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FIFTY YEARS AGO...

Even today some maritime countries have not yet implemented the uniform system of buoyage, either 'A' or 'B', proposed by the International Association of Lighthouse Authorities (IALA) some ten years ago. The following article, reproduced from The Hydrographic Review, *Vol. XII, No. 2, of November 1935, shows that, even 50 years ago, some basic principles governed the criteria for lighted buoys as are applicable today.*

IMPROVEMENTS IN THE TECHNIQUE OF MARITIME SIGNALLING

A Report on the Work of the Technical Conference on Maritime Signals held in Paris in July, 1933, was printed in *The Hydrographic Review*, Vol. XI, No. 2, November 1934, page 123. Among the papers read at that Conference, dealing with research for the improvement of maritime buoyage and lighting, attention is called to a memorandum dated 9th May 1933 by Mr. G.R. PUTNAM, Commissioner of Lighthouses for the U.S.A., entitled *Development of flashing characteristics and their use to differentiate buoys according to purpose.*

As is known, progress in maritime lighting has made possible the introduction into practice of a new technique of flashing lights, in which the flashes occur in rapid succession. This arrangement permits new combinations in the buoyage of channels. Mr. PUTNAM'S memorandum puts forward the following suggestions for the buoyage of channels.

(1) Channel-side lights, in the lateral system, should have a slow-flashing period.

(2) Buoys marking obstructions should be characterised by a quick-flashing period.

(3) Wrecks, by an interrupted quick flash.

(4) Safe passage, mid-channel or landfall buoys should be characterised by brief and slow flashes.

The slow periods should not exceed 24 flashes per minute, whilst the quick-flashing or scintillating lights should exhibit at least 75 flashes per minute.

This system is of interest in that it gives distinctive features by night in the same way as the shape or colour of the buoys does by day. The basic principle of the system consists in distinguishing the buoys at night by three immediately recognisable types of flash : a quick flash for obstructions, a combination of one long flash followed by a short flash for mid-channel buoys, and the ordinary (slow) flash for the sides of channels. The distinction between quick and slow flashes is obtained by using the above-mentioned speeds, i.e. speeds of 75 or more short flashes a minute as compared with 30 or less flashes a minute. (The groups of quick flashes followed by a pause are simply a variation of the quick flash).

No counting or timing of flashes is required in this system. It is so simple that the navigator is bound to see at once whether the light is quick-flashing, slow-flashing, or a combination of both. There is no complicated timing, and as it is not even necessary to count the flashes, the system should be reasonably dependable in a rough sea; the characteristics are more definitely recognisable than in a system which calls for the counting of flashes.

By day, the successive buoys of any channel may be distinguished by numbers or letters to an almost unlimited extent. In the proposed system, this distinction between adjacent buoys serving the same purpose can be made by night also, by variations of characteristic within the limits mentioned above, on which distinctions of colour may be superimposed according to certain principles. Of course, the proposed system is by no means intended to supersede the necessary consultation of the chart in cases where the channels are complicated and the buoyage very dense.

It may be objected that, for channel entrance buoys and very exposed buoys in open waters or far from their base, such as landfall buoys, the system entails the adoption of a group-occulting characteristic giving the appearance of a short flash followed by a long flash, a rather delicate characteristic to maintain. But this characteristic may, for the moment, be reserved for fairway buoys in the channels themselves, and there appears to be no need to use their general characteristics for off-shore buoys in open waters.

The tests made in the United States of America of mechanisms with these characteristics prove that they are dependable and are comparable with other flashing appliances in reliability, apart from a few local accidents. It would be interesting to know what experience has been gained in other countries in the use of these characteristics.

Mr. PUTNAM reverts to the objection formulated at the Conferences on the Unification of Buoyage, concerning the danger of marking wrecks aground on the red-light side of a channel by green lights, when green lights are in use on the other side; it remains to be seen whether this difficulty can be satisfactorily overcome by counting a specific number of flashes. The same remark applies in cases where these characteristics may have to be distributed among lights on the cardinal system of buoyage.

Tests of night buoyage systems with quick-flashing lights have recently been made in the U.S.A. on the Delaware River. It has been found desirable that the turns in important channels should be distinguished by buoy lights differing from those marking the intermediate straight stretches. The bends in the main channel of the Delaware River have been marked with quick-flashing lights of the colour appropriate to their own side of the channel. To avoid confusion between these lights and the quick-flashing lights on buoys marking obstructions, Mr. PUTNAM proposes to use quick-flashing lights varied by a single long flash; this characteristic would be used for the sides and entrances of the channels.

