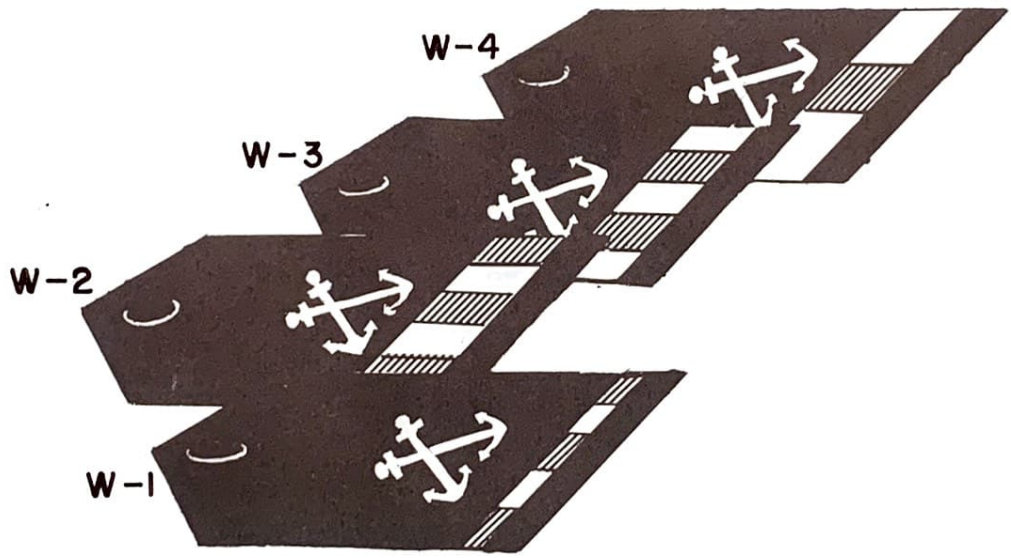
MANUAL OF QUALIFICATIONS FOR WARRANT OFFICERS



DEPARTMENT OF THE NAVY
BUREAU OF NAVAL PERSONNEL

NAVPERS 18455A

DEPARTMENT OF THE NAVY
BUREAU OF NAVAL PERSONNEL
WASHINGTON 25, D.C.

25 June 1965

From: Chief of Naval Personnel
To: All Ships and Stations

Subj: Manual of Qualifications for Warrant Officers, NavPers 18455A; promulgation of

1. The Manual of Qualifications for Warrant Officers, NavPers 18455A, is the official manual which defines qualifications for all warrant officer categories and designators.

2. The manual formulates general and professional qualifications for warrant officers in accordance with the recommendations of the Board to Study the Warrant Officer, Limited Duty Officer, and Master/Senior Chief Petty Officer Programs as approved by the Secretary of the Navy on 5 June 1964. This manual has been designed to serve as a guide for individuals and commands concerned with:

a. Selection of personnel for appointment to warrant officer status.
b. Determination of warrant officer complements and allowances.
c. Distribution and assignment.
d. Development of training requirements and curricula.
e. Career planning for both enlisted personnel and officers.

3. This manual is effective upon receipt, replacing the Manual of Qualifications for Warrant Officers U.S.N., NavPers 18455.

4. Comments and recommendations pertinent to the improvement of this manual are invited and should be submitted to the Chief of Naval Personnel (Pers-A3).

Changes to the Manual of Qualifications for Warrant Officers

Enter number and date of corrections as indicated

Change No.	Dated	Effective	Date made	Signature of person entering correction

CONTENTS

A. PURPOSE

1. The Manual of Qualifications for Warrant Officers, NavPers 18455A, is a guide for personnel concerned with the U. S. Navy's warrant officer program. It promulgates qualifications for each warrant officer category and designator; and provides basic and comprehensive warrant officer occupational information for commands and individuals.

B. WARRANT OFFICER STRUCTURE

1. Warrant officers are technical specialists in prescribed occupational areas. They provide close supervision over machinery/weapons and the enlisted men maintaining and operating them. Career development is based upon the increased supervisory and technical responsibility of warrant officers, as they grow in level and scope of competency, during their progression through the warrant grades.

2. U. S. Navy Regulations prescribes warrant officer rights, restrictions, precedence, authority, and regulations for succession to command. The Warrant Officer Act of 1954 (as now revised and enacted as Sections 555 through 565 and other sections of Title 10, United States Code) is the current authority for administration of warrant officers in the military services. Eligibility requirements and general application, selection, and appointment procedures appear in the Bureau of Naval Personnel Manual, Articles C-1301 through C-1307. Further details are promulgated as necessary by Bureau of Naval Personnel instructions and notices.

C. SCOPE OF MANUAL

1. This manual presents those duties which warrant officers should be capable of performing and those knowledges which they should possess in order to carry out their supervisory and technical responsibilities. It does not present absolute or minimum standards which must be satisfied prior to selection.

D. WATCHSTANDING RESPONSIBILITIES

1. Contents of the manual should not be construed as a detailed listing of all billets, duties, and knowledges required for each warrant category. Watchstanding duties and collateral and additional duty assignments - a command prerogative - vary according to specific situations on individual ships and stations. Even though qualifications pertaining to this type of assignment have not been included in this manual, individual warrant officers are responsibile for carrying out such assignments as required. Examples of duties that may be assigned are Officer of the Deck, Junior Officer of the Watch, Engineering Officer of the Watch, Engineering Junior Officer of the Watch, Base Security Officer, and member of various boards and committees.

E. ARRANGEMENT OF MANUAL

1. Qualifications contained in this manual are divided into two sections. Section 1 - General Qualifications - lists requirements of a general nature, applicable to all warrant officers regardless of category and designator. This section deals with military and routine administrative qualifications common to all warrants. Section 2 - Professional Qualifications - lists operational and technical requirements directly related to a specific warrant officer category. Each set of professional qualifications is arranged by title and designator and includes:

a. "Scope" or brief summary of duties, knowledges, and billet assignments.

b. "Duties and Responsibilities" required of a warrant officer for performance of his assignments in a particular category.

c. "Knowledges and Abilities" which a warrant officer should possess to carry out his duties and responsibilities.

d. "Representative Billets" for warrant officers by grade within category. Billet titles are those Navy Officer Billet Classification (NOBC) titles found in the Manual of Navy Officer Classifications, NavPers 15839A.

F. PATHS OF ADVANCEMENT

1. Charts on pages 3 and 4 illustrate normal paths of advancement for each enlisted rating to the various warrant categories. Some ratings have a normal path of advancement in more than one category. A candidate for warrant status may apply for a category not in the normal path of advancement; however, it should be stressed that unusually keen competition may be encountered. Increased technical knowledge through on-the-job training and specialized training through schools and correspondence courses should be sought by all potential candidates in preparation for selection to warrant status.

TABLE OF WARRANT OFFICER/LIMITED DUTY OFFICER/ENLISTED RATING RELATIONSHIPS

Enlisted Rating	Warrant Officer Category and Designator	LDO Category and Officer Designator
SD, CS, SH, SK, AK, DK	Supply Clerk (798X)	Supply (370X)
DM* BU, SW, EA, CE, UT EO, CM	Civil Engineer Corps Warrant (849X)	Civil Engineer (570X)
BM, QM* SM*	Boatswain (713X)	Deck (600X)
QM* SM* RD* ST* RM*	Operations Technician (714X)	Operations (601X)
GMM, GMG, GMT* GM	Surface Ordnance Technician (723X)	Ordnance (615X)
FT* MT	Ordnance Control Technician (724X)	
TM, MN	Underwater Ordnance Technician (733X)	
LI, YN, PN, PC, JO*	Ship's Clerk (782X)	Administration (620X)
DP	Data Processing Technician (783X)	Data Processing (623X)
MU	Bandmaster (785X)	Bandmaster (626X)
QM, IM, MR, MM, BT BR, EN	Machinist (743X)	Engineering (630X)
DC, SF, ML, PM	Ship Repair Technician (774)	Hull (635X)
IC* EM*	Electrician (754X)	Electrician (637X)

* Normal Path in more than one category
** Only CT ratings may apply in these categories

Enlisted Rating	Warrant Officer Category and Designator	LDO Category and Officer Designator
RD* ST* RM* ET, DS EM* IC* FT*	Electronics Technician (766X)	Electronics (640X)
CT	**Communications Technician (764X)	Cryptology (646X)
ABE, ABF, ABH, AB	Aviation Boatswain (760X)	Aviation Operations (660X)
JO* PH, DM* PT*	Photographer (831X)	Photography (663X)
AG	Aerographer (821X)	Meteorology (665X)
AO, GMT*	Aviation Ordnance Technician (721X)	Aviation Ordnance (670X)
AX, AT, AQ, AE, TD, AW	Aviation Electronics Technician (761X)	Avionics (680X)
ADJ, ADR, AME, AMH AMS, PR, AZ, AD, AM, AS	Aviation Maintenance Technician (741X)	Aviation Maintenance (685X)
AC	Aviation Control Technician (745X)	Aviation Control (661X)
PT*	Air Intelligence (762X)	Air Intelligence (662X)

* Normal Path in more than one category.
** Only CT ratings may apply in these categories.

Section 1

GENERAL QUALIFICATIONS

DUTIES AND RESPONSIBILITIES

1. Prepare division watch, quarter, and station bills.

2. Prepare, maintain, and submit personnel, material, and operational records, reports, and accounts.

3. Supervise organization and maintenance of a filing system for division publications, correspondence, records, reports, instructions, and notices.

4. Compose standard Navy letters, business letters, and speedletters.

5. Draft messages for transmission by radio, teletype, or visual communications, using proper phraseology and format.

6. Manage division fund allotments and material.

7. Conduct safety inspections and publicize and enforce safety regulations.

8. Supervise preparation, handling, and storage of classified material.

9. Supervise requisitioning, marking, issuing, care, preservation, stowage, and surveying of equipment.

10. Conduct personnel and material inspections.

11. Evaluate and grade enlisted personnel performance.

12. Interpret or recommend enlisted classification codes.

13. Develop and supervise a division or department training program for enlisted personnel, and review and evaluate progress of trainees.

14. Supervise and administer programs providing for satisfaction of practical factors, including performance tests, required for advancement of enlisted personnel.

15. Provide technical advice and information concerning uses, capabilities, and limitations of assigned equipment.

16. Provide technical advice and information concerning operational, organizational, and administrative functions of particular category.

17. Coordinate maintenance and repair programs with operational employment; supervise preparation of work requests.

18. Supervise, train, and direct personnel in emergency measures such as first aid, firefighting, damage control, and nuclear, biological, and chemical (NBC) warfare defense.

KNOWLEDGES AND ABILITIES

1. Functions and organization of Department of Defense, Naval Establishment, and major naval air, surface, and subsurface operational and administrative commands.

2. U. S. naval history, customs, and traditions.

3. Authority and responsibilities of division and watch officers as prescribed by U. S. Navy Regulations.

4. Small boat etiquette and authority, and responsibilities of officers embarked.

5. Types, functions, classes, designating symbols, and identifying characteristics of U. S. Navy ships and aircraft.

6. General content and scope of U. S. Navy Regulations, Bureau of Supplies and Accounts Manual (Vol. 1), Bureau of Naval Personnel Manual, Landing Party Manual, Security Manual for Classified Information, Navy Comptroller Manual (Vol. II), and Manual of Qualifications for Advancement in Rating.

7. Nature and scope of information in service publications pertaining to particular category, including U. S. Navy Regulations, U. S. Navy Safety Precautions (OpNav 34P1), bureau manuals, and technical and maintenance manuals.

8. General principles and techniques of teaching applicable to ship or station training programs for enlisted personnel, including preparation of lesson plans, methods of instruction and presentation, use of training aids and mock-ups, selection and training of instructors, testing of trainees, and evaluation and revision of scope and content of training programs.

9. Principles and techniques of leadership such as motivation of personnel and maintenance of morale.

10. Organization of enlisted rating structure and officer designator system, and types, functions, and uses of officer and enlisted classification coding.

11. Standards and methods for evaluating performance of enlisted personnel.

12. General organization and purpose of the Naval Manpower Information System.

13. Types and scope of U. S. Navy retention programs such as STAR (BuPersInst 1133 series) and SCORE (BuPersInst 1440 series).

14. General eligibility requirements for enlistment and advancement of enlisted personnel.

15. Principles and techniques of manpower utilization as contained in manuals such as the U. S. Navy Staffing Criteria Manual for Activities Ashore (OpNav P5310.5), U. S. Navy Staffing Criteria Manual for Activities Afloat (OpNav P5310.6), Organization Planning for Naval Units (NavPers 18374), and Work Simplification for Naval Units, Procedures and Use (NavPers 18359).

16. Types and purposes of welfare agencies and services available to naval personnel.

17. Contents and scope of the Uniform Code of Military Justice, particularly the procedures for preferring charges in accordance with articles 15, 31, 133, 134, and 137.

18. Types and composition of courts-martial and maximum punishments each may award.

19. Regulations and procedures governing shore patrol parties.

20. Procedures and regulations relative to allocation, control, and use of division fund allotments, and to requisitioning of and accounting for materials.

21. Regulations and procedures for naval surveys and inspections.

22. Scope and purpose of Navy Directives System.

23. Scope and use of the Navy-Marine Corps Standard Subject Classification System.

24. Regulations pertaining to destruction of classified equipment and publications.

25. Regulations and procedures for classifying and handling classified correspondence, publications, and equipment.

26. Forms, regulations, and procedures for preparing naval messages and letters.

27. Basic principles and procedures for damage control in event of fire, collision, or flooding.

28. Types, purposes, and operation of common U. S. Navy firefighting equipment.

29. General methods and procedures for detection of NBC warfare agents, protection of personnel and material exposed to these agents, and recognition and treatment of NBC warfare injuries.

