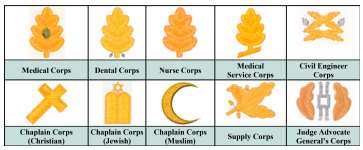
Chapter 2: US Navy Personnel
4/C MQS

1. Know the differences between URL, RL, and SC Officers.
    - Unrestricted Line Officer (URL): USNA focuses on graduating URLs. Mostly includes aviation, surface, SEALs, and EOD. Eligible for command
    - Restricted Line Officer (RL): highly specialized, technical services. Not eligible for command at sea, but may command auxiliary vessels and various shore activities. Wear identical rank as URLs.
    - Staff Corps Officers (SC): highly specialized services. They wear their corps insignia device on the left collar and rank on the right. Not eligible for command at sea, but may command auxiliary vessels and shore activities.

2. Know the Restricted Line communities and their roles.
    - Engineering Duty Officer (EDO) - sustain combat readiness and build the future fleet.
        - May serve on ships in technically challenging positions such as Combat Systems Officer, Chief Engineer, or Reactor Officer on carriers and amphibs.
        - Most USNA grads who become EDO do so through the SWO-EDO or Subs-EDO option
        - After obtaining a warfare qualification, EDOs earn a technical Master's degree, ED qualification program and earn the ED qualification insignia
        - Rickover was an EDO
        - Some EDO's may become salvage diving officers (attend Joint Diving Officer course)
    - Aerospace Engineering Duty Officer (AEDO) - test, evaluate new aircraft, weapons systems, and provide professional management and technical direction in the air weapon system acquisition process
    - Aerospace Maintenance Duty Officer (AMDO) - involved with material acquisition and fleet maintenance
        - CO's of Naval Aviation Depots
        - Involved in all aspects of material acquisition and manage NAVAIR programs
    - Information Warfare Community (IWC)
        - Information Professional (IP)
        - Cryptologic Warfare (CW)
        - Intelligence (INTEL)
        - Meteorology and Oceanography (METOC)
        - USNA grads may select SWO-IP, SWO-CW, SWO-INTEL, and SWO-METOC. Upon receiving SWO pins and within 6 months of promotion to O-3, they redesignate to their IWC community.
    - Public Affairs Officer (PAO) - telling the Navy story

    - Media Operations - work with media outlets to communicate to the American public
    - Internal Communications - publications to communication with sailors and their families
    - Community Relations - hands-on programs, tours, VIP visits, speaking engagements
    - All PAOs are lat-transfers, serve at sea, ashore, and in joint assignments
    - Only 190 PAOs - the smallest Restricted Line community
- Human Resources (HR) - deliver human resources expertise to define, recruit, develop, assign, and retain a highly-skilled workforce for the Navy Total Force mission
    - Core competencies are Workforce Requirement, Training and Education Development, Personnel Management, and Recruiting
- Foreign Area Officer (FAO) - maritime international engagement professionals
    - Provide operational experience, cultural knowledge, and language expertise
    - Force multipliers, forge global relationships, have a credible presence in 70 countries

3. Know the five Staff Corps communities and their roles.
- Medical Community - organized under the Bureau of Medicine and Surgery, includes Medical, Medical Service, Dental, and Nurse Corps
- Supply Corps - conduct and enable supply chain, acquisition, operational logistics, and sailor & family care activities - the business managers of the navy
    - Navy Supply System - most important responsibility
    - Created in February 23, 1795 - Ready for Sea (motto)
    - Purpose: to optimize the Naval Support Network to meet the Operational Readiness and Quality of Life Requirements of our Maritime Forces
    - Mission: to deliver sustained global logistics and QoL support to the Navy and Joint Warfighter
- Civil Engineer Corps (CEC) - established in 1867 to build and maintain Naval Shore establishments
    - Manage and execute the planning, design, construction, operation, and maintenance of Navy shore infrastructure
    - Three areas: construction, contract management, or Seabees
- Judge Advocate General Corps (JAG) - established in 1967, lawyers - provide legal and policy advice to SECNAV in legal matters
- Chaplain Corps - religious ministry - each chaplain is endorsed by their own religious organization - serve with USCG and Merchant Marine, USMC, and Navy
    - Provide, Facilitate, Care, and Advise
    - Chaplains have absolute confidentiality
- SC insignia:



4. Know the purpose of the Limited Duty Officer (LDO) and Chief Warrant Officer (CWO) programs and who competes for these commissions.

- Both provide outstanding senior enlisted to commission without a degree - become officer technical managers (11% of officer corps)
- LDO - officer technical managers related to their enlisted rate - identical rank to URL, can be DIVOs, DH, XO, and COs shore or afloat.
    - Navy Band Officers are LDOs - 14 bands (e.g. USNA) - E-6 before
- Chief Warrant Officer (CWO) - technical specialist - may be DIVO, DH, XO, and CO ashore or afloat
    - Special insignia (CWO2-CWO5) 

5. Know the difference between a paygrade, a rating, and a rate.

- Paygrade is E1-O10 (E-4 to E-7 advance through selection boards, E-7 to E-9 advance through selection boards)
- Rating - occupational specialty in the navy
    - E-1 to E-3 may be designated or non-designated
    - Non-designated pick a Professional Apprenticeship Career Track (PACT) program: airman, seaman, or Fireman
        - Considered striker until they receive enough training to become a designated striker
    - General ratings are for E-4 to E-9
    - Service ratings are subdivided, e.g. GSE - Gas-Turbine Systems Technician (electrical)

6. Know the common ratings by name and abbreviation in this chapter.

- AB (Aviation Boatswain's Mate)
- HM (Hospital Corpsman)
- AT (Aviation Electronics Technician)
- IT (Information Systems Technician)
- AD (Aviation Machinist's Mate)
- IS (Intelligence Specialist)
- AE (Aviation Electrician's Mate)
- LN (Legalman)
- AO (Aviation Ordnanceman)

- LS (Logistics Specialist)
- AS (Aviation Support Equipment Technician)
- MA (Master-at-Arms)
- AW (Aviation Warfare Systems Operator)
- MC (Mass Communications Specialist)
- CS (Culinary Specialist)
- MM (Machinist's Mate)
- CT (Cryptologic Technician)
- MU (Musician)
- DC (Damage Controlman)
- NC (Navy Counselor)
- EM (Electricians Mate)
- OS (Operations Specialist)
- EN (Engineman)
- QM (Quartermaster)
- ET (Electronics Technician)
- PS (Personnel Specialist)
- EOD (Explosive Ordnance Disposal Technician)
- SO (Special Warfare Operator)
- FC (Fire Controlman)
- ST (Sonar Technician)
- GM (Gunner's Mate)
- YN (Yeoman)

7. Know the roles of a Petty Officer (PO), a Chief Petty Officer (CPO), and a Command Master Chief (CMC).

- Petty Officer (PO) - E-4 to E-6, NCO, lead junior enlisted personnel
- Chief Petty Officer (CPO) - senior NCOs, Chief's Mess, E-7 to E-9, train junior officers (O1-O4) - wear different uniforms than other enlisted - selected through a promotion board (presided by an O6)
- Command Master Chief (CMC) - senior-most enlisted member of a command - special assistant to CO for matters pertaining to the health, welfare, job satisfaction, morale, utilization, advancement and training of enlisted personnel
    - Insignia similar to MC but rating symbol replaced by an inverted 5-point star

8. Know and be able to identify by uniform insignia the Navy enlisted ranks

Non-Commissioned Officer and Enlisted Rate Structure of the United States Navy				
Master Chief Petty Officer of the Navy	Master Chief Petty Officer	Senior Chief Petty Officer	Chief Petty Officer	Petty Officer First Class
E-9	E-9	E-8	E-7	E-6
				
Petty Officer Second Class	Petty Officer Third Class	Seaman	Seaman Apprentice	Seaman Recruit
E-5	E-4	E-3	E-2	E-1
				No insignia

9. Understand the NEC system and know the five types of NEC codes.
    - Navy Enlisted Classification (NEC) codes identify a non-rating wide skill, knowledge, aptitude, or qualification that must be documented for assigning billets
    - Entry Career Field, Rating Career Field, Special Career Field, Tracking, and Planning

10. Know the three core capabilities of the Information Warfare Community (IWC):
    - Assured C2
    - Battlespace Awareness
    - Integrated Fires

