Personnel Qualification Standard

Officer of the Deck (OOD)

COMDTINST M3502.5B

Although the words “he,” “him,” and “his” are used sparingly in this manual to enhance communication, they are not intended to be gender driven nor to affront or discriminate against anyone reading this material.

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COMDTINST M3502.5B
MAY 30 2001

COMMANDANT INSTRUCTION M3502.5B

Subj: PERSONNEL QUALIFICATION STANDARD (PQS) OFFICER OF THE DECK (OOD)

1. PURPOSE. This Manual provides guidance for the establishment, implementation and administration of PQS for personnel assigned duties as OOD onboard Coast Guard cutters.

2. ACTION. Area and district commanders, commanders of maintenance and logistics commands, commanding officers of headquarters units, assistant commandants for directorates, Chief Counsel and special staff offices at Headquarters shall ensure compliance with the provisions of this Manual.

3. DIRECTIVES AFFECTED. Personnel Qualification Standard (PQS) Officer of the Deck, COMDTINST M3502.5A is cancelled. This Manual supplements the Cutter Training and Qualification Manual, COMDTINST M3502.4 (series) Chapters 4 and 7.

4. SUMMARY.

   a. The PQS program provides a system for qualifying personnel to perform certain duties. It reflects the minimum level of knowledge and skills an individual is required to demonstrate in order to qualify for a specific watchstation, maintain specific equipment, or perform as a team member. The PQS program is not designed as a training program, but it provides many training objectives.

   b. This PQS is applicable to all Coast Guard cutters 65 feet in length or over.

   c. It reflects the minimum standards for qualifying personnel as OOD. Procedures for unit tailoring of the PQS are found in Chapter 4 of the Cutter Training and Qualification Manual, COMDTINST M3502.4 (series).

DISTRIBUTION – SDL No.139

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
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NON-STANDARD DISTRIBUTION:

d. This PQS was systematically reviewed and compared to the Seafarers Training Certification and Watchkeeping (STCW) requirements for Officer In Charge of a Navigational Watch Deck Officer/Deck Watch Officer for merchant ships 500 gross tons or more. The Coast Guard OOD PQS system was found to meet the spirit of STCW and is acceptable evidence to meet the U. S. obligations for our navigation watch officers qualifications under Article III of the STCW Convention. The PQS, while closely aligned with the STCW competencies, does not fully satisfy the individual licensing qualification requirements of STCW. It must be augmented by additional commercial training, or USCG approval of comparable service training. The excepted areas in which a training gap must be closed for licensing include:

(1) Radar Navigation - STCW performance standards require a 70% on a written exam for Automatic Radar Plotting Aids.

(2) Visual Signaling - STCW performance standards require knowledge of Morse Code.

(3) Cargo Handling, Stowage and Securing – STCW performance standards require knowledge of how to stow cargo in accordance with International Maritime Organization Dangerous Goods Code.

(4) Lifesaving – STCW performance standards require personnel to demonstrate the ability to right an inverted liferaft, board a survival craft from either a ship or from the water and stream a drogue or sea anchor.

(5) Medical Aid – STCW performance standards require completion of an approved medical first aid course.

(6) Compliance with legislative requirements – STCW performance standards require completion of an examination with a minimum score of 70% on international and domestic maritime laws and regulations.

e. Personnel who have partially completed Personnel Qualification Standard (PQS) Officer of the Deck, COMDTINST M3502.5A shall transfer signatures for applicable sections to Personnel Qualification Standard (PQS) Officer of the Deck, COMDTINST M3502.5B.

f. This manual can be downloaded from the Navy PQS Internet site at www.cnet.navy.mil/netpedtc/pqs/default.htm.

5. CHANGES. Send all recommendations for improvement to this Manual using the change recommendation form via the chain of command to Commandant (G-OCU).

6. FORMS. None

TERRY M. CROSS
Assistant Commandant for Operations

RECORD OF CHANGES			
CHANGE NUMBER	DATE OF CHANGE	DATE ENTERED	BY WHOM ENTERED

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CHANGE RECOMMENDATION

PUBLICATION: _____ DATE: _____

TYPE OF CHANGE: ADD: _____ DELETE: _____ MODIFY: _____

EXACT CHANGES RECOMMENDED:

RATIONALE:

SUBMITTED BY: _____
(ORIGINATING COMMAND)

POINT OF CONTACT: _____ PHONE NUMBER: _____

HQ ACTION: _____ ACCEPTED: _____ MODIFIED: _____ REJECTED: _____
(HQ DIV)

REMARKS:

SEND ALL CHANGE RECOMMENDATIONS TO COMMANDANT (G-OCU)

ACKNOWLEDGEMENTS

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INTRODUCTION

PQS PROGRAM

This PQS program is a qualification system for officers and enlisted personnel where certification of a minimum level of competency is required prior to qualifying to perform specific duties. A PQS is a compilation of the minimum knowledge and skills that an individual must demonstrate in order to qualify to stand watches or perform other specific routine duties necessary for the safety, security or proper operation of a ship, aircraft or support system. The objective of PQS is to standardize and facilitate these qualifications.

CANCELLATION

This Standard cancels and supersedes Personnel Qualification Standard – Officer of the Deck (OOD), COMDTINST M3502.5A.

APPLICABILITY

This PQS is applicable to all personnel with duties as OOD onboard Coast Guard cutters.

TAILORING

To command tailor this package, first have it reviewed by one or more of your most qualified individuals. Delete any portions covering systems and equipment not installed on your ship, aircraft or unit. Next, add any line items, fundamentals, systems and watchstations/workstations that are unique to your command but not already covered in this package. Finally, the package should be reviewed by the cognizant department head and required changes approved by the Commanding Officer or his designated representative. Retain the approved master copy on file for use in tailoring individual packages.

QUALIFIER

The PQS Qualifier is designated in writing by the Commanding Officer to sign off individual watchstations. Qualifiers will normally be E-5 or above and, as a minimum, must have completed the PQS they are authorized to sign off. The names of designated Qualifiers should be made known to all members of the unit or department. The means of maintaining this listing is at the discretion of individual commands. For more information on the duties and responsibilities of PQS Qualifiers, see the PQS Management Guide.

INTRODUCTION (CONT'D)

CONTENTS

PQS is divided into three sections. The 100 Section (Fundamentals) contains the fundamental knowledge from technical manuals and other texts necessary to satisfactorily understand the watchstation/workstation duties. The 200 Section (Systems) is designed to acquaint you with the systems you will be required to operate at your watchstation/workstation. The 300 Section (Watchstations) lists the tasks you will be required to satisfactorily perform in order to achieve final PQS qualification for a particular watchstation/workstation. All three sections may not apply to this PQS, but where applicable, detailed explanations are provided at the front of each section.

REFERENCES

The references used during the writing of this PQS package were the latest available to the workshop, however, the most current references available should be used when qualifying with this Standard. Classified references may be used in the development of PQS. If such references are used, do not make notes in this book as answers to questions in this Standard may be classified.

TRAINEE

Your supervisor will tell you which watchstations you are to complete and in what order. Turn to the 300 Section first and find your watchstation/workstation. This will tell you what you should do before starting your watchstation/workstation tasks. It will also tell you which fundamentals and/or systems from this package you must complete prior to qualification at your watchstation/workstation. If you have any questions or are unable to locate references, contact your supervisor or qualifier. Good luck!

PQS FEEDBACK REPORTS

This PQS was developed using information available at the time of writing. When equipment and requirements change, the PQS needs to be revised. The only way the PQS Development Group knows of these changes is by you, the user, telling us either in a letter or via the Feedback Report contained in the back of this book. You can tell us of new systems and requirements, or of errors you find.

SUMMARY OF CHANGES

CHANGES TO FUNDAMENTALS, SYSTEMS, AND WATCHSTATIONS

Fundamental Title	Action	Comment
Safety	Modified	Outdated information
Interior Communications	Deleted	Redundant training covered in DCPQS
Stability and Buoyancy	Modified	Updated missing info
Inspection	Deleted	Incorporated in In-port Watchstanding section
Rules of the Road	Deleted	Moved to 300 section
Radar	Updated	Updated to include current equipment
Electronic Navigation	Added	To include current equipment
Practical Communications	Deleted	Incorporated into Communications Fundamentals to avoid redundancy
Aids to Navigation	Modified	To include current equipment

System Title	Action	Comment
Interior Communications	Deleted	Incorporated into various other systems
Alarm	Added	Created to include current systems
External Communications	Added	Created to include current systems
Anchoring	Deleted	Redundent – Included in Anchoring Fundamentals
Radar Equipment	Modified	Updated to include current equipment
Electronic Navigation	Deleted	Incorporated in Bridge Equipment
Radiotelephone Communications	Deleted	Incorporated into External Communications System

Watchstation Title	Action	Comment
Officer of the Deck (OOD) General	Deleted	Incorporated into Officer of the Deck In-port and Underway sections

SUMMARY OF CHANGES (CONT'D)

WATCHSTATION REQUALIFICATIONS

Due to significant changes in policies, systems, or procedures, it is recommended that all personnel dealing with the subject matter of this PQS requalify in the following watchstations regardless of qualifications achieved in previous versions.

None.

ACRONYMS USED IN THIS PQS

Not all acronyms or abbreviations used in this PQS are defined here. The Subject Matter Experts from the Fleet who wrote this Standard determined the following acronyms or abbreviations may not be commonly known throughout their community and should be defined to avoid confusion. If there is a question concerning an acronym or abbreviation not spelled out on this page nor anywhere else in the Standard, use the references listed on the line item containing the acronym or abbreviation in question.

ADCON	Administrative Control
ANG	Air National Guard
ARPA	Automatic Radar Plotting Aid
ATON	Aids to Navigation
ATP	Allied Tactical Publication
AW	Air Warfare
BECCE	Basic Engineering Casualty Control Exercise
BMOW	Boatswain's Mate of the Watch
CASREP	Casualty Report
CCOL	Compartment Check Off List
CIC	Combat Information Center
CIWS	Close In Weapons System
CO	Commanding Officer
COG	Course Over Ground
COMDTINST	Commandant Instruction
COMSEC	Communications Security
CPA	Closest Point of Approach
dBA	Decibel
DC	Damage Control
DCA	Damage Control Assistant
DEFCON	Defense Condition
DGPS	Differential Global Positioning System
DPS	Dynamic Positioning System
DR	Dead Reckoning
DRM	Direction of Relative Motion
EBL	Electronic Bearing Line
ECC	Engineering Control Center
ECCM	Engineering Casualty Control Manual
ECINS	Electronic Chart and Integrated Navigation System
ECS	Electronic Charting System
ELT	Enforcement of Laws and Treaties
EM	Contact’s True Course and Speed Vector Line
EMCON	Emissions Control
EMI	Electromagnetic Interference
EOW	Engineering Officer of the Watch
EPIRB	Emergency Position Indicating Radio Beacon
ER	Own Ship’s True Course and Speed Vector Line
ESS	Electronic Warfare Support Systems
FCCS	Flooding Casualty Control Manual

ACRONYMS USED IN THIS PQS (CONT'D)

FCS	Fire Control System
FM	Frequency Modulation
FOWK	Fuel Oil Water King
FTC	Fast Time Concept
GHA	Greenwich Hour Angle
GMDSS	Global Marine Distress and Safety System
GMT	Greenwich Mean Time
GPS	Global Positioning System
GWS	Gun Weapon Systems
HERO	Hazards of Electromagnetic Radiation to Ordnance
HF	High Frequency
HFDL	High Frequency Data Link
HIPO	High Potential
IALA	International Association of Lighthouse Authorities
IAW	In Accordance With
ICW	Intercoastal Waterways
IFF	Identify Friend or Foe
INMARSAT	International Maritime Satellite
JOOD	Junior Officer of the Deck
KHz	Kilohertz
LAN	Local Apparent Noon
LE	Law Enforcement
LHA	Local Hour Angle
LOGREQ	Logistics Request
LOP	Line Of Position
LORAN	Local Radionavigation
MCAMS	Main Control and Monitoring System
MG	Main Generator
MHz	Megahertz
MILSATCOM	Military Satellite Communication
MOVREP	Movement Report
MPCMS	Main Propulsion Control and Monitoring System
MSDS	Material Safety Data Sheet
NAVAREA	Naval Area
NAVPUB	Naval Publication
NIMA	National Imagery and Mapping Agency
NSTM	Naval Ship’s Technical Manual
NTP	Naval Tactical Publication
NWP	Naval Warfare Publication
OOD	Officer of the Deck
OPCON	Operational Control
OPORDER	Operation Order
OPS	Operations Officer
ORM	Operational Risk Management
OTC	Officer in Tactical Command
PCS	Permanent Change of Station

ACRONYMS USED IN THIS PQS (CONT'D)

PIM	Position of Intended Movement
PMS	Preventative Maintenance System
POD	Plan of the Day
POLREP	Pollution Report
POW	Plan of the Week
PPE	Personal Protective Equipment
PQS	Personnel Qualification Standard
PRR	Pulse Repetition Rate
RACON	Radar Beacons
RDF	Radio Direction Finder
RM	Relative Motion Line
RPM	Revolutions Per Minute
SABR	Sighting and Boarding Report
SAR	Search and Rescue
SCCS/INS	Ships Command Control System/Integrated Navigation System
SHA	Sidereal Hour Angle
SITREP	Situation Report
SOA	Speed of Advance
SOG	Speed Over Ground
SOLAS	Safety Of Life At Sea
SOP	Standard Operating Procedure
SOPA	Senior Officer Present Afloat
SORTS	Status of Readiness and Training System
SRM	Speed of Relative Motion
SROE	Standard Rules of Engagement
SSDG	Ship Service Diesel Generator
STC	Sensitivity Time Control
STU-III	Secure Telephone Unit
SUW	Surface Warfare
TACAN	Tactical Air Navigation
TACON	Tactical Control
TAD	Temporarily Assigned Duty
UCMJ	Uniform Code of Military Justice
UHF	Ultra High Frequency
UTC	Universal Coordinate Time
VHF	Very High Frequency
VRM	Variable Range Marker
WGS	World Geodetic System
XO	Executive Officer
Z-drive	Azimuthing Drive Propeller

100 INTRODUCTION TO FUNDAMENTALS

100.1 INTRODUCTION

This PQS begins with a Fundamentals section covering the basic knowledge and principles needed to understand the equipment or duties to be studied. The references listed at the beginning of each fundamental will aid you in a self-study program. All references cited for study are selected according to their credibility and availability.

100.2 HOW TO COMPLETE

The fundamentals you will have to complete are listed in the 300 section for each watchstation. You should complete all required fundamentals before starting the systems and watchstation portions of this PQS, since knowledge gained from fundamentals will aid you in understanding the systems and your watchstation tasks. When you feel you have a complete understanding of one fundamental or more, contact your Qualifier. If you are attempting initial qualification, your Qualifier will expect you to satisfactorily answer all line items in the fundamentals before signing off completion of that fundamental. If you are requalifying or have completed the appropriate schools, your Qualifier may require you to answer representative line items to determine if you have retained the necessary knowledge for your watchstation. If your command requires an oral board or written examination for final qualification, you may be asked any questions from the fundamentals required for your watchstation.

101 SAFETY FUNDAMENTALS

References:

[a] Safety and Environmental Health Manual, COMDTINST M5100.47 (series)
[b] OPNAVINST 3500.39, Operational Risk Management
[c] Cutter's Organization Manual/Cutter Instructions
[d] Shipboard Regulations Manual, COMDTINST M5000.7 (series)
[e] Asbestos Exposure Control Manual, COMDTINST M6260.16 (series)

101.1 Discuss your unit's Safety Program. [ref. a]

.2 Discuss the concept of ORM. [ref. b]

.3 Explain the following as they apply to ORM: [ref. b]

a. Defining mission/task
b. Identifying hazards
c. Assessing risks
d. Identifying options
e. Evaluating risk versus gain
f. Executing a decision
g. Monitoring a situation

.4 Discuss the risk assessment methods employed by your cutter. [refs. b, c]

.5 Discuss the responsibilities of the following personnel with respect to shipboard safety: [ref. a]

a. Commanding Officer
b. Executive Officer
c. Department Head
d. Safety Officer
e. Supervisors
f. OOD

.6 Discuss the responsibilities of all hands with respect to shipboard safety. [ref. c]

.7 Define the different classifications of mishaps: [ref. a]

a. Class A
b. Class B
c. Class C
d. Class D
e. Class D-HIPO

.8 Discuss when a Mishap Report is required. [ref. a]

101 SAFETY FUNDAMENTALS (CONT'D)

101.9 Discuss your unit's Hazard Communications Program with respect to the following: [refs. c, d]

a. Purpose and location of unit's inventory of hazardous materials
b. Knowing how to interpret and where to find the Material Safety Data Sheets for hazardous materials aboard
c. Requirement that all containers for hazardous materials be labeled to show contents

.10 Discuss your unit's Hearing Conservation Program with respect to the following: [refs. c, d]

a. How to identify a hazardous noise area and what warnings are required to be posted
b. What hearing protection is required for areas where the noise hazard is at or above 84dBA and 104dBA

.11 Discuss your unit's Sight Conservation Program with respect to the following: [refs. c, d]

a. Personnel protective equipment
b. Use of and location of emergency eyewash stations

.12 Discuss the precautions to be followed when asbestos materials are aboard. [ref. e]

.13 Discuss the types of head protection, harnesses, respirators, and safety goggles available aboard, and describe the hazardous exposure or injury the equipment protects against. [ref. d]

.14 Discuss the safety precautions to be used when working around shipboard antennas and the maximum permissible exposure limits. [ref. d]

.15 Discuss the OOD's actions when a member of the crew reports a hazardous condition. [ref. c]

_____

(Signature and Date)

102 CUTTER CHARACTERISTICS FUNDAMENTALS

References:

[a] Ship's Plans and/or Damage Control Plates
[b] Cutter's Organization Manual/Cutter Instructions
[c] Ship's Information Book

102.1 State the following characteristics for your vessel: [refs. a thru c]

a. Length overall
b. Beam
c. Draft
d. Navigational draft
e. Masthead height above the waterline

_____
(Signature and Date)

103 CUTTER ORGANIZATION FUNDAMENTALS

References:

[a] Cutter's Organization Manual/Cutter Instructions

103.1 Discuss the chain of command for your vessel.

.2 Discuss the duties and responsibilities of the following personnel:

a. Commanding Officer
b. Executive Officer
c. Department Head
d. Division Officer
e. Division Petty Officer
f. Supervising Petty/Chief Petty Officer
g. Division Damage Control Petty Officer
h. Command Chief
i. Officer of the Deck
j. Engineer of the Watch

.3 State the assigned primary and collateral duties of all officers, chief petty officers and petty officers listed on the command assignment list.

