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CONFIDENTIAL

DEPARTMENT OF JUSTICE
WAR DIVISION
ECONOMIC WARFARE SECTION

REPORT ON DAIDO DENKI SEIKO K.K.

NOV 19 1943

Submitted by:
Morris Calden
Foreign Economic Adminis-
tration
New York, New York

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War Division
Department of Justice
Washington, D.C.

Confidential Report
November 19, 1943 (Report No.238)
Re: Daido Denki Seiko K.K.
Submitted by: Morris Calden
Office of Economic Warfare Analysis
Office of Economic Warfare
New York, N. Y.

REPORT ON DAIDO DENKI SEIKO K.K.

1. Introduction

Daido Denki Seiko K.K. of Nagoya, (Daido Electric Steel Mfg. Company) also known as Daido Seiko, is one of the three big alloy steel companies in Japan - the other two being the Yasuki Steel Works of Hitachi Seisaku (Hitachi Mfg.) and Nippon Tokushuko (Japan Special Steel). Daido makes from 30 to 40% of Japan's total alloy or special steels - in some types 80 and 90%. It manufactures all kinds of cast and forged steel products: steel for use in automobiles, aeroplanes, arms, and machine tools; springs; electric furnaces; electric supplies; manganese steel rails etc. (1) In 1938 they started to make some machine tools (lathes or drilling machines) but the reception of these tools was poor. (2)

Plant capacity in September 1937 (1):

Iron alloys	-	15,000 metric tons
Steel ingots	-	10,000 metric tons
Forged steel	-	5,000 metric tons
Rolled iron	-	10,000 metric tons
Cast steel goods	-	10,000 metric tons
Springs	-	20,000 metric tons

The locations of the plants are (1):

1. Nagoya, Minami ku, Tatsumiya (?) Machi, 10
2. Nagoya, Minami ku, Hoshizaki Machi, Kuride (?) 66

In 1939 the site of this plant was enlarged from 150,000 tsubo (1 tsubo = 4 sq. yards) to 200,000 tsubo. The

plant is being expanded and a new electric furnace factory was being added. In 1940 permission was sought from the Ministry of Commerce and Industry to install new experiential equipment for sponge iron and to develop new products.

3. Nagoya, Atsuta ku, Atsuta Higashi Machi
4. Nagoya, Atsuta ku, Hanaomate (?) Machi, 3 chome 18
5. Nagoya, Tsukiji
This plant specializes in tool and construction steel.
6. Iwate prefecture, Shimo Hei gun, Sentoku Mura (known as Miyako factory)
This plant produces iron alloys. In 1940 it was permitted to expand its facilities.
7. Kawasaki, Kita Muwase.
This plant produces springs. A new factory was expected to multiply present production.
8. Nagano, Nishi Chikuma gun, Fukushima Machi
This plant makes iron alloys.
9. Tokyo, Mukojima ku, Tereshima Machi, 4 Chome 23 (Imperial coiled spring factory)
This plant produces springs. (1)

In 1940 Daido sold certain products through the Mitsui Trading Company in Japan (Mitsui Bussan Kaisha).

168 Springs	¥ 10,380	to Mantetsu
90 Passenger car springs	85,830	to Mantetsu
1 Electric Arc furnace	50,735	to Toyo Kikai
2 Electric Arc furnaces	111,000	to Showa Steel, Tokyo
Various electric furnaces	531,390	to Manchuria Aircraft, Nagoya

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In 1940 Daido shipped three-phase electric arc furnaces and parts for making steel and melting iron to Hokkaido, Korea, Formosa, Kwantung, Karofuto, and the South Sea Islands. In the second period of 1940 Daido sold ¥ 46,579 springs for passenger cars and ¥ 852,042 electric furnaces. In addition to Daido, substantial numbers of electric furnaces are manufactured by Mitsubishi Electric and Shibaura.

In January 1940 it bought an Ajax High Frequency furnace from Tokyo Shibaura Electric (3) and in February 1940 Daido purchased a second hand rolling mill from Frank B. Foster of Pittsburgh, Pa.

