

THE CHINESE NAVY HYDROGRAPHIC OFFICE

by Rear Admiral C. H. KANG, C.N.
Director of the Office

BRIEF HISTORY

The Hydrographic Office was first established at Woosung, Shanghai, on 22 April, 1922. It consisted of a director, a deputy director, and three sections, namely, the General Affairs, the Hydrographic Survey and the Drawing sections. In 1926, a new office building was erected in the metropolitan area of Shanghai for its own use, and on 2 August of the same year it began to function in its new headquarters. In 1930, the Office was reorganized by order of the Government to have five sections, namely, the General Affairs, the Hydrographic Survey, Chart Production, Geodetic Computation and the Tide and Current sections; a rear admiral and a captain were appointed as director and chief technician respectively to be in charge of its operations. Under the direct command of the Office, five surveying vessels were put into use : the *Hai Yang*, the *Hai Peng*, the *Kan Lu*, the *Chiao Jih*, and the *Ching Tien*. Among them, the *Kan Lu* was the first ocean-going survey vessel ever commissioned in China. With these vessels, the Office completed the surveying operations along Kiangsu, Chekiang and Fukien Provinces as well as in the lower valley of the Yangtze River, and subsequently produced the navigation and anchorage charts thereof. After it joined the International Hydrographic Bureau, the Office did its utmost to fulfill its obligations as a member till the outbreak of World War II.

Following the outbreak of World War II, the Hydrographic Office was constrained to suspend its operations due to the transfer of key personnel to other units, destruction of surveying vessels, and loss of instruments and records.

At the end of World War II in 1945, the Office was reestablished at Shanghai by order of the Government, and resumed its operations with the surveying instruments and small vessels taken over from the Japanese. In addition to the five original sections, the Maritime Section was set up to meet actual needs. Moreover, a printing shop was brought into being to print charts and Notices to Mariners with machines left by the Japanese.

It is true that the Office took over quite a number of vessels from the Japanese at the end of the war. But most of them were beyond repair. Hence, in September 1946, the Office was authorized to convert the boat *Ching Tien* into a surveying ship, and the gunboats *Chiao Shan*, *Chung Ning*, and *Hwai Ying* into surveying crafts to serve in the Yangtze River.

In the spring of 1947, the Parcel Hydrographic Survey Team was set up, which later assumed the name of the Second Survey Team after

the First Hydrographic Survey Team came into being. In November of the same year, the Instrument Repair Section was established to repair the navigational, surveying and meteorological instruments of headquarters and of its subordinate units.

In the spring of 1949, the Chinese Communists staged an all-out rebellion. Under most unfavorable conditions, the *Ching Tien*, *Chiao Shan* and *Hwai Ying* broke through the Communist cordon and sailed to Taiwan via Tinghai and Mawei while the craft *Chung Ning* was scuttled in the Yangtze River. Ever since the Office moved its headquarters to Taiwan, it has continued its survey operations and chart production without intermission. The Printing Shop was later rehabilitated to resume its former activities.

In August 1951, the *Ching Tien* was renamed the *Chi Lien*. In 1955 the craft *Chiao Shan* was scrapped. By order of the Government, *Hai Ning* and *Hai Ching* were converted into survey craft. Now under the command of the Office are five field units operating at Taiwan, in the Pescadores and offshore islands.

SURVEY OPERATIONS OF NAVIGATION ROUTES

(1) From 1922 to 1937, the Office was assigned the undertaking of surveying operations on a national basis. As a result, it produced 30 charts on harbor anchorage and coastal navigation along Kiangsu, Chekiang and Fukien Provinces, 31 navigation charts for the section from the Woosung estuary to Hankow in the Yangtze River, and several scores of corrected editions of former charts.

(2) From 1945 to 1949, the Office devoted most of its efforts to the initial phase of reviving the hydrographic surveying activities with the obsolete apparatus taken over from the Japanese. But the Communist rebellion prevented the realization of our plans. Following are some of the projects accomplished during this period :

A. Clearance operations of waterways :

We performed the duties of sweeping mines, salvaging sunken ships and clearing other obstacles in the waterways to secure safety of navigation.