.4 Discuss the purpose and conditions of the following bills:

a. Administrative
b. Operational
c. Emergency
d. Special
e. Battle

.5 State the purpose of the following elements of the battle organization and the inter-relationship between these elements as applicable to your cutter:

a. Command Control
b. Ship Control
c. Operations Control
d. Weapons Control
e. Engineering Control
f. Damage Control

_____

(Signature and Date)

104 CUTTER MISSION FUNDAMENTALS

References:

[a] Area/District SOP
[b] Cutter ROC/POE Instructions
[c] Cutter Organization Manual/Cutter Instructions
[d] Physical Security Program, COMDTINST M5530.1 (series)

104.1 Discuss the geographical area of responsibility for the area or district to which your unit is assigned. [ref. a]

.2 State the primary mission areas of your ship. [ref. b]

.3 Discuss the operational chain of command for each mission area. [ref. a]

.4 Discuss the following degrees of operational readiness and the status of equipment and personnel required for each: [ref. b]

a. Alfa
b. Bravo
c. Charlie

.5 Discuss the following conditions of readiness and the status of equipment and personnel required for each: [ref. c]

a. Condition I
b. Condition III
c. Condition IV
d. Condition V

.6 Discuss the DEFCONs expected of your vessel and the general degree of readiness each requires. [ref. a]

.7 Discuss the terrorist threat conditions expected of your vessel and the general degree of readiness each requires. [ref. d]

.8 State other Coast Guard units in your homeport area, their missions, and their geographical area of responsibility. [ref. a]

104 CUTTER MISSION FUNDAMENTALS (CONT'D)

104.9 Discuss where your vessel has concurrent responsibility for missions with other Coast Guard units in your homeport area. [ref. c]

.10 State other non-Coast Guard military and civilian organizations in your homeport area, their missions or emergency responses, and geographical area of responsibilities: [ref. c]

a. Federal
b. State
c. Municipal/local

.11 Discuss where your vessel has concurrent responsibility for missions with other non-Coast Guard military and civilian organizations in your homeport area. [ref. c]

_____

(Signature and Date)

105 GOOD ORDER AND DISCIPLINE FUNDAMENTALS

References:

[a] Manual for Courts-Martial, United States (Current Revision)
[b] Military Justice Manual, COMDTINST M5810.1 (series)

105.1 Discuss the following provisions of the UCMJ: [ref. a]

a. Article 7, (Apprehension)
b. Article 9, (Imposition of Restraint)
c. Those subject to the UCMJ
d. Location of jurisdiction of the UCMJ

.2 Discuss the purpose and procedure for filling out a Report of Offense and Disposition (Form CG4910). [ref. a]

.3 State under what circumstances Article 31 warnings are required, and how and when they are given to suspects. [ref. b]

.4 Discuss the circumstances under which you, as OOD, may prevent crewmembers from leaving the ship. [ref. b]

.5 Discuss the circumstances under which you may restrain a crewmember. [ref. b]

.6 Discuss the following kinds of searches: [ref. b]

a. Consent search
b. Searches incident to lawful apprehension
c. Searches authorized by the CO
d. Searches requiring immediate action to prevent the removal or destruction of evidence
e. Searches authorized by a Coast Guard military judge
f. Searches incident to detention (frisk)
g. Searches incident to arrest (body)

.7 Discuss the procedures and requirements to obtain command authorization to search. [ref. b]

.8 Discuss the effective use of administrative inspections relative to the health, morale, and safety of the unit. [ref. b]

105 GOOD ORDER AND DISCIPLINE FUNDAMENTALS (CONT'D)

105.9 Discuss the following as each applies to handling evidence: [ref. b]

a. Chain of custody
b. Duties of evidence custodian
c. Search and seizure

.10 Discuss the procedures in the event of an arrest of a crewmember. [ref. b]

.11 Discuss the procedures for handling the service of a warrant by a law enforcement official. [ref. b]

.12 Discuss the procedures for handling the service of a summons. [ref. b]

.13 State the purpose, use, and limitations of extra military instruction. [ref. b]

.14 State the accountability procedures for restricted personnel. [ref. b]

.15 Explain who may impose restriction/extra military instruction/withdraw privileges/extra duty? [ref. b]

.16 State the responsibilities in relation to personnel assigned extra duty. [ref. b]

.17 State the purpose of the Extra Duty Log. [ref. b]

_____
(Signature and Date)

106 OPERATIONAL REPORTS FUNDAMENTALS

References:

[a] NWP-10-1-12, Maritime Reporting System
[b] Casualty Reporting (CASREP) Procedures (Materiel), COMDTINST M3501.3 (series)
[c] NWP-10-1-11, SORTS
[d] National Search and Rescue Manual, Vol. I, COMDTINST M1620.5 (series)
[e] Maritime Law Enforcement Manual, COMDTINST M16247.1 (series)
[f] Marine Safety Manual, Vol. IV (Technical), COMDTINST M16000.9 (series)
[g] Aids to Navigation Manual-Administration, COMDTINST M16500.7 (series)
[h] Area/District SOP

106.1 For each of the reports listed below:

A. Discuss the general purpose.
B. Discuss the information contained.
C. Discuss the reasons for/situation which requires submission.
D. Discuss the frequency/timeframe of submission.
E. Discuss the basic format and the differences between initial, update, correction, cancellation, and end/completion formats.
F. Discuss the normal action and information addressees.
G. State who is responsible for ensuring each report is submitted on time and in the proper format.
H. State who may authorize the release of the report.

		Questions
.1	SORTS [ref. a]	A B C D E F G H
.2	CASREP [ref. b]	A B C D E F G H
.3	MOVREP [ref. c]	A B C D E F G H
.4	LOGREQ [ref. c]	A B C D E F G H
.5	SAR SITREP [ref. d]	A B C D E F G H
.6	LE SITREP [ref. e]	A B C D E F G H
.7	POLREP [ref. f]	A B C D E F G H
.8	ATON outages/discrepancies [ref. g]	A B C D E F G H
.9	Position Report [ref. h]	A B C D E F G H
.10	SABR message [ref. e]	A B C D E F G H
.11	Forwarding requests for political asylum [ref. e]	A B C D E F G H

106 OPERATIONAL REPORTS FUNDAMENTALS (CONT'D)

106.2 State the purpose of the five readiness status data areas of the SORTS. [ref. a]

.3 State what additional operational reports are required by your Operational Commander? [ref. c]

.4 Explain what procedures and/or reports are required when communications are lost with a unit under your unit's operational command or with your Operational Commander? [ref. c]

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(Signature and Date)

107 TIDES AND CURRENTS FUNDAMENTALS

References:

[a] Dutton's Navigation and Piloting

107.1 Define these terms as they relate to tides:

a. High water
b. Low water
c. Range
d. Tide rips
e. Neap
f. Spring
g. Charted depth
h. Mean tide level
i. Diurnal
j. Semidiurnal

.2 Define these terms as they relate to currents:

a. Current
b. Tidal
c. Ocean
d. Rotary
e. Flood
f. Ebb
g. Slack water
h. Set
i. Drift

.3 Discuss the effect the current has on your vessel while alongside a pier and at anchor.

.4 State the normal tidal range, period, and hazards in the vicinity of your normal berth.

.5 Discuss the manner in which lines are normally tended throughout the day as a result of tides and currents at your normal berth.

.6 Discuss the precautions to be taken in the event of extreme tides and currents.

107 TIDES AND CURRENTS FUNDAMENTALS (CONT'D)

107.7 Discuss how the state of the tide and current can be determined using stationary objects and floating aids to navigation.

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(Signature and Date)

108 DECK SEAMANSHIP FUNDAMENTALS

References:

[a] Coast Guardsman's Manual (Bennett)
[b] Commanding Officer's Navigation Standards/Standing Orders
[c] Cutter's Organization Manual/Cutter Instructions
[d] Modern Seamanship (Knight)
[e] Boat Crew Seamanship Manual, COMDTINST M16114.5 (series)
[f] Aids to Navigation Manual-Seamanship, COMDTINST M16500.21 (series)
[g] Ship's Information Books/Technical Manuals

108.1 Explain how to and why it is important that all deck equipment is properly stowed and secured for sea. [ref. a]

.2 Discuss the procedure for preparations made prior to relieving the BMOW watch. [ref. a]

.3 Discuss the necessary preparations/safety precautions and reports the OOD must make for heavy weather. [refs. b,c]

.4 Discuss the proper use of the sea painter with small boats. [ref. d]

.5 Discuss the procedure used by the Coxswain to cast off and to hook on the falls. [ref. d]

.6 Define the following items, their use, and proper rigging as applied to ground tackle: [ref. a]

a. Chain markings
b. Wildcat
c. Brake
d. Hawse pipe
e. Chain pipe
f. Turnbuckle
g. Anchor windlass
h. Gypsy head
i. Capstan
j. Mooring Winch/Self Tending system
k. Chain stopper
l. Riding stopper
m. Pelican hook

108 DECK SEAMANSHIP FUNDAMENTALS (CONT'D)

108.6
n. Stockless anchor
o. Lightweight anchor
p. Anchor fluke
q. Anchor crown
r. Anchor shank
s. Anchor stock
t. Anchor bending shackle
u. Chain swivel
v. Outboard swivel shot
w. Anchor chain
x. Detachable link and accessories
y. End link
z. Detachable end link
aa. Chain locker
ab. Anchor buoys/floats

.7 Discuss/define the following items/terms, their use, and proper rigging as applied to marlinespike seamanship:

a. Hawser [ref. a]
b. Line [ref. a]
c. Wire [ref. a]
d. Small stuff [ref. a]
e. Flemish [ref. a]
f. Coil [ref. a]
g. Fake [ref. a]
h. Heaving line [ref. a]
i. Monkey fist [ref. a]
j. Rat-tailed stopper [ref. d]
k. Marlin/hemp [ref. a]
l. Bight [ref. a]
m Bitter end [ref. a]
n. Eye [ref. a]
o. Eye splice [ref. a]
p. Long splice [ref. a]
q. Short splice [ref. a]
r. Marlinspike [ref. a]
s. Fid [ref. a]
t. Mousing [ref. a]
u. Safe working load [refs. e,f]
v. Taglines [ref. e]
w. Round turn [ref. a]
x. Figure eight turn [ref. a]
y. Dip the eye [ref. a]

108 DECK SEAMANSHIP FUNDAMENTALS (CONT'D)

108.8 Define/discuss the following items/terms, their use, and proper rigging as related to mooring/line handling: [ref. a]

a. Mooring line
b. Breast line
c. Forward spring line
d. After spring line
e. Bow/head line
f. Stern line
g. Storm line/wire
h. Tattletale line
i. Heavy strain
j. Moderate strain
k. Light strain
l. Stopper
m. Rat guards
n. Chafing gear

.9 Define the following items, their use, and proper rigging as related to deck equipment: [ref. a]

a. Pad eye
b. Lifelines
c. Leadline
d. Paint float
e. Boatswain's chair
f. Jacob's ladder
g. Accommodation ladder
h. Cargo/scramble net

.10 State how lines and wires are classified. [ref. a]

.11 State the common applications for the following: [ref. a]

a. Wire rope
b. Synthetic line
c. Natural fiber line

.12 Discuss the difference between identical sizes of synthetic and natural fiber mooring lines with respect to: [refs. e, f]

a. Strength characteristics
b. Stretching characteristics
c. Ease of handling
d. Breaking characteristics
e. Durability
f. Buoyancy

108 DECK SEAMANSHIP FUNDAMENTALS (CONT'D)

108.13 Explain the numbering sequence of standard mooring lines. [refs. a, d]

.14 Discuss the correct procedures for making up a mooring line. [refs. a, d]

.15 Discuss the procedures for heaving around on a mooring line. [refs. a, d]

.16 Discuss the types of fenders aboard. [ref. d]

.17 Discuss the proper methods of rigging fenders. [refs. a, d]

.18 Discuss the occasions and types of fenders that will be used in in-port evolutions. [ref. d]

.19 State the following figures for each of your cutter's boats: [ref. g]

a. Length
b. Beam
c. Hoisting weight
d. Cargo capacity
e. Personnel capacity
f. Sea conditions and wind limitations for use
g. Max speed/rpm
h. Max range
i. Fuel capacity

.20 Discuss the items in the cutter's boat outfit list. [ref. g]

.21 Discuss the type of davits fitted to your cutter. [ref. g]

.22 Discuss the personnel assignments for lowering, hoisting, and crewing the boat and the standard qualifications required for each position. [refs. a, e, g]

.23 Explain the procedures for lowering/hoisting a boat in-port and underway including applicable safety precautions and emergency procedures. [refs. a, g]

.24 Discuss the conditions and lines of authority under which the boat may be used in-port. [ref. b]

.25 Discuss the locations where a boat may be moored/secured if not in the cradle. [ref. a]

.26 Discuss the condition of a properly secured boat in-port and underway. [ref. a]

.27 Discuss the proper condition of the boat when ready for use (including special equipment and preparations when abandoning ship). [ref. a]

108 DECK SEAMANSHIP FUNDAMENTALS (CONT'D)

108.28 Discuss the routine checks made by deck and engineering personnel to ensure that the boat is ready to launch/secure. [ref. a]

.29 Discuss the proper method of securing, loading, and using a paint float. [ref. a]

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(Signature and Date)

109 CUTTER COMPARTMENTATION AND WATERTIGHT INTEGRITY FUNDAMENTALS

References:

[a] NWP 3-20.31, Surface Ship Survivability
[b] Naval Engineering Manual, COMDTINST M9000.6 (series)

109.1 State the responsibilities of the OOD with regard to effecting and maintaining prescribed material condition. [ref. a, ch. 3]

.2 Discuss how closure violations and the improper setting of material conditions of readiness affect watertight integrity. [ref. b, ch. 079]

.3 Discuss the purpose of the Damage Control Closure Log and how it is properly maintained aboard cutters. [ref. a, ch.3]

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(Signature and Date)

110 STABILITY AND BUOYANCY FUNDAMENTALS

References:

[a] NSTM S9086-CN-STM-010/CH-079, Vol. 1

110.1 Define the following terms and discuss how they relate to the stability of your vessel:

a. Overall stability
b. Transverse stability
c. Longitudinal stability
d. Displacement
e. Center of buoyancy
f. Force of buoyancy
g. Freeboard/reserve buoyancy
h. Center of gravity
i. Metacenter
j. Righting arm
k. Righting moment
l. Danger angle
m. Heel
n. Trim
o. List
p. Roll
q. Pitch
r. Calculative draft
s. Mean draft
t. Limiting draft
u. Solid flooding
v. Loose water
w. Free surface effect
x. Free communication effect
y. Inclinometer

.2 Discuss the use of the inclining experiment.

.3 Discuss the effects on stability of:

a. Weight additions above and below the waterline
b. Weight removals above and below the waterline
c. Weight shifts above, below, to port, and to starboard of the center of gravity

.4 Discuss the various methods used for correcting excessive list and trim caused by flooded compartments or unequal weight distribution.

110 STABILITY AND BUOYANCY FUNDAMENTALS (CONT'D)

110.5 Discuss the use of the liquid loading diagram, FCCS, and the flooding effects diagram.

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(Signature and Date)

111 IN-PORT WATCHSTANDING PRINCIPLES FUNDAMENTALS

References:

[a] Cutter's Organizational Manual/Cutter Instructions
[b] Coast Guard Regulations Manual, COMDTINST M5000.3 (series)
[c] Commanding Officer's Standing Orders/Executive Officer's Morning Orders
[d] Watch Officer's Guide (Noel)
[e] NTP-13, Flags, Pennants, and Customs
[f] SOPA Instructions (if applicable)
[g] Naval Engineering Manual, COMDTINST M9000.6 (series)
[h] Procedure for the Preparation and Disposition of Cutter Logs, COMDTINST M3123.12 (series)

111.1 Discuss the in-port watch organization. [ref. a]

.2 State the primary responsibilities and duties of the In-port OOD as described in the Shipboard Regulations Manual and Coast Guard Regulations. [ref. b, ch. 6]

.3 State the purpose and content of the CO's Standing Orders and the XO's Morning Orders and discuss how they relate to each other. [ref. c]

.4 Discuss the following actions taken prior to relieving the watch including, but not limited to:

a. Inspecting the quarterdeck for appearance [refs. a, c, d]
b. Determining the status of the engineering plant and hotel services [refs. a, c]
c. Determining the status of major equipment [refs. a, c]
d. Determining the status of mooring lines, ground tackle, and cutter's position (berth/mooring) [refs. a, c, d]
e. Determining the status of the cutter's boats and/or vehicles [refs. a, c, d]
f. Determining the location of the CO/XO and other key personnel [refs. a, c, d]
g. Reviewing current weather and tidal conditions [refs. a, c, d]
h. Ensuring that all appropriate flags, pennants and/or lights are properly displayed [refs. a, c, d, e]
i. Determining the current and scheduled activities/evolutions and conditions of readiness [refs. a thru d, f]
j. Reviewing the Damage Control Closure Log for accuracy and completeness [ref. g]
k. Determining SOPA and Guardship assignments/responsibilites [refs. d, f]
l. Determining that all watchstations are properly manned with qualified personnel [refs. a, c, d]
m. Reviewing publications and instructions pertaining to the duties of In-port OOD [refs. a, c, b]
n. Determining the location and accuracy of the Cutter's Personnel Recall Log [ref. c]

111 IN-PORT WATCHSTANDING PRINCIPLES FUNDAMENTALS (CONT'D)

111.4
- o. Determining the cutter's operational status [ref. c]
- p. Reviewing procedures for all in-port emergencies [refs. a, c, d, f]
- q. Determining status and action for all unexecuted orders or anticipated operational changes [ref. c]
- r. Determining what work is to be performed by the In-port Watch [ref. c]
- s. Determining the adequacy of measures used to ensure vessel security [refs. a, c, d, f]
- t. Inspecting the pier area and approaches to the ship for safety, cleanliness, and security [refs. a, c, d]
- u. Determining the status of absentees or deserters [refs. a, c, d]
- v. Determining when the vessel is to get underway, when the bills or details are to be set, and when the boats are to be rigged in and griped down ready for sea [ref. a]
- w. Determine types of shore services supplied [ref. f]
- x. Determine number and type of telephone lines and ship's telephone numbers [refs. c, f]

.5 Discuss the importance of keeping all watchstanders informed of current and expected evolutions. [ref. d]

.6 Discuss those items to be passed to the oncoming watch upon relief. [refs. a, c, d]

.7 Explain the standard format of the following unit log entries:

- a. Midwatch entries [ref. h]
- b. Change of status [ref. d]
- c. Vessel mooring alongside [ref. d]
- d. Shore ties [ref. d]
- e. Cold iron [ref. d]
- f. Watch relief [ref. d]
- g. Absentees [ref. h]
- h. Leave (CO only) [ref. h]
- i. Official visits and calls [ref. h]
- j. Personnel arriving for duty (TAD) [ref. d]
- k. Personnel reporting or departing PCS [ref. d]
- l. Injuries [ref. h]
- m Fueling [ref. h]
- n. Ammo handling [ref. h]
- o. Drills and exercises [ref. h]
- p. Commanding Officer's non-judicial punishment [ref. h]
- q. Courts-martial [ref. d]
- r. Magazine temperature, small arms, and ammo status [ref. h]

.8 Discuss the proper procedures for making corrections and late entries to the Unit Log. [ref. b]

.9 Discuss the Unit Log as a official government document. [ref. b]

111 IN-PORT WATCHSTANDING PRINCIPLES FUNDAMENTALS (CONT'D)

111.10 State the purpose and content of the standard checklists used by the ship for in-port evolutions. [ref. a]

.11 Discuss the duties and responsibilities of all duty section watchstanders. [refs. a, d]

.12 List all reports and requests normally handled by the In-port OOD and discuss the proper action(s) to be taken in each case. [refs. a, c, d]

.13 Discuss the steps required to relieve each In-port Watchstation. [refs. a, c, d]

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(Signature and Date)

112 ROUTINE IN-PORT EVOLUTIONS FUNDAMENTALS

References:

[a] Coast Guard Regulations Manual, COMDTINST M5000.3 (series)
[b] Cutter's Organization Manual/Cutter Instructions
[c] Safety and Environmental Health Manual, COMDTINST M5100.47 (series)
[d] Commanding Officer's Standing Orders/Executive Officer's Morning Orders
[e] Naval Engineering Manual, COMDTINST M9000.6 (series)
[f] Coast Guardsman's Manual (Bennett)
[g] Aids to Navigation Manual-Seamanship, COMDTINST M 16500.21 (series)
[h] Ordnance Manual, COMDTINST 8000.2 (series)
[i] Uniform Regulations, COMDTINST 1020.6 (series)
[j] Engineer Officer's Standing Orders
[k] Area/District SOP
[l] Coast Guard Diving Policies and Procedures Manual, COMDTINST M 3150.1 (series)

112.1 Discuss the normal daily routine for workdays, Saturdays, Sundays, and holidays. [refs. a thru c]

.2 For each of the routine items listed below:

A. Discuss the general purpose of the evolution.
B. Discuss the general procedures of the evolution.
C. State who is involved and what bill, if any, is set.
D. Discuss the duties and responsibilities of the in-port OOD and the required permission to conduct the evolution.
E. Discuss the information furnished to the OOD, including sources.
F. Discuss the information furnished to other stations by the OOD.
G. Discuss the safety precautions that must be observed in terms of proper uniform, PPE requirements, and procedures.

