

CLASSIFICATION : UNCLASSIFIED

CENTRAL INTELLIGENCE AGENCY

RESTRICTED
INFORMAL REPORT

REPORT

STAT

COUNTRY China

DATE DISTR. 16 August 1948

SUBJECT Coal Industry

NO. OF PAGES 4

PLACE
ACQUIRED China

NO. OF ENCLS.
(LISTED BELOW)

DATE OF INFORMATION 1942

SUPPLEMENT TO
REPORT NO.

STAT

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE ACT 50 U.S.C. 31 AND 32, AS AMENDED. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. REPRODUCTION OF THIS FORM IS PROHIBITED. HOWEVER, INFORMATION CONTAINED IN BODY OF THE FORM MAY BE UTILIZED AS DEEMED NECESSARY BY THE DISSEMINATING OFFICE.

THIS IS UNEVALUATED INFORMATION FOR THE RESEARCH
USE OF TRAINED INTELLIGENCE ANALYSTS

SOURCE Chinese periodical, Ti-li (Geography) Vol. II, No 1/2, June 1942, Chinese Geographical Research Institute. (FEB Per Abs 19436 --- Translation specifically requested.)

THE COAL INDUSTRY IN THE SAN-ESIA DISTRICT.
OF THE LOWER CHIA-LING CHIANG

Lin Ch'ao

The coal fields studied in this report are located in the gorges of the lower Chia-ling Chiang in the area where Lin-shui, Yüeh-ch'ih, Kuang-an, Ho-ch'uan, and Chiang-pei Hsiens meet.

The geological structure carrying the coal measures is largely made up of Permian and Jurassic rocks.

The coal measures are much thicker in the Permian than in the Jurassic, but because of the proximity of the veins one to another, the softness of the rocks, the wide distribution of the coal and its relative excellence for industry and shipping, more operators have been working in the Jurassic than in the Permian. However, owing to the thinness of the veins, reserves are smaller and production less than in the Permian.

According to the Szechwan Geological Research Institute the coal reserves in the Hsue-yang Shan area amount to 477 million tons. Of these, 80 percent are in the Permian formation and 20 percent in the Jurassic formation. The importance of the Permian deposits in the area is revealed in this comparison.

If the various anticlinal ranges are considered individually, Kuan-yin Haiz holds 83 percent of the total reserves in both Permian and Jurassic formations. The second in importance is the Li-pi Haiz with a total of 40,124,000 tons in the two formations. The total reserves for the section of the area discussed in this article are 305,939,500 tons or 63 percent of the total reserves of the whole Sen-Haiz area.

[illegible]

RESTRICTED

RESTRICTED
RESTRICTED

STAT

There are something over 50 small mines in the T'ien-yin Hsia, 17 in the Li-pi Hsia, 12 in the Lung-wang-tung area, and a few on the Wen-t'ang anticline.

Most of the mines use primitive methods. The T'ien-fu Company in the Kuen-yin Hsia area and the Pao-yuan Company in the Wen-t'ang area have some modern equipment. A very large percentage of total production is still from the use of primitive methods, but there is a trend toward modernization.

Old-type mines have been worked for from 100 to 200 years, now type, only a few decades. Early production was from a few tons to a hundred or so tons a day.

Most of the mines are found on the sides of the anticlines in the ravines created by comparatively young streams where the outcrops are near the surface. The tunnels are from one meter to several meters high according to conditions.

Shoring timbers are used as required by the depth of the vein and density of the overhanging rock. Fewer timbers are required in the Jurassic than in the Permian. Wooden rails are laid on the floor of the tunnels on which bamboo coal carts ply in and out. Man-powered or water-powered air pumps are used for ventilation. Water pumps are of bamboo. The lights used are oil or dry-cell lamps.

The T'ien-fu and the Pao-yuan Companies are representative of the modern mines. The modernization consists of two factors, fiscal organization (combining of several mines under one stock-company ownership) and mechanization of the mining operations.

The T'ien-fu Company was organized in 1933 by a merger of six mines, with a capital of 240,000 yuan. In 1938 the company combined with the North Szechwan Railway and the Hsiao Chung-fu Company to form the T'ien-fu Mining Corporation Ltd with a capital of 1 1/2 million yuan. Since this reorganization, modernization has speeded up. The company now has an electric power plant to power the pumps and charge the storage batteries. It also has a railway and a large repair shop. However, part of the mines are still operated by old methods.

The Pao-yuan Company was organized in 1923, by a merger of five old mines, with a capital of approximately one million yuan. It has a small dynamo, air compressor, and pumps. It uses rail and carts for transport. Its dynamo is only able to provide lights and charge storage batteries. Its air compressor and pumps are not in use. Its railway uses man power. This company can hardly be said to be operating on a modernized basis, but its production is second only to the T'ien-fu Corporation, and before 1931, even surpassed it.