B. Hydrographic Survey Operations :

a. Oceanic Survey : We formulated plans for surveying the Pratas, the Paracel and the Nansha Islands, and worked out brief charts of many islands in coastal waters, including those of the Pratas and the Paracel Islands.

b. Coastal Survey : The plans for surveying all important harbors of China were set in motion at the time. Owing to the political situation, nothing was done about Port Arthur and Tarien in the northeastern part of the country. However, survey operations were conducted in regard to other important harbors and gulfs, and three volumes of navigation and anchorage charts about the Pohai Gulf islands and islets along the coast of Chekiang and Kwangtung were produced.



FIG. 1. — Rear Admiral C. H. Kang,
Director of the Naval Hydrographic Office of China.

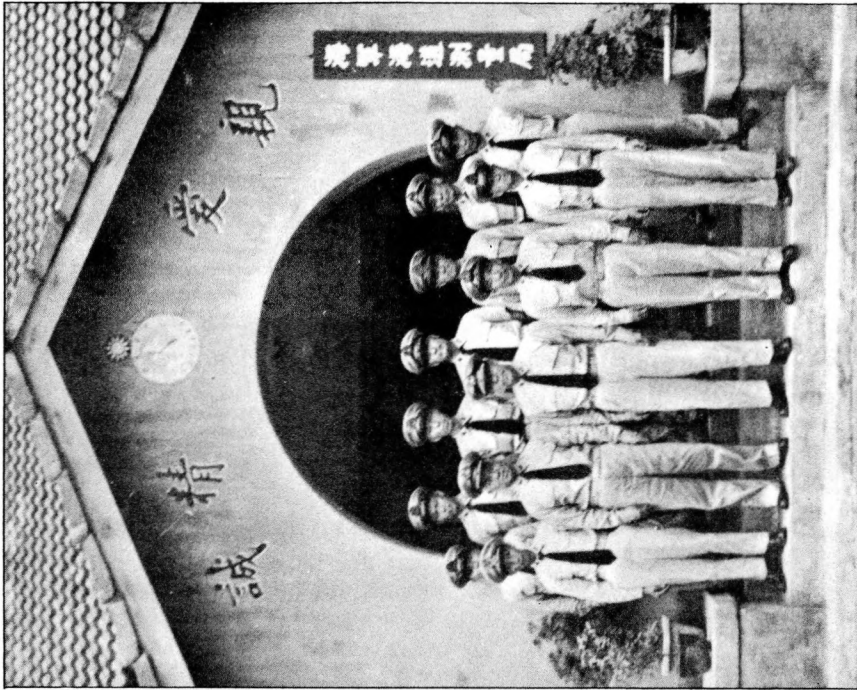


FIG. 2. — Rear Admiral C. H. Kane and his staff.

c. River Survey : The First Hydrographic Survey Team with three vessels under its command constantly operated in the Yangtze River. It produced 10 volumes of corrected charts for the section from Woosung to Chenhai, 5 volumes of charts for the section between Hankow and Kiukiang, and scores of other reference charts.

C. Reestablishment of Navigational Aids :

All the lighthouses, light vessels, beacons and buoys along the China coast and the inland waterways, which had been destroyed or damaged by gunfire during World War II, were duly repaired or reestablished.

(3) From 1949 up to the present : Since the Office moved its headquarters to Taiwan, more than thirty volumes of navigation and anchorage charts and reference charts covering Taiwan, the Pescadores and the islands in the neighboring waters of Chekiang and Fukien Provinces have been produced by the two hydrographic teams operating with 3 vessels. Now continued efforts are being made to chart the navigation routes in the area of Taiwan and the Pescadores.

CHART PRODUCTION OPERATIONS

Since the establishment of the Office in 1922, the development of its chart production can be summarized in the following three stages :

A. First Stage (1922-1949). — The Office placed its emphasis upon producing charts for the section from Woosung to Hankow along the Yangtze River. Other charts depicting the situation of the major harbors along the coast of Chekiang and Fukien Provinces were also produced. Prior to World War II, charts were entrusted to the Commercial Press Ltd., Shanghai for publication. After the War, all were printed by the Printing Shop of the Hydrographic Office.

