Professional Knowledge Book

Class of 2023

AN INTRODUCTION TO THE U.S. NAVY AND MARINE CORPS
PROFESSIONAL DEVELOPMENT

Class of 2023,

The Navy Warfare pins and Marine Eagle, Globe, and Anchor on the cover of this Professional Knowledge Book (Pro-Book) represent the service assignments for the Class of 2019.

Regardless of which one you are assigned in the fall of 2022, there is a core professional knowledge that you are required to attain prior to receiving a commission as a trained Navy or Marine Corps Officer from the U.S. Naval Academy. The Midshipmen Training Program (MTP) is a principal means of accomplishing that requirement.

The MTP consists of six basic components:
1. **Midshipmen Qualification Standards (MQS)** – books that are divided by class year and contain core learning objectives (LO). Yours is in the back of this Pro-Book.
2. **References** – used to acquire the knowledge necessary to complete the MQS. They include this Pro-Book, websites listed in each MQS, and files posted at: https://www.usna.edu/Training/Professional-Knowledge-References.php#fndtn-panel13CReferences.
3. **Instruction Periods** – used for “come-arounds” and other training opportunities during which you will show that you have mastered the LOs.
4. **4/C Pro-Quizzes/Exam** – quizzes administered weekly to assess comprehension of the applicable LOs, and a Pro-Exam administered at the end of the fall semester as a mid-point evaluation for Plebe Year.
5. **Professional Competency Boards (PCB)** – oral boards administered to 4/C midshipmen in the spring to objectively assess comprehension of all LOs for the year.
6. **Professional Competency Assessments (PCA)** – exams administered to 3/C and 2/C midshipmen to objectively assess comprehension of LOs.

The MTP is managed by the Training Department. It is part of a training continuum that includes the Career Information Program (CIP) - managed by the Professional Development (PRODEV) Division -, and Core Courses taught by PRODEV and the Leadership Education and Development (LEAD) Division. This continuum is intended to:
- Prepare you for each summer’s training events
- Enable you to make informed choices regarding your preferences for service assignment
- Prepare you to be a junior officer

As you move forward through this year, take pride in your growing knowledge and understanding of the Naval Service. Take advantage of this opportunity; it will contribute to your success here at the academy and, more importantly, in the Fleet.

LCDR P. A. Archer
Training Officer
United States Naval Academy
4/C PROFESSIONAL KNOWLEDGE TRAINING SCHEDULE

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Notes:
1. MQS will be distributed during the Fall Reform.
2. Respective MQS Learning Objectives (located in the back of this book) must be signed off in full prior to a plebe taking a quiz, exam, or board.
3. The Brigade Training Staff shall develop questions for all Pro-Quizzes, the Pro-Exam, and the Professional Competency Boards using the MQS Learning Objectives. The 4/C Training Officer shall provide guidance and review all quiz and exam questions.
4. When evaluating a plebe on Professional Knowledge during a come-around, the focus should be a plebe’s preparedness for Pro-Quizzes, the Pro-Exam, and PCBs. A plebe should arrive at the come-around already knowing the required information.
5. Come-arounds shall be conducted daily during the week using designated Instruction Periods listed in the Battle Rhythm contained in the Midshipmen Regulations (MIDREGS). They may only be scheduled outside of these periods if a scheduling conflict arises for an upper class midshipmen or the plebe.
6. Pro-Quizzes and the Pro-Exam shall be completed on Fridays between 1900 and 2000 in accordance with the MIDREGS Battle Rhythm. Plebes on an approved Movement Order (MO) or Excusal during this time shall complete the quiz or exam between 1900 and 2000 on the Sunday that immediately follows.

*Dates with an asterisk in the chart above denote holiday-shortened weeks.
# PRO-QUIZ AND EXAM QUESTION TYPES AND GRADING CRITERIA

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<th>QUESTION TYPE</th>
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| MULTIPLE CHOICE     | CORRECT per the key – Full credit  
|                     | INCORRECT – No credit |
| TRUE OR FALSE       | CORRECT per the key – Full credit  
|                     | INCORRECT – No credit |
| MATCHING            | CORRECT per the key – Full credit  
|                     | Partial credit awarded to each correctly matched item in the list. |
| FILL IN THE BLANK   | CORRECT per the key – Full credit  
|                     | INCORRECT – No credit |
| LIST                | Each answer in the list should be correct per the key (i.e. verbatim).  
|                     | Credit awarded for each correct item in the list. |
| LIST AND DESCRIBE   | Each answer in the list should be correct per the key (i.e. verbatim).  
|                     | Credit awarded for each correct item in the list.  
|                     | Incorrect, incomplete, or no description results in no credit for that item. |
| STATE VERBATIM      | CORRECT per the key – Full credit  
|                     | INCORRECT – No credit |
| STATE BRIEFLY       | CORRECT per the key – Full credit (does not need to be verbatim)  
|                     | Grader should assign credit based on the midshipman’s demonstrated understanding. |

**Notes:**

1. The Pro-Quizzes and Pro-Exam are written by the Brigade Training Staff and reviewed by the 4/C Training Officer.

2. Each Pro-Quiz shall consist of no more than 20 questions.

3. The Pro-Exam shall consist of 30 questions.

4. Passing is 70%.

5. There are no-retakes for Pro-Quizzes.
Midshipman Regulations (COMDTMIDNINST 5400.6 (series)) are supplementary to U.S. Navy Regulations, 1990. Members of the Brigade and all personnel subordinate to the Commandant of Midshipmen shall comply with the substance, spirit, and intent of these directives at all times. Nothing in these regulations should be construed as taking priority over sound judgment or doing the right thing. Situations may arise where good judgment will be the only regulation, and midshipmen are expected to conduct themselves per Navy core values in these situations. These regulations apply at all times. Midshipmen are required to comply with the requirements set forth in this instruction during the summer training periods as well as during the academic year.

This chapter is included to test your knowledge, understanding, and application of Midshipmen Regulations. You are responsible to know and comply with all the material included in Midshipmen Regulations and thus not limited to the areas identified for evaluation.

Initials _____

https://www.usna.edu/Commandant/Directives/Instructions/5000-5999/COMDTMIDNINST-5400.6U_MIDSHIPMEN-REGULATIONS-MANUAL.pdf
WEEK 2: FINANCIAL LITERACY

Financial literacy provides the necessary knowledge in personal finance and the midshipmen pay system to make educated financial decisions. Over the next 4 years, you will earn approximately $15,000 in net pay through the midshipmen pay system. Additionally, the Career Loan is offered at the end of your 3/C year, which can range up to $36,000. Therefore, it is wise to make financial literacy one of your focuses to gain control and understand your finances.

As future leaders, financial literacy is not only essential for you to make smart financial decisions, but to guide those Sailors/Marines who may need financial guidance. Start now, and make financial literacy an important part of your life!

I. Understanding the Midshipmen Pay System

The midshipmen pay system is managed by the Disbursing Office in Bancroft Hall 4002. Congress established the midshipmen pay at **35% the base pay of an O-1 with fewer than two years of service**, and it is appropriated to fulfill military and academic obligations while attending USNA. The base pay amount for the year 2019 is $1,116.00 per month. End of month pay released to personal bank accounts is:

- $125 for 4/C MIDN
- $225 for 3/C MIDN
- $300 for 2/C MIDN
- $500 for 1/C MIDN

After this and other deductions such as Taxes, Social Security, Medicare, Service Member Group Life Insurance (SGLI), Held Pay, Personal Deductions, and the Advance for Clothing and Equipment (ACE) Loan repayment, any remaining funds are retained as Held Pay to budget for future expenses.

There are many factors associated with the midshipmen pay system. Not only do you need to understand how much you are being paid but also how to read your Leave and Earnings Statement (LES). The following terminology will help you better understand this system:

- **MyPay** ([https://mypay.dfas.mil](https://mypay.dfas.mil)). An online pay account management system that was created and maintained by the Defense Finance and Accounting Service (DFAS). It provides pay and tax information for military members, retirees, and numerous federal civilian employees. This is where you will be able to view your LES. You must login/change your password at least **once every 120 days** to avoid issues with your login. Make it a habit of viewing your LES once per month.

- **Leave and Earnings Statement (LES)**. The LES is a monthly pay stub and the statement showing your entitlements, deductions, leave information, and tax withholding information. You may access your LES via the MyPay website. Your LES is available 1 week prior to Pay Day. **It is your responsibility to monitor your pay, identify pay issues, and report findings to the Disbursing Office, located in Bancroft Hall, Rm 4002.**

- **Pay Day**. You are paid once per month at the beginning of each month for the previous month. For example, a 4/C midshipman will receive the pay of $100 on 1 September for the month of August. This pay is considered “August pay” even though the payment is received in the month of September.

- **Held Pay**. Held Pay is an account managed by the Disbursing Office and DFAS that applies to all midshipmen. To ensure sufficient funds are available to meet future mandatory issue (i.e. gear, uniforms, books, etc.), not all pay is released. For example, if you make $1,087.80 as a 4/C, and pay $600 in deductions, you would have $487.80 left. However, $362.80 is deposited into your Held Pay account and $125 into your direct deposit account. This process will continue from month to month, accumulating funds into your Held Pay account. If enough Held Pay accumulates, it will be released to you every February, July, and November. Please note that 4/C midshipmen are not able to accumulate Held Pay due to the amount of debt initially incurred. In order for Held Pay to be released to you, your account balance must be above the following minimums:
• 4/C MIDN are not eligible for Held Pay release due to insufficient funds
• $1,500 for 3/C MIDN
• $1,350 for 2/C MIDN
• $1,000 for 1/C MIDN

You can monitor your Held Pay balance on your LES. **This balance is found under the “Summary” column, on the second to last line labeled as “Cr Fwd”**. If the account is not above the minimums, Held Pay cannot be released in the months previously mentioned. If any Held Pay is released, the maximum amount is $750 per pay period.

• **Advance for Clothing and Equipment (ACE) Loan.** The ACE loan is an interest-free advance pay of $8,500 to provide funding for initial mandatory gear, uniforms, and equipment costs during Plebe Summer. Midshipmen are placed on an automatic payment plan to fully repay the ACE Loan by the Fall of their 1/C year.

• **Outside Funds.** Outside funding such as Scholarships or private funds may be applied (but are not required to be) to your pay account. Excluding room and board, the total costs for the ACE Loan, gear, uniforms, and textbooks are approximately $17,500 for the entire four years. By default, the $17,500 is budgeted to be paid out from your monthly pay. However, you are highly encouraged to apply outside funding as it allows your Held Pay account to grow more as less money is being deducted from $1087.80. Therefore, you may apply up to $17,500 in outside funds to your pay account. **You are entitled to apply and receive scholarships your entire four years at USNA.** If you receive scholarship money or private funds, contact the Disbursing Office to arrange the deposit. Authorized outside funds include personal checks, public or private scholarships, and college savings plans such as the state 529 plans.

• **Taxes.** Your pay is subject to Federal Income Tax Withholding (FITW), Federal Insurance Contribution Act withholding (FICA), and in most cases, State Income Tax Withholding (SITW). Federal and State income tax is withheld based on the following defaults:
  o Marital status: Single
  o Number of exemptions: 01
  o State of legal residence: As declared in Permit to Report; if not declared, Maryland

All midshipmen are required to file their taxes by 15 April of each year. To do so, midshipmen must obtain tax documents such as the W-2 (document information that is submitted to the IRS) by logging into MyPay. The Midshipmen Financial Advisor provides training and instructions on how to file your State and Federal Taxes.

• **Servicemember Group Life Insurance (SGLI).** SGLI is provided by the Veteran’s Association to all service members at a monthly rate of 6.5 cents per $1,000 of coverage. All midshipmen are given the maximum coverage of $400,000 as default coverage. Midshipmen can elect to reduce their coverage in increments of $50,000. **To change SGLI coverage amounts visit the Midshipmen Personnel Office in Bancroft Hall 4001.**

• **Naval Academy Business Services Division (NABSD).** NABSD is the retail arm of the Naval Academy that operates all retail services on the Yard, including the Midshipmen Store, Uniform Store, and Textbook Store.

• **Charitable Allotments.** Midshipmen are authorized to contribute to two charitable organizations through allotments directly from their pay, the Combined Federal Campaign (CFC) and Navy Marine Corps Relief Society (NMCRS). If desired, allotments are deducted from January through March for CFC and from April through June for NMCRS. Allotment values must be divisible by three, as they will be split between three months. For example, if you donate $12.00 to CFC, you will see a CFC allotment of $4.00 on each of your January, February, and March LES.

• **Travel Reimbursement.** Midshipmen are reimbursed for travel performed under official orders. This includes travel to the Naval Academy when inducted, travel to/from summer training, and other official travel. USNA’s Summer Training Travel Office is located in Bancroft Hall, room 2016.

• **Commuted rations (COMRATS).** Midshipmen receive COMRATS at the daily ration rate ($12.30 per day for 2019) when in an authorized status away from USNA, such as leave periods.
II. Personal Finance

In order to achieve financial goals and success, you must understand your own personal finance. Just as it is important to understand your pay, you must also learn how to manage it. Money management is achieved by having an understanding of topics such as financial tools, budgeting, and money habits. By gaining knowledge from these topics, you will be able to practice personal finance and become financially responsible.

Financial Tools

A ‘Financial Tool’ is a metaphor that can help you achieve your financial goals. Just like any other tool, it is important to learn how to use it. The following are the most common financial tools available through Banks (USAA, Navy Federal Credit Union, etc.), Brokerages (Vanguard, Fidelity, etc.), and other sources.

- **Checking account.** A transactional deposit account held at a financial institution that allows for withdrawals and deposits. Money held in a checking account is liquid and can be withdrawn using checks, ATMs, debit cards, and other methods. This is your ‘everyday use account’ that is linked to your Debit account.
- **Savings account.** A deposit account held at a bank or other financial institution that provides principal security and a modest interest rate. It typically pays out better interest than a checking account. Most people set aside funds in these accounts as an emergency fund and for short-term goals like saving for holiday leave, summer leave, your class ring, or buying a car.
- **Money Market account.** An account that typically pays a higher interest than a savings account. Similar to the interest earned on checking and savings accounts, the interest earned on a money market account is taxable. Individuals typically use money market accounts for short-term savings and emergency funds.
- **Certificates of Deposit (CD).** CDs are funds borrowed by the bank from their customers. A CD entitles the customer to receive interest over a set term that generally ranges from one month to 5 years. The longer the terms of the CD is, the better the interest paid out will be. CDs generally pay better interest than savings accounts and money market accounts but incur penalties for early withdrawals. CDs are primarily used for short-term financial goals ranging up to 5 years.
- **Bonds.** A debt investment in which an individual loans money to an entity (corporate or government) that borrows the funds for a defined period of time at a fixed interest rate. Bonds are used by corporations and governments to finance projects or to purchase assets. They are generally purchased by individuals looking to achieve better returns than those offered by bank-related services.
- **Mutual Funds.** An investment vehicle that is made up of a pool of funds contributed by many investors for the purpose of investing in securities such as stocks, bonds, money market instruments, and similar assets. Mutual funds are created by brokerages and financial institutions and are operated by their fund managers. The fund managers oversee the fund’s capital and attempt to produce gains and income for the investors. When investors contribute to mutual funds, they are in essence purchasing shares of a portfolio composed of different securities. Mutual Funds are a great way to create a diversified portfolio of investments as it is considered less of a risk.
- **Exchange Traded Funds (ETFs).** A security that tracks a specific market sector, a commodity, or a basket of assets. ETFs are exactly like Mutual Funds but are not actively managed by the fund managers. ETFs can be purchased through the stock exchanges (i.e. New York Stock Exchange) as they trade like regular stocks. In order for investors to purchase investments through exchanges, they must open a brokerage account via a Financial Institution.
- **Stocks.** A type of security that signifies ownership in a corporation. There are two main types of stock: common and preferred. Common stock usually entitles the owner to vote at shareholders’ meetings and to receive dividends. Preferred stock generally does not have voting rights but has a higher claim on assets and earnings than the common shares. Shares of stock can also be purchased through brokerage accounts.
- **Individual Retirement Accounts (IRA).** IRAs are an investing tool used by individuals to save specifically for retirement. There are two types of IRAs: Traditional and Roth. Contributions to the Traditional IRA may be tax deducted each year, which lowers your taxable income, but
withdrawals are taxed. Roth IRAs do not provide a tax deduction immediately, but withdrawals are tax free. At your age, Roth IRAs typically return significantly more money! Most IRAs can be obtained through Financial Institutions and/or Banks to begin your retirement planning.

- **Credit Cards.** A card issued by a Financial Institution giving the holder an option to borrow funds, usually at the point of sale. Credit cards charge monthly interest and are primarily used for short-term financing. Credit cards are a great tool for building your credit rating (discussed below) and earn points or rewards. Since credit cards can be useful financial tools, it is important to learn how not to ‘abuse’ them by piling debt. The best way to manage your credit cards is to charge what you can afford to pay off that month, and pay the balance in full each month. The average college student carries a $500 balance; do not be average!

- **Career Starter Loan.** An optional loan offered by Navy Federal and USAA at the end of your 3/C year. Depending on which bank you choose, it may range up to $36,000. The purpose of the Career Loan is to “jump-start” your Navy or Marine Corps career, as there are significant costs when you first graduate and report. There are many midshipmen who graduate without any money left and therefore start their careers with debt. To avoid that, you should seek financial guidance to better plan and manage the Career Loan. For more information on the Career Loan, please visit: https://intranet.usna.edu/FinancialAdvisor/Guides/starterloan.php

**Interest**

Interest is expressed as the charge for the privilege of borrowing or lending money, typically expressed as an Annual Percentage Rate (APR). If you are borrowing from a credit card, you need to understand how much interest you are paying. Likewise, if you are lending, understand how much interest you are making. The higher the interest, the more money you pay or make. There are two types of Interests:

- **Compound Interest.** Compound interest is charged on the amount borrowed or lent plus the interest it has accrued. Therefore, compound interest can be thought of as ‘interest on interest/amount’, and will make your debt or investment grow at a faster rate than simple interest would. For example, Annual Percentage Yield (APY)

- **Simple Interest.** Simple interest does not compound, it is only charged on the amount borrowed or lent. For example, Annual Percentage Rate (APR)

When you obtain debt through credit card use or loans, most financial institutions use compound interest in order to make more money off you. However, there are financial predators such as ‘Payday Loans.’ Avoid them at all costs due to their outrageous terms/conditions and high interest rates of up to 400%. It is best to stay away from Payday loans at all times!

**Money Habits**

The definition of a habit is an acquired behavior pattern regularly followed until it has become almost involuntary. Therefore, when it comes to finances, you can develop either Good Money Habits or Bad Money Habits. Carrying debt on a credit card, for example, is a Bad Money Habit where you are ‘abusing’ the financial tool by not paying it back. As a student, it is much easier to steer towards the Bad Money Habits. You may get complacent when you do not have a significant money worries like paying a mortgage or having dependents (spouse, children, etc.). In addition, by having a limited income, if you do not track your money habits carefully, it is easy to waste money. Below you will find some of the most common money habits you should work to acquire or avoid:

- **Good Money Habits (Acquire)**
  - **Pay yourself first.** A good ‘Rule of Thumb’ is to save at least 10% of your monthly income. Setting up a monthly automatic transfer on the first of every month to your savings account can be the easiest way to “set it and forget it.” Following this concept, you will not be spending money first and saving what is left over or nothing at all.
  - **Budgeting.** A budget is an estimation of the revenue and expenses over a specified future period. It allows you to analyze your spending and identify where you are overspending on one or multiple expenses (cell phone, shopping, food, entertainment, etc.). Remember, overspending on unnecessary personal expenses will prevent you from saving money. One of the easiest ways to budget as a midshipman is to do so on a weekly basis. For example, if you make $100 per month and choose to save $20 each month, you can break up the $80 of spending money into $20 per week. If you happen to
spend less than $20 in a week, you can carry the difference over to the next week or, better yet, save it! You can find a midshipman budget spread sheet on the Financial Advisor website: http://intranet.usna.edu/FinancialAdvisor/Guides/budgeting.php

- **Live below your means.** Do not spend more than you make. Ensure that your spending does not exceed your budget to avoid borrowing money. This habit will help you avoid a pile of debt that may take years to pay back.

- **Pay with cash.** Paying with cash provides a physical connection between the exchange of money and goods/services. The habit is especially effective when you are trying to avoid debt. In addition, paying with cash helps you budget better as you can physically see your money disappear from your wallet, as opposed to swiping your debit/credit cards.

- **Save for retirement now.** One of the best financial decisions you can make at a young age is to save for your retirement. For example, MIDN X starts saving $50 per month at age 18, while MIDN Y starts $50 per month at age 28. Both midshipmen invested in the same Mutual Fund with an annual return of 7%. If both withdrawal their funds at age 60, MIDN X would have a total of $142,765 while MIDN Y would only have $68,227. In order for MIDN Y to have the same amount as MIDN X at age 60, his/her starting contribution would have to be $104 per month instead of $50. Remember, the sooner, the better as you want compounding interest to do the work for you.

**Bad Money Habits (Avoid):**

- **Living paycheck to paycheck.** This term refers to an individual who devotes their entire month’s pay to expenses without saving any of it. Most individuals who live ‘paycheck to paycheck’ typically do not have any savings or budget and tend to live above their means.

- **Maxed out Credit Cards.** Refers to when a credit card balance amount has reached the line of credit available. To avoid reaching the limit, you must budget the amount each month that can be charged and not exceed it. Pay off the full credit card balance every month. This way, you avoid paying interest each month and carrying outstanding debt. Carrying debt from month to month, specifically 30% or more of your credit card limit, counts against you on your Credit Report/Score.

- **Not reviewing your Credit Report/Scores.** Being unaware of your Credit Report/Score should be avoided at all times. If a predator steals your identity and takes out a loan on your behalf, you may never know unless you check your Credit Reports. Make it a habit to check this information at least three times per year.

- **Paying the minimum payment on Credit Cards.** Credit cards will often allow you to pay a “minimum payment” on credit balances. This often gives credit card holders a false sense of security. Credit cards typically have very high interest rates, sometimes upwards of 20%. If you only pay the minimum each month, interest will add up over time and can snowball into an unmanageable level of debt. If you have an outstanding balance, create a reasonable payoff plan and include it in your monthly budget.

**Credit Reports**

Your Credit Report is a detailed report of your credit history prepared by a credit bureau and used by a lender to determine your creditworthiness. Your Credit Report is composed of credit history such as credit cards, loans, previous or current home addresses, number of late payments, bankruptcy, accounts in default, etc. Here are important facts you need to understand about Credit Reports:

- **How to obtain it.** You can either pay for the Credit Report through well-trusted websites like www.myfico.com or receive a free Credit Report through www.annualcreditreport.com (it includes the report but does not show you a score).