11. Know the four IWC officer communities. (there's 5)
    - Cryptologic Warfare (CW)
        - Cyberspace operations (CO) - more detail in 3/C MQS
        - Signals Intelligence (SIGINT) - collection of electromagnetic signals
        - Electronic Warfare (EW) - Electronic Attack (EA), Electronic Protection (EP), and Electronic Support (ES) - includes Indications and Warning (I&W)
        - Enlisted counterpart is Cryptologic Technician (CT)
    - Meteorology/Oceanography (METOC) - provides actionable information about the weather
        - 4 Warfare Directorates (only 3 in book) - Undersea Warfare, Expeditionary Warfare, Weather Services
        - Enlisted counterpart is Aerographer's Mate (AG)
    - Cyber Warfare Engineer (CWE) - apply cyber operations, computer science and engineering to do cyberspace defense, exploitation, and attack
        - Enlisted counterpart is CTN
    - Information Professional (IP) - operate, maintain, secure, plan, acquire, and integrate three network domains afloat and ashore
        - Enlisted counterpart is Information Systems Technician (IT)
    - Intelligence (INTEL) - identify adversary capabilities, vulnerabilities, and intentions
        - Intelligence Preparation of the Battlespace (IPB)
        - Indications and Warning (I&W)
        - Targeting - identify an enemy's critical vulnerabilities

        - Targeteering is different - identifies which weapons achieve the desired effect
    - Enlisted counterpart is Intelligence Specialist (IS)

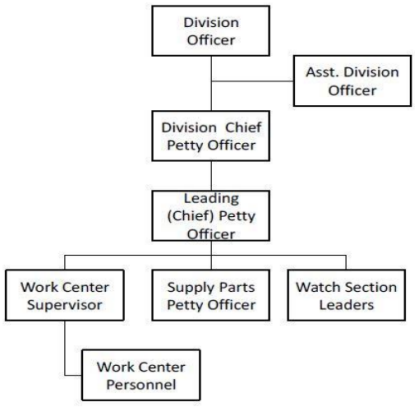
12. Know the four IWC enlisted communities. (there's 5)
- Aerographer's Mate (AG) - measure elements of the environment, prepare forecasts, briefs
- Cryptologic Technician (CT)
- Cryptologic Technician Network (CTN)
- Informations Systems Technician (IT) - manage the network, different surface and subs variant
- Intelligence Specialist (IS) - prepare briefs, assist in planning, safeguard classified material

13. Know the three network domains used in the Navy and know their associated classification levels.
- NIPRNET - Non-Classified Internet Protocol Routing Network - unclassified
- SIPRNET - Secret Internet Protocol Routing Network - secret
- JWICS - Joint Worldwide Intelligence Communications System - TS and Sensitive Compartmented Information (SCI)

14. Know the role of the Civil Engineer Corps community.
    - Answered in 3)

3/C MQS

1. Know the typical shipboard divisional chain of command.



2. Know the typical organization of a Supply Department on a small fleet unit.
- S1 - Stock Control - executing the ship's operating budget, repair parts, gov't credit cards, financial services

- S2 - Food service - culinary operations
- S3 - Retail Services - Quality of Life services - laundry, ship store, vending machines, and barber shop
- S4 - Disbursing - navy cash and carries physical US currency

3. Know the primary tasks performed by the following ratings.
    a. Culinary Specialist (CS) - cook and responsible for all aspects of dining
    b. Logistics Specialist (LS) - postal service, logistics, customer service, financial systems, inventories
    c. Retail Specialist (RS) - ship store, vending machines, barber shops, laundry

4. Describe the basics of each of the following and how they are used to support tactical units:
    a. Radio Frequency (RF) Communications - uses electromagnetic waves to communicate. Also can interfere in enemy radio or emit fraudulent transmissions for confusion and deception
    b. Satellite Communications - uses non-terrestrial means to communicate, like satellites, increases access, redundancy, and reduces latency
    c. Terrestrial Network Infrastructure - uses terrestrial means, like cell towers to communicate

5. Know the definition of Joint Intelligence Preparation of the Operational Environment (JIPOE).
- JIPOE is the analytical process joint intelligence organizations use to produce intelligence assessments, estimates, and other intelligence products in support of the joint force commander's (JFC's) decision-making process

6. Know the three categorizations of Cyberspace Operations.
- Offensive Cyberspace Operations (OCO)
- Defensive Cyberspace Operations (DCO)
- Department of Defense Information Network (DODIN) operations and defense

7. Know the three Levels of Intelligence.
- Strategic - senior military and civilian leaders - combatant commanders - national strategy and policy - global
- Operational - combatant and subordinate joint force commanders - operational environment, intentions of enemies, planning of campaigns
- Tactical - commanders - battles, engagements

2/C MQS

1. Know the three "Engineer Functions and Activities" and identify an example of each.
    a. Combat Engineering - Countering barriers, obstacles, mines, and unexploded ordnance

b. General Engineering - Road construction, maintenance, and repair
c. Geospatial Engineering - Terrain analysis and visualization

2. Know the four subsets of the Medical Community and their roles
1) Medical Corps - provide general health and medical readiness
2) Medical Service Corps - provides specialists in health care fields (optometry, pharmacy, biochemistry, etc.)
3) Dental Corps - controls dental disease, oral surgery, and dental hygiene
4) Nurse Corps - provide healthcare like civilian nurses

3. Know the five types of enlisted service schools.
1) Class A - Basic technical knowledge - NEC may be awarded
2) Class C - Advanced skills and techniques - NEC may be awarded
3) Class E - Educated that leads to an academic degree
4) Class F - Trains fleet personnel who are en route to, or are members of ships' companies - no NEC awarded
5) Class R - Recruit Training / Boot Camp

5. Know the history and evolution of the Naval Reserve.
a. Official Formation - 3 March 1915
b. Period between WWI and WWII - No Ready Reserve units and no reserve officers on extended active duty. Just before WWII, very few reservists were serving in fleet units
c. At the end of World War II - ⅘ Navy personnel were reservists
d. Post-Vietnam to present - "Total Force" and "horizontal integration" - reservists train with the active commands they would serve with in emergencies - received modern equipment - Desert Storm 1990 proved that this worked

6. Know the mission and organization of the Naval Reserve to include:
a. Full-Time Support (FTS) - active-duty in the training and administration of the Navy Reserve Force program
b. Individual Augmentee (IA) - NOT FOUND IN BOOK
c. Ready Reserve (Selected Reserve and Individual Ready Reserve) - SELRES hold valid mobilization billets and drill for pay. IRR includes the Voluntary Training Unit (VTU) and Active Status Pool (ASP). VTU drill in a non-pay status. ASP do not drill
d. Standby Reserve - are key federal employees or are experiencing hardships

<table>
<tr><th colspan="4">Active Status</th><th>Inactive Status</th><th>Retired Status</th></tr>
<tr><td colspan="3">READY RESERVE
Ready Reserve = SELRES + FTS + IRR</td><td rowspan="3">USNR-S1
(Standby Reserve)
<u>Active</u>
Key Federal Employees
Hardships</td><td rowspan="3">USNR-S2
(Standby Reserve)
<u>Inactive</u>
Cannot earn points or promote</td><td rowspan="3">Retired
Qualified for reserve retirement or FTS retirement</td></tr>
<tr><td rowspan="2">SELRES
(Selected Reserve)
Hold valid mobilization billets for pay</td><td colspan="2">IRR
(Individual Ready Reserve)
IRR = VTU + ASP+ MMIRRG
45% of Ready Reserve</td></tr>
<tr><td rowspan="2">VTU
(Volunteer Training Unit)
Drill in a non-pay status</td><td>ASP
(Active Status Pool)
Non-drilling status</td></tr>
<tr><td>FTS
(Full Time Support)
Reservists on active duty 365 days a year (includes CANREC)</td><td>MMIRRG
(Merchant Marine)
Non-drilling status</td></tr>
</table>

Chapter 3: Mission of the US Navy: Tactics, Operations, Strategy, and the Joint Environment

4/C MQS

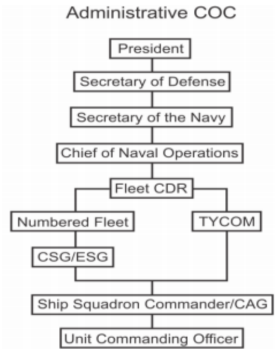
1. Know the mission of the Navy and comprehend the Navy ethos.
   - The mission of the Navy is to maintain, train, and equip combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas
   - Navy ethos - professional, integrity, disciplined, patriots