B. Second Stage (1950-1956). — To meet the urgent needs of the time, the Office reproduced more than two hundred different kinds of waterway charts and published new editions of navigation charts for the area of Taiwan and the Pescadores. Meanwhile, a large quantity of reference charts of the offshore islands were turned out for military use.

C. Third Stage (1957-1959). — Continued efforts are being made to collect necessary data to revise the charts already published and to issue a second edition of the navigation charts of waters along the China coast.

CURRENT AND TIDAL OPERATIONS

A. When the Office was set up in 1922, it used the tidal data supplied by the Customs House. In 1924, the Customs House published the Luhwashan Tide Table. From 1928 to 1930, the Office published its first tide table covering the section from Woosung to Luhwashan based upon the data furnished by the Customs House.

B. From 1931 to 1932, the tide data from Shihpu were made available to the Office. From 1932 to 1937, additional data were obtained from the

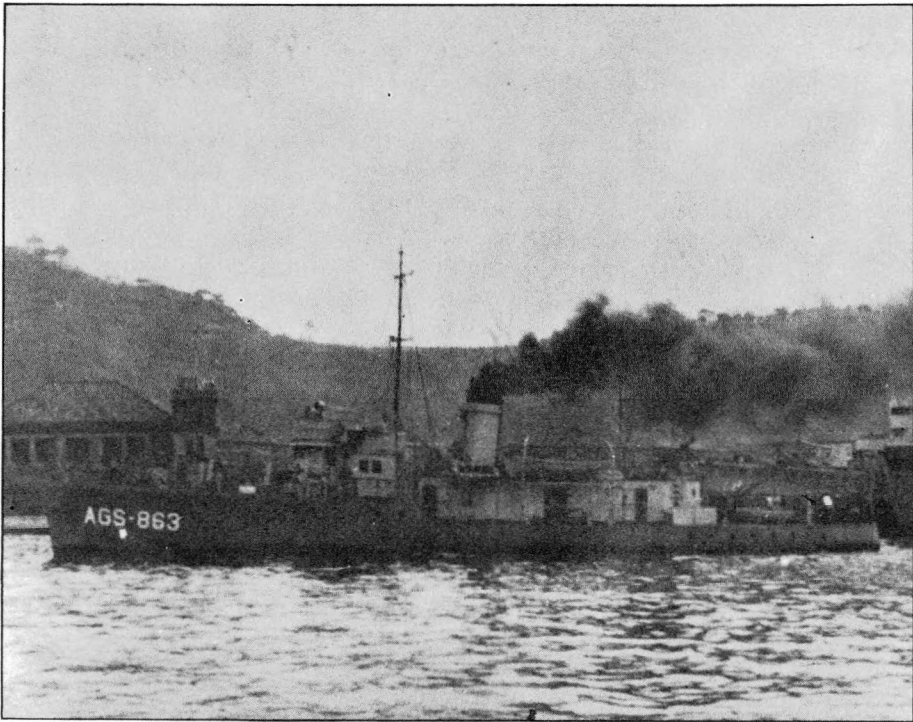


FIG. 3. — Survey Ship *Hai Ching*.

