THE PRESENT STATUS OF PRIVATE HYDROGRAPHIC ACTIVITIES IN JAPAN

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Introduction

When explaining the present status of hydrographic activities in Japan, it is necessary to mention the historical aspect of the development of private survey enterprises in this country.

These private survey companies have been rapidly developing during the present decade. In order to carry out the Programme of National Large Scale Mapping, the Geographical Survey Institute of the Construction Ministry, the governmental organization responsible for the Programme, turned to private survey teams for cooperation. With this momentum, the private survey activities began to expand rapidly.

As regards the field of hydrography, all services, such as surveying, oceanographic observations, production of nautical charts and publications, were directly operated, until the end of the World War II, by a governmental organization, i.e. the Hydrographic Department, the single exception being the sale of nautical charts and publications.

For the past several years, however, reclamation works and dredging operations for harbour construction have been actively carried out throughout the country under a development programme for coastal industrial zones. Accordingly, demands for hydrographic services have increased, and thus hydrographic surveying by private companies has been rendered sufficiently profitable to become commercially viable.

In addition, the nation-wide plans for ocean exploration, recently organized, are accelerating the rate at which private survey companies are advancing into the field of strictly hydrographic activity.

As things stand at present, it would be difficult for the Hydrographic Department, with its limited personnel and facilities, to meet alone the entire demand for the new surveys and resurveys necessitated by these plans and programmes.

It is to be hoped that this situation will not cause too many inconveniences in the shipping world, especially to those agencies which are using Japanese charts as originals.

Hydrographic Surveying

The first five-year programme for harbour construction in Japan has already been completed, and the second five-year programme has been underway since 1968. A total investment of 1 030 thousand million yen (2.86 million dollars U.S.) for this programme is planned to carry out the various works, the main projects being construction of ports and harbours for both foreign and domestic trade and consolidation of industrial harbours. Dredging of passages and construction of refuge harbours will also be carried out. Upon completion of this programme, public berths with depths of more than 10 metres alongside for use by large sized vessels will be available in 51 ports and harbours. There will be 29 berths in Tokyo, 25 in Kobe, 14 each in Osaka and Nagoya, and 10 in Yokohama.

Development programmes for off-lying islands and the construction of fishery harbours will also be undertaken under this programme. As Japan is a maritime nation, it quite naturally devotes its efforts to the development of fisheries and marine products industries. Thus, fishery harbours should also be developed.

With such rapid progress in harbour construction, it becomes difficult for government agencies alone to determine all the changes in depths in harbours and passages. Accordingly, this is a field into which private survey enterprises are expanding their activities.

Tidal and Tidal Currents Observations

One of the observations increasingly demanded in recent years is tidal current measurement. Contrary to what is commonly thought, details of tidal currents in ports and harbours, as well as close to the coasts, are not well known. In particular, an observation instrument for low velocity currents still remains to be developed, so that measurement of such currents has had to be deferred. However, the problem of coastal currents (including low velocity currents) has become a matter of public concern owing to the enlargement of ports, disposal of sewage, construction of atomic electric generation facilities, etc. Thus private surveying companies are increasingly approached for determination of the coastal currents.

In passages and in ocean areas, however, observations of currents and tidal currents are usually carried out by governmental organizations, such as the Hydrographic Department and the Meteorological Agency.

Geophysical Surveys

Demands for geophysical surveys have also been on the increase lately in connection with the investigation of underwater mineral resources.

In addition, such surveys will also be necessary at a future date in connection with the establishment of underwater constructions.

Surveys at present employ mainly a seismic profiler; however, proton magnetometers and gravimeters will be used by private companies in the future.

Other Sea Surveys

Promising undertakings in Japan, in the field of electric generating services, are atomic electric power generation and underwater electric generation. Both systems face a common problem : compensation to the fisheries industry must be settled prior to the establishment of new facilities. When this problem has been solved, it will be necessary to measure currents and tidal currents, to analyse dispersion, to measure salinity and water temperature, etc. at the sites chosen for these installations. Detailed and accurate bathymetric and geological charts of the seas concerned will be indispensable to the establishment of underwater electric generation installations.

Furthermore, the necessary steps must be taken for preventing damage to the public. Such measures should be taken not only in the coastal waters around industrial zones but also in inland waters, such as lakes which adjoin factories. Hence various observations, as for instance investigation of water quality, will be required in order to provide basic data before taking these preventive measures.

Thus, continual demands for the types of hydrographic and oceanographic surveys mentioned above and also for investigations of waves and exchange of sea water, etc. are being made to private companies and to governmental organizations as a consequence of the nation's industrial development.

Sale of Nautical Charts and Publications

As already mentioned, the sale of nautical charts and publications has since prewar days been in the hands of a limited number of private companies. This is because charts have to be kept up-to-date to the time of sale, with the result that only a few companies were selected as being competent agents to carry out this work.

At present the following three companies are official sales agents for nautical charts and publications :

Nippon Yusen Kaisha (NYK), Nippon Senshu Kyokai (Japan Shipowners' Association) and Nippon Suiro Zushi Kaisha (Japan Hydrographic Publication Co.). These firms have altogether about 220 branch offices and agents in ports and harbours over almost all the country. Small corrections arising from Notices to Mariners are made at these companies' main and branch offices.

The total number of nautical charts sold during 1968 was about 390 000.

Conclusion

According to the registry records kept at the Geographic Survey Institute, the number of private land survey companies in Japan amounts to about 2 800. Regarding hydrographic survey companies, however, the position is not clear since there is no requirement to register. Although 45 companies now belong to the Hydrographic Survey Association, those actually engaging in survey activities are estimated to be only about 10. It is, however, to be expected that the land survey companies will tend to expand their services into the hydrographic field.

A remarkable phenomenon of recent times is that when ocean exploration is about to start, every leading manufacturer in Japan has established its own ocean exploitation company. For the time being these companies are concentrating on developing various survey instruments, but it is quite possible that they will later move on to hydrographic surveying.

With the steadily increasing demand for hydrographic and oceanographic surveys, it is considered that the governmental organization would inevitably turn to private enterprises for cooperation because both the personnel and the budgetary arrangements of the governmental organizations are always limited.

It should be noted that in Japan there are at present few regulations to govern private firms in carrying out sea surveys; there is no registration system, nor are there any official qualification examinations for hydrographic survey techniques, nor any system for official approval of instruments, etc. Everything is unregulated. It is considered that government organizations should be urged to establish official regulations and standards for carrying out hydrographic surveys.

The author would appreciate receiving from other countries any comments and suggestions arising from this article.