30. Emergency first aid procedures and techniques, including artificial respiration, control of bleeding, application of improvised splints, treatment of burns, and recognition and treatment of shock.

Section 2

PROFESSIONAL QUALIFICATIONS

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BOATSWAIN

SCOPE

BOATSWAINS are technical and operational specialists in seamanship. They may serve as assistants to first lieutenants and deck officers, division officers, repair party officers, officers in charge of yard craft and harbor tugs, and as battery officers on small ships. They supervise personnel engaged in preservation of ships' hulls, superstructures, and spaces; maintenance, repair, and operation of deck, cargo handling, anchor, and mooring gear; loading, off-loading, stowing, and securing of all types of cargo; maintenance, repair, operation, and equipping of small boats and landing craft (less engines).

DUTIES AND RESPONSIBILITIES

1. Supervise maintenance and preservation of ships' hulls, superstructures, spaces, powerboats (less engines), ground tackle, deck and abandon ship equipment, and standing and running rigging; supervise rigging, testing, and operation of booms, davits, and cranes; evaluate equipment for defects and determine necessity for replacement or repair.

2. Supervise anchoring, mooring, and getting underway.

3. Supervise loading, off-loading, stowing, and securing operations for all types of cargo, including ammunition, gases, and liquid flammables; supervise rigging and operation of equipment for replenishment of ships at sea.

4. Supervise lowering, operating, hoisting, and stowage of ships' boats; train boat crews; conduct boat drills.

5. Supervise rigging and use of gear for surface towing, salvage, rescue, and minesweeping operations.

6. Supervise operation of dual-purpose and antiaircraft batteries, groups, and gun mounts.

7. Organize and coordinate operations of damage control party.

8. Pilot and maneuver yard craft in inland and coastal waters.

9. Organize and supervise operations of a boat pool.

10. Supervise work order system of job orders and work requests.

11. Supervise maintenance of department equipment histories and Current Ship's Maintenance Project (CSMP).

KNOWLEDGES AND ABILITIES

1. Types, functions, capabilities, and limitations of mooring lines, anchors, anchor chains, and anchor windlass; methods and procedures for anchoring and mooring ships.

2. Types, functions, capabilities, and limitations of all cargo handling rigs and equipment, including standing and running rigging, masts, and spars; methods, procedures, and precautions for loading, off-loading, stowing, and securing all types of cargo, including pyrotechnics, ammunition, gases, and liquid flammables.

3. Methods and procedures for hoisting and lowering boats, using davits, booms, and cranes; types, functions, capabilities, and limitations of all types of boats, life rafts, and floats; small boat seamanship.

4. Types, functions, capabilities, limitations, and rigging of towing, rescue, and minesweeping equipment; types and uses of submarine and torpedo nets and booms.

5. Operating procedures, safety regulations, and emergency procedures and precautions relative to gun batteries, groups, and gun mounts.

6. Equipment, methods, and procedures for NBC decontamination, emergency control and repair of flooding and hull damage, and firefighting; types, capabilities, and limitations of survival equipment.

7. Methods and materials used in preservation, including paint characteristics, preparation of all types of surfaces, and applicable safety precautions.

8. Methods and procedures for determining position in inland and coastal waters, using radar, visual bearings, and soundings; use of tide and current tables; capabilities and limitations of magnetic compass.

9. International Regulations for Preventing Collision at Sea, Inland Rules of the Road, and Pilot Rules for Certain Inland Waters.

10. Steering effect of wind, current, rudder, trim, loading, engines, and lines in shiphandling alongside and underway.

11. Applications of laws of cyclonic storms, including determination of probable path and location of storm center; shipboard procedures for riding out storm.

12. Buoyage systems of the United States.

13. Scope and nature of information contained in U. S. Navy Landing Party Manual.

14. Principles of amphibious operations, including duties and responsibilities of personnel and landing craft methods and techniques.

15. Contents, scope, and maintenance procedures for a Current Ship's Maintenance Project.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1			
	Beachmaster	9405	Beachmaster Unit
	Boat Pool Officer	9410	NAVSTA
	(Assistant) Operations Officer, Ashore	9466	NAVSTA
	Naval Port Control Officer	9472	NAVSTA
W-2			
	First Lieutenant, Afloat	9242	AFDM, AFDB, ARSD, ARS, ARC
	Ship's Boatswain	9278	AV, AS, AD, AO, AGS
	First Lieutenant, Ashore	9442	NAVSTA
	Operations Officer, Ashore	9466	NAVSTA
W-3			
	First Lieutenant, Afloat	9242	ATA
	Ship's Boatswain	9278	AP, ARC
	First Lieutenant, Ashore	9442	ADCOM, ADU, COMMSTA

GRADE	TITLE	NOBC	ACTIVITY
W-4	Instructor, Naval Science	3270	NAVSCOL
	Brig and Discipline Officer	3405	NAVSTA, RECSTA
	First Lieutenant, Afloat	9242	ATF
	Officer in Charge, Afloat	9273	AKL
	Ship's Boatswain	9278	AGB, CVA

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OPERATIONS TECHNICIAN

SCOPE

OPERATIONS TECHNICIANS are technical and operational specialists in communications, antisubmarine warfare (ASW), and combat information center (CIC) procedures, techniques, and equipment. They may serve as assistants to operations, communications, or CIC officers. They supervise personnel engaged in operation and maintenance of ASW, communications, and CIC equipment. They analyze, solve, and correct operational problems and equipment malfunctions.

DUTIES AND RESPONSIBILITIES

1. Supervise main communications center personnel in handling communications traffic; exercise general supervision over crypto center, radio and teletype rooms, and signal bridge.

2. Organize and supervise overall operations of CIC, communications, and signal divisions aboard ship or communications division ashore.

3. Supervise CIC team in electronic search and tracking, voice radio operations, internal communications, data collection and handling during maneuvers, general quarters, getting underway and entering port, and watch and emergency conditions.

4. Verify, evaluate, and route incoming operational information received by electronic and visual means; direct and supervise dissemination and transmission of information to other ships and units.

5. Supervise installation, operation, and maintenance of radar, electronic countermeasures equipment, voice and CW radio, radioteletypewriter (RATT) circuits, and other related equipment used in procuring and evaluating combat and operational information.

6. Establish and maintain security precautions for maintaining required watches as directed; maintain security of CIC and radio and crypto rooms, including all classified material contained therein.

7. Encypher and decypher messages; analyze traffic procedures and traffic for crypto security.

8. Verify posting of proper recognition signals as prepared by registered publications custodian.

9. Supervise work order system of job orders and work requests.

10. Supervise maintenance of division equipment histories and Current Ship's Maintenance Project.

KNOWLEDGES AND ABILITIES

1. Types, capabilities, limitations, and reliability of CIC, ASW, and communications equipment.

2. Standard CIC and radar doctrines and procedures, including CIC functions relating to navigation, air control, weapons control, plotting methods, contact classification, and aircraft, surface, and subsurface vessel identification.

3. Content, scope, and application of Joint, Allied/Combined, and U. S. Navy communications procedures as contained in JANAP, ACP, and DNC publications.

4. Principles of radio wave and underwater sound propagation.

5. Operating principles of teletype, radio, and electronic countermeasures equipment.

6. Function and organization of CIC, communications, and signal divisions.

7. Contents, scope, and maintenance procedures for a Current Ship's Maintenance Project.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	(Assistant) CIC Officer	9216	CC, CVA
	CIC Watch Officer	9220	AGC
	Ship's Electronic Countermeasures Officer	9282	CVA
	(Assistant) Operations Officer, Ashore	9466	NSYD
W-2	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	COMMSTA
	(Assistant) Communications Officer, Afloat	9582	AS
	Traffic and Circuit Officer	9595	COMMSTA
W-3	(Assistant) CIC Officer	9216	CLG, AAWTRACEN
	Radio Officer	9565	LPH
W-4	Staff Readiness Officer (CIC)	9075	FLTRGR
	CIC Officer	9216	FTC
	Traffic and Circuit Officer	9595	COMMSTA

AVIATION ORDNANCE TECHNICIAN

SCOPE

AVIATION ORDNANCE TECHNICIANS are operational and technical specialists in the field of aviation ordnance. They serve as aviation ordnance, weapons branch, and division officers, and as technical advisers concerning uses, capabilities, limitations, and reliability of aviation ordnance and aircraft armament. They supervise and direct the arming of aircraft and the requisitioning, stowing, handling, testing, disassembly, assembly, installation, operation, maintenance, and repair of aviation ordnance and aircraft armament; supervise and direct the stowage, testing, and installation of aircraft missiles; and interpret, publicize, and ensure compliance with regulations and safety precautions governing the handling and stowing of aircraft ammunition, aircraft missiles, pyrotechnics, and explosives.

DUTIES AND RESPONSIBILITIES

1. Implement and ensure compliance with operational readiness and safety procedures for line inspections of aviation ordnance, aircraft armament, and aircraft missiles.

2. Establish and maintain liaison with local fleet supply and staff activities; secure technical assistance and determine availability of materials and facilities to meet operational, maintenance, repair, and training requirements.

3. Supervise and direct the installation, alteration, modification, and modernization of aviation ordnance, aircraft armament, and related equipment, as required by changes, bulletins, and other technical instructions.

4. Supervise and direct the inspection, replacement, disassembly, assembly, adjustment, test, maintenance, and repair of aviation ordnance, aircraft armament, and related equipment.

5. Supervise and direct the use and maintenance of shop equipment, including measuring instruments, hand and power tools, and test equipment used for the installation, testing, maintenance, modification, and repair of aviation ordnance, aircraft armament, and related equipment.

6. Inspect and evaluate repaired, overhauled, altered, modified, or newly installed aviation ordnance and aircraft armament.

7. Supervise and direct marking, handling, stowing, and preservation of aircraft ammunition, pyrotechnics, explosives, and aircraft missiles.

8. Supervise and direct practices and techniques for casualty analyses of aviation ordnance, aircraft armament, and related equipment.

9. Inspect and evaluate accuracy of ordnance and armament test equipment; direct repairs and calibrations.

10. Supervise and direct the maintenance, repair, and operation of targets, tow targets, tow reels, and associated equipment.

11. Determine frequency of component or equipment failures and symptoms of malfunctioning from equipment histories; prescribe local corrective action and initiate necessary reports and recommendations for improvement of equipment performance.

12. Prepare rearming bills and establish procedures and schedules for rearming aircraft; conduct training drills and rearming operations under simulated emergency conditions.

13. Supervise and direct the preparation of bills for disposal and jettisoning of aircraft munitions.

14. Supervise and direct the preparation and submission of aviation ordnance, aircraft armament, and related equipment histories, and maintenance and repair reports.

15. Supervise and direct the collection, preparation, and dissemination of technical information and directives concerning aviation ordnance, aircraft armament, aircraft missiles, and related equipment to assigned personnel.

16. Conduct familiarization programs for training pilots and aircrewmen in operational techniques, capabilities, and limitations of aviation ordnance equipment and aircraft munitions.

KNOWLEDGES AND ABILITIES

1. General organization and functions of naval air stations, aircraft carriers, seaplane tenders, and aircraft squadrons.

2. Organization and functions of aviation ordnance and aircraft armament maintenance, overhaul, and repair units afloat and ashore.

3. Organization and operation of small arms firing ranges.

4. Regulations and procedures for inventorying, requisitioning, surveying, handling, preserving, stowing, and issuing aviation ordnance, aircraft armament, aircraft missiles, and related equipment.

5. Types, purposes, and frequency of inspections required on aviation ordnance, aircraft armament, and related equipment.

6. Types and capacities of ready service lockers and magazines, including safety and operational devices.

7. Types, specifications, and identification of cleaning solutions, lubricants, and preservatives used in maintenance of aviation ordnance and aircraft armament equipment.

8. Methods, procedures, and precautions governing boresighting and the adjustment and alignment of noncomputing sights and ordnance suspension and release equipment.

9. Types, frequency, preparation, and distribution of aircraft ordnance and armament maintenance and repair records, logs, reports, and accounts.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	* Squadron Armament Officer (General)	8675	NAS, Squadron
W-2	(Assistant) Training Officer	3290/ 8675	NATTU, NATTC
	Aircraft Maintenance Officer (Weapons)	8193	CVA, CVS, AV, AVP
	* Squadron Armament Officer (General)	8675	NAS
W-3	* Squadron Armament Officer (General)	8675	Squadron, NAS
W-4	Aircraft Maintenance Officer (Weapons)	8193	CVW
	Weapons Research Planning Officer	6980	BuWeps, NavOrd, test units and stations

* This NOBC title is under study for possible revision.

SURFACE ORDNANCE TECHNICIAN

SCOPE

SURFACE ORDNANCE TECHNICIANS are technical and operational specialists in naval guns, rockets and rocket launchers, missiles and missile launchers, and small arms. They may serve as assistant weapons officers and as division and ordnance repair officers. They supervise personnel engaged in assembly, installation, operation, testing, maintenance, and repair of surface ordnance, surface ordnance equipment, and ammunition and ammunition components.

DUTIES AND RESPONSIBILITIES

1. Develop procedures and supervise practices and techniques for casualty analyses of surface ordnance equipment, using drawings, wiring and schematic diagrams, test equipment, and technical manuals; develop procedures to evaluate equipment for defects and determine necessity of replacement or repair.

2. Supervise installation and modification of surface ordnance equipment; supervise ordnance division personnel in maintenance, repair, and operation of all ordnance equipment.

3. Conduct electrical, hydraulic, and mechanical tests on surface ordnance equipment; conduct boresighting and battery alignment and supervise testing of firing cutout safety devices.

4. Supervise ammunition, warhead, and propellant handling practices and procedures, enforcing all safety precautions; conduct testing of magazine sprinkling and flooding systems; test ammunition components to determine condition, as specified; develop procedures for requisitioning, handling, stowing, issuing, and preserving ammunition, ammunition components, and propellants.

