper way of using the dope. Recommended by Mr. Mueller in order to keep up production. 544.
- Produces report on the whole situation to Mr. Costello. 555-562.
- Rejected material put in and accepted. 562.
- Shipped material to Detroit before it had been tested. 562.
- On another occasion they made tie-rods, specified at 105,000 pounds per square inch of tensile strength, which fell below 95,000. Found out that instead of making them out of steel which specified 0.25 and 0.35 per cent of carbon, they were making them out of steel as low as 0.16 and 0.18 per cent carbon. 563.
- Used silver solder, instead of tin which was just as good, which cost the Government \$7,000 or \$8,000 a year, and the tin would have cost \$400. 579.
- Col. H. H. ARNOLD (Washington, D. C., August 31, 1918; Book 21). Explains the delay in testing the De Haviland machine and the reason for it. 588.
- Col. B. Q. Jones asked permission to fly this first machine, but this was refused, on the ground that it was the only machine in existence, and if it got all broken up it would cause serious delay in the production. 589.
- No performance tests were made. 589.
- Told by Chief Signal Officer that tests were not necessary, that machine could fly, and that was all that was necessary. 590.
- Shipped some planes to Gerstner Field, La., for tests. 591.
- Radiator problems to be solved by Maj. Gray. 591.
- Machine turned over to Air Division for test about April 7 for first time. 593.
- According to the charge approximately 70 machines were made without testing. 598.
- The De Haviland 4 finally tested, at first proved unsatisfactory. Two men killed in this test. 600.
- The machine overloaded in pounds per square foot. 601.
- The tests continued, and finally machine is passed as an acceptable machine for use at the front, not as good as ought to be, but better than nothing. 602.
- This is the condition in which these machines had been shipped prior to this time. 602.
- Modifications suggested by them same as those suggested by Gen. Pershing in his telegram. 602.
- The Dayton-Wright plant took machines right off the floor and boxed them up to ship overseas without flying them at all. 609.
- After May they were tested, but not before. They hurried them off so that they could say they had shipped some machines. 610.
- Explains the difference in flying a machine with a military load, to meet military requirements, and flying one that did not have a military load. 613-614, 615,

- Capt. E. J. CLARK (Washington, D. C., August 31, 1918; Book 21).
Submits the correspondence relating to negotiations with the Patterson Aeroplane Co., of Detroit. 667.
Is asked concerning letter dated July 27, 1918, addressed to Mr. Fletcher. 667.
(From the Patterson Aeroplane Co., of Detroit.)
Pages 667 to 672 contain the letter.
Produces report submitted by him on this subject and letter received in reply. 675.
Other papers, pages 676 to 687.
- Col. R. L. MONTGOMERY (Washington, D. C., September 30, 1918; book 22).
Additional statement correcting previous testimony. 1-10.
- Lieut. Col. JESSE GURNEY VINCENT (Washington, D. C., September 30, 1918; Book 22).
Was a mechanical engineer with Packard Motor Car Co., of Detroit, before entering the Army. 11.
Held position of vice president in charge of engineering with that company for about two years; prior to that was chief engineer of the company. 11.
Gives mechanical training. 11.
First came to Washington in connection with the development of a standardized aircraft engine, since known as the Liberty motor, on May 27, 1917. 12.
Received a commission in the Army on September 3, 1917. 13.
Was loaned to the Government by the Packard Motor Car Co. up until August 15, 1917. 13.
Has received no compensation from Packard Co. since August 15 with exception of some dividends on some stock which he owns in company. 13.
Owns about \$60,000 worth of common stock, par value. 14.
Salary with Packard Co. for year August, 1916, to August, 1917, was \$25,000. 19.
Makes statement of his experience with airplane engines and their development. 24-33.
Report made by Col. Hall and witness as to the advisability and what should be done to standardize an American airplane engine was marked "Vincent Exhibit 1, September 30, 1918." Inserted in record. 35-43.
After report was received by Aircraft Board, Col. Hall and witness were requested by board to go back to work and submit complete drawings of the standardized engine which was proposed. 43.
On June 4 was advised by Mr. Deeds that \$250,000 had been set aside and that he was to go back to Detroit and get the work started on sample of 8-cylinder engine. 45.
Went back to Detroit with an order for five 8-cylinder engines to be built by the Packard Motor Co. 46.
First engine was built by no less than 12 different concerns. 46.
First engine was completed in 21 days from the time drawings were started. 49.
Reports from abroad in July, 1917, indicated that the 8-cylinder engine should not be made, but that a 12-cylinder engine was desirable. 55.

Lieut. Col. JESSE GURNEY VINCENT—Continued.

Report made by Inspector Lynn Reynolds to Government on test of 12-cylinder engines was marked "Vincent Exhibit No. 2, September 30, 1918," and is inserted in the record. 64-88.

Results of test were so conclusive that it was immediately decided to put the engine into production in large quantities. 89. Mr. Olly, of Rolls Royce interests, suggested a change in the oil pump, to make the motor what is called a dry crank case job. 103.

Mr. Olly also suggested that the propeller hub be made detachable instead of shrunk on. Both of these changes were approved. 103.

An airplane engine developing 400 horsepower on the ground develops 200 horsepower at 20,000 feet. 105.

Crank shaft was too light to be produced commercially and was made heavier. 107.

In his opinion, production was not delayed more than two weeks by the changes referred to. 109.

Knows of no other changes of an important character that were made in the Liberty motor. 109.

Was not consulted at all about schedules placed in contracts of companies. 110.

With reference to speed in production, thinks Ford Co. contracted to do something that was impossible. 112.

Col. Clark nominally had charge of the Airplane Experimental Department until he took charge of it about February 6, 1918. 133.

This experimental department was to embrace both planes and engines. 134.

Protested against the Airplane Experimental Department because he did not think it gave them any authority or responsibility. 135.

Argued for engineering department with the idea that it would take entire charge of engineering and definitely straighten out what he thought was an unsettled condition; one of which was the putting of planes into production in this country without having complete drawings or a complete understanding as to just what equipment such planes were to carry. 136.

First established his office in Dayton early in October, 1917. 138.

Up to February 6 he was known as executive officer of the Airplane Experimental Department. 139.

Did not have anything to do with the designing of planes as distinguished from engines. 141.

Supervised the construction of McCook Field. 144.

Was instrumental in selecting the site of McCook Field. 145.

Moraine Field is what is now known as South Field and is a part of Col. Deeds's old farm. 148.

North Field was at the time they went out there a training field used by the Dayton-Wright Co. Understood that at least a part of that field was owned jointly by Col. Deeds and Mr. Kettering.

Went to Dayton with the idea of taking what was known as Moraine Flying Field. 149.

Lieut. Col. JESSE GURNEY VINCENT—Continued.

Col. Clark telegraphed from Dayton suggesting North Field. 153.

Mr. Talbott and Mr. Kettering suggested McCook Field. 154.

No one on the part of the airplane experimental department was giving attention to the settlement of the design of the De Haviland 4. 154.

Col. Clark did not agree it was up to us and upon investigation found the Dayton-Wright Co. did not consider we had anything to do with it. 154. That the airplane experimental department had anything to do with the settling of the design of the De Haviland 4 plane. 155.

Had many arguments with Col. Clark about the matter. 156.

His position that the Government ought to determine what was to be made and then give it to the manufacturer to make. 156.

Took up matter with Col. Deeds. 156.

Col. Clark had several well qualified theoretical aerodynamic engineers with him. 159.

With the exception of Col. Clark, who did the preliminary work on the design of the Bristol Fighter to adapt it to the Liberty 12, none of these men who had had experience were having anything to do with settling the De Haviland 4 or the Bristols, or any problems related to the actual program. 160.

Production engineering department did not have anybody that he knew of who had any experience in airplane designing. 161.

As soon as he was given control of McCook Field he began to direct efforts toward getting some machines ready for production rather than doing purely experimental or research work. Obtained permission to take the De Haviland 9 away from the Dayton-Wright Co. at South Field and put it through McCook Field. 163.

This particular machine was a sample that had been built by Dayton-Wright from such meager information as they could obtain from abroad. 164.

Was not until the latter part of March or April of this year that they succeeded in obtaining a De Haviland 9 from Europe.

Witnesses who have testified to the receipt of the De Haviland 9 in October are mistaken. 164.

The De Haviland 9 was completed up to the point of equipment of bombs before January 1. 168.

The De Haviland 9 is being put out of production abroad. 171.

De Haviland 9-A, equipped with Liberty 12, took its place. 171.

On February 6, when at McCook Field, made efforts to get De Haviland 9, Lapere two-seater fighter, VE 7 advanced training machine ready for production, and a little later the U. S. B. 1 and U. S. B. 2. 173.

Mr. Nash put him in full charge of engineering department on July 23, 1918. 176. Department was called the Airplane Engineering Division of the Bureau of Aircraft Production. 177.

The testing and final say on new machines is still with the technical section of the Department of Military Aeronautics. 178.

Can not say why De Haviland 4 was permitted to go so far into production without test. 184.

Lieut. Col. **JESSE GURNEY VINCENT**—Continued.

Mr. J. V. Martin is considered a pest, not only by the engineers of this country but also those of Europe. 192.

Witness is shown Blakeley Exhibits 1, 2, 3, 4 relative to vouchers covering payments to the Packard Co. on development work of Liberty motor and questioned as to the amounts, etc. 193-240.

JAMES V. MARTIN (Washington, D. C., September 30, 1918; Book 22).

Profession was a master mariner. Now a member of naval auxiliary on leave from overseas work to do work for the airplane engineering department of the Army and for the Bureau of Construction and Repair of the Navy. 240.

Became a master mariner in November, 1912. 240.

Has not had any experience in mechanics outside of navigation. 241.

First became interested in aeronautics in 1908 at Harvard University through Mr. Herring, of the Herring-Curtiss Co. 242.

Constructed the second airplane in the history of the War Department. 242.

Was in Europe in latter part of summer of 1909 and met the pioneers in airplane work, such as Bleriot, Grahame-White, Mr. Handley-Paige, A. V. Roe, of England, and others. 243.

Organized the Harvard Aeronautical Society and built and flew the Harvard 1, an airplane for this society at Harvard University. 243.

In 1910 held first big international meet in the United States, the Harvard-Boston meet, and brought Grahame-White to the United States, etc. 243.

Went to England and as an employee of Mr. Grahame-White became chief instructor of the London Aerodrome. 244.

Gives list of men prominent in British air ministry whom he trained. 244.

Returned to United States in May, 1911, and originated and demonstrated the type of machine which is used exclusively by the United States Army to-day, the tractor biplane. 245.

De Haviland 4 is based on that machine. 246.

Left nothing undone to prepare himself in experience as the leading tractor biplane designer of America. 255.

After war broke out made trips to Europe to acquaint himself with planes that were used in fighting. 255.

From the inception of the European war he had endeavored to secure the attention of the Government aviation authorities to certain airplane efficiency features, etc. 257.

British Government sent over with him the A B C motor. 258.

Built plane called Kitten 3 in this country, which is the third modification of the British Kittens. 263.

The A B C motor is used in the B. A. T. and Sopwith machines. 267.

Showed design of two-place reconnaissance fighter to Col. Clark. 268.

Committee advised Col. Vincent to let him build two of them. 269.

Model was built and tested in the Washington Navy Yard wind tunnel more than two months ago. 271.

Col. Vincent has been acquainted with result of test. 272.

JAMES V. MARTIN—Continued.

Offered services to Government to have it built, and offer is not receiving a bit of consideration. 273.

Order for 10 planes was to keep him going while he was doing the bombing work.

Always held his own services and those of his organization at the service of the Government without profit during the war. 282.

Motors have been decided on the night bomber which he built which are not fit to go into the plane. 283.

Brig. Gen. **CHARLES MCKINLEY SALTZMAN** (Washington, D. C., October 1, 1918; Book 22).

Brigadier general, Signal Corps. 293.

Entered West Point on June 15, 1892, and became a commissioned officer on June 15, 1896. 293.

At time of our entry into war was on duty in the office of the Chief Signal Officer of the Army. 293.

When we entered war, aviation section was a small branch of the Signal Corps, consisting of less than 100 officers and probably about 1,000 men. 294.

Col. J. B. Bennett was officer in charge of the air division at that time. 294.

Did not have any combat planes at that time. 294.

Had approximately 100 training planes. 294.

Gives history of the development of the aviation section. 295.

Had a number of conferences with Gen. Squier with a view toward having tighter executive control over all the divisions of his office. 299.

The policy Gen. Squier favored was to place an officer in charge of a division of his office, then look to him to go full speed ahead and accomplish results without coming to him. 299.

Col. Deeds was put in charge of the equipment division and virtually left to carry out his own plans and purposes. 300.

Aircraft board was purely advisory. 300.

Other divisions of the office did not get prompt action; they did not get prompt results from the equipment division. 300-A.

In November was worried about equipment division and urged appointment of a strong executive who would be rather a central figure down there. Col. Deeds and Col. Montgomery appointed Col. Horner to meet this condition. 300-A.

He strongly urged the appointment of Col. Edgar as executive officer. 302.

Gen. Squier was absolutely satisfied with the work of Col. Deeds as the head of that division. 302.

Knows of incidents where men who had been in various manufacturing concerns were permitted to continue their activities in transactions of the Government relating to those concerns after they had been brought into relation with the Signal Corps. 305.

Enumerates and explains cases that he knows of. 305-315.

Knows about the acquisition of the General Vehicle Co. 315.

Asked Aircraft Board what object was in taking over plant to make rotary motors when the plan did not call for rotary

- Brig. Gen. CHARLES MCKINLEY SALTZMAN—Continued.
motors. Was told that this industry must be kept up; that it was not known definitely but what we would want rotary motors next year. 316.
- Reference to the \$250,000 set aside to carry on experimental work on Liberty motor at Packard Co., he is unable to state the occasion for the appointment of a special disbursing officer for that fund. 318.
- So far as he knows no special disbursing officer was appointed. The entire appropriation was disbursed under four vouchers—Blakely Exhibits Nos. 1, 2, 3, 4. 321.
- Any voucher certified to by Gen. Squire himself or anyone, civilian or officer, to whom he gave that authority to certify was sufficient for any payment within the appropriation. 323.
- Lieut. Col. JESSE GURNEY VINCENT (Washington, D. C., October 1, 1918; Book 22).
Makes supplementary statement with regard to vouchers for payment to Packard Motor Co. for experimental work on Liberty motors. 325.
- Talked with Col. Deeds about it a few minutes last evening. 326.
- Stayed with Col. Deeds night before last and last evening at his residence. 326.
- Col. Deeds sent Maj. Souther out to see him. Maj. Souther made two trips to the Bureau of Standards and brought with him the second time an officer, a captain, whom he introduced to him as one of his assistants who had charge of the placing of orders and arranging payments. 325.
- Maj. Souther was one of the men who originally recommended going ahead with the development of the standardized engine, and he followed it very closely up to the time of his death. 330.
- Asked if the captain to whom he referred was Capt. Elliott, but is unable to remember the name. 330.
- This captain was told about the work in connection with the vouchers and shown the equipment that had been delivered. 331.
- Witness was asked "What was the purpose of bringing in a man who was a stranger to the transaction and showing him a lot of drawings?" 331.
- Only knows what he was told by Maj. Souther as the job was put up to him to put the thing through the proper channels. 332.
- Again questioned as to method used in arriving at amounts shown on vouchers paid Packard Co. in connection with experimental work on Liberty motors. 334-353.
- Borglum Exhibit 23-A, a memorandum for Col. Waldon sent by Maj. Gray as chief of specification section with respect to accessories which should be used on Liberty motor; witness had interview or conversation with Maj. Gray with respect to the accessories which were to be used on the first 20,000 Liberty motors. 353.
- Outlines talks he has had with Col. Deeds about the use of the Delco ignition on the Liberty motor. 355.

Lieut. Col. JESSE GURNEY VINCENT—Continued.

Delco ignition costs approximately \$150 a set. 357.

When in Washington, Mr. Kettering stayed with him, or stayed with Col. Hall and him, who were occupying a suite of rooms which had been reserved by Mr. Deeds at the New Willard Hotel. 358.

Col. CLINTON GOODLOE EDGAR (Washington, D. C., October 1, 1918; Book 22).

Witness asked to state a little more specifically how Wilbur Wright Field came to be selected. 359.

Gen. Foulois had the sole responsibility of picking out fields. 362.

Col. Deeds and Mr. Orville Wright took Gen. Foulois and witness out to this property in an automobile. 365.

Can not state how it happened that 2,500 acres was selected. 368.

Rental was based on acreage. 369.

In light of his present knowledge thinks 1,300 or 1,400 acres would have been enough. 369.

Understood the property was in the ownership of the Miami Conservancy Commission and that arrangement could be made with the Government through one ownership. 370.

Marsh land was transferred back to the State in exchange for land at the side. 373.

Thinks there is land down there rented by the Government that an airplane could not land on. 378.

Had nothing to do with the selection of McCook Field. 379.

McCook Field is one of the fields on which no option to purchase exists. 381.

Col. Deeds told him there would be no option. 381.

Asked as to why he took a lease on a field on which so much money was to be expended when he did not have an option to purchase, witness stated Col. Deeds directed him to do it. 382.

HORACE B. WILD (Washington, D. C., October 1, 1918; Book 22).

Aeronautical engineer. 385.

Has been in that business about 15 years. 385.

Has the third pilot license in the United States, issued by the Aero Club of America in September, 1910. 386.

Made first flight over Chicago on January 3, 1906. 386.

Chief engineer of Illinois Aircraft Corporation. 386.

Spent \$25,000 in training organization and building one plane for Government. 388.

Capital stock of company \$100,000. 388.

Came to his notice that some of those chaps from Signal Corps were carrying on a system of graft. 390.

Man's name was Donohue. He wears captain's chevrons now. 390.

Have made it very unpleasant for him because he tried to break up work of grafting and padded pay rolls. 393.

If Mr. Edison S. Williman, 29 South LaSalle Street, Chicago, of banking firm of Bowser & Williman, made statement before committee, "he would make your hair stand on end." 394.

HORACE B. WILD—Continued.

“They organized the Aircraft Manufacturers’ Association, and the I. W. W., in my estimation, are angels alongside of those fellows.” 400.

Orville Wright told him a short time ago he had not even been consulted by the Dayton-Wright outfit. 400.

LESTER P. BARLOW (Washington, D. C., October 1, 1918; Book 22).

Went over to France to conduct tests of the Barlow heavy drop bombs in competition with bombs to be furnished by the allied government. 418.

Did not see any De Haviland 4’s over there. Understands there are some over there in storage at Bordeaux. 420.

Bombing test was given up as far as dropping any bombs over the German lines was concerned for the simple reason there were no available planes for the work. 424.

There are about 500,000 shells of the mark 1, 2, and 3 finished or being finished in this country, which will not be used, according to latest information from the United States Ordnance Department. 427.

Brig. Gen. SAMUEL TILDEN ANSELL (Washington, D. C., October 2, 1918; Book 22).

Assigned to duty in office of the Judge Advocate General. 430.

Has no personal recollection of the case of Mr. E. A. Deeds, referred to his office for consideration, although an investigation might have been made in the office by an assistant. 431.

Met Col. Deeds a week ago when he was invited to his home to meet a mutual friend visiting there. 431.

Attention of witness directed to a letter written by Col. Deeds to the Aircraft Production Board, dated August 28, 1917, stating what he claimed to have been the disposition of certain interests that he had formerly held. 433.

Testimony of Secretary of War before committee was read in which he stated Col. Deeds, then Mr. Deeds, came to his office with Judge McCann, his legal adviser, relative to straightening out his business relations before accepting a commission. Secretary of War referred them to the Judge Advocate General and stated he had sent word to Judge Ansell. Some days later they (Mr. Deeds and his counsel) came back and said they had fixed up everything to Judge Ansell’s satisfaction. 433, 434.

Does not refresh memory of witness. 434.

“If there was anything written on the subject, and coming that pointedly to the office—I should have supposed something ordinarily would have been written—it is on the files.” 435.

Witness does not recall ever having heard of or having had to deal with any question of stock interest in the United Motors Corporation, Dayton Engineering Laboratories Co., Domestic Building Co., Dayton Metal Product Co., or Dayton-Wright Airplane Co. 436.

Witness: “When I got your message this morning, when the chief clerk’s search revealed nothing, I spoke to Gen. Crowder, and I found that some time in the spring of this year he had two officers of the department go over the Inspector General’s

Brig. Gen. SAMUEL TILDEN ANSELL—Continued.

report, and all those officers coupled up that investigation with what palpably this investigating committee wanted to know, and he took charge of that. I was away at that time." 438.

Col. CLINTON GOODLOE EDGAR (Washington, D. C., October 2, 1918; Book 22).

Found in his files an order of April 28, 1917, ordering him to active duty. Was not in the position of a civilian employee but was a reserve officer on active duty at the time of the transaction of the Wilbur Wright Field. 440.

Copy of report of Maj. Foulois on the inspection of land for Aviation Service, with recommendations, dated May 11, marked "Edgar Exhibit 19, October 2, 1918." 441.

Acted with the board but had no official status. 442.

A little disturbed about his memory. 442.

Authority or request for authority, signed by Gen. Squier, for the renting of site at Dayton—2,500 acres—and the authority for building the camp with indorsements through channels marked "Edgar Exhibit 20, October 2, 1918." 442.

Received instructions to acquire the land in question, to take a lease for the Government of approximately 2,500 acres, known as the Wilbur Wright Field, at a rental of \$17,500 per year with the privilege of renewal for three years and the option of purchase at \$350,000, the cost of crop destruction being \$75,000. 443.

Judge Hughes: "And the statement in this letter that for the construction of cantonment buildings, etc., Dayton, Ohio, site for squadron, \$1,300,000; for roadways, draining and water system, and the construction of cantonment buildings, was an underestimate?" 444.

Great question in mind of witness in regard to those estimates. They proved to be very much underestimated. Does not doubt but what those camps could have been built at the price fixed. 444.

505.27 of these acres leased for Wilbur Wright Field later proved to be marshy land lying between Erie Railroad and the river. This was withdrawn and an equal value, amounting to 250.47 acres, added. Of this amount the commanding officer approved 74.94 acres and disapproved 175.53 acres, parts, if not all, of which were reported marshy. 447.

These negotiations were handled by Maj. James S. Holden. 448.

In the rush of business turned the real estate matters over to Maj. Holden about August, 1917. 452.

Judge Hughes: "And the rental is not \$17,500, but \$20,000 a year. How do you explain that—that is, after the first year?" 456.

Witness has no memory on that subject at all. Thinks Maj. Holden can clear that up. 456.

Has no further information about Wilbur Wright Field. 456.

Letter from Chief Signal Officer to The Adjutant General relative to increase in cost of site for aviation supply depot near Dayton, Ohio. 460.

Col. CLINTON GOODLOE EDGAR—Continued.

Judges Hughes takes up lease of McCook Field made by Dayton Metal Products Co. to the Government, in which there is no option to purchase. 464.

Authority to lease for rental read into record. 467, 468.

Col. Deeds had everything to do with the selection of the field, as far as he knows. There was no inspection of the field and no investigation of any sort done by his (witness) section. 469.

Col. E. A. DEEDS (Washington, D. C., October 2, 1918; Book 22).

Born on a farm near Granville, Ohio, March 12, 1874. 471.

Family name has been Deeds for at least four generations; he thinks five. 472.

Has no knowledge of its ever having been Dietz. 472.

Gives briefly his career, including his business relations and experience, down to time we entered the war. 472.

Letter from Secretary of War, dated March 6, asking him to act on Munitions Standard Board, marked "Deeds Exhibit 1, October 2, 1918." 474.

Letter of acceptance, dated March 10, marked "Deeds Exhibit 2, October 2, 1918." 474.

Telegram of April 4, sent by Mr. Coffin, asking him to come to Washington at once, bringing Kettering and Talbott, marked "Deeds Exhibit 6, October 2, 1918." 475.

Telegram sent by Mr. Deeds to Mr. Coffin at Darien, Ga., tentatively declining appointment on an aviation committee, marked "Deeds Exhibit 8, October 2, 1918." 480.

Never knew Mr. Coffin intimately until he came to Washington. Had had a general acquaintance with him for a number of years—perhaps five. 481.

Witness was to have been vice president of the Dayton-Wright Airplane Co. 482.

Mr. Kettering and he owned 120 acres in the field later known as the McCook Field. 487.

Dayton Metal Products Co. owned remainder of field, approximately 80 acres. 487.

Mr. Coffin's telegram of May 10, referring to membership on the Aircraft Production Board, marked "Deeds Exhibit 9, October 2, 1918." 491.

Mr. Deeds's reply, accepting membership and stating he would be on hand Tuesday or Wednesday, marked "Deeds Exhibit 10, October 2, 1918." 492.

Was formally appointed on the Aircraft Production Board May 17. 492.

Commission in Army was dated August 15. 494.

On August 2 was made active chief of the Equipment Division, Aviation Section, Signal Corps. 495.

Did not act in any way in connection with the Signal Corps as a representative of the Chief Signal Officer. 495.

Has had no authority from Chief Signal Officer to do anything in connection with the obtaining or the settlement of terms of contracts. 496.

Col. E. A. DEEDS—Continued.

Equipment Division reorganized on August 29; Finance and Supply Division was consolidated with the Equipment Division. Witness continued in charge of division until January 14. 499.

On January 14 was assigned to duty in the executive division of the Signal Corps. 500.

Relieved from duty in executive division on May 22. 501.

Does not know how H. E. Talbott, jr., happened to be on the flying fields committee, a subcommittee of the National Advisory Committee for Aeronautics. Does not think him qualified for that. 503.

