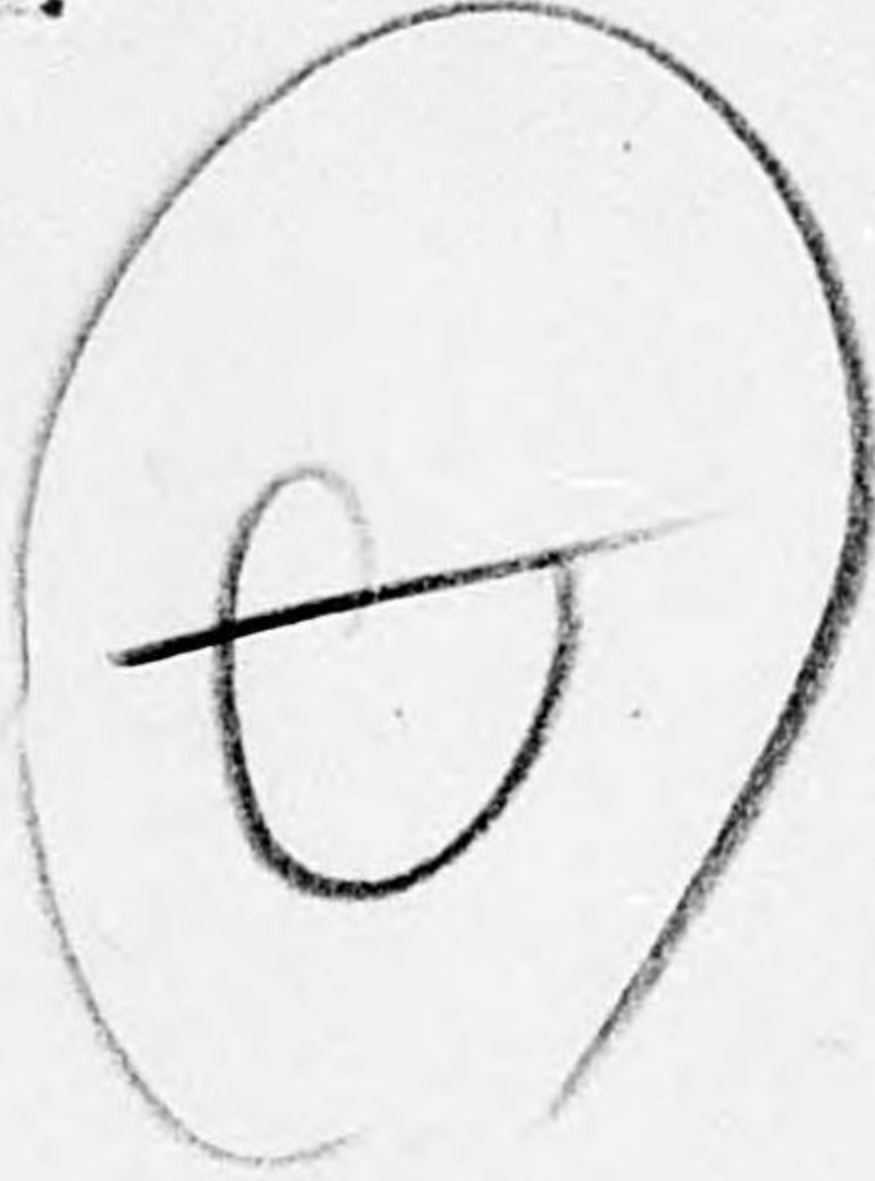


94a(1) Doc(2)

USSBS
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U. S. STRATEGIC BOMBING SURVEY

APO 234, c/o Postmaster
San Francisco, California

Questions to be asked of Mr Komota
Arch. for Kawasaki Aircraft

1. When you were erecting a concrete building, did you make a test of the concrete being used.
2. If so, can you give us a chart of the test.
3. Is there a concrete building Code in Japan? If so, we would like to have one. ✓
4. Why is the concrete of such a general low grade in Japan.
5. Why are concrete buttress used to such an extent on concrete buildings in this area?
6. Do you use expansion joints in concrete buildings?
7. Are Bldgs designed to withstand Earthquakes - All Bldgs. - Yes.
- 8

