

MAR 1952

**FDD  
FILE  
COPY**

CLASSIFICATION ~~RESTRICTED~~ **CONFIDENTIAL**  
~~SECURITY INFORMATION~~  
CENTRAL INTELLIGENCE AGENCY  
INFORMATION FROM  
FOREIGN DOCUMENTS OR RADIO BROADCASTS

REPORT   
CD NO.

50X1-HUM

COUNTRY China  
SUBJECT Economic - Agriculture, water conservation  
HOW PUBLISHED Book  
WHERE PUBLISHED Shanghai  
DATE PUBLISHED Jun 1952  
LANGUAGE Chinese

DATE OF INFORMATION 1951

DATE DIST. 27 Jul 1953

CENTRAL INTEL  
CLASSIFICATION  
Cancelled  
Classified to **CONFIDENTIAL**  
BY

NO. OF PAGES 32

SUPPLEMENT TO REPORT NO.

50X1-HUM

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES, WITHIN THE MEANING OF TITLE 18, SECTIONS 793 AND 794, OF THE U.S. CODE, AS AMENDED. ITS TRANSMISSION OR REVELATION OF ITS CONTENTS TO OR RECEIPT BY AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. THE REPRODUCTION OF THIS FORM IS PROHIBITED.

THIS IS UNEVALUATED INFORMATION

SOURCE Chih Huai, published by Hua-tung Jen-min Ch'u-pan She.

REGULATION OF THE HUAI HO, 1951,  
WITH A GRAPHICS SUPPLEMENT

Comment: This report gives information from the illustrated book, Chih Huai (Regulation of the Huai Ho), compiled by the Propaganda Unit, Political Section, Huai Ho Conservancy Commission, and published by the Hua-tung Jen-min Ch'u-pan She (East China Publishing Company). The report discusses the engineering and conservation projects in progress or to be undertaken to control the Huai Ho.

50X1-HUM

Regulation of the Huai Ho

In 1950, when the Government Administration Council of the People's Republic of China decided to undertake the radical regulation of the Huai Ho, it adopted the principle of providing for both storage and drainage for all sections of the river system. The primary objective was to eliminate the causes of floods, but, at the same time, it was planned to provide irrigation, to improve inland waterway navigation, to develop hydroelectric power, and thus step by step toward improvement of the whole area.

As a standard operating procedure, it was laid down that work must be carried out according to approved plans, and that plans must be based upon as full and accurate data and information as could be gained from all available references, as well as through fresh surveys and from expert advisers.

Main Features of the Conservation Program

The plans called for the construction of reservoirs and the use of natural or artificial retention basins to retain flood waters at least temporarily. Instead of permitting flood waters to rush to the sea, they are to be made available over an extended period for such useful purposes as irrigation, improvement of

**CONFIDENTIAL**

CLASSIFICATION		<del>RESTRICTED</del>		DISTRIBUTION													
STATE	<input checked="" type="checkbox"/> NAVY	<input checked="" type="checkbox"/> NSRB															
ARMY	<input checked="" type="checkbox"/> AIR	<input checked="" type="checkbox"/> FBI															

CONFIDENTIAL

50X1-HUM

navigability of streams, and generation of power. It was calculated that reservoirs and retention basins on the upper and middle sections of the Huai Ho system should have a capacity of not less than 12 billion cubic meters.

The channels of the main and tributary streams are to be improved by dredging, straightening, and protection against harmful scouring and erosion to ensure unimpeded drainage and boat traffic.

The main stream of the Huai Ho is to be separated from its present direct connection with Hung-tse Hu, and given other channels for its access to the sea.

#### Calculations Based on Hydrographic Data

According to hydrographic data available for the years of worst floods of recent times, 1921, 1931, and 1950, the greatest volume of water which in those years flowed through the Hung-tse Hu outlet within a period of 150 days, was 76 billion cubic meters. This figure was taken as a basis for the development of plans. In consideration of the tentative estimates as to the capacities of the various features to be consummated, the conclusion was reached that disastrous floods could be averted by carrying out the following measures:

#### 1. Reservoirs and Retention Basins

On the upper reaches of the Huai Ho tributaries, in Honan, construct reservoirs and basins having an effective storage capacity of  $3\frac{1}{2}$  billion cubic meters. In the middle section, in Anhwei, construct reservoirs and basins having an effective storage capacity of  $8\frac{1}{2}$  billion cubic meters.

If this is done, the maximum rate of flow to pass Cheng-yang-kuan would be not more than 5,500 cubic meters per second; that past the mouth of the Tung-fei Ho would be not more than 5,000 cubic meters per second. After the confluence with the Ko Ho, the rate of flow past Pang-fou would be not more than 7,000 cubic meters per second. After receiving the waters of the tributaries in the Su-hsien 117 04, 33 39 Special Administrative District, the rate of flow past Fou-shan approximately 118 07, 33 08 should not be more than 8,700 cubic meters per second.