Judge Hughes: "How was it you came to serve upon a committee on fuses when you were contemplating contracts with the Government through your Dayton Metal Products Co. for the manufacture of fuses?"

Witness: "We were asked to come here and serve on that committee, and accepted the service, as a great many other men did." 512.

Pages 512-522 are devoted to interrogations and replies relative to Col. Deed's connection with the Munitions Board and the minutes of the Aircraft Production Board under date of May 29, 1917, in which the board goes on record as favoring a contract wherein a maximum price is established. Witness unable to offer a satisfactory explanation of his action in the matter.

Mr. Kettering first came to the Cash Register Co. when witness was vice president about 10 years ago. 522.

Witness first took up with Mr. Kettering a definite venture in which they were jointly interested in 1909, 1910, or 1911. 523.

Were equal owners of the stock of the Dayton Engineering Laboratories Co., known as the Delco Co. 526.

There was a time when the control of this organization was sold to the United Motors Co. 525.

Sale of this stock to the United Motors Co. gave both Mr. Kettering and witness several million dollars. 530.

Has been associated with Mr. Kettering in various enterprises, borrowing money, advancing money, and making investments on equal shares and is so associated to-day. 530.

Both have a common agent, Mr. George B. Smith, who signs checks for both. 530.

Mr. Smith is a highly confidential and trusted agent for both of them in all their undertakings. 531.

The Dayton Metal Products Co., Mr. Talbott, and Mr. Kettering, and Mr. Smith have their offices in a remodeled-private house on the corner of First and Ludlow, Dayton, Ohio. Also Mr. Deeds. 531-532.

First became associated with Mr. Talbott in a business way at the time of the organization of the Dayton Metal Products Co. in the fall of 1915. 532.

Company was organized to build Russian detonators. 535.

In latter part of March, 1917, company received contracts from United States Government for detonators. 536.

Company accumulated a surplus in excess of \$2,000,000. 536.

Names some of the other enterprises in which he was associated with Mr. Kettering. 538.

Col. E. A. DEEDS—Continued.

Witness and Mr. Kettering still own equal shares of the Domestic Building Co. 540.

Witness and Mr. Kettering in the Moraine Development Co. 541.

Own practically one-half of the company. 542.

The Moraine Development owned the land on which the present plant of the Dayton-Wright Airplane Co. has been built. 542.

Still holds his interest in the Moraine Development Co. 543.

Gave his interest of 17,500 shares of the United Motors Co. to Mrs. Deeds. 544.

Indorsed the certificates of transfer on October 13, 1917. 545.

Asked Judge McCann to come to Washington to take up his legal status here as a member of the Aircraft Production Board and also of the Army and do whatever was necessary in connection therewith to make his status right. 550.

Told Secretary of War he had had a relationship with the Dayton-Wright Co., and might be subject to criticism on that account. 552.

Has a hazy recollection that he did see Judge Ansell. 553.

Does not remember going to Judge Ansell's office with Judge McCann. 558.

Judge McCann did not have anything to do with the actual transfer of any of his interests. 560.

Judge McCann drew letter sent to the Aircraft Production Board. 561.

Statement of facts contained in that letter were based on statements made to Judge McCann by witness as he had no personal knowledge of the transaction. 562.

Told Judge McCann that Mr. Kettering has taken his interests in the Domestic Building Co. when he had not. 563.

Judge Hughes: "The letter that you addressed and signed to the Aircraft Production Board said that you had made a bona fide transfer of that stock." 566.

Puts responsibility for that statement upon Judge McCann. 566.

Has never parted with stock of Domestic Building Co. 568.

Judge Hughes: "In other words, you were willing to state, and did state, that an actual bona fide transfer had been made, when all that had been done was an arrangement that a transfer would be made if it was found to be necessary to make it? That is plain English, is it not?"

Witness: "That is exactly what it was." 568.

It may have been in September or October that it was decided the Dayton-Wright Co. should buy the Domestic Building Co.'s plant. 570.

The transfer by which the Domestic Building Co. purported to transfer to the Talbotts and Mr. Kettering was closed up and notes given in November, 1917. 570.

Salary of witness in Delco Co. was \$60,000 a year. 574.

Salary of witness in Dayton Metal Products Co. was \$25,000 a year. 574.

Drew salary from Delco Co. up until some time in August. 575.

Col. E. A. DEEDS—Continued.

The actual certificates for the transfer of 38 shares of preferred stock in the Delco Co. were transferred to Mr. Kettering on October 13, 1917. 575.

Dayton-Wright Airplane Co. was incorporated in April, 1917, and witness was one of the incorporators. 578.

Was not a subscriber for stock. 580.

Was not aware until this last May that the entire capitol stock, with exception of five qualifying shares, of the Dayton-Wright Co. were subsequently acquired by the Dayton Metal Products Co. 580.

This transaction took place at the end of November or the beginning of December, 1917. 581.

Learned in the fall of 1917 that the Dayton Metal Products Co. had become the owner of the Dayton-Wright Airplane Co. 586.

Witness question as to the finances of the Dayton-Wright Co., involving the Domestic Building Co. and the Moraine Development Co. 590, 605.

The Dayton-Wright Airplane Co. was a new organization that had no financial backing whatever except that which the Talbotts and Kettering gave it, either directly or through the Dayton Metal Products Co. 605.

Witness: "That Munitions Board was the English board that I had in mind at that time." 606.

First became interested in the acquisition of the Wilbur Wright Field by the Government as a flying field about April 24. 607.

About April 24 sent an engineer of the Miami conservancy district to confer with Mr. Waldon regarding the lands of the Miami conservancy district, the Wilbur Wright Field now occupying part of those lands. 607.

On May 7 Maj. Foulois and Capt. Edgar came to Dayton to look over the conservancy lands. 608.

Extract from telegram of Mr. Deeds to Mr. Kuhns, secretary of Miami conservancy district: "Subject of our trip yesterday moving very rapidly and very satisfactory. There is no doubt in my mind but what we will be successful." 611.

Thought there was no doubt but what Government would make use of the fields. 611.

Another extract from same telegram: "Avoidance of publicity very essential. Inspection will be made end of this week or first of next. You and Morgan must plan now as though it was decided." 612.

Meant in matter of publicity because "we" had not yet acquired contracts of purchases and options on all the property. 612.

Judge Hughes: "You seem to have been quite busy telegraphing on April 30, 1917, for there is another telegram to Ezra Kuhns on the same day, in the course of which you say, "Publicity will follow these instructions, and no one outside of Signal Corps officers know of our plan for a larger school, and so far as everyone is concerned, the Dayton school is the Wright Field Civilian School.'" 618.

Col. E. A. DEEDS—Continued.

- Judge Hughes: "On May 11, 1917. That is the same date as the date of Maj. Foulois's report. Mr. Talbott telegraphed as follows: 'Contracts remaining unsecured to cover 2,500 acres will be closed by to-morrow evening. Will start Monday on immediate possession of land so the fields will be ready when buildings are finished.'" 625.
- On May 12, Mr. Deeds telegraphed Mr. Talbott as follows: "Suggest Kuhns, Emmett, Grant, and Brown be here Monday morning for conference on conservancy, bringing description of entire 2,500. Tax value and tax rate of property under discussion will be helpful. Publicity can be delayed at this end without difficulty. Everything moving nicely." 626.
- Witness questioned as to how he knew 2,500 acres had been agreed upon. 627-628.
- Capt. Edgar asked him who would be a good contractor in Dayton, and he recommended the Dayton Lumber & Manufacturing Co. 632.
- Mr. Talbott had not informed him of the arrangements that had been made for obtaining the control of the stock of the Dayton Lumber & Manufacturing Co. 634.
- Questioned as to his connection in securing contract for Mr. King, president of Dayton Lumber & Manufacturing Co. 636-640.
- Never made any inquiry to find out who was the real party interested in that contract. 648.
- Knew Mr. Talbott had given financial assistance to the Dayton Lumber & Manufacturing Co. to the extent of \$400,000. 650.
- Had never heard that the Dayton Lumber & Manufacturing Co., through Mr. Kind, proved to be an unsatisfactory contractor. 669.
- Col. Edgar told him it was an unsatisfactory contract. 669.
- Col. Vincent and Col. Clark recommended South Field. 670.
- Privilege of purchasing was left out of lease on South Field because it was only looked upon as a temporary arrangement. 673.
- Witness owns South Field individually. 673.
- Mr. Talbott and Mr. Kettering had shown what is now McCook Field to Col. Clark and Maj. Vincent, and they had decided, everything considered, that was a much better location. 676.
- The Wright Field, or McCook Field as it is now called, was a tract of 210 acres; 120 belonging to Mr. Kettering and witness, the remaining belonging to the Dayton Metal Products Co. 676.
- Lease on that field was recommended by Clark and Vincent. 678.
- Does not know what part he played in determining the terms of the lease. 681.
- Had sold his interest to Mr. Kettering, who later sold it to the Dayton Metal Products Co. (681).
- Remember Col. Edgar saying the Government did not want to buy it. 686.

Col. E. A. DEEDS—Continued.

Judge Hughes: "Our information is just the contrary, that it was refused. Do you have a recollection definitely about about that, that you are prepared to testify to?" 686.

Did not want an option given. 688.

Gave Col. Clark a letter to take to Mr. Kettering relative to Moraine (South) Field. 692.

Moraine Field was abandoned because of the opposition to the Dayton Wright Co. 698.

Witness: "It may seem a little strange, but I am not a great man on the financial end. I would a great deal rather work in the factory on the production engineering, which is my line of work, which I enjoy. I have left this other matter to Mr. Smith, who has really handled all those things; and I think he keeps them straight, and we abide by his decision." 708.

Has never gone through the account relative to transfer of his interests in McCook Field to Mr. Kettering. 709.

Relied on Mr. Smart and George Smith for the facts. 710.

Judge Hughes: "You have such confidence in them (Talbotts and Kettering) and in your confidential representative, Mr. Smith, who also represents Mr. Kettering, that you are willing to have these statements made up and passed by Mr. Smith and adopted without a personal knowledge of the accuracy?"

Witness: "Yes, sir; that is right." 710.

Leased South field to Dayton-Wright Co. at rental of \$1 per year. 712.

Went over exhibits with Mr. Smith, which he submitted to committee. 719.

Not prepared to testify that he knew when his salary with the Dayton Metal Products Co. stopped. 724.

Asked if there was any reason he wanted to get out of the Dayton Metal Products besides the fact that there might be Government contracts, witness replied, "Yes; there was a real, intimate reason, which I do not know as I would care to state on the record, but there was a whole change in our family affairs after the death of the younger boy, and I had a real desire to get out of a good many things at that time." 726.

Wanted to get out of everything as far as possible, except the Domestic Engineering Co. 728.

Does not think he has ever seen the notes given for his stock in the Dayton Metal Products Co. 731.

Never recognized he had any Government connection of any consequence until he was brought into the aircraft situation. 736.

Witness would not swear that the minute book of the Dayton Metal Products Co. was accurate. 738.

Has not observed the apparent changes and apparent removals of portions of minutes and substitutions of others in this book. 738.

Judge Hughes: "Now, if that is a correct copy of the minutes of May 21, 1917, of the board of directors of the Dayton Metal Products Co., which is now being shown you, will you testify whether you were in Dayton on May 21, 1917, and at such a meeting?" 740.

Col. E. A. DEEDS—Continued.

Witness: "No; I will not." 741.

Witness was in Washington from May 18 to 23. 749.

Col. E. A. DEEDS (Department of Justice, October 3, 1918; Book 23). Took steps to locate or procure proper sources of supply; this before he became chief of the Equipment Division. 1.

Get what information they could get quickly on the existing plants that had built aircraft. 1.

Contracts placed in a small way at the beginning of the formation of the board. 2.

The chief contracts for the production of the Curtiss type or the JN-4, and the Standard type or the SJ-1 were placed, the Curtiss type with the Curtiss Co. and the Standard type with the Standard Aircraft Corporation, and the Dayton-Wright Co. at Dayton, and the Fisher Body Corporation in Detroit. 2.

Thinks, as a member of the board, he recommended that these orders for the Standard J be placed as mentioned on page 3. 4.

His attention called to a letter written by him to Mr. Kettering, June 13, 1917, in which he tells him that he will be interested in knowing that the Standard training machine is going to be called the U. S. primary training, and will not be called the Curtiss JN, etc. 9.

Asked what was the occasion of that statement to Mr. Kettering at that time. 9.

His attention called to the fact that further extracts from the letter would indicate that he was going to tell him what had been done, rather than to seek advice in an unsettled matter.

The Hall-Scott engine had always been used in the Standard plane, but he is unable to say how many Standard planes had been built prior to June, 1917. Maybe 12; perhaps only 5. 13.

Mr. Kettering advised the continued use of the Hall-Scott engine with the Standard plane. 14.

States that the Wright-Martin Co., on the Pacific coast, had used the Hall-Scott engine. 15.

Reminded that the Joint Army and Navy Technical Board gave their approval reluctantly to the use of the Hall-Scott, and then only for a temporary use. 17.

He wanted the Dayton-Wright Airplane Co. to have the contract, because of the fact that they were a concern who would come through. 18.

The first contract, under date of August 1, 1917, with the Dayton-Wright Airplane Co., was for 400 Standard Js. 20.

This contract merged into another with the Dayton-Wright Airplane Co., under date of September 7, 1917, for 400 Standard Js, 1,500 Martinsides, and 2,000 De Haviland 9s. 21.

Overcome their reluctance to take such a large contract by September 7. 22.

They were so reluctant in the matter that they were going ahead and working on the first model that arrived in this country. 22.

Col. E. A. DEEDS—Continued.

He was anxious to have the Fisher Body Corporation take a contract because he looked upon them as one of the best producing concerns of their kind in existence. 26.

No, they had never built any airplanes, no airplane engineer on the staff, and had no experience whatever. 26.

His idea was that if the Dayton-Wright Airplane Co. could do the engineering and turn over a finished product to the Fisher Body Corporation, and then they could work together afterwards. 27.

Yes; admits that the Government in their contract specified that the drawings and specifications should be furnished to the Dayton-Wright Airplane Co. by the Government. 28.

Makes the statement that the drawings were produced by the Government in the experimental department of the Dayton-Wright Airplane Co. and supplied both to the Dayton-Wright Airplane Co., and to the Fisher Body Corporation. 29.

Has to take this statement back. 29

The Government did not furnish complete drawings in either the case of the DH 4s or the Standard J planes; it was left to the Dayton-Wright Airplane Co. to work out itself. 30.

The Government, it is supposed, with all its power and resources was unable to provide facilities which this new Dayton-Wright Airplane Co., with no capital stock paid up and no money except that it could borrow from Mr. Talbott and Mr. Kettering, was able to provide those facilities. 31.

The Government had to rely upon this little organization at Dayton to establish the drawings and designs. 32.

Asked if that was his conception of his duty and power and responsibilities as chief of the Equipment Division of the Signal Corps. 32.

States that the Fisher Body Corporation kept men at the experimental plant of the Dayton-Wright Airplane Co., and there was constant going back and forth between Dayton and Detroit so as to keep in touch. 34.

Is reminded that the officials of the Fisher Body Corporation made the statement that the going to and fro from Dayton was in the vain endeavor to get drawings, without which they could not proceed to produce. 34.

Asked why he didn't employ the resources of the Singer Manufacturing Co. 34.

He states they, in the first place, did not want an order. 35.

Asked to swear to this; anyway he had questions in his mind (the president or vice president of the Singer Manufacturing Co.) and he did not want to take an order for an airplane unless it was absolutely necessary. 35.

Asked if the Singer Manufacturing Co. did not offer in writing the facilities of this company to the Government and to build whatever the Government wanted them to build. 35.

Mr. Deeds considered that the Singer Manufacturing Co. was an ideal place for a supply of pistols or something of that kind, but to get into airplanes they were not fitted for that. 36.

Asked as to the inconsistency of his remarks. 36.

Col. E. A. DEEDS—Continued.

Did not think they were suited for the work, and yet he wanted them to take the contract. 37.

It was among the three or four in the country that were best equipped for this work. 38.

The thought was to ultimately get around to the Singer Sewing Machine Co. and the Pullman Co. 39.

Asked why they did not give a contract to the Pullman Co. 42.

Thought they could be added sometime when there had been something specifically developed. 42.

Asked if it was possible that the Dayton-Wright Airplane Co. was a monopolist of facilities for the production of drawings. 45.

The Government had an airplane engineering department and they made the drawings for the Bristol, and were not successful, therefore the Government did not have a department to do this kind of work. 45-46.

Confronted with the statement that he did not establish a department that was competent to do it. 46.

Yes; the Dayton-Wright Airplane Co., organized in April, 1917, was left with the work of designing and completing the De Haviland 4. 47.

And then the company in its turn charged the Signal Corps with failure to give it the drawings it needed and the information it needed to complete the work, and charged to that failure the delays in production. 47.

Asked if he was aware of that. 47.

Asked if it did not result in this: The Dayton-Wright Airplane Co. said to the Signal Corps, "You give us the drawings," and the Signal Corps said to the Dayton-Wright Airplane Co., "You are to make them," and the Dayton-Wright Airplane Co. said, "We can not," and the Government said, "Neither can we," and production was at a standstill. 47-48.

Asked why he drew a contract stipulating that the Government would furnish the drawings, when he knew that the Dayton-Wright Airplane Co. was going to make them themselves. 48.

Lays it onto Col. Montgomery.

One reason for the preference given to the Dayton-Wright Airplane Co. was that he depended upon Orville Wright and the men who had grown up with him—Jacobs and other men of that kind. 50. (As adding to the facilities of the plant.)

Thought he was competent to design a De Haviland machine, but knew he was competent to rearrange the De Haviland machine for receiving the Liberty engine. 51.

Asked why he did not hire him for the Government then. 52. It never occurred to him.

Is told that the engineer of the Dayton-Wright Airplane Co. testified, and this is abundantly supported by facts, that Orville Wright had virtually nothing to do with the production of the DH-4. 53.

Asked why he left him with the Dayton-Wright Airplane Co. for the purpose of doing something which that company had not contracted to undertake. 53.

Col. E. A. DEEDS—Continued.

Asked if he knew the salary of Mr. Talbott, sr., to which he replied, "No; never knew." 78.

Presumed they were charging their salaries to the Government expense as a part of their overhead. 79.

But never thought of it. 80.

Had no explanation to make of the situation that developed with regard to all these high salaries being charged to the Government, as he had never heard of their salaries. 83-84.

Asked with regard to the "confidential telegrams." 86.

Is given an illustration of one of these "confidential telegrams" which amounted to an inside "tip." 88-89.

Asked for a full explanation of his conduct in the matter. 89 to 93.

His attention called to Blakeley Exhibit 1, to the Packard Motor Car Co. for \$104,500, which appears to have been certified by him. 97.

Finally has a recollection of the matter. 100.

Helped put the voucher through. 100.

As he understands his position now, does not suppose it was within his authority to sign vouchers. 101.

Does not know how many vouchers he may have signed. 101.

Asked about another voucher, Blakeley Exhibit 3, for \$60,000 to the Packard Co. 104.

As no per or any initials opposite; seems to have been a plain signature in his name. 104.

Is read minutes of Aircraft Production Board of meeting on June 8, 1917, in which it recommended to the Chief Signal Officer of the Signal Corps that the sum of \$250,000 be set aside to carry on this work, etc. 108.

Placed this work with the Packard Motor Car Co. after this resolution. 108.

Is shown letter attached to voucher, inclosing bills from the Packard Co. for the last 8-cylinder engines, etc., with recapitulation of the material, etc., direct expense and overhead, and with 12½ per cent profit added. 109.

This amounted to \$249,159.10. 110.

He is the one upon whom they relied to certify that these figures were accurate and he in turn relied upon Maj. Vincent. 110.

Did not understand at the time that the Government could only pay for specific things. 113.

They did not have the items of the various work and services included in the voucher; just made a general estimate. 113.

Asked if, as a man of business, he did not know that the Government was not paying out money on a cost contract under a general estimate. 117.

States if there had been any irregularity in that respect it would have been caught in the finance division. Asked if he was not the catcher on that nine. 117.

Is confronted with the statement that he knows well enough that it never went to the finance division. 117.

He did not show the voucher to anybody; just signed it and sent it to the paymaster and it was paid, he admits. 118.

Is asked regarding the accessories for the Liberty motor. 120.

Col. E. A. DEEDS—Continued.

With regard to the various programs gotten up specifying so many machines for this month and so many for the next, says there was a lot of prophecy about the dates, and they may have been expectations. 130.

His attention called to McConaughy Exhibit 1 which was laid before the Secretary of War in the examination he underwent, and is told that Mr. Baker said they did not issue this statement until he understood it was verified by Col. Deeds and Gen. Squier. 135-136.

Did not know that he was verifying this as for the Secretary of War. 137.

Knew, though, that he was a representative of the Committee on Public Information. 137.

Asked why, in testimony before the Senate committee on April 2, 1918, he replied to Senator Wadsworth that he never saw it and did not know of anybody seeing it. 140.

Further says to Senator Wadsworth that neither he nor any other officer of the department consulted with Secretary Baker before he made this statement. 141-142.

Remembers some indefinite conversation with some one from the Bureau of Public Information, but he did not say a thing that would justify the statement that they were five months ahead of the program. 143.

Said the first of it he knew was when he saw it in the papers. 144.

No effort made that he knew of to find the source of the information which the Secretary of War took as reliable and put his signature to. 144.

Denies the conversation with Mr. Pew, who testified that Col. Deeds told him that there had been a shipment abroad, that they were now on the water en route to France. Maybe 10—perhaps a dozen—also denies he said the same thing to Mr. McConaughy, who testified that he told him the same things as told to Mr. Pew. 147 to 149.

Swears that he did not say that to either one of them. 149.

At the time this statement was made—published in the papers on February 21, 1918—he had been advised by Mr. Talbott that the first 100 De Havillands were to remain here, and he had been asked to recall the single one that had been shipped for foreign service. 153.

Is asked to explain this. 153.

Is given summary of the various points of destination for the first shipments, which shows that on April 3, 1918, was the date of the shipment of one uncompleted plane to France. 155.

Admits that on February 21, 1918, there were no planes on the water en route to France. 155.

He said he did not mention that they were on the water—just that they were shipped. 156.

After dodging the question from all sides, admits that a statement authorized by the Secretary of War is a statement with official authority, and if he had any place at all as an officer of the Army, and had judgment enough to fill any office in the Government he should have known it. 161.

ORVILLE WRIGHT (October 3, 1918; Book 23).

Been interested in aviation matters since 1896. 175.

States his experience. 175.

Sold his stock in the Wright Co. in 1915 to New York capitalists. 176.

In the early part of 1917 Mr. Deeds organized a company with Mr. Kettering and the Messrs. Talbott to carry out some experiments of Mr. Wright's, this company at first called the Dayton Airplane Co. 180.

Put up several buildings on what is known as the South Field, which was owned by Col. Deeds. 180.

Built, he thinks, four hangars and a machine shop. 181.

The principal work he did on the De Haviland 4s was in preventing changes being made, following closely as possible the original machine. 185.

This all with reference to the model. After the model was completed he had practically nothing to do with the plant. 185

States this model was flown about the end of October, 1917. 186.

Since the model was completed, he has given his time up to the present to certain experimental engineering being conducted at South Field. 188.

Had nothing to do with the redesigning of the Bristol, or with the Spad. 189.

Was only consulted about the Bristol on propellers. 190.

Col. Hall came to him about this matter. 190.

Had nothing to do with the Standard J planes. 192.

Was not employed by the Government or retained on behalf of the Government. 193.

Was at Dayton all through the fall of 1917. 193.

DAVID WOOD SOWERS (October 3, 1918; Book 23).

Residence, Buffalo.

President, Sowers Manufacturing Co.

Makes statement of his own accord regarding the Niagara Frontier Defense League. 195.

Their organization had nothing to do with the cost-accounting system at the North Elmwood plant. 223.

JOHN CREEPS WICKLIFFE (October 4, 1918; Book 23).

Production expert, Bureau of Aircraft Production. 341.

Became associated with the Government February 25, 1918. 341.

Prior to that, secretary of C. C. Mengel & Bros. Co. 341.

Mengel & Bros. Co. manufactured mahogany and walnut lumber and veneers. 341.

Been connected with that company 15 years. 342.

Sold out their interests in the Mengel Co. when he came to Washington to take a place with the Government. 344.

His firm dealt both in Central American and African mahogany. 346.

Had contracts with persons in Central America for getting out mahogany, and also had rights in Africa, or concessions. 346.

States the firms who were represented at the meeting to form an association of mahogany manufacturers and importers. 349.

Minutes from the different meetings gone over. 358 to —.

Other minutes read. 370-375.

JOHN CREEPS WICKLIFFE—Continued.

Further minutes. 377-381.

These minutes marked collectively "Wickliffe Exhibit 1, October 4, 1918."

Was a matter of negotiation with the Government for five or six weeks. 386.

Is shown resolution presented on January 31, 1918, to the war committee, marked "Wickliffe Exhibit No. 2, October 4, 1918." 386.

Mr. Wickliffe states that in this resolution it will be noticed that they left the fixing of any price to the Government. 387.

Up to this time African mahogany had not been involved in the proposition. 387.

Mr. Wickliffe prepared a statement of costs at New Orleans, New York, and Louisville, respectively, on behalf of the association for submission to the Government. 388.

This marked "Exhibit 5, October 4, 1918." 389.

This statement prepared early in February. 389.

Down until the latter part of February he was in active association with the committee, the war committee of the mahogany association, and with the corporation C. C. Mengel Bros. Co., of which he was secretary then. 392.

Resigned as secretary of the Mengel Co. on February 23. 393. Asked as to the matter which left the negotiations so long in abeyance. 396.

