HEADQUARTERS
U.S. STRATEGIC BOMBING SURVEY
(PACIFIC)
APO 234
C/O POSTMASTER, SAN FRANCISCO

INTERROGATION NO: 298

PLACE: TOKYO
DATE: 6 Nov 45

Division of Origin: Capital Equipment and Construction.

Subject: Electric Industry - Mitsubishi Electric Company.

Personnel interrogated and background of each:

Mr. MIYAZAKI - General Manager
Mr. HAZAMA - Director
Mr. UCHIDA - Liaison for Mitsubishi Electric Company.

Where interviewed: Offices of Mitsubishi Electric Company.

Interrogator: Major HALES, Pfc Jacobson

Interpreter: None.

Allied Officers Present: None.

Summary:

Production problems confronting the electrical industry during the war and damage to the industry.

I N T E R R O G A T I O N

1. The men with the best overall knowledge of the electrical industry were stated as:

Mr. TSUMORI - President of Tokyo Shibaura.
Mr. TAKAO - Vice-President of HITACHI LTD.
Mr. WADA - Managing Director of Fuji Electric Co.
Mr. KAJII - President of Sumitomo Tsushuin Kogyo.

2. The percent of the productive capacity of the heavy electrical equipment manufacturers that was damaged by the end of the war was stated as 60%. Mitsubishi Electric was damaged to the extent of 35%, but Hitachi, the largest, was hardest hit. Fuji and Tokyo-Shibaura were also more seriously damaged than Mitsubishi (This overall estimate seems exaggerated).

3. Recovery of the heavy electrical equipment manufacturers was difficult to see, since the attacks came only a few months before the war ended. Still, production of the most essential orders (special machinery for use of the armed forces) was shifted to Mitsubishi on a night shift. No labor could be shifted, since the tactics of our Air Forces in wiping out urban areas scattered the labor force to the countryside. The last few months of the war saw the armed forces sending skilled workers who were in uniform to plants needing such help for the completion of vitally needed products. About 300 Naval specialists were thus acquired by Mitsubishi. Lack of housing is one reason of slow recovery even today.

Production of vacuum tubes, wire and cable showed signs of collapse during the war. This was evident in Autumn 1944. The wire shortage is stated to be a result of a shortage of wire drawing machinery and lack of transport. Completed products could not be delivered to consumers who urgently needed them. Mr. MIYAZAKI felt that the effect of the above two shortages on the armed forces must have been considerable.

There never were enough vacuum tubes even before production declined, but toward the end of the war production fell very sharply.

4. Total production of electrical equipment increased steadily and attained a peak in the middle of 1944. The industry generally operated at a one-shift capacity, with only parts of plants operating a second shift. Labor and materials were the factors limiting operation on a full double shift. Skilled labor was lost by induction into the armed forces early in the war. Replacements had to be trained. By 1944, half of Mitsubishi Electric's force of 40,000 workers consisted of schoolboys and schoolgirls (apprentices). By October 1944 production began to drop off. In the Winter of 1944-45 it fell off 20% at Mitsubishi Electric, and with the advent of bombing in March-April 1945, the drop in production became much sharper.

5. Government sponsored research amounted to about 60% of the total before the war, with private research concentrating on industrial development rather than pure research. With the incidence of the war (1941) the government turned its research facilities to development of specific products also, and gave financial assistance to companies engaged in special research projects. Research became more a joint effort on the part of the armed forces and large business concerns as the war continued.

Financial assistance by government in the electrical industry was rare before the war. During the war it was evident mainly in research assistance and for dispersal if specifically ordered by the Ministry of Munitions.

At the end of 1942 a government research bureau was established to aid in the development of improved products for the armed forces.

No tax exemptions or subsidies were granted to the electrical industry in general.

6. Rationing began in 1938 with the establishment of an Iron and Steel Ration Association, which was formed by companies to obtain their share of iron and steel. This was necessary since the armed forces began hoarding this commodity, and private industry found it desirable to establish its own rationing organization to allot what remained of the nation's stock. Allocations of materials were more formally controlled beginning with January 1942 by the Electric Machinery Manufacturers Control Association. Up to that time there was no prohibition of the manufacture of non-essential items. No strict control existed even then.

