

802

RESTRICTED

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



INTERROGATION NO. 340

PLACE Tokyo, Japan  
DATE 9 November 1945

Division of Origin Capital Equip & Construction  
Subject: Furukawa Electric Co.

Personnel interrogated and background of each:  
Mr. S. NAKAGAWA - President of Co.

Where interviewed Office of Furukawa Electric Co.

Interrogator Pfc. Jacobson

Interpreter None

Allied Officers Present S/Sgt G. L. Stauffer

Summary:

Damage to the industry, dispersal attempts and production problems of the electrical industry.

DISTRIBUTION : ALL DIVISIONS.



CAPITAL EQUIPMENT AND CONSTRUCTION BRANCH  
UNITED STATES STRATEGIC BOMBING SURVEY

MIJ/gls

9 November 1945.

FURUKAWA ELECTRIC CO.

Personnel Interrogated: Mr. S. NAKAGAWA - President of Company.

Interrogator: Pfc Jacobson.

**INTERROGATION**

About 40% of wire and cable industry was damaged by air raids. 10% of the buildings of the Furukawa Co. were lost. Out of 200 wire and cable factories in Japan 117 were left at the end of the war.

There were no signs of recovery after the attacks. Dispersal of labor and disrupted transportation were the main causes of lack of recovery.

Resistance wire and very thin wire were among the shortages of wire products. No particular extensions were made to cable plants during the war but new machines and equipment were added to accommodate demands for insulated cable. Production of bare wire for power lines practically closed at the end of 1941.

Upon dispersal some of the smaller factories went to places where copper was more accessible.

Paper was universally substituted for fibre insulation in all less essential wire and cable uses.

In 1944 full capacity was maintained at which time peak production was attained. In 1945 production remained at full capacity until March when the bombings started. From this point production dropped considerably. Capacity was defined as one 12 hour shift with 20% working on the night shift when demand for increased production became great (about 1944). Discontinuation of bare wire production caused a drop in production in 1941.

Many skilled workers had been drafted into the Armed Forces. Substitute labor in the form of school children was put to work in 1944. Three of these were equal to one skilled worker. Unskilled workers were sent to the company school for three months before they were employed. During the winter, farmers did part-time work at the Yokohama and Nikko Plants of the Furukawa Co.

Copper was always short in spite of a production increase to 80,000 tons during the war. Most of it went into munitions.

Research. The field of research was devoted mainly to substitutes for those materials which became short. For immediate needs industry did its own research with help from the government. The only aid obtained



from the government was financial assistance. During the war the government maintained inspection to insure production of war materials.

In 1944 transportation difficulties were responsible for non-delivery of finished cable products--this was mostly in the case of Navy orders. Railroads had inadequate freight car facilities. It was believed that the Navy ordered more than it actually needed. About 80% of insulated wire made by Furukawa went to the Navy (about 8 to 1 ratio) when compared with the Army, which ordered mainly field telephone cable.

In 1942 a shortage of concrete and steel prevented expansion. Wood had to be substituted to construct buildings. Only girders and pillars for cranes were made of steel. The Navy ordered expansion but would not supply the necessary materials for such expansion. Expansion was made possible only by increasing labor and not by expansion of buildings. About one-third of the production of Furukawa was devoted to the making of wire--the other two-thirds being devoted to the making of sheet metal. Before the war industry had no trouble in meeting demands; there were no shortages in either labor or materials. Labor difficulties began in 1943 with the loss of skilled labor accumulating steadily.

By 1942 reclaimed copper only was used for civilian use while the new stock was used for military purposes. In 1943 civilian use of wire was virtually halted and everything began to go to the military. The military endeavored to curtail civilian consumption of wire completely.

80% of raw materials needed for manufacture of wire and cable had been imported before the war.

Planning was done according to the cabinet budget issued since requirements could thus be gauged.

Changes in material were necessary when the conversion was made from civilian to military consumption because of the great difference in requirements by the military. There was no shortage of wire drawing equipment as used in large manufacturing concerns. Mr. Nakagawa ignored the existence of small manufacturers. His attitude is clearly monopolistic. He feels that small wire makers depress prices and are thus anathema to him. During the war heavy machines were a bottleneck to cable production. It took about one year after ordering ordinary machines before delivery was actually made. Boric acid, Tungsten, and nickel were some raw materials which were indicated as short during the war.

Dispersal began in the beginning of 1944. Only small factories planned to disperse but could not because of lack of transportation (no railroad cars were available). Orders were received to disperse from the Army and Navy but railway companies would not give the necessary transportation to carry out these orders according to Nakagawa. The large industries had the power to resist the Army and Navy orders but the small ones did not. The scattering of machines in dispersal of small concerns reduced production somewhat. Maximum dispersal came at



the beginning of 1945. The difficulty of getting another building was the main reason for the firm's not being able to disperse. **Underground dispersal** was attempted by making tunnels in the hills near Nikko but the end of the war came about before this could be used. Difficulty was encountered in this task because of rock encountered in the digging. About 30% of the machinery was expected to be dispersed--this percentage was made up mostly of small machinery.

Subcontractors supplied many of the small parts (about 10% for metal parts and a larger percentage for other small parts). The effect on production was very great when the small factories were destroyed by air attacks on urban areas in the Tokyo-Kawasaki districts.

The shortage of wire had a big effect on the completion of such finished products such as ships and planes. This shortage began to be felt toward the end of 1944.

