

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

INTERROGATION NO. 293
(Obtain from G-2)

PLACE: Tokyo
DATE: 7 November 1945

Division of Origin: Oil and Chemicals

Subject: Army-Navy Production of Synthetic Rubber
and Organic glasses.

Personnel interrogated and Background of each: KIRINO, Capt. IJN. Demobilized 15 October 1945. In charge of ordering all Army-Navy requirements in Synthetic Rubber, Organic glasses, Paints, Natural Rubber Products, Optical glass, Plane Fabrics, Paper (ordnance), Natural Leather. Officer in charge of labor supply for all of above industries.

Where interviewed: Room 810, Meiji Bldg.

Interrogator: Lt. Comdr. W.H. Evans (Mr. L.S. Galstaun substituting)

Interpreter: Mr. Baba

Allied Officers Present: Capt. Rasmussen and Mr. J.G. Schaafsma

Summary:

Captain Kirino graduated from the Naval Engineering School in 1919. Most of the time from 1919 until his graduation from the Naval Staff College as a Lieutenant, was spent in the Submarine Service. From the time he was promoted to Lt. Commander until the present he worked on control of natural resources and economics control. Prior to October 15, 1945 when he was demobilized, he was a captain.

By placing orders, controlling labor and raw materials supply and distribution of final products, he had tight control over the Synthetic Rubber and Organic glass industries.

All of the production of these two items was done by Civilian firms, and was for the exclusive use of the Army and Navy.

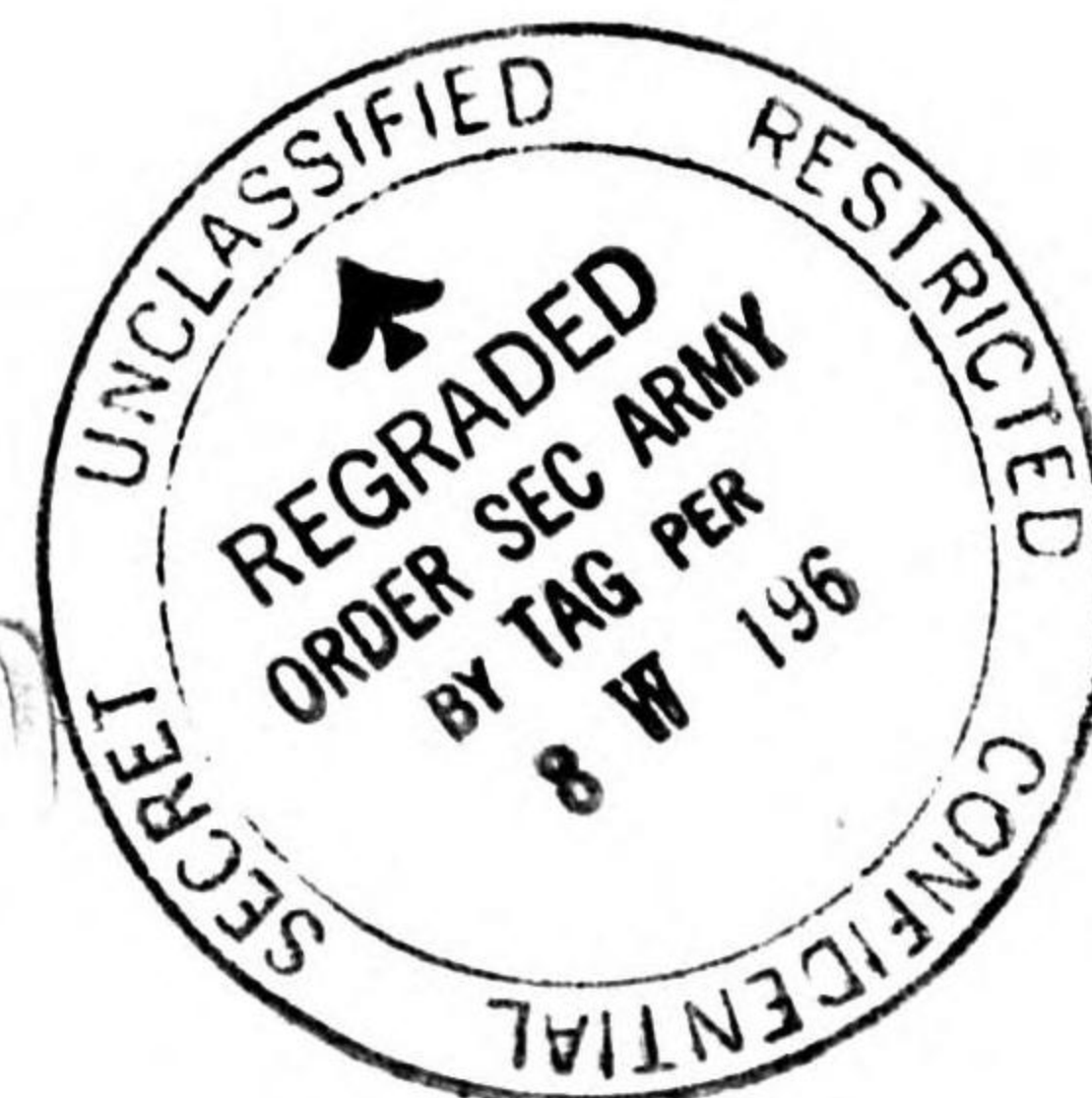
No shortages in raw materials ever affected production of Synthetic Rubber since priorities were always sufficiently high to permit requisitioning of supplies and labor from any source whatever.