In January 1937 Daido Seiko organized Daido Kikai Seisakusho (Daido Machine Mfg. Co.) with a capital of ¥ 2,000,000. This company makes machine tools and parts, and metal welders. Machine equipment was not up to expectations so that production was less than anticipated.

This report consists of tabulations of Daido orders and inquiries for steel equipment from January 1, 1937 to 1940 when their orders had to be cancelled because export licenses failed to come through. Transactions were handled by Mitsubishi Shoji Kaisha, Mitsui Bussan Kaisha, Ataka & Co. Ltd., and Okura & Company, Ltd. The files of these concerns are now kept by the Alien Property Custodian in a warehouse at 27 Cliff Street, N.Y.C. This report is one of a series being made after an examination of those files.

The abbreviation DWG means that Japanese drawings of workpieces or parts of workpieces are contained in the files. The abbreviation C means that the order was cancelled.

FOOTNOTES

1. John Williams "A Directory of Certain Japanese Industrial Concerns, and from his unpublished notes in the warehouse at 27 Cliff Street.
2. A letter from Ataka, N.Y. to Ataka, Osaka, dated February 15, 1940.
3. Mitsui confidential reports for 1940.

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11. RECAPITULATION OF ORDERS PLACED

Shipped

1	Used Mesta 34" High Reversing Blooming Mill	\$254,000.00
1	Chambersburg 12,000 lb. "E" Drop Hammer	18,985.00
1	Chambersburg 25:1 Anvil	22,104.00
1	Ajax 7" Forging Machine	86,450.00
1	Ajax Sawing and Burring Machine	3,100.00
	Dies, tools, electrical equipment and other accessories	<u>30,049.00</u>
	Total	414,688.00

Cancelled

2	Ajax 7" Forging Machines	116,125.00
1	Ajax 2,500 Ton Forging Press	85,250.00
1	Chambersburg 20,000 lb. "E" Drop Hammer	75,300.00
	Miscellaneous	<u>196.00</u>
	Total	276,871.00

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111. MITSUBI ORDERS PLACED AFTER JANUARY 1, 1937

Tokyo Ord. Export Ord.	Date	Maker	No.	Article	Price
TO 3018 EO 2947	1/7/38 12/22/37	Chambersburg	1	12,000 lb "E" Steam Drop Hammer without anvil for manu- facturing six- throw crankshafts similar to Chevrolet (In- quired at Ajax and Heppenstall for dies which would forge crankshaft flange at same time forging was made)	\$ 18,985.00
TO 3167 EO 3348	7/30/38 7/18/38	Chambersburg	1	25:1 Ratio Anvil for TO 3018	22,104.60
EO 3348 add.	9/12/38	Heppenstall	2 2	Forging Dies Upsetter Dies	1,415.10
TO 3200 EO 3432	9/10/38 8/26/38	Ajax	1	7" Forging Machine and Die "A"	86,450.00
EO 3432 add.	1/20/39	Ajax	2	Dies and Tools for producing forging B (re- duction gear parts) from SAE #3340 steel, and forging "E" (cam) from SAE #3312 steel (Dwg)	4,898.00

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Tokyo Ord. Export Ord.	Date	Maker	No.	Article	Price
EO 3432 add.#1	2/23/39	International General Electric	1	Motor	\$ 1,008.83
TO 3467 EO 3989	12/16/38 12/28/38	Ajax	1	Forging Roll #2	9,049.00
EO 3989 add.	1/9/39	Ajax	1	Set - Roll Dies for producing connecting rod blank #F (Dwg)	1,732.50
			1	Roll Dies for Chevrolet rear axle drive shaft	
TO 3500 EO 3775	12/6/38 11/9/38	Ajax	1	Sawing and Burring Machine #3, for bar of 4" dia.	3,100.00
EO 3775 add.	11/30/38	Ajax	10	#3 32" Sawing Discs	678.00
TO 2423 EO 2318	12/12/39 12/8/39	Frank B.Foster	1	Used Nesta 34" 2 High Revers- ing Blooming Mill consisting of:	254,000.00
			1	Roll Stand Manipulator Bed Plates Two Mill Tables Hot Bloom Shear (Dwgs)	
				weighing approx. 1,447,000 lbs.at \$100,000.00.	