Relates the incidents in connection with the proposition that he should become connected with the Government service in the hardwood section. 399-404.

Asked how long the compensation at the rate of \$4,000 per annum from the Government continued. 404.

Letter is read from Bureau of Aircraft Production, which requests him to cease accepting a salary from the Mahogany & Importers' Association. 406.

Letter is read in which he does as above requested. 407.

He received through Mengel Bros. & Co. \$500 per month. 409.

Paid by the Mahogany Manufacturers & Importers' Association the rate of \$350 per month from April 1, 1918, down to August 1. 412.

Was asked if he knew that prior to the date of the letter of August 20 (p. 407) this subject had been the subject of inquiry by the Federal authorities. 431.

Relates conversation he had with Mr. Mengel regarding the continuance of his compensation in the company after he went into the service of the Government. 432.

After he finds out what the Government is to pay him, he writes Mr. Mengel to cut down the allowance from \$500 to \$350, and he would remit the difference. 435.

Is asked to produce copy of the letter to Mr. Mengel and also a little statement of the receipts of money and the return of the amounts he referred to. 436.

States he was not connected with the negotiations of the meetings in any but a subordinate way. 437.

JOHN CREEPS WICKLIFFE—Continued.

S. B. Vrooman, jr., son of S. B. Vrooman, at the head of S. B. Vrooman Co., one of the members of the association, is chief inspector of the wood section of the Bureau of Aircraft Production. 442.

Then, with reference to the meeting of conference of the mahogany manufacturers, "Williams Exhibit 11" (see p. 438), the only persons representing the Government were Mr. Williams, Mr. Vrooman, jr., and Mr. Wickliffe. 443.

Mr. Vrooman was called in upon a matter of inspection. 443. First definite statement from the production engineering department that authorized quarter-sawed white oak that he ever found was under date of May 23. 470.

Mr. Wickliffe produces letter from Mr. Day regarding the use of white-oak propellers and finding them unsatisfactory. 474. Produces letter showing the French were using African mahogany. 478.

WALTER C. MARMON (October 4, 1918; Book 23).

President of the Nordyke & Marmon Co. 495.

Received a contract for the Hall Scott engines, which was signed up some time in July. 496.

Fixed-price contract at \$2,366 an engine. 496.

Original contract called for deliveries to be completed on January 15. 497.

Shipped the last one on May 3. 497.

Gives copy of brief they received for a 90-day extension on account of the reasons they gave for the delay. 497.

This brief marked "W. C. Marmon Exhibit 1, October 4, 1918." 498.

The brief, pages 498 to 527.

Now makes a verbal statement of the reasons for delay in the delivery of the engines. 527-531.

The next contract is for 3,000 Liberty engines. 531.

This contract dated September 28, 1917, order No. 10449. 531.

Asked why they took such a contract of such importance to the country when they did not have the facilities to perform it, the acquiring of which took over a year. 543.

States they were not seeking the Liberty contract. 544.

The proposition was put up to them by Col. Waldon, Col. Deeds, and Col. Montgomery. 544.

Their knowledge of how to make gasoline internal-combustion engines was considered of greater advantage than facilities. 545.

First advance was a war-credits advance and an agreement to buy certain of the machine-tool equipment. 547.

States the agreement to install machinery and tools in his plant on the part of the Government to the extent of a million dollars is correct. 547.

The Government up to August 28 had paid \$963,323.33 for tools and machinery. 548.

Payment of \$64,878.71 for testing equipment. 548.

One-half million was advanced on the Hall Scott, which has been paid back. 550.

WALTER C. MARMON—Continued.

Amount authorized for Liberty contract was \$2,000,000, the contract calling for the fixed profit to be credited against that. 550.

About \$35,000 or \$40,000 had been credited in this way. 551.

The fixed-price contract was entered into on the 31st of August, 1918, at \$4,000. 552.

The contract. Pages 553 to 559.

Asked why they changed the contract to one for a fixed profit at \$4,000. 587.

Pay the Government 5 per cent on the \$2,000,000 advanced. 594.

On appraisalment they are to get three-fifths of the depreciation on the cost of that part of the investment made for the Hall Scott. 594.

Asked why real estate was included in the depreciation clause in paragraph B exclusive of buildings and land. 596.

Did not know that was in there. 596.

Produces statement showing payments that have been made to the Government. 598.

This paper marked "W. C. Marmon Exhibit 3, October 3, 1918." 598.

Is asked to give a statement as to what he understood he was doing when he made the agreement with the Government for depreciation in the new contract which provided a fixed price. 601.

States their intention in regard to depreciation was to be paid the difference between the cost of the investment made in plant by their company for purposes of producing the Liberty motor, plus three-fifths of the cost of the plant erected for producing Hall Scott motors, and the fair market value of the above-described part of their plant at the end of the contract. 601.

Submits letter to the Attorney General, being a statement of the list of the stockholders of their company, under date of June 11, 1918. 601-608.

This also contains details of payment by the Government on Liberty motors, and details of payment by the Government on Hall Scott engines shipped. 605.

Also causes contributing directly and materially to delays in the production of Liberty motors. 606.

Also factory statement showing the shipment to Hall Scott and detailed payment and amounts of advances also forwarded. 628.

CLARENCE E. JEFFERS (October 4, 1918; Book 23).

Chief engineer for the Nordyke & Marmon Co. 631.

Been with the Marmon & Nordyke Co. since October 24 1912. 631.

So far behind in production from changes that none of the engines got ahead, and the latest changes with all the others were incorporated in the first engine. 633.

Change in the propeller hub did not affect them at all. 634.

CLARENCE E. JEFFERS—Continued.

Thought the changes had delayed production from four to six months. 636.

Relates the delay caused by the piston pin. 636.

Gives outline of the connecting-rod change. 638-644.

Pratt Whitney & Co., of Hartford, Conn., were behind on their deliveries of surface grinders to them of 60 days. Jig-boring machine was promised on March 15 and not received until May 10. When it was received, they could not use it on account of the poor workmanship. 645.

Their big trouble in delays has been due to the close limit on the drawings. 645.

Other manufacturers started their production when the Detroit inspection office was not organized and were therefore using material which the Government inspector at their plant would not let them use. 648.

FREDERICK E. MUSKOVICS (October 3, 1918; Book 23).

Vice president of the Nordyke & Marmon Co. 650.

Knew of no transactions which Capt. Marmon as a representative of the Government has had with the Nordyke & Marmon Co. beyond the communications as to blue prints. 650.

No connection at all. 651.

At one time he recommended an oil that the Packard Co. had turned out, as they were having trouble in cold weather. 651.

CHESTER P. SIEMMS (October 4, 1918; Book 23).

President and treasurer of the Siemms-Carey-Kerbaugh Corporation. 652.

His company had a contract with the Government for getting out spruce from the Olympic Peninsula and also for building a railroad connecting the mill with the C. M. & St. P. Railroad. 652.

Relates interview with Mr. Hoadley. 653.

Mr. Hoadley appeared drunk. Wanted \$500,000. 653.

If he didn't get it Mr. Siemms's contract would be canceled. 654.

Said Senator Chamberlain would cancel the contract. 654.

At the last, urged him to call up Mr. Pliny Fiske, of New York. 655.

Next morning, through advice from his counsel, calls up Mr. John D.—and told him about this. 657.

Mr. Charles Brewer, from the Department of Justice, came to look into it. 657.

Gives statement of what transpired over the telephone in conversation with Mr. Hoadley. 661-663.

His organization or combination with Mr. Kerbaugh had nothing to do with the spruce contract. 682.

States how the spruce contract was brought to his attention. 683.

The contract as finally worked out was not for delivering logs at all, as originally suggested by Mr. Fiske, but was for delivering flitches, which is a slab of a spruce log. 686.

Explains the basis of the final trade. 689.

For the railroad contract Mr. Fiske signed a Fidelity bond for an advance of \$500,000. For the spruce contract it was necessary to provide \$6,000,000. 689.

CHESTER P. SIEMMS—Continued.

Endeavor to satisfy the War Credits Board to get the \$6,000,000 for the work. 689.

Mr. Fiske agreed finally that if he could not satisfy the War Credits Board in another week, then he could exchange a mutual release with them and they could seek financial aid elsewhere. 692.

One contract had no risk in it; the other had. 693.

Maj. JAMES S. HOLDEN (Department of Justice, Washington, D. C., October 5, 1918; Book 24).

Commissioned on January 11, 1918. 1.

Worked as a civilian in the Army prior to that time. 1.

Was in charge of real estate matters in the construction division of the Signal Corps, under Col. C. G. Edgar, Capt. Edgar at that time. 1.

Produced true copy of the original lease by the Government of the field known as the Wilbur Wright Field, at Dayton. 2.

This lease marked "Holden Exhibit 1, October 5, 1918."

Asked to send in data which will show why the lease was made for 2,075 acres. 3.

Option price was \$350,000, or \$140 an acre for 2,500 acres. 4.

Rental, 5 per cent per annum on the purchase price and \$1 per acre for the taxes. 5.

Statement in reference to the rental read upon the record. 5-13.

The titles not searched on the leases for the tracts of land they have had to take for the Government. 21.

In the hurry they would go ahead and start building thousands of dollars' worth of construction, without any shadow of title, lease, or anything else, because it would take six weeks or two months before you could get any transaction closed by the Government. 22.

Condensed statement of the negotiations in connection with the leasing of McCook Field. 23.

Cols. Deeds and Edgar did not want to put in an option to purchase on the McCook Field. 24.

Said the Government would never want to buy the property anyway, as it would never amount to much. 24.

Along in March, 1918, Col. Deeds and Mr. Craighead approach Mr. Holden and tell him they will put in an option to purchase, at a higher price, \$300,000 or \$350,000. 25.

Lieut. SAMUEL BELL VROOMAN, JR. (Department of Justice, Washington, D. C., October 5, 1918; Book 24).

Entered the Army on July 16, 1918. 31.

Been in the employ of the Signal Corps since the 1st of December, 1917. 31.

Formerly with S. B. Vrooman Co., of Philadelphia. 32.

Was not an officer of the company. 33.

His father was president. 33.

Stockholder to the extent of \$10,000, par value, common stock. 34.

Did not make any disposition of this stock when he entered the Government. 34.

Lieut. SAMUEL BELL VROOMAN, Jr.—Continued.

His compensation from the Vrooman Co. prior to the time he entered Government service was \$100 a week, counting interest on his stock. 35.

Regular dividend paid of from 15 to 20 per cent on the stock. 35. Has run practically at 20 per cent all the time, only one year at 15 per cent. 37.

Received, therefore, a compensation of about \$50 a week before he entered the Government service. 38.

Received \$1,800 compensation a year from the Government before he was commissioned. 39.

When he was commissioned became \$1,700, with an allowance for rooms. 40.

Been receiving the \$50 a week compensation from the S. P. Vrooman Co. ever since he entered the Government. 41.

Duties with the Government consisted of inspecting mahogany lumber for propellers. 43.

The Government was buying mahogany when he first started, December, 1917. 43.

Inspected the mahogany bought from Lewis Thompson & Co. 44.

Inspected personally from December 1 until the 10th of February, then was given charge of all propeller lumber, but none of the inspecting himself. 45.

Selected the inspectors and gave them instructions. 45.

One of his duties to pass upon disputed questions. 46.

Visited the plants of the airplane manufacturers or propeller manufacturers to gain knowledge of the proper kind of lumber to go into propellers. 47.

All plants furnishing mahogany to the Government were under his jurisdiction. 47.

Maintained his force by dividing it up into districts—New York, Dayton, and Chicago. The man in charge of each district responsible for the personnel of the inspectors. 48.

Dayton had charge of all or most of the walnut. No mahogany in the Dayton district. 48.

Chicago had the Talge Mahogany Co., C. C. Mengel & Bros. Co., and C. L. Willey. 48.

New York had I. T. Williams & Sons, the Astoria Veneer Mills & Dock Co., etc. 48.

In case of a disagreement regarding the mahogany his was the final decision. 33.

The head of each district selected the inspectors, from six up at each of the three districts, who were selected from among the plants of the various mahogany manufacturers. 54.

And those furnishing mahogany who are members of the Mahogany Manufacturers' and Importers' Association represented 75 per cent or more of the entire mahogany trade of the country. 55.

It was the policy never to have the men inspect mahogany for the firm from which they came. 35.

His duty at present is just to see whether the mahogany comes to the specifications. 64.

Lieut. SAMUEL BELL VROOMAN, Jr.—Continued.

His own plant had never furnished any mahogany under aircraft specifications. They had two British contracts taken over. 66.

The American Government commandeered this lumber, and the British Government was paid 10 per cent of their profit. 67.

Mr. McCullough, of the I. T. Williams & Sons, was in charge of the New York office. 69.

Received \$2,400 from the Government, and I. T. Williams & Sons made up the difference of \$1,600, as he originally received from I. T. Williams & Sons \$4,000. 71.

Mr. McCullough had under his supervision the inspection of timber at the Astoria Mills, I. T. Williams & Sons, S. P. Vrooman & Co., etc. 76.

Col. E. A. DEEDS (Book 24).

Desires to make some corrections in his testimony. 90.

Changes the name of the Smith Gas Engine Co. to the Smith Gas Engineering Co. 90.

Mentions page 100 of a report marked "Deeds Exhibit 19, October 5, 1918," which includes, as one of the subcommittees, a subcommittee on fuses and detonators, with E. A. Deeds, etc., chairman, and H. E. Tablott, Dayton Metal Products Co. 92.

Would not change his testimony in regard to the fact that the fuse committee never functioned, and, so far as he knew, never had anything to do after that one meeting was held. 93.

The only explanation he has of the continuance of the committee is the fact that probably a number of the printed lists of committees continued long after the committee itself had ceased to function. 93.

His appointment on the fuse committee came from Mr. Frank Scott, chairman of the General Munitions Board. 94.

He and Mr. Talbott were the sole members of the committee. 94.

States the munitions standard board did not function. 95.

Knew he had been appointed on the munitions standard board. 96.

Resigned from it some time in June, July, or August, along there, of 1917. 97.

The report of the function of the munitions standard board for the year June 30, 1917, is read to Mr. Deeds, who says he did not know a thing about what the board was doing. 97-101.

Makes correction on page 66 of this report, or book, regarding the stock of the United Motors Corporation, which does not change it any but makes it a little more intelligible. 102.

Refers to pages 81 to 90, where the questions are asked whether or not he had an interview with the Secretary of War and another interview with Gen. Ansell. 103.

Went to see the Secretary of War with Judge McCann. 103.

Went to see the Secretary of War in August, 1917, about the time of the letter of disclosure. 104.

On page 132, when asked if he and Mr. Kettering received \$250,000 apiece from the Dayton Metal Products Co., he said, "Yes, sir," and he now wants to add "as a loan." 104.

Col. E. A. DEEDS—Continued.

Makes a correction, on page 231, where asked, "You sent that telegram?" and he said, "Yes, sir," and Mr. Deeds now wishes to add "at Mr. Craighead's suggestion." 112.

On page 70 were given the names of engineers—Mr. Day, Mr. Loening, etc.—and Mr. Deeds would like to have the records show that each of these men was given something to do, etc. 116.

Has received no money for any purpose whatever from Mr. Kettering or H. E. Talbott, or H. E. Talbott, jr., the last year. 123.

Has no agreement, arrangement, or understanding of any kind whatever with Mr. Kettering for delivery or surrender of his notes. 123.

Various other questions asked about arrangements or agreements with Mr. Kettering or the Talbotts, to all of which he replies he has none. 123, 124.

Submits the report of the Senate committee and refers to page 11, where there is a statement regarding the Miami Field and the Dayton-Rantoul Flying Field. 124, 125.

Then mentioned in the same report a reference regarding the acceptance of the field adjoining the plant of the Dayton-Wright Airplane Co. 126.

Submits a statement by Mr. W. W. Montgomery, attorney for the Bureau of Aircraft Production, which he says explains itself fully. 126.

This paper marked "Deeds Exhibit 21, October 7, 1918." 128-134.

Maj. HOWARD ELLIOTT (Department of Justice, Washington, D. C., October 7, 1918; Book 24).

In August, 1917, was in the Army, with rank of captain. 158.

Was a disbursing officer in the then Signal Corps, Aviation Section. 158.

Is shown a voucher, "Blakeley Exhibit 1," which was paid by check on August 11, 1917, for the sum of \$104,500. 159.

Can not recall anything about this, but it is sufficient evidence to a disbursing officer when he sees the signature of the proper competent officer of the Government certified over his signature that he had received the material or the services. 160.

He would see Col Deeds's signature there and put his name there, as Mr. Deeds, being in charge of the Equipment Division, a commission pending, he would take it that he was the responsible party. 167.

His was known as the Finance and Supply Division. 188.

Asked why a matter of this sort did not take its normal course and go through the Finance Division. 169.

Can not recall that the Chief Signal Office issued any orders as to who should have authority to pass vouchers for payment in the Aviation Section. 170.

Nor any orders that he could pay vouchers on Mr. Deeds's certification before he became a commissioned officer. 172.

Army regulations require an officer to certify vouchers. 173.

Is shown order 8526 with the initials "G. H. B." at the bottom of the order. 174.

Maj. HOWARD ELLIOTT—Continued.

These are the initials of Capt. Brett, who was in charge of the Finance Department. 174.

This certificate came through the Finance and Supply Division, but instead of the certificate having been given by Mr. Montgomery, who was in charge at that time, August 11, 1917, it was certified by Mr. Deeds. 174.

On the back of the voucher reference is made to the less formal agreement, 08256. The order is addressed to the Aircraft Division, which says nothing about the Packard Motor Car Co. 175.

Annexed are a series of blanks, the name of the Packard Motor Car Co., and copies of the vouchers. 175.

Asked if that would be regarded as an order to the Packard Motor Car Co., or evidence of a contract with the Packard Motor Car Co., or what there was to show the terms and conditions on which anything should be paid to the Packard Motor Car Co. 176.

Maj. Elliott states there is absolutely nothing. 176.

This final settlement of \$249,159.10 takes the total cost and the profit of 12½ per cent. 176.

Nothing in all those vouchers or in the order 8526 to show that any 12½ per cent was ever agreed to be paid to the Packard Motor Car Co., nor what was the basis for the allowance of that amount. 176.

Is asked to get all information possible on order 8526. 183.

Is asked to bring in also the regulations which govern disbursements of this character. 184.

ALFRED BETTMAN (October 7, 1918; Book 24).

Employed in the Department of Justice. 191.

Special assistant to the Attorney General in the division that is referred to as the War Emergency Division. 191.

States for the record what regulations have been issued or what instructions have been issued upon the subject of enemy aliens. 191-196.

Capt. OSCAR R. EWING (October 7, 1918; Book 24).

In the Contract Section of the Bureau of Aircraft Production (of the Signal Corps). 197.

Lieut. Col. Downey has been in charge of the Contract Section from the beginning. 197.

States he went through all their files and that they have no record of the contract with the Packard Motor Car Co. for certain work in connection with the development of the Liberty motor engine. 198.

And no record of the contract or order under which approximately \$250,000 for experimental work or work in the development of the first engines of these types was done.

The photostat copy of the order which he sent and which was marked "Elliott Exhibit No. 3" was merely a memorandum to the Air Division and is what is known as an allotment of funds. 198.

Telling them that \$250,000 is available for certain purposes, and nothing in the memorandum to show that the order was given to the Packard Motor Car Co. 198-199.

Capt. OSCAR R. EWING—Continued.

Nothing in the files to show anything about this contract. 199.
Produces the only file of correspondence he could find about about this matter. 202.

One memorandum has a statement of "The increase of \$11,-464.38 over present allowance on order No. 8526 is authorized in order to permit the payment of bills now outstanding." 204.

Mr. Ewing thinks that this meant that the appropriation of \$250,000 was sufficient to meet outstanding vouchers and that this was a memorandum to increase that allotment, \$11,464.38. 204.

Asked if it did not look more like it was a voucher for \$11,464.38 and that it was made that amount in order that the total amount might come within the \$250,000 appropriation. 205.

In fact the two engines are figured at \$5,732.19 each to make up that sum of \$11,464.38, which is a very low figure as compared with the other engines. 205.

Col. R. L. MONTGOMERY (October 8, 1918; Book 24).

Is asked to recall the fact that in the early part of 1918 a contract was concluded with the Curtiss Airplane & Motor Corporation for the making of advances by the Government to an amount not in excess of \$8,000,000 on account of War Department contracts. 208.

This contract contains a provision that there shall be retired at a price not in excess of par and accrued interest all the serial 6 per cent first-mortgage gold bonds of a total of \$1,400,000, dated October 1, 1917, etc. 208.

Col. Montgomery is asked for information with respect to these gold notes of the Curtiss Co. that were outstanding. 209.

Has no information at all with respect to the owners of those notes. 201.

Asked why there should have been any provision made for the retiring of those gold notes. 210.

The effect of the transaction was that a premium was paid at the expense of the Curtiss Co. upon those notes. 211.

And that at a time when the Curtiss Co., instead of paying a premium, was seriously in need of money to carry on Government work. 212.

Apparently the only purpose was to pay the notes to some people who held them, and Mr. Hughes told him he wanted to know who those people were. 213.

States the National City Co. did not hold any of those notes. 213.

Thinks the idea originated in the minds of the Navy Department. 214.

His firm had nothing to do with the bringing out of the Miami conservancy district, 5 per cent bonds, an issue of \$10,000,000, dated December 1, 1917. 215.

Relates conversation with Col. Deeds wherein Col. Montgomery is asked who he thought would take the bond issue of the Miami conservancy district. 215.

Has no knowledge of the disposition of the funds. 217.

Col. R. L. MONTGOMERY—Continued.

His attention called to the General Vehicle Co. and the fact that at the time of the acquisition of its plant by the Government it had outstanding certain notes amounting to \$1,530,408, not far from the amount the Government paid for the plant. 217.

Asked what the initials "P. T. & M." opposite this item stand for. 217.

Takes it that those represent the Peerless Co. or a subsidiary of the Peerless Co. 217.

Poor's Manual of Industrials for 1917 under the title of "Peerless Truck & Motor Corporation" states that the Peerless Truck & Motor Corporation owned or had acquired the ownership of the Peerless Motor Co. and the General Vehicle Co. 218.

Did not understand at the time the proposition was made to buy the plant that the General Vehicle Co. stock was owned by the Peerless Truck & Motor Corporation or by any organization of the Peerless. 220.

If the National City Co. owned the Peerless, he did not know it. 221.

Mr. Montgomery strongly advised the Aircraft Board to make the purchase. 225.

The negotiations were carried on by Mr. W. W. Montgomery, jr. 225.

The General Motors Co. needed the General Vehicle Co. for its knowledge of rotary-engine building. 225.

These engines to be built to fill an order or request from Gen. Pershing. They would have gone into the Nieuport plane. 226.

States that it is not exactly true that the reason the General Vehicle Co.'s plant was purchased was so that there would be a continuous manufacture of rotary engines in the country. 226.

The Union Switch & Signal Co. was starting to do that. 226.

At any rate the price arrived at as the purchase price is substantially the same as the amount of the notes which the General Vehicle Co. had outstanding. 228.

Maj. Gen. GEORGE OWEN SQUIER. (October 9, 1918; Book 24.)

Chief Signal Officer of the Army. 234.

In charge of the aviation section of the Signal Corps. 238.
(Prior to his appointment as Chief Signal Officer.)

Is asked how many airplanes were owned by the Government when he became Chief Signal Officer in February, 1917. 238.

Approximately 150 training planes, no service planes, and no bombing or pursuit planes. 239.

Proceeded from the day war was declared to outline an estimated program as a basis to proceed to Congress with for hearings, etc. 241.

Only had a program in a vague way which stated the types of planes it was proposed to build. 242.

When he returned to this country fully posted on the progress of aviation activities abroad and the types of planes in use, needed, etc. 243.

Maj. Gen. GEORGE OWEN SQUIER—Continued.

With this information in his possession he is asked why he was not in a position to order at once planes and engines that would be needed. 245.

Perhaps \$20,000,000 was available at the time this country entered war for making airplanes and engines. 247.

Did start ordering training planes immediately for the work the country was entering in. 247.

Did not order combat or bombing planes or pursuit planes because they did not have the money and because there was not a settled judgment as to which types were the best. 248.

As soon as the war broke out requested France and England to send the best experts they could spare. 249.

Quite a few here by the last of May from England, France, and Italy. 250.

Caproni people were the first men sent from abroad to undertake the designing of planes for the American Government. 253.

The idea was to adapt the Caproni plane to the Liberty engine. 254.

With an expectation of 9,000 arranged for in August, by February it was reduced to a total of 50. 257.

Continuously before the board, but also continuously postponed, he admits. 258.

Is shown program of the Handley-Page, which program started in September, 1917, with an expectation that 1,500 Handley-Page's would be made, and again on February 19 it was reduced to a program of a total of 50. 261.

This program also postponed and suspended. 262.

The information which he had received abroad and the information he received during the following year before this country entered the war was not adequate to enable him to formulate a plane program. 265.

Sent a commission over in May to find out the whole situation and to bring back what to do. 266.

Had no notion that the country was going into an air program of the size that later developed, but he had notions large enough to ask for an appropriation of \$640,000,000 by Congress. 266-267.

Asked why the commission could not have been sent two months earlier. 269.

Appropriation bill passed on July 24, 1917. 270.

Established the Equipment Division of the Signal Corps in August or September. 271.

Functions of this division to procure the material of the Signal Corps in contradistinction to personnel. 271.

Appointed Mr. Deeds to be in charge of that division. 271.

Prior to that time Mr. Deeds had been a member of the first Aircraft Board, appointed by the Council of National Defense. 272.

