

INTER-GOVERNMENTAL MARITIME
CONSULTATIVE ORGANIZATION



SN/Circ.25
2 November 1965

[T2/C/7.017]

I M C O

FACSIMILE TRANSMISSION OF
METEOROLOGICAL CHARTS

The Commission for Maritime Meteorology of the World Meteorological Organization examined, at its fourth session, the question of facsimile broadcasts of weather charts for shipping. The Commission adopted Recommendation 16 (CMM-IV) which was later approved by the Executive Committee of WMO.

The Recommendation, together with an extract from WMO publication No. 9.TP.4 on the same subject, are circulated herewith to Member Governments for their information at the request of the Secretary-General of WMO.

Previous information on this question was brought to the attention of Member Governments in July 1963 (SN/Circ.6).

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WORLD METEOROLOGICAL ORGANIZATION
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Recommendation 16 (CMM-IV)

FACSIMILE BROADCAST OF METEOROLOGICAL INFORMATION FOR MARITIME PURPOSES

THE COMMISSION FOR MARITIME METEOROLOGY,

NOTING :

- (1) Recommendation 17 (CMM-III),
- (2) The International Convention for Safety of Life at Sea (London, 1960), Chapter V, Regulation 4b (ii),
- (3) The increasing number of ships equipped for the reception of meteorological information by facsimile;

CONSIDERING :

- (1) That the facsimile broadcast of meteorological information offers a valuable service to shipping and for fishing vessels,
- (2) That the existing and planned meteorological facsimile broadcasts can be of use to meet the requirements for shipping and for fishing vessels,
- (3) That such broadcasts could satisfy more efficiently maritime requirements if appropriate adjustments of programmes (e.g. contents of broadcasts including presentation of charts) and areas in which the broadcasts are intended to be received were made;

RECOMMENDS :

- (1) That Members operating facsimile broadcasts should consider the possibility of making appropriate adjustments to :
 - (a) The programmes of their facsimile broadcasts,
 - (b) The presentation of charts transmitted,
 - (c) The areas for which the broadcast is intended, taking into account the annex* to this recommendation,
- (2) That Members should assist shipping companies in becoming familiar with WMO specifications for standardized facsimile equipment;

ENCOURAGES other Members to establish facsimile broadcasts for the benefit of shipping and fishing vessels;

REQUESTS the Secretary-General to include the details of facsimile broadcasts of interest to shipping in WMO Publication No. 9. TP.4, Volume D, even though the charts only partially cover a sea area.

* See Annex

Annex to Recommendation 16 (CMM-IV)

FACSIMILE BROADCASTS USEFUL FOR MARITIME PURPOSES

(a) Suggested contents

1. Surface analysis charts with the following additional features :
 - (1) Areas in which the wind speed is 34 knots or more (Beaufort force 8 or more);
 - (11) Movement of pressure centres (direction and speed)
2. Surface prognostic charts
3. Sea conditions charts actual
4. Sea conditions charts prognostic
5. Extended forecast charts
6. Ice conditions charts (actual and prognostic)
7. 500 mb analysis charts
8. Sea surface temperature charts
9. Bathy-thermograph traces
10. Layer depth charts

NOTE : All charts used in transmissions should indicate chart scale and projection.

(b) Schedules

1. Strict adherence to published transmission schedules is essential to assist ships in the reception of charts.
 2. Members should arrange their schedules in so far as possible so that the charts of interest to shipping are transmitted successively.
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(b) Modulation by frequency deviation (FM)

Value of the central frequency : about 1900 c/s
Value of the frequency for black : 1500 c/s
Value of the frequency for white : 2300 c/s.

The frequencies for black and white should not vary by over 8 c/s over a period of 30 seconds and by more than 16 c/s over a period of 15 minutes.

3.11 Levels of signals in case of amplitude modulation

Receiving equipment should accept any level between +5 db and -20 db, zero reference level corresponding to a power of one milliwatt dissipated in a resistance of 600 ohms.