		Questions
.1	Muster and quarters [refs. a, b]	A B C D E F G
.2	Working parties [ref. d]	A B C D E F G
.3	Taking on stores [refs. b, d]	A B C D E F G
.4	Fueling operations (taking on/transferring) [refs. b, e]	A B C D E F G
.5	Sludge truck/barge [ref. e]	A B C D E F G
.6	Personnel working aloft [ref. b]	A B C D E F G
.7	Personnel working over the side [ref. b]	A B C D E F G
.8	Working mooring lines with capstan/gypsy heads [refs. b, c, f]	A B C D E F G
.9	Moving of heavy weights/objects [ref. g]	A B C D E F G
.10	Receiving a ship alongside [refs. b, c, d, f]	A B C D E F G
.11	Reduced visibility, heavy weather [refs. b, d]	A B C D E F G
.12	Diving operations [refs. b, d, e,l]	A B C D E F G

112 ROUTINE IN-PORT EVOLUTIONS FUNDAMENTALS (CONT'D)

			Questions
112.2	.13	Health, safety, and sanitation inspection [refs. b, d, e]	A B C D E F G
	.14	Daily magazine, pyrotechnics, and small arms inspection [refs. b, h]	A B C D E F G

.3 State the purpose and frequency of the OOD's rounds. [ref. d]

.4 Discuss the general grooming policy and specific regulations concerning haircuts and wearing of miscellaneous articles, including jewelry, earrings, etc. [refs. b, i]

.5 Discuss the general policy on wearing the military uniform and the wearing of civilian clothing. [refs. b, i]

.6 For each of the special evolutions listed below:

A. Discuss the general purpose of the evolution.
B. Discuss who is involved and what bill, if any, is set.
C. Discuss the control/coordination and permission required by the OOD in order to conduct the evolution.
D. Discuss the stated limits and variables that must be considered.
E. State any safety precautions that must be observed.

		Questions
.1	Ordnance handling [ref. h]	A B C D E
.2	Jacking main engines [refs. e, j]	A B C D E
.3	Light-off preparations [refs. d, e, j]	A B C D E
.4	Quick reaction drills (communications) [ref. b]	A B C D E
.5	HERO restrictions [refs. e, h]	A B C D E
.6	EMCON restrictions [ref. b]	A B C D E
.7	DEFCON changes/drills [ref. k]	A B C D E
.8	Sortie/dispersal [refs. b, d, k]	A B C D E

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113 HONORS AND CEREMONIES FUNDAMENTALS

References:

[a] Coast Guard Regulations Manual, COMDTINST M5000.3 (series)
[b] Watch Officer's Guide (Noel)

113.1 Discuss the procedures and the occasions for rendering honors between ships. [ref. a]

.2 Discuss the procedures and the conditions for rendering honors to officials embarked in boats. [ref. a]

.3 Discuss the procedures for half-masting the U.S. ensign. [ref. a]

.4 Discuss side honors rendered to visiting officials, officers, and the Commanding Officer. [ref. a]

.5 State the occasions for dressing and full dressing ship. [ref. a]

.6 Discuss the procedures for morning and evening colors. [ref. a]

.7 State the methods for identifying the grade of an officer embarked in a boat. [ref. a]

.8 Discuss boat hails. [ref. a]

.9 Explain the proper order for embarking, debarking, and the proper seating in boats. [ref. a]

.10 State the meaning of the following pennants and flags: [ref. b]

a. First substitute
b. Second substitute
c. Third substitute
d. Prep
e. The Union Jack at the outboard starboard halyard
f. Church pennant

113 HONORS AND CEREMONIES FUNDAMENTALS (CONT'D)

113.11 Discuss the procedure for piping aboard/ashore: [ref. a]

a. Area Commander
b. District Commander
c. A flag officer
d. Commanding Officer
e. A district staff officer
f. A commissioned officer
g. A foreign naval officer
h. A civilian official

.12 Discuss the procedures for receiving VIPs during an unannounced visit. [ref. a]

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(Signature and Date)

114 SECURITY FUNDAMENTALS

References:

[a] Shipboard Regulations Manual, COMDTINST M5000.7 (series)
[b] Cutter Organization Manual
[c] Maritime Law Enforcement Manual, COMDTINST M16247.1 (series)
[d] Classified Information Management Program, COMDTINST M5510.23 (series)
[e] Coast Guard Military Personnel Security Program, COMDTINST M5520.12 (series)
[f] Physical Security Program, COMDTINST M5530.1 (series)
[g] Automated Information System (AIS) Security Manual, COMDTINST M5500.13 (series)
[h] The Coast Guard Freedom of Information and Privacy Acts Manual, COMDTINST M5260.3 (series)
[i] Watch Officer's Guide (Noel)
[j] Property Management Manual, COMDTINST M4500.5 (series)

114.1 Discuss the types of internal security threats that could be encountered aboard ship and procedures to ensure security. [ref. a]

.2 State the location of each restricted area and security container on your vessel. [ref. b]

.3 State the location, type, and use of the pyro located aboard. [ref. b]

.4 Discuss the procedures that must be followed to ensure that crewmembers are authorized to leave the ship. [ref. b]

.5 State the ship's policy regarding visitors. [ref. b]

.6 Discuss the OOD's responsibilities and actions for the following: [ref. b]

a. Small craft approaching
b. Swimmers near the ship

.7 Discuss the OOD's responsibilities and initial actions when dealing with a breach of internal security. [ref. b]

.8 Discuss the rules governing the use of force to ensure shipboard security. [ref. c]

114 SECURITY FUNDAMENTALS (CONT'D)

114.9 Discuss the following as they apply to classified material: [ref. d]

a. Effects of unauthorized disclosure of classified material
b. Persons who normally have access
c. Persons who may authorize access
d. Classified markings on documents
e. Derivative classification
f. Paragraph markings

.10 Explain clearance, access, and need to know. [ref. e]

.11 Discuss the cutter organization for the control and protection of classified material. [ref. b]

.12 Discuss the procedure for documenting and destroying classified material. [ref. f]

.13 Explain the classified material control procedures required for accountability of classified material. [ref. f]

.14 Explain the procedures for internal routing of each category of classified material. [refs. b, f]

.15 Explain the responsibilities of an individual who has control of or access to classified material. [ref. f]

.16 Discuss the personnel and equipment available aboard ship to deal with internal ship security problems. [ref. b]

.17 State the procedures to be taken by the OOD in the event of: [ref. b]

a. Unauthorized entry into restricted/security areas
b. Open, unattended security containers or safes
c. Classified material left unattended
d. Attempted access to classified material by deception
e. A report of an attempt to solicit classified information by someone not authorized access or need to know

.18 Define operational security as it applies to your vessel. [ref. b]

.19 Explain the procedures for safeguarding information of an unclassified, but sensitive nature. [ref. g]

.20 Discuss what information about vessel schedules, vessel operations, and vessel locations are authorized for release to the public and/or to the crew and in what documents this information is located. [ref. h]

114 SECURITY FUNDAMENTALS (CONT'D)

114.21 Explain the procedure for handling media inquiries about vessel missions, schedules, or crewmembers attached. [ref. h]

.22 State what personal information is releasable to relatives. [ref. h]

.23 Discuss what type of information falls under the provisions of the Freedom of Information Act. [ref. h]

.24 Discuss what type of information is protected by the Privacy Act. [ref. h]

.25 Discuss the reasons for the use of the shore patrol as described in the Watch Officer's Guide. [ref. i]

.26 Discuss the circumstances and procedures under which government owned property may be removed from the limits of the vessel. [ref. j]

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(Signature and Date)

115 IN-PORT EMERGENCY PROCEDURES FUNDAMENTALS

References:

[a] Cutter's Organization Manual
[b] Ordnance Manual, COMDTINST 8000.2 (series)
[c] Watch Officer's Guide (Noel)
[d] Coast Guard Regulations Manual, COMDTINST M5000.3 (series)
[e] Emergency Medical Services Manual, COMDTINST M16135.4 (series)
[f] Personnel Manual, COMDTINST M1000.6 (series)

115.1 For each of the following in-port emergencies state:

A. What bill would be set?
B. What alarms would be sounded?
C. What announcement would be made over the general announcing system?
D. Where would the OOD be stationed?
E. What initial action would the OOD take or direct?
F. What emergency services would be contacted for assistance?
G. What equipment would be deployed?
H. What material condition would be set?
I. Who would be contacted internally and externally?
J. What procedures would be followed?

			Questions
115.1.1	.1	Fire aboard [ref. a]	A B C D E F G H I J
	.2	Fire on the pier [ref. a]	A B C D E F G H I J
	.3	Fire/flooding aboard another ship nearby [ref. a]	A B C D E F G H I J
	.4	Flooding [ref. a]	A B C D E F G H I J
	.5	Excessive list [ref. a]	A B C D E F G H I J
	.6	Collision/allision [ref. a]	A B C D E F G H I J
	.7	Man overboard [ref. a]	A B C D E F G I J
	.8	Vessel or swimmer in distress [ref. a]	A B C D E F G I J
	.9	Loss of electrical power [ref. a]	B C D E F G I J
	.11	Excessive magazine temperature [ref. a]	A B C D E F G H I J
	.12	Weapons/ammunition handling accident [ref. b]	A B C D E F G H I J
	.13	Mooring line parting [ref. a]	A B C D E F G I J
	.14	Oil spill [ref. a]	A B C D E F G I J
	.15	Toxic gas emergency [ref. a]	A B C D E F G H I J
	.16	Bomb threat [ref. a]	A B C D E F G H I J
	.17	Civil disturbance [ref. a]	A B C D E F G H I J
	.18	Internal disturbance [ref. c]	A B C D E F G I J
	.19	Violation of U.S. Law observed (non-military jurisdiction) [ref. d]	B C D E F G I J
	.20	Severe personnel injury (aboard and/or adjacent to the ship) [ref. e]	B C D E F G I J

115 IN-PORT EMERGENCY PROCEDURES FUNDAMENTALS (CONT'D)

115.2 Discuss the procedures and importance of conducting in-port emergency/security drills for all watch sections on a regular basis. [refs. a, c]

.3 Discuss the procedures for processing emergency leave requests during nonworking hours: [ref. f]

a. Circumstances which warrant granting emergency leave
b. Need for swift, sensitive action on emergency leave requests
c. Criteria and procedures for funding emergency leave

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(Signature and Date)

116 WEATHER FUNDAMENTALS

References:

[a] Weather for the Mariner (Kotsch)
[b] National Marine Weather Broadcast Advisories.
[c] Commanding Officer's Standing Orders
[d] Cutter's Organization Manual
[e] Area/District SOP
[f] SOPA Instructions (if applicable)
[g] Heavy Weather Guide (Kotsch)
[h] Procedure for the Preparation and Disposition of Cutter Logs, COMDTINST M3123.12 (series)

116.1 Define the following weather warnings as issued by National Weather Service: [ref. a]

a. Thunderstorm conditions
b. Wind warnings (small craft, gale, storm, and hurricane)
c. Tropical depression
d. Tropical storm
e. Typhoon/ hurricane conditions
f. Snow conditions
g. Tsunami conditions

.2 Discuss the sources of weather information available to your ship. [ref. b]

.3 Discuss the precautionary measures that must be initiated by the OOD for the following conditions:

a. Thunderstorm conditions [refs. c, d]
b. Wind warnings (small craft, gale, storm, and hurricane) [refs. c, d]
c. Tropical depression [refs. c, d]
d. Tropical storm [refs. c, d, e]
e. Typhoon/ hurricane conditions [refs. c, d, e]
f. Snow conditions [refs. c, d]
g. Tsunami conditions [refs. c, d, e]

.4 Discuss the Commanding Officer's standing orders for inclement weather. [ref. c]

.5 Discuss the current SOPA/district/area directives concerning heavy weather/storm condition requirements, including possible port dispersal. [refs. e, f]

116 WEATHER FUNDAMENTALS (CONT'D)

116.6 Define the following: [refs. a, g]

a. Weather
b. Climate
c. Warm air mass
d. Cold air mass
e. Front
f. Cold/warm/occluded front
g. Tropical cyclone
h. Extra tropical cyclone

.7 Discuss the physical characteristics of the following clouds and their significance in local weather prediction: [refs. a, g]

a. Cirrus
b. Cirrostratus
c. Cirrocumulus
d. Altostratus
e. Altocumulus
f. Nimbostratus
g. Stratus
h. Stratocumulus
i. Cumulus
j. Cumulonimbus

.8 Discuss the purpose of the following shipboard weather instruments: [ref. a]

a. Thermometer (wet/dry bulb)
b. Psychrometer
c. Aneroid barometer
d. Barograph
e. Anemometer

.9 Discuss the available information contained within Naval Oceanography Center weather messages and/or National Marine Weather Broadcast advisories. [ref. b]

.10 Discuss the requirements for logging and reporting weather information. [ref. h]

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117 SHIPBOARD SUPPLY FUNDAMENTALS

References:

[a] Cutter's Organization Manual
[b] Simplified Acquisitions Procedures Handbook, COMDTINST M4200.13 (series)
[c] Personnel Manual, COMDTINST M1000.6 (series)

117.1 Discuss the control procedures for the receipt and storage of the following types of supplies during both working hours and non-working hours, including the function of the Supply Officer/Supply Petty Officer: [refs. a thru c]

a. Routine supplies
b. Commissary supplies
c. Medical supplies (general, controlled, and perishable)

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118 ENVIRONMENTAL PROTECTION FUNDAMENTALS

References:

[a] Area/District SOP
[b] Code of Federal Regulations, Title 33, Parts 1-199
[c] Commanding Officer's Environmental Guide, COMDTINST M5090.1 (series)
[d] Cutter's Organization Manual/Cutter Instructions

118.1 Discuss the applicable environmental protection regulations, requirements, procedures, and reports for the following conditions: [refs. a thru d]

a. Refueling
b. Pumping bilges
c. Oil spill
d. Deballasting
e. Ammo transfer
f. Paint chipping/sandblasting
g. Dumping trash
h. Local noise regulations, including the use of general announcing systems, ship's whistle, and alarms
i. Discharge of sewage
j. Discharge of grey water
k. Incinerator usage
l. Diesel (internal combustion) engine exhaust

.2 State where the regulations and requirements may be found for other ports. [ref. b]

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119 TIME FUNDAMENTALS

References:

[a] Dutton's Navigation and Piloting, 14th Edition
[b] American Practical Navigator (Bowditch)

119.1 Define the following: [refs. a, b]

a. Time zone
b. Zone description
c. Zone time
d. UTC/GMT
e. Standard time
f. Daylight savings time
g. Mean solar time
h. Local mean time

.2 Discuss the sources available to obtain accurate time. [refs. a, b]

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120 COMMUNICATIONS FUNDAMENTALS

References:

[a] Radiotelephone Communications Handbook, COMDTINST M2300.7 (series)
[b] Telecommunications Manual (TCM), COMDTINST M2000.3 (series)
[c] ACP-165, Operational Brevity Codes
[d] Watch Officer's Guide (Noel)
[e] National Search and Rescue Manual, Vol. 1, COMDTINST M16120.5 (series)
[f] Radio Frequency Plan, COMDTINST M2400.1 (series)
[g] Cutter's Organization Manual
[h] ACP-129, Visual Communication Procedure
[i] International Code of Signals, NO Pub. 102
[j] ACP-125, Radiotelephone Procedures

120.1 Define the following terms relating to voice transmissions:

a. Call sign [ref. a]
b. Precedence [refs. a, b]
c. Circuit discipline [ref. a]
d. Originator [refs. a, b]
e. Addressees [refs. a, b]
f. Primary channel [ref. a]
g. Secondary channel [ref. a]
h. Emergency silence [ref. a]

.2 Discuss the following types of communications, with regard to frequency, range, and usage: [ref. b]

a. VHF/voice
b. UHF/voice
c. HF/voice
d. HFDL
e. INMARSAT w/STU-III
f. MILSATCOM
g. GMDSS

.3 Define the following voice communications prowords: [refs. c, d]

a. Negative
b. Roger
c. Over
d. Out
e. Wait/wait out

120 COMMUNICATIONS FUNDAMENTALS (CONT'D)

120.3 f. Break
g. Say again/I say again
h. I spell
i. Figure

.4 Discuss the designated uses of the following frequencies:

a. 2182 KHz [ref. e]
c. CH-13 VHF/FM [refs. b, f]
d. CH-16 VHF/FM [refs. b, f]
e. 121.5 MHz [ref. e]
f. 243.0 MHz [ref. e]

.5 Explain the procedures for transmission/receipt of a safety or emergency broadcast. [ref. e]

.6 Discuss the requirements/procedures for use of bridge to bridge VHF/FM communications. [ref. f]

.7 State mission specific/working frequencies and specified uses of those channels normally used/monitored by your cutter. [ref. g]

.8 Discuss the procedures used in visual challenge and reply and state the restrictions placed upon their use. [ref. h]

.9 Discuss the different types of visual communications. [ref. h]

.10 State the meaning of the flashing light prosign AA. [ref. h]

.11 Describe the appearance and meaning of the following flags and pennants as they apply:

a. Allied: [ref. h]
1. Alfa
2. Bravo
3. Hotel
4. Oscar
5. Quebec
6. Five
7. Emergency
8. Code

120 COMMUNICATIONS FUNDAMENTALS (CONT'D)

120.11 b. International: [ref. i]

1. Alfa
2. Bravo
3. Delta
4. Hotel
5. Juliet
6. Oscar
7. Papa
8. Victor
9. Whiskey

.12 Discuss the responsibilities of the originator of message traffic. [ref. j]

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121 ENGINEERING FUNDAMENTALS

References:

[a] Cutter's Organization Manual
[b] Engineer Officer's Standing Orders
[c] Engineering Casualty Control Manual
[d] Naval Engineering Manual, COMDTINST M9000.6 (series)
[e] Cutter's Equipment Technical Manual
[f] Ship's Information Book

121.1 Discuss the functions of the following: [ref. a]

a. Engineer Officer
b. Damage Control Assistant
c. Main Propulsion Assistant
d. Electrical Assistant
e. Auxiliary Assistant
f. EOW

.2 Discuss the contents of the following unit instructions:

a. Engineering Standing Orders [ref. b]
b. Engineering Casualty Control Manual [ref. c]
c. Machinery Space Fire Doctrine [ref. c]

.3 Discuss the various engineering states of standby and readiness for the main propulsion plant. [ref. b]

.4 Discuss the normal preparation period required by the Engineering Department prior to getting underway from Charlie status, including emergency sorties. [refs. b, d]

.5 Discuss the purpose of MPCMS. [ref. e]

.6 Explain the different MPCMS color codes and their significance. [ref. e]

.7 Describe the functional differences between the MPCMS control console located in ECC as compared to consoles located elsewhere. [ref.e]

.8 Discuss the terms split, parallel, and single operation in relation to the ship's generators. [ref. c]

121 ENGINEERING FUNDAMENTALS (CONT'D)

121.9 Discuss the effects on the ship and the OOD's actions in response to the following engineering casualties while in-port (if applicable), underway in restricted waters and open ocean, and discuss what operational limitations are imposed: [ref. c]

a. Loss of electrical load
b. Loss of SSDG/MG
c. Loss of pilot house control
d. Shaft vibration
e. Loss of one shaft (in a twin shaft operation)
f. Jammed throttle
g. Excessive smoke from exhaust/stack(s)
h. Loss of main propulsion control on one or more shafts
i. Loss of steering control
j. Loss of lube oil pressure/major lube oil leak
k. Loss of fuel oil pressure/major fuel oil leak
l. Engine overheat
m. Loss of thruster(s)
n. Crankcase explosion

.10 Discuss the capabilities and limitations of the ship's main propulsion plant. [refs. c, f]

.11 Discuss the station keeping limitations of the ship's Dynamic Positioning System. [ref. f]

.12 Discuss the content of the ship's Restricted Maneuvering Doctrine. [ref. a]

.13 Discuss the reason for advising the EOW of any anticipated need for major speed changes. [ref. b]

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122 UNDERWAY BRIDGE WATCH FUNDAMENTALS

References:

[a] Cutter Navigation Standards and Procedures, COMDTINST M3530.2 (series)
[b] Cutter's Organization Manual
[c] Commanding Officer's Standing Orders
[d] Watch Officer's Guide (Noel)
[e] Coast Guard Regulations Manual, COMDTINST M5000.3 (series)
[f] Commanding Officer's Navigation Standards
[g] Telecommunications Manual, COMDTINST M2000.3 (series)
[h] Procedure for the Preparation and Disposition of Cutter Logs, COMDTINST M3123.12 (series)
[i] Area/District SOP
[j] OPNAVINST P-03C-01-89, U.S. Navy Cold Weather Handbook for Surface Ships
[k] Cutter's Combat Systems Doctrine
[l] Naval Engineering Manual, COMDTINST M9000.6 (series)
[m] Cutter's Information Book (Class Specific)

122.1 Discuss the underway bridge watch organization. [ref. a, b]

.2 For the items listed below: [ref. a, b]

A. Discuss the assigned duties, watchstation location and responsibilities.
B. Discuss the relationship with the OOD with respect to required reports and conduct of watch in general.
C. Discuss the circumstances which would warrant the relief of the OOD.