Had no duties with the Signal Corps of an executive character. 272.

Maj. Gen. GEORGE OWEN SQUIER—Continued.

Was then not in the service of the United States, as a representative of the United States, prior to the time he was made Chief of the Equipment Division, outside of his duties as a member of the Aircraft Production Board. 272.

Is reminded that the Aircraft Production Board had no executive authority, could not place any contracts, which he admits. 273.

Board authorized by law October 1, 1917. 273.

His attention again directed to August, 1917, when the Equipment Division was established, and to the fact that Mr. Deeds as a member of the Aircraft Production Board had no executive or administrative authority. 274.

Does not recall any order from him that would clothe him with this authority. 274.

The Engineering and Supply Division, before the Equipment Division was established, corresponded to it in function. 275.

Had a separate section called the Finance and Supply Department, with Col. Montgomery at the head. 276.

Then about August 29 these two divisions were reorganized and amalgamated, the Equipment Division and the Finance and Supply Division. 276.

Made one Equipment Division, of which the Finance Section would be a part, with Col. Montgomery under Col. Deeds. 277.

Admits that, as Chief Signal Officer dealing with the military program, before a board which was limited by the authority of the Secretary of War to obtaining of its information as to program from the Army and the Navy, he held an influential position. 283-284.

This board was a regular clearing house for information, he states. 285.

Goes over the first part of the contract situation. 286.

Asked what information he got as to the resources of the Dayton-Wright Co. 289.

States he knew Mr. Orville Wright, in reply. 290.

Did not know whether he owned stock or was just employed by the company. 290.

Did not know what the capital stock of the Dayton-Wright Airplane Co. was. 291.

Did not know when the capital stock of the company was paid in. 291.

Again states how much reliance he placed in the fact that Orville Wright was about in this plant. 292, 293.

Asked if he understood that the contract with the Dayton-Wright Airplane Co. made it the duty of the Government to furnish it with drawings, etc. 294.

And that so far as the manufacturing end of it was concerned and the making of the planes, he understood that Mr. Orville Wright was not to have anything to do with that, to which he answers, yes. 295.

Asked if he knew he was placing this contract with the Dayton-Wright Airplane Co. at a time when it had no financial resources to carry it out with. 296.

Maj. Gen. GEORGE OWEN SQUIER—Continued.

He knew it could get all the money it wanted. 297.

Did not know how much the Dayton-Wright Airplane Co. would be able to make out of this contract in one year. 300.

Resumé given him of the order for the 4,000 De Havillands, profits, bogy price, etc., etc., salaries of the Talbotts, and of Mr. Kettering, etc., and he is asked the theory on which this contract was made. 305.

Says it would seem exorbitant, if true. 306.

Says he did not know these conditions, he had too much to cope with, had to rely and trust the people who were doing the negotiating; in other words, the chief of the financial department and the Chief of the Equipment Division. 307.

States on page 306 that these contracts were the subject of weeks, even months, of careful negotiations and consideration. 306.

Admits on page 308 that the contracts were let to the Dayton-Wright Airplane Co. very promptly. 308.

Asked why they did not make a contract with the Singer Co. 309.

Asked about the Fisher Body Corporation. 312.

Asked if he knew that Mitsui & Co. owned the Standard. 316.

Here he is asked a leading question; i. e., had he noticed that the Standard Co. in some way got hold of a contract for nearly every type of plane that was being put into service by the American Government and that the representatives of this Japanese house are familiar with every detail, etc., etc. 316, 317.

Had heard that this firm was financed by Japanese funds. 317.

He is asked how, as a "military" man, they got this series of little contracts covering the entire aviation field with the exception of the Bristol. 318.

Thinks it may have been a mistake. 318.

Thinks possibly that something was done here that should not have been done. 318.

Asked with regard to Mr. Vincent who had been chief engineer of the Packard Co. 324.

When the \$250,000 was appropriated they started to design, to construct, the Liberty engine. 326.

Does not know whether positively that a contract was ever given to the Packard Co. 327.

Rules of the Office of the Chief Signal Officer are that verbal contracts are not to be made unless they are absolutely necessary—emergencies. 327.

His attention called to the provision, chapter 418 of the act of Congress of August 29, 1916, providing * * * whenever contracts which are not to be performed within 60 days on behalf of the Government by the Chief Signal Officer * * * shall be reduced in writing * * *. In other cases contracts shall be entered into under certain regulations, as may be prescribed by the Chief Signal Officer. 328.

Says he will send in a copy of any regulations he may have prescribed under that provision. 328.

Maj. Gen. GEORGE OWEN SQUIER—Continued.

Says he never gave any authority to any officer of the Equipment Division or the Finance Division or otherwise in the Signal Corps to disburse the \$250,000 without any written contract or written order. 330.

Such a disbursement was not according to the rules and regulations of the department. 330.

Is read Mr. Macauley's statement, president of the Packard Co., in which he says they went ahead on verbal orders. 330.

Got the verbal orders from Lieut. Col. J. G. Vincent. 331.

Never gave anyone authority to violate any of the regulations. 333.

Asked to explain the fact that Lieut. Col. Vincent himself have these orders, a salaried officer of the Packard Co., and that when the vouchers were put in they were paid upon his certificate. 325.

His attention called to the voucher for \$104,500, with Col. Deeds signature to it. 327.

States Col. Deeds had no authority from him, and there was nobody else to give him that authority. 328.

States the same about the voucher for \$60,000, certified to by Col. Deeds. 328.

Also makes the same negative statement with regard to the voucher for \$73,194, which has a letter from Col. Deeds attached. 330.

Gave no authority to anyone in the Signal Corps to certify for payment, or to make payments, under these conditions. 332.

Did not know that Lieut. Col. Vincent was a stockholder in the Packard Motor Car Co. 333.

States that none of these vouchers were brought to him for his consideration before they were paid. 333.

None of these amounts were brought to his attention for approval before they were paid. 334.

Was not aware that Mr. Deeds, before he received a commission, or Col. Deeds thereafter, undertook to certify vouchers for payment. 335.

States the first De Haviland 4 was received in this country in August, 1917. 338.

Col. Vincent's testimony said that Col. Clark, during the period from October 1, 1917, to February 6, 1918, was devoting most of his time to the design of an airplane known as the U. S. A. C-1, and that no one on the part of the airplane experimental department was giving attention to the settlement of the design of the DH-4. 341.

Relied upon Col. Deeds to see that the DH-4 was designed. 342.

The matter of Orville Wright being brought up again, he finally states that Orville Wright was working on secret matter for the Government. 349.

Asked why, if the delay was caused because they could not get information as to what equipment was desired, he did not advise the President or the Secretary of War that the air program was being held up month after month. 362.

States he was a member of the National Advisory Committee for Aeronautics. 364.

Maj. Gen. GEORGE OWEN SQUIER—Continued.

Asked regarding the misleading statement or letter which was addressed to the President of the United States by the secretary of the National Advisory Committee for Aeronautics under date of January 24, 1918. 364.

Understood that some sort of a report was being sent to reassure the President. 367.

States they did not get the information from him, but admits he never took pains to tell them the exact position they were in. 369.

Under the terms of the contract with the French Government, regarding the supplying of raw materials, it was contemplated that there would be 100 per cent of the deliveries by the middle of April. 374.

Down to February 1, 1918, 58 per cent of the materials had been shipped. 374.

His attention called to another inaccuracy in the letter under date of January 24 to the President by the National Advisory Committee for Aeronautics. 380.

Wherein it states that "The same types of machines are being put in quantity production in foreign countries under contracts with the United States." 381.

Did nothing when he read the statement in the paper by the Secretary of War which stated "The first American-built battle planes are to-day en route to the front in France," etc. 383.

Is told of Mr. Pew's testimony in which he stated that Maj. Gen. Squier called the Senate speeches, criticizing the inaccurate statements emanating from his department, "German propaganda." 390.

Remembers nothing of this at all. 392.

Maj. HOWARD ELLIOTT (October 9, 1918; Book 24).

Produces what correspondence he was able to find in the files relative to transactions with the Packard Motor Car Co. 422.

Is satisfied that there was never a written contract. There is absolutely no evidence of a contract. 429.

Reads from Army Regulations, page 138, portion of paragraph 653, that "Every order issued by any military authority which may cause an expenditure of money in a staff department will be given in writing." 435.

Verbal order is permissible in an emergency. 435.

A matter that was in progress from the 1st of June until November would seem to have been susceptible of a written statement. 436.

Lieut. Col. M. W. THOMPSON (Washington, D. C., October 10, 1918; Book 24).

War Credits Board made an advance in the nature of a loan to the Curtiss Aeroplane & Motor Corporation. 442.

The Curtiss Co. was advanced substantially \$12,000,000, of which two-thirds came from the Army through the War Credits Board and the remaining third from the Navy. 443.

Can not state from memory how much of this loan was devoted to the retirement of outstanding obligations of the Curtiss Co. 445.

Lieut. Col. M. W. THOMPSON—Continued.

Out of total advance of \$12,000,000, nearly \$7,500,000 was devoted to the retirement of first lien bonds on the North Elmwood plant and debenture notes. 447.

“One day in comes a telegram saying that the New York Central agent of the Director General of Railroads had asked for authority to put an embargo on cars to the Curtiss plant, the reason being that they had a great number of cars that had been shipped in there against draft with bill of lading attached, and not getting their money they could not take up the draft, and the railroad yards were clogged up. If that embargo had been put on, it would have busted the Curtiss Co. and they would have been in the hands of receivers.” 452.

Copy of memorandum from War Credits Board to Acting Secretary of War relative to advances to Curtiss Co. 455.

Letter from Navy Department to War Credits Board on same matter. 466.

The moneys advanced by the Army were deposited in the Bankers' Trust Co. in New York, at the request of the Curtiss Co., and that part of those moneys required to pay off the debentures was transferred by the Bankers' Trust Co. to the Central Trust Co., at whose offices the debentures were payable. 473.

It has been a part of policy of Government to endeavor to cause the Curtiss Co.'s general commercial credit to be built up so far as possible, in order that they might transfer the load of credit off the Government. 475.

Generally understood the control of stock of the Peerless Truck & Motor Co. is in the General Electric Co. It appears the Peerless Truck & Motor Co. held the notes of approximately \$1,500,000 of the General Vehicle Co. 476.

RODERICK S. HUDDLESTON (Washington, D. C., October 10, 1918; Book 24).

President of the Huddleston-Marsh Mahogany Co. since January 1, 1909. 479.

Had contracts with Government for mahogany lumber. 480.

Two contracts called for about 3,195,000 feet of Central American and Mexican mahogany. 480.

Firm is a member of the Mahogany Manufacturers' & Importers' Association. 480.

First meeting of association was held January 21, 1918. In Washington. 481.

War committee of association was formed with Mr. A. S. Williams as chairman and Mr. Charles H. Thompson as secretary. 483.

List of firms desirous of becoming members of the association. 485.

Proposition submitted by committee to the Government. 487-500.

Proposition was rejected by Lieut. Ryerson and members of association were told to submit a price on lumber only. 502.

Thinks it was between \$350 and \$400 per thousand. 502.

RODERICK S. HUDDLESTON—Continued.

Mr. John C. Wickliffe, representing C. R. Mengel Bro. & Co., was in Washington when these negotiations held. 504.

The association made certain payments to Mr. Wickliffe. 505.

List showing contributions made by each member of the association. 508.

Did not like to feel that one mahogany manufacturer was paying all the expenses of an employee of the Government. 510.

Would not pay Mr. Wickliffe until it was approved by the Signal Corps. 514.

Letter from office of Chief Signal Officer to C. C. Mengel & Bro. Co., approving their request to be allowed to pay Mr. J. C. Wickliffe a salary while he was in the employ of the Signal Corps. 518.

Payment was discontinued at end of July at request of Mr. Wickliffe. 521.

Judge Hughes: "—but there was not the slightest doubt but what Mr. Wickliffe went into that department and then dealt with those very manufacturers who constituted that association which was paying him this money." 523.

Made payments to Mr. McCullough, an employee of the George D. Emery Co., who was identified with the Signal Corps. 528.

Mr. McCullough was an inspector under Mr. Vrooman. 529.

Mr. McCullough was in charge of inspection in Philadelphia and New York. 539.

JOHN EDWARD McCULLOUGH (Washington, D. C., October 10, 1918; Book 24).

At present time is superintendent at mill for the George D. Emery Co., manufacturing mahogany and Spanish cedar cigar boxes. 544.

Became identified with the Signal Corps on March 4, 1918. 545.
Resigned on August 3, 1918. 545.

During that time he was district inspector in charge of New York district, which took a strip along the coast from Maine to Texas. 545.

Mr. S. B. Vrooman, jr., chief inspector of lumber for the Signal Corps, asked him to take that work in charge. 546.

Inspected plant of S. B. Vrooman & Co. in Philadelphia. 548.

Received compensation at rate of \$2,400 a year from Government. 549.

Received from George D. Emery Co. the difference between that and \$3,500, which was his regular income. 550.

That account was turned over to a committee and he got check monthly from that committee through the treasurer, Mr. Huddleston. 550.

Lieut. Vrooman, as his superior officer, occasionally visited same plants that he did. 551.

Went around with him to make rulings as to what should be accepted and not accepted. 551.

WILLIAM WOODROW MONTGOMERY, JR. (Washington, D. C., October 10, 1918; Book 24).

Connected with the Bureau of Aircraft Production as chief of what is known as the advisory and consulting department, whose duty it is to look after miscellaneous matters which involve legal questions. 554.

Is a brother of Col. Montgomery. 556.

Conducted negotiations relating to the acquisition of the plant of the General Vehicle Co. 559.

Gives history of negotiations. 560.

Had been telling General Vehicle Co. not to get tied up with other contracts; that they (Government) would need their facilities. 566.

When plan by which their (General Vehicle Co.) plane would be taken over by the General Motors people was dropped it left them in a very awkward situation. 566.

Proposition was made by Mr. Wagoner that Government take over plant on the same terms as General Motors had contemplated paying for it. 567.

Arrangement was made that, subject to the approval of the Aircraft Board, we would purchase the plant of the General Vehicle Co. at its actual asset value, deducting, however, the appraised value or perhaps the inventory value of their electric-truck business. 567.

Understood Peerless Motor Co. had an interest in the General Vehicle Co. 569.

Has no idea who the real persons were behind the Peerless Co. 570.

Does not know whether the National City Co. had any relation to it. 570.

Contract was placed with Union Switch & Signal Co. on December 6, 1917, for 2,500 La Rhone engines, but negotiations started considerably

Cablegram signed Pershing, dated October 5, 1917, No. 204, paragraph 2, contains sentence reading, "Advise you build no rotary engines; single-seater pursuit airplanes be sent to Europe; existing machines this type will be outclassed by date yours arrive. Build only what you need for use in United States training purposes." 565, 574.

Did not know whether the Union Switch & Signal Co. would make good on their contract, although for some reason he does not know why Government wanted both types of engines—the Gnome and the La Rhone. 576.

Question arose as to what to do with the General Vehicle Co.'s plant, which Government had bought. 576.

General Vehicle Co. plant was turned over to the Wright-Martin Co. for the manufacture of Hispano-Suiza engines. 577.

Witness asked why it was deemed necessary or advisable to buy the plant of the General Vehicle Co. 578.

Judge Hughes: "Have you ever looked up the question as to the inherent power of the Government to institute condemnation proceedings for lands that are needed for governmental use?"

WILLIAM WOODROW MONTGOMERY, JR.—Continued.

- Thinks this general rule would have resulted in a lawsuit in this case. 580.
- Government took plant of the General Vehicle Co. at a time when it did not contemplate business which would be adequate to utilize the plant. 581.
- Col. Thompson employed the firm of Black & Veitch, who made an appraisal of the property, which seemed to justify the price Government was paying. 582.
- Memorandum of the Joint Army and Navy Technical Aircraft Board relative to the rotary engine. 584.
- Supposes matters of purchasing plant around either with Col. Deeds or Col. Montgomery. 588.
- Thinks either Mr. Vanderlip or Mr. Rich, of National City Bank, were in some way connected with it. 590.
- Voucher for the payment of real estate—has in mind figure of \$861,000—was approved by Mr. Baker personally. 592.
- Practice required that the Secretary of War shall personally approve the voucher before any payment for real estate is made, and there is no such requirement in regard to personality or other things. 593.
- EDWARD PUTNAM CURRIER (Washington, D. C., October 10, 1918; Book 24).
- Was commissioned a major in the Signal Corps last October. 597.
- Was sort of utility man. Was there for about two weeks and then detailed to the Treasury Department for a little over six weeks. 597.
- Came to Washington in April, 1917, and was sort of secretary or assistant to Mr. Coffin for a while. 598.
- Was there about three or four months and then went down to Col. Montgomery's office and helped there. 599.
- Before coming to Washington was member of firm of Montgomery, Clothier & Tyler, which later changed to Montgomery & Co. 599.
- Entered the firm April 2, 1917. 600.
- Previous to that was with the National City Bank. 600.
- Does not recall the flotation of securities of the Curtiss Aeroplane and Motor Corporation. 600.
- ALBERT LARIVIERE (Washington, D. C., October 10, 1918; Book 24).
- Is principal clerk of appropriations department in War Department. 605.
- Dealing with appropriations of Bureau of Aircraft Production, Finance Division. 605.
- Prior to organization of bureau was with the Signal Corps. 606.
- Was relieved of Capt. Elliott's accounts and Maj. Gutensogn's accounts, his predecessor, about the 1st of August, 1917. 607.
- Mr. Mehrlick checked Capt. Elliott's accounts. 607.
- Gives information as to how a voucher is checked. 608.
- It is up to disbursing officer to satisfy himself that party had a right to sign voucher. 610.

ALBERT LARIVIERE—Continued.

- Does not recall ever O. King voucher No. 7228 for \$60,000, payable to Packard Motor Car Co., upon which his initials appear. 612.
- Does not remember ever signing a voucher in that way. 628.
- Maj. EARNEST A. COLEMAN (Washington, D. C., October 10, 1918; Book 24).
- Commissioned a major August 3, 1918. 630.
- Commissioned a first lieutenant on August 18, 1917. 630.
- Employed in office of Auditor for the War Department before entering the Army. 630.
- Has seen original of voucher No. 458, paid August 11, 1917, for \$104,500, to the Packard Motor Car Co., before. 631.
- Chief Signal Officer asked for these vouchers last winter or last fall. 634.
- The Aircraft Board, the Office of the Chief Signal Officer, and the Department of Justice were inquiring about matter. 635.
- Furnished photostated copies of vouchers to Department of Justice for the purpose of determining as to whether this investigation now being conducted was necessary. 636.
- There should be a written order covering voucher. 644.
- Has never met Maj. Vincent. 661.
- Lieut. Col. A. C. DOWNEY (Washington, D. C., October 10, 1918; Book 24).
- Judge Hughes. "Capt. Elliott is responsible for your coming here to-day, because he told us that you had some information with regard to these vouchers under which \$249,159.10 was paid to the Pack Co. for experimental work in developing the Liberty motor." 663.
- Had no personal relation to it whatever. 664.
- DOUGLAS CAMPBELL (Washington, D. C., October 14, 1918; Book 24).
- Is a lawyer. His firm, Campbell, Harding & Pratt, represent the J. G. White Corporation. 672.
- Recently made a trip to France on behalf of the Bureau of Aircraft Production at the request of the J. G. White Corporation. 672.
- Copy of his report on the subject of air motor and materials shipped to France under United States Government contract, No. 1694, with the J. G. White Corporation. 673-676.
- Immediate object of inquiry was to ascertain the disposition of materials which had been shipped and general condition in which the materials arrived in France, 676.
- Mr. Chilton's statement as to material shipped to France under this contract. 678.
- Lieut. Hiltz and Capt. Satterfield, of the American Air Service, and Maj. Guinard, of the French service, advised him with respect to the satisfaction as the quality of the materials delivered. 681.

DIGEST OF HEARINGS BEFORE THE SUBCOMMITTEE OF THE COMMITTEE ON MILITARY AFFAIRS. SENATE.

- Col. C. G. EDGAR (Washington, D. C., May 29, 1918; Volume I).
A colonel, Signal Corps, United States Army, commissioned a reserve captain in Quartermaster Corps, December, 1916. Put in charge of construction division, Signal Corps, April, 1917. Organized construction division and began project to build aviation training plants, 54 buildings. Only three existing when he began this work. Sites selected by board of officers. 5.
Work required an architect to get out plans for buildings. Architect chosen, Mr. Kahn, Detroit. Completed 10 days. Training before Army service shows no airplane-construction knowledge. 6.
Automobile connections. 7.
Locating flying fields, repair depots. 9-11.
Report of progress on all fields, May 27, 1918. 12.
No connection with ground flying schools. Formation of same. 14.
Formation of the construction division, employees, some in uniform, others not. The discipline prevailing. 16-17.
Gen. Squier responsible for all moneys and things done in Signal Corps.
Statement showing estimated cost of all projects constructed or under construction in the United States up to March 25, 1918, and actual cash disbursements. 19.
Statement showing rentals of land to June 30, 1918. 21.
Purchase of land. 22.
List of construction work, showing estimated and actual cost of each project as of May 24, 1918. 22-23.
Construction abroad. 23.
Commitment for construction work, Langley Field, Hampton, Va.
Allotments available for purchase of land and construction of buildings in the United States and abroad. 24.
Cost of Belleville, Ill., field. 27.
Building of fields.
Senator Reed, "Do you think there was any waste down there (referring to Fort Worth, Tex.), avoidable waste?"
Col. Edgar, "Yes, sir; I do. I think there has been avoidable waste on every one of these jobs." 28.
Sanitary conditions at the fields. 29.
Made first protest to these conditions in January; no action at that time. Protests made to Gen. Squier and Gen. Kinley. 30-31.

Col. C. G. EDGAR—Continued.

- The names of contractors who built the various fields and whether their work proved satisfactory. 31-35.
- Langley Field project gave much trouble. Senator Reed, "Did the Government lose any money, particularly on that?" Col. Edgar, "I think more money was spent down there than was necessary; yes."
- J. G. White, New York, contractor. Also contracted for other jobs. Selected by Aircraft Production Board. 36.
- Testimony showing Col. Deed's connection with Mr. Talbott, of the Dayton Lumber Co. 37.
- Night flying route, Dayton to Rantoul, Ill. 38.
- Very expensive project. One or two flights made each night. Lack of cooperation and system in Signal Corps. 39.
- List of airplane manufacturers. 40.
- Name of Construction Division changed to Supply Division. Experienced trouble with Equipment Division to secure parts for damaged planes. Col. Deeds head of Equipment Division. 42-46.
- Improvement in Equipment Division when Col. Deeds replaced by Mr. Potter. Now materials being received. Thinks delays due to interior friction in Equipment Division. 49.
- Lack of fighting planes now. One hundred and thirteen fighting planes. De Haviland, shipped overseas.
- Miami Field built without his authority. Approximately \$40,000 spent. Col. Deeds assumes responsibility for its construction. "I never knew anything about it until I heard from Carl Fisher that additional work ought to be done. I wired him. He said, 'I am building you a field.'" 50.
- Equipment Division built acetone plants. Million-dollar job. Could have been done by Supply Division for \$60,000. 51.
- Unauthorized construction assumed by commanding officers of fields without advice from his office. Paid for out of post funds, designed for other purposes. 52.
- Memo showing present housing capacity and quarters for enlisted men and officers at all fields. 56.
- Tables showing housing capacity Signal Corps camps, fields, depots, etc. 54-55.
- Representatives of Supply Division sent to fields. Ignored by commanding officers there. 56-57.
- Lieut. Col. E. LESTER JONES (May 29, 1918; Volume I).
A lieutenant colonel, Supply Section, Division of Military Aeronautics, chief assistant to Col. Edgar.
- Construction of the unauthorized Miami Field and night-flying field, Dayton to Rantoul, Ill. 58&59.
- Col. Deeds: "I am to blame for this situation, and I am the cause of the trouble." Miami Field now used successfully as experimental station.
- J. G. White & Co. bought materials and paid freight charges for Government. Used commercial bills of lading in lieu of Government bills of lading. 60-61.

Mr. B. A. GUY (Buffalo, N. Y., June 3, 1918; Volume I).

Secretary and general manager Curtiss Aeroplane Corporation.

Six plants. North Elmwood plant built for Government.

Size of plant. Started August 1, 1917. Operating within 30 days and manufacturing by following October.

Engaged in making planes before United States entered war.

Five of six plants built after war in Europe began.

First Government order was for 600 JN-4B machines, June 27, 1917. Price \$8,000. 65-66. All delivered by November 21.

This type used by England. Delivery not hampered by Government in any way. 67. Prepared to fill this contract even before Government placed order. 68.

Second order September 19, 1917, before other completed. 69.

Included 3,000 Spad machines. Had no plans for building this type, but on October 20, 1917, ready to build them; but order canceled on October 20 by Government. 71. Failed to build 500 Caproni's; also in second order, due to failure of Government to furnish blue prints and specifications. 72.

If Government had placed orders promptly, it would have stimulated production in Curtiss plant. Much loss of time caused thereby. 74.

Third order for 1,400 JN-4D, September 19, 1917. Produced by May, 1918. Delays caused by Government due to its request to build machines so they could be stored; also manufacture of certain spare parts given to other concerns and when order given for certain type of machine Government desired various changes from time to time. 76-81.

Cancellation of contract for spare parts. 82-83.

Effort of Government to have Liberty engine installed in Spad machines. 85.

WILLIAM A. MORGAN (production manager, June 3, 1918; Volume I).

Curtiss Corporation brought in at this point to show cancellation of Spad contract. 86-91.