5. Supervise preparation of main, secondary, antiaircraft, and missile batteries for firing; supervise preparation of impulse and saluting charges; prepare postfiring analyses of surface ordnance equipment.

6. Assume control of gun mount, turret, or launcher as local control officer, firing with independent control at air or surface targets; assume duties of director officer for antiaircraft battery; select, instruct, and drill gun, turret, and missile launcher crews.

7. Develop procedures for and direct operation of pistol, rifle, and machine gun ranges; instruct in use of small arms and grenades, and in related safety regulations and precautions.

8. Organize, coordinate, and supervise operations of ordnance repair shop or mobile ordnance service unit; supervise personnel in use of shop equipment, including measuring instruments, hand and power tools, and test equipment.

9. Supervise work order system of job orders and work requests.

10. Supervise maintenance of department machinery histories, Current Ship's Maintenance Project, OrdAlts, field changes, and class item records.

KNOWLEDGES AND ABILITIES

1. Methods and procedures for preparing a battery for firing.

2. Types, operation, repair, and maintenance of recoil and counterrecoil systems, training and elevating systems, sights, gas-expelling devices, and ammunition handling and hoisting equipment.

3. Types, uses, characteristics, capabilities, and limitations of naval guns, rockets and rocket launchers, missiles and missile launchers, and small arms, including fuses and exploder mechanisms, pyrotechnic ammunition, and bombs, mines, and torpedoes.

4. Types, composition, and characteristics of explosives, propellants, and projectiles; methods and purposes of testing smokeless powder and other ammunition.

5. Types and uses of demolition charges, and methods of setting charges at sea and ashore.

6. Construction of magazines and shell rooms, including safety and operational devices.

7. Types, construction, use, and functional relationships of electrical, hydraulic, and mechanical components of surface ordnance and related equipment.

8. Procedures and methods for battery alignment, boresighting, star gauging, and bore searching, for determining and applying roller path data, and for conducting electrical, mechanical, and hydraulic tests on surface ordnance equipment.

9. Functions and organization of weapons departments, divisions, and ordnance repair units.

10. Contents, scope, and maintenance procedures for a Current Ship's Maintenance Project.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	(Assistant) Ammunition Material Officer	6083	NAD
	Division Officer, Weapons Department (General)	9250	AE
	Division Officer, Weapons Department (Surface Weapons)	9251	CG
	Weapons Officer	9258	AS
	(Assistant) Special Weapons Assembly Officer (Mechanical)	9298	CVA
W-2	(Assistant) Mine Assembly and Test Officer	6516	NAD
	(Assistant) Surface Weapons Officer	9264	CLG
W-3	(Assistant) Technical Assistant for Weapons	7999	NSYD
	Surface Weapons Officer	9264	CLG
	Special Weapons Assembly Officer (Nuclear)	9299	CVA
W-4	Instructor, Technical	3250	NUWPTRACEN
	Instructor, Naval Science	3270	OCS
	(Assistant) Weapons Officer, Naval Activity	6960	NAVSTA

ORDNANCE CONTROL TECHNICIAN

SCOPE

ORDNANCE CONTROL TECHNICIANS are technical and operational specialists in weapons guidance and control systems. They may serve as assistant weapons officers and as division and ordnance repair officers. They supervise personnel engaged in installation, operation, testing, maintenance, and repair of gyroscopic equipment, radar, computers and rangekeepers, servomechanisms, rocket and missile launchers, and torpedo control systems.

DUTIES AND RESPONSIBILITIES

1. Develop procedures and supervise practices and techniques for casualty analyses of ordnance control systems, using drawings, wiring and schematic diagrams, test equipment, and technical manuals; develop procedures to evaluate ordnance control, missile, and underwater weapon direction equipment for defects, and determine necessity for their replacement or repair.

2. Supervise installation, alteration, and modification of weapons control equipment; supervise operation, maintenance, and repair of all ordnance control, missile guidance, and underwater direction electrical and electronic equipment.

3. Conduct electrical, electronic, mechanical, and hydraulic tests on complete weapons control systems; align stable elements, computers, ordnance control antennas, missile launchers, and torpedo control systems; conduct boresighting operations; supervise testing of firing cutout safety devices.

4. Supervise balancing, adjustment, alignment, and/or testing of weapons control electronic circuits, servocontrol systems, and gyroscopic, mechanical, and hydraulic mechanisms.

5. Conduct a battery alignment; participate in postfiring analyses; analyze results of dummy director and error recorder tests; compute corrections and supervise repair or adjustment of equipment.

6. Select, instruct, and drill plotting room, director, and control station teams.

7. Organize, coordinate, and supervise operations of ordnance repair shop or mobile ordnance service unit; supervise personnel in use of shop equipment, including measuring instruments, hand and power tools, and test equipment.

8. Supervise work order system of job orders and work requests.

9. Supervise maintenance of department machinery histories, Current Ship's Maintenance Project, OrdAlts, field changes, and class item records.

KNOWLEDGES AND ABILITIES

1. Function, operation, and procedures for maintenance and repair of gyroscopic equipment, radar, weapons control and guidance systems, computers and rangekeepers, underwater direction equipment, and electronic components of guidance and control systems.

2. Types, functions, theory, and uses of synchro transmitters, receivers, and control transformers.

3. Theory of construction, operation, testing, adjustment, and repair of servomechanisms.

4. Types, functions, adjustments, and operation of roller path compensators and parallax mechanisms.

5. Functions and organization of weapons departments, divisions, and repair units.

6. Contents, scope, and maintenance procedures for a Current Ship's Maintenance Project.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	(Assistant) Fire Control Repair Officer	6457	AS
	Weapons Repair Officer	6978	AR
	Fire Control Gunner	9236	AS
	(Assistant) Division Officer, Weapons Department (General)	9250	CVA
W-2	Weapons Repair Officer	6978	AD
	Ship Construction and Repair Superintendent (General)	7936	NSYD
	Fire Control Officer (Surface-to-Air Missiles)	9238	CG
W-3	Fire Control Repair Officer	6457	AS, MOTU
	Fire Control Officer (Surface-to-Air Missiles)	9238	CLG
W-4	Weapons Installation and Repair Superintendent	6940	NSYD
	Fire Control Officer (Surface-to-Air Missiles)	9238	DLG

733X

UNDERWATER ORDNANCE TECHNICIAN

SCOPE

UNDERWATER ORDNANCE TECHNICIANS are technical and operational specialists in underwater ordnance, including torpedoes, depth charges, and mines. They may serve as assistant weapons officers and as division and ordnance repair officers. They supervise personnel engaged in assembly, installation, operation, testing, maintenance, and repair of torpedoes, torpedo launching equipment, depth charges, mines, mobile mine propulsion units, and minesweeping equipment.

DUTIES AND RESPONSIBILITIES

1. Supervise assembly, testing, inspection, maintenance, overhaul, and repair of torpedoes, torpedo launching equipment, mobile mine propulsion units, depth charges, mines, minesweeping equipment, and dan buoys, using test equipment, drawings, wiring and schematic diagrams, technical manuals, and directives.

2. Develop procedures to evaluate torpedoes, mobile mine propulsion units, and depth charge equipment for defects, and determine necessity for their replacement or repair; conduct inspections and tests for deterioration or malfunction of torpedo and depth charge hoisting, handling, and test equipment.

3. Supervise modification and alteration of torpedoes, depth charges, mines, and minesweeping equipment; supervise installation, operation, and maintenance of torpedo and depth charge test and overhaul equipment; supervise handling and issuance of mine countermeasures materials for minesweeping.

4. Organize, coordinate, and supervise workshop for testing, maintenance, repair, and overhaul of torpedoes, depth charges, mobile mine propulsion units, mines, and minesweeping equipment; supervise personnel in use of shop equipment, including measuring instruments, hand and power tools, and test equipment.

5. Coordinate torpedo and depth charge overhaul, repair, and transfer practices within shops and between ships and stations; develop procedures for handling, issuing, and installing mines; supervise installation of mines on surface minelayers, submarines, and aircraft.

6. Interpret a mining annex to an operation plan or order; prepare a mining bill; plan a mining operation, including determination of techniques to be employed, number and types of mines to be laid, and area to be covered.

7. Supervise handling and stowing of torpedo and depth charge boosters and detonators and mine explosives; supervise maintenance of warhead and depth charge magazines and their special handling and operating equipment.

8. Supervise work order system of job orders and work requests.

9. Supervise maintenance of department machinery histories, Current Ship's Maintenance Project, OrdAlts, field changes, and class item records.

KNOWLEDGES AND ABILITIES

1. Types, characteristics, capabilities, limitations, and principles of operation of underwater ordnance such as torpedoes, mines, minesweeping equipment, depth charges, and associated equipment.

2. Construction, function, operation, maintenance, and repair of underwater ordnance, control systems, and exploder mechanisms.

3. Principles of torpedoes propelled by steam, electricity, or chemicals; principles of electronic, acoustic, and mechanical torpedo control systems; basic electronics as applied to underwater ordnance.

4. Procedures for loading torpedo tubes and for firing, ranging, and recovery of all types of service torpedoes.

5. Types and meaning of electrical, electronic, and mechanical symbols and reference designations commonly used in naval technical publications; application of blue prints, schematics, and diagrams in repair, maintenance, and overhaul of underwater ordnance equipment.

6. Maintenance and test procedures for high-pressure pneumatic and hydraulic lines and accumulators used with torpedoes and associated equipment.

7. Methods and procedures for assembling, testing, and reworking mines and mine components and accessories.

8. Recognition and operating principles of foreign mines.

9. Types of minesweeping vessels and capabilities and limitation of their sweep gear; principles, methods, and procedures for mine detection and mine hunting; methods and procedures for handling and issuing mine countermeasures materials for minesweeping.

10. Methods and procedures for handling, issuing, and installing mines on submarines, aircraft, and surface minelayers.

11. General oceanographic and hydrographic effects on mines and minesweeping equipment, and general geographic aspects affecting minefields and mine performance.

12. Doctrine, policy, procedures, and tactics of operational employment and utilization of mine ordnance.

13. Functions and limitations of degaussing systems.

14. Function and organization of weapons and repair departments and divisions, and torpedo, mobile mine propulsion unit, and depth charge overhaul activities; mission and organization of mine forces and their relationship to other fleet and shore organizations.

15. Contents, scope, and maintenance procedures for a Current Ship's Maintenance Project.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1			
	Mine Assembly and Test Officer	6516	NAF
	Torpedo Weapons Officer	6537	NAD
	(Assistant) Weapons Repair Officer	6978	AS
W-2			
	Torpedo Weapons Officer	6537	SUB BASE
	Torpedo Repair Officer	6540	AD, AS, SUB BASE
	Mining Officer.	9270	NAS

GRADE	TITLE	NOBC	ACTIVITY
W-3			
	Torpedo Test Officer	6558	SUB BASE
	Weapons and Ammunition Inspection Officer	6938	WEAP STA
	Mining Officer	9270	MCFT SUPPUN
W-4			
	Mine Assembly and Test Officer	6516	NAD
	Torpedo Weapons Officer	6537	WEAP STA
	Torpedo Test Officer	6558	TORP STA

AVIATION MAINTENANCE TECHNICIAN

SCOPE

AVIATION MAINTENANCE TECHNICIANS are operational and technical specialists in the field of aircraft maintenance. They serve as assistants to aircraft maintenance officers, power plants branch officers, airframes branch officers, and division officers, and as technical advisers concerning the capabilities, limitations, and reliability of aircraft power plants, accessories, airframes, and ground support, safety, and survival equipment.

DUTIES AND RESPONSIBILITIES

1. Organize, supervise, and direct the operation and upkeep of facilities for maintenance and repair of aircraft and associated equipment.
2. Implement procedures for, and supervise and direct, a planned maintenance system employing calendar, pre-flight, post-flight, special, and conditional inspections.
3. Coordinate maintenance work performed by shop groups with other groups within the squadron and the supporting unit.
4. Supervise and direct the installation, alteration, modification, and modernization of aircraft systems and components as required by changes, bulletins, and other technical instructions.
5. Supervise and direct the inspection, replacement, disassembly, assembly, adjustment, test, maintenance, and repair of aircraft power plants, accessories, and related systems.
6. Supervise and direct the use and maintenance of machine, hand and portable power tools, test benches, test and measuring instruments, and associated equipment used in aircraft maintenance and repair.
7. Supervise and direct corrosion control practices and preservation and depreservation of aircraft and associated equipment.
8. Supervise and direct the inspection, removal, replacement, alignment, maintenance, and repair of aircraft structures and ejection seats.
9. Supervise and direct casualty analyses of aircraft power plants, accessories, airframes, and ground support, safety, and survival equipment.
10. Evaluate inspections and reports to determine operational efficiency of aircraft and associated equipment.
11. Supervise and direct the inspection, replacement, adjustment, test, maintenance, and repair of cabin environmental systems.
12. Supervise and direct the operation of a work order system, including the preparation and submission of Single Action Maintenance Instructions (SAMI's), Continuing Action Maintenance Instructions (CAMI's), job orders, and work requests.
13. Supervise and direct the maintenance of equipment histories, plant account cards, and aircraft logs and records, and the preparation and submission of aircraft maintenance and repair reports.
14. Supervise and direct the collection, preparation, and dissemination of technical information concerning maintenance of aircraft and associated equipment.
15. Conduct familiarization programs for training pilots and aircrewmen in operational techniques, capabilities, and limitations of power plants, accessories, airframes, and ground support, safety, and survival equipment.

KNOWLEDGES AND ABILITIES

1. General organization and functions of naval air stations, aircraft carriers, seaplane tenders, and aircraft squadrons.