		Questions
.1	CO	A B C
.2	XO	A B C
.3	Navigator	A B
.4	OPS	A B C
.5	OOD	A B
.6	JOOD	A B
.7	Communications Officer	A B
.8	Senior Watch Officer	A B
.9	Department heads	A B
.10	DCA	A B
.11	QMOW	A B
.12	BMOW	A B
.13	EOW	A B
.14	Helmsman	A B
.15	Lee Helmsman	A B
.16	Messenger	A B
.17	Lookouts	A B
.18	Pilot	A B

122 UNDERWAY BRIDGE WATCH FUNDAMENTALS (CONT'D)

122.3 Discuss the following preparations required of bridge watchstanders prior to relieving the watch:

a. Physical alertness [refs. c, d]
    1. Fatigue
    2. Illness/effects of prescribed drugs
    3. Night vision
    4. Current weather conditions
b. Required equipment [ref. d]
    1. Foul weather gear
    2. Flashlight with red lens
    3. Binoculars
c. Personal appearance [refs. c, d, e]

.4 State the items that should be noted by the OOD during the prewatch rounds of the ship. [refs. c, d]

.5 State the contents of the following and discuss the use of each with regard to watch relief procedures:

a. Standing orders and navigation standards [refs. a, c, f]
b. Night orders [ref. c]
c. Message boards [ref. g]
d. Weather observation sheet [ref. h]
e. Cutter's Smooth Log sheet [ref. h]
f. Navigation data sheet [ref. h]
g. OPORDER [ref. i]
h. Schedule of events [ref. c]
i. Ship's Communications Plan [ref. j]
j. POD and/or POW [ref. c]
k. CO's battle orders [ref. k]
l. DC Closure Log [ref. l]

.6 Discuss the tactical, navigational, and internal shipboard information that the oncoming OOD should be familiar with prior to relieving the watch. [refs. d, m]

.7 Explain the items discussed during the briefing of the oncoming watch. [ref. d]

.8 Explain the verbal exchange required as part of the OOD relieving process and the requirement for such an exchange. [ref. d]

122 UNDERWAY BRIDGE WATCH FUNDAMENTALS (CONT'D)

122.9 Discuss the following as they apply to proper watchstanding underway: [refs. c, d]

a. Foresight
b. Forehandedness
c. Vigilance
d. Judgment
e. Leadership
f. Technical knowledge
g. Communications

.10 Explain the standard format for the following log entries: [ref. h]

a. Midwatch
b. OTC
c. TACON
d. OPCON
e. ADCON
f. Position
g. Speed and course changes
h. Drills and exercises
i. Fueling

.11 Discuss the contents of the standard check lists used for underway evolutions. [ref. a]

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(Signature and Date)

123 STANDARD COMMANDS FUNDAMENTALS

References:

[a] Watch Officer's Guide
[b] Coast Guardsman's Manual (Bennett)
[c] Cutter's Information Book (Class Specific)
[d] Cutter's Navigation Standards

123.1 Discuss the purpose of exact phraseology, clarity, and loudness when issuing commands to ship control stations: [ref. a]

a. Command
b. Command acknowledgement
c. Action taken
d. Report
e. Acknowledgement

.2 Define the following commands to the helm: [refs. a, b]

a. Right/left (amount in degrees) rudder
b. Right/left standard rudder
c. Right/left full rudder
d. Hard right/left rudder
e. Rudder amidships
f. Increase your rudder to (amount in degrees)
g. Ease your rudder
h. Shift your rudder
i. Meet her
j. Come right/left steer course (course in degrees)
k. Steer nothing to the right/left of (course in degrees)
l. Steady as you go
m. Mark your head
n How's your rudder?
o. Mind your helm
p. Sally your rudder

.3 Define the following ship control commands to the lee helm: [ref. a]

a. All/STBD/port engine(s) ahead one-third (two-thirds, standard, full, flank)
b. All/STBD/port engine(s) back one-third (two-thirds, full, flank)
c. Indicate (number) revolutions
d. Indicate turns for (number of) knots
e. How's your engine(s)?
f. Indicate (number) pitch (for controllable pitch cutters)

123 STANDARD COMMANDS FUNDAMENTALS (CONT'D)

123.4 Define the following ship control commands to the bow/stern thruster, if applicable: [refs. c, d]

a. Lower/raise, lock, and train
b. Place bow thruster in remote
c. Transfer to starboard/port/center
d. Train to (course in degrees)
e. Power position (percentage or amount in buttons/notches)
f. Power stop

.5 Define and give examples of the following standard commands to linehandlers: [refs. a, b]

a. Stand by your lines
b. Send/put over (line number)
c. Take (line number) to the capstan/windlass
d. Heave around (line number)
e. Avast heaving (line number)
f. Take a strain (line number)
g. Hold (line number)
h. Check (line number)
i. Surge (line number)
j. Up behind
k. Ease (line number)
l. Slack (line number)
m. Single up (line number) or all lines
n. Double up (line number) or all lines
o Shift number (line number)
p. Let go (line number)
q. Let go all lines
r. Take in (line number) or all lines
s. Cast off (line number) or all lines

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124 FORCES ACTING ON SHIPS FUNDAMENTALS

References:

[a] Naval Shiphandling (Crenshaw)
[b] Modern Seamanship (Knight)
[c] Cutter's Information Book (Class Specific)
[d] Cutter's Equipment Technical Manual

124.1 Explain in general the following forces and how they affect the action of single and multishaft vessels:

a. Side forces [refs. a, b]
    1. Following wake effect
    2. Inclination effect
    3. Helical discharge effect
    4. Shallow submergence effect
b. Inherent resistance [refs. a, b]
    1. Frictional resistance
    2. Wave resistance
    3. Eddy resistance
    4. Appendage resistance
    5. Air/wind resistance
    6. Squat
    7. Shallow water effect
    8. Sink
c. Screw thrust [ref. a]
d. External resistance [ref. a]
    1. Rough water effect
    2. Wind force
    3. Bank suction
    4. Current force
e. Rudder force [ref. a]

.2 Discuss the resulting action of your vessel under the following conditions: [ref. a]

a. Vessel going Ahead, Ahead Thrust
    1. Rudder Left Full
    2. Rudder Amidships
    3. Rudder Right Full

124 FORCES ACTING ON SHIPS FUNDAMENTALS (CONT'D)

124.2 b. Vessel dead in the water, Ahead Thrust
1. Rudder Left Full
2. Rudder Amidships
3. Rudder Right Full

c. Vessel dead in the water, Astern Thrust
1. Rudder Left Full
2. Rudder Amidships
3. Rudder Right Full

d. Vessel going Astern, Astern Thrust
1. Rudder Left Full
2. Rudder Amidships
3. Rudder Right Full

.3 Discuss the z-drive configurations necessary to achieve the following: [refs. c, d]

a. Zero thrust
b. Movement ahead
c. Movement astern
d. Thrust to starboard/port
e. Ahead turn to starboard/port
f. Astern turn to starboard/port

.4 State what is/are the direction of motion of the propeller(s) of your vessel? [refs. c, d]

.5 State the number and location of the rudders in relation to the propellers. [ref. c]

.6 Discuss the controlling forces of the rudder in a single rudder vessel and a multi-rudder vessel? [ref. a]

.7 Explain how the helm/tiller control applies to a vessel equipped with a z-drive. [refs. c, d]

.8 Discuss the reasons why the Conning Officer must anticipate the operational limitations of the engines and rudder/z-drive when maneuvering the ship. [refs. c, d]

.9 Discuss the principles of a controllable-pitch screw and state the difference between zero pitch and zero thrust and its effect on the handling of a ship. [ref. a]

.10 Discuss the principles of bow/stern thruster and its effect on the handling of a ship, if applicable. [refs. c, d]

124 FORCES ACTING ON SHIPS FUNDAMENTALS (CONT'D)

124.11 Explain the effect of the rudder on steering while moving astern. [ref. a]

.12 Discuss the ship's maneuvering ability relative to the size of the ship's rudders. [ref. c]

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(Signature and Date)

125 BASIC MANEUVERING FUNDAMENTALS

References:

[a] Modern Seamanship (Knight)
[b] Marine Navigation (Hobbs)
[c] Dutton's Navigation and Piloting, 14th Edition
[d] Cutter's Tactical Characteristics Folder
[e] Naval Shiphandling (Crenshaw)

125.1 Define the following terms:

a. Pivot point [refs. a, b]
b. Turning circle [refs. a, b]
c. Advance [refs. b, c]
d. Transfer [refs. b, c]
e. Tactical diameter [refs. a, b]
f. Final diameter [ref. b]
g. Standard tactical diameter [ref. d]
h. Standard rudder [ref. e]
i. Angle of turn [ref. e]
j. Acceleration/deceleration tables [ref. d]

.2 Discuss the following as defined in the Cutter's Tactical Characteristics Folder (state actual dimensions): [ref. d]

a. Height of eye of bridge/flying bridge
b. Standard tactical diameter
c. Reduced tactical diameter
d. Final diameter
e. Acceleration/deceleration at various speeds

.3 State the following characteristics of your ship: [ref. d]

a. Where is the pivot point located in your vessel under normal conditions
b. Discuss the relationship between:
    1) Rudder angle/z-drive direction and tactical diameter
    2) Ship speed and tactical diameter
c. Explain the effect on speed when your vessel is turned
d. Describe the action of your vessel when rudder is applied or z-drives are positioned for a complete 360 degree turn
e. What is your vessel capable of in regard to the advance, transfer, and distance of the smallest tactical diameter
f. What is your vessel capable of in regard to the combination of speed and rudder angle or z-drive direction necessary to steer the smallest tactical diameter, the rate of return, and how much heeling results

125 BASIC MANEUVERING FUNDAMENTALS (CONT'D)

125.3 g. Discuss the fastest method of turning your vessel when it is dead in the water, the rate of turn, the turning diameter, and how much heeling, if any, results

.4 Speed: [ref. d]

a. Define acceleration (speed) curve
b. Define surge
c. What is the minimum distance and time that your vessel can be brought dead in the water from AHEAD 1/3, 2/3, standard, full, flank and the engine order given to accomplish these maneuvers
d. What are the effects/consequences of a crash stop
e. What is your speed over the ground for AHEAD 1/3, 2/3, standard, full, flank, and back 1/3, 2/3, and full
f. Discuss the relationship of controllable pitch propellers vs speed as it relates to acceleration/deceleration (for vessels so equipped)

.5 Discuss the following on multishaft vessels:

a. Define twist [ref. e]
b. What rudder and engine commands are given to accomplish this maneuver [ref. e]
c. Where is the approximate position of the pivot point during a twist [ref. e]
d. What is the minimum distance necessary to accomplish a 360 degree twist [ref. d]
e. What is the fastest method to twist [refs. d, e]
f. How would a thruster(s) assist in this maneuver [ref. d]

.6 State the speed above at which thrusters are ineffective. [ref. d]

.7 Discuss the following:

a. Define casting/back and fill [ref. a]
b. What rudder/z-drive and engine commands are given to accomplish this maneuver [refs. a, e]
c. Where is the approximate position of the pivot point during this maneuver [ref. d]
d. What is the minimum distance necessary to accomplish a 360 degree turn by casting [ref. d]
e. What is the fastest method to cast [ref. a]
f. How would a thruster(s) assist in this maneuver [ref. d]

.8 Discuss the following: [ref. a]

a. Define dredging anchor
b. What commands are given to accomplish this maneuver
c. Where is the approximate position of the pivot point during dredging
d. How does dredging affect the turning diameter

125 BASIC MANEUVERING FUNDAMENTALS (CONT'D)

125.8 e. Discuss the relationship between desired speed and the required length of chain during dredging

f. What safety precautions must be considered with regard to submerged hazards/sonar/bow propulsion unit, etc.

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(Signature and Date)

126 HANDLING ALONGSIDE FUNDAMENTALS

References:

[a] Naval Shiphandling (Crenshaw)
[b] Modern Seamanship (Knight)
[c] Watch Officer's Guide (Noel)

126.1 Discuss the most common errors committed by shiphandlers when making an approach alongside. [refs. a, b]

.2 Describe how the Venturi effect applies to the reaction of a vessel when approaching/clearing away from alongside a relatively solid pier or another vessel. [ref. a]

.3 Describe the commands (given for rudder/z-drive, engine, and linehandlers) necessary to approach/clear away from a pier in each of the following cases:

a. Bow-out (ship's head equals course outbound) [refs. a thru c]
    1. No wind/current (port side to and starboard side to)
    2. Wind/current off the pier (port side to and starboard side to)
    3. Wind/current on the pier (port side to and starboard side to)
    4. Opposing wind/current (port side to and starboard side to)
    5. Head wind/current (port side to and starboard side to)
    6. Following wind/current (port side to and starboard side to)

b. Bow-in (ship's head equals course inbound) [refs. a thru c]
    1. No wind/current (port side to and starboard side to)
    2. Wind/current off the pier (port side to and starboard side to)
    3. Wind/current on the pier (port side to and starboard side to)
    4. Opposing wind/current (port side to and starboard side to)
    5. Head wind/current (port side to and starboard side to)
    6. Following wind/current (port side to and starboard side to)

.4 Discuss what additional considerations are necessary when approaching/clearing away from a ship at anchor/adrift? [refs. a, b]

.5 Discuss the location of the pivot point when a mooring line is put over to the pier. [refs. a, b]

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(Signature and Date)

127 ANCHORING FUNDAMENTALS

References:

[a] Watch Officer's Guide (Noel)
[b] Naval Shiphandling (Crenshaw)
[c] Modern Seamanship (Knight)
[d] Marine Navigation (Hobbs)
[e] Cutter's Information Book (Class Specific)
[f] Seamanship, Fundamentals for the Deck Officer (Dodge and Kyriss)

127.1 Explain the following commands and responses: [refs. a, b]

a. Set the anchor watch
b. Make the anchor ready for letting go
c. Stream the anchor buoy
d. Set the anchor
e. (Number) shots on deck/at the water's edge
f. Brought to and holding
g. Anchor buoy watching
h. Anchor is tending (bearing) with (heavy/medium/slight/no) strain
i. Walk out the anchor
j. Veer to (number) shots
k. Dip the anchor
l. Make the anchor ready for heaving around
m Anchor is up and down
n. Anchor is at short stay
o. Break out the anchor
p. Anchor is aweigh
q. Anchor in sight
r. Anchor is at the water's edge
s. Anchor is clear/fouled
t. House the anchor
u. Anchor secured for sea
v. Weigh the anchor

.2 Discuss the following step by step procedures to: [ref. c]

a. Let go from hawse pipe with handbrake
b. Let go from hawse pipe with chain stopper
c. Walk out from hawse pipe with wildcat

127 ANCHORING FUNDAMENTALS (CONT'D)

127.3 Discuss the procedures and sequence taken by the anchor detail to make the anchor ready for letting go and to set/weigh the anchor once dropped. [refs. b, c]

.4 Discuss the anchor chain with respect to the following: [ref. c]

a. Size of link
b. Length of chain
c. Number of shots of chain and marking of each shot
d. Marking of detachable link between each shot of chain
e. Yellow shot of chain
f. Red shot of chain
g. Method of securing the bitter end

.5 Discuss the considerations and the procedures for making a deep drop with the anchor. [refs. b, c]

.6 Discuss the environmental and geographical considerations taken into account in determining the scope of anchor chain to deploy, and state the rule of thumb ratio for figuring chain length versus water depth. [ref. c]

.7 Discuss how the following affect the anchoring evolution:

a. Depth of water [ref. c]
b. Type of bottom [ref. c]
c. Ship's speed [ref. b]
d. Rudder position [ref. b]
e. Approach to anchorage [ref. b]
f. Wind/sea state/forecasted weather [ref. b]
g. Current [ref. b]
h. Use of wood chips [ref. b]

.8 Define the following: [ref. d]

a. Swing circle
b. Drag circle
c. Head bearing
d. Drop bearing/range
e. Drop circle/point

.9 Discuss the method of determining, the factors affecting, and frequency for reporting the following: [ref. b]

a. Amount of chain out
b. How anchor chain tends
c. Amount of strain on the chain

127 ANCHORING FUNDAMENTALS (CONT'D)

127.10 Discuss the general safety observations and practices that must be observed during anchoring evolutions including PPE and positioning of personnel in relation to the chain. [ref. d]

.11 Discuss the procedures to follow when the anchor will not drop. [refs. b thru f]

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(Signature and Date)

128 TOWING FUNDAMENTALS

References:

[a] National Search and Rescue Manual, Vol. 1, COMDTINST M16120.5 (series)
[b] Modern Seamanship (Knight)
[c] Naval Shiphandling (Crenshaw)
[d] Cutter's Organization Manual

128.1 Discuss the Coast Guard's policy regarding towing in a non-emergency situation. [ref. a]

.2 Discuss the importance of the following pretowing observations including (but not limited to): [refs. b, c]

a. Sea state
b. Wind velocity and direction
c. How the disabled vessel lies relative to the wind
d. Relative rate of drift of both vessels
e. Disabled vessel's damage
f. Disabled vessel's sea keeping ability
g. Number of people on the disabled vessel
h. Number and physical configuration of disabled vessel's bits/cleats/towing appendages

.3 Discuss the advantages/disadvantages of the various methods of approach, passing tow to another vessel, and dropping the tow. [refs. b, c]

.4 Discuss the advantages/disadvantages of and required on-scene conditions for towing astern/alongside and pushing ahead. [refs. b, c]

.5 Discuss the importance of the towing procedure being understood between both vessels prior to commencing towing operations. [refs. b, c, d]

.6 Discuss the standard safety precautions that both vessels must observe throughout the entire towing evolution. [refs. b, c, d]

.7 Discuss the importance and methods of establishing and maintaining effective communications between both vessels during towing operations. [ref. d]

.8 Discuss the advantages/disadvantages of removing personnel from a disabled vessel. [refs. b, c, d]

.9 Discuss the various possible methods to pass the messenger and hawser. [refs. b, c]

128 TOWING FUNDAMENTALS (CONT'D)

128. 10 Discuss the procedure for taking an initial strain on the towing hawser. [refs. b, c]

.11 Discuss hawser strain in general and the use and purpose of a strain gauge. [refs. b, c]

.12 Discuss the proper use of chafing gear. [ref. d]

.13 Discuss the procedures for accelerating, decelerating, and changing course with a vessel in tow and what precautions must be observed. [ref. c]

.14 Define and discuss the importance of the following towing terms: [ref. c]

a. Catenary/dip
b. In step
c. Yawing
d. Safe towing speed

.15 Discuss the importance of maintaining a proper towing watch during towing operations and the equipment needed by the towing watch, including (but not limited to) the following: [refs. b, c, d]

a. Communications between the towing watch and pilothouse
b. Fire axe
c. Charged fire hose
d. Portable cutting torch

.16 Discuss the emergency action to be taken by both vessels in the event of:

a. Loss of propulsion by the towing vessel [refs. c, d]
b. Towing hawser parting [ref. d]
c. Man overboard, from either vessel [ref. d]

.17 Discuss an emergency breakaway during towing operations including: [refs. c, d]

a. Who may initiate
b. Who controls evolution once initiated
c. Reasons for initiating

.18 Discuss the advantages and disadvantages of the actions to be taken (by both vessels) in passing the tow to another vessel or breaking the tow for anchoring the disabled vessel, include methods of recovering the towing hawser and messenger. [ref. b]

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(Signature and Date)

129 UNDERWAY EMERGENCY FUNDAMENTALS

References:

[a] Naval Shiphandling (Crenshaw)
[b] Modern Seamanship (Knight)
[c] Coast Guardsman's Manual (Bennett)
[d] Watch Officer's Guide (Noel)
[e] Cutter's Organization Manual
[f] Commanding Officer's Standing Orders
[g] Command Navigation Standards
[h] Cutter Navigation Standards and Procedures, COMDTINST M3530.2 (series)

129.1 Describe the following man overboard methods of recovery and cutter maneuvering considerations when using each:

a. Boat recovery [refs. a, b]
b. Shipboard recovery [refs. a, b]
    1. Williamson turn [refs. a, b]
    2. Anderson turn (destroyer turn) [refs. a, b]
    3. Racetrack turn [refs. a, b]
    4. Delayed turn [refs. a, b, d]
    5. Y-backing [refs. a, b]
c. When in formation [ref. d]

.2 Discuss the use of the following items in the recovery of a man overboard: [ref. e]

a. Life ring/buoy
b. Smoke float and/or dye marker
c. Strobe light
d. Searchlight
e. EPIRB
f. GPS plotter
g. ECINS/ECS

.3 Discuss the following items as they apply to the smallboat recovery method: [ref. e]

a. Manning of the boat
b. Visual signaling
c. Surface swimmer

129 UNDERWAY EMERGENCY FUNDAMENTALS (CONT'D)

129.4 Discuss the use of the following in a shipboard recovery:

a. Cutter surface swimmer [ref. e]
b. Cargo net [ref. e]
c. Portable davit line with harness [ref. e]
d. Jacob's ladder [refs. c, e]
e. Stokes litter [refs. c, e]
f. Lookout [refs. c, e]

.5 Discuss the factors the OOD must consider when maneuvering the cutter in restricted waters, alongside another vessel, or alongside a pier, including engineering casualties, set and drift, etc. [refs. a, b, f, g]

.6 Discuss the responsibilities of the OOD in heavy and cold weather. [refs. a, b, f]

.7 Discuss the factors the OOD must consider in posting watches when maneuvering in low or restricted visibility. [refs. e, f]

.8 Explain the procedures the OOD may use to reduce collision impact. [ref. b]

.9 For items listed below: [ref. e]

A. Discuss immediate cutter control actions by the Conning Officer.
B. Discuss the proper reaction of the OOD.
C. State the appropriate alarms to be sounded.
D. State the appropriate whistle signals.
E. State the appropriate visual signals.
F. Discuss the prescribed course of action IAW ATP 1, Vol. 1.
G. Discuss notification of higher authority.