7. No shortage of skilled labor existed until the war started. Since draft deferment was not possible, the shortage of skilled labor soon became evident.

Shortages of materials began to be evident in 1943. Mica, asbestos and transformer oil are illustrations of early shortages. It was felt that the Army and Navy had cornered the entire supply of these materials. There were no adequate substitutes for asbestos and transformer oil. The manufacture of power transformers shrank considerably starting in 1943, and fell to a mere trickle in 1944. Oil was removed from unused transformers in many instances to insulate others that were needed.

8. Ferro concrete construction was used in expansion of facilities up to 1938. Thereafter new buildings were made of wood, since no concrete and steel was available to companies for construction. The policy during the war was to purchase or rent textile mills for expansion of factory space.

9. Overall planning before the war was done on the company level, with the Ministry of Commerce and Industry performing some planning in the field of basic materials. Plans for war production were divided, with individual control by both Army and Navy in their own spheres of interest. The attempt at joint control in the Munitions Ministry in 1943 failed with the exception of aircraft production. In all other fields, there was still separate control by both Army and Navy.

10. Radical planning changes occurred only in manufacture of communications equipment due to changing war needs and a changing military situation.

11. On subcontracting it was stated that 40% of parts for war goods were made in small shops of the "home industry" type. The percent was lower for the rest of Mitsubishi Electric, but on the average, 30% of all parts manufacture was made in small shops.

In the communications industry, it was felt that the percent was higher--perhaps 60%. The first urban area raid on Tokyo in March had a very serious effect on production of all electrical companies, since so many of the small shops were destroyed. Companies began to resort to parts manufacture in their own plants but this cut down the volume of production considerably and dislocated assembly space and facilities. Some manufacturers, especially in communications manufacture, came to almost a complete halt with the destruction of the small shops.

12. Weaknesses of the Japanese electrical industry were listed as:

a. Inferior grade of raw materials once the war began.

b. Inefficiency og the labor force and lack of mechanization.

The quality of products was allegedly not affected by inferior materials, although the tolerances and efficiency ratings of products were lowered. For example, the power losses in generators were greater.

The quality of production machinery was considered generally adequate but a shortage of measuring instruments (both electrical and mechanical) was evident.

13. Dispersal of the electrical industry began early in 1944, but it did not occur on a large scale until it was ordered by the Munitions Ministry about February-March 1945. The reason for this was that voluntary dispersal was not compensated by the government, but when it ordered dispersal, it compensated companies partly for transportation costs, purchase of dispersal sites and production losses. Orders to disperse a definite percent of productive facilities were given. The company would find a dispersal site, get it approved by the government (Munitions Ministry) and then move. By the time large scale dispersal began, transportation difficulties prevented many companies from carrying out their programs to the extent desired.

Underground areas were being prepared by the time the war ended, but the difficulties were great and very little underground facilities were in operation by the time the war ended. The Armed Forces' underground preparations were far more advanced. Private corporations had insufficient construction labor to undertake an efficient underground building program.

14. The general opinion among industrialists that the war was lost became apparent in the Autumn of 1944, but plans and operations were not changed by this feeling.

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(Obtain from G-2)

PLACE Tokyo, Japan
DATE 6 November 45
9:30 A.M.

Division of Origin Capital Equip & Constr

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Mr. Hazama - Director
Mr. UCHIDA - Liaison for Mitsubishi Electric Co.

Where interviewed Offices of Mitsubishi Elec Co

Interrogator Maj Hales, Pfc Jacobson

Interpreter None

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Summary:

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CAPITAL EQUIPMENT AND CONSTRUCTION BRANCH
UNITED STATES STRATEGIC BOMBING SURVEY

GJH/gls

6 November 1945.

ELECTRICAL INDUSTRY - MITSUBISHI ELECTRIC CO.

Personnel Interrogated:

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Mr. HAZAMA - Director
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No tax exemptions or subsidies were granted to the electrical industry in general.

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