2. Organization and functions of aviation maintenance, overhaul, and repair activities ashore and afloat.
3. Types of aircraft construction and use of military specifications in the installation, inspection, maintenance, and repair of power plants, accessories, airframes, and ground support, safety, and survival equipment.
4. Characteristics, uses, and identification of aircraft metals, hardware, hose, tubing, and preservatives.
5. Methods and procedures for operational tests of aircraft and associated equipment.
6. Types, properties, characteristics, designations, and "use limits" of aviation fuels and lubricants; procedures for detecting contaminants.
7. Types, functions, and principles of operation of flight, navigation, and power plant instruments.
8. Use of Failure or Unsatisfactory Reports (FUR's) in the Maintenance Engineering Analysis and Repair (MEAR) program.
9. Regulations and procedures for aircraft and equipment inventory, transfer, requisition, and survey.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	Aircraft Maintenance Officer (Powerplants)	8191	Squadron
	Aircraft Maintenance Officer (Airframes)	8192	Squadron
	Aircraft Maintenance Officer (Aviator's Equipment)	8194	Squadron
	Aircraft Maintenance Officer (Support Equipment)	8195	Squadron
W-2	(Assistant) Training Officer	3290/ 8190	NATTC, FAETU
	Aircraft Maintenance Officer(Powerplants)	8191	NAS
	Aircraft Maintenance Officer (Airframes)	8192	NAS
	Aircraft Maintenance Officer (Aviator's Equipment)	8194	NAS
	Aircraft Maintenance Officer (Support Equipment)	8195	NAS

GRADE	TITLE	NOBC	ACTIVITY
W-3			
	* Aircraft Maintenance Task Supervisor	8178	Squadron
	Aircraft Maintenance Quality Control Officer	8177	Squadron
	Squadron Material Officer	8348	Squadron
	Aircraft Maintenance Planning and Control Officer	8176	Squadron
	(Assistant) Aircraft Maintenance Officer (General)	8190	CVA, CVS, LPH
W-4			
	Aircraft Maintenance Quality Control Officer	8177	NAS
	Aircraft Material Control Officer	8305	NAS
	Aircraft Maintenance Planning and Control Officer	8176	NAS
	(Assistant) Aircraft Maintenance Officer (General)	8190	CVW

* This NOBC title is under study for possible revision.

MACHINIST

SCOPE

MACHINISTS are technical and operational specialists in ship machinery, and technical specialists in maintenance of optical equipment, instruments, and office machinery. They may serve as assistants to engineering and ship repair officers, and as optical and instrument repair officers. They supervise personnel engaged in operation and maintenance of main propulsion (nuclear, diesel, or steam) and auxiliary machinery, engineering and repair department equipment, and refrigeration systems; handling, stowing, and regulating expenditure of fuel oil and boiler feed water; instrument repair, adjustment, and calibration.

DUTIES AND RESPONSIBILITIES

1. Develop procedures and supervise practices and techniques for casualty analyses of engineering equipment, using drawings, wiring and schematic diagrams, test equipment, and technical manuals; develop procedures to evaluate engineering equipment for defects and determine necessity for replacement or repair.

2. Supervise replacement, installation, maintenance, and repair of auxiliary, main propulsion (nuclear, diesel, and steam), and repair department equipment, in accordance with standards set by Bureau of Ships and technical manuals.

3. Supervise main turbine and reduction gear bearing, thrust, and blade clearance measurements, and initiate and supervise corrective action as required.

4. Determine time, labor, and material requirements and supervise major repairs to boilers, main propulsion machinery, and auxiliary equipment; make specific recommendations regarding repairs beyond capacity of ship's force.

5. Supervise maintenance, repair, and adjustment of jeweled instruments, optical equipment, and office machinery.

6. Conduct prescribed tests of safety valves, speed and pressure governors, and overspeed trips; inspect propellers, shafts, sea valves, zincs, and strut and stern tube bearings when in dry dock.

7. Supervise operation, maintenance, and repair of industrial gas generating equipment, distilling plants, refrigeration systems, and air compressors.

8. Direct operation of boilers, main propulsion machinery, and auxiliary machinery and equipment.

9. Supervise fueling of ship at sea and in port, and the handling, stowing, and expenditure of fuel oil and lubricants.

10. Organize an engineering damage control party; analyze and direct emergency repairs to main propulsion machinery and associated piping; control list, trim, and draft, using prescribed damage and casualty control procedures.

11. Organize, coordinate, and supervise operations of machine and optical and instrument repair shops.

12. Supervise work order system of job orders and work requests.

13. Supervise maintenance of division machinery histories and Current Ship's Maintenance Project.

KNOWLEDGES AND ABILITIES

1. Types, functions, capabilities, limitations, operation, maintenance, and repair of auxiliary and main propulsion machinery (nuclear, diesel, and steam) and associated piping, including marine boilers, refrigeration systems, distilling plants, gas generating plants, air compressors, and thrust, spring, and radial bearings of main engine and reduction gear.

2. Types, purposes, tests, and adjustments of safety valves, speed governors, pressure governors, and overspeed trips.

3. Functions and characteristics of propellers, shafts, sea valves, zincs, and strut and stern tube bearings.

4. Types, functions, capabilities, and limitations of lenses and prisms in optical instruments used in navigation and ordnance; operation, maintenance, collimation, and repair of optical instruments.

5. Function, operation, maintenance, calibration, and repair of jeweled instruments, mechanical measuring instruments, and office machinery.

6. Theory, function, operation, maintenance, and repair of test equipment used in optical and instrument repair shops.

7. Duties, authority, and responsibilities of the Engineering Officer of the Watch and damage control repair party officer.

8. Functions and organization of engineering and repair departments and divisions.

9. Contents, scope, and maintenance procedures for a Current Ship's Maintenance Project.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	(Assistant) Ship Construction and Repair Superintendent (Submarines)	7938	NSYD
	Auxiliary Machinery Officer	9302	AP, CAG, CVA
	Boiler Officer	9305	CVA
	Main Propulsion Assistant (Steam)	9341	AF
W-2	(Assistant) Machinery Installation and Repair Superintendent	7241	NSYD, SHPREPFAC
	Auxiliary Machinery Officer	9302	CG
	Main Propulsion Assistant (Diesel)	9336	AOG
	Main Propulsion Assistant (Steam)	9341	AE, AKA, AO, ARC
	Ship's Engineer Officer (Diesel)	9363	ASR, ATA, AVP
	Junior Main Engine Officer	9387	CVA

GRADE	TITLE	NOBC	ACTIVITY
W-3			
	Instructor, Naval Science	3270	NAVSCOL
	Machinery Installation and Repair Superintendent	7241	AD, NAVSTA
	Auxiliary Machinery Officer	9302	CVS
	Main Propulsion Assistant (Steam)	9341	AD, AFS, AGR, APA, DL, LSD
	Ship's Engineer Officer (Diesel)	9363	ARS, ATF
W-4			
	Instructor, Naval Science	3270	NAVSCOL
	Machinery Installation and Repair Superintendent	7241	AR
	Technical Material Inspection Officer	7387	AS
	Ship Construction and Repair Superintendent (General)	7936	NSYD
	Boiler Officer	9305	CAG
	Repair Division Officer	9348	CVA

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AVIATION CONTROL TECHNICIAN

SCOPE

AVIATION CONTROL TECHNICIANS are specialists in the field of air traffic control. They serve as assistant operations officers, ground controlled approach/carrier controlled approach (GCA/CCA) controllers, and radar air traffic control center/carrier air traffic control center (RATCC/CATCC) watch officers, and as technical advisers concerning the capabilities, limitations, and reliability of air traffic control procedures and techniques. They supervise and direct personnel concerned with air traffic and radar air traffic control.

GRADE TITLE

DUTIES AND RESPONSIBILITIES

1. Organize, coordinate, supervise, and direct local air traffic control procedures.
2. Organize, coordinate, supervise, and direct ground-controlled and carrier-controlled approach systems and procedures.
3. Supervise and direct the planning, development, and submission of recommendations for instrument approach procedures in accordance with current criteria and directives.
4. Supervise and direct the control of air traffic under visual flight rules (VFR) and instrument flight rules (IFR) procedures.
5. Supervise and direct the collection, dissemination, and use of procedures prescribed in instructions and directives pertaining to emergency landings, crashes, and accidents.
6. Supervise and direct the operational functions of air traffic control facility flight checks.
7. Supervise and direct the operational maintenance of control tower equipment, ground-controlled approach, carrier-controlled approach, and air surveillance radar.
8. Supervise and direct the plotting of position, status, and movement of aircraft.
9. Supervise and direct the maintenance, use and filing of current flight planning information and reference materials.
10. Supervise and direct the operation and operational calibration of radar air traffic control equipment.
11. Monitor local procedures for alerting search and rescue facilities.
12. Supervise and direct the preparation of letters of agreement and coordinate them with agencies or facilities concerned.
13. Supervise and direct the collection, dissemination, use and filing of FAA regulations and instructions.
14. Supervise and direct the preparation, submission, and filing of status, performance, inventory, casualty, inspection, and other air traffic control reports.
15. Supervise and direct the collection, preparation, and dissemination of technical information pertaining to the operation and operational maintenance of air traffic control equipment.

KNOWLEDGES AND ABILITIES

1. Organization and functions of operations departments of naval air stations and air operations departments of aircraft carriers.
2. General organization and functions of aircraft control towers, ground-controlled approach units, radar air traffic control centers, and carrier air traffic control centers.
3. Civil, Joint, and U. S. Navy regulations and instructions regarding air traffic control.

4. Nature and scope of information concerning air traffic control in OpNav, BuWeps, and FAA publications, instructions, and notices.
5. Methods, procedures, and terminology utilized in processing flight clearances.
6. Instructions governing standard communications procedures for plotting, reporting, and controlling air traffic.
7. Instructions, rules, and criteria governing visual and instrument flight procedures.
8. Methods and procedures for plotting, reporting, and controlling air traffic.
9. Air navigation methods, including use of computing devices and use and correction of aeronautical charts and publications.
10. Regulations and instructions regarding the requirements and procedures for air traffic control facility flight checks.
11. Sources of information and common symbols and terminology used in reporting weather data.
12. Instructions and regulations pertaining to the need, content, and preparation of letters of agreement.
13. Regulations and procedures for requisitioning, surveying, inventorying, stowing, preservation of, and accounting for air traffic control equipment and materials.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	Controlled Approach Officer	8658	NAS, CVA, CVS
	Airborne CIC Officer	8502	CARAEWRON
W-2	(Assistant) Training Officer	3290/ 8647	NATTC
	RATCC Watch Officer	8645	NAS
	Airborne CIC Officer	8502	VW
W-3	Instructor, Technical	3250/ 8658	NATTC
	Controlled Approach Officer	8658	CVA, CVS
W-4	Operations Officer, Aviation Shore Activity	8668	NAS
	Air Traffic Control Officer	8647	NAS

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ELECTRICIAN

SCOPE

ELECTRICIANS are technical and operational specialists in electrical power, lighting, and interior communications systems. They may serve as assistants to electrical officers, division officers, and as electrical repair officers. They supervise personnel engaged in installation, adjustment, testing, maintenance, modification, and repair of shipboard electrical systems pertaining to power distribution, propulsion, steering, lighting, degaussing, interior communications, gyrocompasses, and associated equipment. They analyze, solve, and correct operational problems and equipment malfunctions.

DUTIES AND RESPONSIBILITIES

1. Develop procedures and supervise practices and techniques for casualty analyses of electrical systems, using drawings, wiring and schematic diagrams, test equipment, and technical manuals; develop procedures to evaluate electrical equipment, systems, and components for defects and determine necessity for replacement or repair.

2. Supervise electrical division personnel in operation, testing, maintenance, and repair of lighting, power distribution, degaussing, interior communications systems, gyrocompasses, steering gear, and associated equipment.

3. Supervise installation, adjustment, alteration, and modification of electrical systems and equipment.

4. Direct operation and control of electrical distribution and interior communications systems and circuits under battle and battle damage conditions; conduct emergency drills for electrical division personnel; supervise testing of electrical safety devices.

5. Determine time, labor, and material requirements for maintenance and repair of motors, generators, gyrocompasses, main propulsion motors, and auxiliary equipment.

6. Organize, coordinate, and supervise operations of electrical repair unit, shop, or activity.

7. Supervise use and maintenance of shop equipment, including measuring instruments, hand and power tools, and test equipment used in testing, maintenance, and repair of lighting, power distribution, degaussing, interior communications, and associated equipment.

8. Supervise work order system of job orders and work requests.

9. Supervise maintenance of division equipment histories and Current Ship's Maintenance Project.

KNOWLEDGES AND ABILITIES

1. Principles of electricity and electronics applicable to I. C. equipment, including rectifiers, audiofrequency amplifiers, and oscillators.

2. Types, uses, construction, theory of operation, capabilities, limitations, maintenance, and repair of motors, generators, servosystems, batteries, power and lighting distribution systems, casualty and emergency electrical distribution and interior communications systems and circuits, and electrical components of electrical-drive propulsion systems and steering-gear equipment.

3. Construction, theory of operation, testing, adjustment, maintenance, and repair of gyrocompasses and associated equipment, interior communications systems and associated equipment, and degaussing systems and associated equipment.

4. Theory, construction, operation, capabilities, limitations, and characteristics of a.c. and d.c. electrical systems, circuits, and equipment.

5. Principles of rewinding, insulating, and testing of all d.c. armatures and field coils, and a.c. stators and rotors.

6. Types, purposes, and theory of operation of minesweeping gear, and maintenance and repair procedures for associated electrical equipment.