In the bullet proofing of aircraft fuel tanks, the bulk of the layer was natural rubber to which a thin layer of synthetic was cemented. It was the shortage of natural rubber, not synthetic, which resulted in discontinuance of bullet proofing.

Yearly production of synthetic rubber was about 300 metric tons, practically all of the neoprene type.

Organic glass was always short. The production capacity was about 200 tons a month but actual was usually around 75 tons. Lack of "know-how" was stated to be the cause. Production was steady at this level and fluctuations in demand were made up by substitution of ordinary glass. Some shortages of raw materials decreased production toward the end of the war (Sodium cyanide and coal for fuel).

The records left by Capt. Kirino were his personal copies. The originals were burned on Official Orders.



Question: As aircraft production slowed, did demand for organic glass decrease?

Answer: Actual production remained fairly stable. Fluctuations were absorbed by using ordinary glass in rear windows and other less critical places.

Question: Was there any organic glass for civilian use?

Answer: None whatever; the Army-Navy use represents total production.

Question: Did Captain Kirino supervise production of any other materials?

Answer: Yes; besides synthetic rubber and organic glass. I was in charge of paints, Natural Rubber Products, Optical glass, Plane fabrics, Paper for Ordnance and Natural leather for industrial use. Natural Rubber made up the bulk of the lining for bulletproofing of aircraft fuel tanks. Paper was for electrical insulation and in some cases as a substitute for steel plate. Natural leather was used for pump packings and also for gasoline filters. Silk was important in plane fabrics.

Question: In regard to these material, where did shortages develop?

Answer: In natural rubber and manila hemp due to shipping. In silk because areas previously used for mulberry trees (to feed silkworms) were diverted to raising food items. In tire manufacture, a shortage developed in cotton. Rayon was used for a substitute.

Question: What was the result of the shortage of natural rubber?

Answer: The bulk of the bullet proof layer on fuel tanks was natural rubber. A thin fuel-resistant layer of synthetic rubber was cemented to the fuel side of the natural rubber. Since so much of the bullet proofing material was natural rubber, we stopped bullet proofing aircraft fuel tanks in order to conserve rubber for more essential items like tires.

Question: How much of a stockpile of natural rubber was left at the end of the war?

Answer: About 10,000 tons. This is an estimate.

Question: How long would this stock pile have lasted?

Answer: If saved for military use only, about 1-1/2 years.

Question: How long will it take to restore silk production?

Answer: About five years.

Question: Will it take five years for the mulberry trees to mature?

Answer: No; two years for that. But the people have to be re-educated as this is an unprofitable venture and is dependent on government subsidy. The production is entirely in civilian hands. As to labor, the control was in the hands of the Welfare Ministry.

Question: Does the Captain have any personal opinion as to how some of these problems could have been handled better?

Answer: The main difficulty was centralized control. Better centralization could have improved the whole situation.

Question: Are the records left with us originals?

Answer: These are exact copies of my report prior to demobilization. The copies turned in were burned but I saved my personal copies and these are the ones I gave you.

TRANSCRIPT

Question: What did the Captain do in the line of synthetic rubber and organic glass?

Answer: He gave orders to the civilian firms to produce synthetic rubber and organic glass. He was in charge of production and personnel problems, and allocated raw materials and labor to meet the problems.

Question: What about tetra-ethyl-lead?

Answer: The fuel headquarters of the Army took care of all the tetra-ethyl-lead that was used. Civilian firms produced for both Army & Navy. Nippon Soda was a large supplier (There were others but not known to Captain Kirino).

Question: Where was synthetic rubber produced?

Answer: Mostly in Northern Kyushu.

Question: How many tons per year?

Answer: Three hundred.

Question: What were the principal uses?

Answer: For flexible gasoline lines & bullet proofing aircraft fuel tanks.

Question: What were the raw materials?

Answer: These documents give the picture (the Captain left some documents, now being translated). A large amount of alcohol was used -- much more than should have been necessary. Salt was also required.

Question: Was this synthetic rubber the same as neoprene?

Answer: Practically the same.

Question: Did lack of salt affect production?

Answer: No raw material shortage was allowed to interfere. The main reason for production lags was that the labor employed was not paid sufficiently.

Question: Was there at any time a shortage of synthetic rubber?

Answer: No; airplane production was not high enough to be held up by lack of synthetic rubber.

Question: What were the types of organic glass produced?

Answer: We had only one type. I do not know the English name. Sodium cyanide and acetone were used as raw materials.

Question: Is this plastic the same as plexiglass?

Answer: I do not know.

Question: Was the process developed with foreign help?

Answer: I think Mitsubishi developed it.

Question: Was the entire production in the hands of civilian companies or was some produced in Army-Navy plants?

Answer: Production was entirely by civilians. The names of the principal producers are in the deposition.

Question: What were the principal uses?

Answer: Windows and instrument covers in aircraft. Production is around 1,000 tons per year but our designed capacity is around 2400 tons. Many production problems prevented realization of the potential capacity. Toward the end, shortages in sodium cyanide and coal for fuel became critical.

Question: When was the organic glass industry started in Japan?

Answer: Approximately 5 or 6 years ago.

Question: Was the demand more than the industry was able to produce?

Answer: Yes, always.