RECOMMENDATION 540-2*

OPERATIONAL AND TECHNICAL CHARACTERISTICS FOR AN AUTOMATED DIRECT-PRINTING TELEGRAPH SYSTEM FOR PROMULGATION OF NAVIGATIONAL AND METEOROLOGICAL WARNINGS AND URGENT INFORMATION TO SHIPS

(Question 5/8)

(1978-1982-1990)

The CCIR,

CONSIDERING

(a) that the availability of navigational and meteorological warnings and urgent information on board ships is of great importance for safety;

(b) that the existing radiocommunication system for promulgation of navigational and meteorological warnings and urgent information to ships can be improved by use of modern techniques;

(c) that the IMO has etablished the following definitions on the promulgation of maritime safety information:

– "NAVTEX" means the system for the broadcast and automatic reception of maritime safety information by means of narrow-band direct-printing telegraphy;

– "international NAVTEX service" means the coordinated broadcast and automatic reception on 518 kHz of maritime safety information by means of narrow-band direct-printing telegraphy using the English language, as set out in the NAVTEX manual, published by the IMO;

– "national NAVTEX service" means the broadcast and automatic reception of maritime safety information by means of narrow-band direct-printing telegraphy using frequencies and languages as decided by the administrations concerned;

(d) that the 1988 Amendments to the International Convention for the Safety of Life at Sea, 1974, require that every ship to which the Convention applies shall be provided with a receiver capable of receiving international NAVTEX service broadcasts;

(e) that several countries are operating a coordinated international NAVTEX service, based on narrowband direct-printing in accordance with Article 14A of the Radio Regulations;

(f) that the system should be applicable to the maritime mobile service (both international and national);

(g) that it is desirable that the service fulfils the requirements of all types of ships desiring to use it;

(h) that although each area may need specific guidance, the use of standard technical and operational characteristics would facilitate the extension of the service,

UNANIMOUSLY RECOMMENDS

1. that the operational characteristics for the promulgation of navigational and meteorological warnings and urgent information using NBDP should be in accordance with Annex I;

2. that the technical characteristics for the promulgation of navigational and meteorological warnings and urgent information using NBDP should be in accordance with Annex II.

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* The Director, CCIR, is requested to bring this Recommendation to the attention of the International Maritime Organization (IMO), the International Hydrographical Organization (IHO), the World Meteorological Organization (WMO) and to the International Association of Lighthouse Authorities (IALA).

ANNEX I

OPERATIONAL CHARACTERISTICS

1. Narrowband direct-printing techniques should be used for an automated telegraph system for promulgation of navigational and meteorological warnings and urgent information to ships. Common frequencies for such transmissions should be internationally agreed upon and the frequency 518 kHz has been designated for world-wide use in the international NAVTEX service (see Radio Regulations Nos. 474, 2971B and N2971B).

1.1 For national NAVTEX services administrations should also utilize the format of this Recommendation on the appropriate frequencies as defined in the Radio Regulations.

2. The radiated power from the coast station transmitter should only be that sufficient to cover the intended service area of that coast station. The range extension occurring during night hours should also be considered.

3. The information transmitted should primarily be of the type used for coastal waters preferably using a single frequency (Resolution No. 324 (Mob-87)).

4. The transmission time allocated to each station should be restricted to that which is adequate for the anticipated messages to be broadcast to the area concerned.

5. Scheduled broadcasts should take place at intervals not exceeding eight hours and be coordinated, to avoid interference with broadcasts from other stations.

6. Message priorities

6.1 Three message priorities are used to dictate the timing of the first broadcast of a new warning in the NAVTEX service. In descending order of urgency they are:

– VITAL: for immediate broadcast, subject to avoiding interference to ongoing transmissions;

– IMPORTANT: for broadcast at the next available period when the frequency is unused;

– ROUTINE: for broadcast at the next scheduled transmission period.

Note – Both VITAL and IMPORTANT warnings will normally need to be repeated, if still valid, at the next scheduled transmission period.

6.2 In order to avoid unnecessary disruption to the service, the priority marking VITAL is to be used only in cases of extreme urgency, such as some distress alerts. In addition, VITAL messages are to be kept as brief as possible.