Col. Deeds claimed Spad obsolete, but returning officer from Europe said, "Well, the Spad machine is not obsolete, because it is one of the best types we have over there to-day." 91.

Reasons for selling stock and leaving Curtiss Corporation: Insinuations made he was profiteering, so sold his stock at a sacrifice. 93-96.

Mr. B. A. GUY (Buffalo, N. Y., June 3, 1918; Volume I).

Difficulties experienced in manufacturing Bristol Fighter planes for Government. 98.

Failed to receive proper specifications from Engineer Corps of Government. Much loss of time in production caused. 98-99.

To stimulate production in plant large orders should have been placed from time to time. 101-102.

Navy contracts for planes. 103.

Senator Reed sums up, "You mean when they gave you the blue prints for this machine, and there are necessarily parts of a machine that have to be fitted to each other, that in some instance the parts would not fit if made according to the plans and you could not assemble the machines." Mr. Guy, "That is true." 105.

Mr. B. A. GUY—Continued.

Curtiss Co. developed high-horsepower machine. Not offered to Government for fear of competing with Liberty motor. 106.

Loss of eight months' production due to Government's insistence for certain motor in one type of plane. 107.

Cancellation of contract for Caproni's machines. 107-108.

Mr. Morgan's statement as to finances of Curtiss plant and his activities to secure Government orders. 110.

Assurances made by Secretary of War that Government would finance extension of Curtiss plant. All arrangements made, but officials refused to sign contract. 112-116.

Correspondence between Curtiss and Government officials.

GEORGE H. MUELLER (June 4, 1918; Volume I).

Chief engineer Curtiss Corporation. Of German parentage. Previous training before entering employ of Curtiss Co.

Testimony showing reverses made by the Government in deciding what motor and what guns should be used with the manufacture of Spad plane. Much time lost. 124-128.

All of his testimony related to the technical construction of motors and types of airplanes. 128-146.

Mr. C. WEBER (Buffalo, N. Y., June 4, 1918; Volume I).

Production manager, Curtiss Corporation.

Reduction in production due to failure of Signal Corps to furnish spare parts which were manufactured elsewhere and shipped to Curtiss Co. to put on machines. 147.

Loss of production due to Government caused employees to be idle, but received wages. Probably paid by Government. 149.

Mr. CHARLES M. MANLY (Buffalo, N. Y., June 4, 1918; Volume I).

Consulting engineer and chief inspection engineer, Curtiss Aeroplane & Motor Corporation; 20 years' experience with airplane development.

Made trip to England and France to cooperate for airplane production. 150.

A plane should be designed to suit the motor. Liberty engine. 152-153.

Technical discussion of engines follows.

Mr. JAMES E. KEPPERLY (Buffalo, N. Y., June 4, 1918; Volume I).

Vice president, general manager, director, and member of voting trust.

Not a stockholder. Connected formerly with Willys-Overland. Annoyance by Secret Service in Buffalo. Military Intelligence. 158.

FRANCIS LYSTER JANDRON (Detroit, Mich., June 5, 1918; Volume I).

Assistant secretary Packard Motor Co.

War work of this company. J. G. Vincent, later colonel of Signal Corps, had charge of development of Liberty motor.

Statement of O. E. Hunt, chief engineer of Packard Co., giving technical discussion of various motors and company's activity in airplane development.

Correspondence of president Packard Co. and Col. Deeds showing development of Liberty motor. 169-170.

Difference between Packard and Liberty motors. 173.

FRANCIS LYSTER JANDRON—Continued.

- Criticism of Liberty motor. Senator Frelinghuysen's statement. 178-179. Technical criticism follows.
- Problem of radiation in Liberty motor. Packard Co. had nothing to do with it and was never asked.
- Senator FRELINGHUYSEN. Who is to blame for that? 186.
- Lack of coordination. 186-187.
- Mr. HUNT. Contracts were let when there has been no tests of the engine in combination with the radiators in the planes. 187.
- Change in system of oiling. 189.
- Contracts for production given before experiments completed. 196.
- Lack of tool makers. Enlisted in Army. "We have 50 men detailed to us from Camp Custer, and they are drawing the pay of soldiers and working alongside of our men who are drawing twice as much." 203.
- Changes for the betterment of airplane production. 203.
- Changes in Liberty motor directed by the Government. 205.
- Question of patent rights and royalties turned over to the Government. 205.
- Col. Waldron's connections with Packard Co. Correspondence showing relationship.
- General description of Packard plant. 209.
- Mr. HENRY FORD (Detroit, Mich., June 6, 1918; Volume I).
- Government work by his company.
- Installation of special machinery caused delays.
- Mr. FORD. And too many experts. 213.
- Suggestions to expedite production. 214-217.
- Building of ships. 220-221.
- Mr. R. H. COLLINS (Detroit, Mich., June 6, 1918; Volume I).
- President and general manager Cadillac Motor Car Co.
- Engaged in making Liberty motors. Thinks Government attracted expert toolmakers to leave factories. Many officers entered factories and induced men by promises to enlist. 224.
- Suggestions for betterment of the production. 226.
- Labor conditions in Detroit. 226.
- Various faults in Liberty motor.
- Handling of I. W. W. activity in his plant. 229.
- Mr. W. C. LELAND (Detroit Mich., June 6, 1918; Volume I).
- Lincoln Co. formed to take up Government work. Building Liberty motors.
- Statement of why his plant unable to keep up with schedule in production. 231-235.
- Opinion of Liberty motor. 236.
- Sabotage activity in his plant. 238.
- Technical discussion of motors.
- Mr. CHARLES FISHER (Detroit, Mich., June 6, 1918; Volume I).
- Of the Fisher Body Corporation, Detroit.
- Contracted to build De Haviland airplane. Drawings submitted in driblets and held up production. Promised specifications and drawings within two weeks. 244.
- Cols. Montgomery, Deeds, and Waldon made promises. 246.

- Mr. C. F. KETTERING (Dayton, Ohio, June 7, 1918; Volume I).
 Dayton-Wright Airplane Corporation. Succeeded the Domestic Building Co., of which he was vice president and Col. Deeds, with 40 per cent holdings, was president.
 Business of the Domestic Building Co. 260.
 His various business connection with Col. Deeds. 261-265.
 Incidents leading up to the formation of the Dayton-Wright Corporation by Deeds, Wright, Talbott, and Kettering. 270-271.
 Corporation formed to take up promised Government contracts. 272.
 Government sent accountants to check up values in taking over corporation. Method of arriving at realty values. 274.
 Contract with the Miami Conservancy District for land to build the Wilbur Wright Flying Field. 278-279.
 Sabotage activity. 280.
 Contracts to build planes. 282-283.
 Cause of delays. 283-290.
 Compelled to sign the cross-licensing agreement, and the royalty which was paid included in cost of production. 291.
 His opinion of the Liberty motor.
 Twenty-six million dollars of contracts done by this company. 295.
- Mr. JOHN GRIER HIBBEN (Princeton, N. J., June 18, 1918; Volume I).
 President of Princeton University.
 United States School of Military Aeronautics. Five such schools. Seven hundred students taking seven courses offered.
 University gives instructions to men sent by Government, who has charge of the military instructions. Graduates sent to flying schools in United States. Expenses of school, \$136,248.
- Mr. J. H. ANDERSON (New Brunswick, N. J., June 18, 1918; Volume I).
 Of the Wright-Martin Aircraft Corporation. Manufacturing Hispano-Suiza motors. Operates also a Government-owned plant at Long Island. Its financial organization. This company a beneficiary of the cross-license agreement. 302. List of the company's officers.
- Mr. WILLIAM HAND (New Brunswick, N. J., June 18, 1918; Volume I).
 Assistant to the sales manager, Wright-Martin Corporation.
 Came to company immediately after letting of first contract.
 List of contracts taken from the Government. 305, 306.
 All contracts let on cost plus basis. Contract states construction must commence 90 days after all details completed. Government failed to send all details. Does not know how much time was lost thereby. 307.
 Connections of Mr. Houston, formerly of the Curtiss plant.
 Employed only male help. No labor difficulties.
 Operated a plant protection department to guard against sabotage. 310.
- Mr. GEORGE H. HOUSTON (Somerville, N. J., June 19, 1918; Volume I).
 Of the Wright-Martin Aircraft Corporation.
 Detailed account of the contracts let by the Government. 314, 315.

Mr. GEORGE H. HOUSTON—Continued.

Delivering 500 motors each month. Part of plant forced to close down because of receiving no more orders. Contracts negotiated by a Mr. Fletcher, Bureau of Aircraft Production. Let on the cost plus and bogy price basis. 316.

Secured right to manufacture this Hispano-Suiza motor from France and Spain.

His letter of July 25, 1917, to S. D. Waldon, Aircraft Production Board offering a year's output covering contract already to supply French with planes and what could be done for United States Government. 317. Letter in reply. 318. No contract let until October.

French representatives of company advises change from geared motors to direct drive. This told to United States officials, but order given for geared motors. Months later order changed to direct drive. Much time lost thereby. 318, 319.

Their Los Angeles factory made 50 planes for Government, but it proved a bad undertaking due to miserable drawings and specifications submitted by Government. 320.

Offer to form organization to build planes but nothing done. 320.

Formation of secret service to combat sabotage. 322.

Gen. George W. Goethals president of this company before entering Army. 323.

Mr. L. G. RANDALL (Plainfield, N. J., June 19, 1918; Volume I).

Of the Standard Aircraft Corporation. Built machines and spare parts for Government. Only doing Government work.

Many employees discharged because of not receiving more contracts.

Factory not suitable to build fighting planes. Used most for assembling. Plant at Elizabeth and at Plainfield both could be used in emergency.

Statement of Mr. Thomas Henri Huff giving a discussion of a machine he designed for company with Gnome and Le Rhone motors. 332-337.

Mr. HARRY B. MINGLE (Elizabeth, N. J., June 19, 1918; Volume I).

President, Standard Aircraft Corporation. Capitalization and formation of the company.

Plant enlarged for the United States Signal Corps.

Financed by Japanese concern, Mitsui & Co. Stock owned by Mingle, given as collateral in favor of Mitsui & Co. 340-347.

Plant making planes for Japanese Government. 347.

List of contracts. 347, 348.

Contract for assembling Handley-Page plane. 349.

Signal Corps sent drawings and parts and desire his corporation to build plane suitable for Liberty motor and ship same to fields and overseas without testing. 351.

"We canned the idea." Dealings with Mr. Kellogg, Signal Corps.

Senator REED. Did you have any previous experience that led you to believe that the drawings and blue prints sent by the Government were inaccurate?

Mr. MINGLE. Oh, yes, sir. It was continual.

Mr. HARRY B. MINGLE—Continued.

Senator REED. I want to know if the United States officers proposed to have you make a machine from parts that had been assembled from drawings which were sent to you, the machine when completed to be equipped with a Liberty motor, and yet that kind of machine had never been tested with a Liberty motor in it.

Mr. MINGLE. Yes.

After this thing was done I made a trip through the Handley-Paige plants to which these parts had been assigned, and the condition which I found in those plants was the greatest indictment against the Signal Corps that I ever saw in my life. There was not anyone who had the least conception, so far as I could find out, of what the entire program was. 355. Would have saved five or six months if drawings had been completed.

De Haviland contract uncomplete. Only one produced. "When do you expect quantity production." "There is not a man that can tell until somebody puts his foot down and says 'produce it as it stands to-day and get it out.'" 357.

Red tape in getting drawings and plans for De Haviland changes. 357. Production entirely prevented. 358.

Applied for sanction to go ahead. No reply. 359.

More or less freedom in producing Handley-Paige. 362.

Necessary for plant to close down unless more contracts are let to them. 362. Orders received; later rescinded. 363.

Company developed a sample plane under supervision of Italian representative of Caproni machine and plans were taken to begin to build them. Given out to another company. 364-365.

Officials of company sent to Dayton, found prints for parts of De Haviland 9's not ready for production. This told to officials in Washington. Chairman, "Did they seem to be surprised at your story." "I think they were shocked." 365.

Much material bought, but contract canceled. Authorized to sell material and make claim for difference between cost price and price obtained. 367. Authorization given by finance section, who were told that this material could be used by other manufacturers in building other types of planes. 367-368. "That to me is absolutely outrageous." Senator Reed, "Have you had other trouble with sabotage besides that." [Laughter.] His intention to finally dispose of the material. 369.

Feels his company discriminated against. 370. Mr. Ryan visited other plants but not this one. Col. Deeds only came recently. Built and tested a "J" machine, but received contract for only 100, while contract for a 1,000 of his company's own inventive machine given to Fisher Body Co., and 1,000 to the Dayton-Wright Co. 372-376. "Did they, however, state a reason for not giving these particular contracts that there was any objection on account of the way you were financed."

Progress his company made with Standard "J" plane with Hispano-Suiza motors. 379-380.

Experience with the Navy has been satisfactory. 381.

No trouble from sabotage. 381.

Mr. HARRY B. MINGLE—Continued.

Liberty motor as good as any. 382.

Suggestion as to placing of responsibility somewhere. 383.

Correspondence showing condition of airplane production. 384-389.

Maj. ROY S. BROWN (Mineola, Long Island, June 20, 1918; Volume I).

Of Regular Army, Aviation Section. Much experience in flying with Liberty motor. Engaged in teaching.

Testimony mostly technical, giving his experience with various planes and motors. Thinks Mercedes (German), Rolls-Royce (English), and Liberty (American) best of the motors. Hispano-Suiza an excellent motor. Spad and German Albatross best planes.

Capt. UGO D'ANNUNZIO (Mineola, Long Island, June 20, 1918; Volume I).

Captain of Italian Army, charge of technical direction of aviation. Chief engineer of the Caproni plant, Milan, Italy.

Connected with Italian Army since 1910.

His story of how Caproni became connected with United States in building Caproni machines. 406. Came to America conference with Mr. Coffin and Col. Deeds. Sent to Standard Aircraft Corporation. Plant not adequate to build Caproni. Assurances by Mr. Mingle his plant could be enlarged. Government not certain in program to build this machine. Many conferences with Col. Deeds, but no decisions. 408.

Necessary to build motor to go with Caproni which used a Fiat. Impossible to build fast enough in Italy and ship to America. 409.

Technical discussion of Liberty motor. A good one.

Curtiss plant a wonderful one but badly organized. Fisher Body plant efficiency superior, but equipment not so large as Curtiss. Standard Aircraft Corporation an excellent one but small. 413-415.

Mr. W. F. BENNETT (Long Island City, June 21, 1918; Volume I).

Treasurer Lewis Vought Corporation, Long Island City. His plant expects to enlarge and receive some Government contracts. 419-422.

Mr. GEORGE A. MORRISON (Farmingdale, Long Island, June 21, 1918; Volume I).

Production manager of Breese Aircraft Co.

Government contract for 300 Penquin planes. Production trouble with Lawrence Motor furnished them by the Government. 425.

Motor made by the Excelsior Co., of Chicago.

Correspondence of the company to show defective workmanship of Lawrence motor. 426-436.

"We received them from the Excelsior Motor Co., with the stamp of approval of the United States Signal Corps on them.

We are not supposed to do anything with the motors. 437.

One-third of the deliveries defective; could be seen with naked eye, yet they bore Government stamp of approval on them. 438.

Mr. GEORGE A. MORRISON—Continued.

Bogey price basis.

Mr. CARL HENDRICKSON (Farmingdale, Long Island, June 21, 1918; Volume I).

Of the Excelsior Co., Chicago. Sent to Breese plant to look after defects in engines which his company sent to Breese Co. Testifies trouble with engines due to bad workmanship. Should never have passed Government inspector. 441.

Second Lieut. FELICE TESTONI (Mineola, Long Island, June 21, 1918; volume 1).

Of Italian Army. Special duty to test Liberty engines. Bound by agreement not to discuss Liberty motor. 443.

Technical discussion of motors and planes. 444.

Mr. W. H. WORKMAN (Washington, D. C., June 25, 1918; Volume I).

Statement of airplane production in England and France. 452. Returned to this country feeling that something was really being done. "I regret to say that I can not feel we are any better off than we were six months ago." 452.

Production of Handley-Page plane and motor. 453.

Proposal to Bureau of Aircraft Production on behalf of Mr. Handley Page, of England. His interest with Mr. Page. 454-468.

Maj. A. C. DOWNEY (Washington, D. C., June 26, 1918; Volume I).

Bureau of Aircraft Production. His duties. 469.

Connection with conference on legislation relative to the Aircraft Board. Board desired authority without responsibility. Desired Signal Corps to execute contracts and the board to have simply advisory capacity.

His information regarding letting of contracts. Senator New, "Did you agree with all matters relating to the letting of those contracts, either for the planes or the motors?" Incident showing his disapproval.

Contract drawn up with Willys-Overland Co. whereby company was to receive \$2,100 per motor if delivered by certain time. If not delivered then, company was to receive \$1,950. Company did not make deliveries on time, but Aircraft Board passed resolutions to pay them \$2,100 because some machinery costing about \$25,000 had been installed by them. "The Government has not any right, and there is not any consideration for amending a contract where we are to receive \$25,000 worth of machinery and stand to pay out three-quarters of a million dollars." 471.

Explanation of basis of letting contracts. Cost plus, etc. 472-473.

The contractor receives a fixed profit equal to either 12½ per cent or 15 per cent of an estimated cost. If manufactured for less than estimated cost contractor receives 25 per cent of savings, Government 75 per cent. Dayton-Wright Co. received 12½ per cent, Fisher Body Co., 15 per cent. 473.

He approved of supplemental contracts.

Government had to amortize North Elmwood plant of Curtiss people. 474.

Maj. A. C. DOWNEY—Continued.

The original cross license agreement costing the Government \$4,500,000. 475. Supplemental agreement cut this amount to \$2,300,000. 476. Wright-Martin Co. and Curtiss Co. beneficiaries under this agreement.

Aircraft Board did not attempt to force corporations to join the Manufacturers' Aircraft Association. 477.

Fisher Body Co. and Standard people stated they signed cross license agreement almost under duress. "I did not want to see them join the Manufacturers' Aircraft Association." "I did not think it was an arrangement which was fair to the Government." 477.

So far as everything has been brought to his attention, he approves of everything in connection with the McCook Field proposition. 479.

How contractors coming to Washington to secure contracts to manufacture airplanes for the Government were dealt with. 482.

Contract with Engle Aircraft Co. for spare parts on the Curtiss training plane. Secretary of War Baker's brother connected with Engle Co. He resigned because of criticism. Contract canceled but renewed upon his resignation.

Mr. FRANK H. ADAMS (Washington, D. C., June 26, 1918; Volume I).

Of the New York Times relative to production of Liberty motors in the Trego Iron Works. He visited plant because his brother was connected with this company. Production impossible there because of so many changes, 5 to 30 per day, coming in. 485-487.

Correspondence showing cancellation and reinstatement. 488.

Maj. H. S. BROWN (Washington, D. C., June 26, 1918; Volume I).

Chief of Finance Division, Bureau of Aircraft Production.

His business activities in civil life, Wall Street.

Story of the organization of the Finance Division. 493. General memorandum No. 30 gives general function of his section.

Number of personnel employed. 495.

Complaints of Standard Aircraft Corporation gone into. Summarizes Standard Corporation's condition (*a*) as being result of lack of management, (*b*) lack of accounting system, (*c*) lack of money. 496-498.

Dealings of Finance Section with Curtiss people. Lack of accounting in this company. 499.

Dealings with the Dayton-Wright Corporation. 500.

Advanced \$11,900,000 to the Curtiss people to relieve their financial difficulties. 501.

Government took a mortgage secured by notes, also furnished \$2,000,000 worth of materials to them. 502.

Government placed a controller in the Curtiss office. Found a misstatement as to liabilities. 502.

Daily statement, Curtiss Airplane & Motor Co., of June 19, 1918. 503.

Relation between Finance Division and the Spruce Production Division. 504.

Maj. H. S. BROWN—Continued.

Correspondence relative to the litigation between Wright Co. against the Curtiss Airplane Co. with reference to cross license agreement. 505-506.

Maj. FRANK E. SMITH (June 26, 1918; Volume I).

Charge of approvals and appraisals section, also chief executive officer in charge of field forces of the Finance Division. His business activities before entering Army. Connected with automobile industry. 507.

His duties with the approvals and appraisals sections. 508-509.

Trouble in securing sufficient personnel to do the work at hand.

Commissions held up from two to five months. 510.

Divisions of the approvals department and functions of each. 511.

The procedure adopted of letting contracts, thinks Government interests are fully protected.

Finance section pays salaries to civilians, quartermaster pays officers. Salaries of some contractors too high and only part of salary is being paid until a proper salary return can be determined. Examples, Mr. Mingle, \$62,000; Mr. Talbott, sr., and Mr. Kettering, \$35,000 each; Mr. Talbott, jr., \$30,000. Many of these men do not give full time to government work. 514-516.

Contractors have failed to give full details of cost of spare parts because it would enable the Government to fix future contracts. 516.

Letter prepared for Department of Justice showing a record of costs and changes in the Liberty motor. 517-518.

Method of arriving at cost of producing De Haviland. 519.

Agreed upon \$3,525.21, but contract contained original bogey price of \$7,000.

Cost of Le Rhone motor. Found estimated cost to Government, \$3,375.81. Bogey price placed at \$5,500. 520.

Statement showing savings effected by Finance Division in their contracts. 523.

Friction between Finance Division and contractors, confined mostly to manufacturers of planes, not motors. Concerted action of plane manufacturers through agency of Manufacturers Aircraft Association caused friction. 524.

Thinks because of labor difficulties and because none of the products are standardized that cost-plus contract is best form to adopt in lieu of fixed price which the manufacturers desire. 525.

How enlisted men detailed as toolmakers in Detroit were paid extra. 526.

Advances by the War Credits Board to the Lincoln Motor Co., amounting to \$6,500,000.

Maj. CHARLES B. ROSE (June 26, 1918; Volume I).

Reserve Corps officer detailed to aid and help in production at the Standard Aircraft Corporation at Elizabeth, N. J.

His judgment as to chief cause of the failure of production. Standard plant has six different types of planes varying widely in design. Causes inefficiency in plant. Another cause is failure of smaller company to develop an organization to carry on quantity production. 529-530.

Maj. CHARLES B. ROSE—Continued.

Thinks personnel of Signal Corps not efficient to handle work. Vascillation of Government engineers in making changes makes organization in plants difficult. 530.

Four agencies in Washington in control of production causing duplication of work. 531.

English or Italian methods of producing could not be used in American plants.

RICHARD HENRY DEPEW, Jr. (Washington, D. C., June 29, 1918; Volume I).

An aviator received license certificate to fly from a French school, 1911. Devoted much time to studying airplanes and flying. Connected with Curtiss people at Buffalo plant.

Technical discussion of Bristol planes. Thinks Liberty motor too heavy to be installed in this plane.

Weaknesses found in Bristol. 538.

Suggestions for improvement of this plane, but "tendency was to take suggestions only from Dayton and to give very little consideration to the suggestions from the Curtiss test pilots." This was the main reason that I resigned from the company. 544.

Does not like the Bristol machine. 545.

A plane should be designed for the motor. 547.

Liberty motor can not be used except in two-seater machine.

JOHN H. DAVIS (Washington, D. C., June 29, 1918; Volume I).

An aviator holds license, but had no instructions. Took it up for fun of it. 548.

Employed by Government as civilian instructor.

Conditions prevailing at Kelly Field, San Antonio. No tools with which to work. Men discouraged. "The few tools that were in the hangars appeared to be of no better quality than those purchased at a 10-cent store." 549.

His handling of the men. 548.

Incompetency of officers: Speaking of Maj. Ferron, Col. Chitty, commanding officer at the field, said, "he would not have the major in his office at \$10 per week." Engineer officer also incompetent.

Phoned to Washington to Gen. Saltzman of conditions there.

He was surprised. Later Col. Chitty relieved. 550.

Recommendations. 551-555.

Failure to receive spare parts. 557.

Accidents at Kelly Field.

Later transferred to Gerstner Field. Found conditions there worse than at Kelly. Made suggestions about things which were inexcusable. Officer in charge of field, Kirby, said: "Do you think you can come over here now and run this field?" 560.

Incidents leading up to his discharge. 560-562.

Senator Thomas: "Mr. Davis, you have given us some very valuable information, and we are very much obliged to you for it."

Mr. WILLIAM F. PARISH (Washington, D. C., July 5, 1918; Volume I).

Chief of the oil lubrication branch, supply section, Bureau of Military Aeronautics. Mechanical engineer specializing in lubrication for 23 years. His connections in civil life. 563.

Work for Government to conduct tests and write specifications of the oil to be used on the aeronautics engines of the Signal Corps. 564.

Use of castor oil as lubricant for airplane engines. 564.

Picking of expert men at various fields to look after lubricant work on the planes. Satisfactory reports received from these men as to progress of the work. 566.

The fields lack good mechanical engineers. "There does not seem to be a single practical experienced engineer in a position of authority among the officers operating these flying fields." 567. "Due to fundamental weakness in the organization of the War Department."

Many of our flyers not mechanically inclined, yet can operate machines.

Many fields so disorganized that the work of maintenance and care of machinery could not be systematized. Matter of lubrication has been systematized now in all but seven fields. 569.

"At Kelly Field, San Antonio, there were a number of new planes of a value of nearly a half million of dollars ruined in a very short space of time due to a lack of care." 569. "I have records covering a lack of maintenance of equipment from a great majority of the fields." 570.

Why mineral oil was used in place of castor oil. 570, 571.

Letters showing ability of Mr. Parish. 573.

Correspondence to Senator Thomas showing misunderstanding between Mr. Parish and Mr. Acheson as to lubrication of airplane engines. 574, 579.