		Questions
.1	Collision [ref. e]	A B C D G
.2	Allision [ref. e]	A B C D G
.3	Grounding [ref. e]	A B C D E G
.4	Fire/internal explosion [ref. e]	A B C D G
.5	Loss of propulsion/shaft control [ref. e]	A B C D E F G
.6	Loss of generator [ref. e]	A B C D E
.7	Loss of steering control [ref. e]	A B C D E F
.8	Man overboard [ref. e]	A B C D E F G
.9	Striking a submerged object [ref. e]	A B C G
.10	Visual sighting of a flare or receipt of a distress signal [ref. e]	A B G
.11	Loss of ECINS [ref. h]	A B G
.12	Loss of MPCMS [ref. e]	A B G
.13	Loss of DPS [ref. e]	A B G

129 UNDERWAY EMERGENCY FUNDAMENTALS (CONT'D)

129.10 State the phraseology for the following pipes: [refs. d, e]

a. Man overboard
b. Fire
c. Flooding
d. General quarters
e. Steering casualty
f. Collision
g. General emergency

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130 UNDERWAY WEATHER FUNDAMENTALS

References:

[a] Weather for the Mariner (Kotsch)
[b] Heavy Weather Guide (Kotsch)
[c] Modern Seamanship (Knights)
[d] Naval Shiphandling (Crenshaw)

130.1 Describe a tropical cyclone in both northern and southern hemispheres, including the following:

a. Wind circulation [ref. a]
b. Dangerous semicircle [refs. a, b]
c. Navigable semicircle [refs. a, b]
d. Rate and direction of movement [ref. a]
e. Evasive courses of action [refs. c, d]

.2 Discuss the significant factors in predicting fog. [ref. a]

.3 Discuss the use and interpretation of a report received from a marine weather fax. [refs. a, d]

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(Signature and Date)

131 RADAR FUNDAMENTALS

References:

[a] NAVPUB 1310 DMA PUB, Radar Navigation Manual
[b] American Practical Navigator (Bowditch)
[c] Dutton's Navigation and Piloting, 14th Edition
[d] Radar Manufacturer's Manual
[e] The Radar Book (Van Wyck and Carpenter)
[f] NWP 65-24/65-27

131.1 Discuss the primary applications of the following types of radar:

a. F-band surface search [refs. a thru e]
b. I-band surface search [refs. a thru e]
c. Fire control when used for navigation [ref. f]

.2 Discuss the following terms as they pertain to radar operations: [refs. a thru e]

a. Pulse width
b. PRR
c. Frequency
d. Power out
e. Beam width
f. Antenna rotation rate
g. STC
h. FTC
i. Gain

.3 Discuss the effects of the following on the detection capability of radar: [refs. a thru e]

a. Terrain
b. Sea return
c. Contact composition
d. Radar cross section
e. Atmospheric conditions
f. Beam width
g. Ducting
h. Multiple echoes
i. RACONs
j. EMI (including running rabbits)

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132 MANEUVERING BOARD/AUTOMATIC RADAR PLOTTING AIDS FUNDAMENTALS

References:

[a] Realtime Method of Rapid Radar Plotting (Carpenter & Waldo)
[b] NAVPUB 217 DMA PUB, Maneuvering Board Manual
[c] Cutter Navigation Standards and Procedures, COMDTINST M3530.2 (series)

132.1 Describe the following items and state their use in maneuvering board operations: [refs. a, b]

a. Nautical slide rule
b. Distance and speed scales
c. Logarithmic time, speed, and distance nomographs
d. Polar coordinate plot (maneuvering board pad)

.2 Discuss the following terms and state their interrelationships in maneuvering board operation: [refs. a, b]

a. Polar coordinate plotting
b. Proportional scaling
c. Reference ship (R)
d. Maneuvering ship (M)
e. Motion (true and relative)
f. Actual quantities (distance, bearing, speed, and time)
g. Relative quantities (distance, bearing, and speed)
h. DRM
i. SRM
j. CPA
k. EM vector
l. ER vector
m RM vector

.3 Discuss the procedures involved in using known components of a vector diagram to determine unknown components. [refs. a, b]

.4 Discuss the following and describe how each should be incorporated into a maneuvering board operation: [refs. a, b]

a. Advance
b. Transfer
c. Acceleration
d. Deceleration
e. Tactical diameter

132 MANEUVERING BOARD/AUTOMATIC RADAR PLOTTING AIDS FUNDAMENTALS (CONT'D)

132.5 State the three-minute rule and discuss its application to maneuvering board operations. [refs. a, b]

.6 Discuss the use of the maneuvering board as a monitoring device while conducting maneuvers. [refs. a, b]

.7 Discuss the contact's aspect in relation to own ship. [refs. a, b]

.8 Discuss the relationship between the maneuvering board plot and the radar display. [refs. a, b]

.9 Discuss the value of proper labeling during extended maneuvering board application. [refs. a, b]

.10 Define the following terms and discuss the procedures required to solve for them: [refs. a thru c]

a. True wind
b. Relative wind
c. Apparent wind
d. Desired wind
e. EW vector
f. RW vector

.11 Discuss the effects of the following on solution accuracy: [refs. a, b]

a. Radar repeater calibration
b. Dividers
c. Parallel rules
d. Scale selection
e. Time (accuracy and frequency)

.12 Define the following terms as they apply to radar operations: [refs. a, b]

a. Range rings
b. Up scope targets
c. Down scope targets
d. Limbo targets
e. Target's tails
f. Range ring scale/time plotting relationship

132 MANEUVERING BOARD/AUTOMATIC RADAR PLOTTING AIDS FUNDAMENTALS (CONT'D)

132.13 Discuss ARPA, their capabilities and their limitations:

a. Define ARPA [refs. a, b]
b. Describe the primary function of an ARPA unit [refs. a, b]
c. Describe the initial set up of the ARPA, explaining why own ship's input is crucial [refs. a, b]
d. Explain the uses of the trackball/touchscreen control [refs. a, b]
e. Discuss the procedures for manual target acquisition and cancellation [refs. a, b]
f. Discuss the procedure for automatic acquisition [refs. a, b]
g. Discuss the information that is displayed by the ARPA unit's digital display for own cutter and contacts [refs. a, b]
h. Explain how the trial maneuvers function is activated on the ARPA unit [refs. a, b]
i. Explain how the following trial maneuvers are accomplished: [refs. b, c]
    1. Course change
    2. Speed change
    3. Both course and speed change

.14 Explain the procedures for determining a new course and/or speed to obtain a desired CPA using both ARPA and maneuvering board. [ref. b]

.15 Discuss the use of parallel indexing (Franklin Continuous Radar Plot Technique) as an aid for keeping own ship on track or for avoiding navigational hazards. [refs. a thru c]

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(Signature and Date)

133 NAUTICAL CHARTS AND PUBLICATIONS FUNDAMENTALS

References:

[a] Dutton's Navigation and Piloting, 14th Edition
[b] American Practical Navigator (Bowditch)
[c] Cutter Navigation Standards and Procedures, COMDTINST M3530.2 (series)

133.1 Discuss the use, advantages, and disadvantages of the following:

a. Coastal charts [refs. a, b]
b. Harbor charts [refs. a, b]
c. General sailing charts [refs. a, b]
d. Universal plotting sheets [refs. a, b]
e. Mercator chart projections [refs. a, b]
f. Gnomonic chart projections [refs. a, b]
g. Bathymetric charts [refs. a, b]
h. Electronic charts [ref. c]
i. Raster charts [ref. c]
j. Vector charts [ref. c]

.2 State the use of the following publications/materials and discuss the basic information: [refs. a, b]

a. Nautical Alamac
b. Air Almanac
c. Sailing Directions
d. U.S. Coast Pilot
e. Fleet Guide
f. Planning Guide
g. Light List/List of Lights
h. World Port Index
i. Sight Reduction Tables
j. Notice to Mariners
k. Monthly Bulletins
l. Hydrolants/Hydropacs
m. NAVAREA
n. Chart No. 1
o. Pilot charts
p. Loran charts
q. Plotting sheets

133 NAUTICAL CHARTS AND PUBLICATIONS FUNDAMENTALS (CONT'D)

133.3 State the use of the following as they apply to a Mercator chart: [refs. a, b]

a. Title
b. Edition number
c. NIMA number
d. Scale
e. Reference plane
f. Compass rose
g. Variation and secular change

.4 Discuss the differences between an ECINS and an ECS. [ref. c]

.5 Discuss the accuracy of electronic charts at different levels of magnification/zoom. [ref. c]

.6 Discuss the method(s) used to update your unit's charts (paper and electronic) and publications. [ref. c]

.7 Discuss the importance of using all available navigational equipment and sensors to determine your cutter's position vice relying solely on one positioning source. [ref. c]

.8 Discuss the importance of knowing the chart datum and insuring that the standard GPS datum (WGS 84) is properly converted to the appropriate chart datum. [ref. b]

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(Signature and Date)

134 ELECTRONIC NAVIGATION FUNDAMENTALS

References:

[a] Cutter's Equipment Technical Manual
[b] American Practical Navigator (Bowditch)
[c] Dutton's Navigation and Piloting, 14th Edition
[d] Cutter Navigation Standards and Procedures, COMDTINST M3530.2 (series)

134.1 Discuss the following electronic navigation systems in use aboard your cutter, their concept of operation, accuracy, and availability: [ref. c]

a. GPS/DGPS
b. LORAN
c. Fathometer
d. RDF
e. ECS
f. ECINS
g. SCCS/INS

.2 Discuss the procedures used to obtain the following: [refs. b, c]

a. LOP with LORAN equipment
b. LOP with RDF
c. A position using the GPS/DGPS
d. A position using radar (bearing and/or ranges)
e. A position with fathometer soundings

.3 Discuss the hazards of not using the same datum for both the ship's positioning source and nautical charts. [ref. d]

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135 TERRESTRIAL NAVIGATION FUNDAMENTALS

References:

[a] American Practical Navigator (Bowditch)
[b] Dutton's Navigation and Piloting, 14th Edition
[c] Cutter Navigation Standards and Procedures, COMDTINST M3530.2 (series)
[d] Commanding Officer's Standing Orders
[e] Command Navigation Standards (Hobbs)

135.1 Discuss the following in terms of how they are obtained and used in navigation: [refs. a, b]

a. True bearing
b. Relative bearings
c. Turn bearings
d. Danger bearings
e. Navigational range
f. Visibility of lights
g. LOP
h. DR
i. Fix
j. Running fix
k. PIM
l. Relationship of speed, time, and distance
m. Doubling the angle on the bow
n Radian rule
o. 30/60/90 rule
p. Intended track
q. Rhumbline
r. Set
s. Drift
t. SOA
u. SOG
v. COG
w. Bottom profile
x. Speed triangles
y. Range to turn/danger
z. Slideline

135 TERRESTRIAL NAVIGATION FUNDAMENTALS (CONT'D)

135.2 Discuss the application and navigational use of the following: [refs. a, b]

a. Alidade
b. Bearing circle
c. Radar
d. Fathometer
e. Stadimeter
f. Speed Log
g. Sextant angles (three-arm protractor)
h. Leadline

.3 Discuss the duties and responsibilities of the OOD, Navigator, and members of the navigation team while piloting in restricted waters. [refs. c thru e]

136 CELESTIAL NAVIGATION FUNDAMENTALS

References:

[a] American Practical Navigator (Bowditch)
[b] Dutton's Navigation and Piloting, 14th Edition
[c] Nautical Almanac

136.1 Define the following: [refs. a, b]

a. Sight reduction tables
b. Navigational triangles
c. Sunline
d. Azimuth of the Sun
e. Amplitude of the Sun
f. LAN
g. Twilight (nautical and civil)
h. Celestial LOP/fix

.2 Discuss the information in the following sections of the Nautical Almanac and explain how each is used: [ref. c]

a. Introduction
b. Explanation
c. Daily pages
d. Increment and correction table
e. Front/back covers

.3 Explain the use of the following instruments in celestial navigation: [refs. a, b]

a. Marine sextant
b. Rude starfinder
c. Azimuth circle

.4 Discuss the purpose of each of the following terms associated with the celestial system of coordinates: [refs. a, b]

a. Celestial sphere
b. Celestial poles
c. Elevated poles
d. Equinoctial
e. Celestial meridian
f. Hour circle
g. Declination
h. GHA

136 CELESTIAL NAVIGATION FUNDAMENTALS (CONT'D)

136.4
i. LHA
j. Ecliptic
k. Diurnal circle
l. First point of Aries
m. SHA
n Meridian angle
o. Polar distance

.5 Discuss the purpose of each of the following terms associated with the horizon system of coordinates: [refs. a, b]

a. Zenith
b. Nadir
c. Celestial horizon
d. Vertical circle
e. Prime vertical
f. Altitude
g. Zenith distance
h. Azimuth
i. Azimuth angle
j. Latitude of observer
k. Polar distance of the zenith

.6 Discuss the procedures for determining the following: [refs. a, b]

a. Sunrise/sunset
b. Moonrise/moonset
c. Nautical twilight
d. Civil twilight
e. LAN
f. Sunlines
g. Celestial LOP/fixes
h. Azimuths of celestial bodies
i. Amplitude
j. Gyro error by azimuth/amplitude
k. Side Error
l. Collimation Error
m. Index error

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137 COMPASS FUNDAMENTALS

References:

[a] Handbook of Magnet Compass Adjustment, H.O. Pub No. 226
[b] Dutton's Navigation and Piloting, 14th Edition
[c] American Practical Navigator (Bowditch)

137.1 Define the following: [ref. a]

a. Magnetic poles
b. Lines of magnetic force
c. Deviation
d. Variation
e. Swing ship/latitude correction
f. Permanent magnetism
g. Magnetic compass card
h. Flinders bar
i. Quadrantal spheres
j. Fore/aft athwartship magnets
k. Degaussing
l. Gyro compass/repeater
m. Digital-magnetic (fluxgate) compass

.2 State the methods and required frequency of determining gyro and magnetic compass errors both at sea and in piloting waters. [refs. b, c]

.3 Discuss how to convert gyro and magnetic compass courses and bearings to true courses/bearings including all corrections that must be considered. [refs. b, c]

.4 Discuss the reasons for applying latitude and speed corrections to a Gyro Compass system. [refs. b, c]

.5 State the functions of degaussing coils and discuss their effect on the magnetic compass. [refs. b, c]

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138 SURVIVAL AND SURVIVAL EQUIPMENT FUNDAMENTALS

References:

[a] Cutter Organization Manual
[b] Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)

138.1 Discuss the purpose of the Abandon Ship Bill. [ref. a]

.2 Discuss the three phases of preparation to abandon ship. [ref. a]

.3 Discuss who makes the final decision to abandon ship, including considerations leading to the decision. [ref. a]

.4 Describe the procedures for deploying the cutter's liferafts. [ref. b]

.5 Describe the procedures for entering the liferaft in the water.[ref. a, b]

.6 Discuss the duties and makeup of the ship's Salvage/Securing Detail and/or Emergency Destruction Detail. [ref. a]

.7 Discuss the information provided by the Navigator to be passed to the crew. [ref. a]

.8 Discuss the duties of the officers in charge of debarkation areas. [ref. a]

.9 Discuss the duties of the Mustering Officer/Petty Officer at an Abandon Ship Station. [ref. a]

.10 Describe the EPIRBs installed aboard your cutter including the following: [ref. b]

a. Procedures for manual and hydrostatic release
b. Methods of activation
c. Principles of operation and use
d. Procedure followed after accidental activation

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139 AIDS TO NAVIGATION FUNDAMENTALS

References:

[a] Dutton's Navigation and Piloting, 14th Edition
[b] American Practical Navigator (Bowditch)
[c] Chart No. 1
[d] Coast Guard Regulations Manual, COMDTINST M5000.3 (series)
[e] District SOP

139.1 Discuss in general terms the following:

a. IALA system A [ref. a, ch. 4]
b. IALA system B [ref. a, ch. 4]
c. ICW Marking system [ref. a, ch. 4]
d. Cardinal Buoyage system [ref. b, ch. 5]

.2 Discuss in general terms what caution must be exercised in using buoys as aids to navigation. [ref. a, ch. 4]

.3 Discuss in general terms how the following apply to buoyage systems: [ref. a, ch. 4]

a. Sound characteristics
b. How the phrase “red right returning” is applied to the Buoy system
c. How the color of the buoy is used in determining its function
d. How the light characteristics of the buoy is used in determining its function
e. Reflectors

.4 Discuss in general terms how ranges are used as an aid to navigation. [ref. a, ch. 4]

.5 Discuss in general terms how the following apply to lights: [ref. a, ch. 4]

a. Identification
b. Light sectors
c. Classes of light
d. Visibility
e. Nominal range
f. Luminous range
g. Geographic range
h. Computed visibility
i. Computed range
j. Variation due to refraction
k. Variation due to weather conditions
l. Predicting time and bearing of sighting

139 AIDS TO NAVIGATION FUNDAMENTALS (CONT'D)

139.6 Discuss in general terms the identification and operation of fog signals found on buoys, lighthouses, bridges, etc. [ref. a, ch. 4]

.7 Discuss the aids to navigation information found in the following: [refs. b, c]

a. Light lists
b. List of lights
c. Radio navigational aids
d. Coast Pilot
e. Sailing directions
f. Fleet guides
g. Nautical charts

.8 Discuss how the following assist as an aid to navigation: [ref. b, ch. 4]

a. Marine Broadcast Notice to Mariners
b. Weekly Notice to Mariners
c. Local Notice to Mariners

.9 Discuss how radio and radar beacons are used as an aid to navigation. [ref. a, ch. 16/32]

.10 Discuss the responsibility of any Coast Guard unit Commanding Officer with respect to all aids to navigation as set forth in Coast Guard Regulations. [ref. d, ch. 4]

.11 Discuss what information should be obtained if your unit receives an Aids to Navigation Discrepancy Report from a non-Coast Guard source. [ref. d, ch. 4]

.12 Discuss the specific procedures when reporting an aids to navigation discrepancy to your district/area. [ref. e]

.13 Discuss what actions would be taken with regard to aids to navigation in the vicinity of a marine accident. [ref. d, ch. 4]

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200 INTRODUCTION TO SYSTEMS

200.1 BASIC BUILDING BLOCKS

In this section, the equipment is broken down into smaller, more comprehensible, functional systems as basic building blocks in the learning process. Each system is written to reflect specific watchstation requirements by identifying the equipment most relevant to one or more designated watchstanders.

200.2 COMPONENTS AND COMPONENT PARTS

For learning purposes each system is disassembled into two levels. Systems have components and components have parts. Do not expect to see every item which appears on a parts list to be in the PQS. Only those items which must be understood for operation/maintenance are listed. Normally a number of very broad (overview) systems are disassembled into their components or parts with the big picture as the learning goal. Items listed as components in such a system may then be analyzed as separate systems and broken down into components and parts. Example: the turbogenerators may be listed as a component of the Ship's Service Electrical Distribution system and then later detailed as an individual system for closer study.

200.3 FORMAT

Each system is organized within the following format:

- It lists the references to be used for study and asks you to explain the function of each system.
- It asks for the static facts of what or where the components and component parts are in relation to the system.
- It directs attention to the dynamics of how the component and component parts operate to make the system function.
- It specifies the parameters that must be immediately recalled.
- It requires study of the relationship between the system being studied and other systems or areas.

