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 –

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

© IEC 1998 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission 3, Telefax: +41 22 919 0300 e-mail: inmail@iec.ch

3, rue de Varembé Geneva, Switzerland ch IEC web site http://www.iec.ch



Commission Electrotechnique Internationale International Electrotechnical Commission Международная Электротехническая Комиссия



For price, see current catalogue

Х

– 2 –

60872-1 © IEC:1998(E)

CONTENTS

			Page
FO	REWC)RD	3
Clau	ise		
1	Scop	Scope	
2	Normative references		4
3	Performance requirements		
	3.1	Introduction	5
	3.2	Definitions	6
	3.3	Performance standards	6
4	Methods of testing and required test results		
	4.1	General	12
	4.2	Detection, acquisition, tracking and general facilities	12
	4.3	Tracking reliability	14
	4.4	Tracking accuracy	15
	4.5	Closing target warning	15
	4.6	Collision risk (CPA/TCPA) warning	16
	4.7		16
	4.8	Display	16
	4.9	Audible warnings	16
	4.10	Data requirements	17
	4.11	Interfaces	17
	4.12	Performance test and warnings	17
	4.13	Sea and ground stabilization	17
	4.14	System configuration and quality assurance	17
Anr	nexes		
А	Defin	ition of terms to be used in connection with ARPA performance standards	18
В	Oper	ational scenarios	21
С	Sensor errors		
D	ARPA testing using simulated targets		
Е	Electronic plotting video symbols (EPVS)		

60872-1 © IEC:1998(E)

- 3 -

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent pessible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be n conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The EC shall not be held responsible for identifying any or all such patent rights.

International Standard VEC 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.

- 4 -

60872-1 © IEC:1998(E)

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 JEC 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 JEC 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 results¹)

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.

60872-1 © IEC:1998(E)

– 5 –

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 highspeed 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