1. Record Nr. UNINA9911007273603321

Autore Education Naval

Titolo Basic Optics and Optical Instruments: Revised Edition

Pubbl/distr/stampa Newburyport, : Dover Publications, 2013

ISBN 0-486-16461-6

1-62198-585-7

Edizione [1st ed.]

Descrizione fisica 1 online resource (727 p.)

Disciplina 681/.4

Soggetti Optical instruments - Maintenance and repair - Handbooks, manuals,

etc

Military & Naval Science Law, Politics & Government Naval Science - General

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Note generali Description based upon print version of record.

Nota di contenuto Title Page; Copyright Page; PREFACE; Table of Contents; CHAPTER 1 -

INTRODUCTION TO THE OPTICALMAN RATING; NAVAL OPTICS; THE OPTICALMAN'S JOB; ASSIGNMENTS, DUTIES, AND TRAINING; SKILLS AND KNOWLEDGES; ADVANCEMENT; HOW TO STUDY THIS RATE TRAINING MANUAL; REFERENCES; CONTENTS OF THIS RATE TRAINING MANUAL; CHAPTER 2 - NATURE OF LIGHT; THEORIES OF LIGHT; SOURCES OF LIGHT; TRANSMISSION OF LIGHT; MOTION OF LIGHT; INTENSITY OF

LIGHT; SPEED OF LIGHT; BEHAVIOR OF LIGHT; REFERENCES; CHAPTER 3

- MIRRORS AND PRISMS; MEASUREMENTS IN OPTICS; IMAGE

DESCRIPTION; IMAGE TRANSMISSION; REFERENCES

CHAPTER 4 - LENSESCOMPOSITION OF GLASS; OPTICAL QUALITIES;

LENS SHAPES; LENS TERMINOLOGY; LENS FORMULAS; LENS

ABERRATIONS; THICK LENSES; MISCELLANEOUS OPTICAL ELEMENTS; REFERENCES; CHAPTER 5 - BASIC OPTICAL SYSTEMS; THE EYE; EYEPIECE SYSTEMS; SIMPLE TELESCOPES; REFERENCES; CHAPTER 6 - DESIGN AND CONSTRUCTION OF OPTICAL INSTRUMENTS; MECHANICAL FEATURES;

MOUNTING OPTICAL ELEMENTS; REFERENCES; CHAPTER 7 -

MAINTENANCE PROCEDURES; INSPECTION AND TESTING; OVERHAUL

AND REPAIR; SOLDERING AND BRAZING; HEAT-TREATING AND

TEMPERING; CLEANING AND PAINTING; LENS CLEANING AND CEMENTING; REFERENCES CHAPTER 8 - BASIC INSTRUMENT REPAIRREASSEMBLY; COLLIMATION;

CHAPTER 6 - BASIC INSTRUMENT REPAIRREASSEMBLT, COLLIMATION, SEALING. DRYING, AND CHARGING OPTICAL EQUIPMENT; REFERENCES; CHAPTER 9 - MACHINE SHOP PRACTICES; GRINDERS; DRILL PRESSES; LATHES; MILLING MACHINES; REFERENCE; CHAPTER 10 - OPTICAL AND NAVIGATION EQUIPMENT MAINTENANCE; PARALLEL MOTION PROTRACTOR; MAGNETIC COMPASS; AZIMUTH AND BEARING CIRCLES; STADIMETER; SEXTANT; STRAIGHT LINE TELESCOPES; SHIP TELESCOPE; TELESCOPE ALIDADE; BINOCULARS; BORESIGHT TELESCOPES; REFERENCES; CHAPTER 11 - NIGHT VISION SIGHTS AND GUNSIGHTS; NIGHT VISION SIGHTS; GUNSIGHT TELESCOPES; REFERENCES CHAPTER 12 - SUBMARINE PERISCOPESTHEORY AND DESIGN; PERISCOPE IDENTIFICATION; PERISCOPE HANDLING; CAUTION; PERISCOPE REPAIR; PERISCOPE EVACUATION AND CHARGING; REFERENCES; APPENDIX I - GLOSSARY; APPENDIX II - COMMON FORMULAE USED IN OPTICAL REPAIR AND MACHINE OPERATIONS; APPENDIX IV; INDEX

Sommario/riassunto

Designed as a training manual for Navy personnel (Opticalman 3 & 2), this book provides thorough coverage of the basic theory of optics and its applications. Newly revised and updated, it presents the subject matter with extraordinary clarity, stressing theory and application equally. It will serve admirably to supplement a course in which only one of these factors is emphasized. The book begins with an introduction to the Opticalman rating. It then goes on to discuss the characteristics of light, with special emphasis on wavelengths, reflection, and refraction. Two chapters contain a detailed