



HYDROGRAPHIC SURVEYING IN CHINA

By

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Surveys based on trigonometry seem to have been unknown in China. The use of instruments and land-surveying, in their generally accepted meaning, were also unknown. In fact until quite lately, all land-surveying seems to have been done for an economic object, and more particularly for fiscal purposes.

Land was surveyed only in so far as it could be improved for economic purposes. The cadastral registers, the oldest of which date from the Sung period (960 to 1127 B.C.), were used principally for the collection of taxes, and only secondarily as registers of property. Through the reading of title-deeds of property, when practising my profession of Councillor at Peking, I was able to ascertain that recent title-deeds had been drawn up in a more systematic manner and that plans were attached; the administrative control had also become more severe (1926).

For this reason, cultivable land was very soon marked out, but the development does not seem to have extended any further.

With regard to Hydrographic surveying, the situation was no better. Its development, in so far as it is possible to speak of it at present, is due to interests of an economical character.

The development of surveying on a modern basis was gradual and followed on the penetration in the Far East of western civilisation with its economical methods. At the outset, surveys of the coasts were undertaken, beginning with the ports, then their approaches, thus most frequently the mouths of navigable rivers and the largest rivers, whenever treaty ports existed on them, i.e. those ports in which foreigners have the right to trade. This development dates from 1858. In the Treaty of Tien-tsin it was stipulated that tonnage dues which would be levied by the Customs Administration were to be employed for the construction and maintenance of lighthouses, buoys, various lights, etc... As a result of this stipulation the Marine Department of the Maritime Customs was created. Until the opening of the Suez Canal, the vessels which sailed to Eastern Asia or round Africa were of small size and were mostly sailing vessels. Now-a-days giant liners of over 20,000 tons sail regularly between the West Coast of America and the East coast of Asia. As the tonnage of ships gradually increased, more was expected from the surveying authorities.

Until 1868, the coast was divided into three sections, each of which was under the supervision of a special Inspector. The control was gradually centralized at Shanghai. The Harbour Masters, who were mostly ex-Naval Officers, who had taken service in the Maritime Customs still work in connection with the Coast Inspector at Shanghai, who was, in the beginning, dependent on the Director of Maritime Customs at Shanghai, and later on, directly on the Director General of Maritime Customs at Peking. This last reorganization was made in 1912, at the time when the Construction Service was separated from the Marine Department; the latter was entrusted with the technical supervision of lighthouse construction. In 1907, a special River-Inspector was appointed for the Yang-tze-Kiang, and in 1915 another for the Upper Yang-tze. These also worked in connection with the Coast Inspector. It is well known that Chungking, in the upper reaches of the Yang-tze, can now be reached by steamer. The year 1914 marks

an important date in the history of navigation on the Upper Yang-tze, "for in May the steamer. «*Shuhun*» built from Captain PLANT's plans appeared on the Yang-tze and commenced a regular service between Ichang and Chungking. Later this vessel was found suited in every respect to the purpose for which it was intended, etc..." (1) Captain PLANT became Inspector of the Upper Reaches of the Yang-tze in 1915.

It must be noted that land-surveying evolved similarly under the impulse of economic development. Land around treaty-ports was surveyed and accurate maps were constructed. Railways starting from the treaty-ports penetrated towards the interior of the country and the zones through which they passed were accurately surveyed mainly from an orographical point of view. A real net of railways exists only in Southern Manchuria.

"Before 1922, the only surveys carried out under the aegis of the Chinese Government were those made from time to time by the Marine Department of the Maritime Customs. These surveys which were executed for a definite purpose, could not cover a very large area. It is true that other countries, principally Great Britain and France, had undertaken more or less detailed surveys along the coasts and rivers, but this class of work rightfully belongs to the domain of the local Governmental Authorities. In order to fill this hiatus the Inspector General of the Maritime Customs insisted that a Hydrographic Department should be created in connection with the Chinese Navy; in March 1912 he was invited to put forward proposals and estimates adequate for the organization of such Department. The proposals were accepted by the Chinese Government and, with the consent of the Diplomatic Corps, it was decided that the cost of maintenance, not exceeding 500,000 Haikuan Taels, was to be charged against the receipts of the Customs Administration. Since the date of its foundation, i.e. 1st August 1922, until March 31st, 1924, the Department received 15,000 Haikuan Taels monthly (i.e. 180,000 per annum), but owing to the rapid increase of its requirements and to the growth of its sphere of action, this subsidy has been raised to 27,500 Haikuan Taels (i.e. 330,000 Haikuan Taels per annum)" (2).

(1) *Chungking, Decennial Report, 1, Trade and Shipping, Shanghai 1924.*

(2) *Collection and Disposal of the Maritime and Native Customs Revenue since the Revolution of 1911, by Stanley Wright, 2nd Ed. Shanghai 1927.*