Letter from Engineer officer, Aviation School, Fairfield, Ohio, indorsed by C. O. and then sent to Chief Signal Officer at Washington, complaining of troubles at the fields. Followed up by telegrams. 580, 582.

Difficulties experienced at Wilbur Wright Field, Dayton. 583, 589.

Official test of De Haviland. 592, 595. Most technical.

Testimony of Lieut Tabuteau, inserted here for the record. Taken at Fairfield, Ohio. A technical discussion of planes and motors. 596, 598.

Correspondence about purchasing auxiliary flying field at Fairfield, Ohio. 598, 601.

Letters to the Fisher Body Corporation from Government officials asking them to sign the supplementary cross-license agreement. Inserted here for the record. 604, 608.

JAMES S. DOUGLAS (Washington, D. C., July 8, 1918; Volume I).

Connected with Red Cross work in France. Returned to United States June 11, 1918, and at that time only the Liberty motors were beginning to arrive in France without American planes. Only the motors. 609, 611.

Maj. CUSHMAN A. RICE (Washington, D. C., July 9, 1918; Volume I). Enlisted in Aviation Corps. Later commissioned after taking course in flying. Took and commanded four American squadrons to England and then to France.

Squadrons attached to British flying squadrons on the front. Used entirely British equipment. 616, 617. "The Americans that were operating in my sector were all equipped with British machines. Of course, as I say, that was under a contract with the Royal Air Force." 617. Our men had been trained with British equipment.

His story of incidents of the war. 618, 619.

Discussion of various types of British airplanes and how they are used on the front. 619, 623. "English very cautious in manufacture. They take their war pilots over and do all their experimenting under war conditions, as far as possible, and they do it very thoroughly. They send one set of pilots after another over. Usually when the British service passes a machine, it is a pretty serviceable machine when it comes out to the front," very few changes necessary.

His opinion of Bristol and Spad: "I do not think the building of the actual frame for carrying an engine is any wonderful engineering feat." 626.

Mr. LEO J. PERRETTE (Washington, D. C., July 9, 1918; Volume I). Employed as Army inspector at the Willys-Morrow Co., Elmira, N. Y., which were making spare parts for the Government.

Noticed practices which were detrimental to the interest of the Government. Incident given where inspectors of the company were not permitted to report defects to the inspectors representing the United States Government. 630. Other incidents of bad practices. 631. When he went to this company for employment before entering Government service, the company were about to remove the man who had the job. I found out later that the company held he was holding up production. I inquired into it and found out that in one certain instance, even after the Army inspector on duty had passed a case, this fellow at one time had gone around and even after the Army inspector and held that case. 632.

Senator New. Do you think that there is at the Willys motor plant something of a systematic effort to get those defective pieces passed by the inspectors? Let me cite you this: K-211 magneto brake stud, 3,000 were rejected for the first two or three threads being stripped. The same pair was returned to the Army inspection room three times on three separate days. 634.

Maj. CUSHMAN A. RICE (Washington, D. C., June 9, 1918; Volume I). Technical discussion of the testing of motors for certain planes. 637-641.

Story of how machines on the front now operating in the matter of bombing. 641-645.

Suggestions as to improving aviation service on the front. 646. Has never flown in any American combat planes and never saw any on the front. Not likely to have seen any in his sector on the front. 647. Never saw Liberty motor operated.

Maj. CUSHMAN A. RICE—Continued.

Rather have opinion of flyer who has fought on the front than one from a technical engineer. 648.

His story of accidents at fields. 648-649.

Mr. HENRY WOODHOUSE (Washington, D. C., July 11, 1918; Volume I).

Member of board of governors, Aero Club of America. Activity of the club to promote aviation before the war. The club's desire to secure speed in airplanes was criticized by many Army officers. 652-653.

First suggestion is to have 40 per cent replacements per month to the aviators on the front. Army has not kept up this program. 653-655.

Next, proportion of destruction per month is 100 per cent. 656.

Editor of two magazines. 657. Photographs bought from the Committee on Public Information attempting to show American planes on the front revealed they were not American planes, but French. 658.

Cablegram to the Aero Club of America from American training fields in France complaining of idleness among American aviators due to lack of machines and equipment. 660.

Statement prepared by Mr. Woodhouse for the Senate committee to show his connections with the aeronautic movement and his opinions and conclusions regarding the future. 661-663.

At the suggestion of Mr. Eugene Meyer, jr., War Industries Board, wrote an article giving the most important aspects of the present Allied aeronautic situation. 664-693).

(a) What the Allies expect to get from United States in aircraft.

(b) What United States promises to do aeronautically.

(c) Sending of untrained aviators to France caused criticism that United States taxing Allied manufacturing facilities.

(d) What United States must send to Allies to prevent criticism in case of Allied reverses.

(e) Our present aeronautic plans.

(f) What Germany is planning to do to meet our program.

(g) Mr. Coffin's report regarding status of aircraft building program. 664-668, these seven items.

Number of aircraft and motors to train 10,000 aviators needed for one year's fighting. 671-674.

Partial list of airplane and parts manufacturers. 674.

Motors being manufactured in United States. 675.

Suggests best results obtained by giving orders for completed airplanes and motors to firms already engaged in manufacturing them and let them contract for parts. 677.

Large amount of machinery now idle could be used. 677-678.

Sufficient material in United States to complete program in 12 months. 678-680.

Suggestions of solving problems that may arise to retard carrying out of program. 684-691.

Shipping facilities to ship planes. 694-695.

HENRY WOODHOUSE—Continued.

Care of the aviators. 698-699. Many aviators equipped from private funds. So many of them could not supply all. Complaint made to Washington, letters from Gen. Squiers's office saying they would receive equipment on other side, but letters from officers on other side shows they were not getting them over there. 701-708.

Maj. RICE (Washington, D. C., July 12, 1918; Volume II).

Table showing more or less number of planes that have been operated and used successfully by the British during four years of war, in order to give committee an idea as to what machines have given the best results. 709-710.

THOMAS A. HILL (July 12, 1918; Volume II).

A patent attorney. Testimony shows how Government may become involved by cross-license agreement. 710-715.

Mr. JOHN A. JORDAN (Washington, D. C., July 15, 1918; Volume II).

Engaged in constructing airplanes for Government. Engaged in this work before entrance of United States in war.

Connected with Andermat Aeroplane Co., of California. He and president of this company came to Washington to solicit contracts with Government. Cols. Deeds and Waldron told us flatly we could not get a contract. All companies had been chosen. 718.

His reasons why Government should place contracts with Pacific coast concerns. Finally secured contract. Wright-Martin Co. were being paid \$1,000 additional for building planes in their Los Angeles plant. Should not have been done. 718-719.

Necessary for his company to secure certain supplies from the East. Waldron and Deeds said "You can not depend upon us; we have all we can do ourselves."

Lieut. Farwell, Deeds's confidential man, "You will have to join the association, the Aircraft Association." Reference to the cross-license agreement. 720.

Sent to Buffalo to secure plans and specifications from Curtiss people. Were told you have to pay \$240 and also 1 per cent additional to Curtiss people for use of plans and specifications. 720.

"Waldron gave Curtiss Co. all the information as to price, etc., of my contract, which was supposed to be confidential." 721.

Receiving of bad prints and drawings from the Curtiss Co. 722-723.

Conference with Col. Montgomery about cross-license agreement. Refused to pay Curtiss \$75,000 royalties. 723.

Refused to sign cross-license agreement and were unable to secure small parts from Curtiss people while other manufacturers were getting them. Appealed to Washington, as shown in correspondence. 729.

Later I resigned from company because of lack of internal harmony. Superintendent of our factory, who took my place, immediately "swayed the Government inspector boys so that they passed everything and went out to the scrap pile and brought in everything." Reported this to Washington. 730.

EDOUARD DE BILLY, acting French high commissioner, and Col. TULASNE and Lieut. HENRI MARQUISAN, of the French high commission (July 15, 1918; Volume II).

Their commission cooperating with United States to relieve airplane construction in France by stimulating production in the United States. Technical discussion of planes and motors. Thinks very highly of Liberty motor. Regarded so by the French. 730-739.

Col. H. H. ARNOLD (Washington, D. C., July 16, 1918; Volume II). Assistant Director Bureau of Military Aeronautics.

Only acted as "step-in" at the conference. Hearsay. Experimenting and testing was transferred from Langley Field to McCook Field, Ohio, because of lack of transportation of machines, etc., "Personally, I think that could be done down there (reference to Langley Field, Va.). 743.

Railroad runs into Langley Field, and possible to fly from there to Washington and not from Washington to McCook Field. 744.

McCook Field too small for safe testing, not an ideal place for flying. "I do not see why they selected such a small field." 745.

Has seen water over the McCook Field. 746.

Cost of Wilbur Wright Field, \$2,804,632. Cost \$700,000 for grading. Table showing cost of fields and buildings, etc., on different flying fields. 748.

Shipment of 425 airplanes up to July 12. 750. Up to June 1 no American planes used on the front. Up to July 1 200 had been sent to front, but practically no use made of them. 752.

Thinks De Haviland and Bristol machines as made in this country not satisfactory to fly in. 753. Compass used is worthless. "Our production people improved on it to such an extent that they made it worthless." 753.

Delay in receiving reports of testing machines. Asked production department for them in December, 1917, but first test in April, 1918, yet production of De Haviland went on. 755-756. Gen. Pershing's report by cable as to efficiency of De Haviland 4. Motion passed by Senate Committee asking War Department for copy of this report. 757.

Machines more carefully tested before shipped overseas after this cable. Gen. Kenly's orders. 758.

Defects of design in putting cloth. Col. Semple's recommendations. Not carried out. 759.

Asked production board for tests on Bristol. Never completed. Cloth failed and machine demolished. Mueller's report of test for Curtiss plant different to Government's test. 761. Mueller's only estimated tests. Submitted to Government and asked for their opinion. No reply. 761.

Test of Hispano-Suize. 761-762. Varied in their tests. We reported not satisfactory for use at front. 762. "Well, we are not getting anywhere."

"An automobile engineer can not design aeroplanes." Col. Vincent charge of all production. An engine builder and he passes on both planes and engines. 763. Production can not

Col. H. H. ARNOLD—Continued.

start until tests approved by Gen. Kenly of Bureau of Aeronautics. Thinks this system detrimental to aviation program. This program started by Deeds and Montgomery. 763.

Request of Bureau of Aeronautics for braces on De Haviland. Never put on any machine by production people. 764. His suggestion for remedy is to put one man at head of all aviation, both military and production side. 764. There is a lack of authority. "There is no authority."

Reason for discarding Hall-Scott engine: In hot weather machine burns before plane can reach ground. 766-767.

Investigation of causes of accidents. Studied from many angles. Average one fatality for every 2,900 hours flying. 768. French and British averages show higher rate.

Collisions in the air. Precautions taken at Park Field, Memphis, Tenn., yet collisions occurred. 769-770. Due to eagerness of new students to look around in the air without looking where they are going. Very few accidents due to defects in machines. 770.

Statement regarding inspections at the fields. Facilities for repair work and quality of workmen at the fields. 771.

Telegrams showing cancellation of Spad contract with the Curtis plant. 772.

Lieut. Col. V. E. CLARK (Washington, D. C., July 16, 1918; Vol. II.). With the technical section in the office of the Director of Military Aeronautics, Gen. Kenly. 773.

Went to Europe on a commission to negotiate with foreign Governments as to production of airplanes in United States. Also to secure available data concerning development of airplane designs in England, France, and Italy. Made report to Gen. Squier's office. Recommended three types of British planes, two of French, and one of Italy.

Types of machines recommended. Technical discussion of motors follows. 775.

Designed a Bristol of the English models and his design turned over to Curtiss people. 779.

Failure to produce due to lack of coordination between heads of various departments. Necessitated changes in drawings, etc. 780.

His recommendations not carried out. After year, War Department thinking of making a type of machine, Martinsyde, which he recommended. "Lack of confidence in me." 780.

We have no two-seater fighter in production now. I recommended Caproni triplane for night bombing work. A year has passed and nothing done. 781. Either Handley-Page or Caproni could be used. Latter better, but not enough to warrant any delay in production. Both should not be made because of spare part difficulties. 781.

Attempted to do development work while in command at McCook Field. 782. Ordered away. Heard indirectly his work there unsatisfactory. Col. Deeds appointed him and also removed him. 784. Had come to Washington and sit at his right hand to advise him on basic policies. "I have done no useful work since January." 784.

Lieut. Col. V. E. CLARK—Continued.

Our failure to produce more successful service machines. "I think it was a matter of vacillation on the part of those in authority about what to build." "They seem to have confidence in no one present, or they did not appoint a board whose decisions they were willing to abide by * * *." Secured services of many successful business men and when they came "no one man knew what his job was and no one could find out what his job was." 785.

Cancellation of Spad contract. 787.

Suggestions for the bettering airplane production system. 788, 789. Creation of a board constituting permanent president and secretary and three actual flyers every four months who have seen service at the front.

Removal from command at McCook Field came one month after some criticism he made on the De Haviland 4, built by Dayton-Wright Co. 790.

Notes from Mr. J. D. Perrin's diary concerning contraction of Bristol Fighter redesigned by him for the Liberty motor. 791-795.

Features of delays in Curtiss Co. in not getting results out of M. Ellwood factory. 795.

McCook and Langley Fields controversy. 795.

Copy of Col. Clark's memorandum to chief signal officer about his recommendations from Europe relative to airplane production. 799-808.

Mr. GLENN M. TAIT (Washington, D. C., July 16, 1918; Volume II). Inspector for the Government at Thomas Morse Aircraft Corporation, Ithaca, N. Y.

Many parts passed that he had rejected. Made complaint to chief inspector. Inspection sacrificed for production. 810.

Mr. Hamm stated "that he could not hold them too close or he would not have production." 811.

He was asked to resign, which he did. Incidents to show his request for transfer and which resulted in his resignation. 812-814.

Mr. JOHN A. JORDAN (Washington, D. C., July 17, 1918; Volume II). Statement reaffirms his testimony taken previously about the trouble he experienced in securing blue prints and small parts from the Curtiss people, dealing with Mr. Morgan, particularly Mr. Guy, because he would not sign the Cross license agreement to pay Curtiss people \$75,000 royalties on his contract with the Government.

Before he refused to sign agreement everything was lovely. Mr. Curtiss himself told him he could have anything. Later Mr. Curtiss was not in authority and Mr. Guy refused to give him anything. Came to Washington and complained. Mr. Coffin said, "That is too bad. I do not see any necessity for paying those fellows anything. I will see that you get the blue prints." 818.

Returned to Curtiss plant at Buffalo with Mr. Montgomery, attorney for the board, but did not secure original prints, which were given him before he told them he would not sign

JOHN A. JORDAN—Continued.

agreement, but was given old prints, which he could not produce with. 819.

Maj. Emmons, commander at Mather Field, complained of receiving machines with bad defects. 822, 823.

MR. A. A. D. LANO, of Great Britain (Washington, D. C., July 17, 1918; Volume II).

Came to United States. A manufacture of propellers for airplanes.

Had letter of introduction and offered services to United States Government in May. Not accepted, so went to Canada, where he received a contract. His plant to make propellers at Long Island, N. Y.

In August sent for by Maj. Charles R. Sligh, charge of propeller purchasing and production. Asked if he could produce propellers and inquired how he was financed. Told to go to Grand Rapids, Mich., to meet some bankers. These bankers turned out later to be the Sligh Furniture Co. Refused to go as he had made arrangements with New York connections about finance. Nothing then heard from Maj. Sligh. 829.

Contract with Navy to make propellers and was experiencing trouble in having carload of lumber come through from the West; appealed to Maj. Sligh; received no assistance; correspondence. 830-834.

Only one complaint about character of the work for the Navy, which was an experimental propeller and did not amount to much. 835, 836.

Discussion of kinds of wood to be used in propeller. "The inspection in this country at the moment is extremely lax * * *. All sorts of people are making propellers, and are making them cheaply, and they would not stand inspection." Signal Corps would say, "Yes; but the Lang Co.'s prices are too high." Propeller must stand enormous strain and can not be made too cheaply. Thomas Morse Co. buy their propellers from his company.

History of the wood used in making propellers. Black American walnut used, but as supply became short used Honduras mahogany, but drain on this became enormous; necessary to look for another type of wood. Only recently the tanguile mahogany from the Philippines was tested and found O. K. 837.

Mr. Williams, representing Army as lumber expert, refused to listen to him in recommending this type, but Navy said, "We are delighted to hear of it." Williams connected with a firm before entering Army which controlled mahogany, Honduras. 839, 840.

Lieut Col. T. H. BANE (Washington, D. C., July 17, 1918; Volume II).

Signal Corps. His reasons for present situation in aircraft production. Lack of organization and lack of proper aeronautical engineering ability. 842.

Lieut. Col. T. H. BANE—Continued.

Men who fly should be the designers; now being done by the Bureau of Production, which has done nothing but copy designs. Has allowed latitude in making changes. Incidents of overloading which caused many fatalities. 843, 844.

Investigation into Bristol Fighter. Many accidents. Recommended as a member of board to stop production on this machine. 845.

Weights of engines given and possibilities of carrying the military load. 846-848.

De Haviland 4 not entirely satisfactory as the British De Haviland 4, because of different motor used. 850.

No prospects for improvement in aircraft production. 853.

"A great deal of time is being devoted to testing freak models of airplanes and producing such machines without consulting people who could almost at a glance state that such a machine has no part in the military program."

"You can eliminate two-thirds of them on paper by standards that everyone knows about except the Production Division." 853.

Suggestions for improvement of the situation. One head of the Air Service.

Follow the British system of making changes. Wrote a memorandum to the Production Division telling them of the British system. The reply was it was interesting. 854.

Incidents to show how United States system works. 855.

"I think we are worse off than we were six months ago;" reference to the production situation. 855, 856.

Maj. B. Q. JONES (Washington, D. C., July 17, 1918; Volume II).

A practical flyer, connected with the Department of Military Aeronautics. Loaned to Production Division; as he was doing nothing asked Gen. Kenly to transfer him back. Types of training machines ordered against wishes of flyers. 857.

In the arrangement between production department and Bureau of Military Aeronautics no one to decide on technical engineering matters. 859.

Trouble in production; no responsibility given or allowed young flyers, only because they are too young. No competent men in charge of production. 859.

Leave questions to men who have been in the air, and not those who know nothing about it except as they have picked up from books and from a study on the ground. 859, 860.

Should follow the British system, which leaves entire engineering under the control of the actual flyers, and production people build what they are told. 860.

Accident to Bristol Fighter on last Monday due to overloading. 860, 861.

Sent to France and found Americans using antiquated machines purchased from the French, that were discarded by them a year and a half ago. 862.

Technical discussion of planes and motors for various uses. His opinion as to what machines should be used. 862-865.

Maj. HAROLD S. MARTIN (Washington, D. C., July 18, 1918; Volume II).

Department of Military Aeronautics. Sent to France to look into designing of aeroplanes upon request of chief of Air Service, American Expeditionary Forces. 867.

Went with a board and made recommendations which were approved in principle by cable from Gen. Pershing. 868.

Recommended nine types of machines for production in 1919.

Only steps to carry out his recommendations sent a commission abroad to get the drawings and sample of these machines. 868.

Types of planes being built in this country. 869.

As member of board recommended production of Bristol fighter to be stopped.

De Haviland built in this country not equal to British De Haviland.

Regards reports made on testing of machines with suspicion.

Finds variance in the testing from Col. Vincent's report.

Their tests not as good as the colonel's. 870-871.

One thousand two hundred Standard J-I machines cost \$6,500 for plane and \$2,500 for engine being stored away and further training in them abandoned. 871. Trouble with the engine cause for abandonment. Hall-Scott motor used.

Functions of Department of Military Aeronautics. 872.

Advises the Bureau of Production what is desired for different types of machines. Production Department builds samples of machines and submits them to Department of Aeronautics, which then determines whether they are satisfactory. Thinks Production Department should have men who can definitely decide whether or not a machine should be made. At present can not do this. There should be one head of the Air Service. 873.

Little organization in Production Department. No mistake made if we follow the British system.

Maj. FRANK E. SMITH (Washington, D. C., July 18, 1918; Volume II).

Recalled to give information about Government's plan to purchase fields for testing.

Dayton-Wright Field used by Dayton-Wright Co., but Government pays expenses by way of rental for that field.

Lease executed whereby Dayton-Wright Co. secured property belonging to Morain Developing Co., of which Col. Deeds is 25 per cent stockholder. 875.

Lease made in name of Dayton-Wright Co. so it could be entered into the cost in the cost-plus contract with the Government.

Received 15 per cent on the cost.

Prepared memo to Mr. Potter protesting against this policy and urged that all such contracts for leasing property should be made in the name of the Government. 876-877.

This memo prepared because Mr. Talbott wrote in to go ahead with the field. Matter now under consideration by the General Staff. 879.

Amount of money spent on various fields. 880.

Sergt. ALEXANDER KLEMIN (Washington, D. C., July 18, 1918; Volume II).

M. S. E., 807 Aero Squadron, McCook Field, Dayton, Ohio. Is in charge of aeronautical research department. Previous experience. 881.

Relation of airplane engineering to production. Main work at the fields is getting the English design and turning it into an American proposition; we get English drawings and adapt them to Liberty 12. 881.

Thinks technical engineers who understand stress on the machines and balance of parts ought to be given a very large part in the production. 884.

Testimony as to his birth, etc.

Insertions made here for the completion of the record. Testimony of Mr. Mois H. Avram in behalf of the Wittemann-Lewis Aircraft Corporation, of Newark, N. J. Letter to Senator Thomas inclosing letter from the secretary of this corporation to Mr. Ryan, chairman Aircraft Production Board. 887-895.

Copy of Mr. Avram's letter to the New York Times, May 2, 1918. 895-898.

Mr. MOIS H. AVRAM (Washington, D. C., July 18, 1918; Volume II). Connected with the Slocum, Avram & Slocum Industrial Engineers, of New York. Their business being to investigate and report to financial men on production and otherwise.

Investigated the Wittemann-Lewis Corporation and found them to have engaged in aircraft business for 12 years. Made elaborate report for the Production Board about this corporation.

Wittemann-Lewis people could not deliver this report to the Government. Officials, so asked Mr. Avram.

Came to Washington and secretary insisted that Col. Deeds in conference and could not see him. I waited in the hall for three days until I recognized Col. Deeds, and this was the only way I delivered this report. Said he would look into it and deliver it to Mr. Shepler. 900-901.

But nothing came of it, no work being given to this corporation. Later saw Lieut. Farwell, Shepler's assistant. "The minute I mentioned the name of Wittemann, Farwell said, 'That is a lemon.'" 901.

Finally agreed to send an inspector to this plant. He came and made a report and still nothing came of it.

Financing of Wittemann-Lewis Corporation. Mr. Avram did not feel at liberty to divulge how corporation was financed. 902, 903.

Insertion for the record. Mr. Wittemann's testimony. 903-906.

Mr. PAUL W. WITTEMAN (Washington, D. C., July 18, 1918; Volume II).

Treasurer of Wittemann & Lewis Aircraft Corporation, Newark, N. J. Corporation engaged in making aircraft since 1906. Its activities.

Just after war was declared, this company completed a training machine as a result of a request made by the Signal Corps October 16, 1916. "They requested us to develop a machine after which they promised to give us business." 907.

Would order 20 if we would build a machine which would fly successfully from our factory to Mineola.

Mr. PAUL W. WITTEMAN—Continued.

This was built and Government notified that the machine was being flown by Mr. Alan Adams. The flight was O. K. and our plane remained at Mineola subjected to bad weather without shelter for 30 days. Government refused to give them a test. 908.

Mr. Scott of our company went to Washington to try to secure a test of the machine. Promise given that orders would be issued to the commanding officer at Mineola to make test, but nothing ever done. Curtiss people and experts came there and made photographs and inspected it. 909.

Our machine transferred to camp, now known as Camp Mills, where it received a severe and thorough test.

Mr. Scott spent all summer in Washington trying to secure Government contract. 910. Since this machine had made 300 flights we asked if it would be better to wait and test one of the new machines which were then being built. Government replied it would. Then they notified us that no new types would be considered; that they had decided on the Curtiss and Standard.

Later they said they would not consider any plant unless it could produce 500 to 1,000 planes per year. We made progress to take over Stevenson plant on strength of this statement, and nothing came of it, so we asked assistance of Senator Frelinghuysen. Copy of letter to Senator Frelinghuysen. 912-914.

Contract for 300 spare parts given us. 914. Letter to Senator Frelinghuysen. Were to receive blue prints for spare parts from Curtiss people. Same trouble of the cross license agreement arose that other corporations had had. Correspondence inserted into record showing this. 915-919.

Promised they would be given work when further appropriations made. Never received any.

We inquired if Government was allowing or letting contracts concerns other than those who were not producing the program 500 planes per year. "They answered that they did not wish to discuss these things with us." 920.

Letters to Senator Thomas showing dealings with Mr. Potter. 921.

There was a feeling that we had a prejudice against the Aircraft Board. Matter thrashed out; Capt. White said it was a misunderstanding on the part of the Aircraft Board and that there was absolutely no reason or plausible excuse why we should not get contracts. 923. Copy of Mr. Avram's letter to Mr. Coffin. 924, 925.

His company on the list to become a member of the Aircraft Manufacturing Association relative to cross license agreement, but since our last year's business or present contracts did not amount to \$100,000, we were excluded. 925.

Maj. Gen. WILLIAM L. KENLEY (Washington, D. C., July 20, 1918; Volume II).

Chief of Military Aeronautic Department. Reasons for being called as a witness. 927.

Maj. Gen. WILLIAM L. KENLEY—Continued.