(7)

- ① Made test one year, diam 15cc. thickness 30cc. tested in Kobe Technical High School. - Test after 4 week
- ② Copies of test all burned. Worse. 135 kg. to per Sq. C.C. Worst. Best. 235
180 Average
45 Req. in Japanese Bldg. Code

Target 1547

Conference Friday Nov. 2nd. 1945

Arch. _____

Chief ENGR. _____

Tech. Director _____

Questions

- 1. Area of Plant 340,000 ^{sq} METER
- 2. Area occupied by Buildings 340,000 ^{sq} METER
- 3. Name of all Buildings SEE BOMB PLOT
- 4. Cross and Elevations of Main Buildings Bligs Nos. 1, 2, 3, 4, 12, 15, 16, 19 and 22

Questions on Design

- 5. What was the assumed Live Roof Load on Steel Frame Structures. 6.15 #/sq'
30 KG / sq METER
- 6. What was the assumed Wind Load in pounds per Square Foot. 100 KG / sq METER = 20.48 #/sq'
- 7. Was the design of structures based upon an American design, if not was it English, German, French etc. If the design was American what were some of the American books used as reference. None
- 8. Live floor load used in Concrete Office Building. 300 KG / sq METER = 61.5 #/sq' JAP BOOKS USED
- 9. Please account for the use of Corrugated light Gage metal on some buildings and cement asbestos corrugated roofing. FOR USED FOR FIRE PROOFING
- 10. How do you account for the varied design of Column built up section in the # Akashi plant. LACK OF MATERIAL
- 11. What was the design tensile stress used for structural steel what unit is this answer given in. 1200 kg/cm² What was the Compressive stress. SAME AS TENSILE RCM = 17,100 #/sq in
- 12. What is the ultimate Tensile Stress of Structural Steel. 37000 KG / sq cm
52700 #/sq in
- 13. In regards to concrete. What is the ratio of Cement, Sand and Course aggregate used. 1:2.8:3.2 What is the Structural Compressive Strength after 28 days for the above ratio. 45 kg / sq cm Also amount of water used per bag of cement. Or slump of concrete. Also for the above ratio what is the Design Compressive Stress. 640 #/sq"



35 KG CEMENT
35 LITERS WATER
1 BAG

~~50 kg / bag~~
20 kg / bag

18 TO 20 C.M.

1422 #/sq"
100 TO 150 KG / sq cm.
ULTIMATE STRENGTH

2140 #/sq"

14. Did you study Engineering in United States, if not where YES
15. Did you study Architecture in the United States, if not where TOKYO UNIVERSITY VALUE OF 1 YEN = $\$0.25$
16. Unit cost of Steel per ton erected 560 YEN/TON
17. Unit cost of reinforced concrete in Cubic Yard in place.
Raids. 35 YEN/60. METER
18. June 22nd.raid .What percentage of original machines and equipment was in the plant at time of this raid _____
Also percentage of original production. _____
19. What percentage of machinery then in factory was destroyed by June 22nd and 26th.raid. Answer 96 in factory of which 50% were destroyed.
20. What production was carried on after the above raids.
21. Why was the death rate and injury in the last three raids so low or none at all. _____ Was there any work going on at the plant just just a few hours previous to these raids.? _____

STEEL WORKER 12 TO 13 YEN PER DAY
CARPENTER 7 YEN PER DAY

BONDING STRESS $\frac{1}{10}$ OF COMPRESSIVE STRESS

Elliott

340,000
5/680,000
226,000

Target 1547

Conference Friday Nov. 2nd. 1945

Arch. ^{Kagami} Mr. Kamata Chief Engr.

Tech. Director Mr. Ito.