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Tokyo Ord. Export Ord.	Date	Maker	No.	Article	Price
			1	Used Westinghouse Electric Drive Equipment @ \$154,000.00.	
				This mill is to used for manu- facturing special steel such as stainless steel, nickel chrome steel, spring steel, high speed tool steel, high carbon steel. Billet dimensions were 150 x 150 mm.; round bars - diameters from 150 to 50 mm.; flat bars - 250 x 10 mm.; ingot - 1300 kgs., 35 cm. sq. capacity of 10,000 kilo tons per month	
TO 3539 EO 2446	2/9/40 11/6/40	McCabe & Sheeran	1	Second Hand 7" Ajax Upsetter for forging propeller shaft (DWgs) (C)	\$ 22,500.00
EO 2446 add.	1/9/40	Internation- al General Electric	1	Motor	1,118.00
EO 2446 add.2	3/25/40	Champion Die & Forging	1	Die for producing connecting rod as per Dwg. - to be used with 2,000 lb. Japanese hammer	650.00

Tokyo Ord. Export Ord.	Date	Maker	No.	Article	Price
TO 3642 EO 2963	3/28/40 5/10/40	Ajax	1	2,500 Ton Solid Frame Forging Press (See Exhibit A) (Dwgs) (C)	\$85,250.00
EO 2963 add.	5/14/40	International Gen. Electric	1	Motor and El- ectric Equipment	2,028.95
EO 2963 add #2	6/14/40	Excello	1	Tool Height Setting Guage to be used on #2112 boring machine (EO 2135) (C)	196.00
TO 3660 EO 2067	3/19/40 11/8/39	Ajax	1	7" Upset Forging Machine (Dwg) (C)	93,625.00
EO 2077 add.	11/27/39	International Gen. Electric	1	Motor and El- ectrical Equipment	2,028.95
TO 3817 EO 3081	8/10/40 6/20/40	Chambersburg	1	20,000 lb. "E" Steam Drop Hammer with 25:1 Ratio 2 section anvil. Anvil top of cast steel and anvil base of alloy iron - to be used for aeroplane crankshaft (C)	75,300.00
TO 11003 EO 3210	10/9/40 10/1/40	United Engin- eering and Foundry	1	Cast Steel Mill Coupling for TO 2423 blooming mill for Hoshizaki Works	1,191.00

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Tokyo Ord. Export Ord.	Date	Maker	No.	Article	Price
TO 11004	10/9/40	Worthington		Centrifugal pump, Air Compressor and other equip- ment for blooming mill (DWgs) for Hoshizaki Works	\$ 4,929.00

IV-A. MITSUBISHI INQUIRIES AFTER JANUARY 1, 1937

<u>Inq. No.</u>	<u>Date</u>	<u>Maker</u>	<u>No.</u>	<u>Article</u>
NY 2611	1/20/40	Mesta	1	Sheet Mill for special alloy steel. Annual capacity 10,000 kilo tons. Sheet to be rolled - 13% chrome steel, and 18% chrome, 8% nickel steel sheet. Hot mill, Cold Mill, Reheating furnace, Pickling machines and auxiliary machinery to be purchased.
		Medart, Kane & Roach	1	Straightening Machine for square and round 2"-5"
		Medart	1	Straightening Machine for cold drawn hexagon from 20 mm. to 6 mm.
		Mesta	3	Cold Vertical Billet Shears to cut 4" square billets.
		Bonnat	4	Square Ingot Turning Lathes (billeteers)
		Mesta	1	2,000 Ton Forging Press

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IV-B. mitsui inquiries after January 1, 1937