“Found organization when turned over to me rather messed up.” Made changes in the heads of departments. Took a trip around the preliminary schools to get idea of how things were going on. Impressed with both training and advanced schools, yet there was a lack of coordination, one school accentuating on one thing, another another thing. Attempted to standardize. 928.

Reasons for stopping training with Hall-Scott motor. Loss about \$6,000,000 to Government and knew there would be criticism, yet many accidents and deaths were due to the imperfection of this motor. It was unreliable.

There was also a slowing down of production and thus justified in stopping this training. Cause of accidents due to carelessness among the flyers.

Slowing down of production due to cancellation of French contracts due to our failure to ship raw materials to France and our lack of advanced trained pilots. 931.

American method of inspection at fields before planes are flown. 932.

His statement of Gen. Pershing's cable report to not ship any more De Havillands overseas until they had been inspected in this country. 933.

Abandonment of the program to build Bristol Fighters. Will secure data regarding the cost of this program and what Government lost by its abandonment. 934-935.

Spad a very good machine. Ordered to be built, but canceled because Gen. Pershing cabled that this program be cut out.

His reasons why this program was abandoned. 936.

Relative to American machines on the front, “We have not any advice that they are flying any.” 937. Have not produced a single two-seater fighter that is upon the battle front at this time. 938.

One billion dollars expended or obligated, and only small number of machines sent over. 939.

Believes at the outset we should have adopted one or two of the more advanced planes of Italy, France, and England, and gone ahead and produced them with so much experimenting with new motors, etc. 939. This was done by Italy.

Cause of delays was that Gen. Pershing's cable reports would be referred to production departments before Gen. Kenly would see them, causing much confusion. 941.

How the work is carried on between Mr. Ryan's department and his department. 942-943. Thinks there should be established a separate department of aeronautics. 943.

Friction between the Navy and War Departments. 494.

Program now is to approve anything requested by Gen. Pershing. Cables in my office show that one day one thing is asked for, next day cable comes in canceling that, and a week later another cable comes in asking for the thing requested in first cable. Entirely a jumbled affair. 945.

Has nothing to do with the inspections at the plants, but Mr. Ryan has assured me that every inspector will be an expert. 947.

Maj. Gen. WILLIAM L. KENLEY—Continued.

Method of producing and testing the Liberty motor. 947.

Choice of Fields. Why Wilbur Wright Field was chosen and McCook Field given to production testing. If selection had been left to me I would not have chosen Wilbur Wright Field.

Plan to do in case of a flood. 949.

Letter to Senator Thomas from Department of Military Aeronautics showing equipment of American air squadrons at the front. 950.

Insertions for the completion of the record.

Report of Senator Frelinghuysen on the Aero-Marine Plane & Motor Co., Keyport, N. J. 951.

Memo prepared by Bureau of Aircraft Production containing information as to the general causes of delay and the specific causes of delay. 951-956.

Open letter of Mr. W. H. Fauber, Brooklyn, N. Y., to Mr. John D. Ryan, Chief Aeroplane Production. 95-966.

Mr. JOHN A. JORDAN (Washington, D. C., July 23, 1918; Volume II).

Recalled. His former statement was that there was much correspondence between Liberty Iron Works, of Sacramento, Calif., and Aircraft Production Board. Shown telegram from Mr. Henderson, of this company, saying there were no letters or correspondence concerning the contract for 300 aeroplanes awarded them. "There is voluminous correspondence." Does not know why Henderson sent such a telegram. 967.

Presentation of written statement prepared giving fuller information relating to this contract. 968-974.

How he came to Washington, finally secured a contract with the Government for his company, the Liberty Iron Works, his difficulty with the Curtiss people in securing blue prints and small parts because of the Cross license agreement; how he was given bad prints, etc.; trouble experienced in getting small parts, and when they did arrive he was compelled to send them back, etc.; how friction arose in his own company which resulted in his resignation; how the new manager carried on the contract, using parts that had been rejected on inspection; contract finally canceled.

Mr. WALTER D. SAYLE (Washington, D. C., July 23, 1918; Volume II).

President and general manager Engle Aircraft Co., Niles, Ohio, which company was organized from the partnership of Engel, Patterson & Baker, the Baker being a brother to Secretary of War Baker, about January, 1917, and was incorporated in August, 1917. 974.

Capitalization of the company. 975.

Company was given contracts for spare parts, but public criticism both in Washington and throughout the country in the press caused Mr. Baker to resign as president of the corporation. 976. Sold completely out for \$15,000, part being for cash put into company and for services.

Mr. WALTER D. SAYLE—Continued.

How corporation bought out Engel who was making a flying boat. Baker and Patterson furnished money, Engel furnish the technical brains, his machinery, and flying boat. 977.

After resigning, Mr. Baker's only interest in the company was to come to Washington with Mr. Sayle to advise Mr. Sayle in matters with the Government.

His company never signed cross-license agreement, but placed \$2,500 with Curtiss people to secure blue prints, etc., of which \$2,000 was refunded. 983.

Capt. RILEY SCOTT (Washington, D. C., July 26, 1918; Volume II).

Originally in the Regular Army, a graduate of West Point, and through friendship of Lieut. Selfridge and the Wright brothers became interested in airplanes and resigned from Army and specialized on the airplane, particularly the rôle as a bombing plane.

Went to Europe in 1911 and 1912 to compete for Michelo prize. 986.

Offered services to France and England when war declared. Entered United States Army, and as such was employed as an aeronautical mechanical engineer with especial concern with bombing. 986.

Technical reasons why he made report on De Haviland that it was unsuited for bombing and combat fighting. 987.

Technical discussion of the American De Haviland in comparison with English De Haviland follows. 987-996.

Naval Constructor J. C. HUNSAKER (Washington, D. C., July 27, 1918; Volume II).

Regular Navy Service. American-made aircraft delivered to the Navy so far has been satisfactorily operated on our coasts, but has not been in operation long enough in France and England to know what changes should be made. 997.

Because of request from the Marine Corps for ground flying machines, we secured from Signal Corps of the Army part of their first delivery of De Havilands. All but four shipped to France, the four being sent to Miami, Fla., training school for testing. Testing there showed defects in workmanship, minor defects which developed while flying them. Can be corrected, not fundamental defects. 998.

Nature of the defects. 999.

Uncertain what to do with the 100 crated machines for France. 1000.

Shown a photograph and technical discussion follows of various parts of airplanes. 1001, 1002.

Maj. H. C. K. MUHLENBERG (Washington, D. C., July 30, 1918; Volume II).

Commanding officer testing department, Wilbur Wright Field. Discussion of the De Haviland 4. Giving changes made in the British De Haviland, producing photographs, etc., carrying weights, etc. 1006-1014.

The American-built Bristol machine. Approves of its rejection and does not think it is a fit machine as made in this country. Assembling shows grossest kind of carelessness. Defects covered up. Built by the Curtiss plant. 1015.

Maj. H. C. K. MUHLENBERG—Continued.

Inspection at Dayton-Wright plant. Their inspectors and Government inspectors have opportunity to see each step that is taken in the machine from the time it is laid out until it is completed. Failure to see these defects indicates grossest kind of carelessness or conspiracy. 1017.

Records showing criticism of the De Haviland 4. 1022-1026.

(a) Criticisms of his office. 1022.

(b) Letter from testing department, Wilbur Wright Field.

(c) Gen. Pershing's cable report. 1024-1026.

Even other changes than those suggested by Pershing must be made before the plane is satisfactory. 1027.

Thinks there should be created a division of aeronautics. 1028-1029.

Capt. R. W. SCHROEDER (Washington, D. C., July 30, 1918; Volume II).

Entered Army because of previous experience in aviation. Employed as aeroplane mechanic in Franco-American Aviation Co., Chicago, Ill. 1030-1031.

Was present during testimony of Maj. Muhlenberg and agrees with everything said by him. 1031.

Shows from photograph an incident to substantiate Gen. Pershing's report of a defect. 1031.

Does not think De Haviland machine fit to send to the boys at the front. 1033.

Notices poor workmanship in work turned out by Dayton-Wright factory and the woodwork turned out by Curtiss plant unsatisfactory. 1033. Lieut. Foote says, "I think I would be very safe in saying that every pilot at our field, without exception, is very leery of these machines."

Lieut. JOHN M. FOOTE (Washington, D. C., July 30, 1918; Volume II).

Formerly an automobile mechanic; entered Army; and graduate flyer of the school at Memphis.

List of machines he has flown. 1035.

Entertains the same distrust as expressed by flyers at Dayton-Wright Field about the De Haviland 4. Heard testimony of Maj. Muhlenberg and Capt. Schroeder, and agrees with them. 1035. Thinks the machine is wrong in design as well as production.

Criticism of the plane for bombing purposes. Not suitable also as a fighting machine. Mounting of guns on the De Haviland 4 would make absolutely useless. Thinks machine should be relegated for all purposes that he knows of. Can not say about reconnaissance purposes. 1037, 1038.

Maj. C. K. REINHART (Washington, D. C., August 1, 1918; Volume II).

Commanding officer, First Provisional Squadron, Hazelhurst Field, Long Island, N. Y. A practical flyer. List of machines that he has flown. 1039.

Received eight De Haviland 4's at his field for defense of city of New York. Before testing they were mounted with guns and bombing devices. Tested it for speed and climbing, and found structural defects. 1040.

Maj. C. K. REINHART—Continued.

Enumeration of defects which developed in the testing. 1040-1042. Another shipment of De Havilands came to his field and many defects developed after two or three hours of flying. 1042, 1043.

Does not think, as an expert flyer, that this machine will stand the severe service tests. Made reports to Washington; does not know what happened to his reports. Only 8 of 20 of his officers will take a chance to fly. 1044-1045.

Thinks one who goes up in De Haviland and had to do battle with a German machine would be at a disadvantage. 1045.

Capt. J. H. KELLEY (Washington, D. C., August 1, 1918; Volume II). Charge of the fighter flight, including the De Haviland, at Wilbur Wright Field, Fairfield, Ohio. Saw service at the front. List of machines he has had experience with. 1046.

Enters into discussion of the technical side of machines, particularly the American and English De Havilands.

Left France June 27, 1918, and to his knowledge knew of no American planes in France. 1052.

Capt. CHARLES C. JOHNSON (Washington, D. C., August 1, 1918; Volume II).

Charge of scout flight at testing department, Wilbur Wright Field, Ohio.

Transferred from the French Army to the United States Army in France. Entered French Army in 1915. 1053. His service at the front. 1054.

Never flown the De Haviland, but from a little inspection of it on the ground thinks it has weak points. Confirms defects that others have testified to. Outline of the defect. 1054-1057. Thinks defects can be remedied, but the machine never can be made a combat machine. 1057.

Thinks it can be used for reconnoissance and photo work.

Previous to leaving France saw no American combat planes in use at the front. 1058.

Lieut. FRANK W. WELLS (Washington, D. C., August 1, 1918; Volume II).

A pilot in scout flight at Wilbur Wright Field. Was with the French Army at the front and was transferred to American Army January, 1918. Came to the United States July 1, 1918. 1059-1060.

Never flown at the field. "There have not been any machines to fly in the scout flight, with the exception of one, and I did not think that was fit to fly, so I did not fly that one." 1060.

Reference made to Standard M Defense. Defects.

No experience with the De Haviland except to observe it. Saw one American De Haviland in France. At first flyers liked it, but now they will not do any stunts with it. 1061-1062. Does not think De Haviland can ever be made a combat plane. May be used for photo work and possibly directing artillery fire. 1064.

Has never seen an American-built plane used on the front. 1064.

Naval Constructor J. C. HUNSAKER (Washington, D. C., August 2, 1918; Volume II).

Recalled to testify about 100 De Havilands which the Navy had crated for shipment to France and were being held up because of the defective workmanship on four of the same lot which were tested at Miami, Fla. Decided to refuse to accept them and returned them to the Aircraft Production Board of the Army, who agreed to give them other later models, which they would guarantee. 1067-1068. Fifty of them did go to France.

Discussion of the defects. 1068-1070.

Steps taken to patch up the 50 sent to France. Men sent to France for this purpose. 1071-1072.

Marines in France need airplanes. Does not know how steps will be taken to prevent the use of these 50 machines, but thinks full information as to the defects will be sent. 1072.

No trouble with other contracts with the Army for other types of planes. Most of their airplane work done separately from the Army either by contract with other concerns or in the naval shops themselves. 1073.

Capt. N. E. IRWIN, United States Navy (Washington, D. C., August 2, 1918; Volume II).

Director of Naval Aviation. Program of the United States Navy in building aircraft, etc. All satisfactory except the Hall-Scott motor, which they stopped using. 1076. Ones already secured patched up, but abandoned all production of further Hall-Scott motors. 1076-1077.

Testimony about the De Haviland which the Navy received from the Army confirms Naval Constructor Hunsaker's testimony concerning the defects in the 4 tested at Miami, the 50 sent to France, and the taking back by the Army of the 100. 1078-1079. Letter to Senator Thomas from Secretary Daniels inclosing report of the defects discovered in testing the 4 De Havilands at Miami, Fla. 1079-1080.

Insertions for the record: Letter to Senator Thomas from Maj. H. S. Brown, Chief of Finance Division, showing the loss in the cancellation of Bristol contracts. Loss, \$6,482,000, with deduction for salvage. 1081-1082.

Mr. W. M. C. POTTER, Assistant Director, Bureau of Aircraft Production (Washington, D. C., August 6, 1918; Volume II).

Statement of Gen. Pershing's request for 25,000 planes, with accessories, spare parts, guns, etc., by July 1, 1919.

His request included planes for various purposes. He did not recommend a particular type of plane for its particular purpose, but he desired us to develop the planes intended for a certain purpose. 1083-1085.

With exception of two foreigners who have come to America, "I personally do not know of an airplane designer in this country that I think has had the experience close to the front and in contact with the military necessities who is capable of designing by himself a successful battle plane." 1085.

How Mr. Pomelio, of Italy, one of the above exceptions, came to this country. 1085-1086.

His statement as to the responsibility for the failure of the Bristol Fighter machine. 1087.

Technical discussion of engines for this machine.

Mr. Wm. C. POTTER—Continued.

Effort to induce Aircraft Board to adopt the "Sunbeam," was before his connection, but he investigated a little of it. His statement regarding it. Found it not powerful enough to put into the Bristol plane. 1088-1089.

Sums up to say, "the faulty design and construction of the Bristol Fighter was due entirely to a lack of detailed knowledge of aeronautical design on the part of the men who had the matter in hand." 1090.

Many changes made in the original design, but thinks failure would have been greater if original design had been used. Also bad workmanship. 1090.

Program now for observation planes. The planes being used. 1091-1093.

Program for day bomber. 1093.

Program for night bomber. 1093-1094.

Taking up discussion of the De Haviland 4. Program for 1,000.

About 700 on the way to France. Cable a week ago says that none had reached the front, no reason being given. 1095.

Previous report of defects in the De Havilands shipped over, but these latter planes sent over with the same defects. 1096.

His testimony confirms other testimony about the tests of the 4 De Havilands which the navy officials made at Miami, Fla. 1097.

No favorable report ever made on the testing of the De Haviland. 1097.

No more De Havilands similar to those turned over to the Navy or those already shipped abroad will be turned out until all the defects reported have been made. 1098.

Sending of Col. Hall over on July 16 to look after the defective De Havilands which had already been sent over. His statement concerning Mr. Hall.

Can not answer when we are able to put an acceptable machine of American manufacture in actual combat on the front. 1099.

"The machine that is to be satisfactory to the Department of Military Aeronautics has yet to be built." 1100.

Statement of obligations and net expenditures of aircraft production and Signal Corps appropriations as of May 31, 1918, and July 31, 1918. 1101.

Incident of Capt. de Annunzio coming to America. "Mr. de Annunzio has not been marooned anywhere." "I take exception to it. He has been given every facility that the United States Government offers to develop his machines." 1102.

Impossible to get the services of the right kind of aeronautical engineers to come, because of salaries. 1103.

Congress has not denied to grant a single power but one relating to the press, and why not get these men? 1103.

Men coming from France and Italy now upon invitation.

Criticism of the work made by Senator Reed in his questions put to Mr. Potter. "These gentlemen who have been producing this work will fare just as well in dollars and cents as if they had produced first-class work." Mr. Potter, "They will." 1106.

Not satisfied with the inspections. Men not competent. 1106.

- C. W. NASH (Washington, D. C., August 8, 1918; Volume II).
 Assistant to the director in charge of engineering and production Aircraft Production Board. President Nash Motors Co., and entered into present service at request of Mr. Ryan.
- Statement of the efforts which were made to have him come. Upon invitation, made investigation, and found that the situation was so badly handled that I declined conference with Col. Mixer in Chicago and meeting Mr. Ryan in Detroit. Finally, put up to me that I could not retain my self-respect without doing something. 1108.
- After receiving assurance from Mr. Ryan that I could set organization up as I saw fit, I accepted the proposition. 1108-1109.
- Found that the organization was in an impossible shape. His proposition to have technical section, engineering section, and production department under one head. 1109.
- New engineering department to be formed. Does not know if the men responsible for past blunders will be discharged. Col. Vincent will be retained under his direction. 1110.
- De Haviland 4 only machine to be on front in short time. Deliveries on them suspended, however, for 10 days.
- Confirms statement about deliveries to France and to the Navy of the defective De Havilands even after receipt of Gen. Pershing's cable report of defects. 1111.
- Corrections of these defects now being considered. 1113.
- No production of a 300 horsepower or thereabouts going on now. Not until January 1. 1113-1114.
- Thinks De Haviland an average machine for bombing, but not a fighter machine. 1114.
- Thinks that all talks to newspapers about the Liberty motor being a cure-all for everything should be stopped. Liberty motor has not been tested and no plane should be pronounced a success until it has been tried in every conceivable situation. 1115.
- Mr. Ryan's speech, "Fifty thousand motors have been ordered for them (meaning the boys on the front) and that the new motor (referring to the Liberty motor) was worthy of the highest praise." This impossible. 1116.
- Thinks if 10,000 planes sent over by July 1, 1919, it will be a miracle. Only De Havilands sent over until January 1, 1919.
- Mr. Ryan, Mr. Landon, nor Mr. Nash had previous experience in airplanes. A new profession in this country. 1117.
- He must have authority. Expert men coming from Europe to advise. 1118.
- Statement concerning the Caproni incident the coming over of De Annunzio to assist in production of Caproni. 1120-1121.
- "The policy is going to be to no longer try to plug round holes with square plugs, but to put round plugs into round holes." 1122.

C. W. NASH—Continued.

Incidents brought out in testimony about the Witteman-Lewis Co., and Mr. Lang, who offered to make propellers, etc., directed to Mr. Nash. 1123-1124.

Not thoroughly acquainted with Cross License Agreement, but says, "We are at war, and I think aircraft licensing or anything else that you may call it should be waived, and we should go out and build the best planes at the best places, and get them to France at the quickest possible moment." 1125.

Thinks it would be suicidal for Government to take over plants and operate them. 1125.

Discussion as to contracts and what should be done about the Standard plant with its Japanese financial backing. 1126.

Question of installing fire protection in the plants. 1127.

NEWTON D. BAKER, Secretary of War (Washington, D. C., August 9, 1918; Volume II).

Does not know if there is any combat planes on the front at this time. 1129.

Does not know that airplanes with defects were sent across after receiving Gen. Pershing's cable reporting defects. 1130.

Does not agree with others that it will be January 1, 1919, before we have a combat plane on the front. 1130.

Gen. Pershing's cable says: "Planes sent here must be inspected and thoroughly tested before being shipped." Does not think it a grave error not to comply with this request. 1131.

His statement regarding this follows.

Discussion of the War Department's declination to give the committee the reports from Gen. Pershing. These highly confidential, says Baker. 1134.

Reading of Official Bulletin conveying wrong information as to progress being made in aircraft production. Is it not time to have Mr. Creel stop this? 1137-1140.

JOHN D. RYAN, Director of the Bureau of Aircraft Production (Washington, D. C., August 13, 1918; Volume II).

Previous business activity. Nothing to do with aircraft.

Is in dual capacity. Chairman of Aircraft Board and director of the bureau. 1143.

Members of the Aircraft Board. Col. Deeds and Col. Montgomery have been detached and are not now serving on the board. 1144.

Takes up the personnel of Bureau of Aircraft Production and their previous training, the work of this bureau, etc. 1145-1149.

Relation of the Equipment Division of the Signal Corps. 1149, 1150.

Expenses. \$350,000,000 already expended. Commitments outstanding will absorb rest of \$640,000,000 appropriation. Now ask Congress for additional \$1,032,000,000 to carry them until June 30. 1152-1155.

When he took charge, thinks advancement on elementary-training planes were entirely satisfactory. Backward, however, on advanced-training planes. 1155.

JOHN D. RYAN—Continued.

His statement about the progress on the production of the Bristol Fighter. 1156-1159.

Technical discussion of motors and planes follows. 1160, 1161.

Senator Reed: "As a matter of fact, we have not a single American-made fighting machine anywhere, have we?" "I think that is true," replied Mr. Ryan. 1162.

Cancellation of the Spad contract. Can not criticize, since he came in months afterwards. 1162, 1163.

Statement concerning the De Haviland 4 contract. 1165, 1169.

Lieut. Farwell sent to France, and he made tests of the De Havilands, and it was his findings that Gen. Pershing's cabled report was based. 1166.

Production not canceled, but orders given that changes must be incorporated before any more sent out from factory.

Intends to continue producing De Haviland 4 until the De Haviland 9 can be produced. Does not consider the weight of opinion is that this is a dangerous machine. 1170.

Deeds, Montgomery, and Waldon have nothing to do with Aircraft Production Board. Col. Vincent has nothing to do with money expenditures or making of contracts, but is retained for his technical advice. 1171, 1172.

Men connected with factories having contracts with Government may be called in for advice, but they have no connection with the board. 1173.

His statement relative to the conditions he found in the West relative to spruce situation. 1174.

Prevention of fire at factories. 1175.

Received information last three days that De Havilands were flying satisfactorily; that three squadrons had gone up to the front. This information brought back by Maj. Brett. He returned from production department overseas to secure parts and accessories. 1177, 1178.

Production after 1st day of September, 30 machines a day; after October 1, 50 machines each day. Production of other planes.

Capabilities for climbing, etc., given by Mr. Ryan, relative to the De Haviland. Senator Reed. "I can not understand those figures in connection with the ones that we have been given. They are utterly irreconcilable." 1179.

Informal discussion of secret documents. "I can not put those in the record."

Difference between a combat and fighter plane brought out. 1180.

Handley-Page plane. Inference from a request by the British for us to send them Liberty motors is that we could not build a plane around the Liberty motor. 1182.

Production on this plane. 1182-1183.

Caproni has not been tested sufficiently to go into production. 1184-1185.

Mr. RYAN—Continued.

Senator New takes up the record of the testimony of Capt. Kelly concerning the De Haviland 4 with Mr. Ryan. Takes up the statements also of Maj. Muhlenberg. Mr. Ryan's comments. 1186-1188.

Record of expenses. Expenditures amount to \$334,236,363.50. Commitments amount to \$764,115,582.09.

Maj. G. H. BRETT (Washington, D. C., August 16, 1918; Volume II).

Came into Army through Philippine Scouts. In cavalry branch placed in aviation temporarily from October, 1915. Sailed for France October 29, 1917, after taking course in flying. Continuous overseas' service until last Sunday.

Duties over there, chief of the matériel division of the supply section of the American Expeditionary Forces.

His flying of machines, the types, etc. 1192-1193.

Understood before leaving three squadrons fully equipped ready to go to the front. 1193.

Changes that were made in these planes. 1194.

How the Liberty motor was received in France. Officer who had tested English airplanes said, "It was the sweetest and most responsive motor we have for training and it was one of the easiest handled machines that he had ever driven." Criticized by the French. 1194-1195.

Many knockers on the other side. Accidents in this plane. Not as numerous in proportion to the other planes. 1196.

What he has picked up from hearsay and observation of the De Haviland. Taking up the testimony and record. Pershing's cablegram, etc., with Maj. Brett. His comments. Mostly technical discussion of the defects. 1198-1208.

In reply to Senator Reed's question that we were using the De Haviland 4 for want of a better machine, he answered in the affirmative. 1209.