- **Three different Credit Agencies.** The three different credit agencies are Experian, Equifax, and Transunion. They should all correlate with each other in terms of information/history on your Credit Report. However, it is your job to ensure they all have the same information, as you are your only auditor when it comes to your Credit Report.

- **Credit Score.** A three-digit number (ranges from 300-850) that tells creditors how likely you are to pay back the money you want to borrow. Here is a breakdown of how creditors view you based on your Credit Score range:
Remember, the lower your credit score, the riskier you appear to lenders. Hence, a lower credit score will qualify you for a higher interest (meaning you will be charged more to borrow money) or possibly disqualify you entirely. Credit scores are also used more and more by potential employers, landlords, utility companies, and others. The U.S. Navy may use your Credit Score and Report to determine the type of Security Clearance you may obtain. Remember, if your credit score looks bad, you look bad.

- **Fraud on your Credit Report.** If you notice suspicious information that does not pertain to you, contact one of the credit reporting agencies immediately:
  - Equifax: www.equifax.com, 1-888-766-0008
  - Experian: www.experian.com, 1-888-397-3742
  - TransUnion: www.transunion.com, 1-800-680-7289

Once you contact them, explain with details the situation and ask that a “fraud alert” be placed in your file. If after the investigation they determine that you were a victim of fraud, the information will be disputed on your Credit Report.

**Servicemembers Civil Relief Act (SCRA)**

The SCRA is an Act passed by Congress in 1940 to protect the rights of servicemembers. The primary purpose of the SCRA is to ease legal and financial burdens on military personnel and their families. The SCRA can protect servicemembers from evictions, leases, default judgments, outrageous interest rates, and much more. For example, under the SCRA you can reduce or cap interest rates on any credit card-or other loans you acquired before you entered the military to 6% per year for the period you remain on active duty. A Judge Advocate General (JAG) can assist any military personnel with legal issues or advice pertaining to the SCRA.

**III. USNA Financial Points of Contact**

Should you have any financial questions/concerns please reach out to LT Andrew Hughes. He is the Midshipmen Financial Advisor, located in Bancroft Hall C209. His mission is to provide financial literacy and information to the Brigade of Midshipmen. Should you ever experience pay issues/concerns, please contact LT Daniel Monteith. He is the Disbursing Officer, located in Bancroft Hall 4002, and manages the midshipmen pay system.

**For Midshipmen Pay related questions (Section I), contact:**

Midshipmen Disbursing Officer  
LT Daniel Monteith, SC, USN  
410-293-3307  
monteith@usna.edu  
Bancroft Hall 4002

**For Financial Advice on Personal Finance (Section II), contact:**

Midshipmen Financial Advisor  
LT Andrew Hughes, SC, USN  
410-293-7023  
ahughes@usna.edu  
Bancroft Hall C209  
Make an appointment: https://intranet.usna.edu/FinAdv
I. Courtesies, Customs, and Ceremonies

Fleet Admiral Chester Nimitz, one of the key figures in the U.S. Navy’s victory at sea in the Pacific during World War II, once said, “A naval ceremony should follow the long established rules for its execution carefully and exactly. Such attention to detail honors those who, long before us, established the ritual, and all those who, past, present, and future, take part in that ceremony.”

There is no question that life in the naval service is a unique experience. Once you have been to sea, flown on naval air missions, or taken part in the many different things that Sailors and Marines around the world are doing every hour of every day, you will know from first-hand experience how different a job in the naval service can be from what your counterparts in civilian life are doing. It is only fitting, therefore, that we celebrate our uniqueness through special ceremonies and demonstrate our differences through special customs that remind us of our very different heritage.

II. Saluting

The Salute
- Salutes are customarily given with the right hand, but there are exceptions. If your right arm is injured in such a way as to prevent you from saluting, or if you are using your right hand for some military purpose, such as a Sailor holding and blowing a boatswain’s pipe, then it is considered appropriate for you to salute with your left hand.
- Sailors and Marines must be covered if they are going to salute. Soldiers and Airman may salute uncovered. Be aware that these differences in custom among the services should be modified if the circumstances warrant. Consider, for example, if you were in an office with several soldiers and none of you are covered. An Army officer enters, and the soldiers jump to their feet, come to attention, and salute. Your naval custom would not include the salute, since you are uncovered, but not to salute would seem disrespectful under the circumstances. This follows the old (and customary) saying, “When in Rome, do as the Romans do”.
- If you encounter a senior officer who is not covered, and you are covered, you would still render a salute, even if the senior cannot return the salute.

How to Salute
- Salute from a position of attention if you are standing still.
- If you are walking, salute from an erect position.
Your upper arm should be parallel to the deck or ground, forearm inclined at a 45-degree angle, hand and wrist straight, palm slightly inward, thumb and fingers extended and joined, with the tip of the forefinger touching the lower edge of your cap, slightly to the right of the eye.

Face the person saluted, or if you are walking, turn your head and eyes toward the person. If possible, look directly into the eyes of those you salute.

Allow time for the person being saluted to see and return the salute; if both of you are walking, a distance of about six steps is about right.

Hold the salute until the officer has returned or acknowledged it, and then bring your hand smartly to your side.

In most cases, a salute is accompanied by a verbal greeting. For example, when you meet an officer you know, you should accompany your salute with “Good morning, Lieutenant Jones”. If you do not know the officer’s name, “Good morning ma’am”, or “Good morning sir” is appropriate.

If on a double, slow to a walk when saluting.

If you are carrying something in both hands and cannot render the hand salute, look at the officer as though you were saluting and render a verbal greeting as described above.

If using a cell phone, pause, drop the phone to your side, stand at attention, and render the salute.

Whom to Salute

Salute senior officers of all U.S. services and all allied foreign services. Officers in the U.S. Merchant Marine and Public Health Service wear uniforms that closely resemble Navy uniforms, and they too rate a salute. As do all foreign military officers at USNA.

Salute senior officers who are close enough to be recognized whether they are wearing a uniform or civilian clothes.

Personnel wearing the Medal of Honor are saluted no matter what their rate or rank.

Salute the person standing an Officer of the Deck (OOD) watch no matter what their rank or rate. The same applies to anyone taking a division/detail muster.

Salute senior officers even if they are uncovered or their hands are occupied. Your salute will be acknowledged by a verbal greeting.

If you are walking with or standing by a senior officer, do so on his/her left side. If the occasion for a salute arises, salute when the officer salutes, not before. This is the case whether he/she is saluting a junior or a senior officer.

If you are standing in a group and a senior officer approaches, the first to see the senior should call “Attention”, and all face the officer and salute.

If you are overtaking a senior officer and it becomes necessary to pass, you should do so to the left, salute when abreast of the officer, and ask, “By your leave, sir/ma’am?” The officer should reply “Very well”, and return the salute.

If you are at a crowded gathering or in a congested area, you normally salute only when addressing or being addressed by senior officers.

Because you are in uniform, young children or military retirees may salute you. Return the salute.

When in doubt, salute. If you salute someone who does not rate a salute, you may cause yourself some slight embarrassment by appearing less informed than you should be. However, if you fail to salute someone who does rate one, you appear to be unmilitary, discourteous, and a shirker. No one ever got into trouble for saluting when it was not expected.

When not to Salute

In formation. The person in charge will salute for you or, in some cases, will give the order for you and others in the formation to salute. You are relieved of any responsibility to salute on your own when in formation.

When engaged in work and saluting would interfere with what you are doing. If you are part of a work detail, the person in charge of the detail will salute for the entire group.

When carrying something with both hands and saluting would require you to put all or part of your load down. A verbal greeting is still appropriate in this case.
• In public places where saluting is obviously inappropriate (such as on a bus or while standing in line at a theater). A verbal greeting is appropriate.
• At mess. If you are addressed by an officer while eating, you should stop eating and sit at attention until the officer has departed. Courtesy dictates that the officer will keep the interruption brief.
• In combat or simulated combat conditions.

III. The Address

Officers
• Officers are always addressed and referred to by their title or rank, such as admiral, captain, or commander.
• By tradition, the commanding officer of any ship or station, no matter what his/her rank, is addressed and referred to as “Captain”.
• An officer in the medical or dental corps is addressed and referred to by rank or as “Doctor”.
• A chaplain may be called “Chaplain” no matter what the rank.

Enlisted Personnel
• A chief petty officer is addressed as “Chief Petty Officer Smith”, or more informally as “Chief Smith” or “Chief” if you do not know his or her name.
• Master and senior chief petty officers are customarily addressed and referred to as “Master Chief Smith”, “Senior Chief Smith”, “Master Chief,” or “Senior Chief” if you do not know their names.
• Other petty officers are addressed and referred to by their specific rates. For example, you would address GM2 Johnson as “Gunner’s Mate Second Class Johnson”, “Petty Officer Second Class Johnson”, or “Petty Officer Johnson”.
• Nonrated personnel – those in paygrades E-1 through E-3 – are introduced as “Seaman Wells” or “Fireman Apprentice Johnson” and referred to in the same manner or by their last names only in informal situations.
• Enlisted Marines are addressed using their full rank such as “Staff Sergeant Smith” or “Master Sergeant Jones” – their rank is never shortened to just “Sergeant Smith” if they are an E-6 or above.

IV. Colors

Showing respect to the American flag is probably not new to you. In school, or perhaps in a scout troop, you may have recited the pledge of allegiance. You have probably been to a sporting event where the national anthem was played and everyone in the stadium stood as a mark of respect. The American flag is, in truth, a piece of colored cloth, but what it represents causes us to want to show respect for it. The American flag is a symbol of the democracy we hold so dear, and the men and women who have died protecting that democracy.

The first official salute of the American flag by a foreign government took place 14 February 1778 when a Navy ship, the sloop-of-war Ranger under the command of Captain John Paul Jones, exchanged salutes with the French ship Robuste, in Quiberon Bay on the Atlantic coast of France.

Many customs and ceremonies are associated with the national ensign. The ceremonies of hoisting (raising) it at 0800 in the morning and lowering it at sunset are called morning colors and evening colors, respectively. These ceremonies take place every day on every Navy and Marine Corps shore station in the world. Ships at sea do not observe either of these formal ceremonies, but ships in port – whether moored to a pier or anchored offshore – do observe both. Aboard ships, the ceremonies have an added factor in that a flag known as the union jack is also hoisted and taken down at the same time as the national ensign. The union jack is always hoisted on a pole called a “jackstaff” at the bow (front end) of the ship, while the national ensign is always hoisted onto a pole called a “flagstaff” at the stern (back end) of the ship.
Morning Colors

- “First call to colors” is sounded precisely at 0755. Most often, this is a special bugle call. An alternative is for the Officer of the Deck (OOD) to pass the word “first call to colors” over the general announcing system (1MC). On ships, a special yellow and green pennant called the PREP (or “preparative”) pennant will be hoisted to the yardarm.
- “Attention” is sounded precisely at 0800. While the colors (flags) are being briskly hoisted, the national anthem is played, “To the colors” is played by bugle, or there is silence. On ships, the PREP pennant will be hauled to the dip (lowered to the halfway point) and remain there until the ceremony is completed.
- During colors, everyone within sight or hearing renders honors. If you are outside, stop doing what it is you are doing when “Attention” is sounded, face the colors or the direction from which you heard “Attention”, salute when the national anthem or “To the colors” starts, and drop the salute when it stops. If there is no national anthem or “To the colors” (e.g., silence), salute at “Attention” and hold it until you hear “Carry on.” If you are in ranks, follow the orders of the person in charge of the formation. If you are not in uniform, stand at attention. If you are driving a vehicle, stop and sit at attention.
- Once “Carry on” has been signaled, resume what you were doing before the color ceremony.

Evening Colors

- Evening colors occurs at sunset in the Navy. The exact time of sunset changes (ranging anywhere from 1700 to 2100) depending on your latitude and the time of year but will be published each day in the Plan of Day (POD) of your ship or station.
- Five minutes before sunset, “First call to colors” is sounded just as in the morning and, if you are aboard a ship, the PREP pennant will again be raised to the yardarm.
- At sunset, the colors ceremony begins when “Attention” is sounded on a bugle or when a whistle is blown. PREP is hauled to the dip just as in the morning and the procedures for standing at attention and saluting are the same as in the morning.
- While the national ensign is being lowered, the bugler (or a recording) will play “Retreat” (instead of “To the Colors,” as is played in the morning). Another difference in the two ceremonies is that as morning colors the national ensign is hauled up smartly (quickly), while at evening colors it hauled down slowly and ceremoniously.
- “Carry on” will signal the end of the ceremony just as in the morning.
- Salutes are rendered in the same manner as for Morning Colors.

Half-Masting the National Ensign

- If the ensign is flying when the word is received that the ensign is to be half-masted, it should be immediately lowered.
- If the ensign is not already flying (for example, word is received during the night), morning colors will be held as normal except that after the ensign is hoisted smartly all the way to the peak (top of the mast or flagstaff), it is then lowered to the half-mast position. In other words, it is not appropriate to merely hoist the colors directly to half-mast; the ensign must first be two-blocked (hoisted as far as it will go), then lowered to half-mast.
- The reverse is true in the evening. Before the national ensign can be brought down for the evening, it must first be hoisted to the peak and then lowered all the way down.
- Aboard ship in port, anytime the national ensign is lowered to half-mast, so is the union jack.

Shifting Colors

- Another custom, far less formal than morning or evening colors, yet unique to the sea services, is what we call shifting colors.
- As already discussed, the national ensign is flown from the flagstaff at the stern and the union jack is flown from the jackstaff at the bow when a Navy ship is in port. However, when a ship gets underway (no longer moored to a pier or anchored), the national ensign is flown from the gaff (a short angled pole that is higher up and toward the middle of the ship).
- When the last line is brought on board, or the anchor is lifted clear of the bottom of the harbor (aweigh), a long whistle blast is blown over the ship’s 1MC by the Boatswain’s Mate of the Watch.
(BMOW) and the national ensign and union jack are taken down from the flagstaff and the jackstaff respectively. This is all done smartly while a different ensign is raised briskly to the gaff.

- When a ship returns from sea, the exact opposite procedure takes place as the first mooring line is passed to the pier or the anchor touches bottom.

**Underway**
- Ships at sea do not observe morning or evening colors, but they do fly an ensign at the gaff from *sunrise* to sunset.

**V. Shipboard Customs**

Ships have been plying the waters of the world for many centuries and this long history has resulted in many unique customs. By observing these special customs, you will be forming a special link with Sailors from the past and keeping alive traditions that, in some cases, are thousands of years old.

**The Bridge**
- When a ship is underway, the area known as the bridge serves as the control point for the vessel. A team of Sailors will always be on watch serving the ship’s special needs. The Officer of the Deck (OOD) heads that team and, serving as the Captain’s direct representative, is responsible for the safe navigation of the vessel and for carrying out the ship’s routine.
- There is a formality associated with the bridge, and many ships require all non-watch personnel to request permission from the OOD to enter the bridge, accompanying their request with a salute. This is more than a mere tradition as it allows the OOD to control access to the bridge, ensuring the watch team is not inhibited by having too many people in the way.
- Another custom that serves a useful purpose is the calling out “Captain is on the bridge” by the first person to see the Commanding Officer enter the bridge area. This alerts the OOD and other watchstanders to the Captain’s presence, which is important since it is the OOD’s responsibility to report significant happenings to the Captain and since the Captain’s authority supersedes that of the OOD when he or she is on the bridge.

**The Quarterdeck**
- The quarterdeck in many ways replaces the bridge as the control point of the ship when the ship is not underway. It has both functional and ceremonial purposes and, just like the bridge, is manned by a watch team. The OOD shifts his/her watch from the bridge to the quarterdeck once the ship enters port, and remains there until the ship gets underway again.
- The location of the quarterdeck will vary according to the type of ship. It serves as the point of entry and exiting for the ship. Frequently it is marked off by appropriate lines, deck markings, decorative cartridge cases, or fancy work (nautical decorations made from pieces of line). The quarterdeck is always kept particularly clean and shipshape.
- Watchstanding on the quarterdeck must be in the uniform of the day and present a smart and military appearance at all times. Personnel not on watch should avoid the quarterdeck unless their work requires them to be in that area.
- Larger vessels, such as aircraft carriers, may have two or more entry/exit points, but only one is designated as the quarterdeck.

**Boarding and Departing the Ship**
- The OOD or the Junior Officer of the Deck (JOOD) will meet all persons leaving or boarding the ship. There are specific procedures to be followed by Navy personnel when boarding or departing.
- Because of security considerations, you will nearly always be expected to show your ID card to the OOD (or his/her representative) whenever you board a naval vessel, whether you are a member of the crew or not.
• If the ship is alongside a pier, you will use a ‘brow’ (a walkway that bridges the gap between the pier and the ship) to come aboard. If the ship is anchored out in the water, you will ride in a boat to reach the ship, and to get from the water up to the ship’s main deck you will use an ‘accommodation ladder’ (a kind of stairwell that has been rigged over the side of the ship). The opening in the ship’s rail where you actually board the ship (whether you are using a brow or accommodation ladder) is called the ‘gangway.’

• At the gangway, you should turn and face aft (where the national is flying from the flagstaff), come to attention, and smartly salute if the ensign is flying (after 0800 and before sunset). On some larger ships, you will not be able to actually see the national ensign but you should salute anyway.

• After you have saluted the national ensign, turn and face the OOD (or their representative), salute, and say, “I request permission to come aboard, ma’am (or sir).” The OOD will return your salute and say, “Very well”, or “Permission granted”, and you should proceed. (Note: These salutes take place no matter what the ranks or rates of the individuals involved. If the OOD is a chief petty officer and the boarding individual is a commander, the latter will still salute the CPO, who, as OOD, represents the Captain.)

• If you are not in uniform, you should not salute but still face aft at attention to honor the national ensign and then, still at attention, face the OOD and request permission to come aboard.

• If you are not a member of the crew of the ship you are boarding, you should state the reason for your visit when requesting permission to come aboard.

• The procedure for leaving a ship is much the same as boarding, except that the steps are reversed. Step up to the vicinity of the gangway, salute the OOD, and say, “I request permission to go ashore, sir (or ma’am)”. When the OOD says, “Very well”, or “Permission granted”, and returns your salute, drop your salute and step to the gangway. If the ensign is flying, face aft, salute smartly, and leave.

Officers’ and CPO Country
• The area on board the ship where officers eat (the wardroom) and sleep (staterooms), as well as the halls (passageways) surrounding these areas, is known as ‘officers’ country.’ Correspondingly, the area where chief petty officers eat and sleep is known as ‘CPO country.’

• You should avoid these areas unless you are on official business. If your duties require you to enter any of these spaces, you should knock before entering and remove your cover. Watchstanders wearing a duty belt or sidearm remain covered, unless a meal is in progress.

• The enlisted mess deck is treated with the same courtesy as the wardroom or chief’s mess.

Ship’s Bells
• For many centuries, Sailors did not have the luxury of a personal timepiece. If watches were to be relieved on time, some means of telling the time had to be devised. A system that used a half-hour sandglass and the ship’s bell was created and used for hundreds of years.

• At the beginning of the watch, the sandglass was turned over to start it running. As soon as it ran out, the watchstanders knew the first half-hour had passed, so they rang the ship’s bell once and immediately turned the sandglass over to start the second half-hour. Everyone on board the ship could hear the bell being rung so they could keep track of the time. When the sand ran out the second time, the watchstanders rang the ship’s bell twice. They continue this until eight bells had been rung (representing the passage of four hours or one complete watch). The watch was then relieved, and the new watch team started the whole cycle over by ringing one bell once the first half-hour had passed, and so on.

• This bell-ringing tradition has been continued on board many Navy ships even though most Sailors always have a clock, watch, computer, or handheld device in sight. Here at USNA, this tradition has been continued with bells sounding from Mahan Hall. One bell signals the start of First Period with additional bells continuing throughout the day in half-hour intervals as previously described.
VI. USNA Notable Graduates

The United States Naval Academy is an institution dedicated to producing officers of the highest caliber for the nation. We have been proud to help shape the lives of countless outstanding individuals. Below are just a few of the many USNA graduates who have emerged as leaders in both the military and civilian world.

Chester W. Nimitz  
*Class of 1905*  
Fleet Admiral/Chief of Naval Operations

**Profile**

Born in Fredericksburg, Texas, Nimitz graduated from the U.S. Naval Academy in 1905. He spent almost two decades in submarines, service punctuated by instruction in diesel engines, study at the Naval War College, and tours as executive officer of an oiler and a battleship. Nimitz then commanded heavy cruiser USS Augusta, flagship of the U.S. Pacific Fleet.

In 1939, he was assigned as Chief of the Bureau of Navigation. Following the Japanese attack on Pearl Harbor on 7 December 1941, the Navy named Nimitz Commander in Chief, U.S. Pacific Fleet, and soon afterward Commander in Chief, Pacific Ocean Areas. In recognition of his superior leadership of naval forces during the victorious three-year Pacific campaign, in December 1944 Congress promoted him to fleet admiral.

As Chief of Naval Operations at the dawn of the Cold War, Nimitz directed the forward deployment of naval forces to the Mediterranean and the Far East, worked to adapt the naval services to the joint requirements of the National Security Act of 1947, and promoted adoption of jet aircraft and other advanced technologies. In recognition of his accomplishments, the Navy named USS Nimitz (CVN-68), the first ship in a new class of nuclear-powered aircraft carriers, in his honor.

Alan B. Shepard, Jr.  
*Class of 1945*  
NASA Astronaut/1st American in space

**Profile**

Alan B. Shepard was born November 18, 1923, in East Derry, New Hampshire and died on July 21, 1998. He attended primary and secondary schools in East Derry and Derry, New Hampshire; received a Bachelor of Science degree from the United States Naval Academy in 1944, an Honorary Master of Arts degree from Dartmouth College in 1962, and Honorary Doctorate of Science from Miami University (Oxford, Ohio) in 1971, and an Honorary Doctorate of Humanities from Franklin Pierce College in 1972. Graduated Naval Test Pilot School in 1951; Naval War College, Newport, Rhode Island in 1957.

He was awarded the congressional Medal of Honor (Space), two NASA Distinguished Service Medals, the NASA Exceptional Service Medal, the Navy Astronaut Wings, the Navy Distinguished Service Medal, and the Navy Distinguished Flying Cross. He was a recipient of the Langley Medal (highest award of the Smithsonian Institution) on May 5, 1964, the Lambert Trophy, the Kinchloe Trophy, the Cabot Award, the Collier Trophy, the City of New York Gold Medal (1971), and the achievement Award for 1971. Shepard was appointed by the President in July 1971 as a delegate to the 26th United Nations General Assembly and served through the entire assembly that lasted from September to December 1971.