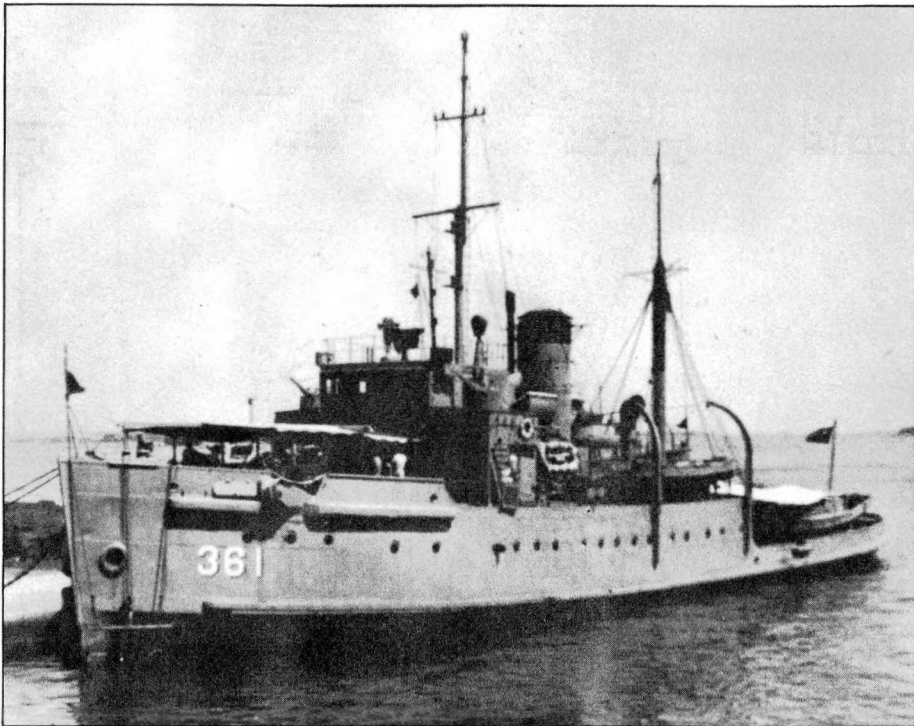


FIG. 4. — Survey Ship *Chi Lien*.

Tsingtao Harbor Office. In 1938, this operation came to a standstill due to the war. As soon as the war was over, the Hydrographic Office set up its tide station at Luhwashan. In 1947, the tide table for Woosung and Luhwashan was again published in Shanghai. From 1948 to 1949, tide data were supplied to the Office from Taku, Keelung, Tsingtao, Luhwashan and Woosung either through the harbor authorities or the Customs Houses. After the Hydrographic Office moved its seat to Taiwan in 1950, three copies of tide tables were produced as follows :

(a) The Taiwan Tide Table. This table covers the tidal situation of Makung, Keelung and Kaohsiung reference stations and the correction number of other harbors concerned along the Taiwan Coast.

(b) The North China Tide Table. This table covers the tidal situation of Tarien, Taku, Weihaiwei and Tsingtao reference stations.

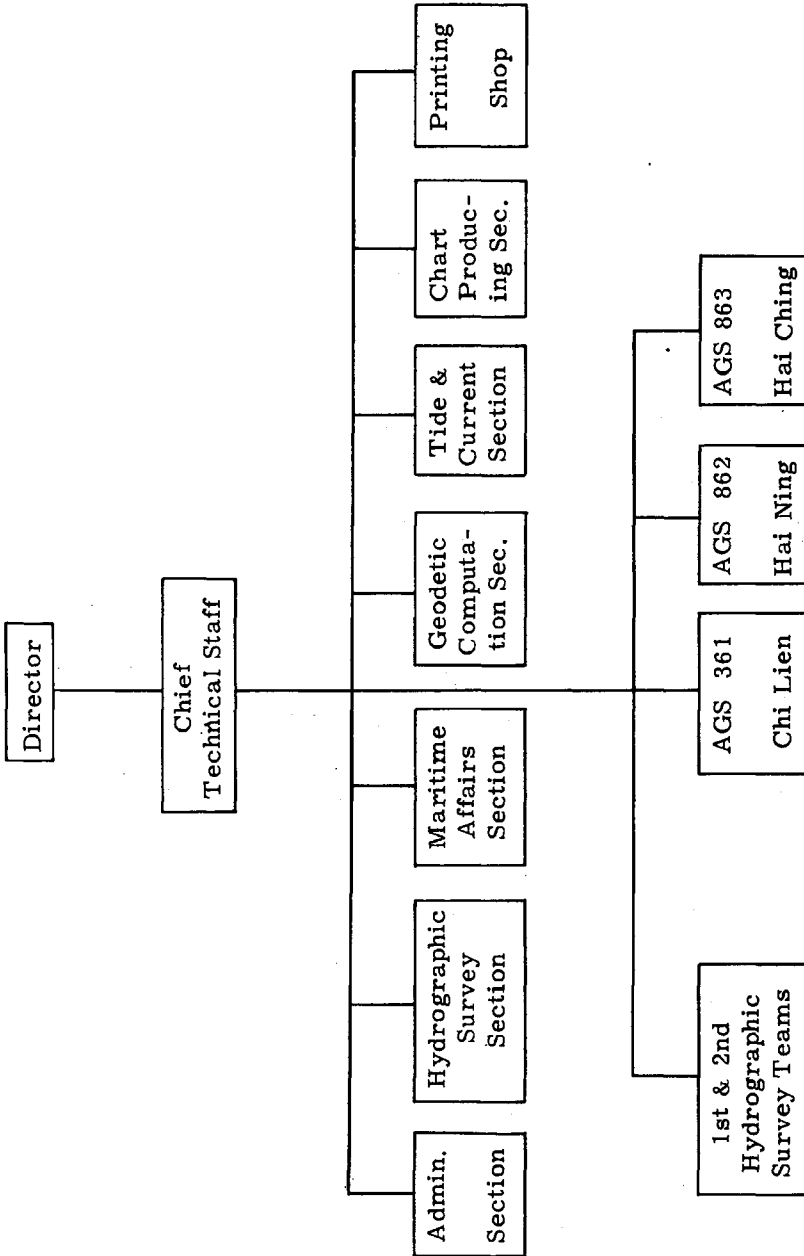
(c) The South China Tide Table. This table covers Woosung, Luhwashan, Amoy and Hongkong reference stations.