7. Functions and organization of engineering department and electrical divisions.

8. Contents, scope, and maintenance procedures for a Current Ship's Maintenance Project.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	Ship Electrical Repair Officer	7085	NSYD
	Ship's Electrical Officer	9353	AFS, AOE, AV, CA, CC, CGN, CVS
W-2	Ship Electrical Repair Officer	7085	AD, ARL, AS, SHPREPFAC, NAVSTA
	Ship's Electrical Officer	9353	AD, AF, AGC, AGS, AKA, CAG, CG, CLG, LPH, LSD
W-3	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	SERVSCOL
	Ship Electrical Repair Officer	7085	ARG, NSYD
	Ship Construction and Repair Superintendent (General)	7936	SHPREPFAC
	Ship's Electrical Officer	9353	AGB, CVA, LPD
W-4	Instructor, Technical	3250	SERVSCOL
	Ship Electrical Repair Officer	7085	AR
	Ship Construction and Repair Superintendent (General)	7936	NSYD
	Special Weapons Assembly Officer (Electrical-Electronic)	9297	CVA

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AVIATION BOATSWAIN

SCOPE

AVIATION BOATSWAINS are operational and technical specialists in the launching, recovery, handling, and servicing of aircraft. They serve as air boatswains, assistant flight deck officers, assistant hangar deck officers, crash and rescue officers, and line division officers. They provide technical advice and information concerning the launching, recovery, handling, and servicing of aircraft; firefighting equipment and operations; crash, rescue, and salvage equipment and operations; and aviation fuels systems.

DUTIES AND RESPONSIBILITIES

1. Supervise and direct personnel in the launching, recovery, handling, spotting, and tying-down of aircraft on flight and hangar decks.
2. Supervise and direct the handling, parking, tying-down, and line security of shore based aircraft.
3. Supervise, direct, and coordinate aircraft fueling and defueling operations.
4. Implement established procedures for and supervise and direct crash, rescue, and salvage operations.
5. Supervise and direct the operation and maintenance of catapults and arresting gear.
6. Supervise and direct the operation and maintenance of shipboard aviation fuel systems.
7. Supervise and direct the operation and maintenance of firefighting and crash, rescue, and salvage equipment.
8. Supervise and direct beaching crews in ground handling, launching, and beaching procedures for seaplanes.
9. Supervise and direct the operation and maintenance of crash boats.
10. Supervise and direct the collection, preparation, and dissemination of technical information pertaining to aircraft launching, recovery, handling, servicing, crash and rescue, and aircraft fueling and defueling equipment.
11. Supervise and direct the preparation and maintenance of maintenance and repair logs for catapults and arresting gear, crash and rescue equipment, and fueling and handling equipment.
12. Supervise and direct the preparation, submission, and maintenance of equipment status, performance, inventory, casualty, and inspection records and reports.
13. Supervise and direct the maintenance of department equipment histories, Current Ship's Maintenance Project, and work order system.

KNOWLEDGES AND ABILITIES

1. General organization and functions of naval air stations, aircraft carriers, seaplane tenders, and aircraft squadrons.
2. Organization and functions of aviation and air operations departments ashore and afloat.
3. Procedures, techniques, and equipment for rescuing personnel from aircraft during emergencies.
4. Procedures, techniques, and equipment for executing aircraft handling and servicing operations, including those peculiar to seaplanes.
5. Nature and scope of information pertaining to the launching and recovery of aircraft as contained in publications, instructions, directives, and notices.
6. Procedures, techniques, and equipment used in aircraft crash and salvage operations.

7. Types, frequency, preparation, and distribution of aviation operations equipment logs, records, and reports.
8. Instructions and procedures for requisitioning, surveying, inventorying, stowing, preserving, and accounting of aviation operations equipment, materials and repair parts.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1			
	* (Assistant) Aircraft Maintenance Task Supervisor	8178	Squadron
	(Assistant) Flight Deck Officer	8654	CVA, CVS, LPH
	(Assistant) Hangar Deck Officer	8660	CVA, CVS, LPH
	(Assistant) Catapult and Arresting Gear Officer	8642	CVA, CVS
W-2			
	(Assistant) Aircraft Fueling Officer	8638	CVA, CVS, LPH
	(Assistant) Training Officer	3290/ 8608	NATTU
	* (Assistant) Crash and Transportation Officer	2790	NAS
	* Aircraft Maintenance Task Supervisor	8178	NAS
W-3			
	* Aircraft Maintenance Task Supervisor	8178	Squadron
	Aircraft Fueling Officer	8638	CVA, CVS, LPH
	Hangar Deck Officer	8660	CVA, CVS, LPH
	Aircraft Handling Officer	8625	CVA, CVS, LPH
W-4			
	Air Boatswain	8608	CVA, CVS, LPH
	Catapult and Arresting Gear Officer	8642	CVA, CVS
	Aircraft Services Division Officer	8626	NAS
	* Crash and Transportation Officer	2790	NAS

* This NOBC title is under study for possible revision.

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AVIATION ELECTRONICS TECHNICIAN

SCOPE

AVIATION ELECTRONICS TECHNICIANS are operational and technical specialists in the field of avionics. They serve as avionics officers, avionics support officers, electronics branch officers, avionics/weapons division officers, and as technical advisers concerning the uses, capabilities, limitations, and reliability of avionics equipment and test equipment. They supervise and direct practices and procedures for servicing, testing, and maintaining aviation electrical, electronic, instrument, and test equipment.

DUTIES AND RESPONSIBILITIES

1. Organize, supervise, and direct the operation and upkeep of facilities for maintenance and repair of avionics equipment.
2. Implement procedures for, and supervise and direct, a planned maintenance program for avionics equipment utilizing calendar, pre-flight, post-flight, special, and conditional inspections.
3. Coordinate work performed by avionics shop groups with other groups within the squadron or supporting unit.
4. Supervise and direct the installation, alteration, modification, and modernization of avionics equipment as required by changes, bulletins, and other technical instructions.
5. Supervise and direct the inspection, disassembly, assembly, adjustment, test, maintenance, calibration, and repair of avionics systems, components, and support equipment.
6. Supervise and direct the use and maintenance of machine, hand and portable power tools, test benches, and test and measuring instruments and associated equipment used in avionics equipment maintenance and repair.
7. Supervise and direct corrosion control practices and preservation and depreservation of avionics systems and test equipment.
8. Supervise and direct practices and techniques for casualty analyses of avionics systems and components.
9. Evaluate inspections and reports to determine operational efficiency of avionics systems and test equipment.
10. Supervise and direct the preparation and submission of avionics equipment histories, plant account cards, job orders, work requests, and other maintenance and repair reports.
11. Supervise and direct the collection and dissemination of technical information concerning the maintenance and repair of avionics systems and associated equipment.
12. Supervise and direct the preparation and submission of Failure or Unsatisfactory Reports (FUR's), inspection, and inventory reports.
13. Conduct familiarization programs for training pilots and aircrewmen in operational techniques, capabilities, and limitations of avionics systems, components, and related test equipment.

KNOWLEDGES AND ABILITIES

1. General organization and functions of naval air stations, aircraft carriers, seaplane tenders, and aircraft squadrons.
2. Organization and functions of aircraft maintenance departments ashore and air departments afloat.
3. Principles and techniques of avionics quality control systems.
4. Methods and procedures for removal, replacement, alignment, maintenance, calibration, and repair of avionics systems and components.

5. Types, functions, and principles of operation of avionics systems and related equipment.
6. Instructions and procedures for corrosion control, preservation, and depreservation of avionics systems and components and electronic test equipment.
7. Types, purposes, and frequency of inspections required on avionics systems and components.
8. Methods and procedures for administration of avionics maintenance programs.
9. Regulations and procedures for inventorying, transferring, requisitioning, and surveying avionics components and related test equipment.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	Squadron
W-2	(Assistant) Training Officer	3290/ 5977	NATTC, FAETU
	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	NAS
W-3	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	CVA, CVS, Squadron
W-4	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	NAS, CVW

Insigne under development

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AIR INTELLIGENCE TECHNICIAN

SCOPE

AIR INTELLIGENCE TECHNICIANS are operational and technical specialists in the field of photographic intelligence. They serve as air intelligence officers and assistant air intelligence officers, and as technical advisers concerning the identification, extraction, and use of intelligence data. They supervise and direct personnel in the preparation of photographic intelligence information, in the maintenance and utilization of intelligence files, and in the preparation of aerial, surface, and radarscope photographic material.

DUTIES AND RESPONSIBILITIES

1. Organize, supervise, and direct the operation and upkeep of a photographic interpretation/ intelligence office.
2. Establish and maintain working relationships with local photographic officers and photographic interpretation/intelligence officers and with fleet and shore activities.
3. Analyze photographic interpretation/intelligence information and reports to determine military implications and significance.
4. Supervise and direct photographic intelligence personnel in collecting, processing, and assembling intelligence data for use in preparing summary photographic intelligence reports and mission planning folders.
5. Supervise and direct the planning of photographic reconnaissance and attack missions from existing mission planning folders.
6. Supervise and direct the collection and preparation of materials for intelligence briefings and debriefings.
7. Supervise and direct the preparation of special detailed studies from aerial photography on individual targets or target areas.
8. Supervise and direct the preparation of intelligence documents, including photographic intelligence keys and radar target dossiers.
9. Supervise and direct the planning and preparation of survival, evasion, resistance, and escape briefs (SERE).
10. Supervise and direct personnel in the operation and maintenance of special equipment used to prepare mosaics, graphics, plots , and charts.
11. Analyze unsatisfactory photographic intelligence work; determine causes and prescribe corrective action.
12. Plan, implement, supervise, and report on evaluation of new techniques and equipment.
13. Determine time, materials, equipment, and personnel requirements for special mission planning.
14. Supervise and direct preparation of photographic interpretation/intelligence information for release, shipment, storage, or disposal.
15. Supervise and direct the preparation and maintenance of intelligence files.

KNOWLEDGES AND ABILITIES

1. Organization and functions of photographic interpretation/intelligence units ashore and afloat.
2. Principles and techniques of functional photographic intelligence analyses.
3. Standards and procedures for quality control of intelligence instruments and target dossiers.
4. Requirements for mission planning and mission planning folders and order of battle briefs.

5. Construction, types, and functions of aerial maps, charts, plot sheets, mosaics, and overlays.
6. Computations and requirements for aerial reconnaissance mapping.
7. Principles and concepts of light, including refraction, reflection, absorption, dispersion, and color brightness.
8. Regulations and procedures for captioning, filing, and/or forwarding photographic intelligence information and materials.
9. Procedures for classifying and declassifying photographic interpretation/intelligence materials and reports.
10. Regulations and procedures for inventorying, requisitioning, surveying, handling, stowing, issuing, and safeguarding photographic interpretation/intelligence logs, records, and reports.
11. Types, frequency, preparation, and distribution of photographic interpretation/intelligence unit logs, records, and reports.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1			
	(Assistant) Air Intelligence Officer (General)	9680	Squadron, CVA
	(Assistant) Air Intelligence Officer (Evasion and Escape)	9681	Squadron, CVA
	(Assistant) Air Intelligence Officer (Briefing and Debriefing)	9682	Squadron, CVA
	(Assistant) Air Intelligence Officer (Photographic Intelligence)	9683	3quadron, CVA
	(Assistant) Air Intelligence Officer (Radar Analyst)	9684	Squadron, CVA
	(Assistant) Air Intelligence Officer (ASW)	9686	Squadron, CVA
W-2			
	(Assistant) Training Officer.	3290/ 9680	FLEOPINTRACEN, IOIC
	(Assistant) Air Intelligence Officer (General)	9680	NRTSC, DIO, FIC
	(Assistant) Air Intelligence Officer (Evasion and Escape)	9681	NRTSC, DIO, FIC
	(Assistant) Air Intelligence Officer (Briefing and Debriefing)	9682	NRTSC, DIO, FIC
	(Assistant) Air Intelligence Officer (Photographic Intelligence)	9683	NRTSC, DIO, FIC

GRADE	TITLE	NOBC	ACTIVITY
	(Assistant) Air Intelligence Officer (Radar Analyst)	9684	NRTSC, DIO, FIC
	(Assistant) Air Intelligence Officer (ASW)	9686	NRTSC, DIO, FIC
W-3			
	Air Intelligence Officer (General)	9680	Squadron, CVA, CVW
	Air Intelligence Officer (Evasion and Escape)	9681	Squadron, CVA, CVW
	Air Intelligence Officer (Briefing and Debriefing)	9682	Squadron, CVA, CVW
	Air Intelligence Officer (Photographic Intelligence)	9683	Squadron, CVA, CVW
	Air Intelligence Officer (Radar Analyst)	9684	Squadron, CVA, CVW
	Air Intelligence Officer (ASW)	9686	Squadron, CVS, CVSG
W-4			
	Air Intelligence Officer (General)	9680	NRTSC, DIO, FIC
	Air Intelligence Officer (Evasion and Escape)	9681	NRTSC, DIO, FIC
	Air Intelligence Officer (Briefing and Debriefing)	9682	NRTSC, DIO, FIC
	Air Intelligence Officer (Photographic Intelligence)	9683	NRTSC, DIO, FIC
	Air Intelligence Officer (Radar Analyst)	9684	NRTSC, DIO, FIC
	Air Intelligence Officer (ASW)	9686	NRTSC, DIO, FIC

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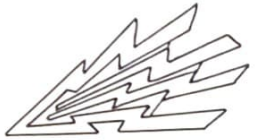
COMMUNICATIONS TECHNICIAN

SCOPE

COMMUNICATIONS TECHNICIANS perform highly specialized and classified duties in the Naval Security Group, under the cognizance of the Director, Naval Security Group. They serve as technical and operational assistants on staffs of varied types of commands, and as head or officer in charge of components within the Naval Security Group.

DUTIES AND RESPONSIBILITIES / KNOWLEDGES AND ABILITIES / REPRESENTATIVE BILLETS

The professional qualification requirements of Communications Technicians are published separately due to the nature of their classification, and promulgated by the Chief of Naval Operations (OP-94G) under a limited distribution on a need-to-know basis. Requests for examination bibliography materials and for enrollment in correspondence courses covering examination subjects should be made by official letter via administrative command addressed to the Director, Naval Security Group, Washington, D. C. 20390.