Rear Admiral Shepard was one of the Mercury astronauts named by NASA in April 1959, and he holds the distinction of being the first American to journey into space. On May 5, 1961, in the Freedom 7 spacecraft, he was launched by a Redstone vehicle on a ballistic trajectory suborbital flight--a flight...
that carried him to an altitude of 116 statute miles and to a landing point 302 statute miles down the Atlantic Missile Range.

James Earl “Jimmy” Carter  
*Class of 1947*  
39th President of the United States

**Profile**

James Earl (Jimmy) Carter, Jr., who in 1976 became the fifth consecutive President with prior Navy service, was born in Plains, Georgia on 1 October 1924. Graduating from Plains High School in 1941, he attended Georgia Southwestern College in Americus, Georgia. After a year there, Carter transferred to Georgia Institute of Technology to study mathematics for a year in order to qualify for the U.S. Naval Academy. In 1943, Carter received an appointment to the academy and became a member of the Class of 1947. After completing the accelerated wartime program, he graduated on 5 June 1946 with distinction and obtained his commission as ensign. After serving in positions such as radar officer, CIC officer, Training and Education Officer, he attended the U.S. Navy Submarine School, Submarine Base, New London, Connecticut from 14 June to 17 December 1948. Carter was honorably discharged on 9 October 1953 at Headquarters, Third Naval District in New York City. On 7 December 1961, he transferred to the retired reserve with the rank of Lieutenant at his own request.

In 1962 he won election to the Georgia Senate, became Georgia’s 76th governor on January 12, 1971 and, on December 12, 1974, he announced his candidacy for president of the United States. He won his party’s nomination on the first ballot at the 1976 Democratic National Convention, and was elected president on November 2, 1976. Jimmy Carter served as president from January 20, 1977 to January 20, 1981. In 1982, he became University Distinguished Professor at Emory University in Atlanta, Georgia. On December 10, 2002, the Norwegian Nobel Committee awarded the Nobel Peace Prize for 2002 to Mr. Carter “for his decades of untiring effort to find peaceful solutions to international conflicts, to advance democracy and human rights, and to promote economic and social development”. In 2010, he published his 25th book, White House Diary.

James B. Stockdale  
*Class of 1947*  
Prisoner of War/Awarded the Congressional Medal of Honor

**Profile**

Admiral Stockdale was born on December 23, 1923 in Abingdon, Illinois. After graduating from the Naval Academy in 1946, he attended flight training in Pensacola, FL and in 1954 was accepted to the Navy Test Pilot School where he served as an instructor for a brief time. Stockdale’s flying career took him west, and in 1962, he earned a Master’s Degree in International Relations from Stanford University.

On September 9, 1965 while returning from a mission, his A-4 Skyhawk was hit by anti-aircraft fire. Stockdale ejected, breaking a bone in his back and badly dislocating his knee. Stockdale wound up in Hoa Lo Prison, the infamous “Hanoi Hilton”, where he spent the next seven years. Despite being kept in solitary confinement for four years, in leg irons for two years, physically tortured more than 15 times, denied medical care and malnourished, Stockdale organized a system of communication and developed a cohesive set of rules governing prisoner behavior.

The spring of 1969, he was told that he was to be taken ‘downtown’ and paraded in front of foreign journalists. Stockdale slashed his scalp with a razor and beat himself in the face with a wooden stool knowing that his captors would not display a prisoner who was disfigured. Later, after discovering that some prisoners had died during torture, he slashed his wrists to demonstrate to his captors that he preferred
death to submission. This act so convinced the Vietnamese of his determination to die rather than to cooperate that the Communists ceased the torture of American prisoners and gradually improved their treatment of POWs. He was released from prison in 1973. He was awarded the Congressional Medal of Honor by President Gerald Ford in 1976. He was one of the most highly decorated officers in the history of the Navy, wearing twenty-six personal combat decorations, including two Distinguished Flying Crosses, three Distinguished Service Medals, two Purple Hearts, and four Silver Star medals in addition to the Medal of Honor. He was the only three star Admiral in the history of the Navy to wear both aviator wings and the Medal of Honor.

After serving as the President of the Naval War College, Stockdale retired from the Navy in 1978. He published a number of books and articles and was awarded eleven honorary doctoral degrees. In 1992 he agreed to the request from H. Ross Perot to stand in as the vice presidential candidate of the Reform Party. Upon his retirement in 1979, the Secretary of the Navy established the Vice Admiral Stockdale Award for the Inspirational Leadership presented annually in both the Pacific and Atlantic fleet. Admiral Stockdale was a member of the Navy’s Carrier Hall of Fame and The National Aviation Hall of Fame, and he was an Honorary Fellow in the Society of Experimental Test Pilots.

H. Ross Perot
Class of 1953
Entrepreneur/Presidential Candidate

Profile

H. Ross Perot was born in 1930 in Texarkana, Texas. In 1957, he went to work for IBM as a salesman. He then founded Electronic Data Systems (EDS) in 1962, which he sold to General Motors in 1984.

In 1979, he funded an operation during the Iran hostage crisis that resulted in the rescue of two of EDS employees.

Concerned over the budget crisis, he ran for president as an independent with Vice Adm. James B. Stockdale in 1992. They won a fifth of the popular vote and finished third in the election. Following his defeat, he formed the Reform Party and ran as their presidential candidate in 1996, where he also came in third.

John McCain
Class of 1958
Prisoner of War/United States Senator

Profile

John Sidney McCain, III was born in Panama Canal Zone, August 29, 1936. He attended school in Alexandria, Va., and graduated from the United States Naval Academy in 1958. In 1973, he graduated from the National War College, Washington, D.C.

He was a Pilot in the United States Navy from 1958 until 1981. From 1967 to 1973, he was a prisoner of war in Vietnam. He received numerous awards, including the Silver Star, Legion of Merit, Purple Heart, and Distinguished Flying Cross.

Roger Staubach  
*Class of 1965*  
Heisman Trophy Winner/Professional Football Player  

**Profile**  
As a midshipman, Roger Staubach was the recipient of college football’s top honor, The Heisman Trophy. Colorblind, Staubach graduated from the Naval Academy in 1965 and was the Academy’s first direct commission Supply Corps officer. He went on to serve four years of active duty service in the Navy, volunteering for one year of overseas duty in Vietnam. Staubach played 11 years of professional football with the Dallas Cowboys and led the Cowboys to two Super Bowl victories. He was elected into the Hall of Fame in 1985, his first year of eligibility.

Outside of sports, in 1977 Staubach founded the Staubach Company; a commercial real estate firm that later merged with Jones Lang LaSalle Incorporated in 2008. He was CEO of Staubach Company for a number of years and following the merger became Executive Chairman, Americas.  

Roger Staubach was on the Board of Directors of the United Way of America and the Board of Advisors of the Children’s Scholarship Fund. He played an active part in the American Cancer Society Annual Children’s Luncheon, and other civic, charitable, and professional organizations. Honors bestowed on Roger include Office & Industrial Properties 1998 Executive of the Year, Commercial Property News Corporate Services Executive of the year in both 1999 & 2000, and was the NCAA 2000 ‘Teddy’ Roosevelt Award Winner.

Major General Charles Bolden  
*Class of 1968*  
NASA Astronaut  

**Profile**  
After graduating from the Naval Academy, Charles Bolden accepted a commission in the U.S. Marine Corps. As a naval aviator, he flew more than 100 sorties into North and South Vietnam, Laos, and Cambodia, in the A-6A Intruder. Following his return to the United States, Bolden graduated from the U.S. Naval Test Pilot School at Patuxent River, Maryland.

Major General Bolden became an astronaut in 1981. He has served on four space flights including STS-31, during which the crew deployed the Hubble Space Telescope, and has logged over 680 hours in space.  

Bolden left NASA in 1994 and returned to active duty in the U.S. Marine Corps to become Deputy Commandant of Midshipmen at the U.S. Naval Academy. Major General Charles F. Bolden, Jr., then served as the Deputy Commander, U.S. Forces, Japan, Yokota Air Base, Japan. In 2003, he retired from the Marine Corps and in 2009 he became the administrator of NASA.
Wendy Lawrence  
*Class of 1981*  
Astronaut  

**Profile**  
Wendy Lawrence was born July 2, 1959, in Jacksonville, Florida. She graduated from Fort Hunt High School, Alexandria, Virginia, in 1977 and received a Bachelor of Science degree in ocean engineering from U.S. Naval Academy in 1981. She also received a Master of Science degree in ocean engineering from Massachusetts Institute of Technology (MIT) and the Woods Hole Oceanographic Institution (WHOI) in 1988. She was awarded the Defense Superior Service Medal, the Defense Meritorious Service Medal, the NASA Space Flight Medal, the Navy Commendation Medal, and the Navy Achievement Medal. She was a recipient of the National Navy League’s Captain Winifred Collins Award for inspirational leadership (1986). Lawrence has more than 1,500 hours flight time in six different types of helicopters and has made more than 800 shipboard landings. While stationed at Helicopter Combat Support Squadron SIX (HC-6), she was one of the first two female Helicopter Pilots to make a long deployment to the Indian Ocean as part of a carrier battle group. In October 1990, Lawrence reported to the U.S. Naval Academy where she served as a physics instructor and the novice women’s crew coach.  

Selected by NASA in March 1992, Lawrence reported to the Johnson Space Center in August 1992. She completed one year of training and is qualified for flight assignment as a mission specialist. A veteran of four space flights, Lawrence has logged over 1,225 hours in space. Lawrence retired from NASA in June 2006.

Michelle Howard  
*Class of 1982*  
First female four-star in the U.S. Navy  

**Profile**  
Admiral Howard graduated from the United States Naval Academy in 1982 and from the Army’s Command and General Staff College in 1998, with a Masters in Military Arts and Sciences.  

Admiral Howard served on several ships to include USS Lexington (AVT 16) where she received the secretary of the Navy/Navy League Captain Winifred Collins award in May 1987. This award is given to one woman officer a year for outstanding leadership.  

She took command of USS Rushmore (LSD 47) on March 12, 1999, becoming the first African American woman to command a ship in the U.S. Navy. She has been in several sea and shore assignments such as the first woman to serve as the Vice Chief of Naval Operations. Admiral Howard retired in December 2017.
David Robinson  
*Class of 1987*  
Professional Basketball Player

**Profile**

Recruited by Annapolis to play for the Academy’s basketball team, David Robinson went from being a 6’4” freshman who averaged just 7.6 points per game to a dominating 7’1” College Player of the Year as a senior.

Selected by the San Antonio Spurs with the number one pick in the 1987 National Basketball Association (NBA) draft, the man known as ‘The Admiral’ put off his rookie season until the 1989-90 season due to his commitments to the Navy. This decision clearly had no adverse effect upon him, as he would go on to be named ‘Rookie of the Year.’

He was the first male basketball player to play on three U.S. basketball teams in the Olympic Games. In 2009, he was inducted into the NBA Hall of Fame along with Michael Jordan and John Stockton.

In 1991, he visited the 5th grade class at Gates Elementary School in Texas. He challenged the 94 students of the class to finish high school, promising each of them a $2,000 scholarship if they did so. In 1998 when 50 of those students graduated, he presented each of them with an $8,000 scholarship. In 1997, he donated $5 million dollars to found the Carver Academy, which he continued to donate to in the following years. Due to his commitment to the community, the NBA renamed their Community Assist Award to be the David Robinson Plaque in 2003.

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Erik Kristensen  
*Class of 1995*  
SEAL

**Profile**

Erik Kristensen graduated with honors from the U.S. Naval Academy in 1995. He served first as a Surface Warfare Officer onboard USS Chandler (DDG-996) and as an Officer in Charge (OIC) of a Rigid Hull Inflatable Boat (RHIB) Detachment at Naval Special Warfare Boat Unit TWELVE (SBU-12).

Kristensen subsequently taught at the Naval Academy and attended graduate school prior to transferring to Basic Underwater Demolition/SEAL (BUD/S). His first assignment as a SEAL was OIC of a Platoon at SEAL Team EIGHT.

In March 2005, LCDR Kristensen deployed to Afghanistan as a Task Unit Commander for SEAL Team TEN to support the Global War on Terrorism. On June 28, 2005, he led a daring mission to rescue a four-man SEAL reconnaissance squad engaged in a fierce firefight with overwhelming Taliban forces in rugged 10,000-foot mountains. Kristensen, seven other SEALs, and eight Army ‘Nightstalkers’ died when their MH-47D Chinook helicopter was shot down by a rocket-propelled grenade.

Eleven SEALs died that day. It was the biggest single loss of life for Naval Special Warfare since World War II. These SEALs embodied the Navy’s Core Values of Honor, Courage, and Commitment, and took care of their teammates to the last. Erik Kristensen and those who perished with him are remembered with the greatest respect and gratitude by his fellow SEALs, the Naval Academy, the Navy, and our nation.
VII. USNA First Link Program

Memorial Hall is the most sacred space at the Naval Academy. It is the “sanctuary of sanctuaries” where USNA remembers our honored dead and the unique contributions Naval Academy alumni have made to the nation. Listed in Memorial Hall are the names of over 2,600 graduates killed in action (KIA), missing in action (MIA), or killed in the conduct of military operations (Operational Losses). The names of these men and women, and the stories of their heroism, inspire future generations of leaders and represent the finest traditions of sacrifice and valor.

As part of the First Link Program, each Plebe at the Naval Academy is assigned a unique name from Memorial Hall. It is your responsibility to learn the details of your assigned hero. When you walk into Memorial Hall going forward, it will not be some abstract sense of sacrifice and overwhelming list of names. You will be able to walk to a specific class panel and name, and know their specific story that was assigned to you as your own “first link.” Detailed information for every name in Memorial Hall can be found at www.usnamemorialhall.org.

Honor is not just a concept that involves doing the right thing and not lying, cheating, or stealing. Living a life of honor also means that you can walk into Memorial Hall in the future and pass the “Mem Hall Test”—knowing that you have conducted yourself as an officer in a way that honors the sacrifice of so many that went before you and gave “the last full measure of devotion.” One of your Company Honor Representatives to the Honor Congress will assign you a unique name from Memorial Hall this week as part of your professional development. More information is available from the Officer Representative for the First Link Program, CDR Richardson in the Political Science Department (Nimitz G-099, drichar@usna.edu).

FIRST LINK – ASSIGNED HERO FROM MEMORIAL HALL:

NAME: _______________________________________

USNA CLASS: _________________________________

Sources:
1. The Bluejacket’s Manual
I. Introduction

In preparation for your 3/C cruise, it is important for you to understand more about the enlisted Sailors with whom you will be paired and working with. Enlisted Sailors in the modern Navy have a higher level of training and education than ever before. Many of our Sailors have acquired college credits and degrees either before entering the Navy or as a result of self-development. Today the Navy requires unprecedented technical proficiency and expertise in its enlisted Sailors. Officers are tasked with leading these motivated individuals and developing them into a cohesive team with mission accomplishment as the highest priority. Given the quality and diversity of these sailors, officers will find leading them both challenging and rewarding. The trust and professionalism shared between an officer and his or her Sailors starts with an appreciation and respect for the value of these individuals and a desire to know them beyond their productivity levels. Therefore, it is essential that officers learn about their Sailors, how they are trained, and how they advance.

For all branches of the military, the initial enlistment requires an eight year service obligation. The eight years is broken into active, reserve, and/or inactive reserve service. For example, the Master at Arms rating requires a four year active obligation, and the remaining four years will be spent in the Individual Ready Reserve (IRR) status. While in the IRR status, you are under no obligation to attend Reserve drills but you could be called back to active duty if a national need arises.

II. Paygrade, Rating, and Rates

Every member of the Navy is either nonrated, rated, or a commissioned officer. Men and women who enlist in the Navy begin as nonrated personnel. A combination of experience and specialized training will allow them to move into a rated category and then advance through a number of levels. Rated personnel are called ‘petty officers.’ Nonrated and rated personnel together are referred to as ‘enlisted personnel.’

Paygrade

Everyone in the Navy has a paygrade. A paygrade defines a person’s relative standing in the Navy and, of course, determines how much money they are paid per month. A new enlisted recruit enters the Navy as an E-1, which is the first enlisted paygrade. Enlisted personnel advance through their paygrades by taking advancement exams (E-4 though E-7) and having their records evaluated by a selection board (E-7 through E-9).

Rating

A rating is an occupational specialty in the Navy. In order to qualify for a rating, a Sailor must work their way through the general apprenticeship levels (E-1 through E-3) or attend a service school. Personnel in paygrades E-1 through E-3 can be considered either designated or non-designated. Non-designated personnel pick one of three available Professional Apprenticeship Career Track (PACT) programs: Airman, Seaman, or Fireman. A PACT Sailor seeking to advance into a specific rating is considered a ‘striker’ and is required to achieve a significant level of experience and training toward a particular rating to formally recognize as a ‘designated striker.’ Once designated a formal rating abbreviation is added to the general rate and paygrade (i.e., BMSA, YNSR, etc…)

There are three categories of ratings: general, service, and emergency.

• General ratings are occupations for paygrades E-4 through E-9. Each general rating has a distinctive badge. Examples are OS, GM, ET.
• Service ratings are those general ratings that are subdivided into specific services. Examples are Gas-turbine systems Technician (GS), which is subdivided into GSE (electrical) and GSM (mechanical).
• Emergency Ratings can be created in times of war or national emergency and are ratings not normally needed by the Navy. There are currently no emergency ratings active today.
The following is a list of common ratings that you should know by name and abbreviation:

- AB (Aviation Boatswain’s Mate)
- AT (Aviation Electronics Technician)
- AD (Aviation Machinist’s Mate)
- AE (Aviation Electrician’s Mate)
- AO (Aviation Ordnanceman)
- AS (Aviation Support Equipman Technician)
- AW (Aviation Warfare Systems Operator)
- CS (Culinary Specialist)
- CT (Cryptologic Technician)
- DC (Damage Controlman)
- EM (Electricians Mate)
- EN (Engineman)
- ET (Electronics Technician)
- EOD (Explosive Ordnance Disposal Technician)
- FC (Fire Controlman)
- GM (Gunner’s Mate)
- HM (Hospital Corpsman)
- IT (Information Systems Technician)
- IS (Intelligence Specialist)
- LN (Legalman)
- LS (Logistics Specialist)
- MA (Master-at-Arms)
- MC (Mass Communications Specialist)
- MM (Machinist’s Mate)
- MU (Musician)
- NC (Navy Counselor)
- OS (Operations Specialist)
- QM (Quartermaster)
- PS (Personnel Specialist)
- SO (Special Warfare Operator)
- ST (Sonar Technician)
- YN (Yeoman)

**Rate**

Petty Officers are identified by a combination of letters and/or numbers that represent the individual’s paygrade and rating. This is known as an enlisted personnel’s **rate**. The first two or three letters represent the general or service rating; the number or letter(s) following indicate the paygrade. An enlisted person who identifies him/herself as BM2 Smith would be a Boatswain’s Mate Second Class. The ‘BM’ is the general service rating and the ‘2’ indicates the paygrade of an E-5. Examples:

- HM3 Hospital Corpsman Third Class (Petty Officer)
- LN2 Legalman Second Class (Petty Officer)
- OS1 Operations Specialist First Class (Petty Officer)
- LSC Chief Logistics Specialist
- CTTC Senior Chief Cryptological Technician-Technical
- MMCM Master Chief Machinist Mate

**III. Roles and Responsibilities**

**Petty Officers**

In the Navy, E-4 to E-6 personnel are considered non-commissioned officers (NCOs), and are called Petty Officers. Petty Officers perform not only the duties of their specific career field but also lead junior enlisted personnel. They take responsibility for their subordinates, address grievances, inform the chain of command on matters pertaining to good order and discipline, and may even have to place personnel on report. The title Petty Officer comes from the French word *petit* meaning small. In medieval England, villages had several ‘petite’ or ‘petty’ officers who were subordinate to major officials. Thus, Petty Officers are assistants to senior officers.

**Chief Petty Officers**

In the Navy, E-7 to E-9 personnel are senior NCOs collectively known as the Chief’s Mess. In addition to elading their Enlisted Sailors, Chiefs are specifically tasked, in writing, with the duty of training Junior Officers (Ensign, Lieutenant (j.g.), Lieutenant, and Lieutenant Commander). They have separate berthing and dining facilities (where feasible), wear khaki uniforms similar in appearance to a commissioned officer’s, and perform separate duties from other enlisted Sailors. Advancement to Chief Petty Officer (E-7) or above requires selection by a promotion board comprised of Chief Petty Officers and presided by a Navy Captain. Beyond the normal examination score, a technical exam determines an E-6’s board eligibility. The proper form of address to a Chief Petty Officer is ‘Chief,’ ‘Senior Chief,’ or ‘Master Chief.’
Command Master Chief (CMC)

After obtaining Master Chief Petty Officer, service members may choose to further their career by becoming a Command Master Chief Petty Officer (CMC). A CMC is considered to be the senior-most enlisted service member within a command, and is the special assistant to the Commanding Officer in all matters pertaining to the health, welfare, job satisfaction, morale, utilization, advancement and training of the command’s enlisted personnel. CMC insignia are similar to the insignia for Master Chief, except that the rating symbol is replaced by an inverted five-point star, reflecting a change in their rating.

IV. Uniform Insignia

Enlisted personnel will wear rating badges or insignias on all uniforms with the exception of non-rated personnel when they wear utilities and coveralls. Insignias and badges with no rating specific markings will be worn on utilities or coverall for E-4 personnel and above. Personnel in paygrades E-7 through E-9 wear collar devices (i.e., gold anchors with USN and fouled chain). A Senior Chief will have one Silver Star above the anchor, and a Master Chief will have two silver stars. When wearing either the peacoat or outer jacket, rating badges or collar devices will be worn with the exception of non-rated personnel. An E-4 (Petty Officer Third Class) wears one chevron on their rating badge, an E-5 (Petty Officer Second Class) has two, and an E-6 (Petty Officer First Class) has three.

The insignia shown below depict that a Boatswain’s Mate (BM). The crossed anchors below the ‘crow’ identify the individual as a BM on the rating badge. Notice the star in the place of the anchors on the insignia of the Master Chief Petty Officer of the Navy. The star shows the individual is a CMC.