Inq. No.	Date	Maker	No.	Article
MF 3277	4/20/37	United Engineering & Foundry	1	2 High or 3 High Blooming Mill Ingot for billet 280 x 280 mm. 600 kg. Ingot for slab 280 x 200 mm. 1,000 kg. Ingot tensile strength 80 kg /sq. mm. Billet 50 cu. m/m 115 x 145 mm. 60,000 Tons/year Billet 60 cu.m/m 58,000 tons/year. Sheet bar (250-300) x(10-20) mm. 29,000 tons/ year. Slab (250-300) x (20-72) mm. 10,000 tons/year. Total billet, sheet, bar and slab, 157,000 tons. Total ingot (20% plus) 186,000 tons.

Inq.No.	Date	Maker	No.	Article	Price
			1	Hoop Mill, 50,000 tons/year, 1½ mm. thick, 160 mm. wide (max.)	
			1	Automobile sheet mill, 40,000 tons/year 0.8 mm. thick, 48" wide	
				First two items were placed with Demag. Only proposals on 3rd item desired. 1,500 ton Wagner press ordered in Germany	
	5/4/37	Alliance	1	Forging Manipulator - manipulator possibly ordered in Germany	
MF 3662	2/2/38	Ajax	1	#3 Forging Roll	\$11,518.75
TE 3770	8/1/39	Ajax	1	Crankshaft Twister for twisting 4 bearing parts of forged 6 cylinder crankshaft (Dwg)	
TE 2560	8/31/38	United Engineering & Foundry	1	2-High Blooming Mill with accessories (See TO 2423) It was originally intended to buy this mill from Demag, but the time of shipment was 24 months after order. The Imperial Japanese army, therefore, urged Daido to place this order in America.)	

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Inq. No.	Date	Maker	No.	Article	Price
TE 3822 EA	9/5/33	Consolidated	1	Cold Shear suitable for cutting round or square, bar stocks, dia. up to 7" prior to upsetting	
TE 2614	9/11/39	United Engineering & Foundry	1	800 mm. 2' High Reversing Blooming Mill for Rolling Special Steel (complete Demag specifications given) Pm. 1,268,733 Purchase of mill contemplated as substitute for German mill which they ordered but found it impossible to get delivery.	
TE 3959	9/20/39	Alliance	1	Forging Manipulator trolley type and	\$18,800.00
			1	Forging Manipulator bridge type for manipulating specified forgings. Export license refused. Alliance also refused to sell drawings so that machines could be made in Japan.	24,900.00
MF 3098	4/3/39	Ajax	2	2,000# Rodrop Hammers	32,400.00
			1	3,000# Rodrop Hammer	22,300.00
			1	4,000# Rodrop Hammer	31,000.00

Inq. No.	Date	Maker	No.	Article	Price
MF 3099	4/4/39	Ajax	1	5" Forging Machine	\$ 50,250.00
MF 3101	4/1/39	Chambersburg	1	#500 Ten Steel Side Trimming Press	11,785.00
MF 3108	2/20/39	McCabe & Sheeran	1	National 5" Up- setting and Forging Machine	15,000.00
		Morey	1	Baldwin Southwark 3,000 Ton Hydraulic Press	28,000.00
			1	Baldwin Southwark 500 Ton Hydraulic Press	4,500.00
MF 3116	4/14/39	De Walt	1	GL Wet Cutting Machine	2,250.00
MF 3130	4/28/39	American Foundry Equip- ment	1	Wheelabrator to clean forgings -1 to 20 kgs.	8,155.00
TE 3960	9/20/39	United Engin- eering & Foundry	1	Cold Billet Shear for cutting 3" alloy steel having 60-110 kgs./mm ² in tensile strength	36,675.00
			1	Cold Billet Shear for cutting 7" square alloy steel having 60-110 kgs./mm ² in tensile strength	38,696.00

