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CONSTRUCTION OF HSI-FEI HO LOCK IN HONAN

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Description of Hsi-fei Ho

The 250-kilometer long Hsi-fei Ho is a large tributary of the Huai Ho. It originates at Lu-i, Honan, passes through T'ai-ho, Ko-yang, Meng-ch'eng, Fou-yang, Ying-shang, Feng-t'ai, and flows into the Huai Ho.

Construction of Hsi-fei Ho Lock

The Hsi-fei Ho lock, constructed at the mouth of Hsi-fei Ho to prevent floods, is 1 1/2 kilometers long. The basic foundation is 8 meters deep, and the highway bridge is 4 meters above the ground. Dikes have been constructed on both banks.

The highest rate of flow of the water of the Hsi-fei Ho is 500 cubic meters per minute. The average flow of water is 300 cubic meters per minute. The high-water mark of the Huai Ho at the mouth of the Hsi-fei Ho is 23.7 meters, so that the top of the lock is one meter above the high-water mark. The drawbridge for the drainage area is 27.1 meters high and 3.7 meters wide. The channel bridge is 30.2 meters high and 5.3 meters wide. The highway bridge is 4 meters wide.

The Hsi-fei Ho lock has three openings, each opening approximately 5 meters wide. On both ends of the lock are cement bases, which are one meter wide at the top, 8.5 meters wide at the base, and 12.7 meters high. In the center of the lock are two comb-shaped lock-guides which are 1.4 meters wide, 13.6 meters long, and 12.7 meters high. The two side openings are used to discharge accumulated water. The gates for the side openings are 6.2 meters high and weigh 11.77 tons. The center opening is 5.23 meters high and has upper and lower gates. The upper gate weighs 10.5 tons and the lower gate, 10.87 tons.

Installation of gates for the side openings required 10 1/2 hours, and for center opening required 11 hours.

The construction work included excavating an area of 70,000 cubic meters, installing four gates, cementing an area of 5,600 meters, and paving 630 cubic meters of stone roads. Temporary railway tracks, cement mixers, and water pumps were used in the construction.

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