<table>
<thead>
<tr>
<th>Non-Commissioned Officer and Enlisted Rate Structure of the United States Navy</th>
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<tbody>
<tr>
<td>Master Chief Petty Officer of the Navy</td>
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<tr>
<td>E-9</td>
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<tr>
<td>![Insignia Image]</td>
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<tr>
<td>Petty Officer Second Class</td>
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<tr>
<td>E-5</td>
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<tr>
<td>![Insignia Image]</td>
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<tr>
<td>Note: Personnel in paygrades E-3 and below are identified by their diagonal stripes and the color assigned to their prospective community.</td>
</tr>
</tbody>
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General Apprenticeships  
Seaman  
Airman  
Fireman  
Hospital Corpsman  
Constructionman  

Color of Stripes  
White on Black Background/Black on White Background  
Green Stripes on Black or White Background  
Red Stripes on Black or White Background  
White on Black Background/Black on White Background  
Light Blue Stripes on Black or White Background
V. Naval Enlisted Classification (NEC) Codes

The Navy Enlisted Classification (NEC) system, of which the NEC coding system is a part of, supplements the enlisted rating structure in identifying personnel on active or inactive duty with special skills and billets in manpower authorizations that require these skills. NEC codes identify a non-rating wide skill, knowledge, aptitude, or qualification that must be documented to identify both people and billets for management purposes. For example, not all Boatswain’s Mates (BM) are qualified LCAC Loadmaster’s. They would go through the qualification process and earn the NEC BM-700B. This tells the detailer – the administrative personnel at Navy Personnel Command (NAVPERSCOM) in Millington, TN, who match individuals to specific assignments (billets) in the Navy - that this particular Sailor can be assigned an LCAC Loadmaster billet anywhere in the Navy. With few exceptions, NECs are assigned to personnel by the Enlisted Personnel Management Center (EPMAC) in New Orleans.

There are five types of NEC codes: Entry Career Field, Rating Career Field, Special Career Field, Tracking, and Planning.

VI. Service Schools

For some ratings, graduation from a particular service school is necessary for advancement. Selection for a service school depends on the rate, time in service, current duty assignment, school quotas, and the operational schedule of the Sailor’s unit. The five types of enlisted service schools are:

- **Class A** – Provides the basic technical knowledge required for job performance and further specialized training. A NEC may be awarded to identify the skill.
- **Class C** – Advanced skills and techniques needed to perform a particular job are taught. A NEC may also be awarded to identify the level of skill.
- **Class E** – Designated for professional education leading to an academic degree.
- **Class F** – Trains fleet personnel who are en route to, or are members of ships’ companies. Also provides individual training such as refresher, operator, maintenance, or technical training of less than 13 calendar days. A NEC is not awarded.
- **Class R** – This is the basic school that provides initial training after enlistment, also known as ‘boot camp’ or ‘recruit training.’ It prepares the recruit for early adjustment to military life by teaching basic skills and knowledge about military subjects. Class R schooling for all recruits is conducted at Recruit Training Center, Great Lakes, IL.

VII. Enlisted Advancement

The Navy Advancement Center (N3 Department) is responsible for Navy-wide administration of the Navy Enlisted Advancement System. Advancement in the Navy means greater responsibility, increased pride, better pay, and more privileges. Advancements to Petty Officer in the Navy are made through centralized competition based on a Final Multiple Score (FMS) process with Sailor evaluations and a measure of rating knowledge as the primary elements. The general requirements for advancement are:

- Recommendation by the Commanding Officer/OIC
- Advancement to E-2 and E-3 is based on Time-In-Rate (TIR), 9 months in length, and performance.
- Advancement to E-4 through E-9 is based on a combination of time in service, TIR, awards, performance (evaluations), and score on the annual/semi-annual exams held in March and September for E-4 through E-6. For E-7 the advancement exam is held annually, in January (determines board eligibility). A selection board is convened in July and results are posted in early August. For E-8 and E-9, advancement is based on performance and board selection.
- Be in proper path of advancement
- Fulfill special requirements (citizenship, security, medical, ASVAB) for certain ratings.
- Successfully complete Service School; if required
- Meet all physical readiness/body fat standards per OPNAVINST 6110.1(series)
- Eligibility documented in electronic service record entry
The advancement-in-rate examination is a tool used, as part of the Final Multiple Score, to help rank qualified candidates on the basis of rating and professional military knowledge at the next higher rate. Sailors are ranked within their rating/paygrade, and the number of Sailors advanced is based on Navy needs.

VIII. Shipboard Familiarization

Bullseyes
All shipboard spaces are given a ‘bullseye’ to identify the deck, frame, and distance from centerline at which they are located. Just as a town or city has a system using street signs and addresses to aid in navigation, so does a Navy ship. The top sequence of numbers on a bullseye refers to the deck, frame, and distance from centerline—for example, 4-95-3-M means that the space is located on the 4th deck, at the 95th frame, the 3rd compartment to starboard of centerline (because 3 is an odd number—‘port even, starboard odd’), and is a magazine. Further compartment letter identifiers (the last letter in a bullseye) can be found in Chapter 12 of the Bluejacket’s Manual.

Enlisted Deck Watches
- Boatswain’s Mate of the Watch (BMOW): As the senior enlisted deck watchstander, the BMOW is charged with assisting the Officer of the Deck in carrying out the daily routine. The BMOW is responsible for ensuring all stations are manned, passing word, supervising all other enlisted deck watchstanders, and maintaining the appearance and cleanliness of the pilothouse.
- Quartermaster of the Watch (QMOW): As the navigator’s representative on the bridge, the QMOW is responsible for fixing the ship’s position, advising the Officer of the Deck with respect to navigation, maintaining the deck log, and raising or lowering signal flags as required.
- Helmsman: The helmsman is responsible for steering the ship and maintaining a steady course in accordance with the conning officer’s standard commands.
- Lee Helmsman: The lee helmsman is responsible for controlling the ship’s engines in accordance with the conning officer’s standard commands.
- Petty Officer of the Watch (POOW): Similar responsibilities to the BMOW, but only stationed in port. Subordinate to the Officer of the Deck, the POOW is responsible for passing word, carrying out the daily routine, maintaining the deck log, and maintaining the appearance and cleanliness of the quarterdeck.

Topside Responsibilities and Identification
Many deck evolutions onboard a Navy ship are potentially hazardous and require personnel involved in these evolutions to wear the proper Personal Protective Equipment (PPE), which includes hard hats. These evolutions range from launching the ship’s boats to anchoring or even refueling while underway. One can easily determine which responsibilities each person has by the color hard hat they are wearing:
- White: Officer/CPO or Safety Observer
- Yellow: Petty Officer in Charge (POIC)
- Blue: Line Handler/Deck Rigger
- Purple: Fuel Handler
- Red: Line Thrower Gunner
Typical Divisional Chain of Command

Sources:
6. The Bluejacket’s Manual
7. OPNAVINST 3120.32D (Standard Organization and Regulations Manual of the U.S. Navy)
8. The Watch Officer’s Guide
9. Navedtra 14343 (Boatswain’s Mate)
WEEK 5: MISSION AND ORGANIZATION OF THE NAVY

I. Mission

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.

II. Ethos

We are the United States Navy, our Nation’s sea power – ready guardians of peace, victorious in war.

We are professional Sailors and civilians – a diverse and agile force exemplifying the highest standards of service to our Nation, at home and abroad, at sea and ashore.

Integrity is the foundation of our conduct; respect for others is fundamental to our character; decisive leadership is crucial to our success.

We are a team, disciplined and well prepared, committed to mission accomplishment. We do not waver in our dedication and accountability to our Shipmates and families.

We are patriots, forged by the Navy’s core values of Honor, Courage, and Commitment. In times of war and peace, our actions reflect our proud heritage and tradition.

We defend our Nation and prevail in the face of adversity with strength, determination, and dignity.

We are the United States Navy.

III. The Chief of Naval Operation’s Vision

The Chief of Naval Operations (CNO), Admiral John Richardson, has provided his guidance for the Navy with the publication of “A Design for Maintaining Maritime Superiority”. This document outlines his vision for the Navy. The mission statement is:

The United States Navy will be ready to conduct prompt and sustained combat incident to operations at sea. Our Navy will protect America from attack and preserve America’s strategic influence in key regions of the world. U.S. naval forces and operations – from the sea floor to space, from deep water to the littorals, and in the information domain – will deter aggression and enable peaceful resolution of crises on terms of acceptable to the United States and our allies and partners. If deterrence fails, the Navy will conduct decisive combat operations to defeat any enemy.

Core Attributes

Integrity. Our behaviors as individuals and as an organization align with our values as a profession. We actively strengthen each other’s resolve to act consistently with our values. As individuals, as teams, and as a Navy, our conduct must always be upright and honorable in both public and when nobody is looking.

Accountability. We are a mission-focused force. We achieve and maintain high standards. Our actions support our strategy. We clearly define the problem we are trying to solve and the proposed outcomes. In execution, we honestly assess our progress and adjust as required – we are our own toughest critic.

Initiative. On their own, everybody strives to be the best they can be – we give 100% when on the job. Our leaders take ownership and act to the limit of their authorities. We foster a questioning attitude and look at new ideas with an open mind. Our junior teammate may have the best idea; we must be open to capturing that idea.

Toughness. We can take a hit and keep going, tapping all sources of strength and resilience: rigorous training for operations and combat, the fighting spirit of our people, and the steadfast support of our families. WE DON’T GIVE UP THE SHIP!
IV. National Military Structure

POTUS
The President of the United States serves as the Commander in Chief (CINC) of all U.S. military forces. The President is responsible to the citizens of the United States for maintaining a military that performs our nation’s security needs.

SecDef
The Secretary of Defense is the principal defense policy adviser to the President and is responsible for the formulation and execution of general defense policy. Subordinate to the Secretary of Defense are the individual service secretaries, including the Secretary of the Navy.

JCS
The Joint Chiefs of Staff advise the CINC. There are seven four-star officers on the Joint Chiefs of Staff:

1. Chairman of the Joint Chiefs of Staff  Gen Joseph Dunford, USMC
2. Vice-Chairman of the Joint Chiefs of Staff  Gen Paul Selva, USAF
3. Commandant of the Marine Corps  Gen David Berger, USMC
4. Chief of Naval Operations  ADM John Richardson, USN
5. Chief of Staff of the Army  Gen Mark Milley, USA
6. Chief of Staff of the Air Force  Gen David Goldfein, USAF
7. Chief of the National Guard Bureau  Gen Joseph Lengyel, ARNG

The Chairman is the principal military adviser to the President, Secretary of Defense, and the National Security Council (NSC); however, all JCS members are military advisers by law. Since the National Security Act of 1947, the Joint Chiefs of Staff have served as planners and advisers, although they have no executive authority to command combatant forces. NOTE: The CJCS, VCJCS, CNO, and Army COS will change in the Fall of 2019.

NSC
The National Security Act of 1947 was the first definitive legislative statement “to provide for 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.” The act went on to say that it was the responsibility of the Joint Chiefs of Staff to “establish unified commands in strategic areas when such unified commands are in the interest of national security,” and the President would establish unified and specified combatant commands to perform military missions.

Thus, one outcome was the establishment of the National Security Council to consider national security issues that require Presidential decision. The National Security Council is chaired by the President. Its regular attendees (both statutory and non-statutory) are:

1. The Vice President
2. The Secretary of State
3. The Secretary of the Treasury
4. The Secretary of Defense
5. The Assistant to the President for National Security Affairs

The Chairman of the Joint Chiefs of Staff (CJCS) is the statutory military advisor to the Council and the Director of National Intelligence is the intelligence advisor.

V. Department of the Navy Leadership

SECNAV
The Secretary of the Navy has authority over both the Navy and Marine Corps. He is responsible for conducting all the affairs of the Department of the Navy, including recruiting, organizing, supplying, equipping, training, mobilizing, and demobilizing. The Secretary also oversees the construction, outfitting, and repair of naval ships, equipment, and facilities.
CNO
The Chief of Naval Operations (CNO) is the senior military officer in the Navy. The CNO is a four-star admiral and is responsible to the Secretary of the Navy for the command, utilization of resources and operating efficiency of the operating forces of the Navy and of the Navy shore activities assigned by the Secretary. The CNO is responsible for manning, training, and equipping the naval force.
A member of the Joint Chiefs of Staff, the CNO is the principal naval advisor to the President and to the Secretary of the Navy on the conduct of war, and is the principal advisor and naval executive to the Secretary on the conduct of naval activities by the Department of the Navy. Assistants are the Vice Chief of Naval Operations (VCNO), the Deputy Chiefs of Naval Operations (DCNOs) and a number of other ranking officers. These officers and their staffs are collectively known as the Office of the Chief of Naval Operations (OpNav).

CMC
The Commandant of the Marine Corps (CMC) is the senior military officer in the Marine Corps. The Commandant is a four-star general and is responsible to the Secretary of the Navy for the command, utilization of resources, and operating efficiency of the operating forces of the Marine Corps.

A member of the Joint Chiefs of Staff, the CMC is the principal Marine advisor to the President and to the Secretary of the Navy on the conduct of war, and is the principal advisor and Marine executive to the Secretary on the conduct of USMC activities.

VI. Chains of Command
The President and the Secretary of Defense (SecDef) exercise authority, direction, and control of the Armed Forces through two distinct chains of Command and Control (C2). One branch runs from the President, through SecDef to the Component Commanders (CCDRs) for missions and forces assigned to their commands – operational chain of command. For purposes other than the operational direction of the CCDRS, the chain of command runs from the President to SecDef to the Secretaries of the Military Departments and, as prescribed by the Secretaries, to the commanders of Military Service forces – administrative chain of command.
Operational Chain of Command
The operational chain of command is tasked with using the forces provided by all four services to carry out the orders of the National Command Authority (NCA). The NCA consists only of the POTUS and the SecDef or their duly deputized alternates or successors. The Navy operational chain of command is:

1. NCA (POTUS and SecDef)
2. Unified Combatant Commander (CCDR) – Operational commanders by geographic area of responsibility (AOR). (i.e. COMUSPACOM)
3. Subordinate Component Commander – Responsible to Unified Commanders for the employment of forces/capabilities in the respective AOR. (i.e. COMUSPACFLT)
4. Numbered Fleet Commander – Responsible for operational naval forces supporting the Component Commanders. (e.g. 2nd, 3rd, 4th, 5th, 6th, 7th, and 10th Fleets)
5. Task Force Commander – Subordinate to the Numbered Fleet Commander and responsible for the planning and execution of operations to achieve military objectives. (i.e. CTF-XX where the first digit would indicate the Numbered Fleet and the second digit would indicate the specific Task Force)
6. Task Group Commander – Subordinate to the Task Force Commander. A Carrier Strike Group (CSG) or Expeditionary Strike Group (ESG) Commander. (i.e. CTG-XX.X where the last digit would indicate the Task Group)
7. Task Unit Commander – Functional Warfare Commanders generally within the CSG/ESG. (i.e. CTU-XX.X.X where the last digit would indicate the Task Unit)
8. Task Element Commander – An individual platform or group of platforms (ships, aircraft, etc.) with a special purpose such as a Surface Action Group (SAG). (CTE-XX.X.X.X.X where the last digit would indicate the Task Element)

Administrative Chain of Command
The administrative chain of command is tasked with manning, training, and equipping forces and is responsible for personnel management, supply, services, maintenance, certification, and other matters not directly related to the operational chain of command. The Navy administrative chain of command is:

1. President of the United States The Honorable Donald J. Trump
2. Secretary of Defense The Honorable Mark Esper
3. Secretary of the Navy The Honorable Richard Spencer
4. Chief of Naval Operations Admiral John Richardson
5. Fleet Commanders
   a. U.S. Fleet Forces Command (dual hatted as the Commander U.S. Atlantic Fleet)
   b. Commander U.S. Pacific Fleet
6. Type Commanders (TYCOM) – The TYCOM controls units during primary and intermediate training cycles before the units move under the control of a Fleet Commander. Establish policy, control funds, and perform all administrative functions in their respective warfare specialties in their geographic area.
   a. Ships: Commander Naval Surface Forces Atlantic and Pacific (COMNAVSURFLANT and COMNAVSURFPAC)
   b. Air: Commander Naval Air Forces Atlantic and Pacific (COMNAVAIRLANT and COMNAVAIRPAC). Aircraft carriers, aircraft squadrons, and air stations are under the administrative control of the appropriate Commander Naval Air Force.
   c. Submarines: Commander Submarine Forces Atlantic and Pacific (COMSUBLANT and COMSUBPAC)
   d. Navy Expeditionary Command (NECC)
   e. Naval Network Warfare Command (NETWARCOM)
7. Group Commanders – Responsible to TYCOMs for administrative control of similar types of Fleet elements (e.g., carrier, cruiser-destroyer, fighter aircraft, etc.) in homeport areas.
8. Squadron Commanders – Responsible to Group Commanders for administrative control of a squadron of similar ship/submarine types.
9. Unit Commanders – Individual ship, submarine, or aviation squadron Commanding Officers responsible to squadron commanders for administrative control of their ship.
Command and Control

Command and control is the exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. Command and control ties together all the operational functions and tasks and applies to all levels of war and echelons of command across the range of military operations. C2 is the means by which an operational commander synchronizes and integrates force activities in order to achieve unity of command. Unity of effort over complex operations is made possible through decentralized execution of centralized, overarching plans. Unity of command is strengthened through consideration of the following:

- Clearly defined authorities and roles
- Logical, standardized information management practices
- Explicit and implicit communication
- Timely decision making
- Recognized coordination mechanisms
- Disciplined battle rhythm
- Responsive, dependable, and interoperable support systems
- Shared situational awareness
- Mutual trust

Command and control of naval forces reflects our operational environment, traditions, and culture. Despite the changes in today’s environment, naval forces have retained unique characteristics in the capabilities we provide, as well as the way we function, compared to the other Services/components. Unlike Army and Air Force organizations, most naval forces do not undergo a lengthy period of transition from garrison to deployed and operational status. Naval forces are operational as soon as they “take in all lines.” Being essentially self-deploying, naval forces are able to operate in support of strategic objectives without affecting another nation’s sovereignty and do not necessarily require host-nation permission for their presence. As such, naval forces provide persistent military capabilities that are immediately available to the Component Commander. Naval tactical commanders are expected to take initiative using the operational-level commander’s guidance, which defines what needs to be done but not how to do it. Our C2 philosophy is derived from the characteristics and complexity of the maritime domain. Even in an era of nearly instantaneous communications and increasingly complex relationships among the forces of other Services and nations, having the subordinate commander execute operations in accordance with a thorough understanding of the commander’s intent is a key tenet of the naval forces’ C2 philosophy. Our leaders are trained, educated, groomed, and held accountable for these exceptional authorities and responsibilities.

VII. Unified Combatant Commands

GEOGRAPHIC CCMDs
Unified Combatant Commands (CCMDs) are composed of forces from two or more services, have broad and continuing missions, and are normally organized on a geographical basis. There are currently ten unified commands; six are geographic (Geographic Combatant Commands – GCC) and four are functional. They are listed below along with the headquarters (HQ) locations.

Geographic:
1. U.S. European Command (USEUCOM) – Patch Barracks in Stuttgart, Germany
2. U.S. Indo-Pacific Command (USINDOPACOM) – Camp H. M. Smith in Honolulu, HI
3. U.S. Southern Command (USSOUTHCOM) – Miami, FL
4. U.S. Central Command (USCENTCOM) – MacDill AFB in Tampa, FL
5. U.S. Africa Command (USAFRICOM) – Kelley Barracks in Stuttgart, Germany
6. U.S. Northern Command (USNORTHCOM) – Peterson AFB in Colorado Springs, CO

Functional:
7. U.S. Special Operations Command (USSOCOM) – MacDill AFB in Tampa, FL
8. U.S. Transportation Command (USTRANSCOM) – Scott AFB in St. Clair County, IL
9. U.S. Strategic Command (USSTRATCOM) – Offutt AFB in Omaha, NE
10. U.S. Cyber Command (USCYBERCOM) – Fort Meade, MD

VIII. Numbered Fleets
As previously stated, Combatant Commanders (CCDRs) have subordinate Component Commanders responsible for employment of their forces in the respective AOR. Below the Component Commanders are Numbered Fleet Commanders. The graph below depicts alignment of those Fleet Commanders with their respective area of operation (AO), headquarters (HQ) location, and Combatant Command (CCMD).

<table>
<thead>
<tr>
<th>Fleet</th>
<th>Area of Operation</th>
<th>Headquarters</th>
<th>CCMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SECOND</td>
<td>U.S. East Coast and Northern Atlantic</td>
<td>Norfolk, Virginia</td>
<td>NORTHCOM</td>
</tr>
<tr>
<td>THIRD</td>
<td>Eastern and Central Pacific</td>
<td>San Diego, California</td>
<td>INDOPACOM</td>
</tr>
<tr>
<td>FOURTH</td>
<td>Caribbean Ocean, surrounding waters of Central and South America</td>
<td>Mayport, Florida</td>
<td>SOUTHCOM</td>
</tr>
<tr>
<td>FIFTH</td>
<td>Middle East (Red Sea, Arabian Sea, Persian Gulf)</td>
<td>Manama, Bahrain</td>
<td>CENTCOM</td>
</tr>
<tr>
<td>SIXTH</td>
<td>Mediterranean Sea</td>
<td>Naples, Italy</td>
<td>EUCOM</td>
</tr>
<tr>
<td>SEVENTH</td>
<td>Western Pacific and Indian Ocean</td>
<td>Yokosuka, Japan</td>
<td>INDOPACOM</td>
</tr>
<tr>
<td>TENTH</td>
<td>Cyber Warfare</td>
<td>Fort Meade, Maryland</td>
<td>CYBERCOM</td>
</tr>
</tbody>
</table>
In 2011, Second Fleet was disestablished and many of its assets and responsibilities were merged into USFF Command. In July 2018, CNO Adm. John Richardson reestablished U.S. Second Fleet headquartered out of Norfolk, VA. Commander, Second Fleet, exercises operational and administrative authorities over assigned ships, aircraft, and landing forces on the East Coast and northern Atlantic Ocean, ultimately reporting to USFF.

Sources:
2. Naval Doctrine Publication 1 (NDP-1)
3. Joint Doctrine Publication 1 (JP-1)
4. OPNAVINST 5400.45
WEEK 6: OPERATIONAL MISSION AREA, CAPABILITIES, AND THE CURRENT MARITIME STRATEGY

I. Operational Mission Areas

Navy ships, staffs, and reserve components are designed and/or organized to perform one or more mission areas. Mission areas define how the Navy executes naval warfare. Navy mission areas are continuously evolving as new weapons, sensors, and capabilities are introduced into the maritime domain. Listed below are the Navy’s operational mission areas.

