

liament offered a reward for a method of determining longitude; in 1731 John HADLEY in England and Thomas GODFREY at Philadelphia invented the present form of the sextant.

Commander MCGUIRE winds up his article on *Navigational Antecedents* by recalling for us, in racy style, the fight between the methods for the determination of longitudes — the astronomical method of lunar distances championed in 1763 by the Astronomer Royal, Nevil MASKELYNE, and the mechanical method with the chronometer championed by John HARRISON.

H. B.

---

## THE NEW INTERNATIONAL CODE OF SIGNALS.

---

Codes of signals for the use of mariners have been published in various countries since the beginning of the nineteenth century. The most important of these are:—

|                         |      |
|-------------------------|------|
| Marryat.....            | 1817 |
| Lynn .....              | 1818 |
| Squire .....            | 1820 |
| Raper.....              | 1828 |
| Rohde (Danish) .....    | 1835 |
| Phillips .....          | 1836 |
| Walker .....            | 1841 |
| Watson .....            | —    |
| Rodgers (American)..... | 1854 |
| Reynold (French) .....  | 1855 |

The best known is Captain MARRYAT's, which was used by many nations and can probably claim to be the first International Code of Signals. Captain MARRYAT used flags representing the numbers 0 to 9, a "Rendezvous" (geographical) flag, a "Telegraph" flag, a "Numeral" pendant, two "Distinguishing" pendants (Substitutes) and the Union Jack. No signal contained more than four flags, which limited the number of available signals to 9,000. This amount was insufficient, so use was made of the same groups in different tables with one of the special flags above-mentioned to indicate from which table the group should be decoded.

In 1855, a Committee was set up by the British BOARD OF TRADE "to enquire into and report upon the subject of a Code of Signals to be used at sea". This Committee put forward a draft code which contained 70,000 signals. The flags, therefore, were increased to 18, which represented the consonants of the alphabet, with the exception of X and Z.

This new code was published by the BOARD OF TRADE in 1887 in two parts. The first part of the book contained universal and international signals, and the second part British signals. The book was adopted by most of the sea-faring nations and, contrary to the intention of the framers of the code, translations were made of the British, as well as the international signals.

This edition lasted for roughly 30 years, and a Committee was again set up by the British BOARD OF TRADE in 1887 "to bring the international signal book up to date." The first report of the Committee was published in 1889, and its proposals were discussed by the principal Maritime Powers and at the International Conference in Washington in the same year.

As result of these discussions many changes were made in the Committee's Report. The flags were increased to 26, one for each letter of the alphabet, and the code or answering pennant. As a result of this increase in the number of flags, many of the more important signals could be made by single or two-flag hoists, general signals by three-flag hoists, and geographical signals by four-flag hoists. This edition was completed in 1897 and was forwarded to all Maritime Powers, some of whom caused translations of it to be prepared.

This edition of the International Code of Signals was put to a very severe test during the 1914-1918 War. Ships of various nations constantly came in contact with one another and had to exchange messages, during operations for mine-sweeping, patrolling, convoying or examination. The book did not stand the test. It was not international. It was found that when coding signals, word by word, the occasions upon which signalling failed were more numerous than those when the result was successful.

After the War the British Government proposed that the revision of the International Code of Signals should be considered by the INTERNATIONAL RADIOTELEGRAPH CONFERENCE, which was due to be held at Washington in 1927. For this purpose they put forward, in co-operation with the Governments of France, Italy, Japan and U.S.A., revised rules for the conduct of signalling and a draft code in English, French and Italian.

The chief changes decided upon by the Washington Conference were as follows :-

(a) The code should be compiled in two volumes, one for use by radiotelegraphy, the other by visual signalling.

(b) The flags were increased by the addition of ten numeral pendants and three substitute flags. The use of the numeral pendants will render the signalling of numbers, times, latitude, longitude, courses, bearing etc. quick and simple, without making use of code-groups. The three substitutes will render it possible to use any combination of four letters or four figures.

(c) The system of Morse signalling was amended by the introduction of procedure signals and brought into line with radiotelegraphy, as far as possible and practicable.

(d) The use of the distant signals and of the fixed semaphore was abandoned.

(e) The signal letters of ships should be the same as their radio call signs and should consist of four letters.

The Conference decided that every effort should be made to render the code international and that there should be seven editorial editions of the code, namely in English, French, German, Italian, Japanese, Spanish and one Scandinavian language, and that it was necessary that representatives of these nations should meet together in order to compile these editorial editions simultaneously and conjointly. They further recommended that the British Government should be requested to undertake this work and that each of the Governments concerned should be asked to send representatives to London for the purpose. After discussion among themselves, the Scandinavian Governments decided that Norwegian should be the representative Scandinavian language.

The Editorial Committee assembled in London in October, 1928, and completed the compilation of the Codes in December, 1930.

One of the most important decisions of the Washington Conference was that the code should be compiled in two volumes, one for use by Radio and the other by Visual.

Although the majority of radio signals to and from ships are, and doubtless will continue to be, transmitted in plain language, and between foreigners often in the English language, it was considered that an International Code for use by radio was needed to enable ships to make full use of the exceptional means of communication with which radio provides them, and because there are in many parts of the world those who are not well conversant with any other language than their own. A further advantage should lie in the fact that nautical and technical expressions have been adjusted in the seven editorial languages so that the use of the code should facilitate the exchange of correct and concise information between people speaking the same language.

Finally, the code should, in many cases, simplify and abbreviate messages by means of the complete sentences and phrases which it contains.

The other main features, as compared with the former International Code of Signals, are :

(a) The introduction of words and phrases applicable to aircraft. These signals may at first appear to be too comprehensive, but it must be remembered that aviation is developing very rapidly as a means of transport, and if inadequate provision for use by aircraft were now made, an early revision of the code, entailing a vast amount of labour and considerable expense, would be involved.

(b) A complete Medical Section and a code for accelerating the granting of pratique. These have been inserted with the assistance and by the advice of the OFFICE

INTERNATIONAL D'HYGIÈNE PUBLIQUE. The Medical Section should prove of great use in securing correct medical advice in case of illness or accident.

The code is primarily intended for use by ships and aircraft and, via shore radio stations, between ships or aircraft and authorities ashore, such as harbour authorities, quarantine authorities, agents, etc. It is not intended in any way to compete with or replace commercial codes, although a certain number of signals have been inserted which may be helpful in communicating with shipowners, agents, repair yards etc., for use in those parts of the world where a common code does not exist.

In order to obtain the best results from the book, users are recommended to make themselves thoroughly familiar with its contents. The proper use of the code will not only ensure that messages are sent correctly, that is, so that the person who decodes a message in another language will obtain its correct meaning, but in many cases it will also enable users to combine complete sentences and phrases so as to convey the intended meaning accurately to the addressee, even if the message cannot be worded in the way originally contemplated.