3.12 Contrast ratio

Contrast ratio for picture signals and control signals will be the same in any one transmission and will be between 12 and 25 db.

3.13 Half-tones

It is desirable to avoid the use of half-tones in international transmission of meteorological charts, while not excluding the possibility of their use in international transmission of photographs from radar apparatus or satellites.

Ref. : Rec. 60 (CSM-III), Res. 35 (EC-XIV)

4. Facsimile transmission of meteorological charts over radio circuits

4.1. When frequency modulation of the sub-carrier is employed for the facsimile transmission of meteorological charts over radio circuits, the following characteristics should be used :

- Centre frequency 1900 c/s
 - Frequency corresponding to black 1500 c/s
 - Frequency corresponding to white 2300 c/s.
- Ref. : Rec. 50 (CSM-II), Res. 21 (EC-X)

4.2 When direct frequency modulation (FSK) is employed for the facsimile transmission of meteorological charts over radio circuits, the following characteristics apply :

- (a) Decametric waves (3 Mc/s - 30 Mc/s)
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|--|-------|----------|
| Centre frequency (corresponding to the assigned frequency) ... | f_0 | |
| Frequency corresponding to black | f_0 | -400 c/s |
| Frequency corresponding to white | f_0 | +400 c/s |
- (b) Kilometric waves (30 kc/s - 300 kc/s)
- | | | |
|--|-------|----------|
| Centre frequency (corresponding to the assigned frequency) ... | f_0 | |
| Frequency corresponding to black | f_0 | -150 c/s |
| Frequency corresponding to white | f_0 | +150 c/s |
- Ref. : Rec. 61 (CSM-III), Res. 35 (EC-XIV)

WORLD METEOROLOGICAL ORGANIZATION

EXTRACT FROM PUBLICATION No. 9.TP.4, VOLUME C, CHAPTER I, PART V

3. Standardization of international meteorological transmissions by facsimile - Equipment characteristics

The facsimile equipment used for international meteorological transmissions should be standardized as follows :

3.1 Index of co-operation

576, for minimum black or white picture elements of 0.4 mm; and
288, for minimum picture elements of 0.7 mm.

Index 288 may be replaced by index 576 with alternate line scanning.

3.2 Drum speed

60, 90, 120 revolutions per minute.

NOTE : If speeds greater than 120 rpm are used, they should be multiples of 60 rpm.

3.3 Diameter of drum

152 mm. In the case of flat-bed scanners this will be the length of the scanning line (including the dead sector) divided by π (for definition of dead sector, see 3.7 below).

3.4 Scanning density

Scanning density = $\frac{\text{Index of co-operation}}{\text{Diameter of drum}}$

It is approximately : 4 lines per mm for index 576
2 lines per mm for index 288.

3.5 Length of the drum

The length of the drum should be at least 55 cm.

3.6 Direction of scanning

At the transmitter, the plane (developed in the case of a drum transmitter) of the message area is scanned along lines running from left to right, commencing in the left hand corner at the top of the message area and finishing in the right hand corner at the bottom. This is the equivalent of scanning over a left hand helix.

3.7 Dead sector

4.5 per cent \pm 0.5 per cent of the length of the scanning line; the signal transmitted during the passage of the dead sector should correspond to white but it is permitted that a black pulse be transmitted within and not exceeding one half the length of the dead sector.

3.8 Synchronization

The scanning speed should be maintained within five parts in 10^6 of its normal value.

NOTE : This tolerance admits of a maximum oblique skew of approximately 1/55 when transmitter and receiver function at opposite maximum deviation limits. A smaller tolerance would reduce maximum oblique skew and is desirable.

INTER-GOVERNMENTAL MARITIME
CONSULTATIVE ORGANIZATION



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23 November 1965

[T2/C/1.03]

IMCO

LIGHT SIGNALS FOR VESSELS
ENGAGED IN FISHING

The Government of Iceland has requested the Secretary-General to communicate to all Member Governments the attached paper concerning special light signals indicating vessels engaged in fishing with purse seine and power-block.

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