2. Understand the National Security Act of 1947 and know the members of the National Security Council.
   - Provided the effective strategic direction of the armed forces and for their operation under unified control and for their integration into an efficient team of land, naval, and air forces
   - Required the JCS to establish unified commands.
   - Established the National Security Council, chaired by the President
     - 1: The Vice President, 2: The Secretary of State, 3: The Secretary of the Treasury, 4: The Secretary of Defense, 5: The Secretary of Energy, 6: National Security Advisor (NSA), 7: The Chairman of the Joint Chiefs of Staff (CJCS), 8: Director of National Intelligence (DNI)

3. Know the responsibilities of the SECNAV, CNO, and CMC.
   - SECNAV - recruiting, organizing, supplying, equipping, training, mobilizing, and demobilizing in the Navy.
     - Oversees construction, outfitting, and repair of naval ships, equipment, and facilities
   - Chief of Naval Operations (CNO) - senior officer in the Navy
     - Manning, training, and equipping the Navy
     - Member of the JCS, principal advisor to the President
     - OPNAV (Office of the Chief of Naval Operations) includes CNO, VCNO, and Deputy Chiefs of Naval Operations (DCNOs)
   - Commandant of the Marine Corps (CMC) - senior military officer in the Marine Corps
     - Principal advisor to the President and SECNAV on USMC activities

4. Know the Administrative and Operational Chains of Command.
   - Operational CoC - carries out the orders of the National Command Authority (NCA)
     1) NCA - only the POTUS and SecDef
     2) Unified Combatant Commander (COCOM)
     3) Subordinate Component Commander
     4) Numbered Fleet Commander
     5) Task Force Commander

6) Task Group Commander
7) Task Unit Commander
8) Task Element Commander

- Administrative CoC - manning, training, and equipping forces
  - 

5. Know the Geographic and Functional Unified Combatant Commands and their AORs

- Geographic
  - U.S. European Command (USEUCOM)
  - U.S. Indo-Pacific Command (USINDOPACOM)
  - U.S. Southern Command (USSOUTHCOM)
  - U.S. Central Command (USCENTCOM)
  - U.S. Africa Command (USAFRICOM)
  - U.S. Northern Command (USNORTHCOM)
- Functional
  - U.S. Special Operations Command (USSOCOM)
  - U.S. Space Command (USSPACECOM)
  - U.S. Transportation Command (USTRANSCOM)
  - U.S. Strategic Command (USSTRATCOM)
  - U.S. Cyber Command (USCYBERCOM)

6. Know the numbered Fleet Commanders, their HQ locations, and the Combatant Commander each supports.

- SECOND - U.S. East Coast and Northern Atlantic - Norfolk, Virginia - NORTHCOM
- THIRD - Eastern and Central Pacific - San Diego, California - INDOPACOM
- FOURTH - Caribbean Ocean, surrounding waters of Central and South America - Mayport, Florida - SOUTHCOM
- FIFTH - Middle East (Red Sea, Arabian Sea, Persian Gulf) - Manama, Bahrain - CENTCOM
- SIXTH - Mediterranean Sea - Naples, Italy - EUCOM
- SEVENTH - Western Pacific and Indian Ocean - Yokosuka, Japan - INDOPACOM
- TENTH - Cyber Warfare - Fort Meade, Maryland - CYBERCOM

7. Know the Navy's Operational Mission Areas.

- Amphibious Warfare (AMW)
- Antisubmarine Warfare (ASW)
- Air Warfare (AW)
- Ballistic Missile Defense (BMD)
- Command, Control, and Communications (CCC)
- Expeditionary Warfare (EXW) - include NSW, MIW, AMW, Navy Expeditionary Combat and Sea Basing
- Information Operations (IO)
- Intelligence Operations (INT)
- Mine Warfare (MIW)
- Mobility (MOB)
- Strike Warfare (STW)
- Surface Warfare (SUW)

8. Comprehend the National Security Strategy's three key priorities.

- March 2021
- Protect the security of the American people
- Expand economic prosperity and opportunity
- Realize and defend the democratic values at the heart of the American way of life

9. Understand the Design for Maintaining Maritime Superiority concept and know the CNO's three focus of effort and four Navy Core Attributes.

- Mission one is operational readiness
- Core attributes:
    - Integrity
    - Accountability
    - Initiative
    - Toughness
- Focus of Efforts
    - Warfighting - deliver integrated American Naval Power
    - Warfighters - Navy family framework 3.0
    - Future Navy - seamless integrated combat power across naval and joint forces

3/C MQS

1. Know the missions of the other services.

a. Department of the Army - providing support for national and international policy and the security of the United State by planning, directing, and reviewing the military and civil operation of the Army establishment

b. Department of the Air Force - formed by the National Security Act of 1947 - organized, trained, and equipped for prompt and sustained offensive and defensive combat operations in the air - defend the US through control and exploitation of air and space

c. U.S. Coast Guard - ensures our Nation's maritime safety, security and stewardship through Maritime Law Enforcement, Maritime Response, Maritime Prevention, Marine Transportation, System Management, Maritime Security Operations, and Defense Operations

2. Comprehend the three levels of warfare.

a. Strategic - national policy and theater strategy - multinational objectives, CCDRs

b. Operational - campaigns, major operations - planning and execution of operations

c. Tactical - battles, engagements, small-unit and crew actions - joint task forces (JTFs)

3. Know the following with respect to the Composite Warfare Commander Doctrine.

a. Comprehend the dynamic nature of warfare at the tactical level. - time horizons are shorter and commander's decision cycles are faster - comprised of multiple echelons (from fleet commanders to unit commanders)

b. Know the roles and comprehend the relationships between the Officer in Tactical Command (OTC), the Composite Warfare Commander (CWC), Warfare and Functional Commanders, and Coordinators. - the OTC can choose to implement a composite warfare organization whenever and chooses the extent. The CWC would organize the functional group commanders and coordinators.

c. Know the Primary Call Signs of the OTC (i.e., AA), the CWC, and the Warfare Commanders.

- Officer in Tactical Command (OTC) - A
- Composite Warfare Commanders (CWC) - B
- Air and Missile Defense Commander (AMDC) - W
- Antisubmarine Warfare Commanders (ASWC) - X
- Information Operations Warfare Commander (IWC) - Q
- Sea Combat Commander (SCC) - Z
- Strike Warfare Commander (STWC) - P
- Surface Warfare Commander (SUWC) - S

4. Know the six steps of the Navy Planning Process (NPP).

1) Mission Analysis - produce a mission statement and an understanding of the situation
2) Course of Action Development - develop multiple COAs using commander's intent, mission statement, and planning guidance
3) Course of Action Analysis (Wargaming)
4) Course of Action Comparison and Decision - the commander chooses a COA
5) Plan or Order Development - orders and plan are developed to match the COA
6) Transition - those who made to plan explain it to those who will execute it

2/C MQS

1. Know the importance of joint doctrine and interoperability.
   - Joint doctrine enhances the operational effectiveness of joint forces by providing fundamental principles that guide the employment of US military forces toward a common objective.
   - Unified action demands maximum interoperability. The forces, units, and systems of all Services must operate together effectively, in part through interoperability. This includes joint force development; use of joint doctrine; the development and use of joint plans and orders; and the development and use of joint and/or interoperable communications and information systems.