It is believed that the electrical industry was damaged more than any other industry in Japan.

Food was believed to be the outstanding shortage in the loss of labor after area attacks.

Four plants of the company can supply any cable demand now needed except for the manufacture of telephone cables. In the event that demand increases a night shift can be established.



CAPITAL EQUIPMENT AND CONSTRUCTION BRANCH  
UNITED STATES STRATEGIC BOMBING SURVEY

MIJ/gls

9 November 1945.

FURUKAWA ELECTRIC CO.

Personnel Interrogated: Mr. S. NAKAGAWA - President of Company.

Interrogator: Pfc Jacobson.

About 40% of wire and cable industry was damaged by air raids. 10% of the buildings of the Furukawa Co. were lost. Out of 200 wire and cable factories in Japan 117 were left at the end of the war.

There were no signs of recovery after the attacks. Dispersal of labor and disrupted transportation were the main causes of lack of recovery.

Resistance wire and very thin wire were among the shortages of wire products. No particular extensions were made to cable plants during the war but new machines and equipment were added to accommodate demands for insulated cable. Production of bare wire for power lines practically closed at the end of 1941.

Upon dispersal some of the smaller factories went to places where copper was more accessible.

Paper was universally substituted for fibre insulation in all less essential wire and cable uses.

In 1944 full capacity was maintained at which time peak production was attained. In 1945 production remained at full capacity until March when the bombings started. From this point production dropped considerably. Capacity was defined as one 12 hour shift with 20% working on the night shift when demand for increased production became great (about 1944). Discontinuation of bare wire production caused a drop in production in 1941.

Many skilled workers had been drafted into the Armed Forces. Substitute labor in the form of school children was put to work in 1944. Three of these were equal to one skilled worker. Unskilled workers were sent to the company school for three months before they were employed. During the winter, farmers did part-time work at the Yokohama and Nikko Plants of the Furukawa Co.

Copper was always short in spite of a production increase to 80,000 tons during the war. Most of it went into munitions.

Research. The field of research was devoted mainly to substitutes for those materials which became short. For immediate needs industry did its own research with help from the government. The only aid obtained



from the government was financial assistance. During the war the government maintained inspection to insure production of war materials.

In 1944 transportation difficulties were responsible for non-delivery of finished cable products--this was mostly in the case of Navy orders. Railroads had inadequate freight car facilities. It was believed that the Navy ordered more than it actually needed. About 80% of insulated wire made by Furukawa went to the Navy (about 8 to 1 ratio) when compared with the Army, which ordered mainly field telephone cable.

In 1942 a shortage of concrete and steel prevented expansion. Wood had to be substituted to construct buildings. Only girders and pillars for cranes were made of steel. The Navy ordered expansion but would not supply the necessary materials for such expansion. Expansion was made possible only by increasing labor and not by expansion of buildings. About one-third of the production of Furukawa was devoted to the making of wire--the other two-thirds being devoted to the making of sheet metal. Before the war industry had no trouble in meeting demands; there were no shortages in either labor or materials. Labor difficulties began in 1943 with the loss of skilled labor accumulating steadily.

By 1942 reclaimed copper only was used for civilian use while the new stock was used for military purposes. In 1943 civilian use of wire was virtually halted and everything began to go to the military. The military endeavored to curtail civilian consumption of wire completely.

80% of raw materials needed for manufacture of wire and cable had been imported before the war.

Planning was done according to the cabinet budget issued since requirements could thus be gauged.

Changes in material were necessary when the conversion was made from civilian to military consumption because of the great difference in requirements by the military. There was no shortage of wire drawing equipment as used in large manufacturing concerns. Mr. Nakagawa ignored the existence of small manufacturers. His attitude is clearly monopolistic. He feels that small wire makers depress prices and are thus anathema to him. During the war heavy machines were a bottleneck to cable production. It took about one year after ordering ordinary machines before delivery was actually made. Boric acid, Tungsten, and nickel were some raw materials which were indicated as short during the war.

Dispersal began in the beginning of 1944. Only small factories planned to disperse but could not because of lack of transportation (no railroad cars were available). Orders were received to disperse from the Army and Navy but railway companies would not give the necessary transportation to carry out these orders according to Nakagawa. The large industries had the power to resist the Army and Navy orders but the small ones did not. The scattering of machines in dispersal of small concerns reduced production somewhat. Maximum dispersal came at



the beginning of 1945. The difficulty of getting another building was the main reason for the firm's not being able to disperse. **Underground dispersal** was attempted by making tunnels in the hills near Nikko but the end of the war came about before this could be used. Difficulty was encountered in this task because of rock encountered in the digging. About 30% of the machinery was expected to be dispersed--this percentage was made up mostly of small machinery.

Subcontractors supplied many of the small parts (about 10% for metal parts and a larger percentage for other small parts). The effect on production was very great when the small factories were destroyed by air attacks on urban areas in the Tokyo-Kawasaki districts.

The shortage of wire had a big effect on the completion of such finished products such as ships and planes. This shortage began to be felt toward the end of 1944.

It is believed that the electrical industry was damaged more than any other industry in Japan.

Food was believed to be the outstanding shortage in the loss of labor after area attacks.

Four plants of the company can supply any cable demand now needed except for the manufacture of telephone cables. In the event that demand increases a night shift can be established.