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CENTRAL INTELLIGENCE AGENCY

30 January 1951

INTELLIGENCE MEMORANDUM NO. 349

SUBJECT: Vulnerability of the Tin Industry in Indonesia

1. Description of the Industry.

Importance of Indonesian Tin Production to the United States.

Indonesia supplies the major portion of the high-grade tin concentrates imported by the United States. These concentrates are especially important to the Texas City smelter, where they are mixed with the much lower grade of concentrates imported from Bolivia, in order to obtain a higher grade product than could be secured from Bolivian concentrates alone.

General Operating and Production Facilities.

The developed tin deposits of Indonesia are located on the islands of Bangka, Billiton, and Singkep. The deposits on Bangka are owned by the Indonesian Government, but are now operated by the Billiton Company under a five-year contract signed in 1948. Since this company has its own deposits on Billiton and Singkep, it now controls the entire tin industry. The accompanying map of the three islands (CIA 11785) shows the location of dredges and other installations important to the tin industry.

In spite of the retarding effect of political disturbances and labor troubles on rehabilitation, the production from the islands has reached the normal prewar level of about 30,000 long tons. During 1949, tin production from dredges amounted to 66 percent of the total, from hydraulic mines 31 percent, and from mines worked on the tribute system and other small operations 3 percent.

Of greatest importance are the dredges. The capacity of dredges and size of buckets used vary according to the size of the ore reserve in a particular locality. The better equipped dredges have their own concentrating plants on board, consisting of trommel screens to eliminate

Note: This report, which has been prepared at the request of the Special Assistant for Intelligence, Department of State, on the basis of immediately available information, has not been coordinated with the intelligence organizations of the Departments of State, the Army, the Navy, and the Air Force. It contains information available to CIA as of 17 January 1951.

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the coarsest material and jigs and tables to produce clean concentrates containing about 75 percent tin. The older and smaller dredges produce a medium-grade product containing 20 to 40 percent tin, which is later upgraded in a concentrating plant.

Of the eight new dredges with 14-cubic-foot buckets that arrived at the islands in late 1947 and early 1948, four are operating at Bangka, two at Billiton, and two at Singkep. These large dredges are, in effect, floating concentrating plants that operate in sea areas or near the sea. Each is said to be capable of recovering well over the equivalent of 1,000 tons of metallic tin a year. Each dredge is also a self-contained power house and pumping station, electric power being generated by supercharged diesel engines directly coupled to generators. The dredge is fitted with an elaborate system of automatic relays and safety devices, as well as with indicating and recording apparatus to facilitate rapid and centralized control.

Second to the dredges in importance are the hydraulic mines. Here electrically driven pumps for water and gravel are mounted on pontoons that can be floated from one part of a pit to another. The ore-bearing deposits are pumped by gravel-pumps to sluices, where the tin mineral (cassiterite) is recovered and cleaned. The resulting product, containing 20 to 30 percent tin, is then transported to a concentrating plant to be brought up to standard grade. Other earth-moving equipment, such as bulldozers, draglines, and excavators, is used on a small scale, chiefly for preparing mine roads, constructing small dikes, and digging fresh-water canals.

Bangka.

The principal tin-bearing area of Bangka is in the northern half of the island, and the most important mining center is in the Sungailiat tin fields in the northeast. The head office of the mining activities is in Pangkalpinang.

Although the rehabilitation of the Bangka tin operations did not get under way until several months after that of Billiton, production today represents about 60 percent of the total tin production from all three islands. This is partly due to the fact that half of the new dredges with 14-cubic-foot buckets are at Bangka. At present, 11 dredges are operating at Bangka -- six with 9-cubic-foot buckets, four with 14-cubic-foot, and one with 15-cubic-foot buckets. Another large dredge caught fire last July and is still out of commission. The accompanying map indicates only four large dredges on Bangka; from available data it is not possible to determine which of the remaining dredges shown is the fifth large dredge.

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Electric power is used for the dredges, as well as for gravel-pumps and for stripping overburden in open-cut mines by counter-balanced monitors. The main power plant is located at the port of Mantong, near Belinju* in the northern part of Bangka. Power is generated by a steam turbine; coal for the boilers is brought by steamers from Sumatra and lightered into the port.