2. Know the primary J-Directorates of a Joint Task Force staff (J-1 through J-6) and comprehend their basic functions.

   J1: Manpower and Personnel
   J2: Intelligence
   J3: Operations
   J4: Logistics
   J5: Strategy, plans and policy
   J6: Command, control, communications and computers/cyber

3. Know and apply the primary N and S-codes of Navy and Marine Corps staffs and comprehend associated basic functions

   a. Navy: N1 to N6

      N1: Administration and Personnel
      N2: Intelligence
      N3: Operations
      N4: Logistics
      N5: Plans
      N6: Communications

   b. Marine Corps/Army: S1 to S-6

      S1: Personnel
      S2: Intelligence
      S3: Operations
      S4: Logistics
      S5: Civil-military Operations
      S6: Signal Operations

Chapter 4: Surface Warfare
4/C MQS

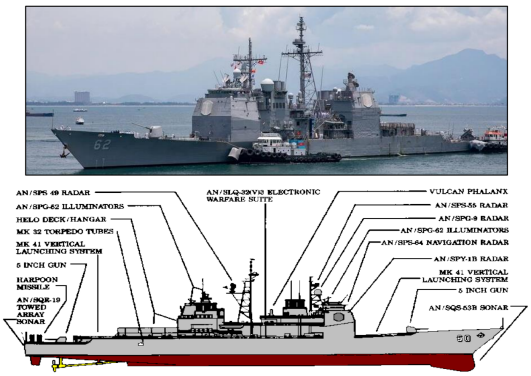
1. Know the mission of Surface Warfare.
   - To provide combat ready ships to the fleet; and to supply those ships and supporting commands with the leadership, manpower, equipment, training, and material needed to achieve operational excellence and conduct prompt, sustained combat operations at sea to ensure victory.

2. Know the different operations and unique capabilities the surface fleet is capable of conducting.
   1. Air Warfare (AW)
   2. Surface Warfare (SUW)
   3. Anti-submarine Warfare (ASW)
   4. Ballistic Missile Defense (BMD)
   5. Strike Warfare (STW)
   6. Maritime Interdiction Operations (MIO)
   7. Naval Surface Fire Support (NSFS)
   8. Electronic Warfare (EW)
   9. Expeditionary Warfare (EXW)
   10. Amphibious Warfare (AMW)
   11. Mine Warfare (MIW)
   12. Mobility (MOB)
   - Stealth, Endurance, Firepower, Mobility, and Communication

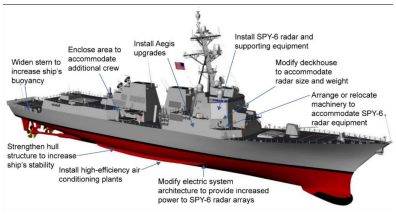
3. Know the insignia worn by Surface Warfare Officers and its background.
   - Introduced in 1975, a gold ship with crossed swords
   - The first milestone qualification a SWO receives
   - The enlisted variant, ESWS was introduced in April 1979

4. Know the visual identification, mission, major weapons/weapons systems, aircraft, and crew size of U.S. Navy ship classes:

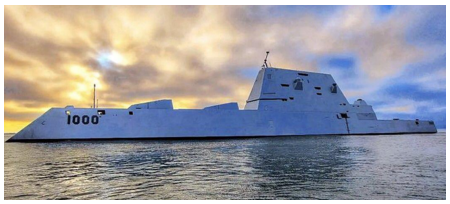
a. CG-47 Ticonderoga Class - Battle force role, AW, USW, STW, SUW, supports carrier strike groups, amphibious forces, or operating independently and as commanders of Surface Action Groups (SAGs). Some CGs have BMD capabilities - 2x5in/54cal or 5in/62cal dual purpose guns, 2xVLS (61 cells fwd, 61 cells aft), 2x20mm Phalanx CIWS, 2xSurface Vessel Torpedo tube launchers (3 tubes per launcher), 2xquadruple harpoon canisters - 2 MH-60 Helos - NO CREW SIZE IN BOOK



b. DDG-51 Arleigh Burke Class (To include Flt I / II / IIA / III) -

- FLT I/II - mission same as CGs except no Battle Force role - 1x5in/54 cal or 5in/62 cal dual purpose gun, 2xVLS (29 cells fwd, 61 cells aft), 2x20mm Phalanx CIWS (1 mount starting with DDG-85), 2xsurface vessel torpedo tube launchers, 2xquadruple harpoon canisters (DDG51 - DDG-78) - can *land* USN/USMC helos - 28 officers / 254 enlisted
  - 
- FLT IIA - same mission and weapons, can *embark* 2 MH-60s - 30 officers / 280 enlisted
  - 
- FLT III - DDG-125+ - same mission and aircraft as FLT IIA - will replace CGs - all FLT III's have BMD capabilities - same weapons except 32 VLS cells fwd, 64 cells aft, 1 CIWS fwd - SPY-6 radar instead of SPY-1 - 35 officers/300 enlisted
  - 

c. DDG 1000 Zumwalt Class - "Tumblehome" hull form, littorals and ground attack, SOF support - 80xadvanced Peripheral Vertical Launch (PVLS) cells for TLAMs, Evolved Sea Sparrow Missiles (ESSMs), Standard Missiles, and Anti-Submarine Rockets (ASROCS), 2xAdvanced Gun System (AGS) 155mm, 2x30mm Close-in Guns System (CIGS) - 2xMH-60R or 1xMH-60R & 3 Vertical Takeoff UAVs - 20 officers and 140 enlisted



d. LCS Class (Both Independence and Freedom Classes) - designed for max speed and shallow draft - FREEDOM class (odd numbers) are mono-hulled, INDEPENDENCE class (even numbers) are tri-hulled - reconfigurable packages based off mission - 1x57mm gun, FREEDOM has Rolling Airframe Missile (RAM), INDEPENDENT has SEARAM, Surface package includes 2x20mm guns - 50-100 crew

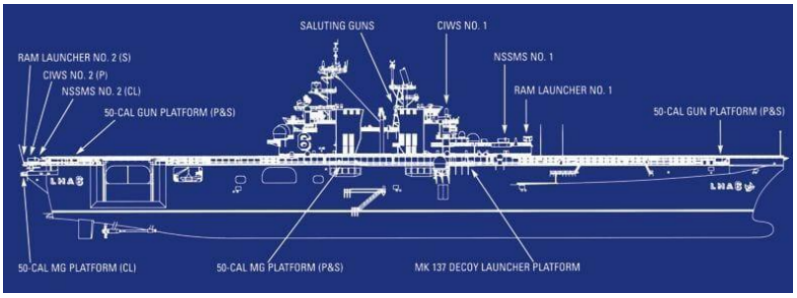
e. MCM-1 Avenger Class - minesweepers - .50 caliber guns, 8 officers / 75 enlisted

f. LSD-41 Whidbey Island Class Dock Landing Ship- two deck mounted boat cranes - designed to operate LCACs - 4 LCACs, 3 LCUs, or 36 AAVs - 2x25mm machine guns, 2x20mm CIWS, 2xRAM launchers, 6x.50 caliber machine guns - 22 officers/350 enlisted, 402 embarked troops

g. LSD-49 Harpers Ferry Class Dock Landing Ship- 1 deck mounted boat crane - 2 LCACs, 1 LCU, or 15 AAVs, same weapons and crew as LSD-41. NO PICTURE IN BOOK

h. LPD-17 San Antonio Class Amphibious Transport Dock- angled hull to reduce radar cross section (RCS) - can interact with other surface combatants with Cooperative Engagement Capability (CEC), Link-11 and Link-16 - 2 LCACs or 1 LCU; 18 AAVs - 2 CH-53E or 2 MV-22 or 6 UH-IN/Y or 6 AH-1 W/Z - 2x30 mm guns 2xRAM launchers, 10x.50 caliber machine guns - 28 officers / 340 enlisted, embarked troops: 800 plus 102 surge

i. LHD-1 Wasp Class Landing Helicopter Dock - large amphibious ships, resemble small aircraft carriers - 3 LCACs, 4 CH-53E, 3 UH-IN/Y, 4 AH-1 W/Z, MH-60S, 12 MV-22, 6 AV-8B, or F-35B - 1108 crew (104 officers) and 1894 embarked troops



j. LHA-6 America Class Landing Helicopter Dock - LHA 6 and 7 have NO well deck - 4 CH-53E, 8 AH-1W/Z, 4 MH-60S, 12 MV-22, 10 AV-8B or F35B - same crew as Wasp

k. LCU - Landing Craft, Utility, and Mechanized - operate at sea for 10 days, carry 1 M1 tank or 350-400 troops, 125 ton lift capacity, onload/offload ramp, crew of 14

l. LCAC - Landing Craft Air Cushion - 1 M1 tank or 4 LAV or 3 AAV, 60-75 tons, crew of 5