200 INTRODUCTION TO SYSTEMS (CONT'D)

200.4 HOW TO COMPLETE

The systems you must complete are listed in the Prerequisites section of each watchstation. When you have mastered one or more systems, contact your Qualifier. The Qualifier will give you an oral examination on each system and, if satisfied you have sufficient knowledge of the system, will sign the appropriate system line items. You will be expected to demonstrate through oral or written examination a thorough understanding of each system required for your watchstation.

201 ALARM SYSTEM

References:

[a] Equipment Technical Publications
[b] Ship's Plans
[c] NSTM S9086-CN-STM-020/CH-079, Vol. 2

201.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?
C. How is the alarm automatically and manually activated?
D. What are the audible and visual alarm indicators?
E. What are the modes of operation or control?
F. What are the probable indications if this component fails?
G. Where is the circuit breaker or remote power cutoff switch located?

		Questions
201.1.1	High temperature alarm	A B C D
.2	Smoke and gas alarm	A B C D
.3	Sprinkler alarm	A B C D
.4	Fire Suppression Flooding system release alarm	A B C D
.5	Flooding alarm	A B C D
.6	General alarm	A B C D
.7	Collision alarm	A B C D
.8	Chemical alarm	A B C D
.9	Bilge water alarm	A B C D
.10	Sanitation/grey water alarm	A B C D
.11	Freezer alarm	A B C D
.12	Person trapped in reefer alarm	A B C D
.13	Gyro	A B C D
.14	Cease fire alarm	A B C D
.15	Helo crash on deck	A B C D
.16	Ship control and alarm console/MPCMS/MCAMS:	
	a. Main engine status and alarms	A B C D E F G
	b. Generator status and alarms	A B C D E F G
	c. Electric power panel	A B C D E F G
	d. Flooding and fire alarm panel	A B C D E F G
	e. Damage control panel	A B C D E F G

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(Signature and Date)

201 ALARM SYSTEM (CONT'D)

201.2 PRINCIPLES OF OPERATION – None to be discussed.

201.3 PARAMETERS/OPERATING LIMITS – None to be discussed.

201.4 SYSTEM INTERFACE

201.4.1 What is the override priority of the general, chemical, and collision alarms?

_____
(Signature and Date)

.2 How does the loss of ship's electrical power affect these systems?

_____
(Signature and Date)

201.5 SAFETY PRECAUTIONS – None to be discussed.

202 EXTERNAL COMMUNICATIONS SYSTEM

References:

[a] Radiotelephone Communication Handbook, COMDTINST M2300.7 (series)
[b] Coast Guardsman's Manual (Bennett)

202.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?
C. What are the modes of operation or control?
D. What are the probable indications if this component fails?
E. Where is the circuit breaker or remote power cutoff switch located?
F. Which systems have this component?
G. What types of information (classified/unclassified) may be transmitted via this circuit?

		Questions
202.1.1	Radio communication systems:	
	a. VHF radio transmitter and receiver	A B C D E G
	b. UHF radio transmitter and receiver	A B C D E G
	c. HF radio transmitter and receiver	A B C D E G
	d. Secure and protected radiotelephone equipment located on the bridge and/or radio room	A B C D E G
	e. Remote operating positions and/or controls for radio transmitter and/or receiver located on the bridge and/or radio room	A B C D E F
	f. Radiotelephone speakers and amplifier control unit	A B C D E F
.2	Other communication systems:	
	a. INMARSAT	A B C D E G
	b. Cellular telephone/fax	A B C D E G
.3	Communication components:	
	a. Volume control knob/muting switch	A B C D F
	b. Panel light/dimmer switch	A B C D F
	c. Key light	A B C D F
	d. Operation light	A B C D F
	e. Channel indicator	A B C D F
	f. Dial-type channel selector	A B C D F
	g. Handset	A B C D F
	h. Speakers	A B C D F

_____
(Signature and Date)

202 EXTERNAL COMMUNICATIONS SYSTEM (CONT'D)

202.2 PRINCIPLES OF OPERATION – None to be discussed.

202.3 PARAMETERS/OPERATING LIMITS – None to be discussed.

202.4 SYSTEM INTERFACE

202.4.1 What other/backup communications equipment is available in the radio room and CIC?

.2 What interferences can be expected to affect your ability to communicate?

_____
(Signature and Date)

202.5 SAFETY PRECAUTIONS

202.5.1 Discuss the electrical safety hazards.

_____
(Signature and Date)

203 ELECTRICAL SYSTEM

References:

[a] Engineer Officer's Standing Orders
[b] Engineering Casualty Control Manual
[c] Naval Engineering Manual, COMDTINST M9000.6 (series)
[d] Ship's Plan
[e] Manufacturers Instruction Books

203.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?
C. What are the modes of operation and control (local/remote, manual, and automatic)?

		Questions
203.1.1	Ship service generators	A B C
.2	Emergency generators	A B C
.3	Main switchboard(s)	A B C
.4	Motor generator(s)	A B C

_____
(Signature and Date)

203.2 PRINCIPLES OF OPERATION

203.2.1 Under what conditions would all generators be on line, paralleled, or split?

_____
(Signature and Date)

203.3 PARAMETERS/OPERATING LIMITS

203.3.1 What is the capacity of each ships generator and shore-tie in terms of volts, amps, and kW?

_____
(Signature and Date)

203 ELECTRICAL SYSTEM (CONT'D)

203.4 SYSTEM INTERFACE

203.4.1 Discuss the difficulties encountered with switching from ship to shore or shore to ship power including loss of phase, phase rotation, and interruption of power.

.2 Discuss the effect of the loss of this system on the following:

a. Fire Control system
b. Firefighting system
c. Search radar(s)
d. Communications system
e. Hydraulic system
f. Hotel services

_____
(Signature and Date)

203.5 SAFETY PRECAUTIONS – None to be discussed.

204 BRIDGE EQUIPMENT SYSTEM

References:

[a] Equipment Technical Publications
[b] Ship's Plans

204.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?
C. What are the modes of operation or control?
D. What are the probable indications if this component fails?
E. Where is the circuit breaker or remote power cutoff switch located?

		Questions
204.1.1	Helm unit:	
	a. Wheel and/or joystick(s)	A B C D E
	b. Non-follow up control	A B C D E
	c. Mechanical helm indicator	A B C D E
	d. Rudder angle indicator	A B C D E
	e. Steering pump and/or cable-selector switch	A B C D E
	f. Steering casualty alarm	A B C D E
	g. Remote steering controls	A B C D E
	h. Autopilot	A B C D E
.2	Lee helm unit:	
	a. Engine order telegraph	A B C D E
	b. RPM enunciators	A B C D E
	c. Emergency bells	A B C D E
	d. Pilot house control/throttle/tractor controls	A B C D E
	e. RPM, pitch, and current meters and alarms	A B C D E
	f. Z-drive RPM and direction/azimuth degree indicator	A B C D E
	g. Thruster controls, tachometer and direction	A B C D E
	h. Dynamic Positioning system	A B C D E
.3	Navigation equipment:	
	a. ECINS	A B C D E
	b. ECS	A B C D E
	c. Gyrocompass	A B C D E
	d. Gyrocompass repeater	A B C D E
	e. Magnetic/fluxgate compass	A B C D E
	f. Surface search radar	A B C D E

204 BRIDGE EQUIPMENT SYSTEM (CONT'D)

			Questions
204.1.3	g.	Navigational radar	A B C D E
	h.	Radar repeater	A B C D E
	i.	Loran receiver	A B C D E
	j.	GPS/DGPS receiver	A B C D E
	k.	Fathometer	A B C D E
	l.	RDF	A B C D E
	m.	Speed log	A B C D E
	n.	Navigation light panel	A B C D E
.4	Information and display equipment:		
	a.	Anemometer	A B C D E
	b.	Clinometer	A B C D
	c.	Status board	A B
.5	Internal communication equipment:		
	a.	Call-Bell system	A B C D E
	b.	Hand-held bull horn	A B C D
	c.	Voice tube	A B C D
	d.	Ship's whistle (including both manual and automatic controls)	A B C D E
	e.	Boat Control Announcing system (6MC)	A B C D E

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(Signature and Date)

204.2 PRINCIPLES OF OPERATION

204.2.1 What actions are necessary to restore proper operation of electronic navigation equipment after a power failure?

_____
(Signature and Date)

204.3 PARAMETERS/OPERATING LIMITS – None to be discussed.

204.4 SYSTEM INTERFACE – None to be discussed.

204.5 SAFETY PRECAUTIONS

204.5.1 Discuss the electrical safety hazards that exist on the bridge.

_____
(Signature and Date)

205 RADAR EQUIPMENT SYSTEM

References:

[a] Cutter Operating Manuals
[b] NAVPUB 1310 DMA PUB, Radar Navigation Manual

205.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?
C. What are the modes of operation or control?
D. What are the probable indications if this component fails?

		Questions
205.1.1	Radar repeater:	
a.	Power	A B C D
b.	Antenna	A B C D
c.	Tune	A B C D
d.	Gain	A B C D
e.	Contrast	A B C D
f.	Interference/reject	A B C D
g.	Panel lights	A B C D
h.	North up/head up/course up	A B C D
i.	BRG scale	A B C D
j.	VRM readout	A B C D
k.	Range rings/brilliance	A B C D
l.	PWR boost	A B C D
m	Range select	A B C D
n.	Rain clutter	A B C D
o.	Sea clutter	A B C D
p.	EBL position	A B C D
q.	Compass	A B C D

205 RADAR EQUIPMENT SYSTEM (CONT'D)

			Questions
205.1.1	r.	Range scale indicator VRM	A B C D
	s.	True bearing scale	A B C D
	t.	Relative bearing scale	A B C D
	u.	Off-center control	A B C D
.2	Radar components:		
	a.	Modulator	A B C D
	b.	Transmitter	A B C D
	c.	Antenna assemblies	A B C D
	d.	Power supply	A B C D
	e.	Receiver	A B C D
	f.	Indicator	A B C D
	g.	STC controls	A B C D
	h.	Antijam controls	A B C D
	i.	Pulse selection switch	A B C D
	j.	Pulse repetition rate control knob	A B C D
	k.	Echo box switch	A B C D
	l.	Main power switch	A B C D
.3	ARPA:		
	a.	Own ship controls	A B C D
	b.	Safe limit controls	A B C D
	c.	Trackball/touchscreen	A B C D
	d.	Target acquisition	A B C D
	e.	Vector control	A B C D
	f.	Data entry keyboard	A B C D
	g.	Trial maneuver	A B C D
	h.	Fault/warning alarms	A B C D
.4	IFF equipment, if applicable:		
	a.	Master control unit	A B C D
	b.	Interrogator (master and remote)	A B C D
	c.	Transponder (master and remote)	A B C D
	d.	Responder	A B C D
	e.	Video decoder	A B C D
.5	TACAN (for vessels so equipped):		
	a.	Master control unit	A B C D
	b.	Remote control unit	A B C D
	c.	Antenna	A B C D

205 RADAR EQUIPMENT SYSTEM (CONT'D)

		Questions
205.1 .6	AN/SPS 40 air search radar (for vessels so equipped):	
	a. Master control unit	A B C D
	b. Remote control unit	A B C D
	c. Antenna	A B C D
	d. Modes of operation	A B C D
	e. Normal repeater line up	A B C D

_____
(Signature and Date)

205.2 PRINCIPLES OF OPERATION

205.2.1 How do the system components work together to achieve the system's function?

_____
(Signature and Date)

205.3 PARAMETERS/OPERATING LIMITS

For the items listed, answer the following questions:

A. What are the minimum and maximum ranges (horizontal and vertical)?

		Questions
205.3.1	Contact acquisition for your radar	A

_____
(Signature and Date)

205.4 SYSTEM INTERFACE

205.4.1 Using the above radar components describe the procedure to properly tune the radar.

.2 What precautions are necessary and what regulations apply when energizing the IFF and AN/SPS 40, with regard to proximity to local airports, ANGs, etc.

_____
(Signature and Date)

205 RADAR EQUIPMENT SYSTEM (CONT'D)

205.5 SAFETY PRECAUTIONS

205.5.1 Discuss the electrical safety hazards.

.2 Discuss the electromagnetic radiation hazards and locate those areas effected on your ship.

.3 Locate remote power cut off switch for all equipment.

.4 Discuss the equipment tag-out procedures.

_____

(Signature and Date)

206 BUOYAGE SYSTEMS

References:

[a] American Practical Navigator (Bowditch)
[b] Dutton's Navigation and Piloting, 14th Edition

206.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. What are the color characteristics of this component?
C. What are the shape characteristics of this component?
D. What are the light characteristics of this component?
E. What is the top mark of this component?
F. What are the numbering/lettering characteristics of this component?
G. Where is this system generally used?

		Questions
206.1.1	IALA – A Buoyage system (as seen when entering from seaward)	A G
	a. Port hand buoy	A B C D E F
	b. Starboard hand buoy	A B C D E F
	c. Preferred channel to starboard	A B C D E F
	d. Preferred channel to port	A B C D E F
	e. North cardinal mark	A B C D E F
	f. East cardinal mark	A B C D E F
	g. South cardinal mark	A B C D E F
	h. West cardinal mark	A B C D E F
	i. Isolated danger mark	A B C D E F
	j. Safe water mark	A B C D E F
	k. Special mark	A B C D E F
	l. Daybeacons	A B C D E F
.2	IALA – B Buoyage system (as seen when entering from seaward)	A G
	a. Port hand buoy	A B C D E F
	b. Starboard hand buoy	A B C D E F
	c. Preferred channel to starboard	A B C D E F
	d. Preferred channel to port	A B C D E F
	e. Safe water mark	A B C D E F
	f. Special mark	A B C D E F
	g. Daybeacons	A B C D E F

206 BUOYAGE SYSTEMS (CONT'D)

		Questions
206.1.3	ICW Marking system (as seen when following the ICW from New Jersey to Texas)	A G
	a. Port hand aids	A B C D E F
	b. Starboard hand aids	A B C D E F
	c. Dual purpose aids	A B C D E F
	d. Daybeacons	A B C D E F

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(Signature and Date)

206.2 PRINCIPLES OF OPERATION – None to be discussed.

206.3 PARAMETERS/OPERATING LIMITS – None to be discussed.

206.4 SYSTEM INTERFACE – None to be discussed.

206.5 SAFETY PRECAUTIONS – None to be discussed.

207 SURVIVAL AND SURVIVAL EQUIPMENT SYSTEM

References:

[a] Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)
[b] Coast Guardsman's Manual (Bennett)

207.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?
C. What is the capacity/capability of this component?

		Questions
207.1.1	Ready lifeboat	A B C
.2	Survival/immersion suit	A B C
.3	Anti-exposure coveralls	A B C
.4	Wet/dry suit	A B C
.5	Cutter swimmer's outfit	A B C
.6	Standard Navy vest type lifejacket (type I)	A B C
.7	Inflatable yoke type lifejacket	A B C
.8	Coast Guard approved type III (inherently buoyant)	A B C
.9	Inflatable life raft	A B C
.10	SOLAS A/B survival kit	A B C
.11	Safety helmet	A B C
.12	Boatcrew signal kit	A B C
.13	Strokes litter	A B C
.14	Electrical floating lantern	A B C
.15	Ring buoy	A B C
.16	Sea Drogue	A B C
.17	Sea Anchor	A B C

_____
(Signature and Date)

207.2 PRINCIPLES OF OPERATION – None to be discussed.

207 SURVIVAL AND SURVIVAL EQUIPMENT SYSTEM (CONT'D)

207.3 PARAMETERS/OPERATING LIMITS – None to be discussed.

207.4 SYSTEM INTERFACE – None to be discussed.

207.5 SAFETY PRECAUTIONS

207.5.1 What safety precautions apply to:

a. Overcrowding boats/rafts
b. Rotating personnel in the water with regard to time and water temperature
c. Keeping inflatable life rafts afloat and in an upright position
d. Controlling temperature within inflatable life raft
e. Environmental considerations
f. Sea keeping considerations using drogue or sea anchor

_____
(Signature and Date)

208 MAIN PROPULSION MACHINERY (DIESEL) SYSTEM

References:

[a] Engineer Officer's Standing Orders
[b] Engineering Casualty Control Manual
[c] Naval Engineering Manual, COMDTINST M9000.6 (series)
[d] Ship's Plan
[e] Manufacturers Instruction Books
[f] NSTM (various chapters as applicable)

208.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?

		Questions
208.1.1	Turbocharger	A B
.2	Lube oil pump	A B
.3	Raw water pump	A B
.4	Governor	A B
.5	Starting motor	A B
.6	Clutch	A B
.7	Reduction gear	A B
.8	Starting air compressor	A B
.9	Z-drive	A B

_____
(Signature and Date)

208.2 PRINCIPLES OF OPERATION

208.2.1 Explain the procedures for emergency control of shaft speed.

.2 Why is it a poor practice to apply a large load to a diesel engine that is not properly warmed up?

.3 Explain the impact, restrictions, and precautions associated with free-wheeling or locking the shaft on multiscrew ships.

_____
(Signature and Date)

208 MAIN PROPULSION MACHINERY (DIESEL) SYSTEM (CONT'D)

208.3 PARAMETERS/OPERATING LIMITS

208.3.1 Explain the operating parameters relating to engine speed, shaft speed, and pitch.

.2 Describe all possible engine configurations available on your cutter.

.3 Explain fuel consumption at various engine speeds and engine configurations.

_____
(Signature and Date)

208.4 SYSTEM INTERFACE – None to be discussed.

208.5 SAFETY PRECAUTIONS

208.5.1 Explain the possible casualties that can occur on your unit's propulsion plant in accordance with your Engineering Casualty Control Manual.

.2 Discuss conditions that can cause the casualties listed in the ECCM.

_____
(Signature and Date)

209 MAIN PROPULSION MACHINERY (ELECTRICAL) SYSTEM

References:

[a] Engineer Officer's Standing Orders
[b] Engineering Casualty Control Manual
[c] Naval Engineering Manual, COMDTINST M9000.6 (series)
[d] Ship's Plan
[e] Manufacturers Instruction Books
[f] NSTM (various chapters as applicable)

209.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?

		Questions
209.1.1	Main generators	A B
.2	Main motor(s)	A B
.3	Excitation generator	A B
.4	Rectifiers	A B

_____
(Signature and Date)

209.2 PRINCIPLES OF OPERATION

209.2.1 Discuss in what combination(s) the main generators and motors may be operated.

.2 Discuss what generators must be on line for each propulsion configuration.

_____
(Signature and Date)

209 MAIN PROPULSION MACHINERY (ELECTRICAL) SYSTEM (CONT'D)

209.3 PARAMETERS/OPERATING LIMITS

209.3.1 Explain the operating parameters relating to engine speed, shaft speed, and pitch.

.2 Describe all possible engine configurations available on your cutter.

.3 Explain fuel consumption at various engine speeds and engine configurations.

_____
(Signature and Date)

209.4 SYSTEM INTERFACE – None to be discussed.

209.5 SAFETY PRECAUTIONS

209.5.1 Describe what happens when the main motor/propulsion generator experiences a short or ground.

_____
(Signature and Date)

210 MAIN PROPULSION MACHINERY (GAS TURBINE) SYSTEM

References:

[a] Engineer Officer's Standing Orders
[b] Engineering Casualty Control Manual
[c] Naval Engineering Manual, COMDTINST M9000.6 (series)
[d] Ship's Plan
[e] Manufacturers Instruction Books
[f] NSTM (various chapters as applicable)

210.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?

		Questions
210.1.1	Gas generator	A B
.2	Free/power turbine	A B
.3	Overspeed governor	A B
.4	Syncro clutch	A B
.5	Reduction gears	A B

_____
(Signature and Date)

210.2 PRINCIPLES OF OPERATION

210.2.1 Discuss the procedures for emergency control of the cutter.

.2 Discuss the methods of engaging and disengaging the clutch, including a dead shaft pickup.

.3 Discuss the precautions taken to prevent icing.

.4 Discuss the procedure to transfer from diesel to turbine and vice versa.

_____
(Signature and Date)

210 MAIN PROPULSION MACHINERY (GAS TURBINE) SYSTEM (CONT'D)

210.3 PARAMETERS/OPERATING LIMITS

210.3.1 Explain the operating parameters relating to engine speed, shaft speed, and pitch.

.2 Describe all possible engine configurations available on your cutter.

.3 Explain fuel consumption at various engine speeds and engine configurations.

