INTERNATIONAL STANDARD

IEC 60872-1

First edition
1998-09

Maritime navigation and radiocommunication equipment and systems – Radar plotting aids –

Part 1:
Automatic radar plotting aids (ARPA) – Methods of testing and required test results

Matériels et systèmes de navigation et de radiocommunication maritimes – Aides de pointage radar –

Partie 1:
Aides de pointage radar automatiques (APRA) – Méthodes d'essai et résultats d'essai exigés



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For graphical symbols, and letter symbols and signs approved by the IEC for general use, readers are referred to publications IEC 60027: *Letter symbols to be used in electrical technology*, IEC 60417: *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets* and IEC 60617: *Graphical symbols for diagrams.*

* See web site address on title page.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – RADAR PLOTTING AIDS –

Part 1: Automatic radar plotting aids (ARPA) – Methods of testing and required test results

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
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International Standard IEC 60872-1 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems. The IEC 60872 series, of which this is part 1, replaces IEC 60872 published in 1987 and amendment 1 (1991) and reflects the new requirements of the International Maritime Organization (IMO).

The text of this standard is based on the following documents:

FDIS	Report on voting
80/192/FDIS	80/207/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annexes A, B, C, D and E form an integral part of this standard.

A bilingual version of this standard may be issued at a later date.

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – RADAR PLOTTING AIDS –

Part 1: Automatic radar plotting aids (ARPA) – Methods of testing and required test results

1 Scope

This International Standard specifies the minimum operational and performance requirements, methods of testing and test results for equipment that complies with performance standards not inferior to those adopted by the International Maritime Organization (IMO) in Resolution A.823. In addition, this standard takes account of IMO Resolution A.694 and is associated with IEC 60945.

When a requirement in this standard is different from IEC 60945, the requirement in this standard shall take precedence.

All texts of this standard, in which the wording is identical to that in IMO Resolution A.823, are printed in *italics* and the resolution and paragraph numbers are indicated in brackets.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60872. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 60872 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60872-2,— *Maritime navigation and radiocommunication equipment and systems – Radar plotting aids – Part 2: Automatic tracking aids (ATA) – Methods of testing and required test results* [1)]

IEC 60872-3, — *Maritime navigation and radiocommunication equipment and systems – Radar plotting aids – Part 3: Electronic plotting aids (EPA) – Methods of testing and required test results* [1)]

IEC 60936-1, — *Maritime navigation and radiocommunication equipment and systems – Radar – Part 1: Shipborne radar – Methods of testing and required test results* [1)]

IEC 60936-2, — *Maritime navigation and radiocommunication equipment and systems – Radar – Part 2: Shipborne radar for high speed craft (HSC) – Methods of testing and required test results* [1)]

IEC 60945:1996, *Maritime navigation and radiocommunication equipment and systems – General requirements, methods of testing and required test results*

[1)] To be published.

IEC 61162: (all parts), *Maritime navigation and radiocommunication equipment and systems – Digital interfaces*

ISO 9000:1987, *Quality management and quality assurance standards*

IMO Resolution A.477:1981, *Performance standards for radar equipment*

IMO Resolution A.694:1991, *General requirements for shipborne radio equipment forming part of the global maritime distress and safety system and for electronic navigational aids*

IMO Resolution A.820:1995, *Performance standards for navigational radar equipment for high-speed craft*

IMO Resolution A.823:1995, *Performance standards for automatic radar plotting aids (ARPAs)*

IMO Resolution A.824:1995, *Performance standards for devices to indicate speed and distance*

IMO MSC.64 (67) :1996, *Annex 4 – Performance standards for radar equipment*

IHO S-52:1996, *Specifications for chart content and display aspects of ECDIS*

3 Performance requirements

3.1 (A.823/A.1) **Introduction**

3.1.1 (A.823/A.1.1) *Automatic radar plotting aids (ARPA)* shall*, in order to improve the standard of collision avoidance at sea:*

.1 reduce the workload of observers by enabling them to obtain information about automatically plotted targets so that they can perform as well with several separate targets as they can by manually plotting a single target;

.2 provide continuous, accurate and rapid situation evaluation.

3.1.2 (A.823/A.1.2) *The radar facilities provided by an ARPA display* shall *comply with the performance standards for radar equipment (Resolution A.477) appropriate to its mode of use*.

3.1.3 (A.823/A.1.3) *In addition to the general requirements contained in resolution A.694, ARPA* shall *comply with the following minimum performance standards.*

3.1.4 Where an ARPA display is intended for use as the master display of a complete radar system, the system shall comply with IEC 60936-1. For high speed craft (HSC) ARPA, the relevant clauses of IEC 60936-2 apply.

3.1.5 Where an ARPA display is intended for use as a slave display of a complete radar system, it shall comply with the relevant clauses of IEC 60936-1, where applicable to such a display. For high speed craft (HSC) ARPA, the relevant clauses of IEC 60936-2 apply.

3.1.6 Quality assurance

The ARPA shall be designed, produced and documented by companies complying with ISO 9000, as applicable.