1. **AMPHIBIOUS WARFARE (AMW).** Amphibious Warfare involves military operations launched from the sea by an amphibious force (AF), embarked in ships or craft with the primary purpose of introducing a landing force (LF) ashore to accomplish the assigned mission. An AF is an amphibious task force (ATF) and an LF together with other forces that are trained, organized, and equipped for amphibious operations.

2. **ANTISUBMARINE WARFARE (ASW).** Operations conducted with the intention of denying the enemy the effective use of submarines.

3. **AIR WARFARE (AW).** The detection, tracking, destruction, or neutralization of enemy air platforms and airborne weapons, whether launched by the enemy from air, surface, subsurface, or land platforms.

4. **BALLISTIC MISSILE DEFENSE (BMD).** All active and passive measures designed to detect, identify, track, and defeat attacking ballistic missiles (and entities), in both strategic and theater tactical roles, during any portion of their flight trajectory (boost, post-boost, midcourse, or terminal) or to nullify or reduce the effectiveness of such attack.

5. **COMMAND, CONTROL, AND COMMUNICATIONS (CCC).** Providing communications and related facilities for coordination and control of external forces, and control of own unit’s capabilities.

6. **EXPEDITIONARY WARFARE (EXW).** A military operation conducted by an armed force to accomplish a specific objective in a foreign country. Expeditionary Operations encompass the entire range of military operations, from foreign humanitarian assistance to forcible entry. The defining characteristic of expeditionary operations is the projection of force into a foreign setting. Includes Naval Special Warfare, Mine Warfare, Amphibious Warfare, Navy Expeditionary Combat, and Sea Basing.

7. **INFORMATION OPERATIONS (IO).** The integrated employment of the core capabilities of electronic warfare, computer network operations, psychological operations, military deception, and operations security, in concert with specified supporting and related capabilities, to influence, disrupt, corrupt, or usurp adversarial human and automated decision making while protecting our own.

8. **INTELLIGENCE OPERATIONS (INT).** The variety of intelligence and counterintelligence tasks that are carried out by various intelligence organizations and activities within the intelligence process. Intelligence operations include planning and direction, collection, processing and exploitation, analysis and production, dissemination and integration, and evaluation and feedback.

9. **MINE WARFARE (MIW).** The strategic, operational, and tactical use of mines and mine countermeasures. Mine warfare is divided into two basic subdivisions: the laying of mines to degrade the enemy’s capabilities to wage land, air, and maritime warfare and the countering of enemy-laid mines to permit friendly maneuver or use of selected land or sea areas.

10. **MOBILITY (MOB).** A quality or capability of military forces that permits them to move from place to place while retaining the ability to fulfill their primary mission.

11. **STRIKE WARFARE (STW).** Naval operations to destroy or neutralize enemy targets ashore, including attacks against strategic or tactical targets, such as manufacturing facilities and operating bases, from which the enemy is capable of conducting or supporting air, surface, or subsurface operations against friendly forces.

12. **SURFACE WARFARE (SUW).** That portion of maritime warfare in which operations are conducted to destroy or neutralize enemy naval surface forces and merchant vessels.
II. Capabilities of the U.S. Navy

The Carrier Strike Group (CSG) and the Expeditionary Strike Group (ESG) are the two largest operational units within the U.S. Navy.

The CSG is a principal element of U.S. power projection capability. It is a flexible naval force that can operate in confined waters or in the open ocean, during day and night, and in all weather conditions. It continues to be centerpiece of our naval force. Although tailorable, a CSG may consist of:

- One Aircraft Carrier (CVN)
- One Guided Missile Cruiser (CG)
- Two Guided Missile Destroyers (DDG)
- One Attack Submarine (SSN)
- One Combined Ammunition, Oiler, and Supply Ship
- One Carrier Air Wing (approximately 70 fixed and rotary wing aircraft)
  - F/A-18E/F Hornets and Super Hornets
  - EA-18G Growlers
  - F-35C Lightning II
  - E-2D Hawkeyes
  - C-2A Greyhounds
  - MH-60R “Romeo” Seahawks
  - MH-60S “Sierra” Knighthawks

Within the CSG, the principal role of the carrier and its air wing is to provide the primary offensive firepower while the other units provide defense and support. However, these roles are not exclusive. Other units in the CSG undertake offensive operations (i.e. launching cruise missiles), and the air wing contributes to its defense (i.e. combat air patrols and airborne anti-submarine missions). Thus, command and control of the CSG is exercised by mission (i.e. ASW, AW, etc.) through the Composite Warfare Commander (CWC) concept.

The ESG centers on the flexibility of amphibious ships, an embarked Marine Expeditionary Unit (MEU), and surface and submarine combatants. The total ESG provides operational freedom and expanded warfare capabilities on land and at sea. There are eight core capabilities provided by ESGs: power projection, maritime superiority (air, surface and subsurface), maritime special operations, amphibious operations, military operations other than war, enabling operations, supporting operations, and Joint Task Force (JTF) enabler. Although tailorable, a typical ESG consists of:

- One Amphibious Assault Ship (LHA or LHD)
- One Amphibious Transport Dock (LPD) Ship
- One Dock Landing Ship (LSD)
- One Marine Expeditionary Unit (MEU)
- AV-8B Harrier IIs
- MV-22 Ospreys (V/STOL)
- AH/1W Super Cobra helicopters
- UH-1 Huey helicopters
- MH-60S “Sierra” helicopters
- CH-53D Sea Stallion helicopters
- CH-46D Sea Knight helicopters
- KC-130J Super Hercules
- Surface combatants and submarines

An ESG combines an Amphibious Readiness Group (ARG) with the additional combat power of surface combatants and submarines. Amphibious landing ships transport troops, vehicles, and supplies wherever they are needed and provide great flexibility to commanders planning operations. However, amphibious ships are not designed for fighting hostile naval forces, especially highly maneuverable patrol craft found in coastal environments. In order to counter those threats and provide Naval Surface Fire Surface (NSFS) in support of amphibious operations, the Navy transforms ARGs into ESGs by assigning dedicated surface and submarine combatants—cruisers, destroyers, and submarines—to support the amphibious ships.
Thus, an ESG is a scalable, adaptable force, capable of planning and executing rapid strike and combat operations while operating in a limited non-permissive (i.e. low threat) environment. ESGs combine a highly mobile group of platforms with a lean command and authority structure. This rapid response is enabled by the capability to rapidly coordinate, deploy, and move to locations where they are needed. In addition, ESGs are designed to be self-sustaining, as well as capable of autonomous action based on being comprised of a diverse set of capabilities. A wide range of missions can be supported, from amphibious assault to disaster relief, based on the composition of integrated Navy and Marine Corps forces.

II. Strategic Guidance

National Security Strategy (NSS)

- In December 2017, President Trump’s Administration released a new National Security Strategy outlining the necessary strategic direction to advance America’s interests and respond to growing political, economic, and military competition. The Strategy identifies four vital national interests, known as the “four pillars”:
  - **Protect the American People, the Homeland, and American way of life:** We will strengthen control of our borders and reform our immigration system. We will protect our critical infrastructure and go after malicious cyber actors. A layered missile defense system will defend our homeland against missile attacks. And we will pursue threats to their source, so that jihadist terrorists are stopped before they ever reach our borders.
  - **Promote American Prosperity:** We will rejuvenate the American economy for the benefit of American workers and companies. We will insist upon fair and reciprocal economic relationships to address trade imbalances. The United States must preserve our lead in research and technology and protect our economy from competitors who unfairly acquire our intellectual property. And we will embrace America’s energy dominance because unleashing abundant energy resources stimulates our economy.
  - **Preserve Peace through Strength:** By rebuilding our military so that it remains preeminent, deters our adversaries, and if necessary, is able to fight and win. We will compete with all tools of national power to ensure that regions of the world are not dominated by one power. We will strengthen America’s capabilities—including in space and cyberspace—and revitalize others that have been neglected. Allies and partners magnify our power. We expect them to shoulder a fair share of the burden of responsibilities to protect against common threats.
  - **Advance American Influence:** A world that supports American interests and reflects our values makes America more secure and prosperous. We will compete and lead in multilateral organizations so that American interests and principles are protected. America’s commitment to liberty, democracy, and the rule of law serves as an inspiration for those living under tyranny. We can play a catalytic role in promoting private-sector-led economic growth helping aspiring partners become future trading and security partners. And we will remain a generous nation, even as we expect others to share responsibility.

National Defense Strategy (NDS)

- In January 2018, the Secretary of Defense, Secretary Mattis, published our National Defense Strategy. As the Deputy Secretary, Pat Shanahan, explains, “The NDS builds upon the President’s National Security Strategy, and is the living framework that will drive DoD plans, organization, and activities.” It is the Department of Defense’s enduring mission to provide combat-credible military forces needed to deter war and protect the security of our nation. The central challenge to the US prosperity and security is the *reemergence of long-term, strategic competition* by what the NSS classifies as revisionist power. The SECDEF defines America’s long term Strategic Approach which will require us to focus on our key values:
  - *Be strategically predictable but operationally unpredictable*
  - *Integrate with U.S. interagency*
  - *Counter coercion and subversion*
  - *Foster a competitive mindset.*
Secretary Mattis also defines how America will expand our competitive space by pursuing three distinct lines of effort:

- **Build a More Lethal Force**
- **Strengthen Alliances and Attract New Partners**
- **Reform the Department for Greater Performance and Affordability**

**Navy Component of the NDS**

The Navy Component of the NDS is a classified document that serves as an implementation plan to the NSS and NDS. Released in summer 2018, the Navy strategy is an extension of the NDS that focuses the Navy on competition and deterring great-power conflict. It sets priorities, policies, and actions for the Navy. This, along with the Design for Maintaining Maritime Superiority, replaces the previous tri-service strategy, *A Cooperative Strategy for the 21st Century: Forward, Engaged, Ready.*

**A Design for Maintaining Maritime Superiority**

*A Design for Maintaining Maritime Superiority* is an unclassified document which lays out the CNO's vision for building a lethal, talented, ready, and efficient naval force. The 2018 revision, *A Design for Maintaining Maritime Superiority Version 2.0*, responds to changes in the competitive environment and dovetails with the Navy Component of the NDS. The Design lays out three forces which shape the competitive environment: 1) traffic on the oceans, seas, and waterways, which is more stressed and congested than ever before; 2) the rise in the global information systems; and 3) the increasing rate of technological creation and adoption. China and Russia have been exploiting these forces to their advantage and expanding the competitive space.

The Design 2.0 establishes four lines of effort and four core attributes to respond to the competitive environment and guide behaviors and investments that shape the Navy now and into the future. These are:

- **LOE Blue**: STRENGTHEN NAVAL POWER AT AND FROM SEA
- **LOE Green**: ACHIEVE HIGH VELOCITY OUTCOMES
- **LOE Gold**: STRENGTHEN OUR NAVY TEAM FOR THE FUTURE
- **LOE Purple**: EXPAND AND STRENGTHEN OUR NETWORK OF PARTNERS

The Design identifies our Navy Core Attributes as:

- Integrity
- Accountability
- Initiative
- Toughness

**Sources:**

5. Composite Warfare Doctrine: NWP 3-56
WEEK 7: SURFACE WARFARE

I. Mission

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.

The surface fleet is able to conduct a myriad of operations in both peace and wartime environments:

1. Air Warfare (AAW)
2. Surface Warfare (SUW)
3. Undersea Warfare (USW)
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)

II. Capabilities

With over 275 warships and more than 110 Military Sealift Command ships around the world, the Navy’s surface fleet is a dynamic force enhanced by advancements in technology and strategy. Ship classes are no longer built around a single mission area; they are built to specialize in one warfare area but must be able to operate in several additional roles. Modern surface ships possess many unique capabilities listed below.

- **Stealth** – Ship classes such as the Arleigh Burke and Zumwalt class destroyers, San Antonio class amphibious transporters, and Littoral Combat Ships (LCS) employ an angled superstructure, radar absorbent and reflective material, and reduced emissions to significantly reduce the radar cross section of the ship, making it much more difficult to acquire.

- **Endurance** – Three primary sources of propulsion employed by the Navy are steam, gas turbine, and diesel. Range and speed vary based on platform; on average, a gas turbine ship has an endurance of 6000nm at 20 knots. These ranges are almost unlimited based on the Navy’s ability to refuel at sea. Of note, Nuclear power is utilized to produce steam propulsion on Aircraft Carriers, providing unlimited endurance.

- **Firepower** – Includes gun mounts, land attack cruise missiles, surface to air missiles, self-defense weapons, and surface-to-surface missiles.

- **Mobility** – Because over two thirds of the world’s surface is ocean and eighty percent of the world’s population lives within 100 nautical miles of the coast, naval forces are a potent deterrent to potential adversaries. Naval forces can arrive quickly and remain indefinitely in the waters around the world. This presence reminds potential adversaries of the U.S. military’s capability and resolve to enforce international law.

- **Communication** – The surface fleet utilizes several means of communication in order to provide and employ classified and unclassified voice, messaging, data and video information from every available source in order to effectively execute the mission. The two primary means used to provide ships, submarines, aircraft, and ground forces necessary information for joint missions are data transmission, via HAWKLINK, LINK 11, and LINK 16, Cooperative Engagement Capability (CEC) and voice transmission, via Satellite COMMS, High Frequency, Ultra High Frequency, Very High Frequency, Super High Frequency, and Extremely High Frequency systems.
III. Surface Platforms

CVN-68 Nimitz Class Nuclear Powered Aircraft Carrier

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>Second largest ship in the U.S. Navy (more than 1000 feet long – 3 football fields) Small superstructure approximately 2/3s of the distance from bow to stern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>With their embarked air wing, aircraft carriers are the centerpiece of America’s naval forces. On any given day, aircraft carriers exercise the Navy’s core capabilities of power projection, forward presence, humanitarian assistance, deterrence, sea control, and maritime security.</td>
</tr>
<tr>
<td>Weapons</td>
<td>Multiple NATO Sea Sparrow, Phalanx CIWS, and Rolling Airframe Missiles (RAM)</td>
</tr>
<tr>
<td>Aircraft</td>
<td>1 Carrier Air Wing (approximately 60 aircraft)</td>
</tr>
<tr>
<td>Crew Size</td>
<td>Ship’s Company: 3,000/Air Wing: 1,500/Other: 500</td>
</tr>
</tbody>
</table>

CVN-78 Gerald R. Ford Class Nuclear Powered Aircraft Carrier

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>Largest Ship in the U.S. Navy and 25 feet longer than the Nimitz Class Carriers at 1106 ft. The Ford class is able to be easily distinguished from the Nimitz class due to the more aft placement of the superstructure.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>With their embarked air wing, aircraft carriers are the centerpiece of America’s naval forces. On any given day, aircraft carriers exercise the Navy’s core capabilities of power projection, forward presence, humanitarian assistance, deterrence, sea control, and maritime security.</td>
</tr>
<tr>
<td>Weapons</td>
<td>Multiple Evolved NATO Sea Sparrow (ESSM), Phalanx CIWS, and Rolling Airframe Missiles (RAM), and small caliber weapons</td>
</tr>
<tr>
<td>Aircraft</td>
<td>1 Carrier Air Wing (approximately 70 aircraft)</td>
</tr>
<tr>
<td>Crew Size</td>
<td>Ship’s Company: 2600/Air Wing: 2,480</td>
</tr>
</tbody>
</table>
CG-47 Ticonderoga Class Guided Missile Cruiser

| Visual Identification | Hurricane bow, split superstructure with two SPY array facing forward and two aft. Two masts, with the shorter forward and taller aft. Two sets of exhaust stacks, one aft of each mast. 5in/54cal or 5in/62cal gun forward and aft. |
| Mission | Modern U.S. Navy guided missile cruisers perform primarily in a Battle Force role. These ships are multi-mission Air Warfare (AW), Undersea Warfare (USW), Strike Warfare (STW), and Surface Warfare (SUW) surface combatants capable of supporting carrier strike groups and amphibious forces or operating independently and as commanders of Surface Action Groups (SAG). Some Cruisers have been outfitted with a Ballistic Missile Defense (BMD) capability. |
| Weapons | 2 x 5in/54cal or 5in/62cal dual purpose guns (1 fwd, 1 aft), 2 x VLS (61 cells fwd, 61 cells aft) 2 x 20mm Phalanx CIWS (port and stbd) 2 x Surface Vessel Torpedo Tube launchers (3 tubes per launcher) 2 x quadruple Harpoon canisters |
| Aircraft | 2 MH-60 Helicopters |
| Mission Specific Capabilities | SPY-1B Air Search Radar, Aegis combat system, Towed Array Sonar |
| Crew Size | 30 officers/300 enlisted |

DDG-51 Arleigh Burke Class Guided Missile Destroyer

| Visual Identification | Open bow, single 5in/54 cal or 5in/62 cal dual-purpose gun fwd, split superstructure, four SPY array faces on superstructure, swept mast, two separate sets of stacks (1 fwd, 1 aft). Flight deck aft. DDG-79 and newer (Flight IIA) also have helo hangars. |

39
<table>
<thead>
<tr>
<th>Mission</th>
<th>DDG 51 warships provide multi-mission offensive and defensive capabilities. Destroyers can operate independently or as part of carrier strike groups, surface action groups, amphibious ready groups, and underway replenishment groups. Guided missile destroyers are multi-mission Air Warfare (AAW), Undersea Warfare (USW), and Surface Warfare (SUW) surface combatants. Some DDGs have been outfitted with a Ballistic Missile Defense (BMD) capability.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weapons</td>
<td>1 x 5in/54 cal or 5in/62 cal dual purpose gun 2 x VLS (29 cells fwd, 61 cells aft for DDG-78 and below, 32 cells fwd, 64 cells aft for DDG-79 and following) 2 x 20mm Phalanx CIWS (one mount starting with DDG-85) 2 x Surface Vessel Torpedo Tube launchers (3 tubes per launcher) 2 x quadruple Harpoon canisters (DDG-51 through 78)</td>
</tr>
<tr>
<td>Aircraft</td>
<td>2 MH-60 (Flight IIA)</td>
</tr>
<tr>
<td>Mission Specific Capabilities</td>
<td>SPY-1D Air Search Radar, Aegis combat system, Towed Array Sonar</td>
</tr>
<tr>
<td>Crew Size</td>
<td>Varies based on Modernization: 28 officers/254 enlisted</td>
</tr>
</tbody>
</table>

**DDG 1000 Zumwalt Class Guided Missile Destroyer**

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>A wave-piercing &quot;Tumblehome&quot; hull form.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>The multi-mission DDG 1000 is tailored for sustained operations in the littorals and land attack, and will provide independent forward presence and deterrence, support special operations forces, and operate as an integral part of joint and combined expeditionary forces. Its multi-mission design and littoral capabilities make it a 100 percent globally deployable asset to the Fleet.</td>
</tr>
<tr>
<td>Weapons</td>
<td>80 x advanced Peripheral Vertical Launch (PVLS) cells for Tomahawk, Evolved Sea Sparrow Missile (ESSM), Standard Missiles, and Vertical Launch Anti-Submarine Rockets (ASROC) (VLA) 2 x Advanced Gun System (AGS) 155 mm guns 2 x 30mm Close-in Guns Systems (CI2G)</td>
</tr>
<tr>
<td>Aircraft</td>
<td>2 x MH-60R  1 x MH-60R and 3 Vertical Take-off Unmanned Aerial Vehicles (UAVs)</td>
</tr>
<tr>
<td>Crew</td>
<td>Approx: 160 (20 officers and 140 enlisted including air det.)</td>
</tr>
</tbody>
</table>
### LCS Littoral Combat Ship

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>Dual designed for max speed and shallow draft. FREEDOM class (odd numbers) – Mono-hull INDEPENDENCE class (even numbers) – Tri-hull</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>The LCS class consists of two variants, the FREEDOM variant and INDEPENDENCE variant - designed and built by two industry teams, respectively led by Lockheed Martin and General Dynamics. These seaframes can be outfitted with reconfigurable payloads, called Mission Packages. Mission packages are supported by special detachments that deploy manned and unmanned vehicles and sensors in support of mine, undersea and surface warfare missions.</td>
</tr>
<tr>
<td>Weapons</td>
<td>1 x 57mm Gun Rolling Airframe Missiles (RAM) Freedom variant/ SEARAM on Independence variant 2 x 20mm guns (Surface Mission Package Only)</td>
</tr>
<tr>
<td>Mission Specific Capabilities</td>
<td>Dependent on Mission Package</td>
</tr>
<tr>
<td>Crew Size</td>
<td>50-100 mission dependent</td>
</tr>
</tbody>
</table>

### MCM-1 Avenger Class Mine Counter Measure Ship

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>Small singledeck house, crowded decks, wooden hull.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>AVENGER class ships are designed as mine sweepers/hunter-killers capable of finding, classifying and destroying moored and bottom mines.</td>
</tr>
<tr>
<td>Weapons</td>
<td>.50 Caliber guns</td>
</tr>
<tr>
<td>Mission Specific Capabilities</td>
<td>Mine hunting specific systems</td>
</tr>
<tr>
<td>Crew Size</td>
<td>8 officers/75 enlisted</td>
</tr>
</tbody>
</table>
### PC-1 Cyclone Class Patrol Coastal Ships

**Visual Identification**  
Stealthy design, short vessel with one open mast, a single 25mm gun on the bow, and one Rigid Hull Inflatable Boat (RHIB) platform in the rear.

**Mission**  
The primary mission of these ships is coastal patrol and interdiction surveillance, an important aspect of littoral operations outlined in the Navy’s maritime strategy. Ten of the 13 PCs are forward deployed to Manama, Bahrain in support of 5th Fleet operational tasking.

**Weapons**  
- 2 x 25mm machine guns
- 5 x .50 caliber machine guns
- 2 x 40mm automatic grenade launchers
- 2 x M-240 machine guns
- 1 x Griffin missile launcher

**Crew Size**  
4 officers/24 enlisted

### MARK VI Patrol Boat

**Visual Identification**  
84 ft patrol boat which is longer than previous classes of Navy patrol boats. Rear deck is capable of launching and recovering small boats, unmanned aerial vehicles (UAVs) and unmanned underwater vehicles (UUVs).

**Mission**  
The primary mission of the Mark VI Patrol Boat is to provide capability to persistently patrol littoral areas beyond sheltered harbors and bays for the purpose of force protection of friendly and coalition forces and critical infrastructure. Mission to include Security Force Assistance (SFA), High Value Unit (HVU) shipping escort, Visit, Board, Search, and Seizure (VBSS) operations, and Theater Security Cooperation (TSC).