_____
(Signature and Date)

210.4 SYSTEM INTERFACE – None to be discussed.

210.5 SAFETY PRECAUTIONS

210.5.1 Explain the possible casualties that can occur on your unit's propulsion plant in accordance with your Engineering Casualty Control Manual.

2. Discuss conditions that can cause the casualties listed in the ECCM.

3. Explain the importance of keeping the plenum deck free of debris and gear.

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(Signature and Date)

211 OTHER PROPULSION MACHINERY/AUXILIARY EQUIPMENT SYSTEM

References:

[a] Engineer Officer's Standing Orders
[b] Engineering Casualty Control Manual
[c] Naval Engineering Manual, COMDTINST M9000.6 (series)
[d] Ship's Plans
[e] Manufacturers Instruction Books
[f] NSTM (various chapters as applicable)

211.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. What is its function?
B. Where is it located?
C. What are the various modes of control?
D. What are the operating parameters/limits?
E. What are the procedures when there is a loss of primary control?

		Questions
211.1.1	Thruster system	A B C D E
	a. Thruster generator	A B D
	b. Silicon control rectifier	A B D
	c. Thruster motor	A B D
	d. Power take-off shaft	A B D

_____
(Signature and Date)

.2	Z-Drive system	A B C D E
	a. Hydraulic motor	A B D
	b. Air clutch assembly	A B D
	c. Remote terminal units	A B D

_____
(Signature and Date)

211 OTHER PROPULSION MACHINERY/AUXILIARY EQUIPMENT SYSTEM (CONT'D)

		Questions
211.1.3	Bubbler system	A B C D E

_____
(Signature and Date)

.4	Bow Wash system	A B C D E

_____
(Signature and Date)

211.2 PRINCIPLES OF OPERATION – None to be discussed.

211.3 PARAMETERS/OPERATING LIMITS – None to be discussed.

211.4 SYSTEM INTERFACE – None to be discussed.

211.5 SAFETY PRECAUTIONS – None to be discussed.

212 CUTTER COMBAT SYSTEM

References:

[a] Cutter Combat Systems Doctrine
[b] Cutter Tactical Manual
[c] Technical Manuals for Installed Combat Systems
[d] Commanding Officer's Battle Orders
[e] Own Ship's HERO Bill

212.1 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of this system or the actual equipment, identify the following system components and component parts and discuss the designated items for each:

A. Maximum and minimum horizontal and vertical ranges.
B. Primary uses (AW, ASUW).
C. Types of ammunition that are available (combat/LE load).
D. Manning requirements.
E. Modes of operation.
F. Misfire procedures.
G. Maximum and minimum detection ranges.
H. Uses for AAW, ASUW, and ELT mission areas.
I. Band/frequency coverage.

		Questions
212.1.1	GWS:	
	a. MK 75 GWS	A B C D F
	b. MK 38 GWS	A B C D F
	c. MK 15 CIWS	A B C D E F
	d. .50 caliber machine gun	A B C D F
.2	FCS maximum and minimum detection ranges	A B C D E F
.3	ESS:	
	a. AN/WLR-1 (H) (V)	D E H I
	b. AN/SLQ-32 (V2)/ANSLQ-32A (V2)	D E H I
	c. CIC/pilothouse modes of operation	D E G H I

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(Signature and Date)

212.2 PRINCIPLES OF OPERATION – None to be discussed.

212.3 PARAMETERS/OPERATING LIMITS – None to be discussed.

212.4 SYSTEM INTERFACE – None to be discussed.

212 CUTTER COMBAT SYSTEM (CONT'D)

212.5 SAFETY PRECAUTIONS

212.5.1 Discuss MK 92 electromagnetic radiation hazards and locate those areas on your ship.

.2 Discuss safety precautions to be observed during gunnery exercises as it pertains to the Bridge Watch.

.3 Discuss safety precautions to be observed during weapons PMS involving exercising gun mounts or energizing MK 92/MK 15 CIWS.

.4 Discuss HERO safety precautions to be observed during CIWS ammunition handling.

.5 Discuss the weapons posture for your ship.

.6 Discuss the SROE for U.S. Forces and how it affects your ship.

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(Signature and Date)

300 INTRODUCTION TO WATCHSTATIONS

300.1 INTRODUCTION

The Watchstation section of your PQS is where you get a chance to demonstrate to your Qualifier that you can put the knowledge you have gained in the previous sections to use. It allows you to practice the tasks required for your watchstation and to handle abnormal conditions and emergencies. Before starting your assigned tasks, you must complete the prerequisites that pertain to the performance of that particular task. Satisfactory completion of all prerequisites is required prior to achievement of final watchstation qualification.

300.2 FORMAT

Each watchstation in this section contains:

- A FINAL QUALIFICATION PAGE, which is used to obtain the required signatures for approval and recording of Final Qualification.

- PREREQUISITES, which are items that must be certified completed before you can begin qualification for a particular watchstation. Prerequisites may include schools, watchstation qualifications from other PQS books, and fundamentals, systems, or watchstation qualifications from this book. Prior to signing off each prerequisite line item, the Qualifier must verify completion from existing records. Record the date of actual completion, not the sign-off date.

- WATCHSTATION Performance, which is the practical factors portion of your qualification. The performance is broken down as follows:

  Tasks (routine operating tasks that are performed frequently)
  Infrequent Tasks
  Abnormal Conditions
  Emergencies
  Training Watches

If there are multiple watchstations, a QUALIFICATION PROGRESS SUMMARY will appear at the end of the Standard.

300 INTRODUCTION TO WATCHSTATIONS (CONT'D)

300.3 OPERATING PROCEDURES

The PQS deliberately makes no attempt to specify the procedures to be used to complete a task or control or correct a casualty. The only proper sources of this information are the technical manuals, Engineering Casualty Control Manual (ECCM), Commanding Officer's Standing Orders or other policy-making documents prepared for a specific installation or a piece of equipment. Additionally, the level of accuracy required of a trainee may vary from ship to ship. Thus, proficiency may be confirmed only through demonstrated performance at a level of competency sufficient to satisfy the Commanding Officer.

300.4 DISCUSSION ITEMS

Though actual performance of evolutions is always preferable to observation or discussion, some items listed in each watchstation may be too hazardous or time consuming to perform or simulate. Therefore, you may be required to discuss such items with your Qualifier.

300.5 NUMBERING

Each Final Qualification is assigned both a watchstation number and a COMDTINST Final Qualification number. The COMDTINST number is to be used for recording qualifications in service and training records.

300.6 HOW TO COMPLETE

After completing the required prerequisites applicable to a particular task, you may perform the task under the supervision of a qualified watchstander. If you satisfactorily perform the task and can explain each step, your Qualifier will sign you off for that task. After all line items have been completed, your Qualifier will verify Final Qualification by signing and dating the Final Qualification pages.

301 IN-PORT OFFICER OF THE DECK (OOD)

NAME_____ RATE/RANK_____

This page is to be used as a record of satisfactory completion of designated sections of the Personnel Qualification Standard (PQS). Only specified supervisors may signify completion of applicable sections either by written or oral examination, or by observation of performance. The examination or checkout need not cover every item; however, a sufficient number should be covered to demonstrate the examinee's knowledge. Should supervisors *give away* their signatures, unnecessary difficulties can be expected in future routine operations.

A copy of this completed page shall be kept in the individual's training jacket.

The trainee has completed all PQS requirements for this watchstation. Recommend designation as a qualified IN-PORT OFFICER OF THE DECK (OOD) (COMDTINST M3502.5B).

RECOMMENDED_____ DATE_____
Supervisor

RECOMMENDED_____ DATE_____
Division Officer

RECOMMENDED_____ DATE_____
Department Head

QUALIFIED_____ DATE_____
Commanding Officer or Designated Representative

SERVICE RECORD ENTRY_____ DATE_____

301 IN-PORT OFFICER OF THE DECK (OOD)

301.1 PREREQUISITES

FOR OPTIMUM TRAINING EFFECTIVENESS, THE FOLLOWING PQS ITEMS SHOULD BE COMPLETED PRIOR TO STARTING YOUR ASSIGNED TASKS BUT MUST BE COMPLETED PRIOR TO FINAL WATCHSTATION QUALIFICATION.

301.1.1 PQS QUALIFICATIONS:

Basic Damage Control (NAVEDTRA 43119-H)

Completed _____
(Qualifier and Date)

301.1.2 FUNDAMENTALS FROM THIS PQS:

101 Safety

Completed _____
(Qualifier and Date)

102 Cutter Characteristics

Completed _____
(Qualifier and Date)

103 Cutter Organization

Completed _____
(Qualifier and Date)

104 Cutter Mission

Completed _____
(Qualifier and Date)

105 Good Order and Discipline

Completed _____
(Qualifier and Date)

106 Operational Reports

Completed _____
(Qualifier and Date)

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

301.1.2 107 Tides and Currents

Completed _____
(Qualifier and Date)

108 Deck Seamanship

Completed _____
(Qualifier and Date)

109 Cutter Compartmentation and Watertight Integrity

Completed _____
(Qualifier and Date)

110 Stability and Buoyancy

Completed _____
(Qualifier and Date)

111 In-port Watchstanding Principles

Completed _____
(Qualifier and Date)

112 Routine In-port Evolutions

Completed _____
(Qualifier and Date)

113 Honors and Ceremonies

Completed _____
(Qualifier and Date)

114 Security

Completed _____
(Qualifier and Date)

115 In-port Emergency Procedures

Completed _____
(Qualifier and Date)

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

301.1.2 116 Weather

Completed _____
(Qualifier and Date)

117 Shipboard Supply

Completed _____
(Qualifier and Date)

118 Environmental Protection

Completed _____
(Qualifier and Date)

119 Time

Completed _____
(Qualifier and Date)

120 Communications

Completed _____
(Qualifier and Date)

121.1-6b Engineering

Completed _____
(Qualifier and Date)

.3 SYSTEMS FROM THIS PQS:

201 Alarm

Completed _____
(Qualifier and Date)

202 External Communications

Completed _____
(Qualifier and Date)

203 Electrical

Completed _____
(Qualifier and Date)

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

301.2 TASKS

For the tasks listed below:

A. What are the steps of this procedure?
B. What are the reasons for each step?
C. What control/coordination is required?
D. What are the prescribed 1MC announcements?
E. What communications must be established?
F. What safety/security precautions must be observed?
G. What are the Coast Guard, SOPA, and ship's guidelines, instructions, or regulations?
H. What limitations are imposed by this task?
I. What are the required reports?
J. What flags/pennants/day shapes/lights are displayed?
K. Satisfactorily perform this task.

		Questions
301.2.1	Inspect quarterdeck watch	A B I
	_____ (Signature and Date)	
.2	Verify status of ship's major equipment and pier services	A B K
	_____ (Signature and Date)	
.3	Inspect ship's mooring lines, ground tackle, and position	A B F K
	_____ (Signature and Date)	
.4	Determine SOPA and guardship assignments	A G J K
	_____ (Signature and Date)	
.5	Review current and scheduled activities, evolutions, and conditions of readiness	A B G K
	_____ (Signature and Date)	
.6	Ascertain location and availability of CO, XO	A B C G J K
	_____ (Signature and Date)	

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
301.2.7	Review required publications and instructions	A B G K
	_____ (Signature and Date)	
.8	Review ship's and SOPA's policies for ship's boats	A B G K
	_____ (Signature and Date)	
.9	Demonstrate the ability to access the MPCMS alarm page and acknowledge an alarm	A B C E F G J K
	_____ (Signature and Date)	
.10	Execute the ship's routine as modified in the POD or POW	A B C D G I K
	_____ (Signature and Date)	
.11	Ensure positive identification/authorization of persons entering/ exiting the ship	A B C F G K
	_____ (Signature and Date)	
.12	Inspect personnel departing on liberty	A B C F G K
	_____ (Signature and Date)	
.13	Inspect packages/materials carried on/off the ship for unauthorized/illegal items per ship's procedures	A B F G K
	_____ (Signature and Date)	
.14	Observe morning/evening colors	A B C D G J K
	_____ (Signature and Date)	

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

Questions

301.2.15

.16 Supervise inspection of ship's boat prior to use to ensure all proper equipment is aboard — A B C G K

_____
(Signature and Date)

.17 Monitor the operation of the ship's boats including lowering and hoisting — A B C E F G J K

_____
(Signature and Date)

.18 Render honors to officers and dignitaries as appropriate — A B C D E G J K

_____
(Signature and Date)

.19 Call away/supervise work parties — A C D F K

_____
(Signature and Date)

.20 Initiate action to receive ships alongside — A B C D E F H I J K

_____
(Signature and Date)

.21 Monitor personnel working over the side — A C D F G H I K

_____
(Signature and Date)

.22 Monitor personnel working aloft — A C D F G H I K

_____
(Signature and Date)

.23 Monitor a refueling/fuel transfer evolution — A C D E F G H I J K

_____
(Signature and Date)

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
301.2.24	Calculate predicted tides and currents for your homeport	A B K
	_____ (Signature and Date	
.25	Inspect entries in DC Closure Log and randomly verify by spot check	A B F G K
	_____ (Signature and Date)	
.26	Read draft marks	A B F K
	_____ (Signature and Date)	
.27	Record weather observations	A B G K
	_____ (Signature and Date)	
.28	Review ship's message board	A B G K
	_____ (Signature and Date)	
.29	Review and sign ship's logs	A B C G K
	_____ (Signature and Date)	
.30	Inspect the magazine(s), armory, small arms, and pyrotechnics spaces and complete the required log entries.	A B F G I K
	_____ (Signature and Date)	
.31	Observe action taken by FOWK/DCA to correct for list and trim	A B C E F G I K
	_____ (Signature and Date)	

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
301.2.32	Observe ordnance handling	A B C D E G H J K
	_____ (Signature and Date)	
.33	Monitor divers in the water	A B C D F G H I J K
	_____ (Signature and Date)	
.34	Prepare for getting underway	A B C D E F G I K
	_____ (Signature and Date)	
.35	Work mooring lines with capstan/winch	A B C E G H K
	_____ (Signature and Date)	
.36	Supervise the installation of chafing gear and rat guards on mooring lines	A B F K
	_____ (Signature and Date)	
.37	Set HERO/EMCON restrictions	A B C D E F G H I J K
	_____ (Signature and Date)	
.38	Initiate actions for reduced visibility/heavy weather/ storm preparations	A B C D E F G H I J K
	_____ (Signature and Date)	

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

301.4 ABNORMAL CONDITIONS

For the abnormal conditions listed below:

A. What indications and alarms are received?
B. What are the probable causes?
C. What immediate action is required?
D. What operating limitations are imposed?
E. How does this condition affect other operations/equipment/watchstations?
F. What control/coordination is required?
G. What communications must be established?
H. Satisfactorily perform or simulate the corrective/immediate action for this abnormal condition.

		Questions
301.4.1	High magazine temperature	A B C D E F G H
	_____ (Signature and Date)	
.2	Loss of firemain pressure	A B C D E F G H
	_____ (Signature and Date)	
.3	Loss of electrical power	A B C D E F G H
	_____ (Signature and Date)	
.4	Loss of cooling/auxiliary saltwater	A B C D E F G H
	_____ (Signature and Date)	

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

301.5 EMERGENCIES

For the emergencies listed below:

A. What indications and alarms are received?
B. What are the probable causes?
C. What immediate action is required?
D. What operating limitations are imposed?
E. How does this emergency affect other operations/equipment/watchstations?
F. What control/coordination is required?
G. What communications must be established?
H. Satisfactorily perform or simulate the corrective/immediate action for this emergency.

		Questions
301.5.1	Fire	A B C D E F G H
	_____ (Signature and Date)	
.2	Flooding	A B C D E F G H
	_____ (Signature and Date)	
.3	Collision	A B C D E F G H
	_____ (Signature and Date)	
.4	Man overboard	A B C D E F G H
	_____ (Signature and Date)	
.5	Call away rescue and assistance team	A B C D E F G H
	_____ (Signature and Date)	
.6	Weapons/ammunition accident	A B C D E F G H
	_____ (Signature and Date)	

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

Questions

301.5.7 Bomb threat — A B C D E F G H

_____
(Signature and Date)

.8 Explosion — A B C D E F G H

_____
(Signature and Date)

.9 Sneak attack/boarding/disturbance ashore — A B C D E F G H

_____
(Signature and Date)

.10 Civil disturbance — A B C D E F G H

_____
(Signature and Date)

.11 Oil spill — A B C D E F G H

_____
(Signature and Date)

.12 Severe personnel injury/imminent death — A B C D E F G H

_____
(Signature and Date)

.13 Emergency action/response message — A B C D E F G H

_____
(Signature and Date)

301 IN-PORT OFFICER OF THE DECK (OOD) (CONT'D)

301.6 WATCHES

301.6.1 STAND THE IN-PORT OOD WATCHES UNDER QUALIFIED SUPERVISION: (MINIMUM OF 6 TIMES)

_____
(Signature and Date)

_____
(Signature and Date)

_____
(Signature and Date)

_____
(Signature and Date)

_____
(Signature and Date)

_____
(Signature and Date)

301.7 EXAMINATIONS (AS REQUIRED BY COMMANDING OFFICER.)

301.7.1 EXAMINATIONS Pass a written examination

_____
(Signature and Date)

.2 EXAMINATIONS Pass an oral examination board

_____
(Signature and Date)

302 UNDERWAY OFFICER OF THE DECK (OOD)

NAME_____ RATE/RANK_____

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A copy of this completed page shall be kept in the individual's training jacket.

The trainee has completed all PQS requirements for this watchstation. Recommend designation as a qualified UNDERWAY OFFICER OF THE DECK (OOD) (COMDTINST M3502.5B).

RECOMMENDED_____ DATE_____
Supervisor

RECOMMENDED_____ DATE_____
Division Officer

RECOMMENDED_____ DATE_____
Department Head

QUALIFIED_____ DATE_____
Commanding Officer or Designated Representative

SERVICE RECORD ENTRY_____ DATE_____

302 UNDERWAY OFFICER OF THE DECK (OOD)

302.1 PREREQUISITES

FOR OPTIMUM TRAINING EFFECTIVENESS, THE FOLLOWING PQS ITEMS SHOULD BE COMPLETED PRIOR TO STARTING YOUR ASSIGNED TASKS BUT MUST BE COMPLETED PRIOR TO FINAL WATCHSTATION QUALIFICATION.

302.1.1 PQS QUALIFICATIONS:

Basic Damage Control (NAVEDTRA 43119-H)

Completed _____
(Qualifier and Date)

Deck Watch Officer Rules of the Road Examination/Renewal

Completed _____
(Qualifier and Date)

.2 FUNDAMENTALS FROM THIS PQS:

101 Safety

Completed _____
(Qualifier and Date)

102 Cutter Characteristics

Completed _____
(Qualifier and Date)

103 Cutter Organization

Completed _____
(Qualifier and Date)

104 Cutter Mission

Completed _____
(Qualifier and Date)

106 Operational Reports

Completed _____
(Qualifier and Date)

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

302.1.2 107 Tides and Currents

Completed _____
(Qualifier and Date)

108 Deck Seamanship

Completed _____
(Qualifier and Date)

109 Cutter Compartmentation and Watertight Integrity

Completed _____
(Qualifier and Date)

110 Stability and Buoyancy

Completed _____
(Qualifier and Date)

113 Honors and Ceremonies

Completed _____
(Qualifier and Date)

116 Weather

Completed _____
(Qualifier and Date)

118 Environmental Protection

Completed _____
(Qualifier and Date)

119 Time

Completed _____
(Qualifier and Date)

120 Communications

Completed _____
(Qualifier and Date)

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

302.1.2 121 Engineering

Completed _____
(Qualifier and Date)

122 Underway Bridge Watch

Completed _____
(Qualifier and Date)

123 Standard Commands

Completed _____
(Qualifier and Date)

124 Forces Acting On Ships

Completed _____
(Qualifier and Date)

125 Basic Maneuvering

Completed _____
(Qualifier and Date)

126 Handling Alongside

Completed _____
(Qualifier and Date)

127 Anchoring

Completed _____
(Qualifier and Date)

128 Towing

Completed _____
(Qualifier and Date)

129 Special/Emergency Evolutions

Completed _____
(Qualifier and Date)

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

302.1.2 130 Underway Weather

Completed _____
(Qualifier and Date)

131 Radar

Completed _____
(Qualifier and Date)

132 Maneuvering Board/Automatic Radar Plotting Aids

Completed _____
(Qualifier and Date)

133 Nautical Charts and Publications

Completed _____
(Qualifier and Date)

134 Electronic Navigation

Completed _____
(Qualifier and Date)

135 Terrestrial Navigation

Completed _____
(Qualifier and Date)

136 Celestial Navigation

Completed _____
(Qualifier and Date)

137 Compass

Completed _____
(Qualifier and Date)

138 Survival and Survival Equipment

Completed _____
(Qualifier and Date)

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

302.1.2 139 Aids to Navigation

Completed _____
(Qualifier and Date)

.3 SYSTEMS FROM THIS PQS:

201 Alarm

Completed _____
(Qualifier and Date)

202 External Communications

Completed _____
(Qualifier and Date)

203 Electrical

Completed _____
(Qualifier and Date)

204 Bridge Equipment

Completed _____
(Qualifier and Date)

205 Radar Equipment

Completed _____
(Qualifier and Date)

206 Buoyage

Completed _____
(Qualifier and Date)

207 Survival and Survival Equipment

Completed _____
(Qualifier and Date)

208 Main Propulsion Machinery (Diesel)

Completed _____
(Qualifier and Date)

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

302.1.3 209 Main Propulsion Machinery (Electrical)

Completed _____
(Qualifier and Date)

210 Main Propulsion Machinery (Gas Turbine)

Completed _____
(Qualifier and Date)

211 Other Propulsion Machinery/Auxiliary Equipment

Completed _____
(Qualifier and Date)

212 Cutter Combat

Completed _____
(Qualifier and Date)

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

302.2 TASKS

For the tasks listed below:

A. What are the steps of this procedure?
B. What are the reasons for each step?
C. What control/coordination is required?
D. What means of communications are used, including 1MC announcements?
E. What safety/security precautions must be observed?
F. What are the Coast Guard/ship's guidelines, instructions, or regulations?
G. What parameters/operating limits must be monitored?
H. What indications are received if proper procedures are not followed and what corrective action is required?
I Satisfactorily perform this task.
J Satisfactorily perform this task 90% of the time.

