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Nota di contenuto	Cover; Contents; Preface to Second Edition; Preface to First Edition; Acknowledgements; 1 Basic radar principles; 1.1 Introduction; 1.2 Principles of range measurement; 1.3 Principles of bearing measurement; 1.4 Picture orientation; 1.5 Picture presentation; 2 The radar system - operational principles; 2.1 Introduction; 2.2 Function of units; 2.3 Transmitter principles; 2.4 Aerial principles; 2.5 Receiver principles; 2.6 Display principles; 2.7 The siting of units on board ship; 3 Target detection; 3.1 Introduction; 3.2 Radar characteristics; 3.3 Target characteristics 3.4 Target enhancement - passive3.5 Target enhancement - active; 3.6 The detection of targets in sea clutter; 3.7 The detection of targets in precipitation clutter; 3.8 The radar horizon; 3.9 False and unwanted radar responses; 3.10 Future advances in target detection; 4 Automatic target tracking, specified facilities; 4.1 Introduction; 4.2 The acquisition of targets; 4.3 The tracking of targets; 4.4 Vectors; 4.5 The ARPA and ATA display; 4.6 The display of alphanumeric data 4.7 Alarms and warnings; 4.8 Connections with other equipment; 5 ARPA and ATA - additional facilities; 5.1 Introduction

5.2 Additional alarms and warnings; 5.3 Automatic ground-stabilization; 5.4 Navigational lines and maps; 5.5 The predicted point of collision (PPC); 5.6 The predicted area of danger (PAD); 6 The radar system - operational controls; 6.1 Optimum performance; 6.2 Setting-up procedure for an analogue display; 6.3 Setting-up procedure for a radial-scan synthetic display; 6.4 Setting-up procedure for a raster-scan synthetic display; 6.5 Performance monitoring; 6.6 Change of range scale and/or pulse length; 6.7 The stand-by condition; 6.8 Setting up the display for a true-motion picture presentation; 6.9 Controls for range and bearing measurement; 6.10 Controls for the suppression of unwanted responses; 6.11 Miscellaneous controls; 6.12 Setting-up procedure for an Automatic Radar Plotting display; 6.13 Switching off; 7 Radar plotting including collision avoidance; 7.1 Introduction; 7.2 The relative plot; 7.3 The true plot; 7.4 The plot when only the target manoeuvres; 7.5 The plot when own ship manoeuvres; 7.6 The theory and construction of PPCs, PADs, SODs and SOPs; 7.7 The plot in tide; 7.8 The theory and practice of reflection plotters; 7.9 Manual plotting - accuracy and errors; 7.10 Errors associated with the true-motion presentation; 7.11 Radar plotting aids; 7.12 The regulations for preventing collisions at sea as applied to radar and ARPA/ATA; 7.13 Intelligent knowledge-based systems as applied to collision avoidance; 8 Navigation techniques using radar and ARPA; 8.1 Introduction; 8.2 Identification of targets and chart comparison; 8.3 Position fixing; 8.4 Parallel indexing; 9 ARPA and ATA - accuracy and errors; 9.1 Introduction; 9.2 The test scenarios used in current standards; 9.3 The accuracy of displayed data required by the Performance Standard; 9.4 The classification of ARPA and ATA error sources

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## Sommario/riassunto

Radar and ARPA (Automatic Radar Plotting Aids) are standard systems on all commercial vessels and are widely used in the leisure maritime sector. This fully revised new edition covers the complete radar/ARPA installation, including AIS (Automatic Identification System) and ECDIS (Electronic Chart Display & Information Systems). It serves as the most comprehensive and up-to-date reference on equipment and techniques for radar observers using older and newer systems alike. Suitable for use both as a professional user's reference and as a training text, it covers all aspects of radar and ARPA tec

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