**Weapons**  
- 2 x 25mm machine guns
- 4 x .50 caliber machine guns
- 1 x MK 44 Machine Gun System
- 6 x Long Range Acoustic Hailing Device

**Crew Size**  
2 Crews, 5 personnel each, plus an 8 person VBSS team
IV. Amphibious Platforms

**LSD-41 Whidbey Island Class Dock Landing Ship**

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>Solid block superstructure. Two deck mounted boat/aircraft cranes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>These ships transport and launch amphibious craft and vehicles with Marines in amphibious assault operations. Their ability to ballast down and flood a well deck makes possible the loading at sea of amphibious warfare craft and their cargo. LSD 41 was designed specifically to operate Landing Craft Air Cushioned (LCAC). It has the largest capacity for these landing craft (four) of any U.S. Navy amphibious platform.</td>
</tr>
<tr>
<td>Lift capability</td>
<td>4 Landing Craft Air Cushion (LCACs), 3 LCU or 36 AAV.</td>
</tr>
<tr>
<td>Weapons</td>
<td>2 x 25mm machine guns, 2 x 20mm CIWS mounts, 2 x RAM launchers, 6 x .50 caliber machine guns</td>
</tr>
</tbody>
</table>

**LSD-49 Harpers Ferry Class Dock Landing Ship**

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>Solid block superstructure. Single boat/cargo crane starboard side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>These ships transport and launch amphibious craft and vehicles with Marines in amphibious assault operations. Their ability to ballast down and flood a well deck makes possible the loading at sea of amphibious warfare craft and their cargo. The HARPERS FERRY class differs from the WHIDBEEY ISLAND class by having a smaller well deck and larger cargo storage spaces. The HARPERS FERRY class is often referred to as the Cargo Variant (CV) LSD class.</td>
</tr>
<tr>
<td>Lift capability</td>
<td>2 Landing Craft Air Cushion (LCACs), 1 LCU, or 15 AAV</td>
</tr>
<tr>
<td>Weapons</td>
<td>2 x 25mm machine guns, 2 x 20mm CIWS mounts, 2 x RAM launchers, 6 x .50 caliber machine guns</td>
</tr>
</tbody>
</table>
### LPD-17 San Antonio Class Amphibious Transport Dock

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>Two enclosed masts, single exhaust stack. Helo hangar on flight deck. Angled hull and superstructure to reduce radar cross-section (RCS).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>LPDs are used to transport and land Marines, their equipment, and supplies by embarked air cushion (LCAC) or conventional landing craft, augmented by helicopters or vertical take-off and landing aircraft (MV-22). These ships support amphibious operations, special operations, or expeditionary warfare missions and can serve as secondary aviation platforms for amphibious ready groups. The SAN ANTONIO class offers many improvements over previous LPDs, including the ability to interface with other surface combatants via the Cooperative Engagement Capability (CEC), Link-11, and Link-16.</td>
</tr>
<tr>
<td>Lift capability</td>
<td>2 LCAC or 1 LCU; 18 AAVs in the well deck 2 CH-53E Sea Stallions or 2 MV-22 Ospreys or 6 UH-1N/Y Hueys or 6 AH-1W/Z Super</td>
</tr>
<tr>
<td>Weapons</td>
<td>2 x 30mm guns 2 x RAM launchers 10 x .50 caliber machine guns</td>
</tr>
<tr>
<td>Crew</td>
<td>28 officers/340 enlisted. Embarked troops: 800</td>
</tr>
</tbody>
</table>

### LHD-1 Wasp, LHA-6 America Class landing Helicopter Dock

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Missions</td>
<td>The largest of all amphibious warfare ships; resembles a small aircraft carrier; capable of Vertical/Short Take-Off and Landing (V/STOL), Short Take-Off Vertical Landing (STOVL), Vertical Take-Off and Landing (VTOL) tilt-rotor and Rotary Wing (RW) aircraft operations; contains a well deck to support use of Landing Craft, Air Cushion (LCAC) and other watercraft (with exception of the first two AMERICA Class ships, LHA 6 and LHA 7, which have no well deck).</td>
</tr>
<tr>
<td>Lift capability</td>
<td>WASP: Capable of carrying 3 Landing Craft Air Cushion (LCACs); 4 CH-53E Sea Stallions; 3 UH-1N/Y Hueys, 4 AH-1W/Z Super Cobras; MH-60S helicopters; 12 MV-22 Ospreys; 6 AV-8B Harriers or F-35B Lightning IIs. AMERICA: 4 CH-53E Sea Stallions, 8 AH-1W/Z Super Cobras, 4 MH-60S Knighthawks, 12 MV-22B Ospreys, and 10 AV-8B Harriers or F-35B Lighting IIs.</td>
</tr>
<tr>
<td>Crew</td>
<td>1,108 crew (104 officers) + 1,894 embarked troops</td>
</tr>
</tbody>
</table>
### LANDING CRAFT, UTILITY, AND MECHANIZED – LCU & LCM

| Visual Identification | Long flat open top; near the appearance of a barge  
|                       | LCU: Control compartment on the starboard side  
|                       | LCM: Control compartment on the stern |
| Mission               | Landing craft are capable of transporting cargo, tracked and/or wheeled vehicles, and troops from amphibious assault ships to beachheads or piers. LCUs have both bow and stern ramps for onload/offload, have the ability to operate at sea for up to 10 days, and are capable of carrying one M1 tank or 350-400 troops. LCMs have a bow ramp for onload/offload and are capable of carrying light vehicles and troops. |
| Lift capability       | LCU: 125 tons  
|                       | LCM: 58-65 tons |
| Crew                  | LCU: 14  
|                       | LCM: 5 |

### LANDING CRAFT AIR CUSHION (LCAC)

| Visual Identification | Large black skirt. Two large propellers aft. |
| Mission               | The LCAC is a high-speed, over the beach, amphibious landing craft. LCAC’s air-cushion capability allows it to proceed inland to discharge cargo on dry, trafficable beaches, thus reducing buildups of troops, equipment, and other material in the surf zone. The landing craft is capable of carrying one M1 tank or four Light Armored Vehicles or three Amphibious Assault Vehicles. The LCAC is unrestricted by tides, beach gradients, and surf conditions, allowing it to access more than 70 percent of the world’s beach areas. LCACs are carried by LHAs, LHDs, LPDs, and LSDs. |
| Lift capability       | 60-75 tons |
| Crew                  | 5 |
V. Surface Warfare in the Spotlight

- In February 2008, an SM-3 fired from USS Lake Erie (CG 70) successfully intercepted and destroyed a non-functioning government satellite as part of Operation Burnt Frost. The mission preserved human life from the toxic hydrazine fuel and demonstrated the capabilities of sea based BMD.

- In April 2009, four pirates in the Indian Ocean hijacked the cargo ship *Maersk Alabama*. The siege ended after a rescue effort by USS Bainbridge (DDG 96), which marks the U.S. Navy’s first successful pirate seizure of a ship registered under the American flag since the early 19th century.

- Following the devastating 2011 Tohoku earthquake and tsunami in Japan, surface ships participated in Operation Tomodachi rendering aid to the Japanese people. Participating units included USS Ronald Reagan (CVN 76), USS Chancellorsville (CG 62), USS Cowpens (CG 63), USS Shiloh (CG 67), USS John S. McCain (DDG 56), USS Fitzgerald (DDG 62), USS Stetham (DDG 63), USS McCampbell (DDG 85), USS Preble (DDG 88), USS Mustin (DDG 89), USS Germantown (LSD 42), USS Tortuga (LSD 46), USS Harpers Ferry (LSD 49), USS Essex (LHD 2), and USS Blue Ridge (LCC 19).

- While operating off the coast of Yemen in 2016, the USS Mason (DDG 87) warded off multiple cruise missile attacks, showing strategic excellence which earned the crew the Battenberg Cup from Naval Surface Force Atlantic Commander.

- USS Porter (DDG 78) and USS Ross (DDG 71) fired 59 Tomahawk Land Attack Missiles in a series of strikes on a Syrian airfield in April of 2017.

- Following the 2017 hurricane season in the Caribbean and Gulf of Mexico – Hurricane Harvey, Irma, and Maria – the U.S. Navy and Marine Corps mobilized a massive response of ships, helicopters, and personnel to provide humanitarian and disaster relief, notably USS Abraham Lincoln (CVN 72), USS Iwo Jima (LHD 7), USS Wasp (LHD 1), USS Kearsarge (LHD 3), USS New York (LPD 21), USS Oak Hill (LSD 51), USS Farragut (DDG 99), and USS San Jacinto (CG 56). The Kearsarge Amphibious Readiness Group delivered more than 3 million pounds of supplies to Puerto Rico.

- Junior SWOs on track to successfully complete their second division officer tours have the opportunity to screen for command-at-sea billets on the Mark VI Patrol boats.

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Sources:
WEEK 8: SUBMARINE WARFARE

I. Mission

As stated in the Commander’s Intent for the United States Submarine Force and Supporting Organizations, “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. These effects may be delivered within the undersea domain or across domain boundaries; they may be delivered from submarines far-forward or in broad ocean areas; they may be the result of carefully coordinated operations with other forces or achieved by independent operations; and they may be accomplished in peacetime, a time of tension, or during conflict.”(1)

II. Ethos

The U.S. Submarine force has a long heritage of sacrifice and valor. Every year on or around 11 April, the community comes together for the Submarine Birthday Ball to remember those who have lost their lives to the depths of the unforgiving ocean and to recognize the year’s achievements in the community. The Submarine Force has, and always will, pride itself on its procedural compliance, intellectual capacity, and training and certification programs. A submarine will operate on its own, autonomously with no external support; undetected and typically in hostile waters. The crew works as one team to accomplish missions vital to national security, and every member of the crew is vital to its proper functioning and, if need-be, survival and war-fighting ability.

III. Submarine Warfare Insignia

The modern-day submarine warfare insignia, commonly called “Dolphins” or “Fish” are worn by submarine qualified officers (gold) and enlisted sailors (silver). The design, adopted in March 1924, is a bow view of a submarine, proceeding on the surface, with bow planes rigged for diving, and dolphin fish flanking the bow and conning tower of a submarine.

SSBN Deterrence Patrol Pin

The SSBN Deterrent Patrol insignia is worn by officers and enlisted sailors of the submarine service who have completed strategic deterrent patrols on nuclear ballistic missile submarines. The design is of a silver Lafayette-Class submarine with superimposed Polaris missile and electron rings which signify the armament and nuclear-powered characteristics of the Fleet Ballistic Missile Deterrent Force. A scroll beneath the submarine holds up to six award stars, with one gold star authorized for each successful deterrent patrol, or a silver star for five successful deterrent patrols. At twenty (20) successful patrols, the SSBN pin is upgraded to a gold design.
Submarine Combat Patrol Pin

The Submarine Combat Patrol Insignia is a uniform breast pin worn by officers and enlisted who have completed combat patrols during declared wars, the last of which conducted during World War II. The pin shows the broadside of a Gato-Class diesel submarine. A scroll beneath the submarine holds service stars, one gold star for each successful patrol after the first or a silver star for five successful patrols.

IV. History

American Revolution
The first military submarine was the American-built Turtle (1775). Designed and built by the patriot David Bushnell, the hand-powered, egg-shaped device accommodated a single man. It is thought to be the first submarine capable of independent underwater operation, and the first to use a screw for propulsion. During the American Revolutionary War, Turtle attempted to sink a British warship, HMS Eagle (the flagship of British blockaders), moored in New York harbor. However, Turtle’s attack failed.

David Bushnell’s Turtle

Civil War
During the American Civil War, Confederate forces revived the submarine concept. On February 18, 1864, the Confederate States Submersible, the H.L. Hunley, performed the first successful military submarine mission when she sank the USS Housatonic off Charleston Harbor. Hunley performed her submerged attack using a spar torpedo (an explosive charge mounted on a long pole sticking out of her bow). Though her attack was successful, Hunley sank following the engagement and her entire eight-man crew perished. Finally located in 1995, Hunley was raised in 2000 and is on display in North Charleston, South Carolina.

H.L. Hunley
**Pre-World War Era**

USS Holland (SS-1) was the United States Navy's first modern commissioned submarine. The boat was originally laid down in the shipyard in Elizabeth, New Jersey and launched in 1897. She was acquired by the USN on 11 April 1900 and commissioned six months later with Lieutenant H. H. Caldwell commanding. The Submarine Community celebrates 11 April as the birthday of the modern-day Submarine Force.

![USS Holland (SS-1)](image)

**World War I**

Submarines first made a significant military impact in World War I. German submarines (U-boats) were central to the German naval strategy. A torpedo fired from a German U-boat sank the ocean liner RMS Lusitania (May 7, 1915), which directly precipitated entry of the U.S. into WWI because American leaders would not tolerate the threat of unrestricted submarine warfare against civilian shipping traffic. The fleet of American diesel submarines was used primarily for coastal defense. However, after 1917, some American boats drew assignments to European waters.

**World War II**

“...It is to the everlasting honor and glory of our submarine personnel that they never failed us in our days of peril.”

~ Fleet Admiral Chester William Nimitz

World War II produced significant improvements in the design and operation of submarines worldwide. Sidestepping the requirements of the Treaty of Versailles, Germany built a large submarine fleet prior to the war. Their ‘wolfpack’ tactics proved devastating to Allied military and civilian ships in the European theater. The U.S. submarine fleet employed the *Gato*, *Balao*, and *Tench* classes to operate in every naval theater and score the most complete victory of any force in any theater of the war. In spite of a hesitant beginning due to the attack on Pearl Harbor and difficulties with defective torpedoes, the submarine force destroyed 1,314 enemy ships totaling 5.3 million tons (including 8 aircraft carriers and more than 200 warships). Translated - 55% of all enemy ships sunk were by approximately 6% of the Naval force. Out of 16,000 submariners, the force lost 375 officers and 3,131 enlisted men in fifty-two submarines, the highest casualty rate of any U.S. service branch in WWII. Additionally, seven submarine Commanding Officers, all USNA graduates, were awarded the Medal of Honor for their actions during WWII.

"Tenacity Dick, stay with the bastard till he's on the bottom."

~ Mush Morton to Dick O'Kane.

Lore among submariners is that while patrolling in the shallow waters of the Yellow Sea during its fourth war patrol, Commanding Officer Mush Morton dealt the XO, LT Dick O'Kane (USNA '11) a perfect 29, the highest possible score for combinations in a single cribbage deal. The crew felt that it was a lucky omen and Wahoo sank two Japanese freighters that night. Three days later, while patrolling off the Korean coast, Morton dealt a 28-point hand to O'Kane. They sank two freighters that day and another one the following day.

Cold War

The Cold War redefined the mission of submarines. Against the rising threat of nuclear war with the Soviet Union, several critical design improvements transformed the U.S. submarine fleet. These improvements included: (1) The tear-dropped hull shape, which allowed much greater submerged operating speeds and higher propulsion efficiency. (2) Nuclear powered propulsion. Due in large part to the efforts of ADM Hyman Rickover (USNA '22), the ‘Father of the Nuclear Navy,’ the Naval Nuclear Power Program was born. On January 17, 1955, Commanding Officer Eugene Wilkinson spoke the famous words “underway on nuclear power” to launch the first nuclear powered submarine, USS Nautilus (SSN-571), on her maiden voyage. Within three years, Nautilus sailed to the North Pole and shattered virtually every submarine distance, speed, and endurance record. Nuclear power continues to afford U.S. submarines nearly unlimited operational endurance because they can remain submerged nearly indefinitely—limited only by their capacity to store food.

USS Nautilus (SSN-571). ADM Hyman G. Rickover.

During the 1960s, strategic planners divided the submarine force into two distinct components, ballistic missile (SSBN) submarines and fast attack (SSN) submarines. For SSBNs, the United States and the Soviet Union both developed submarine launched nuclear weapons. American SSBNs continue to uphold the nuclear deterrence role, forming the most survivable element of the U.S.’s nuclear triad (the other two elements being land-based ballistic missiles and airdropped nuclear ordinance). SSNs assumed the role of protecting SSBNs to ensure successful execution of the nuclear deterrence mission. Equally important,
SSNs assumed the offensive role of detecting and monitoring any foreign ballistic missile submarines. Through the height of Cold War, brave SSN crews tracked, photographed (underwater), and collected acoustic data on Soviet submarines. The crews rewrote the playbook on submarine tactics and conducted highly specialized and sensitive missions for national security. Submarine development and operation during the Cold War formed the majority of the bedrock of the submarine force today.

V. Platforms

Fast Attack Submarines (SSN)

Fast Attack submarines are designed to: (1) seek and destroy enemy submarines (ASW) and surface ships (ASUW); (2) conduct precision strikes with Tomahawk cruise missiles (STRIKE); (3) deliver and support Special Operation Forces (SOF); (4) carry out Intelligence, Surveillance, and Reconnaissance (ISR) missions; (5) support Carrier Strike Groups; and (6) engage in mine warfare. Additionally, the Virginia Class design allows emphasis on littoral operations.

West Coast SSNs are home-ported in Pearl Harbor, HI; San Diego, CA; Bremerton, WA; and Guam. East Coast SSNs are home-ported in Groton, CT, and Norfolk, VA.

There are three classes of SSNs now in service – Los Angeles class, Seawolf class, Virginia class. The crew complement typically consists of 15 officers and 120 enlisted sailors.

<table>
<thead>
<tr>
<th>SSN-688 and 688I Los Angeles class Attack Submarines (SSN 688 -- SSN 773)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Identification</strong></td>
</tr>
<tr>
<td>Length : 362ft; Beam : 33ft; Draft : 31ft</td>
</tr>
<tr>
<td>Flight I have fairwater planes.</td>
</tr>
<tr>
<td>Flight II have fairwater planes and 12 Vertical Launch Tubes (VLS) in the bow.</td>
</tr>
<tr>
<td>Flight III have bow planes and 12 VLS tubes in the bow.</td>
</tr>
<tr>
<td>The sails are unfaired at the leading edge.</td>
</tr>
<tr>
<td><strong>Weapons</strong></td>
</tr>
<tr>
<td>4 Torpedo Tubes – for MK 48 ADCAP Torpedoes or UGM-109 Tomahawk Cruise Missiles</td>
</tr>
<tr>
<td><strong>Capability</strong></td>
</tr>
<tr>
<td>Test depth : 800+ft; Speed : 20+knots submerged, 14+knots surfaced</td>
</tr>
<tr>
<td><strong>Notes</strong></td>
</tr>
<tr>
<td>USS Los Angeles (SSN-688) commissioned in 1976.</td>
</tr>
<tr>
<td>Decommissioned at two per year, and replaced by the new Virginia Class SSNs.</td>
</tr>
</tbody>
</table>

Los Angeles Class Fast Attack Submarine [Left to Right – 688 (I/II), and 688I (III)]
### SSN-21 Seawolf Class Attack Submarine (SSN 21 -- SSN 23)

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>Broader beam and slightly shorter than Los Angeles Class submarines The sails are faired at the leading edge and are fitted with bow planes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weapons</td>
<td>8 Torpedo Tubes – for MK 48 ADCAP Torpedoes or UGM-109 Tomahawk Cruise Missiles</td>
</tr>
<tr>
<td>Notes</td>
<td>USS Seawolf (SSN 21) commissioned in 1997. USS Jimmy Carter (SSN-23) has a 100-foot hull extension called the “Multi-mission Platform”</td>
</tr>
</tbody>
</table>

**Seawolf Class Fast Attack Submarine (USS Seawolf (SSN 21) & USS Jimmy Carter (SSN 23))**

### SSN-774 Virginia Class Attack Submarine (SSN 774 -- SSN 821 and beyond)

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>Longer than Los Angeles Class. The sails are faired at the leading edge and are fitted with bow planes and VLS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weapons</td>
<td>4 Torpedo Tubes – for MK 48 ADCAP Torpedoes or UGM-109 Tomahawk Cruise Missiles</td>
</tr>
<tr>
<td>Capability</td>
<td>Test depth : 800+ft; Speed : 25+knots submerged</td>
</tr>
<tr>
<td>Notes</td>
<td>USS Virginia (SSN 774) was commissioned on 2004. Block V have the Virginia Payload Tubes (VPT) which will provide additional guided-missile capability and replace the SSGNs.</td>
</tr>
</tbody>
</table>

**Enhanced Capability**

1. a fly-by-wire ship control system that provides improved shallow-water ship handling;
2. enhanced special operation forces support systems;
3. a reconfigurable torpedo room, which can house either a combination of torpedoes and Tomahawk cruise missiles, or a large number of Special Operation Forces (SOF);
4. a large lock-in/lock-out chamber for divers;
5. two Photonics Masts that contain color, high-resolution black and white, and infrared digital cameras;
6. modular construction, open architecture, and commercial off-the-shelf components
Ballistic Missile Submarines (SSBN)
Since the 1960s, strategic deterrence has been the SSBN’s primary mission, providing the United States with its most survivable and enduring nuclear strike capability. There is only one type of ‘Boomer’ in service, the Ohio Class submarine which has the capability to carry up to 24 submarine-launched ballistic missiles (SLBMs).

As of February 2018, the new Strategic Arms Treaty (START) is in effect, making the SSBN force responsible for 70% of the United States strategic weapons inventory.

West Coast Boomers are home-ported in Bangor, WA, and East Coast Boomers are home-ported in King’s Bay, GA. SSBNs use two crews (‘Blue’ and ‘Gold’ crews) which alternate on-patrol.

<table>
<thead>
<tr>
<th>SSBN-726 Ohio Class Ballistic Missile Submarine (SSBN 726 – SSBN 743)</th>
</tr>
</thead>
</table>
| Visual Identification | Length : 560ft; Beam : 42ft; Draft : 35ft
Fairwater planes.
Large “turtleback” hull design |
| Weapons | 24 Trident II D5 SLBM Tubes
4 Torpedo Tubes - MK 48 Torpedoes |
| Capability | Test depth : 800+ft; Speed : 20+knots submerged |
Guided Missile Submarines (SSGN)

The first four of the Ohio Class SSBNs were converted into guided missile submarines (SSGN). Ohio Class SSGNs provide the Navy with a combination of precision strike and Special Operation mission capability within a stealthy, clandestine platform. If the maximum number of TLAMs were loaded, one Ohio Class SSGN would carry an entire Carrier Strike Group’s equivalent of cruise missiles. Two remaining missile tubes act as lockout chambers to be used by Special Forces personnel. The missile tubes can also be used to carry and launch Unmanned Aerial Vehicles (UAVs) or Unmanned Underwater Vehicles (UUVs). SSGNs can also carry the Dry Deck Shelter/SEAL Delivery Vehicle (DDS/SDV) in support of SOF.