ELECTRONICS TECHNICIAN

SCOPE

ELECTRONICS TECHNICIANS are technical and operational specialists in electronic theory, equipment, and systems used in communications, detection and tracking, recognition and identification, countermeasures, and navigation. They may serve as assistants to electronic material officers and as division and electronic repair officers. They supervise personnel engaged in installation, modification, testing, calibration, maintenance, and repair of electronic equipment (less interior communications and fire-control equipment). They analyze, solve, and correct operational problems and equipment malfunctions.

DUTIES AND RESPONSIBILITIES

1. Develop procedures and supervise practices and techniques for casualty analyses of electronic equipment, using drawings, wiring and schematic diagrams, test equipment, and technical manuals; develop procedures to evaluate electronic equipment for defects and determine necessity for replacement or repair.

2. Test integrated equipment of electronic systems to verify operational performance, including receiver and transmitter performance, transmission line characteristics, interference and spectrum analysis, and signal distortion measurements.

3. Supervise installation, alteration, and modification of electronic equipment.

4. Supervise maintenance and repair of electronic equipment used in detection and tracking, communications, recognition and identification, countermeasures, and navigation.

5. Supervise calibration of radio direction finders and radiac instruments.

6. Organize, coordinate, and supervise operations of electronic equipment repair unit, shop, or activity.

7. Supervise use and maintenance of shop equipment, including measuring instruments, hand and power tools, and test equipment used in testing, maintenance, repair, and calibration of electronic equipment.

8. Supervise work order system of job orders and work requests; set up and administer the Program Performance Operational and Maintenance Standards for Electronic Equipment (POMSEE) and the Planned Maintenance System (PMS).

9. Supervise maintenance of division equipment histories and Current Ship's Maintenance Project.

KNOWLEDGES AND ABILITIES

1. Principles and concepts of radio wave propagation, and the effects of sunspot cycles, atmospherics, and the ionosphere on radio waves; causes of radio interference and methods of suppressing such interference.

2. Types, radiation characteristics, and functions of antennas, arrays, and reflectors.

3. Operating theory and circuit applications of klystrons, magnetrons, duplexers, transistors, waveguides, and cavities.

4. Types, construction, installation, theory, and use of transmission lines, including matching and coupling sections.

5. Operating principles, testing, and adjustment of synchro units, amplidynes, and servomechanisms.

6. Characteristics, applications, and testing of crystals.

7. Construction, installation, testing, and operating principles of sonar transducers.

8. Theory, circuit design, and application of pulse, amplitude, phase and frequency modulation.

9. Effects of pulse width and rate, receiver recovery time and band-pass, transmitter peak and average power, and target size and construction on maximum and minimum radar ranges.

10. Underwater sound propagation, including effect of refraction, temperature gradients, attenuation, and doppler.

11. Solution of resistance, capacitance, and inductance radio circuit problems, using trigonometry, plane vector analysis, and logarithms.

12. Operating principles, uses, and calibration of radiac instruments.

13. Operating principles of teletype and radio facsimile equipment and transmission.

14. Operating principles and functions of equipment for electronic aids to navigation, particularly direction finders, beacons, and loran.

15. Operating principles and functions of electronic countermeasures equipment.

16. Operating principles of stable elements associated with electronic equipment.

17. Care, use, and function of electronic test equipment.

18. Operating principles, installation, calibration, and manipulation of radio direction finders.

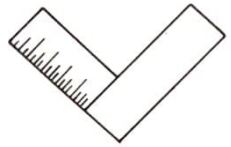
19. Functions and organization of CIC, electronic repair, and communications divisions.

20. Contents, scope, and maintenance procedures for a Current Ship's Maintenance Project.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1			
	Electronics Inspection and Survey Officer . . .	5960	SSB
	(Assistant) Electronics Planning, Installation, and Repair Superintendent.	5963	NSYD
	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	COMMSTA, NAS, NAVSTA
	Ship's Electronic Material Officer	9283	AGC, AGR, CA, CAG, CC, CG, CLG, CVA, CVS, DD, DDG, DDR, DLG
W-2			
	Electronic Data Processing Systems Maintenance Officer (Naval Tactical Data Systems)	5937	CGN
	Electronics Planning, Installation, and Repair Superintendent	5963	NSYD, SHPREPFAC

GRADE	TITLE	NOBC	ACTIVITY
	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	AD, AS, BCHMSTRUN, NAVFAC, COMMSTA, NAF, NAS, NAVSTA
	Ship's Electronic Material Officer	9283	AGS, DL, DLGN, LPD, LPH
W-3			
	Electronics Installation and Maintenance Planning Officer (General)	5925	COMMSTA
	Electronics Planning, Installation, and Repair Superintendent	5963	NSYD, SHPREPFAC
	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	AR, COMMSTA
	Ship's Electronic Material Officer	9283	DER
W-4			
	Electronic Equipment Installation, Maintenance, and Repair Officer	5977	COMMSTA, FTC, NAAS, NAF, NAS, NAVSTA



SHIP REPAIR TECHNICIAN

SCOPE

SHIP REPAIR TECHNICIANS are technical and operational specialists in ship repair and maintenance, damage control, and firefighting procedures, techniques, and equipment. They may serve as assistants to engineering and repair officers and as repair shop superintendents. They supervise personnel engaged in electric arc-welding, oxyacetylene welding and cutting, woodworking, metalworking, boat repairs, foundry operations, patternmaking, piping and drainage, and NBC warfare defense facilities.

DUTIES AND RESPONSIBILITIES

1. Develop procedures and supervise practices and techniques for casualty analyses of ship repair equipment, using blueprints, wiring and schematic diagrams, test equipment, and technical manuals; develop procedures for evaluating operational efficiency of ship repair, damage control, and firefighting equipment; supervise testing of equipment to determine necessity for replacement or repair of equipment.

2. Supervise taking on of fresh and salt water, taking of ship's draft, operation of anchor windlass for getting underway or anchoring, and securing equipment for sea.

3. Supervise testing, maintenance, and repair of emergency equipment and systems such as gas masks, smoke respirators, shallow water diving equipment, sprinkling systems (less magazines), and built-in fog-foam and CO_2 systems as prescribed by the Bureau of Ships Manual.

4. Initiate and supervise necessary repairs to damaged ship repair equipment, hull fittings, compartment bulkheads, decks, piping, and emergency equipment.

5. Instruct firefighting, dewatering, and NBC warfare defense teams; conduct damage control, fire and rescue, and NBC warfare defense drills; supervise testing of watertight compartments.

6. Supervise installation, alteration, and modification of shop machinery, ship's hull and fittings, and damage control, emergency pumping, and firefighting equipment.

7. Organize and supervise operations of foundry, welding, blacksmith, metalsmith, carpenter, and pipefitting shops.

8. Supervise use and maintenance of foundry, welding, blacksmith, metalsmith, carpenter, and pipefitting tools and equipment, including oxyacetylene welding and arc-welding equipment, forges and metallurgical furnaces, woodworking machinery, measuring instruments, and test equipment used in maintenance, alteration, and repair of ship's hull, small boats, watertight fittings, piping systems, and damage control equipment.

9. Supervise plate and sheet metal layout and fabrication, including shearing, cutting, rolling, bending, welding, and spot heating.

10. Conduct standard hardness tests for all types of metals used by the U. S. Navy.

11. Supervise work order system of job orders and work requests.

12. Supervise maintenance of division machinery histories and Current Ship's Maintenance Project; supervise compartment airtest program.

KNOWLEDGES AND ABILITIES

1. Capabilities and limitations of radiac survey meters, carbon dioxide indicators, flame safety lamps, and biological and chemical contamination detection kits.

2. Types, capabilities, and limitations of firefighting and emergency pumping equipment.

3. Types, functions, construction, maintenance, and repair of ship's piping, bulkheads, decks, structural fittings, and drainage systems; regulations governing hull fittings for ships in drydock.

4. Regulations and procedures for operation, maintenance, and repair of welding and cutting equipment, forges and furnaces, ship repair machinery, damage control tools, and anchor windlass machinery.

5. Regulations and procedures for testing and maintenance of firefighting and emergency pumping equipment, built-in CO_2 systems, watertight doors and hatches, and watertight structural compartmentation.

6. Uses, maintenance and repair, and adjustment of shallow water diving equipment, smoke generating and emergency pumping and power equipment, oxygen breathing apparatus and smoke respirators, and NBC warfare defense clothing and equipment.

7. Practices and procedures for taking on fresh or salt water, taking ship's draft, operating anchor windlass, and securing equipment for sea.

8. Types, characteristics, and procedures for use of lubricants and lubrication systems applicable to repair department equipment.

9. Types, characteristics, and uses of metals in metalsmith shops and foundries.

10. Types and meaning of piping and mechanical symbols used in naval technical publications.

11. Identification systems and nomenclature for ship repair materials such as metal, wood, pipe, compressed gases, and paint.

12. Status, authority, and responsibility of an officer in charge of a damage control repair party and of an engineering watch officer.

13. Functions and organization of engineering and repair departments and divisions.

14. Contents, scope, and maintenance procedures for a Current Ship's Maintenance Project.

15. Methods and procedures for damage control, firefighting, and defense against NBC warfare as contained in technical manuals, instructions, and notices, including the Bureau of Ships Technical Manual and the Bureau of Ships Journal.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1			
	Hull Superintendent	7165	NSYD
	Damage Control Assistant	9308	AP, APA, FLTRGR, LPD, LSD
	Repair Division Officer	9348	LPH
W-2			
	Nuclear, Biological, and Chemical Warfare Defense Officer	2765	NAVSCOL
	Ship Construction and Repair Superintendent (General)	7936	NSYD
	Ship Repair Officer	7976	AR, ARG, ARL, AS

GRADE	TITLE	NOBC	ACTIVITY
	Damage Control Assistant	9308	AGMR, AKS, AOE, CAG, LNTRESFLT, LPH
	Diving Officer (General)	9312	NAVSTA
W-3			
	Ship Repair Officer	7976	NAVSTA
	Damage Control Assistant	9308	AGC, AKA, CVA
	Repair Division Officer	9348	CC
	Drydocking Officer	9430	ARD
W-4			
	Fire Protection Officer	2730	DC TRACEN
	Ship Repair Officer	7976	AD
	Officer in Charge, Afloat	9273	AFDL

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SHIP'S CLERK

SCOPE

SHIP'S CLERKS are specialists in the fields of naval administration, personnel administration, and office organization. They may serve as ship and station secretaries, assistants to staff and flag secretaries, and as personnel, education, and classification officers. They supervise personnel engaged in preparing and processing correspondence; personnel recording, reporting, and accounting; printing and disseminating naval publications.

DUTIES AND RESPONSIBILITIES

1. Organize and supervise operation of administrative or personnel office; establish procedures and techniques for work improvement; prepare office organization, workflow, and layout charts.

2. Organize and supervise master directives system for instructions and notices at local activity; develop ship and station administration or executive department directives, regulations, bills, orders, routines, and procedures.

3. Establish procedures for operation of ship or station correspondence and reports control system, including routing and filing of correspondence and submission of reports; prepare and review official, business, and social correspondence; draft naval messages.

4. Implement procedures for interviewing, selecting, and assigning enlisted personnel, including evaluation of education, training, experience, and classification codes.

5. Implement ship or station personnel accounting system, including types of entries, preparation of accounting cards, and submission of reports; establish procedures for maintenance of officer and enlisted personnel diaries.

6. Supervise processing of personnel records and reports pertaining to pay, allowances, allotments, and travel of personnel and dependents.

7. Supervise preparation, assembly, and distribution of employment and operating schedules; operation, mobilization, and logistics orders, plans, annexes, and appendixes; and administrative, material, and operational inspection reports.

8. Supervise reproduction, assembly, distribution, and security of ship and station standard organization books.

9. Supervise operation and maintenance of shipboard printshop.

10. Supervise education and training office, including assembly, organization, and dissemination of information concerning ship or station enlisted career development programs.

11. Supervise operation of U. S. Navy post office.

12. Supervise operation of public information programs.

KNOWLEDGES AND ABILITIES

1. Regulations and procedures for classification, security, accountability, dissemination, transmission, and disposition of classified and registered matter.

2. Regulations and procedures for administration of U. S. Navy post office, including qualifications for selection, nomination, and designation of postal clerks.

3. Procedures for procurement of manuals, publications, courses, forms, and logs from district publication and printing offices, correspondence course centers, and the United States Armed Forces Institute.

4. Sources of information pertaining to types, locations, and eligibility and quota requirements for U. S. Navy schools and courses.

5. Principles of organizational analysis and work simplification applicable to naval administration and personnel offices.

6. Regulations and procedures for effecting appointments and promotions of officers, including professional and physical examinations and execution of acceptance and oath of office, preparation of officer service records, and preparation and submission of officer fitness reports.

7. Regulations and procedures governing enlistments, discharge, advancement in rating, and preparation and maintenance of service records of enlisted personnel, including entries, verification and corrections, the disposition of closed-out records, and the submission of enlisted performance evaluations.

8. Types and contents of officer and enlisted records maintained at local and bureau levels.

9. Procedures governing transfer of personnel to separation centers, separation processing, and preparation of separation documents.

10. Regulations pertaining to fulfillment of service obligations under pertinent statutory provisions, fulfillment of reserve obligations, and transfers to fleet reserve and retired lists.

11. Principles and objectives of the Naval Manpower Information System, basic accounting categories, personnel diaries, and personnel accounting cards.

12. Enlisted classification objectives, methods, and procedures, including coding, testing, interviewing, and service record entries.

13. Regulations and procedures for assignment and distribution of officer and enlisted personnel, including issuance of orders, application and contents of permissive orders, interpretation and transcription of abbreviated orders, and administration of enlisted personnel rotation program; regulations and procedures governing leave.