Including all water flowing directly into the Hung-tse Hu, the rate is estimated to be 11,400 cubic meters per second. Apart from the outflow from Hung-tse Hu at the rate of 700 cubic meters per second through the North Kiangsu main irrigation canal, and from the volume that would be retained in the Hung-tse Hu as a retention basin, the rate of outflow by way of the San Ho on its way to the sea is estimated to be a maximum of 7,000 cubic meters per second. According to this volumetric schedule, it is believed that all danger of flood could be averted. To ensure this volumetric schedule of flow it was found necessary to plan for the construction of the following control works:

To provide storage and retention capacity for  $3\frac{1}{2}$  billion cubic meters in the hills and valleys of Honan, there should be constructed 13 reservoirs, namely, (1) the Ta-p'o-ling Reservoir, on the head waters of the main branch of the Huai Ho; (2) the Nan-wan Reservoir; (3) the Tu-shu-ts'un Reservoir; (4) the Lung-shan Reservoir, on the Huang Ho (not to be confused with the well-known Yellow River); (5) the Po-shan Reservoir, which will collect water from the branches of the Hung Ho and the Ju Ho; (6) the Shih-man-t'an Reservoir; (7) the Pan-ch'iao Reservoir; (8) the Sheng-chia-tien Reservoir, on the Kuan Ho; (9) the Nien-yu-shan Reservoir; (10) the Hsia-t'ang Reservoir, for the branches of the Ying Ho; (11) the Ts'ao-lou Reservoir; (12) the Tzu-lo-shan Reservoir; and (13) the Pai-sha Reservoir. In addition, there should be four retention basins, namely, (1) the T'ung Hu basin, (2) the Wu-sung basin, (3) the Lao-wang-p'o basin, and (4) the Chiao-t'ing Hu basin. For these basins, existing lakes, marshes, and other low-lying land will be utilized as far as practicable.

- 2 -

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

To provide storage and retention basins in Anhwei with a capacity of 8 1/2 billion cubic meters there should be constructed three reservoirs, namely, (1) the Mei-shan Reservoir, on the Shih Ho; (2) the Fo-tzu-ling Reservoir, on the P'i Ho; and (3) the Chang-chu-yuan Reservoir; and ten major retention basins, namely, (1) the Meng-ho-wa-ti basin, (2) the Jun-ho-wa-ti basin, (3) the Ch'eng-hsi Hu basin, (4) the Ch'eng-tung Hu basin, (5) the Ch'iu-chia Hu basin, (6) the Chiang-chia Hu basin, (7) the T'ang-to Hu basin, (8) the Meng-chia Hu basin, (9) the Ch'iao-kang Hu basin, and (10) the Wa-fou Hu basin.

The largest of these is the Ch'eng-hsi Hu basin which can be constructed to have a retention capacity of 2 3/4 billion cubic meters.

#### 2. Jun-ho-chi Control Structure

To control the flow in the main Huai Ho and to utilize fully the storage capacity of the Ch'eng-hsi Hu basin, it was planned to construct on the Huai Ho and Jun-ho-chi (116 09, 32 34), a mammoth control structure. This consisted of three parts, the fixed channel, the diversionary locks, and the admission control locks. The first of these is an unobstructed channel, open throughout the year. Guided by reports of conditions upstream and downstream, the locks may be opened and closed as required. If there is danger of too much water passing downstream, the diversionary locks may be closed and the locks controlling admission to the Ch'eng-hsi Hu basin can be opened to receive the excess flow. These locks at Jun-ho-chi are the principal structural means for controlling the flow of the main Huai Ho above the Hung-tse Hu.

#### 3. Other Control Areas

In north Anhwei, not including Hung-tse Hu, of which only a portion is in Anhwei, the area of lakes and other low-lying land containing water all year round, amounts to approximately 3,000 square kilometers. The larger of these lakes, etc., have direct connections with the main Huai Ho and thus naturally have a regulating effect on the flow in some parts of the river. But, since they were not subject to any control, they can not function usefully as retention basins until control locks are installed. The control locks will prevent entrance of water under ordinary conditions, but may be opened when it is desired to admit and retain flood water. Thus, when not fully needed for detaining flood water, at least a portion of their area may be used for the production of crops. The important role played by the retention basins may be judged from the fact that their capacity is such that they are able to hold more than two thirds of all the water to be stored or detained.