		Questions
302.2.1	Inventory all accountable publications and COMSEC material on the bridge prior to relieving the watch	A B C E F H I
	_____ (Signature and Date)	
.2	Properly relieve the watch as Conning Officer	A B C E F G H I
	_____ (Signature and Date)	
.3	Properly relieve the watch as OOD	A B C E F G H I
	_____ (Signature and Date)	
.4	Transfer bridge watch, keeping full grasp of tactical situation, when increasing cutter's degree of readiness from Condition IV to Condition I	A B C D E F G I
	_____ (Signature and Date)	
.5	Review/update tactical information to ensure that it is current and correctly displayed on surface summary plot/status board	A B C D E F I
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
302.2.6	Determine speed limitations based on propulsion plant capabilities and lineup	A B C D E F G H I
	_____ (Signature and Date)	
.7	Prepare a block diagram of the Integrated Ship's Control system	I
	_____ (Signature and Date)	
.8	Demonstrate proficiency in switching between the different main propulsion modes of control	A B C E G H I
	_____ (Signature and Date)	
.9	Ensure that all bridge logs and records are properly maintained	A B C F G I
	_____ (Signature and Date)	
.10	Supervise the bridge watch	A B C D E F I
	_____ (Signature and Date)	
.11	Operate and supervise use of all bridge equipment	A B C D E F G H I
	_____ (Signature and Date)	
.12	Monitor external radio circuits as directed by cutter's communication plan	A C D E F G H I
	_____ (Signature and Date)	
.13	Monitor EMCON/HERO condition	A B C D E F G H I
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
302.2.14	Conduct and log a voice communications exchange, using bridge-to-bridge radiotelephone	A B C D E F G H I
	_____ (Signature and Date)	
.15	Collect, process, and interpret all reports to OOD and initiate appropriate action	A B C D F I
	_____ (Signature and Date)	
.16	Report contacts to CO	A B C D F G I
	_____ (Signature and Date)	
.17	Determine target angle/aspect of a contact during daylight hours	A B I
	_____ (Signature and Date)	
.18	Determine target angle/aspect of ships at night by interpreting navigation lights	A B I J
	_____ (Signature and Date)	
.19	Correctly identify sound signals for vessels in restricted visibility	A B I J
	_____ (Signature and Date)	
.20	Demonstrate proficiency at solving maneuvering board problems including CPA, intercepts, avoidance, true wind and relative wind	A B I
	_____ (Signature and Date)	
.21	Demonstrate proficiency using the ARPA system to determine contact information and collision avoidance information	A B E F G H I J
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
302.2.22	Determine bearing drift of a surface contact and its significance to risk of collision	A B I J
	_____ (Signature and Date)	
.23	Conn the cutter using standard commands to helm and lee helm	A B C D E F G H I
	_____ (Signature and Date)	
.24	Transfer steering control from primary control to each alternate method of control	A B C D E F G H I
	_____ (Signature and Date)	
.25	Carry out ship's routine as modified by POD and Night Orders	A B C D E F I
	_____ (Signature and Date)	
.26	Conduct ship passing honors	A B C D F I
	_____ (Signature and Date)	
.27	Observe a mooring evolution alongside a pier from bridge, noting standard commands to helm, lee helm, linehandlers, and tugs	A B C D E F G H I
	_____ (Signature and Date)	
.28	Observe line handling procedures alongside a pier or another ship from your cutter's forecastle and fantail	A B C D E F G H I
	_____ (Signature and Date)	
.29	Get cutter underway from a pier	A B C D E F G H I
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
302.2.30	Bring your cutter alongside a pier	A B C D E F G H I
	_____ (Signature and Date)	
.31	Observe anchoring from the forecastle	A B C D E F G H I
	_____ (Signature and Date)	
.32	Observe anchoring from the bridge	A B C D E F G H I
	_____ (Signature and Date)	
.33	Conn the cutter through an anchoring evolution	A B C D E F G H I
	_____ (Signature and Date)	
.34	Get cutter underway from an anchorage	A B C D E F G H I
	_____ (Signature and Date)	
.35	Conn the ship during launch and recovery of small boat	A B C D E F G I
	_____ (Signature and Date)	
.36	Determine distance to a ship using stadimeter	A B F G H I
	_____ (Signature and Date)	
.37	Apply local variation and deviation to the magnetic compass to obtain a true heading	A B I
	_____ (Signature and Date)	
.38	Apply gyro error to indicated course to obtain true heading	A B I
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
302.2.39	Determine gyro error by the terrestrial range method	A B I
	_____ (Signature and Date)	
.40	Determine ship's position using pelorus and alidade using a minimum of 3 LOP's from identified charted objects.	A F I
	_____ (Signature and Date)	
.41	Establish cutter's position by plotting three radar ranges from identified charted objects.	A F G I
	_____ (Signature and Date)	
.42	Establish cutter's position using all available electronic navigation systems (i.e. Loran, GPS, echo sounder).	A F G I
	_____ (Signature and Date)	
.43	Demonstrate a knowledge of Navigation Chart symbols on a local chart.	I
	_____ (Signature and Date)	
.44	Correctly plot DRs and determine set and drift, SOG, COG, course and speed to maintain desired track	A B F G H I
	_____ (Signature and Date)	
.45	Construct an intended track to be used for piloting in restricted waters using turn bearings/ranges, courses and speeds, danger bearings/ranges, and proper labeling	A B E F G I
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

Questions

302.2.46 Act as plotter on a navigation team while piloting in restricted waters — A B C D F G I

_____
(Signature and Date)

.47 Act as navigation evaluator on a navigation team while piloting in restricted waters — A B C D E F G H I

_____
(Signature and Date)

.48 Complete a voyage plan and navigational brief using the required navigation chart and publications to plan a safe passage accounting for: — A B E F G I

a. Selection of voyage route
b. Local regulations
c. Local conditions
d. Available water depth
e. Weather
f. Tides and currents
g. Aids to Navigation
h. Hazards to Navigation

_____
(Signature and Date)

.49 Determine time zone designation for a given location and compute a time zone conversion to include local to Coordinated Universal Time — A I

_____
(Signature and Date)

.50 Compute sunrise/sunset and civil twilight — A I

_____
(Signature and Date)

.51 Prepare a marine sextant for celestial observations — A I

_____
(Signature and Date)

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
302.2.52	Determine the cutter's position using a three star fix	A I
	_____ (Signature and Date)	
.53	Advance multiple celestial LOPs to a common time to form a running fix	A B I
	_____ (Signature and Date)	
.54	Determine compass error by azimuth of the sun	A I
	_____ (Signature and Date)	
.55	Determine the cutter's position using sun lines	A I
	_____ (Signature and Date)	
.56	Compute time of LAN, shoot, and solve for latitude	A I
	_____ (Signature and Date)	
.57	Determine the computed visibility of a navigational light	A B I
	_____ (Signature and Date)	
.58	Demonstrate the ability to correctly read the following: a. Wet bulb b. Dry bulb c. Barometer d. Anemometer e. Weather analysis maps	A B I
	_____ (Signature and Date)	
.59	Compute and interpret state of tide and current at a given time and place	A B I
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

Questions

302.2.60 Observe damage control drills from the bridge, including mobility and maneuvering considerations imposed by the casualty, and how reports are received and acknowledged by the bridge — A B C D E F G I

_____
(Signature and Date)

.61 Demonstrate the use of the liquid loading diagram, FCCS, and the flooding effects diagram — A B C D E F G I

_____
(Signature and Date)

.62 Observe BECCE drills on the bridge, including engine order telegraph procedures, mobility and maneuvering considerations imposed by the casualty, and how reports are received and acknowledged by the bridge — A B C D E F G I

_____
(Signature and Date)

.63 Observe BECCE drills from the engine room — A B C D E F G I

_____
(Signature and Date)

.64 Observe main machinery space fire drill at the scene — A B C D E F G I

_____
(Signature and Date)

.65 Observe the engineering watch during Special Sea Detail — A B C D E F G I

_____
(Signature and Date)

.66 Observe and assist in lighting-off the main plant prior to getting underway — A B C D E F G I

_____
(Signature and Date)

.67 Observe and assist in securing the main plant — A B C D E F G I

_____
(Signature and Date)

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
302.2.68	Observe an abandon ship drill from the bridge	A B C D E F G I
	_____ (Signature and Date)	
.69	Observe an abandon ship drill at abandon ship station	A B C D E F G I
	_____ (Signature and Date)	
.70	Observe a man overboard drill from the shipboard recovery location	A B C D E F I
	_____ (Signature and Date)	
.71	Observe a man overboard drill from the bridge	A B C D E F G I
	_____ (Signature and Date)	
.72	Maneuver the cutter to recover a simulated man overboard during a shipboard recovery	A B C D E F G I
	_____ (Signature and Date)	
.73	Maneuver the cutter to recover a simulated man overboard during a small boat recovery	A B C D E F G I
	_____ (Signature and Date)	
.74	Encode and decode signals from PUB 102 during actual transmission/reception or during a flaghoist drill	A I
	_____ (Signature and Date)	

302.3 INFREQUENT TASKS – None to be discussed.

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

302.4 ABNORMAL CONDITIONS

For the abnormal conditions listed below:

A. What indications and alarms are received?
B. What immediate action is required?
C. What are the probable causes?
D. What operating limitations are imposed?
E. What emergencies or malfunctions may occur if immediate action is not taken?
F. How does this condition affect other operations/equipment/watchstations?
G. What follow-up action is required?
H. Satisfactorily perform or simulate the corrective/immediate action for this abnormal condition.

		Questions
302.4.1	Loss of electrical power	A B C D E F G H
	_____ (Signature and Date)	
.2	Loss of main engines/main propulsion plant/Z-drive	A B C D E F G H
	_____ (Signature and Date)	
.3	Loss of MPCMS	A B C D E F G H
	_____ (Signature and Date)	
.4	Loss of steering control	A B C D E F G H
	_____ (Signature and Date)	
.5	Loss of gyro	A B C D E F G H
	_____ (Signature and Date)	
.6	Loss of ECINS/ECS	A B C D E F G H
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
302.4.7	Loss of firemain pressure	A B C D E F G H
	_____ (Signature and Date)	
.8	Loss of equipment cooling water	A B C D E F G H
	_____ (Signature and Date)	
.9	Loss of control/start air	A B C D E F G H
	_____ (Signature and Date)	
.10	Fuel spill	A B C D E F G H
	_____ (Signature and Date)	
.11	Excessive list	A B C D E F G H
	_____ (Signature and Date)	
.12	Excessive magazine temperature	A B C D E F G H
	_____ (Signature and Date)	
.13	Internal personnel disturbance	A B C D E F G H
	_____ (Signature and Date)	
.14	Reduced visibility and heavy/cold weather	A B C D E F G H
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

302.5 EMERGENCIES

For the emergencies listed below:

A. What indications and alarms are received?
B. What immediate action is required?
C. What are the probable causes?
D. What operating limitations are imposed?
E. What other emergencies or malfunctions may occur if immediate action is not taken?
F. How does this emergency affect other operations/equipment/watchstations?
G. What follow-up action is required?
H. Satisfactorily perform or simulate the immediate action for this emergency.

		Questions
302.5.1	Lube/fuel oil loss of pressure/leak	A B C D E F G H
	_____ (Signature and Date)	
.2	Fire	A B C D E F G H
	_____ (Signature and Date)	
.3	Flooding	A B C D E F G H
	_____ (Signature and Date)	
.4	Collision	A B C D E F G H
	_____ (Signature and Date)	
.5	Man overboard	A B C D E F G H
	_____ (Signature and Date)	
.6	Abandon ship	A B C D E F G H
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

		Questions
302.5.7	Grounding	A B C D E F G H
	_____ (Signature and Date)	
.8	Report of another ship in distress	A B C D E F G H
	_____ (Signature and Date)	
.9	Weapons handling accident	A B C D E F G H
	_____ (Signature and Date)	
.10	Internal explosion (i.e. crankcase, battery charger, ammo, etc.)	A B C D E F G H
	_____ (Signature and Date)	
.11	Striking a submerged object	A B C D E F G H
	_____ (Signature and Date)	
.12	Report of missing personnel from another ship or own ship	A B C D E F G H
	_____ (Signature and Date)	
.13	Aircraft in water	A B C D E F G H
	_____ (Signature and Date)	
.14	Hostile air/surface/subsurface action	A B C D E F G H
	_____ (Signature and Date)	

302 UNDERWAY OFFICER OF THE DECK (OOD) (CONT'D)

302.6 WATCHES

302.6.1 STAND THE UNDERWAY OOD WATCHES UNDER QUALIFIED SUPERVISION: (MINIMUM OF 6 TIMES)

_____
(Signature and Date)

_____
(Signature and Date)

_____
(Signature and Date)

_____
(Signature and Date)

_____
(Signature and Date)

_____
(Signature and Date)

302.7 EXAMINATIONS (AS REQUIRED BY COMMANDING OFFICER.)

302.7.1 EXAMINATIONS Pass a written examination

_____
(Signature and Date)

.2 EXAMINATIONS Pass an oral examination board

_____
(Signature and Date)

QUALIFICATION PROGRESS SUMMARY FOR
OFFICER OF THE DECK (OOD)

NAME_____ RATE/RANK_____

This qualification progress summary is used to track the progress of a trainee in the watchstations for this PQS and ensure awareness of remaining tasks. It should be kept by the individual or in the individual's training jacket and updated with an appropriate signature (Training Petty Officer, Division Officer, Senior Watch Officer, etc.) as watchstations are completed.

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301 IN-PORT OFFICER OF THE DECK (OOD)

Completed _____ Date_____
(Signature)

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302 UNDERWAY OFFICER OF THE DECK (OOD)

Completed _____ Date_____
(Signature)

LIST OF REFERENCES USED IN THIS PQS

ACP-125, Radio Telephone Procedures
ACP-129, Visual Communication Procedure
ACP-165, Operational Brevity Codes
Aids to Navigation Manual-Seamanship, COMDTINST M16500.21 (series)
American Practical Navigator (Bowditch)
Area/District SOP
Asbestos Exposure Control Manual, COMDTINST M6260.16 (series)
Automated Information System (AIS) Security Manual, COMDTINST M5500.13 (series)
Boat Crew Seamanship Manual, COMDTINST M16114.5 (series)
Casualty Reporting (CASREP) Procedures (Materiel), COMDTINST M3501.3 (series)
Chart No. 1
Classified Information Management Program, COMDTINST M5510.23 (series)
Coast Guard Diving Policies and Procedures Manual, COMDTINST M3150.1 (series)
Coast Guard Military Personnel Security Program, COMDTINST M5520.12 (series)
Coast Guard Regulations Manual, COMDTINST M5000.3 (series)
Coast Guardsman's Manual (Bennett)
Code of Federal Regulations, Title 33, Parts 1-199
Command Navigation Standards (Hobbs)
Commanding Officer’s Environmental Guide, COMDTINST M5090.1 (series)
Commanding Officer's Battle Orders
Commanding Officer's Navigation Standards/Standing Orders
Commanding Officer's Standing Orders
Cutter Combat Systems Doctrine
Cutter Navigation Standards and Procedures, COMDTINST M3530.2 (series)
Cutter Operating Manuals
Cutter ROC/POE Instructions
Cutter Tactical Manual
Cutter’s Organization Manual/Cutter Instructions
Cutter's Equipment Technical Manual
Cutter's Information Book (Class Specific)
Cutter's Tactical Characteristics Folder
Damage Control Plates
District SOP
Dutton's Navigation and Piloting, 14th Edition
Emergency Medical Services Manual, COMDTINST M16135.4 (series)
Engineer Officer's Standing Orders
Engineering Casualty Control Manual
Equipment Technical Publications
Handbook of Magnet Compass Adjustment, H.O. Pub No. 226
Heavy Weather Guide (Kotsch)
International Code of Signals, NO Pub. 102
Manual for Courts-Martial, United States (Current Revision)
Manufacturers Instruction Books
Marine Navigation (Hobbs)

LIST OF REFERENCES USED IN THIS PQS (CONT'D)

Marine Safety Manual, Vol. IV (Technical), COMDTINST M16000.9 (series)
Maritime Law Enforcement Manual, COMDTINST M16247.1 (series)
Military Justice Manual, COMDTINST M5810.1 (series)
Modern Seamanship (Knight)
National Search and Rescue Manual, Vol. 1, COMDTINST M16120.5 (series)
Nautical Almanac
Naval Engineering Manual, COMDTINST M9000.6 (series)
Naval Shiphandling (Crenshaw)
NAVPUB 1310 DMA PUB, Radar Navigation Manual
NAVPUB 217 DMA PUB, Maneuvering Board Manual
NSTM (various chapters as applicable)
NSTM S9086-CN-STM-010/CH-079, Vol. 1
NSTM S9086-CN-STM-020/CH-079, Vol. 2
NTP-13, Flags, Pennants, and Customs
NWP 3-20.31, Surface Ship Survivability
NWP 65-24/65-27
NWP-10-1-10, Operational Reports
NWP-10-1-11, SORTS
NWP-10-1-12, Maritime Reporting System
OPNAV 3120.32C, Standard Organization and Regulations Manual of the U.S. Navy (SORM)
OPNAVINST 3500.39, Operational Risk Management
OPNAVINST P-03C-01-89, U.S. Navy Cold Weather Handbook for Surface Ships
Ordnance Manual, COMDTINST 8000.2 (series)
Own Ship's HERO Bill
Personnel Manual, COMDTINST M1000.6A (series)
Physical Security Program, COMDTINST M5530.1 (series)
Procedure for the Preparation and Disposition of Cutter Logs, COMDTINST M3123.12 (series)
Property Management Manual, COMDTINST M4500.5 (series)
Radar Manufacturer's Manual
Radiotelephone Communications Handbook, COMDTINST M2300.7 (series)
Radio Frequency Plan, COMDTINST M2400.1 (series)
Realtime Method of Rapid Radar Plotting (Carpenter & Waldo)
Rescue and Survival Systems Manual, COMDTINST M10470.10 (series)
Safety and Environmental Health Manual, COMDTINST M5100.47 (series)
Seamanship, Fundamentals for the Deck Officer (Dodge and Kyriss)
Ship’s Information Book/Ship's Technical Manuals
Shipboard Regulations Manual, COMDTINST M5000.7 (series)
Ship's Plans
Simplified Acquisitions Procedures Handbook, COMDTINST M4200.13 (series)
Technical Manuals for Installed Combat Systems
Telecommunications Manual (TCM), COMDTINST M2000.3 (series)
The Coast Guard Freedom of Information and Privacy Acts Manual, COMDTINST M5260.3 (series)
The Radar Book (Van Wyck and Carpenter)
Watch Officer's Guide (Noel)
Weather for the Mariner (Kotsch)