5. Know how the following events influenced surface warfare:

a. American Revolution - In October 13, 1775 the Continental Navy was established - US Amphibious force was created with the Raid of Nassau - Naval Act of 1794 built the first 3 frigates, *United States, Constellation*, and *Constitution*

b. Civil War - steam power and ironclad vessels

c. Pre-World War Era - Mahan: economic manufacturing base, overseas colonies, and a flourishing merchant marine to become a sea power - Great White Fleet in 1907 (Teddy Roosevelt) - First dreadnought-style battleship: *USS South Carolina*

d. WWI - blockade duty - a convoy had 20-25 merchants and 6-8 escorts

e. WWII - golden age of surface warfare - island hopping - amphibious assaults - Leyte Gulf was the last major naval battle in history - hunting submarines in the Atlantic

f. Cold War - in Korea amphibious assaults - in Vietnam SEAL support - Reagan pushed for a 600 ship Navy - development of AEGIS, Tomahawks, CIWS

6. Demonstrate knowledge of recent events pertaining to Surface Warfare.

- A lot of these are humanitarian operations
- Shooting down ICMBs, satellites
- LHA-6 America is homeported in Sasebo, Japan, USS Portland (LPD-27) used a LASER weapon
- USS Preble (DDG-88) installed with LASER

7. Understand the Basic Rates on conventional surface ships.

- Boatswain Mate (BM) - deck gear, small boats, sometimes aviation operations
- Operations Specialist (OS) - monitor radar systems, communication inside CIC
- Cryptologic Technician Technical (CTT) - monitor and prosecute electronic signals
- Quartermaster (QM) - navigation
- Gunner's Mate (GM) - maintenance of small arms, crew served weapons and ammo
- Sonar Technician Surface (STG) - anti-submarine warfare and sonar suite
- Fire Controlman (FC) - operation and maintenance of weapons targeting system (AEGIS)
- Electronics Technician (ET) - operation and maintenance of combat system electronic equipment (less AEGIS)
- Information Systems Technician (IT) - ship's LAN and computer systems
- Engineman (EN) - maintenance of engines
- Gas Turbine Systems Technician Mechanical (GSM) - responsible for gas turbine engines
- Gas Turbine Systems Technician Electrical (GSE) - responsible for the electric control of gas turbine engines
- Electrician's Mate (EM) - responsible for the ship's electrical power system
- Machinist's Mate (MM) - responsible for auxiliary engineering systems (hydraulics too)
- Damage Control (DC) - responsible for DC equipment
- Hull Technician (HT) - responsible for the physical structure of the ship (welding, brazing)
- Retail Service Specialist (SH) - responsible for ship store, laundry, and hotel services
- Logistic Specialist (LS) - responsible for ordering replacement parts
- Culinary Specialist (CS) - responsible for feeding crew
- Yeoman (YN) - responsible for admin stuff and personnel reporting requests

8. Demonstrate knowledge of future advances in Surface Warfare.

- Unmanned Surface Vessels - medium and large vessels, used for intel and communication
- DDG (X) - new hull form, new hypersonic missiles and laser systems (more space than other DDGs to house new equipment)
- LASER Weapons Systems - 3 prototypes, used to neutralize cruise missiles - unlimited reload capability

3/C MQS

1. Know the designation/name, purpose/significance, visual identification and U.S. Navy ship classes that carry the following weapons and systems

a. Aegis Weapon System and AN/SPY-1 Phased Array Radar - AEGIS Weapon System (AWS) is an automated weapon control system from detection to kill. The AN/SPY-1 is a high-powered radar (can track more than 100 targets). On DDGs and CGs

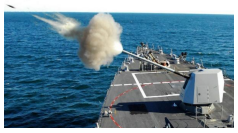
b. AN/SQQ-89 Undersea Warfare/Anti-Submarine Warfare Combat System - provides surface ships the ability to engage undersea targets (sonar) and launch undersea weapons - on CGs and DDGs

c. BGM-109 Tomahawk Land Attack Missile (TLAM) - used for deep land attack warfare - fly at low altitudes at high subsonic speed - pilots over an evasive route - on CGs and DDGs

d. Littoral Combat Ship Mission Modules - Surface Mission Package has 2x20mm guns. Other mission packages include Mine Warfare and Anti-Submarine Warfare

e. MK 15 Phalanx Close-in Weapon System (CIWS) - inner layer point defense against anti-ship missiles, aircraft and littoral warfare threats - phalanx is the only CIWS capable of autonomously performing its own search, detect, evaluation, track, engage, and kill assessment functions - on DDGs, CGs, LSDs, and CVNs

f. MK 45 5” 54/62 Caliber Gun - engage surface and air targets and provide naval surface fire support for expeditionary operations - 20 round automatic loader, fires 16-20 rounds per minute - on DDGs and CGs



g. Mk 46 Torpedo - anti-submarine weapon - 1965, NATO standard (25 countries) - on CGs and DDGs

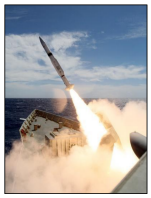
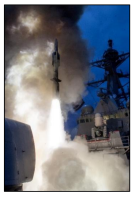
h. Mk 54 Torpedo (Lightweight Hybrid Torpedo – LHT) - better performance and reduced lifecycle costs than Mk 46 - uses commercial off the shelf (COTS) technology - on CGs and DDGs

i. RIM-116 Rolling Airframe Missile (RAM) - fire and forget - destroys anti-ship cruise missiles and asymmetric air and surface threats - no shipboard support required (no ship illuminators) after missile launch - on LHAs, LHDs, LPDs, CVNs, LSDs, and LCSs

j. RIM-162 Evolved Sea Sparrow Missile (ESSM) - defense against anti-ship cruise missiles, low velocity air threats, and high speed maneuverable surface threats - on CVNs, LHAs, LHDs, DDGs, DDG-1000, CGs

k. RGM-84 Harpoon - anti-ship missile system - can use sea-skim or pop-up maneuvers - launched without a booster - on CGs, DDGs, and LCSs

l. SM-2 and SM-6 Standard Missiles - surface-to-air defense weapon (SM-6 has a longer range) - SM-6 provides an air defense force multiplier - on CGs, DDGs, LCSs

m. SM-3 Standard Missile - intercept and destroy short-to-intermediate-range ballistic missiles - uses hit-to-kill technique - on ships with AWS and BMD capabilities, such as Flight III DDGs

2. Know and comprehend the characteristics of two major combat systems, AEGIS and SSDS, and with which Surface Warfare ships they are associated. (Aegis and SSDS)

- AEGIS is a centralized, automated, C2 and weapons control system that was designed as a total weapon system, from detection to kill. SPY-1 is installed on CGs, and DDGs (51-124). SPY 6 is installed on Flight III destroyers (125+ except 127)
- Ship's Self-Defense System (SSDS) - primary combat system for amphibious warships and CVNs. Includes RAM, SEASPARROW, CIWS. Not offensive like AEGIS, and less than 25 mile range

3. Comprehend the general responsibilities of the following personnel on Navy surface ships.

a. Commanding Officer - charged with the absolute responsibility for the safety, well-being, and efficiency of the ship and crew

b. Executive Officer - responsible for the organization, performance of duty, training, maintenance, and good order and discipline of the ship

c. Command Master Chief - advisor to the command on policies pertinent to morale, welfare, job satisfaction, discipline, utilization and training of all enlisted personnel

d. Department Head - represents the CO in matters pertaining to the department

e. Division Officer - directs the operations of the division through the LCPO and LPOs

4. Comprehend the general qualification for and organizational relationship between the following underway watches:

a. Tactical Action Officer (TAO) - NOT FOUND IN BOOK - the officer in charge of the CIC

b. Officer of the Deck (OOD) - in charge of the safe and proper operation of the ship. The TAO, JOOD, JOOW, CICWO, EOOW, Communication Watch Officer, QMOW, Damage Control watch, BMOW, bridge talkers, and Duty Master at Arms (DMAA) all report to the OOD

c. Engineering Officer of the Watch (EOOW) - in charge of the engineering department watch section

2/C MQS

1. Know the basic characteristics to include designation, hull markings and crew makeup of Military Sealift Command (MSC) ships.