Like SSBNs, SSGNs also use two crews, which alternate to increase the platform’s operational tempo. West Coast SSGNs are home-ported in Bangor, WA and typically swap crews in Guam. East Coast SSGNs are home-ported in King’s Bay, GA and typically swap crews in Diego Garcia.

<table>
<thead>
<tr>
<th>SSGN-726 Ohio Class Guided Missile Submarine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Identification</strong></td>
</tr>
<tr>
<td>Fairwater planes otherwise known as sail planes</td>
</tr>
<tr>
<td>Deck stays dry while riding on the surface</td>
</tr>
<tr>
<td><strong>Weapons</strong></td>
</tr>
<tr>
<td>4 Torpedo Tubes - MK 48 Torpedoes</td>
</tr>
<tr>
<td>22 of 24 Missile Tubes x7 UGM-109 Tomahawk Cruise Missiles per tube -- Maximum 154</td>
</tr>
<tr>
<td><strong>Enhanced Capability</strong></td>
</tr>
<tr>
<td>Berth for a team of 66 SOF personnel for up to 90 days.</td>
</tr>
<tr>
<td>Ability to carry the Dry Deck Shelter/SEAL Delivery Vehicle (DDS/SDV).</td>
</tr>
<tr>
<td>Ability to launch Unmanned Aerial Vehicles (UAVs) or Unmanned Underwater Vehicles (UUVs).</td>
</tr>
</tbody>
</table>
Future Projects

The Columbia Class submarine is being designed to replace the Ohio Class ballistic missile submarine, whose remaining boats will be decommissioned, one per year, beginning in 2027. The Columbia Class will take over the role of submarine presence in the United States’ strategic nuclear force. Design features will include X-shaped stern control surfaces (hydroplanes), sail-mounted dive planes, and electric drive.

VI. Combat Systems

Weapons

Mk-48 and Mk-48/ADCAP (ADvanced CAPability) Torpedoes

The Mk-48 is the principal heavyweight Anti-Submarine and Anti-Surface ship torpedo in the U.S. inventory. It is an acoustic-homing torpedo, having its own onboard SONAR to seek and destroy enemy contacts. The ADCAP modification includes improvements in speed and accuracy, sophisticated SONAR, all digital guidance and control systems, and increased range. A single Mk-48 is capable of sinking most of the world’s warships. The torpedo is designed to detonate underneath a ship, creating a steam void below the ship that breaks the ship’s keel. The lack of water under the keel first cracks the hull. After detonation, most ships have mere moments until they are sunk.

The Mk-48 follows a pre-programmed search routine using an active seeker to search for the target and can be controlled by a guidance wire from the submarine. The ADCAP is so capable that the target may not even be aware that a torpedo is incoming until terminal homing, which occurs shortly before the ADCAP detonates.

Tomahawk Cruise Missile

The Tomahawk Land Attack Missile (TLAM) is an all-weather, long range, subsonic cruise missile used for land attack warfare. U.S. submarines can launch the Tomahawk cruise missile either from a torpedo tube or from the Vertical Launch System, if capable. The most common cruise missile warhead is a conventional 1,000-lb, unitary warhead, but some are configured to release combined effects bomblets (anti-airfield).

Submarine-Launched Ballistic Missile (SLBM)

Trident II (D5) missiles are deployed in Ohio Class SSBN submarines, each carrying up to 24 missiles. The Trident II (D5) is a three-stage, solid-propellant ballistic missile with a range of more than 4,000 nautical miles. Each missile carries multiple nuclear warheads, housed in multiple independent re-entry vehicles (MIRVs), which launch from the missile and are independently targeted.
Sensors

Sonar

Unless using a periscope, a submerged submarine has no optical window to the outside world. To locate contacts, to locate the ocean floor, and for targeting purposes, a submarine uses SONAR (SOund NAvigation and Ranging). SONAR can function in two modes: active (used less frequently) and passive (constantly employed). In active SONAR, the submarine emits a sound pulse that reflects off an object, and the return signal allows the submarine to determine the bearing (direction) and range (distance) to the contact. Passive SONAR involves listening to sounds like the noise generated by a merchant’s engines or the noise of another submarine’s screw chopping through the water. SONAR can be used for navigational purposes as well. By identifying known features on the ocean floor, a submarine can keep track of its location.

There are several SONAR sensors:

- Spherical Array (in the bow)
- Hull Array (along the hull)
- Towed Array (out the stern)
- High Frequency Array (in the sail)

Periscopes and Photonics Masts

Periscopes are used to see outside the submarine for safety and targeting other vessels operating at periscope depth. Periscope depth is the depth at which the periscope is exposed while the hull of the submarine remains below the water line. The Virginia Class platform and SSGNs have photonics masts that utilize cameras to transmit images or video to the submarine instead of using mirrors and lenses like a periscope. Current uses of periscopes and photonics masts include but are not limited to visual detection of other ships and aircraft, ranging, infrared and low-level light detection, communications, and electromagnetic spectrum monitoring.
Sources:
2. CSS Hunley: https://hunley.org/
I. History

During the twentieth century, few military organizations played a more crucial role than Naval Aviation. During maritime conflicts, aircraft carriers replaced battleships as the decisive weapon, projecting their powerful air wings over vast expanses of water, striking with surprise at enemy fleets and land bases, and then disappearing with equal swiftness. In times of peace, the carrier and its battle group provided American political leaders a flexible and potent way to respond to regional crises wherever and whenever American vital interests were threatened. “Where are the carriers?” has been the first question asked by American presidents at the start of every national security crisis since the end of World War II.

The Navy’s interest in airplanes as a naval weapon system dates back to 1898 when several naval officers became members of an inter-service board tasked to observe and investigate the military potential of the new flying machine. In 1908 and 1909, naval officer observers were present at the public demonstrations staged by the Wright brothers.

In 1910, LT Theodore G. Ellyson became the first naval officer selected for flight training. Ellyson underwent instruction with Glenn Curtiss, the producer of the first practical hydroplane and early aircraft developer. It was a Curtiss Pilot by the name of Eugene Ely who made the first shipboard takeoff from the USS Birmingham in 1910. Ely would later become the first Pilot to successfully land an aircraft on the deck of a ship. Just one year later, having successfully completed training, LT Ellyson demonstrated the ability to launch a plane utilizing a newly devised compressed air catapult.

The first naval air station was located in Annapolis at Greenbury Point in 1911. The first aircraft carrier, USS Langley, was commissioned in 1922 by converting an old collier to a flat top ship.

Naval aircraft saw action in WWI, but it was not until WWII that naval aviation gained prominence. While naval aviation saw action in both European and Pacific theaters, it was the performance at the battle of Midway that solidified their position of importance. Having destroyed all four Japanese carriers, naval aviators turned the war in the Pacific from defensive to offensive. From that point onward, the center of the fleet became the aircraft carrier instead of the battleship.

Naval aviation has continued to grow in distinction and popularity over the past few decades. From operations in Desert Storm, Iraqi Freedom, Enduring Freedom, and Inherent Resolve to humanitarian assistance at home and abroad, naval aircraft and aircraft carriers have assumed prominent roles and responsibilities.

At the start of hostilities in Afghanistan, the aircraft carriers in the North Arabian Sea provided the only viable option for tactical air support. In the first two years of sustained combat operations for Operation ENDURING FREEDOM (OEF), 72% of strike sorties were flown by aircraft based on six different carriers. Hornets, Prowlers, and Hawkeyes provided close air support at distances of 600 to 750 nautical miles from their sea base. Indicative of the dynamic employment of carrier aircraft, 80% of targets engaged were assigned to aircrews after launch and 93% of munitions were satellite-aided or laser-guided. In a single deployment, a Carrier Air Wing (CVW-8) attached to USS Theodore Roosevelt (CVN-71) flew 3,000 sorties, supporting Troops-In-Contact (TIC) 500 times.

In 2003, six of twelve aircraft carriers were surged for Operation IRAQI FREEDOM, flying half of all fighter sorties in the U.S. Central Command Area of Responsibility (AOR). Carriers were on station in the Mediterranean Sea as well as the Persian Gulf. More than 700 Navy and Marine Corps aircraft provided critical combat capability, with each carrier flight deck active, on average, 16 hours a day to generate 120-130 sorties during the first month of the war. In a single deployment, CVW-14 aboard the USS Abraham Lincoln (CVN-72) dropped 1.865 million pounds of ordnance.
Naval aviation continues to provide unique capabilities for humanitarian relief operations. CVW-2 assigned to USS Abraham Lincoln (CVN-72) arrived on-station off the coast of Indonesia just five days after the Dec. 26, 2004 tsunami devastated the region. The Abraham Lincoln Carrier Strike Group (ABECSG) spearheaded the emergency relief effort known as Operation UNIFIED ASSISTANCE. By month’s end, Navy helicopters had flown 1,527 missions, delivering 4.8 million pounds of supplies and transporting 2,929 people. In 2011, when a 9.0 magnitude earthquake caused a tsunami to catastrophically damage the Fukushima nuclear reactor in Japan, the U.S. Navy swiftly responded with 24 ships and 140 naval aircraft to assist the Japanese Self Defense Force. Domestically, naval aircraft played a vital role conducting search and rescue and humanitarian operations during Hurricane Katrina in New Orleans in 2005 and Hurricane Harvey in Houston in 2017.

Likewise, sea-based aviation assets remain a valuable tool in complex contingencies such as the NATO operation in support of Libya’s liberation in 2011 during Operations ODYSSEY DAWN and UNIFIED PROTECTOR. Air operations were led by EA-18G Growlers whose radar jamming pods, High-Speed Anti-Radiation Missiles, and APG-79 phased-array radar devastated the Qadhafi regime’s air defense and communications networks, enabling AV-8B Harrier IIs of the 26th MEU to attack ground targets in Libya. Simultaneously, P-3C Orions attacked surface ships with AGM-65F Maverick missiles, and an MV-22 conducted combat search and rescue to recover the aircrew of a downed USAF F-15E.

Most recently, naval aviation has been a key player in the fight against ISIL/ISIS in Iraq and Syria by launching air strikes from aircraft carriers and forward deployed bases. During their 10-month deployment to the Arabian Gulf in 2014-2015, CVW-17 aircraft aboard the USS Carl Vinson (CVN-70) Strike Group launched 2,383 combat sorties in support of Operation INHERENT RESOLVE. CVW-17 aircraft deployed 869 precision-guided munitions, totaling over a half million pounds of ordnance, against ISIL/ISIS targets in Iraq and Syria.

The common link for those who participate in this exciting history is their training in Pensacola, Florida. Since 1914, it is there that young student naval aviators and naval flight officers have learned and mastered the unique demands of flying naval aircraft.

II. Roles and Responsibilities

Naval Aviation personnel fall into many categories. Naval Aviators and Naval Flight Officers (NFO) operate the aircraft in today’s fleet. Naval Aircrewmen support flight operations and operate mission equipment in flight. On the ground, maintenance and medical personnel support the mission by keeping both the aircraft and aircrews airworthy. Below is a brief description of some of the major roles within Naval Aviation:

**Naval Aviator.** Unrestricted Line Officer qualified for duty involving flying as a Pilot. As a qualified aircraft commander (AC), a Naval Aviator retains overall responsibility for the safe conduct of flight operations and physical control of aircraft, regardless of rank.

**Naval Flight Officer (NFO).** Unrestricted Line Officer who operates the advanced systems onboard naval aircraft and may also act as the overall tactical coordinator of multiple air assets during a mission.

**Naval Aircrewmen.** Enlisted personnel in a permanent flight status. Naval Aircrewmen perform in-flight duties in accordance with various aircrew positions and are responsible to the Aircraft/Mission Commander for the operation, maintenance, and training associated with applicable aircraft systems.
**Flight Surgeon.** Medical representative for an aviation command. The flight surgeon is a board-certified medical doctor and promotes aviation safety to decrease the potential for aircraft accidents through the implementation of aviation medicine programs, flight physicals for aircrew personnel, and other routine medical tasks. The flight surgeon is responsible to the CO of the squadron for medical readiness and routinely flies with the squadron to observe in-flight stressors and crew coordination.

**Professional Aviation Maintenance Officer (PAMO).** Established in 2009, the PAMO community is comprised of aerospace maintenance duty officers, aviation maintenance limited duty officers, and aviation maintenance chief warrant officers. They have significant experience and display a high level of knowledge in all aspects of aviation warfare support. In addition to serving a minimum of 24 months in an aviation maintenance activity and completing one operational deployment, PAMOs are required to complete a personnel qualification standard (PQS) and successfully pass an oral board. Once qualified, PAMOs serve as leaders within an aviation squadron’s maintenance department, supporting aviation missions and the squadron’s warfighting capabilities.

### III. Operations

The primary function of naval aviation is to closely coordinate with other naval forces in maintaining command of the seas while also establishing dominance in the airspace surrounding vital interests. Naval Aviation supports the following operations:

1. AIR WARFARE (AW)
2. SURFACE WARFARE (SUW)
3. UNDERSEA WARFARE (USW)
4. CLOSE AIR SUPPORT (CAS)
5. COMBAT SEARCH AND RESCUE (CSAR) / SEARCH AND RESCUE (SAR)
6. COMMAND, CONTROL, COMMUNICATION, COMPUTERS, COMBAT SYSTEMS, AND INTELLIGENCE (C5I)
7. LOGISTICS SUPPORT OPERATIONS (LOG)
8. INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (ISR)
9. MINE WARFARE (MIW)
10. STRIKE WARFARE (STW)

The numerous naval aviation operations are carried out by multiple aviation platforms. In general, there are three categories of aircraft: Fixed Wing, Rotary Wing, and Tiltrotor. Within these categories, aircraft are developed with specific missions in mind. Fixed wing naval aviation assets can be further classified into one of two groups: Carrier Aviation or Maritime Aviation.

### IV. Organization

Naval aircraft are grouped together in squadrons – military units composed of a number of similar aircraft. Each squadron is composed of officers and enlisted tasked with planning, flying, and maintaining all of their aircraft in support of the mission at hand. Every squadron is designated with a two or three-letter abbreviation describing the missions they accomplish.

<table>
<thead>
<tr>
<th>Squadron Type Decoder</th>
<th>1st Letter</th>
<th>Meaning</th>
<th>2nd Letter</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Fixed Wing</td>
<td>Q</td>
<td>Electronic or Reconnaissance</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Rotary Wing</td>
<td>R</td>
<td>Logistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>W</td>
<td>Warning</td>
<td></td>
</tr>
</tbody>
</table>
### Individual squadrons are often grouped together with other squadrons and surface units to accomplish their mission. Two ways they are grouped together are into Carrier Air Wings or Detachments.

#### Carrier Air Wing

A Carrier Air Wing (CVW) is composed of squadrons from different Type Wings and is embarked onboard an aircraft carrier. Until 1963, Carrier Air Wings were known as Carrier Air Groups (CAG); thus, the commander of each air wing came to be known as, and is still called, the CAG. The CAG holds the rank of Captain and reports directly to the Carrier Strike Group (CSG) Commander.

A typical modern CVW is composed of the following squadrons, putting the wing at approximately 70 aircraft:

- 4 VFA Squadrons (F/A-18E/F Super Hornet)
- 1 VAQ Squadron (EA-18G Growler)
- 1 VAW Squadron (E-2C/D Hawkeye)
- 1 VRC Detachment (C-2 Greyhound)
- 1 HSC Squadron (MH-60S Knighthawk)
- 1 HSM Squadron (MH-60R Seahawk)

#### Detachments

Often times, helicopter, logistics, and patrol squadrons do not deploy as a whole squadron. When this is the case, the deploying aircraft are called a detachment. For example, VRC detachments are assigned to a CVW; HSC or HSM detachments each may be assigned to amphibious ships or small combatant ships (CG, DDG, LCS).

### V. Aircraft Designations

All Navy aircraft, like all U.S. military aircraft, are designated with a scheme of letters and numbers that identify each aircraft’s particular type, model, and series (T/M/S). Prefix letter(s), placed before the hyphen, identify an aircraft’s primary mission(s). The number(s) following the hyphen define the particular model number. The letters following the model number indicate the series of that model (in successive alphabetic increments). The following prefixes (mission designators) are common to U.S. Navy aircraft:

<table>
<thead>
<tr>
<th>Aircraft Type Decoder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Attack</td>
</tr>
<tr>
<td>C</td>
<td>Cargo/Transport</td>
</tr>
<tr>
<td>E</td>
<td>Electronic</td>
</tr>
<tr>
<td>F</td>
<td>Fighter</td>
</tr>
<tr>
<td>H</td>
<td>Helicopter</td>
</tr>
<tr>
<td>K</td>
<td>Tanker</td>
</tr>
</tbody>
</table>
VI. Fixed Wing

**F/A-18E/F Super Hornet**

| Role: Fighter/Attack | Carrier-based all-weather fighter and attack aircraft. All F/A-18s can be configured quickly to perform either fighter or attack roles or both, through selected use of external equipment to accomplish specific missions. This ‘force multiplier’ capability gives the operational commander more flexibility in employing tactical aircraft in a rapidly changing battle scenario. The fighter missions are primarily fighter escort and fleet air defense; while the attack missions are force projection, interdiction, and close and deep air support. The F/A-18E/F Super Hornet replaced the F/A-18C Hornet and has the same capabilities. However, the Super Hornet has a greater range, higher service ceiling, larger payload, increased reliability, and an improved electronics suite. The Super Hornet also serves as the carrier air wing’s only air refueling asset. |
| Distinguishing Features: | Twin V-oriented vertical stabilizers Rectangle shaped air intakes Single seat (E model) or Two seat (F model) cockpit |
| Crew: | E: 1 Pilot F: 1 Pilot/1 NFO as a Weapons System Officer (WSO) |
| Responsibilities: | E: Pilot is responsible for aviation, navigation, communication, and tactical employment that includes air-to-air and air-to-ground missions. F: The crew is optimized through sharing the responsibilities above which makes them particularly suited for high task load missions such as close air support and forward air control. |

**EA-18G Growler**

| Role: Electronic Attack | Carrier based and expeditionary (ground based) all-weather electronic attack aircraft. A modified version of the F/A-18F, the EA-18G has replaced the Navy’s EA-6B |
Prowler. The EA-18G Growler integrates the latest electronic attack technology, including the ALQ-218 receiver, ALQ-99 jamming pods, communication countermeasures, and satellite communications. Along with the electronic attack suite, the Growler also features the same APG-79 Active Electronically Scanned Array (AESA) radar found in the Super Hornet.

<table>
<thead>
<tr>
<th>Distinguishing Features:</th>
<th>Twin V-oriented vertical stabilizers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rectangle shaped air intakes</td>
</tr>
<tr>
<td></td>
<td>35% larger fuselage and wing surface area compared to the Hornet</td>
</tr>
<tr>
<td></td>
<td>Two seat cockpit</td>
</tr>
<tr>
<td></td>
<td>Jamming pods mounted on the wing tips</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crew:</th>
<th>1 Pilot/1 NFO as Electronic Warfare Officer (EWO)</th>
</tr>
</thead>
</table>

| Responsibilities:      | The crew is optimized by sharing the responsibilities of aviation, navigation, communication, and tactical employment that includes electronic attack, electronic surveillance, and High-speed Anti-Radiation Missiles (HARM). |

**F-35C Lightning II**

F-35C Lightning II is a fifth generation fighter, combining advanced stealth technology with fighter speed and agility, fused targeting, cutting-edge avionics, advanced jamming, network-enabled operations and advanced sustainment. The F-35C will be a critical addition to the carrier strike group (CSG) integrated war-fighting package with stealth advantages to penetrate threat envelopes and the ability to detect and link that information to other CSG aircraft, ships and decision-makers. F/A-18 Super Hornets, with the ability to carry large payloads of advanced weapons will continue to provide lethality and flexibility and to complement the F-35C. The aircraft features a common design across three unique variants for the Air Force (F-35A), Marine Corps (F-35B), and U.S. Navy, capable of performing ground attack, reconnaissance, and air defense missions.