- 480,000 Sq Questions
- Area of Plant ~~340,000~~ Sq. M.
 - Area occupied by Buildings ~~2/3 of above~~ 4 340,000 Sq M.
 - Name of all Buildings On Bomb Plot.
 - Cross ^{cut} and Elevations ^{of} Main Buildings . Bldgs Nos.
 1, 2, 3, 4, 12, 15, 16, 19 and 22-25
 #3 Same as #1
 Questions on Design
 Same as 15
 Same as 25
 - What was the assumed Live Roof Load on Steel Frame Structures.
 30 Kil per Sq. M. = 6.15[#] Sq Ft.
 100 Kil. per Sq. M. on Vertical Surface
 - What was the assumed Wind Load in pounds per Square Foot. 20.4[#] Sq Ft
 - Was the design of structures based upon an American design, if not was it English, German, French etc. If the design was American what were some of the American books used as reference.
 Modern Japanese style
 - Live floor load used in Concrete Office Building. 300 Kil per Sq. M. = 61.5[#] Ft
 - Please account for the use of Corrugated light Gage metal on some buildings and cement asbestos corrugated roofing
 Steel metal only for roof in repair
 - How do you account for the varied design of Column built up section in the # Akashi plant Japan has no rolled section = 17,100[#] Ft
 1200 Kil. per Sq. Centimeter
 - What was the design tensile stress used for structural steel What unit is this answer given in.
 Compressive stress ^{Same for Compression}
 52,700[#] 370 Kil per Sq. Centi
 370 Kil per
 - What is the ultimate Tensile Stress of Structural Steel
 52,700[#] 370 Kil per
 - In regards to concrete. What is the ratio of Cement, Sand and Course aggregate used? ^{3.2} 1-2.8-3.2 ^{2.8} . What is the Structural Compressive Strength after 28 days for the above ratio? ^{45 Kil D.C.M.} Also amount of water used per bag of cement. ^{18 to 20 cc} Or slump of concrete. Also for the above ratio what is the Design Compressive Stress.
 735[#]
 Factor of Safety 3
 ratio 70 or 80

Bag of Cement 50 Kil. = 640[#] Ft

- 14. Did you study Engineering in United States, if not where In America 2 month in 1929 Study in Japan
- 15. Did you study Architecture in the United States, if not where _____ Yen = 134 cts.
- 16. Unit cost of Steel per ton erected 560 Yen per ton.
- 17. Unit cost of reinforced concrete in Cubic Yard in place. 85 Yen per Cu. M.

Raids.

- 18 June 22nd. raid .What percentage of original machines and equipment was in the plant at time of this raid 324 Machines Also percentage of original production. _____
- 19 What percentage of machinery then in factory was destroyed by June 22nd and 26th. raid. Answer 96 in factory of which 50% ~~were destroyed~~ of a total 42% in engine plant damaged
- 20. What production was carried on after the above raids.
- 21. Why was the death rate and injury in the last three raids so low or none at all. _____ Was there any work going on at the plant just a few hours previous to these raids.? _____ damaged in

2171 Machines of all sorts - 250 ~~Mach~~ after Jan. raids
 + balance dispersed, 1'

H Presses & tools.

of 324 of ~~tools~~ 42% of machine tools were destroyed 228 were in engine plant, 42% of machine tools destroyed in engine plant and 50% of those in AIC plant.

1945	Dec. 44	Production	AIC	Engines
Jan.	_____	_____	14	158
Feb.	_____	_____	34	69
Mar.	_____	_____	24	50
Apr.	_____	_____	44	292
May	_____	_____	18	285
June	_____	_____	18	195
July	_____	_____	14	128
Aug 15	_____	_____	0	0

Futaba was not down on 15 July after IB raid on 7th July or about no production was carried on. Delivered + tested at Akashi. 1/3 was produced at 1547. 2/3 were assembled elsewhere at Futaba and tested here.

Delivered to Akashi