14. Regulations and procedures for reporting personnel casualties, including message reports, notification of next of kin, and disposition of records, accounts, and personal effects.

15. Court-martial procedures under the Uniform Code of Military Justice, including regulations and procedures contained in the Manual for Courts-Martial and the Manual of the Judge Advocate General (JAG P5800.7); regulations and procedures for delivery of naval personnel to civil authorities.

16. Organization and composition of the regular and reserve officer structure, including grades, corps, precedence, and billet designator and qualifications codes; organization and composition of the regular and reserve enlisted structure, including precedence, ratings, and billet and rating codes.

17. Purpose, objectives, and scope of the U. S. Navy records management program, including Navy Directives System, forms control procedures, disposal procedures, and standards for issuing, filing, and maintaining directives.

18. Regulations and procedures for preparing, identifying, forwarding, and filing correspondence.

19. Purposes and objectives of the naval communication system, including types, classes, and distribution of messages and authorized abbreviations and drafting procedures.

20. Regulations and procedures governing the publication and distribution of ship and station newspapers, the operation and maintenance of shipboard print shops, and the preparation, printing, and dissemination of ship and station administrative regulations and orders.

21. Principles and methods of the U. S. Navy public relations program for promoting civilian understanding of service objectives; procedures and methods for establishing a Press Liaison Office.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	Administrative Assistant	2605	COM NAV, NAS, NAVSTA
	Personnel Officer	3965	LPH
	Ship's Secretary	9286	CVS
W-2	Personnel Distribution Officer (Officer)	3126	BUPERS
	Personnel Distribution Officer (Enlisted)	3127	EPDO
	Personnel Officer	3965	AS, NAS, NAVSTA
	Ship's Secretary	9286	CA, CAG, CC, CG, CGN, CLG, LPH
W-3	Administrative Officer	2615	ATTACHE
	Personnel Distribution Officer (Enlisted)	3127	ADCOM, EPDO
	Personnel Officer	3965	AD, ADCOM, NAD, NAS, NAVSTA, NSYD
	Ship's Secretary	9286	CVA, CVAN
W-4	Procurement and Recruiting Officer	3020	NRS
	Personnel Officer	3965	CVA, CVS, NAS, NAVSTA, HQ ND
	Ship's Secretary	9286	AGC

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Insigne under development

DATA PROCESSING TECHNICIAN

SCOPE

DATA PROCESSING TECHNICIANS are operational and technical specialists in the automatic data processing field. They perform duties as data processing systems administrators, machine processing officers, and systems analysts in ships, staffs, and shore installations. They serve as technical advisors concerning the capabilities, limitations, and reliability of data processing equipment, procedures, and techniques. They direct and supervise personnel concerned with the preparation of data for processing, and operation of all automatic data processing equipment. The term "automatic data processing" as used herein relates to the processing of data for naval operational and management applications. This includes tactical, strategic, scientific, business, and logistics uses. The term "automatic data processing equipment" includes electric accounting machines (EAM), general purpose digital computers (EDP), and all supporting peripheral equipment.

DUTIES AND RESPONSIBILITIES

1. Organize, supervise, and direct the operation of an automatic data processing installation.

2. Establish and maintain liaison with departments, field activities, agencies, and echelons of higher command that provide input and/or use output data. Provide technical advice to management concerning the capabilities, limitations, reliability, and operational employment of data processing installation.

3. Establish and maintain liaison with equipment manufacturers relative to development of software, technological changes to existing hardware, and technical publications.

4. Supervise and direct site preparation and installation of automatic data processing equipments.

5. Conduct a continuous and realistic program for evaluation of operational efficiency, with particular emphasis on the application of EAM versus EDP methods of data processing. Compile cost and time estimates.

6. Develop ADP methods and procedures peculiar to system's application. Coordinate systems, operations, and programming functions. Promulgate detailed technical instructions concerning standards and procedures.

7. Develop production run manual for each EDP operation and/or EAM application. Supervise preparation and distribution of, and maintain quality control over, input and output data.

8. Assess complexity of data processing problem, schedule program completion date, assign appropriate programming language and operating system, keep management informed on percentage of project completion, and develop work measurement reports and standards for programmers and systems analysts.

9. Establish priorities for processing data.

10. Establish and maintain tape and direct access storage library. Establish and maintain procedures for and control of tape rehabilitation equipment.

11. Maintain and submit time utilization reports on equipment use.

12. Maintain inventory control over consumable supplies, and establish reorder levels. Formulate operating budget.

13. Maintain proper security standards over total data processing operation.

14. Maintain systems chart depicting all runs in the ADP system.

15. Develop and administer training program for indoctrination of all equipment operators, programmers, clerical personnel, and analysts.

KNOWLEDGES AND ABILITIES

1. General organization and functions of an automatic data processing installation ashore and afloat.

2. Procedures, techniques, and equipment for automatic processing of data with both electro mechanical and electronic digital machines.

3. Principles of electricity and electronics applicable to ADP equipment.

4. Theory of construction, operation, testing, adjustment, and station level maintenance of ADP equipment.

5. Instructions and procedures for requisitioning, surveying, inventorying, stowing, preserving, and accounting of ADP equipment, materials, and repair parts.

6. Techniques and procedures for performing analysis and design of an automatic data processing installation.

7. Techniques and procedures for site preparation and installation of ADP equipment.

8. Contents and scope of Navy-used manuals, handbooks, and other aids relating to automatic data processing and processing equipment.

9. Procedures and instructions for maintaining and reporting equipment utilization and cost factors.

REPRESENTATIVE BILLETS

GRADE	*TITLE	*NOBC	ACTIVITY
W-1	Data Processing Systems Administrator .	2628	CVA, CVS, LPH AS, AD, AR
	Machine Processing Officer	2630	NSD, NAS, FLTCOMPUTER-PROGCEN
	Data Processing Systems Analyst	2635	OPCONCENTER, NAVCOSSACT, BUPERS, FLTWKSTUDYGRP, FLTASTGRP, PAMI
W-2	Data Processing Systems Adminstrator .	2628	CVA, CVS, AS, FIC
	Machine Processing Officer	2630	NAS, ASO, FIC, NSD
	Data Processing Systems Analyst	2635	FLTASTGRP, EXAM-CENTER, ASO, FLT-WKSTUDYGRP, FINANCE CENTER
W-3	Data Processing Systems Administrator .	2628	TYPE CDR STAFF, SECURITY GRP, FLTCOMPUTER-PROGCENTER, FINANCE CENTER
	Machine Processing Officer.	2630	TYPE CDR STAFF, BUPERS, PAMI, NAVCOSSACT, EXAMCENTER, OPCONCENTER, ASO, DIA ACTIVITY, FINANCE CENTER

*These NOBC Titles and Codes are under study for possible revision.

GRADE	TITLE	NOBC	ACTIVITY
	Data Processing Systems Analyst	2635	PAMI, BUPERS, OPCONCENTER, NAVCOSSACT, FLEET STAFF, EXAMCENTER, DIA ACTIVITY, FAGLANT
W-4	Data Processing Systems Administrator .	2628	TYPE CDR STAFF, SECURITY GRP, FLTCOMPUTER-PROGCENTER, FINANCE CENTER
	Machine Processing Officer	2630	BUPERS, PAMI, FLEET STAFF, NAVCOSSACT, OPCONCENTER, EXAMCENTER, ASO, DIA ACTIVITY
	Data Processing Systems Analyst	2635	OPCONCENTER, BUPERS, NAVCOSSACT, FLEET STAFF, PAMI, FLTWKSTUDYGRP, EXAMCENTER, FAGLANT

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BANDMASTER

SCOPE

BANDMASTERS are specialists in the field of music, including conducting, orchestration, and instruction. They may serve as leaders or assistant leaders of U. S. Navy bands and orchestras. They assist in operation, organization, and administration of U. S. Navy bands and orchestras; serve as members of examining boards for advancement in rating of musician personnel; evaluate ability of applicants for the U. S. Navy music program and of potential instructors for the U. S. Navy School of Music.

DUTIES AND RESPONSIBILITIES

1. Conduct a large band in performance of advanced literature of own choosing.
2. Form, conduct, and maneuver a large band for all types of official functions, honors, and ceremonies.
3. Transcribe a selection for band (full instrumentation) from orchestral score.
4. Arrange a selection for band (full instrumentation) from piano score, using advanced harmonic resources and rhythmic devices.
5. Reproduce musical composition in written form through aural perception of harmonic, melodic, and rhythmic dictation.
6. Harmonize a given melody, using advanced harmonic resources.
7. Analyze a given band composition for structural content.
8. Audition and evaluate musical background and instrumental proficiency of applicants for the U. S. Navy music program.
9. Analyze and evaluate aptitude for teaching, musical proficiency, and instrumental ability of potential instructors for the School of Music.
10. Prepare musical programs by concert bands, soloists, ensembles, and dance bands for radio, television, and stage presentation.
11. Instruct musician personnel in harmony, theory of music, ear training, and instrumental techniques.

KNOWLEDGES AND ABILITIES

1. Titles, composers, and arrangers of published band compositions.
2. Principles of musical forms such as sonata, song, suite, and symphony.
3. Principles and characteristics of higher dominant discords, secondary dominants, chromatic supertonic chord, chords of augmented sixth, and other chromatic alterations.
4. Types of modulations and their applications.
5. Practical ranges of band instruments.
6. Types of sound generators and resonators in various instrumental categories.
7. Organization and functions of U. S. Navy bands and the U. S. Navy music program.
8. Procedures for submission of annual inventory reports and Monthly Report of Musicians (NavPers 623).
9. Current Bureau of Naval Personnel policies concerning musician personnel.
10. Current regulations concerning music for military ceremonies such as reviews, parades, funerals, inspections, escorts, and guard mounts.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	Instructor, Technical	3250	SCHMUSIC
	Music Director	3520	NAVBAND
W-2	Instructor, Technical	3250	SCHMUSIC
	Music Director	3520	NAVBAND
W-3	Instructor, Technical	3250	SCHMUSIC
	Music Director	3520	NAVBAND
W-4	Instructor, Technical	3250	SCHMUSIC
	Music Director	3520	NAVBAND

SUPPLY CLERK

SCOPE

SUPPLY CLERKS are specialists in the field of supply, including fiscal accounting and disbursing, material control, and mess management. They may serve as assistants to officers in the Supply Corps and may be assigned independent duty in this capacity. They supervise personnel engaged in procurement, stowage, and distribution of supplies and monies; operation of ship's stores, U. S. Navy exchanges, commissary departments, and disbursing offices; preparation of supply and equipment inventories and requirements estimates, record audits, fiscal computations, and material allocations.

DUTIES AND RESPONSIBILITIES

1. Supervise inspection and receipt procedures for incoming supplies.

2. Supervise operation and preventive maintenance of equipment used in supply offices, galleys, ship's stores, commissary stores, and U. S. Navy exchanges.

3. Supervise preparation of requisitions, surveys, allotments, pay records, and travel, ration, and public vouchers; supervise preparation of provisions, clothing, and small stores returns; supervise preparation of order and inspection reports, commissary records, invoices, and correspondence.

4. Supervise stowage of provisions, clothing, ship's stores stock, and other supplies and equipment prescribed in the Bureau of Supplies and Accounts Manual.

5. Supervise operations of clothing and small stores, ship's stores, U. S. Navy exchanges, and commissary stores.

6. Determine quantities and types of provisions and supplies required for all types of cruises, high and low limits of stock carried in supply department, and necessity for preparation and submission of equipment and supply requisitions.

7. Supervise general mess management, preparation of weekly bill of fare, and battle messing operations.

8. Supervise preparation of recommendations for supplementary operating instructions in ship's stores, commissary stores, U. S. Navy exchanges, and clothing and small stores activities concerning hours of operation, pricing, and sales procedures.

9. Disseminate information concerning availability of material and facilities for ship or station operation, maintenance, repair, and training missions.

KNOWLEDGES AND ABILITIES

1. Organization and management of disbursing offices afloat and ashore.

2. Methods of computing pay, posting of payments, balancing and completing cash and check disbursements, and auditing accounts.

3. Regulations and procedures for reimbursement of travel claims, including travel of dependents.

4. Regulations and procedures for auditing pay records, allotments, and other supply and disbursing vouchers.

5. Systems and methods of accounting for all types of naval expenditures.

6. Regulations and procedures for auditing and verifying U. S. Navy mail clerk accounts.

7. Control and accounting procedures for ship's allotments.

8. Use and meaning of numerical components of naval appropriation symbols and their application to naval accounting procedures.

9. Definitions and uses of major functional account classifications.

10. Organization and function of supply departments and activities, including naval supply depots, naval supply centers, ship's stores, commissary stores, U. S. Navy exchanges, and inventory control points.

11. Regulations and procedures for preparation of equipment and provision surveys, for procuring, receiving, issuing, and accounting for stores, equipment, and repair parts, for stock upkeep, receipt, issue, and control, and for purchasing and procuring special material by letter and dispatch, including Military Standard Requisitioning and Issue Procedures, Military Standard Transaction Reporting and Accounting Procedures, and uniform material issue priority system.

12. Methods of assembling, invoicing, packaging, and processing materials for shipment.

13. Functions and uses of Allowance and Interchangeability Lists, and Illustrated Parts Catalog.

14. Inventory methods for stores and materials, and adjustments for gains and losses.

15. Methods of classifying, measuring, and marking naval supplies.

16. Methods and procedures for the transfer of materials and supplies between the U. S. and foreign governments, the military services, and U. S. Navy supply officers.

17. Regulations and procedures for disposal of excess materials.

18. Regulations and procedures for bulk stowage of general stores materials and for stowage, preservation, and conservation of various types of provisions.

19. Regulations and procedures for determining types of provisions, clothing, and supplies required for all types of cruises.

20. Methods of determining balanced diets in weekly bill of fare and procedures for evaluating weekly bill of fare in terms of cost per allowed ration.