6.3 Periods should be scheduled between the regular transmission periods permitting immediate/early transmission of VITAL messages.

6.4 By use of the message serial number 00 in the preamble of a message (see also Annex II § 6) it is possible to override any exclusion of coast stations or of message types which might have been made in the receiving equipment.

7. Initial shore-to-ship distress-related messages should first be broadcast on the appropriate distress frequency by coast stations in whose SAR area distress cases are handled.

8. Participating transmitting stations should be provided with monitoring facilities to enable them to:

– monitor their own transmissions as to signal quality and transmission format;

– confirm that the channel is not occupied.

9. In case a message is repeated by more than one transmitting station within the same NAVTEX region (e.g. for better coverage) the original preamble B_1-B_4 (see Annex II) should be used.

10. In order to avoid overloading of the channel it is desirable to use a single language and where a single language is used it shall be English.

11. Dedicated on-board equipment is recommended.

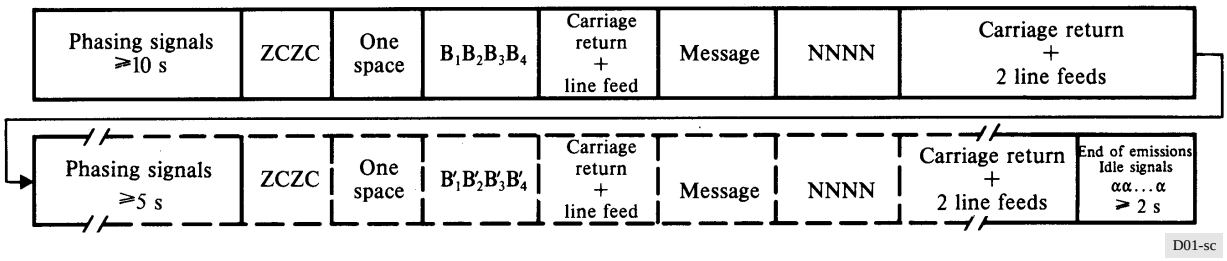
12. Other operational characteristics and detailed guidance are given in the NAVTEX Manual developed by the International Maritime Organization.

ANNEX II

TECHNICAL CHARACTERISTICS

2. The signals transmitted should be in conformity with the collective B-mode of the direct-printing system specified in Recommendations 476 and 625.

3. The technical format of the transmission should be as follows:



in which

ZCZC defines the end of the phasing period,

the B_1 character is a letter (A-Z) identifying the transmitter coverage area,

the B_2 character is a letter (A-Z) for each type of message.

2.1 Both the B_1 characters identifying the different transmitter coverage areas and the B_2 characters identifying the different types of messages are defined by IMO and chosen from Table I of Recommendations 476 and 625, combination numbers 1-26.

2.1.1 Ship equipment should be capable of automatically rejecting unwanted information using character B_1.

2.1.2 Ship equipment should be capable of disabling print-out of selected types of messages using character B_2 with the exception of messages with B_2 characters A, B and D (see also § 2.1).

2.1.3 If any facility is rejected or disabled as described in § 2.1.1 and 2.1.2 above, the extent of any such limitation must be clearly indicated to the user.

2.2 B_3B_4 is a two-character serial number for each B_2, starting with 01 except in special cases where the serial number 00 is used (see § 6 below).

2.3 The characters ZCZC $B_1B_2B_3B_4$ need not be printed.

3. The printer should only be activated if the preamble B_1-B_4 is received without errors.

4. Facilities should be provided to avoid printing of the same message several times on the same ship, when such a message has already been satisfactorily received.

5. The necessary information for the measures under § 4 above should be deduced from the sequence $B_1B_2B_3B_4$ and from the message.

6. A message should always be printed if $B_3B_4 = 00$.

7. Extra (redundant) letter and figure shifts should be used in the message to reduce garbling.

8. In case a message is repeated by another transmitting station (e.g. for better coverage) the original preamble B_1-B_4 should be used.

9. The equipment on board ships should be neither unduly complex nor expensive.

10. The transmitter frequency tolerance for the mark and the space signals should be better than ± 10 Hz.