Since 1952, the tide tables and sunrise and sunset tables of Swatow, Pratas, Peihai and Nasha Islands have been published annually. A correction table of the subordinate stations has been appended to each copy. With the tables mentioned above, the tide situation of the China Coast can be easily obtained.

DEVELOPMENT AND IMPROVEMENT

1. Survey areas should be extended to facilitate navigation and anchorage.
2. A card system should be set up to strengthen datum control. Continued efforts should be made to collect more material to add to the content of the waterway charts.
3. The area of tide and current examination should be extended to add to the contents of tide and current tables.
4. New waterway charts are colored prints. The charts of the Taiwan Coast, amphibious charts, the U.T.M. cardinals and the geographical reference charts for the armed forces have all been improved.
5. A five-year plan for administration, organization, equipment, and training is under preparation.

ORGANIZATION OF THE H. O.



PERSONNEL ORGANIZATION OF THE H. O.

<i>Title and Rank</i>	<i>Number of Personnel</i>
Director : Rear Admiral	1
Chief Technician : Captain	1
Chiefs of Sections : Commanders	6
Printing Officer in Charge : Commander	1
Leaders of Hydrographic Survey Teams : Commanders ...	2
Hydrographic Survey Officers	28
Cartographers	9
Printing Officers	2
Engineer Officer	1
Repair Officer	1
Medical Officers	2
Budget and Finance Officers	2
Subsection Officers	10
Surveyors	6
Draftsmen	4
Printing Men	12
Engine Men	4
Firemen	2
Seamen	44
Stewards	14
Commissary Men	8
Carpenter's Mate	1

SURVEYING VESSELS

Name	Displacement	Date Launched	Sounding Equipment	Officers	Crew
<i>Chi Lien</i>	680	1938	1 DR-12 depth recorder, 1 sounding machine	16	66
<i>Hai Ning</i>	370	1938	»	8	50
<i>Hai Ching</i>	330	1938	»	7	40

PERSONNEL TRAINING OF THE H. O.

<i>Training Activities</i>	<i>Qualification</i>	<i>Period</i>
Postgraduate School, Hydrographic Dept	Naval line officer	2 years
Postgraduate School, Hydrographic Dept Reserve Officer Class	Graduates of civil engineering and mathematics departments of colleges	6 months
Naval Academy, Hydrographic Survey Class	Excellent enlisted men	2 years 6 months
Navy Hydrographic Office, U.S.A. Hydrographic Training Course	Naval officer	1 year