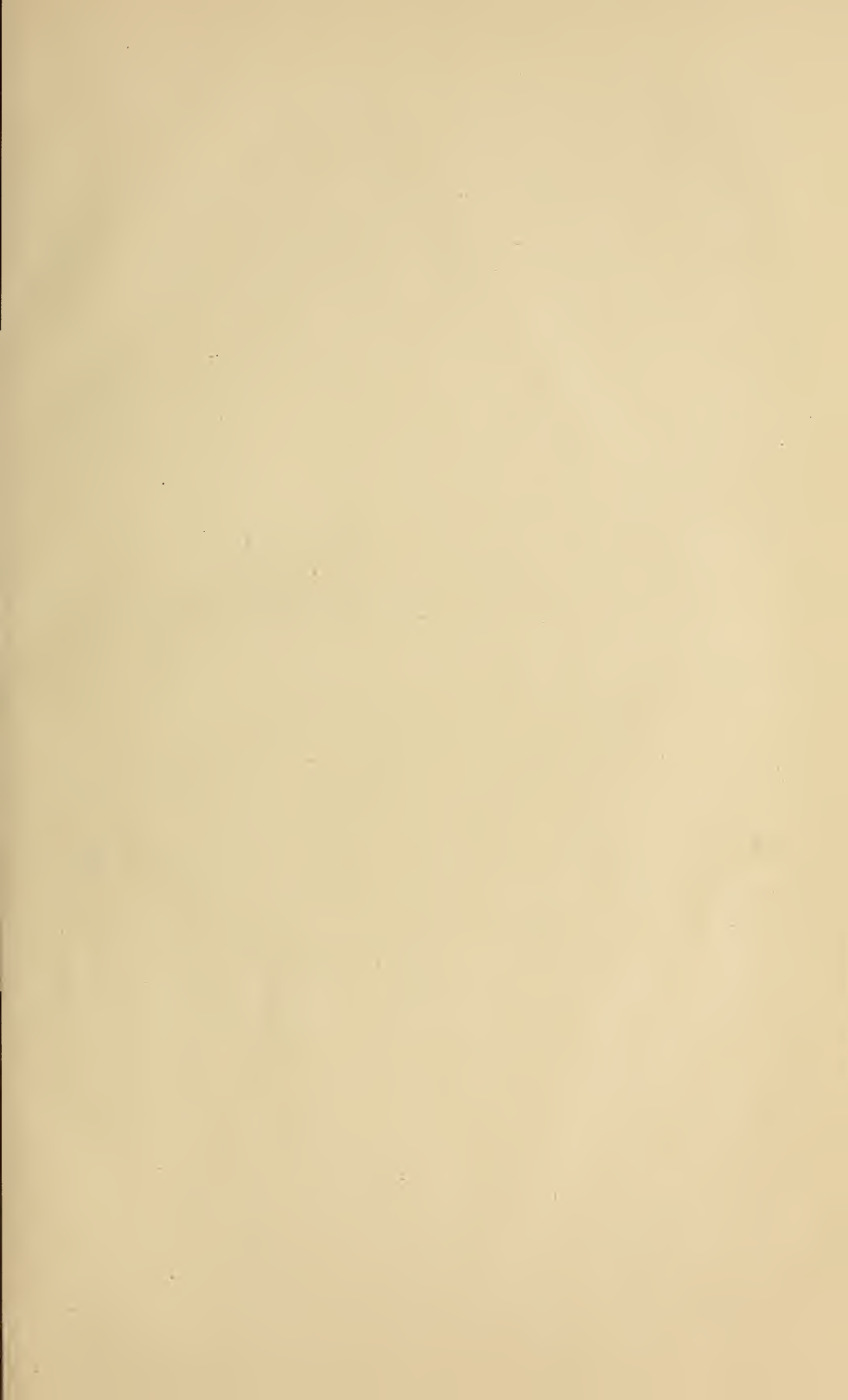
Taking up with Maj. Brett the record of the testimony of Maj. Muhlenberg and Capt. Kelly. Maj. Brett's comments. 1210-1216.

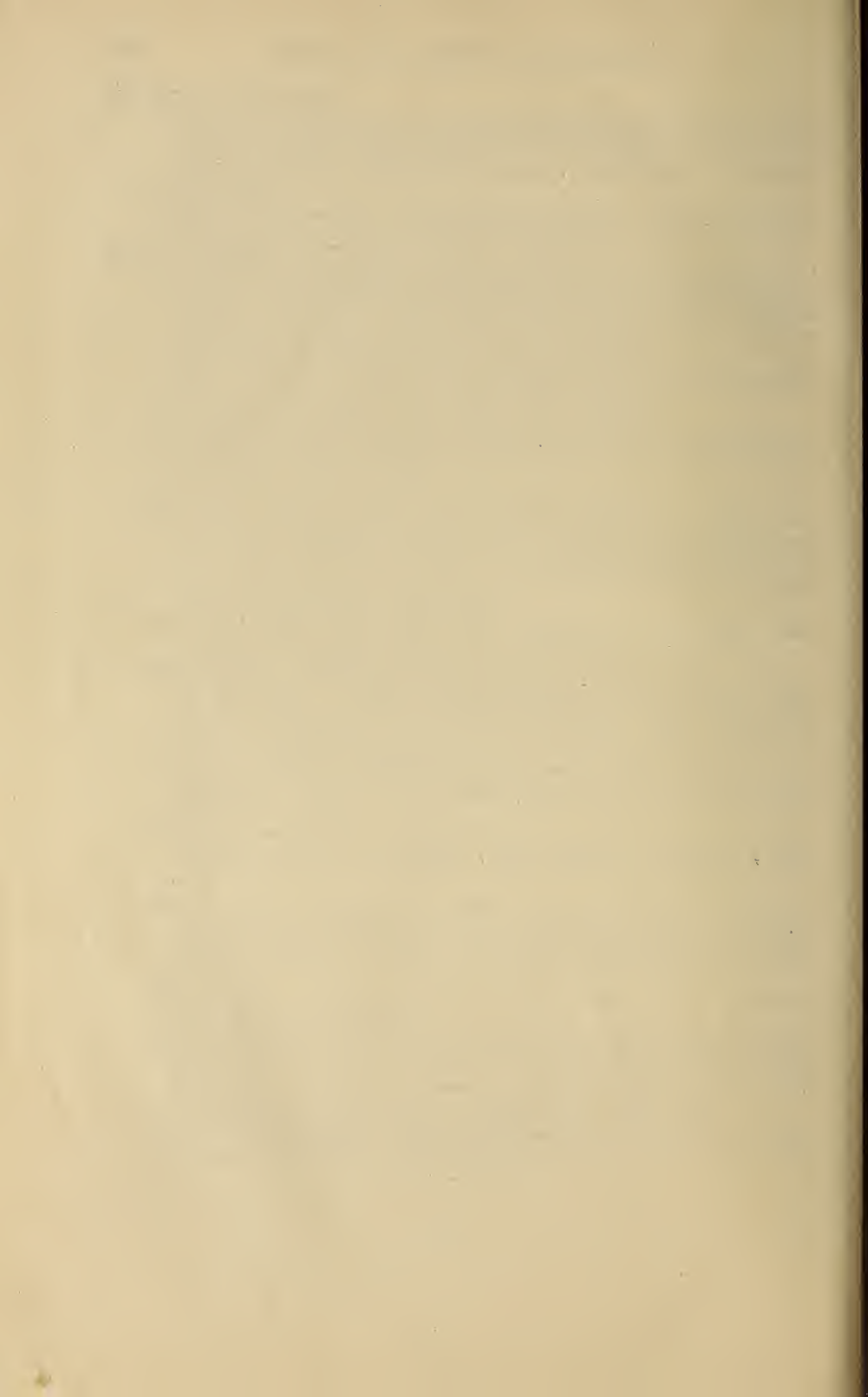
Memorandum showing the approximate number of airplanes received from European sources to July 31, 1918, by the Air Service, Supply Division, American Expeditionary Forces. 1218-1219.

Memorandum showing the number of squadrons in operation on the front. 1220-1221.

Says the French have not lived up to their part of the contract when asked about Gen. Kenly's testimony that production had slowed down with our contracts with the French because of our inability to send them raw materials. 1221-1222.

Senator Frelinghuysen presented statement showing the status of program contracts. 1224-1226.

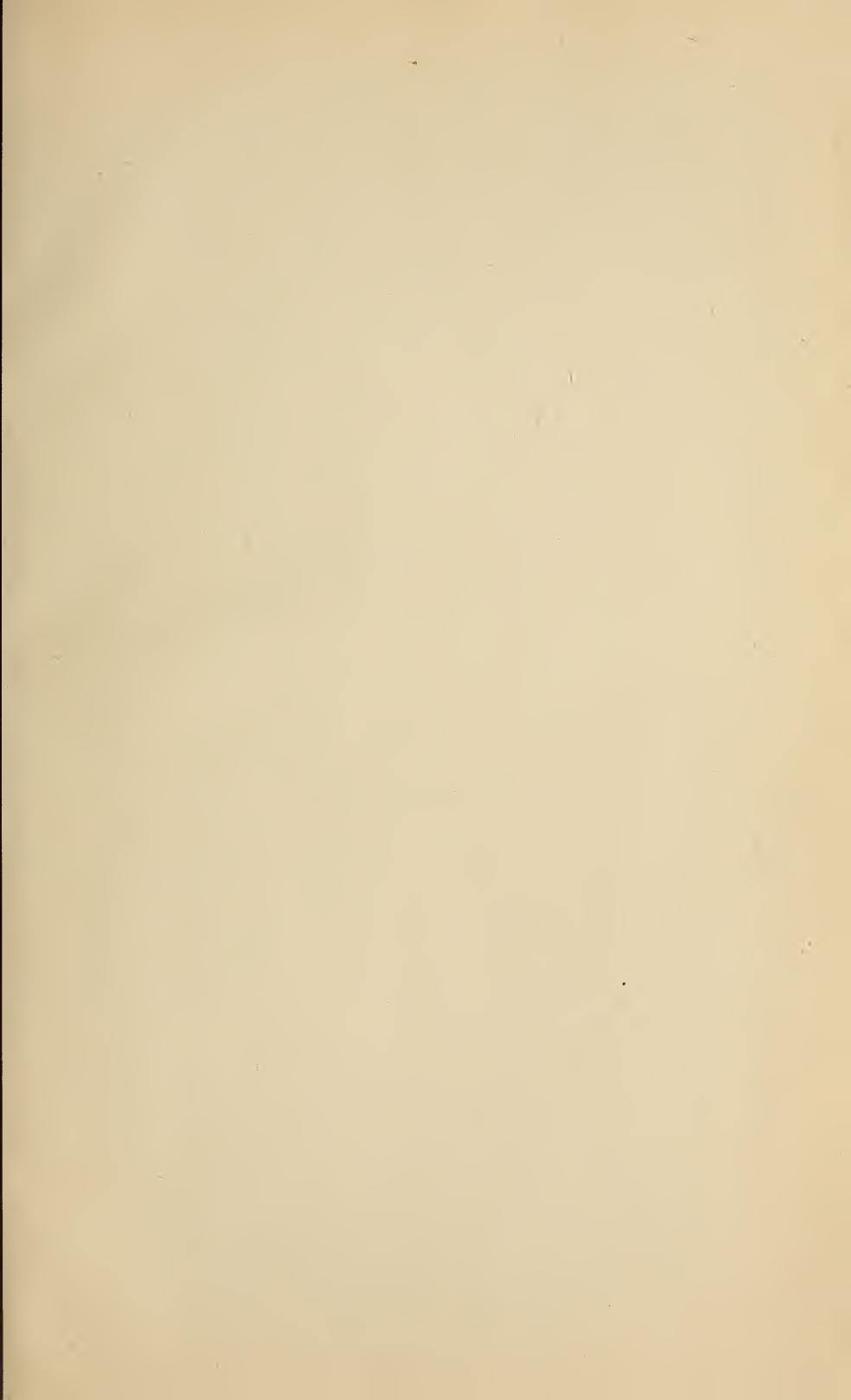


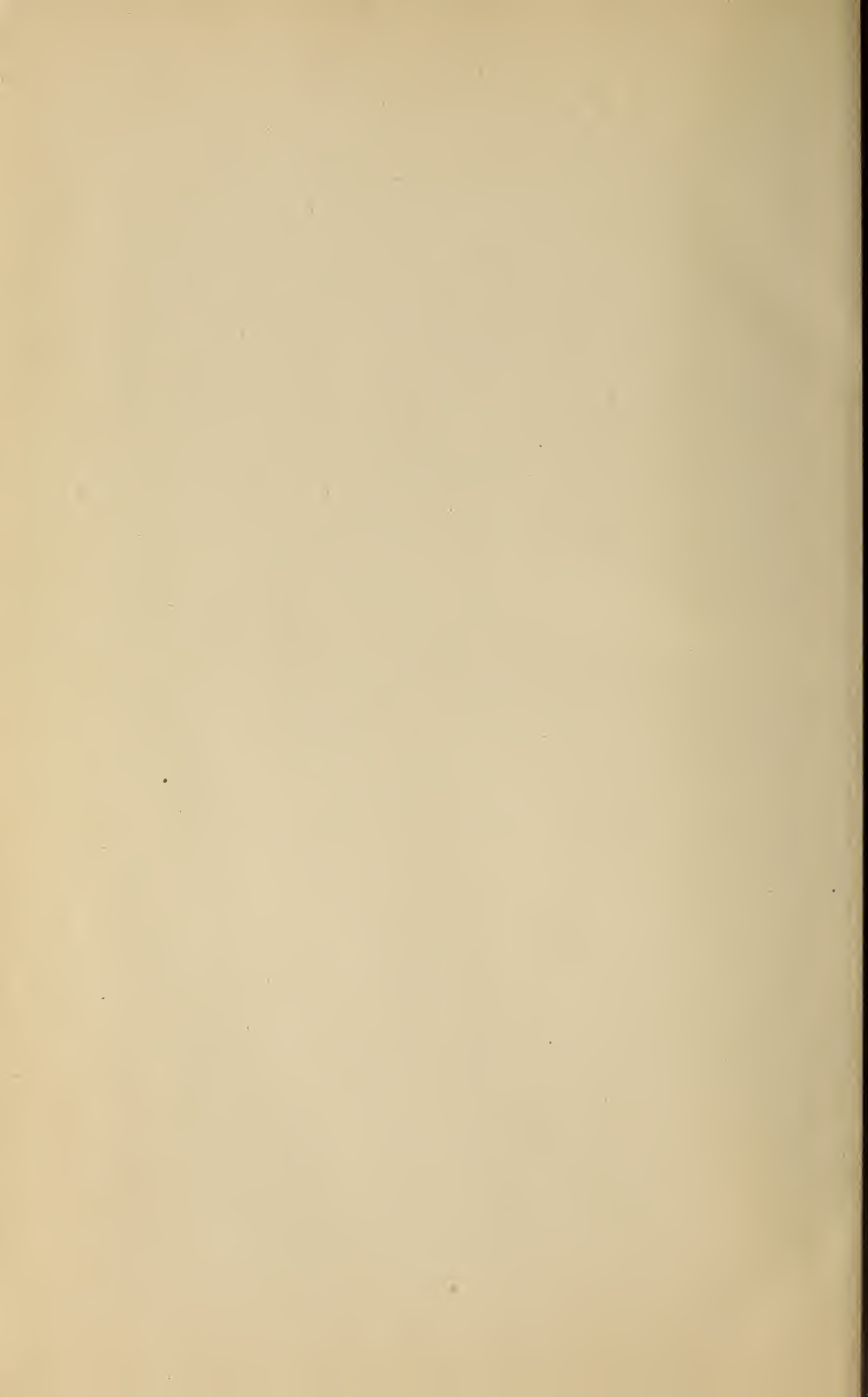


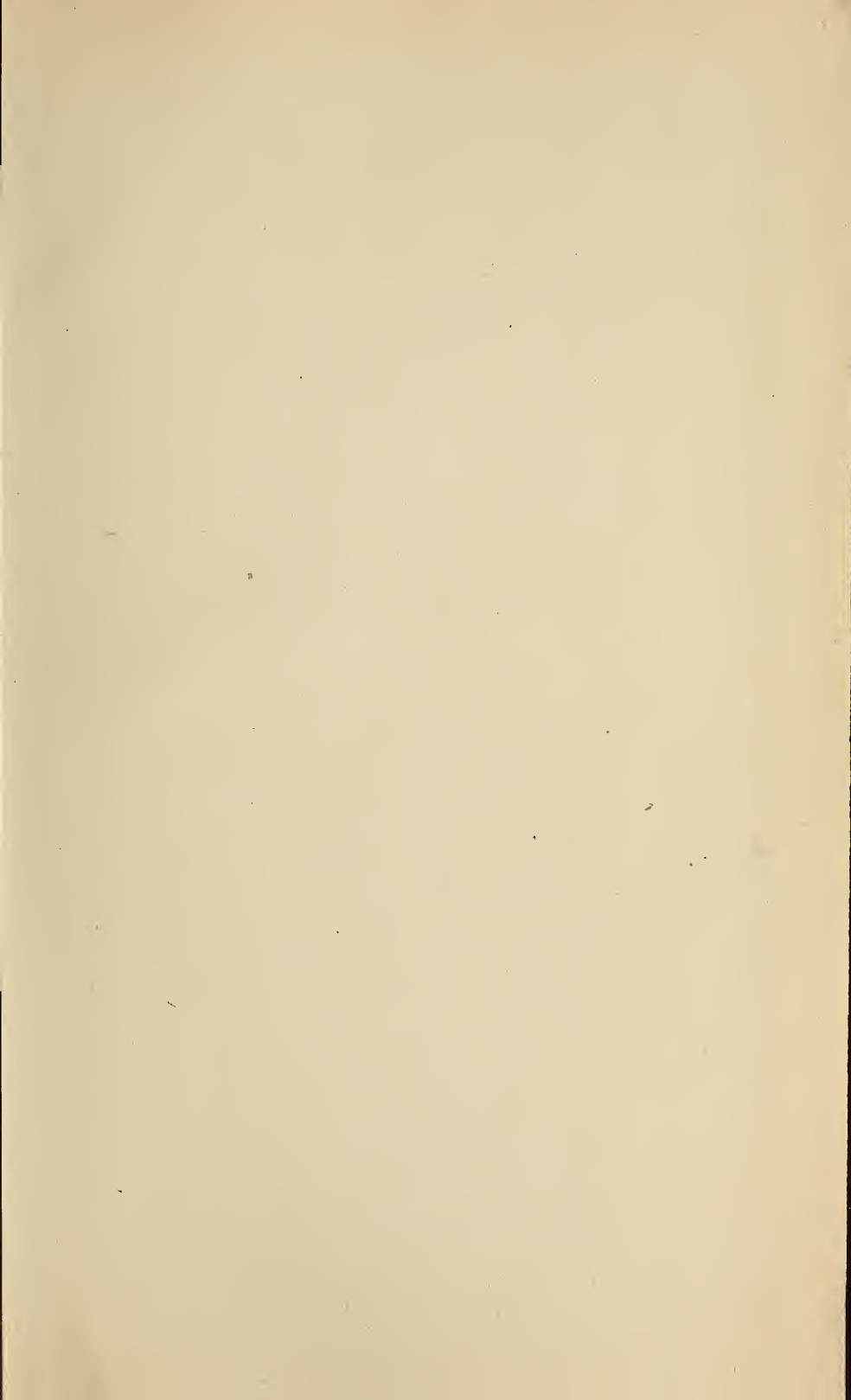


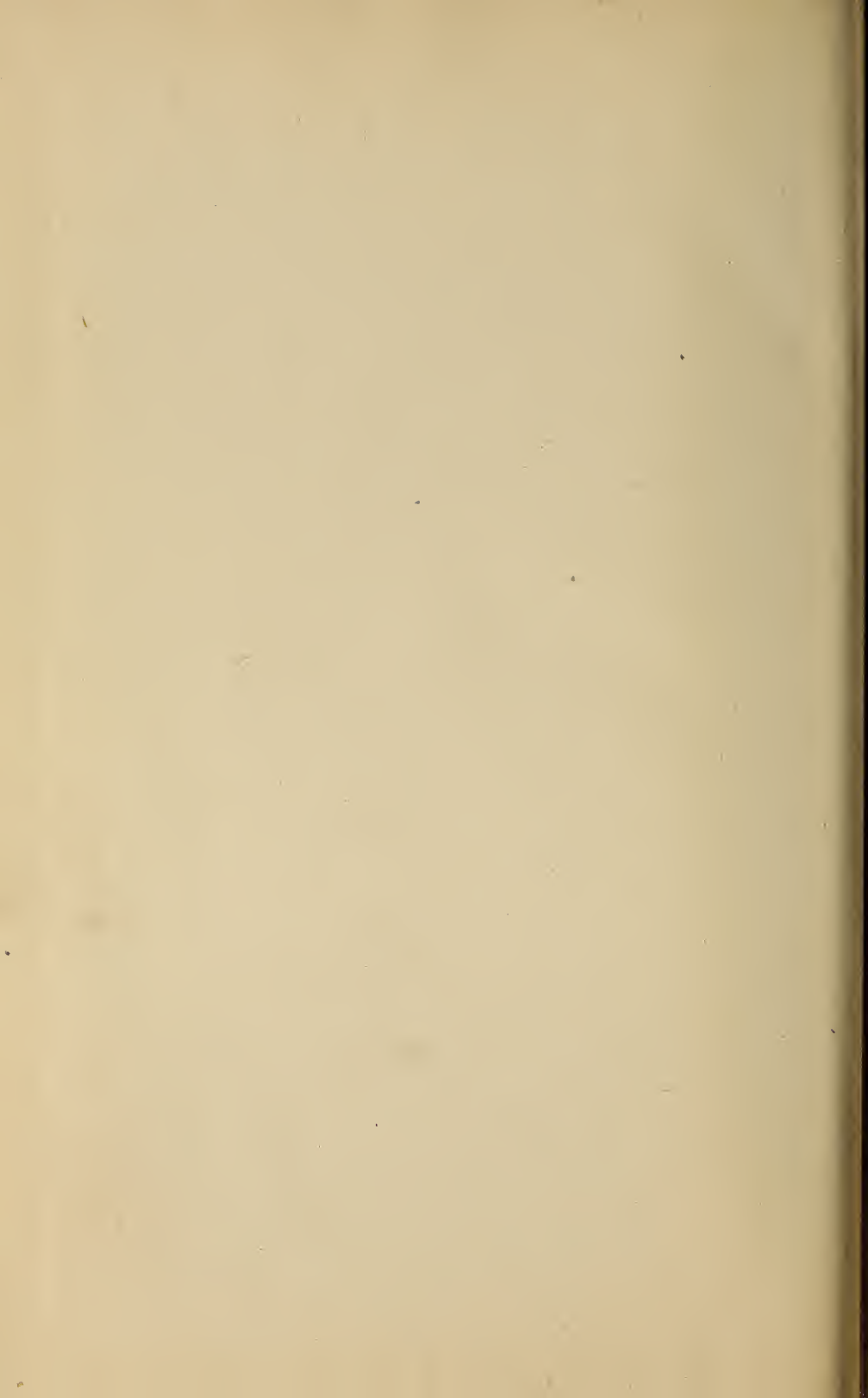
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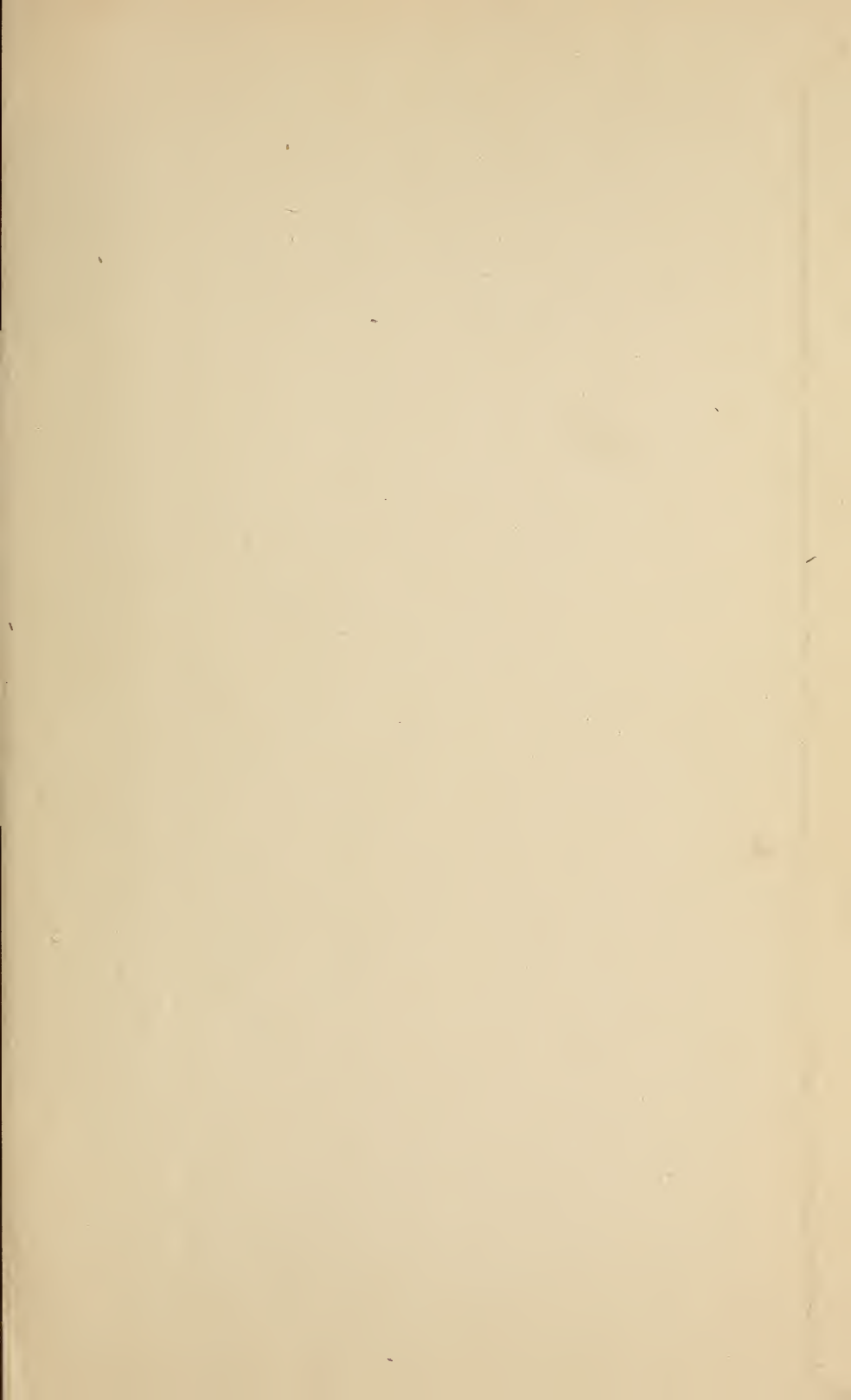
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