- MSC ships have the designation USNS
- Crewed by civilians (some MSC ships have small military departments for specialized missions)
- MSC carry the prefix "T" before their hull designation

2. Know the five basic categories of USNS ships and a basic understanding of the types of ships in each.

a. Combat Logistics Force - dry cargo/ammunition ships, fast combat support ships, oilers - they provide unreps

b. Special Mission - oceanographic research vessels, missile range instrumentation ships, navigation test ships - they support research, data collection, or other operational tests

c. Prepositioning - provide quick and efficient movement of military gear between operating areas w/o reliance on other nations

d. Service Support - towing, rescue and salvage, submarine support, cable laying, repair service, C2, and floating medical facilities

e. Sealift - provides rapid loading and off-loading of Army wheeled tracked vehicles and other oversized equipment

3. Discuss Early Command opportunities for both post-Division Officer and post-Department Head tours.

- Instead of a second department head tour, post department head tour, or post division officer tour, SWOs can take early command
- (Both post Divo and DH) Mine Countermeasure (MCM) ships, Naval support elements (NSE)
- Post DH can command unmanned surface vessel (UXS) task group

4. Discuss Surface Warfare Officer pipeline, including the PERS-41 detailing process, JO sea and shore duty slate, and graduate education opportunities.

- Start with BDOC, OOD PH1 and BST, then 1st DIVO, then OOD PH2, ADOC, BST, 2nd DIVO, then shore tour. Then DH pipeline starts
- For shore tour, options are WTI, EC, Grad school
- PERS-41 manages the SWO pipeline, promotions, screening, career assignments, and career advice

- After 1st DIVO Tour, during 2nd DIVO tour, and at the end of 2nd DIVO tour there are DH looks

Chapter 5: Undersea Warfare
4/C MQS

1. Know the mission of Submarine Warfare.
   - The mission of the U.S. Submarine Force is to execute the mission of the U.S. Navy in and from the undersea domain. In addition to lending added capacity to Naval forces, the Submarine Force in particular is expected to leverage those special advantages that come with undersea concealment to permit **operational**, **deterrent**, and **combat** effects that the Navy and the Nation could not otherwise achieve

2. Know the insignia worn by Submariners and the significance of the design.
   - Warfare Insignia - Called Dolphins or Fish, adopted in March 1924
     - Submarine with planes rigged for diving, and dolphin fish
   - SSBN Deterrence Patrol Pin - Lafayette Class submarine with polaris missile and electron rings
     - Up to 6 stars beneath, with one gold for each patrol, or silver for 5 patrols
     - At 20 patrols, the pin is gold
   - Submarine Combat Patrol Pin
     - Patrols during declared wars (last one was WWII)
     - Gato Class diesel submarine
     - One gold stars or silver for 5 patrols

3. Know how the following events influenced submarine design and capability:
   a. American Revolution - first military submarine Turtle (1775)
   b. Civil War - CSN developed H.L. Hunley - first successful military submarine attack
   c. Pre-World War Era - USS Holland was the first modern commissioned submarine. April 11, 1900 is the submarine's birthday
   d. WWI - first significant military impact - German U-boats, unrestricted submarine warfare
   e. WWII - 55% of enemy ships sunk by 6% of the Navy - submarines had the highest casualty rate
   f. Cold War - Tear-drop shaped hull design and nuclear powered propulsion (USS Nautilus was the first) - Rickover
   g. Operation Odyssey Dawn - NOT FOUND IN BOOK

4. Know the visual identification, mission, weapons/weapons systems, specific capabilities, and crew size of U.S. Navy submarines to include SSNs, SSBNs, and SSGNs.
   - Los Angeles Class Fast Attack Submarines (SSN-688). 1976 - Unfaired leading edge. Flight I have fairwater planes, Flight II have fairwater planes and 12 VLS tubes in the bow - Flight III have bow planes and 12 VLS tubes. 4 torpedo tubes for MK-48 or

Tomahawk - decommissioned at two per year, replaced by Virginia - 800ft depth, 20 kts submerged, 14 kts surfaced

  - 

- Seawolf Class Fast Attack Submarine (SSN 21) - 1997 - faired leading edge, shorter than Los Angeles, bow planes, 8 torpedo tubes for MK48 or Tomahawk. USS Jimmy Carter has a 100-ft hull extension called “Multi-mission Platform.”
  -  
- SSN-774 Virginia Class Attack Submarine - 2004 - longer than Los Angeles, faired leading edge, 4 torpedo tubes, 800 ft depth, 25 kts submerged, Block V have Virginia Payload Tubes (VPT) for guided missile capability to replace SSGNs. Enhanced capabilities include: fly by wire, SOF support, reconfigurable torpedo room, lock-in/lock-out chamber for divers, 2 photonic masts, modular construction
  -  
- Ballistic Missile Submarines (SSBN-726 Ohio Class) - boomers, with 2018 START treaty, responsible for 70% of US nuclear inventory, 24 ballistic missiles each - blue and gold crews, West Coast - Bangor WA, East Coast - Kings Bay, GA - fairwater planes, unfaired leading edge, 4 torpedo tubes, 800ft depth and 20kts submerged
  -  
- Guided Missile Submarines (SSGN-726 Ohio Class) - first 4 SSBNs converted to SSGNs, 22 missile tubes replaced with 7 tomahawks (154 max), the other 2 are used for SOF - can carry UAVs, UUVs, Dry Dock Shelter or SEAL Delivery Vehicles - 2 crews, same home ports as SSBN - crews swap in Diego Garcia - 4 torpedo tubes, berth 66 SOF for 90 days

-  

5. Know the advantages of nuclear powered submarines compared to conventionally powered submarines.

- Unlimited operational endurance, can remain submerged nearly indefinitely (limited only by food)

3/C MQS

1. Know the following submarine missions and identify which platform is assigned each as their primary mission:

a. Intelligence, Surveillance, Reconnaissance (ISR) - observe and record video of other countries' military exercises, relying on our stealth capabilities, and intercepting communications to provide cueing for our forces - SSN/SSGN

b. Naval Special Warfare (NSW) - DDS (dry dock shelters) capabilities to insert SEALs near another country's shore - SSGN

c. Strike - launch Tomahawk cruise missiles into enemy territory - SSN/SSGN

d. Anti-Submarine Warfare (ASW) and Anti-Surface Warfare (ASUW) - track and monitor patterns of enemy surface and submarine combatants - or launch Mk-48 ADCAP torpedoes - SSN/SSGN

e. Mine Warfare - detect, avoid, and neutralize enemy mines, countering A2/AD - SSN/SSGN

f. Counter-Drug Operations - detect drug running boats and subs, inform law enforcement - SSN/SSGN

g. Strategic Deterrence - remain undetected - makes up the survivable leg of the nuclear triad (bombers, silos, and subs) - assures mutual destruction if US is attacked - SSBN

2. Know the designation, name, purpose, and U.S. Navy submarine classes that carry the following weapons or systems:

a. MK 48 Advanced Capability (ADCAP) Heavyweight Torpedo - principal US anti-surface and anti-submarine torpedo - onboard SONAR - the ADCAP variant has a longer range, digitized sensors, more speed and accuracy - detonates underneath the hull - every class (SSN/SSBN/SSGN)

b. UGM-109 Tomahawk Land Attack Missile (TLAM) - land attack missile, most are configured with 1000 lb warhead, some have bomblets (anti-airfield) - SSN/SSGN

c. Trident II (D5) Submarine Launched Ballistic Missile (SLBM) - each SSBN can carry 24 missiles, 4000 nm range, three stage, each missile has multiple nuclear warheads in multiple independent reentry vehicles (MIRV) - SSBN

d. Dry Dock Shelter (DDS) - help transport SEALs with SEAL Delivery Vehicles (SDV) and Combat Rubber Raiding Crafts (CRRCs) without surfacing - SSGN

3. Explain the Junior Officer at-sea watches including:

a. Engineering-Officer-of-the-Watch (EOOW) - responsible for safe operation of the nuclear plant - 12-man team, provides electricity, propulsion, and water

b. Junior-Officer-of-the-Watch (JOOW) - assistant to OOD

c. Contact Manager / Junior-Officer-of-the-Deck (JOOD) - responsible for providing accurate and current contact picture to OOD using contact management from Sonar Operators and Fire Control Technicians (turn raw data into usable information)

d. Officer-of-the-Deck (OOD) - responsible for the ship's safe navigation and operation

4. Know the difference between deployment cycles on SSNs and SSGNs, and the patrol cycle on SSBNs.

- SSNs operate on 6 month deployments
- SSGNs operate on 15 month deployments (have two crews to swap out)
- SSBNs typically operate 77 days at sea followed by 35 days in port (have two crews to maximize efficiency and increase morale). SSBNs are designed to last 15 years between overhauls