Such an arrangement introduces one more distinction in the proposed system of flashing lights, but this varied quick flash is very simple and readily recognisable and requires no counting or timing.

H.B.

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Even fifty years ago, the Straits of Malacca and Singapore were an important waterway for international maritime navigation. The concern of navigators as regards complex tidal and current conditions in the Straits was highlighted in the following article published in *The Hydrographic Review* of November 1935.

CURRENT TABLES, STRAITS OF MALACCA AND JAVA SEA, 1935

Published by the *Hoofdkantoor van Scheepvaart* (Head Office of Navigation),
Marine Department, Batavia (Centrum), Price Fl. 1.
(Extract from *De Zee*, Den Helder, No. 3, March 1935, page 154)

These current tables are based on current observations carried out in the years 1932-1934 by the surveying vessel *Orion*. From these observations, tidal-stream constants were computed, besides the constant current which prevailed locally during the period of observations; both are given on page 1 of the publication.

The observations were made at eleven stations, viz. off the Een Vadembank (One Fathom Bank) and the Longbank, in Malacca Strait, Doerian Strait, Berhala Strait, Singapore Strait, Riouw Strait (northern part and south entrance), eastward of P. Djang (Lingga Archipelago), off P. Toedjoe (northward of Banka), in Banka Strait, off Amedia Bank and Nemesis Bank. The times of slack water and the times and strengths of the maximum current are given for these places, and for each day of the year, in eleven tables. The *constant current* to be expected is shown as "correction" at the top of each table. The direction of the current is indicated at the top of each page.

This publication merits attention and will doubtless be welcomed by shipping circles as a valuable addition to the *Zeemansgids voor Nederlandsch Oost-Indië* (Sailing Directions for the Netherlands East Indies). For this particular *Zeemansgids* is far from being complete as regards current data, owing to the fact that the opportunity had never before arisen of carrying out systematic observations at so many places in the straits over so long a period. In this connection homage must be rendered to both the Commanding Officer of the *Orion*, Mr. P.A.C.T. KNIJFF, Director of the Government Navy, who made the observations and worked them out in such a conscientious manner, and the *Hoofdkantoor van Scheepvaart* which lent its support to the undertaking and arranged for this publication.

On the route given, i.e. the busiest route of the Netherlands East Indies, the currents are not as a rule very strong; it is but seldom (for instance in Riouw Strait) that the sum of tidal stream plus constant current exceeds three knots. The tidal stream is mixed at all stations, of prevailing semi-diurnal character in Malacca Strait and prevailing diurnal character in most of the other straits. Consequently, the aspect of the current is very capricious; all the more, for this reason, the current tables should be systematically consulted. This apparently capricious regime is evident on glancing at the tables. If the current is semi-diurnal, a notation is necessary every three hours, viz. slack water; three hours later, maximum current; three hours later, again slack water, and so on, so that each day is divided into 8 columns. During the period of prevailing diurnal tides, 4 to 5 columns only are filled in.

Mr. LUYMES, during his period of office, had already strongly advocated this type of tables (see *De Zee* of February 1934) and expressed his astonishment that the managers of shipping companies had apparently not yet completely realised the usefulness of such a publication. But opinions must be given time to evolve; the introduction of novelties takes time.

If the *Hoofdkantoor van Scheepvaart* does not abandon the experiment too soon (for this publication is, as a matter of fact, provisionally considered merely as an experiment), it is certain that these Current Tables will be used by the captain of every ship as a most welcome and valuable addition to the Sailing Directions. The booklet is very concise and clear. Each station occupies 6 pages (the whole booklet consists thus of 70 pages) on which all the current data are collated. The price of this collection of tables is one florin and there *should* therefore be no obstacle in this respect in the way of purchase. The undersigned wishes to stress particularly that directors of shipping companies and captains should acquire this publication and use it; they can but benefit therefrom. It may be procured, in Holland from Gebrs. van Cleef, Spui 28, 's-Gravenhage; in the East Indies from the distributors and the sub-agencies for the sale of charts and Sailing Directions in the various ports, and at Palembang. Any criticism of these tables will be gladly received.

HOOYKAAS