The biggest repair shop on the island is located at Sungailiat.

Billiton.

The principal tin-bearing districts on Billiton are located in the eastern and northern parts of the island. The town of Manggar is the main center of mining activity.

At Billiton, there are 14 dredges in operation, five with 14-cubic-foot buckets, eight with 7-cubic-foot, and one with 5-cubic-foot buckets. Two of the five large dredges are of the postwar type. These dredges are equipped with three diesel generator sets of 600 to 700 hp. each, one of which acts as a stand-by. Although all dredges are electrically driven, the two 7-cubic-foot dredges used in Tandjungpandan district generate the necessary electric power by wood-fired steam engines on board, whereas the other dredges are fed from the Manggar power station.

The main power station is actually situated at Tandjung Samak, a small port near Manggar. Diesel oil for this power station is delivered to storage tanks by means of 4,000-ton oil tankers, which can moor directly at the pier at Tandjung Samak. Except for the oil discharge pier at Manggar, there is no other place on the island where steamers of any size can moor and discharge directly onto the shore. A second small power station, located at Tandjungpandan, supplies electric current for lighting houses.

The main repair shop, also, is near the town of Manggar, but there are four smaller repair shops and a great number of auxiliary shops distributed throughout the island. The four smaller repair shops are located near Gantung, at Tandjungpandan, east of Tandjungpandan, and at Klappa Kambit. The last is situated at a deep mine flooded during the war and not now in operation.

Singkep.

The more important tin-bearing areas are located in the eastern part of the island. Kotadabok,** the principal village of the island and the site of the only electric power station and the repair shop, is in the same area.

* Or Blinju.

** Or Dabo.

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Two large offshore dredges with 14-cubic-foot buckets and one inland dredge with 9-cubic-foot buckets operate near Kotadabok; another large dredge is operating inland near the north coast. A number of small pines consisting of one or more gravel-pumps are also in operation.

Some diesel oil is stored on the island to supply the diesel engines of the electric power station.

The waters around the island of Singkep are shallow, and even small steamers cannot moor near enough to discharge or take on cargo directly. Motor launches and lighters ply between the ship and shore.

2. Present Status of Local Measures to Protect Vulnerable Facilities.

The tin mining operations in Indonesia which are conducted on the islands of Bangka, Billiton, and Singkep would in the case of an emergency be vulnerable to sabotage without adequate protection. This applies particularly to the three power plants, one on each island, to the concentrating plants, and to the dredges. Photographs indicate that the power plants, and probably the transformer stations, are surrounded by fences. Except for these and for the boat patrol of the islands against offshore smuggling, little information is available regarding local measures taken to protect the vital facilities of the industry.

3. Security Comment.*

a. Conclusions.

The known security measures instituted for the protection of the power plants are not sufficiently extensive to provide adequate safeguards against sabotage. From the limited information available regarding security measures taken, however, it is not possible to appraise the extent or degree of vulnerability to sabotage of the various facilities involved in the mining, processing, and shipment of Indonesian tin for the United States.

b. Recommendations.

In order to ascertain the present security situation, the Billiton Company would have to be approached, and a field survey by security experts would probably be required. In such case, the prior approval and collaboration of the Indonesian Government would be required, looking toward the drawing up and implementation of an adequate security program.

* This section, dealing with security, has been prepared by the CIA component responsible for security matters.

APPENDIX

Selected Maps.

a. Bangka I.; 1:675,000; Office of Strategic Services; 1943; CIA 2874. This map shows about 20 "mines" (area where either dredges or hydraulic equipment is in operation), for smelters inoperative since 1945, a charcoal factory, and a more extensive power line than is indicated on the map accompanying this study.

b. Billiton; 1:180,000; Office of Strategic Services; 1944; CIA 2875. This map locates two types of dredges as of 1943; it also shows the narrow-gauge lines and the port serving the Manggar area.