2/C MQS

1. Discuss the Command organization on a submarine and the role of the following Department Heads and Division Officers:

a. Engineer Officer ("ENG") - DH responsible for all systems related to the nuclear propulsion plant and auxiliary engineering systems

i. Electrical Officer (EO) - DIVO for EMNs (Electricians)

ii. Reactor Controls Assistant (RCA) - DIVO for ETNs (Nuclear Electronics Technicians). Oversees all reactor plant protective equipment maintenance. Verifies the Pre-Critical Checkoff and Estimated Critical Position before every reactor plant setup

iii. Main Propulsion Assistant (MPA) - DIVO for MMN (Nuclear Mechanics). Oversees nuclear mechanical system maintenance. In charge of propulsion turbines, steam, plant fluids, flooding casualties, engine casualties, steam plant casualties

iv. Chemistry and Radiological Controls Assistant (CRA) - DIVO for ELTs (Engineering Laboratory Technicians). Oversees chemistry samples, maintenance, radiological control programs and casualties

v. Damage Control Assistant (DCA) - DIVO for MMAs (Auxiliary Mechanics). Oversees DC, sanitary, hydraulic, chill water, diesel generators

b. Navigator / Operations Officer ("NAV") - DH responsible for safe navigation of the ship

i. Communication Officer (COMMO) - DIVO for ITS (Radiomen and Electronic Warfare). Approves radio messages, responsible for periscopes

ii. Assistant Operations Officer (AOPS) - DIVO for ETVs (Navigation Electronics Technicians). Runs OPs briefs, and navigational systems

c. Combat Systems Officer ("WEPS") - DH for all weapons/combat equipment

i. Tactical Systems Officer (TSO) - NOT FOUND IN BOOK

ii. Assistant Weapons Officer (AWEPS) - DIVO for STSs, FTs, and TMs (Sonar Technicians, Fire Control Technicians, and Torpedomen). Oversees all tactical systems

iii. Dive Division Officer - Aka SCUBRO, any rate with Navy Dive School training. Control hull inspections and retrieve gear dropped in water

2. Understand the Submarine Officer training pipeline to include the following:

a. Naval Nuclear Power School (NNPTC) - 24 weeks, science and technology subjects - the foundation for understanding nuclear propulsion in Charleston, SC

b. Nuclear Power Training Unit "Prototype" (NPTU) - Aka Prototype, in Charleston, SC or Ballston Spa, NY. 26 weeks. Hands-on training with reactors. Ends with qualification as EOOW

c. Submarine Officer Basic Course (SOBC) - 12 weeks, New London, CT. Submarine operations, DIVO training, DC, safety, seamanship. May include 6 weeks of weapons training at Trident Training Facilities in either Kings Bay, GA, or Bangor, WA

d. Prospective Nuclear Engineer Officer (PNEO) - Given to DHs to qualify as a Nuclear Engineer Officer and continue their career. Washington Naval Yard

3. Discuss shore tour opportunities for Junior Officers, including the detailing process, shore duty slating, and graduate education opportunities.

- JOs can go to Nuclear Power School, Prototype, Submarine School to teach. Or they can get their graduate degree.

4. Be familiar with future projects of Submarine Warfare.

- The Columbia class will replace the Ohio Class SSBNs, which will be decommissioned at a rate of 1 per year, starting in 2027
    - Will have hydroplanes, sail-mounted dive planes, and electric drive

Chapter 6: The United States Marine Corps
4/C MQS

1. Comprehend the mission of the U.S. Marine Corps.
    - "We are warfighters within a warfighting organization. Our Corps performs three important functions for our Nation - we Make Marines and we Win Battles and we Return Quality Citizens."
    - Naval expeditionary combat, amphibious assault, protect naval bases
    - Crisis response and deterrence

2. Know the elements and organization of the MAGTF, MEF, MEB, MEU, and SPMAGTF.
    - MAGTF - Marine Air-Ground Task Force
        - Ground Combat Element (GCE) - Infantry with artillery, Light Armored Reconnaissance (LAR), ACV, combat engineers and reconnaissance assets
        - Aviation Combat Element (ACE) - close air support
        - Logistics Combat Element (LCE) - transportation, engineering, embarkation, medical/dental, and HQ and service
        - Command Element (CE) - admin, intel, ops, logistics, comms, medical, legal, chaps
    - Marine Expeditionary Force (MEF) - largest fighting element, command by LtGen - 40K to 80K troops - has 1-3 MEUs within
    - Marine Expeditionary Brigade (MEB) - next largest, no permanent structure (unlike MEF), stood up for specific theaters (e.g. MEB A for Afghanistan), commanded by a BGen or MGen - 14K to 17K troops
    - Marine Expeditionary Unit (MEU) - self-contained, forward-deployed response force - embarked on Amphibious Assault Ships, able to launch within 6 hours - 2.2K troops
    - Special Purpose MAGTF (SPMAGTF) - specific mission scope and focus - expeditionary operations - small force

3. Know the origin of the birth of the U.S. Marine Corps.
    - November 10, 1775 - in Tun Tavern - Samuel Nicholas is considered the first CMC
    - Direct descendant of royal Marines

4. Know the historical significance of the early traditions of the Marine Corps.
    - Quatrefoil - plus on cover for officers - so sharpshooters could distinguish friend and foe
    - Leatherneck - collar piece to keep heads erect and protect from slashes
    - Rank of Sergeant Major - established in 1798 - Archibald Sommers was the first. In 1957 Sergeant Major of the Marine Corps was established (Bestwick)
    - Marine Corps Band - 1798 - Jefferson said "The President's Own" - played for every president except Washington
    - Mameluke Sword - 1805 - Prince Hamet

- The Blood Stripe - Battle of Chapultepec in 1847 - 90% of officers and NCOs were casualties
- The Grand Old Man of the Corps - Archibald Henderson - 5th CMC from 1820-1859
- Father of Marine Aviation - 2ndLt Cunningham
- Marine Corps Emblem - 1868 - eagle: nation, anchor: navy, globe: worldwide

5. Understand the Core Values of the Commandant's Planning Guidance.
   - Force Design - naval integration
   - Warfighting - Littoral Operations in a Contested Environment (LOCE), Expeditionary Advanced Base Operations (EABO)
   - Education and Training - Professional Military Education, Modeling and Simulation training (M&S), and wargaming
   - Core Values - less sexual assault, hazing, and non-EAS attrition
   - Command and Leadership - maintain the standard

6. Understand the various USMC Military Occupational Specialties (MOS).
   - 0102 - Manpower Officer - admin
   - 0203 - Ground Intelligence Officer - ground surveillance and reconnaissance
   - 0204 - Human Source Intelligence Officer
   - 0206 - Signals Intelligence/Ground Electronic Warfare Officer
   - 0207 - Air Intelligence Officer
   - 0302 - Infantry Officer
   - 0402 - Logistics Officer
   - 0602 - Communications Officer
   - 0802 - Field Artillery Officer
   - 1302 - Combat Engineer - heavy equipment, breaching, demolition, construction
   - 1702 - Cyberspace Officer - DOD Information Network (DODIN)
   - 1803 - Amphibious Assault Officer - Amphibious Combat Vehicles (ACVs)
   - 3002 - Ground Supply Officer
   - 3404 - Financial Management Officer
   - 4402 - Judge Advocate
   - 4502 - Communication Strategy and Operations Officer - CommStrat
   - 5803 - Military Police Officer
   - 6002 - Aircraft Maintenance Officer
   - 6602 - Aviation Supply Officer
   - 7204 - Low Altitude Air Defense
   - 7208 - Air Support Control Officer
   - 7210 - Air Defense Officer
   - 7220 - Air Traffic Control Officers
   - 7315 - Unmanned Aircraft System (UAS) MAGTF Electronic Warfare Officer (EWO)