#### 4. Deepening River Channels

Adequate drainage of flood water required the reconditioning of river channels in numerous places. A knowledge of how much water is expected and its anticipated rate of flow will make it possible to determine how large the river bed should be. It may then be found necessary to deepen or widen other channels, to increase the distance between the dikes on either bank or to raise and strengthen them. One section of the river bed where enlargement was most urgent was that part of the Huai Ho in Honan near its confluence with the Hung Ho to take care of the torrents of water flowing in from the area of the Huang-ch'uan (115 09, 32 12) Special Administrative District. The Hung Ho, Ju Ho, Ying Ho, and the streams of the area that were in the path of the Yellow River floods, needed to be dredged, and the dikes made higher, wider and farther apart. Similar work was required on the Huai Ho between Cheng-yang-kuan and Wu-ho, as well as on sections of streams in the Fou-yang and Su-hsien districts.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

## 5. Separation of Main Huai Ho From Hung-tse Hu

The separation of the main Huai Ho from Hung-tse Hu is requiring at least seven different types of projects and an immense amount of work. It was decided that the water carried by a number of streams draining the region of the Su-hsien Special Administrative District, on the north side of the Huai Ho, should be made to enter Hung-tse Hu directly via a new cutting leading to one of the arms of the lake extending westward, and that it should be prevented from joining the Huai Ho by such dams or dikes as might be required. A diversionary lock has to be built in the vicinity of Shuang-kou [118 14, 33 14] to stop the main stream from entering the lake by the new cutting, except when some of the water might be needed to replenish the supply of irrigation water in the basin; and a dam has to be built across the old channel below Shuang-kou to block flow in either direction.

Of the new channel to the sea for the main Huai Ho, section one has to be cut from a point between Wu-ho and Feng-shan [118 04, 33 38] to a point on the old channel below the dam just mentioned. Section 2 has to be cut from a point near Hsu-i [118 34, 33 03] eastward to the San Ho. North of Hsu-i a dam has to be built to block the flow into or out of Hung-tse Hu. North of the junction of Section 2 of the San Ho, diversionary locks are to be built to prevent main stream water from entering Hung-tse Hu, but permitting discharge from Hung-tse Hu in case of high water. Section 3 is to be a short cut from the San Ho, at a point near Li-ch'eng-chen [119 04, 33 02] across a neck of land into the Kao-yu Hu and the Yun Ho.

These three cuttings, together with the connecting sections of the old channel, and the two locks and two dams, will provide the new channel that permits the Huai Ho to by-pass Hung-tse Hu.

Irrigation, Navigation, Hydraulic Power

The reservoirs and storage basins, with their installations for control of flow, will make it possible to supply irrigation water as needed, and water to deepen the flow in rivers and streams used for inland waterway transportation. It is estimated that water stored in the upper reservoirs will be sufficient to add from 6 to 9 million mou of wet land, that is, land suitable for growing rice. It is estimated that water stored in the lower basins, if means are found to utilize it, will be sufficient for about 10 million mou of rice fields.

After the separation of the Huai Ho from the Hung-tse Hu, the latter functioning as a storage basin, with a capacity of 4 billion cubic meters, is to discharge water at the rate of 700 cubic meters per second for the irrigation of 25 million mou of wet fields in north Kiangsu through the new North Kiangsu Main Irrigation Canal which is to be built, as well as through the existing network of canals.

Formerly, the Huai Ho was an important inland waterway, but, because of the interposition of the Hung-tse Hu and the Grand Canal in recent years it has become increasingly difficult for boats to pass directly from the Grand Canal to the Huai Ho and vice versa. Under the new conditions which call for further improvements of the channels, including ship locks, the largest of which will be built at Huai-yin, the Huai Ho will again become an important link in a navigable waterway between Shanghai and eastern Honan, and one that will connect points on the Tientsin -- P'u-k'ou and Feiping-Hankow railways with Anhwei and Honan.

Although there is but little pressure head to be found on the Huai Ho and most of its tributaries, nevertheless a limited amount of hydroelectric power may be developed eventually for pumping irrigation water and the lighting and industrial needs of some small cities.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

Small-Scale Local Projects

Apart from the major construction projects described above, there is a long-term program of work to be done on innumerable small-scale projects by the peasants on or near their own lands, such as soil conservation through afforestation, the use of cover crops, contour cultivation, and barriers of various types to retard the run-off and retain the soil. All of these measures will help diminish the effects of sudden heavy downpours and reduce the silting up of reservoirs, channels of all kinds, and retention basins.

This program will also include a planned system of ponds and ditches to collect and retain water for farm and village use, and the digging of numerous subsidiary canals to distribute the water of the main irrigation canals. It is estimated that the volume of earth to be moved in this program of small projects will be equal that moved in the main program. By combining the motive of self-interest on the part of the rural people with the experience gained in the more formal large projects it is expected that the secondary program can be carried out by the peasant masses rapidly and on a wide scale. These plans will all contribute greatly to the economic and industrial development and prosperity of the whole country.

50X1-HUM

CONFIDENTIAL

**Page Denied**

Next 26 Page(s) In Document Denied