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Inq. No.	Date	Maker	No.	Article	Price
MF 2210	2/23/40	F. B. Foster	1	U.E. and F. Second Hand 1,000 Ton Steam Hydraulic Davy Type Forging Press (Dwgs). Order placed in Japan.	
			1	New or Second Hand Forging Press	
MF 3706	3/25/40	Alliance	1	Soaking Pit Trolley- unable to obtain exchange permit, therefore considered placing order with Shibaura United Kogyo. Alliance refused to give them drawings.	
TE 11017	7/8/40	United Engineering & Foundry	4	Rolls, 30" x 75" United Special Steel Alloy	\$10,200.00
TE 3404	8/7/40	American Chain & Cable Co.	1	Campbell Automatic. The hardest material to be cut off SAE 71630 chrome tungsten steel as forged at normal SAE 6195 chromium steel as forged (Dwg)	
MF 2259	7/3/40	Republic	1	Second Hand Hot Sheet Mill	154,000.00
			1	10" Rod Mill	65,000.00
				Republic had these mills on hand and wished to dispose of them. Mitsui offered them to Daido.	

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<u>Inq.No.</u>	<u>Date</u>	<u>Maker</u>	<u>No.</u>	<u>Article</u>	<u>Price</u>
MF 3784	9/16/40	Ajax	1	1,000 Ton Press, Crankshaft Twister	
		Alliance	1	2 Ton Forging Manipulator	
			1	5 Ton Forging Man- ipulator	

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IV-C. ATAKA INQUIRIES AFTER JANUARY 1, 1937

<u>Inq. No.</u>	<u>Date</u>	<u>Maker</u>	<u>No.</u>	<u>Article</u>	<u>Price</u>
702	3/29/40	Medart	1	Bar Turning Machine capable of handling steel bars ranging in diameter from 12 to 75 mm. x 3 meters in length.	

IV-D. OKURA INQUIRIES AFTER JANUARY 1, 1939

2301	9/14/38	Caterpillar Tractor	1	Diesel D4 Tractor	\$2,083.53
23506	1/22/40	Alliance	1	Forging Manipulator	
23507	2/28/40	Mesta Morgan	1	1,000 Ton Forging Press with Manipulator - 1 Ton Ingot	
23605	3/30/40	Morgan Engin- eering Mesta	1	Stainless Steel Plate Rolling Mill. Square ingot 18-8 nickel chrome steel or 13% chrome steel. Size 1 ton/pc. body length 1 meter. Steel plate to be rolled down-size; 10 mm.- 6 mm. x 3'-0" x 6'-0". Capacity per month about 800 tons with 250 operating hours.	

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Inq. No.	Date	Maker	No.	Article	Price
23507	3/18/40	Farrell- Birmingham	1	Stainless Steel Rolling Mill (no details)	
23285	5/9/39	J V W Corp.		Exclusive patent and manufacturing rights in Japan of the Atlantic Casting and En- gineering Corp- oration's process of precision moulding of non- ferrous metals in plaster casts.	\$100,000.00

Note: Inquiries
were made in various
American plants for
methods of producing
alloy steels.

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V. EXHIBIT TO #3642

Work to be done on Ajax 2,500 ton Forging Press:

It is intended to make three kinds of crankshafts, "A", "B", and "C" and also gear blank "D" (Drawings in folder).

Material: Nickel chrome tungsten steel
Strength: 120 kg. per square mm.

Round cornered square stock will be used.

For the forging of crankshaft A and C, the customers have in mind the following sequence of operations:

- 1st Operation: To upset the stock using 7" upsetter.
- 2nd Operation: To press by 2,500 ton forging press.
- 3rd Operation: To make finish forging by Chambersburg 12,000 lbs. drop hammer.

As regards "B" crank only 2nd and 3rd operations will be done.

The forging press will be used for second operation.

Mr. Crilly of Ajax Mfg. Co., when he visited Japan last year (1939), suggested that the 2nd operation be omitted. However, Mr. Takahashi, engineer of Daido Steel Works, found that they had great difficulty in getting satisfactory results unless the 2nd operation, i.e. the forging press, be included.

March 28, 1940