- 7599 - Flight Student

7. Know the purpose and features of and be able to identify the aviation platforms of the U.S. Marine Corps.

a. AH-1Z - close air support - Cobra/Viper - missiles, 20mm cannon, used since Vietnam


b. UH-1Y - blend of all 6 Marine Aviation functions - Offensive Air Support, C2, and Aerial Reconnaissance - .50 and 7.62mm machine guns, 50% faster than UH-1N (2014)


c. CH-53E - Sea Stallion/Super Stallion - heavy lift, can carry a 26000 lb LAV, 16 tons of cargo, or an assault team or humanitarian operation - .50 machine guns, self defense flares, in-flight refueling probe, Forward Looking Infrared Imager (FLIR) for night vision - will be replaced by CH-53K King Stallion with 3x lift capacity and double combat radius (2023 or 2024)


d. MV-22 - Osprey - carry 24 marines, twice as fast and 5x range than other helos, fly by wire controls, digital cockpits, VTOL, STOL, in flight refueling


e. F/A-18 - Hornet - fighter/attack - fighter escort, enemy air defense suppression, recon, air control, close air support - air-to-air missiles (sparrow, AMRAAM, and Sidewinder), ground munitions (Harpoon and Maverick missiles), 20mm gun, laser guided bombs and clusters

f. F-35B - Lighting II will replace F/A-18A/C - A is Air Force variant, B is USMC with V/STOL capability, and C is USN with CVN capability - Marine pilots will fly B and C to land on carriers

g. KC-130J - Hercules - tactical tanker/transport, tactical aerial refueling, 12,000 gallons of fuel and can refuel 2 aircraft at once - Harvest HAWK (Hercules Airborne Weapons Kit) is a KC-130 outfitted with bombs, and 30mm cannons to support Marines

h. MQ-9A - Reaper - ISR - infrared sensors, Hellfire Missiles, lots of Munitions and Multi-Spectral Targeting System

3/C MQS

1. Understand the function and capabilities of the Marine Littoral Regiment (MLR).
    - Self-deployable, multi-domain force optimized for contact and blunt layers - a naval formation - the Navy and Marine Corps will field a Light Amphibious Warship to enhance MLR mobility and sustainment
    - MLRs can: conduct Expeditionary Advanced Base Operations (EABOs), conduct Strike, Coordinate Air and Missile Defense Actions, Support Maritime Domain Awareness, Support Surface Warfare, Support Operations in the Information Environment

2. Know the purpose and features of and be able to identify the additional weapons and platforms of the U.S. Marine Corps.

a. M777 Howitzer - 155mm, provides timely, accurate, and continuous firepower in support of infantry, 9000 lbs lighter than its predecessor, highly moveable, can be lifted by Osprey and Super Stallion

b. High Mobility Multipurpose Wheeled Vehicle (HMMWV) - very versatile vehicles used since the mid 1980s. C2, troop transport, shelter carrier, towed weapons mover, armament carrier, TOW missile system carrier, and ambulance. Can be mounted with M2 .50 cal, M240 or M249

c. Joint Light Tactical Vehicle (JLTV) - joint effort by Army and MC to replace HMMWV. Lighter and faster than HMMWV and offer comparable protection and firepower. Adaptable, C4ISR capabilities, transportable by aircraft, 3500-5100 lb payload

d. M142 High Mobility Artillery Rocket Systems (HIMARS) - transportable by KC-130, most advanced artillery system, 40 mile range (accurate within 26 feet), six tubes with 200-pound rockets, 3 man crew, 24,000 pounds, fires M270 artillery rockets and anti-aircraft rockets, can fire 15 minutes after being unloaded

e. Amphibious Combat Vehicle (ACV) - replacing the AAV, transports a squad from ship-to-shore over a contested landing zone. 8x8 wheeled vehicle, 65 MPH on land, 6-7 kts in water, armed with M2 .50 cal or Mk-19 40mm. Remote weapons station with 30mm in the mid-2020s. V-shaped hull and blast seats, 3-man crew with 13 embarked troops

3. Know the primary function and effective range, and be able to identify the individual weapons of the U.S. Marine Corps.

a. M4 Carbine - infantry weapon, lighter and shorter barrel than M16, good for short distances and confined spaces, Area TGT-600m, point TGT-500m

b. M27 Infantry Automatic Rifle (IAR) - delivers accurate suppressive fire in support of the Fireteam. Enhances an automatic rifleman's maneuverability and displacement speed. Area TGT-800m, point TGT-550m

c. M240B Medium Machine Gun - engage long-range targets, heavier than M249 but faster rate of fire and longer range, can use tripod for defense, bipod is always attached while patrolling - 3725m

d. M32A1 Multi Shot Grenade Launcher (MSGL) - lightweight 40mm six shot grenade launcher, can fire 6 rounds in 3 seconds. Area TGT 400m, Point TGT 250m

e. MK-153 Shoulder Launched Multipurpose Assault Weapon (SMAW) - portable anti-armor rocket launcher. Destroys bunkers and fortifications with dual mode rockets, destroys tanks with HEAA rockets. 1x2 meter target-250m, tank sized target-500m

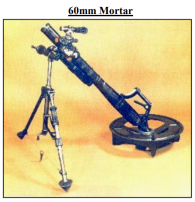
f. MK19 Mod 3 Automatic Grenade Launcher - high volume, suppressive fire support, destroys light-armored vehicles, protects supply convoys, and defends against hovering rotary aircraft, fires explosive 40mm grenades. 1500 yards (safe distance to launch: 75m in combat, 310 m in training)

g. 50 Caliber Machine gun - suppression fire for offense and defense, effective against enemy personnel, light armored vehicles, and slow, low-flying aircraft. 1829m with tripod

h. FGM-148 Javelin - fire and forget missile with lock-on before launch and automatic self guidance, top-attack flight profile against vehicles, but direct flight for buildings and helicopters. Altitude of 500ft in top-attack mode, and 190ft in direct mode.

i. BGM71 TOW Missile - tube-launched, optically tracked wire-guided anti-tank missile. Can penetrate armor 30-inches thick at 3000m. TOW is a widely used anti-tank guided missile. Can be found on helicopters, vehicles, and manually carried

j. 60mm Mortar - effective, indirect fire, lightweight and portable. Mortars are fired by dropping into the muzzle, ignites and gas pressure drives the round up. 60mm mortars have 3500m range, 81mm - 5700m. Different mortars are high explosive (HE) - light armored targets, personnel, fortifications, smoke rounds, and illumination rounds



4. Know and understand the role of the infantry and how non-combat arms MOS support the infantry.

- Infantry (and other combat arms) engage in direct confrontation with the enemy (e.g. kill, capture, seize terrain, deny access to terrain). First on the scene to confront threats

- Combat Support - Provide direct support to forces. Ensure combat forces are adequately manned, armed, fed, fueled, maintained, and moved

2/C MQS

1. Understand the Commandant's Planning Guidance, paying attention to the direction the Marine Corps is headed in the future.
   - Force design - a change to naval integration
   - Warfighting - work on Littoral Operations in a Contested Environment (LOCE) and Expeditionary Advanced Base Operations (EABO) with the Navy
   - Education and Training - more naval based education, wargaming, Modeling and Simulation Training (M&S)
   - Core Values - Minimize sexual assault, hazing, and non-EAS attrition
   - Command and Leadership - care for Marines' wellbeing
   - Two primary missions remain: crisis response and deterrence
   - CHANGES: prioritize distributed operations, seamless naval integration, removing tanks, downsizing the infantry, replacing artillery batteries with rocket and missile batteries, cuts to helicopters in favor for UAVs and littoral ships
   - Marine Littoral Regiment (MLR) is a new type of MAGTF focusing of deterrence by sea denial

2. Know and understand the general schedule of TBS.
   a. Phase I Individual Skills - Leadership, rifle and pistol quals, land nav, comms, combat lifesaving, MCMAP
   b. Phase II Rifle Squad Leader Skills - Decision making, combined arms, rifle squad tactics/weapons, scouting and patrolling
   c. Phase III Rifle Platoon Leader Skills - decision making, combined arms, rifle squad tactics/weapons, scouting and patrolling
   d. Phase IV Basic MAGTF Officer Skills - military operations in urban terrain (MOUT), rifle platoon (REIN) tactics, force protection, expeditionary operations, legal/platoon commander's administration

3. Understand the quality spread utilized at TBS and how it affects your future MOS.
   - Started in 1977, ensures that all MOSs receive a fair share of the most competitive officers. Uses the rule of thirds and is the most important factor when being assigned an MOS (all factors are MOS quality distribution, student suitability, unique or additional considerations, and student preferences - in that order).