21. Regulations, procedures, and sanitary precautions pertaining to commissary operations, inspection of food service personnel, messing areas, food, and food stowage spaces.

22. Methods of procuring general mess and commissary stores and supplies from naval and civilian sources.

23. Organization and operation of officer, chief petty officer (CPO), and general messes ashore and afloat, including regulations and procedures for auditing records and accounts of cabin, wardroom, and CPO messes.

24. Procedures for preparation, justification, and review of transportation requests.

25. Regulations and procedures for shipping household effects.

26. Types, functions, capabilities, and limitations of labor saving devices and equipment used in supply operations, and equipment used in supply offices, galleys, ship's stores, commissary stores, and U. S. Navy exchanges.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	Commissary Officer	1130	CA, CAG, CC, CG, CLG, NAVSTA
	Navy Exchange (Ship's Store) Officer	1933	CG, CGN, CLG, CVS
W-2	(Assistant) Disbursing Officer	1045	FINOFF, NAAS, NAF, NAVSTA, NSYD
	Commissary Officer	1130	AR, ARG, AS, AV, CVS, NAAS, NAS, NAVSTA
	General Stores Officer	1913	AGC, AGS, AP, APA
	General Supply Officer	1918	COMMSTA, FAIR, NAF, NAVFAC
	Navy Exchange (Ship's Store) Officer	1933	AD, CVA, LPH
W-3	Disbursing Officer	1045	CGN, COMM MSTS, NAD, FINOFF, NSYD, SUPACT
	Commissary Officer	1130	AD, AS, COMMSTA, NAAS, NAF, NAVSTA
	Commissary Store Officer	1135	COMMSTOR
	Material Handling Equipment Officer	1310	NAVSTA
	Warehouse and Storage Officer	1370	NAVSTA
	General Stores Officer	1913	AE, AF, CA, CAG, CC, CG, CLG, CVS, LPH
	Navy Exchange Officer	1933	NAVEXCH
W-4	Disbursing Officer	1045	FINOFF, HQSUPPACT
	Commissary Officer	1130	AP, NAS, NAVSTA, NSYD
	Commissary Store Officer	1135	COMMSTOR
	General Supply Officer	1918	CC, EPDO, NAF, SERVGRP
	Navy Exchange Officer	1933	NAVEXCH
	Technical Supply Officer (Aviation)	1991	CVA

AEROGRAPHER

SCOPE

AEROGRAPHERS are technical specialists in the field of meteorology. They serve as meteorological officers, meteorological watch officers, meteorological reconnaissance officers, and as technical advisers concerning the capabilities, limitations, operation, and operational maintenance of meteorological and oceanographic equipment. They supervise and direct personnel in the use, operation, and operational maintenance of meteorological and oceanographic equipment; in the recording, computation, and analysis of weather data; and in the dissemination of information on current and anticipated weather and ocean conditions for specific geographic regions.

DUTIES AND RESPONSIBILITIES

1. Organize, supervise, and direct the operation of a weather service office; establish work routines and coordinate operations.
2. Establish and maintain liaison with local electronics activity personnel for the preventive maintenance and repair of assigned meteorological and oceanographic electronic equipment.
3. Determine specific requirements for meteorological and oceanographic information based on tasks of units serviced.
4. Supervise and direct the plotting, interpretation, evaluation, forecasting, and dissemination of meteorological and oceanographic data.
5. Supervise and direct personnel in observing and recording weather phenomena and oceanographic conditions through visual and instrument methods.
6. Supervise and direct personnel in the preparation of meteorological and oceanographic data for transmission.
7. Supervise and direct the preparation of cross-sectional diagrams for extended aircraft flights.
8. Supervise and direct the briefing and debriefing of pilots and aircrewmen on current, expected, and encountered weather conditions.
9. Supervise and direct personnel in the determination of ballistic wind and air density as required for surface and antiaircraft firing.
10. Supervise and direct personnel in the installation and modification of meteorological and oceanographic equipment.
11. Supervise and direct personnel in the maintenance, adjustment, and calibration of meteorological and oceanographic instruments.
12. Supervise and direct the testing for operating efficiency of meteorological and oceanographic instruments and equipment; conduct periodic inspections.
13. Establish and conduct a familiarization program for pilots, aircrewmen, and other interested personnel concerning meteorological and oceanographic observations, and the availability, interpretation, and use of this information.
14. Supervise and direct the collection, preparation, and dissemination of technical information concerning meteorology and oceanography.
15. Supervise and direct the collection and dissemination of current safety regulations and precautions pertinent to the installation, modification, operation, and maintenance of meteorological and oceanographic equipment.

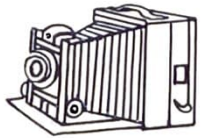
KNOWLEDGES AND ABILITIES

1. General organization and functions of the Office of the Naval Weather Service and the Oceanographic Office and their relationships to the Operating Forces and the Shore Establishment.
2. Organization and functions of Fleet Weather Centrals, Fleet Weather Facilities, and Weather Service Offices.

3. General meteorology and basic laws of physics as used in the analysis and interpretation of meteorological and oceanographic data.
4. General weather and climate of ocean and land areas of the world.
5. Uses and applications of meteorological and oceanographic information in standard naval air, surface, and subsurface operations.
6. Types, applications, and performance characteristics of meteorological and oceanographic equipment.
7. Operational procedures and techniques for upper air observations; use of upper air charts and forms; interpretation and analysis of data for use in forecasting.
8. Prescribed procedures for preparation and encoding of meteorological and oceanographic data for transmission, and for decoding and interpretation of data received.
9. Regulations and procedures for inventorying, requisitioning, surveying, maintaining, stowing, and accounting for meteorological and oceanographic equipment and publications.
10. Types, frequency, preparation, and distribution of meteorological and oceanographic records and reports.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1			
	Meteorological Watch Officer.	8720	NAS
	Meteorological Reconnaissance Officer.	8716	VW
	Meteorological Equipment and Technical Liaison Officer	8712	FWC, FWF
W-2			
	(Assistant) Training Officer.	3290/ 8715	NATTU
	Meteorological Officer	8715	NAS
W-3			
	Meteorological Watch Officer.	8720	FWC, FWF
	Meteorological Officer	8715	NAF
W-4			
	Meteorological Officer	8715	LPH, AV
	Meteorological Supply Management Officer . .	8710	NSC, ASO



PHOTOGRAPHER

SCOPE

PHOTOGRAPHERS are operational and technical specialists in the field of military photography and image-forming sensor reconnaissance. They serve as photographic officers, assistant photographic officers, photographic material officers, and as technical advisers concerning the uses, capabilities, limitations, and material readiness of photographic equipment and image-forming sensor reconnaissance systems. They supervise and direct practices and procedures for the operation, testing, and maintenance of photographic and image-forming sensor reconnaissance equipment and photographic laboratories.

DUTIES AND RESPONSIBILITIES

1. Organize, supervise, and direct the operation and upkeep of a photographic laboratory.
2. Establish and maintain working relationships with local photographic, intelligence, and public information offices and with local fleet and shore activities.
3. Plan for, prepare layout, and direct the installation of equipment in a photographic laboratory.
4. Select procedures for, and supervise and direct the application of quality control methods in, the processing of light-sensitive materials.
5. Determine time, material, equipment, and personnel requirements for special missions, assign priorities, and prepare required operational schedules.
6. Supervise and direct the production of motion picture projects.
7. Select procedures for and supervise and direct the testing and inspecting of equipment for operational readiness.
8. Analyze unsatisfactory photographic work; determine causes of defects and prescribe corrective action.
9. Supervise and direct personnel in the operation and maintenance of photographic and image-forming sensor reconnaissance equipment and in the processing of light-sensitive materials.
10. Inspect damaged photographic equipment, determine necessity for its survey or repair, and initiate procedures to prevent recurrence.
11. Supervise and direct the inspection and evaluation of negatives and prints prior to release, shipment, or placing in official files.
12. Supervise and direct the collection, preparation, and dissemination of photographic information to division personnel.
13. Determine "high and low limits" for photographic supplies; establish procedures to avoid oversupply and provide for the updating of chemicals and sensitized materials.
14. Supervise and direct the preparation and submission of Failure or Unsatisfactory Reports (FUR's), inspection, and inventory reports.
15. Conduct familiarization programs for pilots and aircrewmen in photographic flight techniques, including operational capabilities and limitations of fixed and nonfixed, manually controlled, and automatic cameras, and related equipment.

KNOWLEDGES AND ABILITIES

1. Organization and functions of a photographic laboratory ashore and afloat.
2. Organization and functions of operations departments of aircraft carriers.
3. Organization and functions of an integrated operational intelligence center.
4. Principles and techniques of photographic quality control systems.

5. Principles and techniques of negative processing, and photographic printing and duplicating processes.
6. Operational use and placement of artificial lighting, including single, multiple, and synchro-sunlight flash lamps.
7. Photographic computations and requirements for reconnaissance and aerial mapping.
8. Regulations and procedures for captioning, filing, and forwarding of negatives and prints.
9. Regulations and procedures for the classification and security of negatives and prints.
10. Regulations and procedures for inventorying, requisitioning, surveying, handling, stowing, issuing, and security of photographic equipment, supplies, and accessories.
11. Types, frequency, distribution, and preparation of photographic equipment logs, records, and reports.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1	(Assistant) Photographic Officer	8853	NAS
	Photographic Officer	8853	CVS, AVM
	Photographic Material Officer	8847	CVA
W-2	(Assistant) Training Officer	3290/ 8853	NATTU
	Photographic Officer	8853	NAS
	Photographic Material Officer	8847	VU, VAP, VFP
W-3	Photographic Officer	8853	CVA, CVS
	Photographic Material Officer	8847	NPC, NRTSC
	(Assistant) Photographic Officer	8853	VU, VAP, VFP
W-4	Photographic Officer	8853	NPC, NRTSC
	Photographic Material Officer	8847	NSC, ASO

CIVIL ENGINEER CORPS WARRANT

SCOPE

CIVIL ENGINEER CORPS WARRANTS are technical and operational specialists in the fields of construction, utilities, maintenance, and transportation. They may serve as assistants to commanding officers and to officers in charge of naval construction forces, and as officers in charge of detachments of naval construction forces and public works officers. They supervise personnel engaged in construction, maintenance, and repair of facilities, including buildings, airfields, waterfront structures, and utilities systems, and in operation, test, maintenance, and repair of allied plants and automotive and construction equipment.

DUTIES AND RESPONSIBILITIES

1. Develop procedures and supervise practices and techniques for casualty analyses of construction, automotive, weight handling, and utilities equipment, of systems such as lighting, power distribution, telephone, and sewage disposal, and of equipment and system components.

2. Develop procedures for, and supervise personnel in, the operation, maintenance, and repair of U. S. Navy public works, public utilities, and automotive, railroad, construction, and weight handling equipment.

3. Determine necessity for, and supervise personnel in, the repair and maintenance of facilities and structures such as buildings, utility systems, railroad trackage, piers, roads, and docking facilities.

4. Supervise operation, maintenance, and repair of distribution systems, including central plants and substations, for utilities such as steam, electricity, compressed air, water, and gas.

5. Supervise components of mobile construction battalion in construction of shore facilities, including airfields, campsites, supply dumps, highways, bridges, and waterfront structures.

6. Supervise detachment of amphibious construction battalion in support of amphibious operations, including construction of pontoon causeways and operation of warping tugs.

7. Command a platoon or company in perimeter defense, close and extended order drill, and manual of arms.

8. Determine time, labor, material, and cost estimates for maintenance, repair, and overhaul of equipment, utilities, and plants; supervise preparation, submission, and review of project data.

9. Organize and supervise operations and upkeep of shops.

10. Supervise work order system of job orders and work requests.

KNOWLEDGES AND ABILITIES

1. Methods and procedures for establishing advanced base camps, including layouts for facilities and field sanitation requirements.

2. Methods and procedures for construction of advanced base and permanent type structures and utilities systems.

3. Methods and procedures for maintenance and operation of U. S. Navy automotive, railroad, construction, and weight handling equipment, including cost control procedures contained in Bureau of Yards and Docks technical manuals.

4. Types, uses, and capabilities of automotive, railroad, construction, and weight handling equipment, and of advanced base and permanent type structures and utilities systems.

5. Methods and procedures for ground and perimeter defense and disaster control.

6. Methods and procedures for preparation, submission, and review of construction project time, labor, and material requirements, and cost estimates.

7. Organization and functions of units of the naval construction forces and public works departments; functions and operation of amphibious construction battalions.

8. Responsibilities of an industrial relations office and the functional relationship of this office with public works activities.

REPRESENTATIVE BILLETS

GRADE	TITLE	NOBC	ACTIVITY
W-1			
	Utilities Engineering Officer	4077	NAD
	Transportation Engineering Officer	4082	NAD, NAS, NSYD, NAVSTA
	Construction Battalion Company Officer (General)	4160	MCB
W-2			
	Public Works Operations Officer	4057	NAF
	(Assistant) Public Works Maintenance Officer	4065	HQSUPPACT, MCAS, NAS
	Utilities Engineering Officer	4077	MCAS
	Transportation Engineering Officer	4082	NAD, NAS, NSYD
	Construction Battalion Company Officer (General)	4160	MCB
W-3			
	(Assistant) Staff Civil Engineering Officer	4011	HOUSACT
	Public Works Operations Officer	4057	NAVSTA
	Publics Works Maintenance Officer	4065	MCAS, NAS, NSC
	Transportation Engineering Officer	4082	CHB, NAVSTA, NSYD
	Construction Battalion Company Officer (General)	4160	MCB
W-4			
	Instructor, Technical	3250	CBCEN
	Public Works Operations Officer	4057	NAF
	Public Works Maintenance Officer	4065	FLT, ACT, MC BASE, NAF, NAVSTA

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