25X1X7

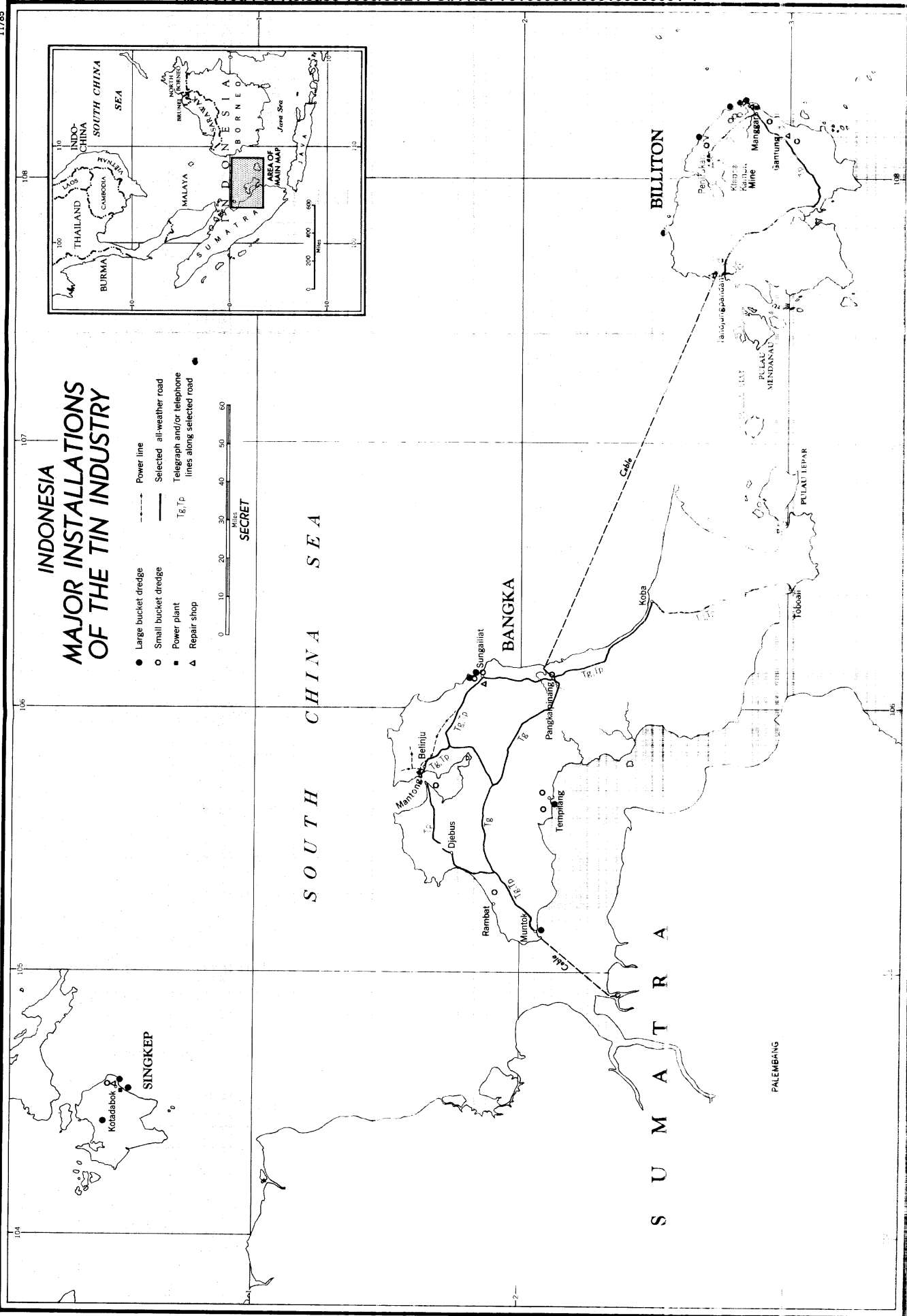
25X1X7 Zatra, 1:250,000, Sheets No. 40, 48, 55, 56, 57, and 58; [REDACTED]

25X1X7

[REDACTED] These sheets provide coverage of all three islands and give detailed transportation data (narrow-gauge lines and six categories of roads and tracks). Line symbols are widely distributed on all sheets, some 50 appearing on Bangka alone.

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INDONESIA
MAJOR INSTALLATIONS
OF THE TIN INDUSTRY

- Large bucket dredge
- Small bucket dredge
- Power plant
- ▲ Repair shop
- Power line
- Selected all-weather road
- - - - - Telegraph and/or telephone lines along selected road



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