

INTERNATIONAL MARITIME ORGANIZATION

4 ALBERT EMBANKMENT,
LONDON SE1 7SR

Telephone: 071-735 7611
Telegrams: INTERMAR-LONDON SE1
Telex: 23588
Telefax: 071-587 3210



IMO

SN/Cir 8
11 November 1991

BA

Ref. T2/2.07

PERFORMANCE STANDARDS FOR RADAR REFLECTORS

At its thirty-seventh session (23 to 27 September 1991), the Sub-Committee on Safety of Navigation (NAV 37/25, paragraphs 4.3 to 4.6) considered Australia's proposal (NAV 37/4) to amend rule 25 of the 1972 Collision Regulations by adding, inter alia, new requirements for sailing vessels of non-metallic construction to carry an effective radar reflector at the top of one or more masts.

The NAV Sub-Committee could not support this proposal and pointed out that resolution A.384(X) recommends the fitting of a radar reflector on all vessels of less than 100 tons gross tonnage and therefore a radar reflector should be carried not only by sailing vessels of non-metallic construction but also by all other small vessels.

At the request of the NAV Sub-Committee, the attention of Member Governments is invited to the need to give effect to resolution A.384(X) attached hereto.

W/3776x/ta

RESOLUTION A.384(X)

*Adopted on 14 November 1977
Agenda item 8(b)*

PERFORMANCE STANDARDS FOR RADAR REFLECTORS

THE ASSEMBLY,

NOTING Article 16(i) of the Convention on the Inter-Governmental Maritime Consultative Organization concerning the functions of the Assembly,

RECOGNIZING that small vessels will improve the range and probability of their radar detection, if fitted with radar reflectors,

HAVING CONSIDERED the Report of the Maritime Safety Committee on its thirty-sixth session,

RESOLVES:

- (a) to adopt the Recommendation on Performance Standards for Radar Reflectors, set out in the Annex to this Resolution;
- (b) to recommend that Member Governments should require all vessels of less than 100 tons gross tonnage operating in international waters and adjacent coastal areas to be fitted, if practicable, with a radar reflector complying with performance standards not inferior to those shown in the Annex to this Resolution,

REVOKES Resolution A.277(VIII).

ANNEX

**RECOMMENDATION ON PERFORMANCE STANDARDS FOR
RADAR REFLECTORS**

1. Introduction

- 1.1 Small craft referred to in paragraph 2 of this Recommendation should be fitted with radar reflectors to improve the range and probability of their radar detection.
- 1.2 Radar reflectors should comply with the minimum performance requirements as specified in this Recommendation.
- 1.3 In the following paragraphs the echoing areas specified are those for the frequency of 9.3 GHz (corresponding to a wavelength of 3.2 cm).

2. Application

- 2.1 All vessels of less than 100 tons gross tonnage operating in international waters and adjacent coastal areas should, if practicable, be fitted with a radar reflector.

2.2 The radar reflector should be of an approved type with an adequate polar diagram in azimuth, and an echoing area:

- (i) preferably, of at least 10 m^2 , mounted at a minimum height of 4 m above water level; or
- (ii) if this is not practicable, of at least 40 m^2 , mounted at a minimum height of 2 m above water level.

3. Performance

3.1 Reflectors should be capable of performance around 360° in azimuth using a typical marine navigational radar.

3.2 The echoing areas referred to in paragraph 2 correspond to the maximum values of the main lobes of the polar diagram.

3.3 The azimuthal polar diagram should be such that the response over a total angle of 240° is not less than -6dB with reference to the maxima of the main lobes and that the response should not remain below -6dB over any single angle of more than 10° .

4. Construction

The reflector should be capable of maintaining its reflection performance under the conditions of sea states, vibration, humidity and change of temperature likely to be experienced in the marine environment.

5. Installation

5.1 Fixing arrangements should be provided so that the reflector can be fitted either on a rigid mount or suspended in the rigging.

5.2 If there is a preferred orientation of mounting this should be clearly marked on the reflector. In the case of an octahedral reflector, the correct method of mounting is one corner cavity at the top and one at the bottom. Any other method might reduce its performance below that in 3(c).