A few other companies are moving in the direction of expansion and modernization, especially in the Permian formations. Because of the thinness of the veins in the Jurassic, old methods will probably continue to be the more economical.

According to a Szechwan Geological Research Institute report in 1938, daily production was 1,629 tons or about 50,000 a month. During the last year or two in response to the demand of the political situation, production has been stepped up somewhat, but figures are not available. The available figures are as follows:

RESTRICTED

RESTRICTED

RESTRICTED
RESTRICTED

STAT

	Jurassic	25.5	tons per day
Total		325.5	tons per day
Wen-t'ang Hsia	Anticline, Jurassic	505	tons per day
Li-yi Hsia	Anticline, Jurassic	150.8	tons per day
Lung-wang-tang	Jurassic	148.5	tons per day
Total for three areas		1,629.8	tons per day

From the above figures, it is apparent that the bulk of the Permian formation production is in the Wen-yin Hsia. Wen-t'ang Hsia comes second in production with about one-third of the total.

At the time of compilation of the above statistics the Pao-yuan Company was the largest producer with 400 tons a day. Recently the T'ien-tu Corporation has passed Pao-yuan and has a daily output of 600 tons, with prospects of 1,000 tons a day. Other companies are taking steps looking to a large increase in production. The greatest prospect of increase is in the Permian formations.

An analysis of seven coal samples from this area reveals an average of various constituent elements as follows:

Moisture	Volatiles	Fixed	Ash	Sulfur	Coking
Content	Substance	Carbon	Content	Content	Qualities
1.17%	18.12%	82.02%	14.67%	1.47%	Three samples have coking qualities.

From the above figures, it is apparent that the Permian coals, because of their high ash and sulfur content are not suitable for coking purposes.

In 1928 the T'ien-tu Company's records showed that their output was being distributed as follows as to use:

Domestic use	36%
In Ho-ch'uan and up river	30%
Private shipping companies	18%
Machine industries	14%
Railway and Kila industries	8%

The coal going up river apparently was largely used in the salt fields for evaporation purposes.

With the growth of steel manufacture [due to war conditions] there is a tendency to increase the use of Permian coal for coking, even at the sacrifice of economy.

Transport of the coal from this area is largely by the Chia-ling Chiang and its tributaries. Figures cited for six companies show that the transport costs run from 31 percent to 73 percent of the delivered price of the coal. According to figures given for three companies the cost of transport from the mine to the river loading ports runs from 60 percent to 90 percent of the total cost of transport. Transport from mine to river loading ports is by railway [steam-powered and man-powered], canal, and man power. A combination of canal and railway used

RESTRICTED

RESTRICTED

RESTRICTED

RESTRICTED

STAT

by the Kuo-yuan Company costs 0.186 yuan per kilometer-ton. All-rail transport as used by the T'ien An Corporation costs 0.024 yuan per kilometer-ton, while all-man-power basket-carrying transport as used by the Chiang-ho Company costs 0.333 per ton-kilometer.

The great bulk of the coal from the area goes to Chiung-ch'ing (Chungking). It is loaded on the river boats from 17 loading points. Figures given for nine of these points indicate that from 1,000 to 22,800 tons per month pass through them.

The number of men employed in coal mining in the San-hsia area in 1940 was approximately 7,700. They are employed under three systems: direct hiring by the company; contract system, in which the company furnishes materials and equipment and the contractor hires the crews; the rental system wherein the renter furnishes everything and the mine collects a share of the product as rent. This last system is largely in use where mines are distant and scattered and operations difficult.

In the larger modernized mines there are three shifts of 8 hours each, in others two shifts of 12 hours each. In the small mines the working hours are from sunrise to sunset.

Wages before the war were about 30 yuan per month without board and about 10 yuan with board. These wages are apparently insufficient for a reasonable standard of living.

Because of bad conditions in the pits intermittent fevers and tuberculosis are very prevalent.

Most of the laborers are from neighboring hsien areas. Their living quarters vary with the size of the mine and the terrain. They range from the crudest shelter against sun and rain to substantial buildings.

Agriculturists are few in the area, and consequently about three-fourths of the food consumed must be brought from points up river. The shoring-timber business is an important item in the economy of the area. Most of the timber also comes from up river. Businesses catering to the daily necessities flourish. It is apparent that the economy of the area is closely tied up with the mining industry.

Owing to the geological structure, available man power, and the favorable geographical location of this area, it has developed into the most important coal-mining area of Szechwan. The opening of the mines, felling of the timber, and construction of roads and buildings has changed the whole aspect of the country; farming has been relegated to a subordinate position. Consequently, the writer considers the opening of the mines as the fundamental factor in the present development of geography of the area.

- END -

RESTRICTED

RESTRICTED