<table>
<thead>
<tr>
<th>Distinguishing Features:</th>
<th>Twin V-oriented vertical stabilizers</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Rectangle shaped air intakes</td>
</tr>
<tr>
<td></td>
<td>Single seat</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crew:</th>
<th>Crew: 1 x Pilot</th>
</tr>
</thead>
</table>

| Responsibilities:      | To take full advantage of the combination of the aircraft's stealth, avionics suite, and internal weapons carriage to establish a first-look, first-shot, first kill capability. |

**E-2D Hawkeye**

| Role: Fighter          | F-35C Lightning II is a fifth generation fighter, combining advanced stealth technology with fighter speed and agility, fused targeting, cutting-edge avionics, advanced jamming, network-enabled operations and advanced sustainment. The F-35C will be a critical addition to the carrier strike group (CSG) integrated war-fighting package with stealth advantages to penetrate threat envelopes and the ability to detect and link that information to other CSG aircraft, ships and decision-makers. F/A-18 Super Hornets, with the ability to carry large payloads of advanced weapons will continue to provide lethality and flexibility and to complement the F-35C. The aircraft features a common design across three unique variants for the Air Force (F-35A), Marine Corps (F-35B), and U.S. Navy, capable of performing ground attack, reconnaissance, and air defense missions. |

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<tr>
<th>Distinguishing Features:</th>
<th>Twin V-oriented vertical stabilizers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rectangle shaped air intakes</td>
</tr>
<tr>
<td></td>
<td>Single seat</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crew:</th>
<th>Crew: 1 x Pilot</th>
</tr>
</thead>
</table>

| Responsibilities:      | To take full advantage of the combination of the aircraft's stealth, avionics suite, and internal weapons carriage to establish a first-look, first-shot, first kill capability. |
### E-2D Hawkeye

<table>
<thead>
<tr>
<th>Role:</th>
<th>Airborne Early Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carrier based all-weather tactical battle management, airborne early warning, and command and control aircraft. The E-2D uses computerized radar, Identification Friend or Foe (IFF), and electronic surveillance sensors to provide early warning, threat analysis against potentially hostile air and surface targets. Additional missions include surface surveillance coordination, air interdiction, offensive and defensive counter air control, close air support coordination, time critical strike coordination, search and rescue airborne coordination, and communications relay.</td>
</tr>
<tr>
<td>Distinguishing Features:</td>
<td>High wing</td>
</tr>
<tr>
<td></td>
<td>Twin turboprop engines</td>
</tr>
<tr>
<td></td>
<td>Large rotating radar dome on the spine of aircraft</td>
</tr>
<tr>
<td>Crew:</td>
<td>2 Pilots/3 NFOs</td>
</tr>
<tr>
<td>Responsibilities:</td>
<td>Pilots: Aviation, navigation, and communication. NFOs: Mission Commander, Sensor Operator, Airborne Command &amp; Control</td>
</tr>
</tbody>
</table>

### C-2A Greyhound

<table>
<thead>
<tr>
<th>Role:</th>
<th>Fleet Logistics Support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carrier Onboard Delivery (COD). Provides long-range logistics support to Carrier Strike Groups. The C-2A can deliver a combined payload of 10,000 pounds over a distance of 1,000+ nm. The interior arrangement of the cabin can readily accommodate cargo, passengers, and litter patients. The large aft cargo ramp/door and a powered winch allow straight-in rear cargo loading and unloading.</td>
</tr>
<tr>
<td>Distinguishing Features:</td>
<td>High wing</td>
</tr>
<tr>
<td></td>
<td>Twin turboprop engines</td>
</tr>
<tr>
<td></td>
<td>Rear loading ramp</td>
</tr>
<tr>
<td>Crew:</td>
<td>2 Pilots/2 enlisted Aircrew</td>
</tr>
<tr>
<td>Responsibilities:</td>
<td>Pilot: Aviation</td>
</tr>
<tr>
<td></td>
<td>Co-Pilot: Navigation and communication</td>
</tr>
<tr>
<td></td>
<td>Aircrew: Loadmasters for cargo and passengers</td>
</tr>
</tbody>
</table>

### P-8A Poseidon

<table>
<thead>
<tr>
<th>Role:</th>
<th>Multi-mission Maritime Aircraft (MMA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The P-8A is currently being phased in to the fleet to replace the aging P-3C aircraft. It is a modified Boeing 737-800ERX, bringing together a highly reliable airframe and high-bypass turbo fan jet engine with a fully connected, state-of-the-art open architecture mission system. This combination, coupled with next-generation sensors, dramatically improves the Navy’s Undersea Warfare (USW) and Surface Warfare (SUW) capabilities.</td>
</tr>
</tbody>
</table>

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**E-6B Mercury**

| Distinguishing Features: | Twin turbofan engines with flat lower nacelles  
| | Raked wingtips |
| Crew: | 3 Pilots/2 NFOs/3-6 enlisted Aircrew |
| Responsibilities: | Pilots: Aviation, navigation, and communication.  
| | NFOs: Tactical Coordinator (TACCO) that typically serves as the Mission Commander; Navigator/Communications Officer (NAVCOM)  
| | Aircrew: Sensor Operators (optical/acoustic/non-acoustic) |

**Role:** Dual-mission aircraft. Fulfills TACAMO (Take Charge and Move Out) mission by linking the National Command Authority (NCA) with the nation’s nuclear forces (Bombers, ICBMs, SSBNs) by relaying Emergency Action Messages. Also serves as an Airborne Command Post (ABNCP) with the capability to launch U.S. land-based ICBMs via the Airborne Launch Control System (ALCS).

**Distinguishing Features:** Boeing 707 airframe with 4 large high-bypass turbofan engines  
| Antenna pod on spine of aircraft.  
| HF antenna pod under each wing tip |

**Crew:** 3 Pilots/2 NFOs/6-9 enlisted Aircrew

**Responsibilities:**  
- Pilots: Aviate, navigate, and communicate. May act as Mission Commander.  
- NFOs: Airborne Communications Officer (ACO) and Combat Systems Officer (CSO). Responsible for Communications Central and release authority for all message traffic. May act as Mission Commander.  
- Aircrew: Operation and maintenance of mission systems.

**MQ-4C Triton**

**Role:** The MQ-4C Triton will be a forward deployed, land-based, autonomously operated system that provides a persistent maritime ISR capability using a multi-sensor mission payload (marine radar, Electro-Optical/Infrared (EO/IR), Electronic Support Measures (ESM), Automatic Identification System (AIS) and basic communications relay). The MQ-4C Triton's ability to perform persistent ISR within a range of 2,000 nm allows the P-8A aircraft
to focus on their core missions, USW and SUW/weapon employment and Multi-Intelligence (INT) operations respectively.

<table>
<thead>
<tr>
<th>Distinguishing Features:</th>
<th>130 ft wing span, domed superstructure, engine on centerline of fuselage, V-oriented twin vertical stabilizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crew:</td>
<td>Aircraft is unmanned; 4 personnel required per ground station</td>
</tr>
<tr>
<td>Responsibilities:</td>
<td>Air Vehicle Operator, Tactical Coordinator, 2 Mission Payload Operators</td>
</tr>
</tbody>
</table>

**VII. Rotary Wing**

**MH-60R ‘Romeo’ Seahawk**

<table>
<thead>
<tr>
<th>Role: Maritime Strike</th>
<th>The primary missions of the Romeo are USW and SUW. Other missions include intelligence, surveillance, and reconnaissance, search and rescue, vertical replenishment, counter-narcotics operations, and command and control operations. The Romeo has updated radar and sonar systems, electronic signal collection capabilities, a glass-cockpit configuration, and a ‘dipping’ sonar for active acoustic tracking of submarines.</th>
</tr>
</thead>
</table>
| Distinguishing Features: | Rear-wheel is further forward, closer to the middle of the aircraft  
Radar dome under nose  
Door on starboard side only  
Low pylon mounts  
When equipped with a FLIR, the turret faces up |
| Crew: | 2 Pilots/1-2 enlisted Aircrew |
| Responsibilities: | Pilot: Operate the aircraft  
Co-Pilot: Airborne Tactical Officer (ATO) supervises the tactical situation/directs the Pilot and sensor operators  
Aircrew: Sensor operators for all onboard systems, rescue swimmers, crew-served weapons operators |

**MH-60S ‘Sierra’ Knighthawk**

| Role: Sea Combat | The MH-60S ‘Sierra’ is a jack of all trades helicopter. Primary missions include SUW, Special Operations Forces support, and Combat Search and Rescue. Other mission areas include Humanitarian Assistance / Disaster Relief, Search and Rescue, and Logistics. |
Distinguishing Features:
The tail wheel is in the very back of the aircraft
Large cargo doors are on both sides of the cabin
Gunner’s windows are behind the cockpit
When equipped with a FLIR the turret faces down

Crew: 2 Pilots/1-5 enlisted Aircrew

Responsibilities:
Pilot: Operates the aircraft
Co-Pilot: Navigation/tactical mission control
Aircrew: Crew chief, aerial gunner/rescue swimmer

**MH-53E Sea Dragon**

Role: Mine Countermeasures

The primary mission of the MH-53E is Airborne Mine Countermeasures (AMCM). The secondary missions are vertical shipboard delivery and assault support. It is capable of towing a variety of mine hunting/sweeping countermeasure systems, including the Mk 105 magnetic minesweeping sled, the AQS-14A side-scan sonar, and the Mk 103 mechanical minesweeping system. When performing the assault support mission, the MH-53E can be fitted with the GAU-21 .50-cal. machine gun ramp-mounted weapon system.

Distinguishing Features:
Large size (99 feet long)
6 or 7 rotor blades depending on the variant

Crew: 2 Pilots/1-2 enlisted Aircrew

Responsibilities:
Pilot: Operate the aircraft
Co-Pilot: Navigation/tactical mission control
Aircrew: Sensor operator, loadmaster, and aerial gunner.

**MQ-8B Fire Scout**

Role: ISR

The MQ-8 Fire Scout is an unmanned autonomous helicopter that provides reconnaissance, situational awareness, and precision targeting support for ground, air, and sea forces. The system is comprised of one or more MQ-8 Fire Scout air vehicles, mission control systems, and associated control handling and support equipment. The system can operate from any suitably equipped air-capable ships or land bases. The MQ-8B equipped systems have deployed from Guided Missile Frigates (FFG) and Littoral Combat Ships (LCS).
## Distinguishing Features:
- Small size (31.5 ft and 2000 lbs), no windows or doors, skids

## Crew:
- 1 Pilot / 1 Aircrewman

## Responsibilities:
- **Pilot**: Operates aircraft remotely
- **Aircrew**: Sensor Operator

### Sources:


2. NAVPERS 15839I – Part A

3. NAVPERS 18068F – Navy Enlisted Classifications


20. [http://www.navsource.org/archives/02/027806.jpg](http://www.navsource.org/archives/02/027806.jpg)


27. *The Bluejackets Manual*

28. *Ships and Aircraft of the U.S. Fleet*


I. SPECWAR Ethos

In times of war or uncertainty, there is a special breed of warrior ready to answer our Nation’s call. A common man with uncommon desire to succeed. Forged by adversity, he stands alongside America’s finest special operations forces to serve his country, the American people, and protect their way of life. I am that man.

My Trident is a symbol of honor and heritage. Bestowed upon me by the heroes that have gone before, it embodies the trust of those I have sworn to protect. By wearing the Trident, I accept the responsibility of my chosen profession and way of life. It is a privilege that I must earn every day. My loyalty to Country and Team is beyond reproach. I humbly serve as a guardian to my fellow Americans always ready to defend those who are unable to defend themselves. I do not advertise the nature of my work, nor seek recognition for my actions. I voluntarily accept the inherent hazards of my profession, placing the welfare and security of others before my own. I serve with honor on and off the battlefield. The ability to control my emotions and my actions, regardless of circumstance, sets me apart from other men. Uncompromising integrity is my standard. My character and honor are steadfast. My word is my bond.

We expect to lead and be led. In the absence of orders, I will take charge, lead my teammates, and accomplish the mission. I lead by example in all situations. I will never quit. I persevere and thrive on adversity. My Nation expects me to be physically harder and mentally stronger than my enemies. If knocked down, I will get back up, every time. I will draw on every remaining ounce of strength to protect my teammates and to accomplish our mission. I am never out of the fight.

We demand discipline. We expect innovation. The lives of my teammates and the success of our mission depend on me - my technical skill, tactical proficiency, and attention to detail. My training is never complete. We train for war and fight to win. I stand ready to bring the full spectrum of combat power to bear in order to achieve my mission and the goals established by my country. The execution of my duties will be swift and violent when required yet guided by the very principles that I serve to defend. Brave men have fought and died building the proud tradition and feared reputation that I am bound to uphold. In the worst of conditions, the legacy of my teammates steadies my resolve and silently guides my every deed. I will not fail.

II. SPECWAR History

Today’s naval special warfare personnel can trace their origins back to the amphibious scouts and raiders, Naval Combat Demolition Units, Office of Strategic Services Maritime Unit, and Underwater Demolition Teams of World War II. While none of those early organizations have survived to the present, their pioneering efforts are mirrored in the missions and professionalism of NSW today.

**Naval Combat Demolition Units (NCDUs)**

In June 1943, Lieutenant Commander Draper L. Kauffman, ‘the father of naval combat demolition’ established the Naval Combat Demolition Unit (NCDU) Training School in Fort Peirce, FL to train personnel specifically for European operations in WWII. The NCDUs, composed of six-man teams, were formed with volunteers acquired from the Navy Construction Battalion (Seabee).
By April 1944, 34 NCDUs were deployed to England in preparation for Operation OVERLORD, the Allied invasion of France on the beaches of Normandy. The NCDUs were utilized to destroy an array of barriers and underwater obstacles. The NCDUs suffered 31 dead and 60 wounded, a casualty rate of 52 percent. The majority of the NCDUs were then transferred to the Pacific Theater of operations and eventually absorbed into the UDTs.

Underwater Demolition Teams (UDTs)

The Underwater Demolition Teams were founded in November 1943 in response to the challenges faced by the U.S. Marine Corps in the amphibious landing on Tarawa. It was clear that the Navy needed a unit that could provide hydrographic reconnaissance and underwater demolition of obstacles prior to an amphibious landing. UDT-1 and UDT-2 were subsequently established, and saw action across the Pacific Theater to include the invasions of Saipan, Guam, Peleliu, Iwo Jima, and Okinawa, as well as in the European Campaign. With a formal training program established in Maui, Hawaii, the UDTs would perform mine clearing and demolition raids during the Korean War and canal clearance operations in the Vietnam War.

SEAL Teams

Beginning in 1961, the CNO stressed the need for a naval unit with unconventional warfare capabilities. President John F. Kennedy recognized the importance of such a unit and in 1962 established SEAL Teams ONE and TWO, with personnel transferred from the UDTs. These Teams were first tested in the initial stages of the Vietnam War as advisors to the Vietnamese in the conduct of clandestine maritime operations. Once U.S. troop involvement increased, the SEAL Teams began conducting reconnaissance and direct action missions. During the war, LTJG Joseph Kerry, LT Thomas Norris, and PO Michael Thornton all received Medals of Honor for their actions in combat.

To ensure that special operations forces maintained a high state of readiness and to correct deficiencies accentuated by the failed attempt to rescue American hostages in Iran in April 1980, a comprehensive program of Special Operations Forces (SOF) revitalization began in 1981. Established in 1987, the United States Special Operation Command (USSOCOM) provided the funding and organizational relationships necessary to field a professional U.S. special operations capability.

In 1989, SEALs participated in Operation JUST CAUSE, the invasion of Panama to topple the Noriega dictatorship. NSW forces seized Paitilla Airfield to prevent General Noriega from fleeing by air as well as disabled his boat with explosives to hinder an escape by sea.

From August 1990 thru March 1991, SEALs participated in Operation DESERT SHIELD and Operation DESERT STORM. They conducted beach and land border reconnaissance, combat search and rescue (CSAR), and mine countermeasure missions. SEALs also conducted a maritime deception mission, a feint that successfully drew Iraq forces away from the point of the U.S. assault into Kuwait.

In the recent conflicts of Afghanistan (Operation ENDURING FREEDOM) and Iraq (Operation IRAQI FREEDOM), the SEAL teams have conducted numerous Counterinsurgency and Counterterrorism operations to include Direct Action, Surveillance and Reconnaissance, Foreign Internal Defense and personal security detachment operations for civilian government leaders. Starting in 2009, the NSW force began conducting village stability operations to provide persistent presence within local population and support to the Afghan Local Police program. LT Michael Murphy and SO2 Michael Monsoor received Medals of Honor posthumously in Operation ENDURING FREEDOM and Operation IRAQI FREEDOM respectively. USS Michael Murphy (DDG-112) was also named in honor of LT Murphy. Most recently, SOCS Edward Byers and SOCM Britt Slabinski were awarded the Medals of Honor in Operation ENDURING FREEDOM.

III. SPECWAR Organization

Commander, Naval Special Warfare Command (NAVSPECWARCOM), a two-star rear admiral headquartered in Coronado, CA, exercises operational and administrative control of all active and reserve NSW forces stationed in the United States. The NAVSPECWARCOM mission is to man, train, equip,
deploy, and sustain NSW forces for operations and activities abroad in support of combatant commanders and U.S. national interests. NAVSPECWARCOM is an echelon II command under the combatant command of USSOCOM.

Deployable NSW forces are assigned to one of the six NSW Groups. NSWGs 1 and 2 command the eight active duty SEAL teams. Naval Special Warfare Group ONE, based in Coronado, CA, with SEAL Teams ONE, THREE, FIVE, and SEVEN as its subordinate commands. Naval Special Warfare Group TWO, based in Little Creek, VA, with SEAL Teams TWO, FOUR, EIGHT, and TEN as its subordinate commands.

Naval Special Warfare Group THREE, based in Pearl Harbor, HI, is responsible for NSW forces conducting undersea special operations worldwide. Subordinate commands include SEAL Delivery Vehicle Team ONE (SDVT-1), Training Detachment THREE (TRADET-3), and Logistics Support Unit THREE (LOGSU-3).

Naval Special Warfare Group FOUR, based in Little Creek, VA, organizes personnel to deploy combat-ready forces and maritime mobility systems with craft capabilities and capacities in accordance with USSOCOM priorities. Subordinate commands include Special Boat Teams TWELVE, TWENTY, and TWENTY TWO.

Naval Special Warfare Group TEN, based in Little Creek, VA, is responsible for intelligence, surveillance, reconnaissance, and preparation of the environment capabilities, with NSW Special Reconnaissance Teams ONE and TWO, and the Mission Support Center as its subordinate commands.

Naval Special Warfare Group ELEVEN is responsible for NSW Reserve Components and personnel in support of NSW and joint special operations.

Naval Special Warfare Units provide support and forward deployed bases around the globe. NSW Unit-1 is located in Guam and responsible for INDOPACOM. NSW Unit-2 is located in Germany and is responsible for EUCOM. NSW Unit-3 is located in Bahrain and responsible for CENTCOM. NSW Unit-10 is located in Germany and responsible for AFRICOM.

**SEAL Teams**

SEAL Teams are comprised of three Troops with three platoons each (nine platoons/Team), a Command and Control Element, and a mobile support element that is deployable overseas for extended periods. The SEAL officer's first leadership assignment is as a Squad Leader (LTJG/LT) to a SEAL platoon, and then progresses to a Platoon Commander (LT), and eventually Troop Commander (LCDR) of three SEAL platoons.

A standard Troop can be task-organized for operational purposes into three platoons, each with 16 personnel. Troop core skills consist of Sniper, Breacher, Communicator, Maritime/Engineering, Close Air Support, Corpsman, Point-man/Navigator, Primary Driver/Navigator (Rural/Urban/Protective Security), Heavy Weapons Operator, Sensitive Site Exploitation, Air Operations Master, Lead Climber, Lead Diver/Navigation, Interrogator, Explosive Ordnance Disposal. The size of each SEAL Team with three troops and support staff is approximately 300 personnel.

The SEAL elements are trained to infiltrate their objective areas by fixed and rotary winged aircraft, Navy surface ships, submarines, vehicles, underwater, or on foot. Their ability to conduct clandestine, high-risk missions and provide real-time intelligence offers decision makers excellent situational awareness and provides multiple options to conduct warfare. NSW is a relatively small force consisting of approximately 9,250 personnel, 2,700 SEALs, 700 Special Warfare Combatant Craft-Crewmen (SWCC), 750 reservists, 4,000 Combat Support (CS) and Combat Service Support (CSS) personnel, and more than 1,100 civilians. NSW constitutes 11 percent of USSOF and less than 2 percent of the Navy’s forces.
Special Warfare Combatant Craft-Crewman

SWCC are specially selected and trained enlisted personnel who operate NSW combatant craft and other craft in maritime, coastal, and riverine environment. SWCC operators must complete the 7-week SWCC basic crewman training, which emphasizes physical conditioning, water competency, seamanship, navigation, boat tactics, teamwork, and mental toughness. The course includes a 51-hour navigation, boat tactics, and swimming evolution with little sleep and constant exposure to the elements. Completion of basic SWCC training requires proficiency in coxswain skills, over-the-horizon navigation, small-craft tactics, weapons, communications, maritime insertion and extraction, and coastal patrol and interdiction. On completion of SWCC Basic Crewman Training, students advance to Crewman Qualification Training (CQT).

CQT is a 21-week course covering weapons, seamanship, first aid, navigation, communications, waterborne patrolling, marksmanship, engineering, small-unit tactics, close-quarters combat, combative, SERE Level C, language training, and an introduction to NSW mission planning. Graduates of CQT are designated as Special Warfare Boat Operators (SB), authorized to wear the SWCC insignia, and assigned to a Special Boat Team.

IV. SPECWAR Missions and Capabilities

Missions

- **Direct Action** – Short-duration strikes and other small-scale offensive actions taken to seize, destroy, capture, or recover in denied areas. Direct Action involves ambush, combat swimmer ship attacks, combat search and rescue; close quarters combat (CQC), and visit board search and seizure (VBSS).
  
  Example: Operation NEPTUNE SPEAR (Osama bin Laden raid)

- **Special Reconnaissance** – Acquiring information concerning the capabilities, intentions, and activities of an enemy. Special Reconnaissance involves counter-sniper operations, hydrographic reconnaissance, and listening and observation posts.
  
  Example: Prior to an amphibious assault by Marines during the Second World War, Underwater Demolition Teams (UDTs) would conduct hydrographic reconnaissance and destroy beach obstacles.

- **Unconventional Warfare** – Operations conducted through surrogate forces that are organized, trained, equipped, supported, and directed by external forces. Unconventional Warfare involves training foreign guerrilla forces or other clandestine operations to operate in denied areas.

- **Counterterrorism** – Counter Terrorism involves the prevention, deterrence, and response to terrorism. Example: Since 2009, SEALs have been conducting operations in Yemen against Al-Qaeda in Arabian Peninsula militants.

- **Foreign Internal Defense** – NSW offers training and other assistance to foreign governments and their militaries to enable the foreign government to provide for its country’s national security. Foreign Internal Defense involves training the security forces of other nations in areas such as internal peacekeeping/law enforcement, border defense, counter-drug operations, and military strategy. These operations are continuously ongoing around the world.
  
  Example: SEALs served as advisors and instructors for the Iraqi and Afghan Armies.

- **Counterinsurgency** – Counterinsurgency (COIN) is defined as “those military, paramilitary, political, economic, psychological, and civic actions taken by a government to defeat an insurgency”. A key aspect of COIN is the development of host nation security forces. NSW COIN operations are based on the ability to teach combat skills, regional expertise, language skills, and the ability to work among indigenous populations. Example: Operation ENDURING FREEDOM Village Stability Operations (VSO) in which teams have been dispersed in remote, austere, and hostile areas of Afghanistan to enable local security and re-establish or re-empower traditional local governance mechanisms that represent the population and that promote critical local development to improve the quality of life within village communities and districts.
Seabasing
Given the freedom of navigation laws for surface ships and the stealth of submarines, sea based NSW forces are able to operate throughout the oceans and along the littorals of the world with few restrictions. These seabases have lower profiles and a less intrusive presence with no requirements for host nation support or diplomatic clearance, to enable persistent, unobtrusive, mobile SOF presence in remote littoral areas.

Seabasing support can be provided by conventional naval forces (carrier strike group, expeditionary strike group, surface strike group, surface action group, or submarines) as well as Military Sealift ships and commercial vessels.

Limitations
- **Conservation of Forces** – SEAL and SWCC operators require extensive investment in selection, training, and equipment; provide unique capabilities; and are relatively few in number. They cannot be replaced quickly nor expanded rapidly.
- **Sustained Engagement** – NSW forces can deliver a high volume of weapons fire relative to their size and are designed to strike when and where least expected, employing stealth to gain surprise or use other techniques to engage the enemy with a tactical advantage. However, their small size constrains their effectiveness as a static defense force.
- **Timing** – SEALs are a rapid-response force and can normally respond more quickly than other forces. However, preparation and rehearsal time varies with each situation. Some operations require assembly of a significant support package (submarine, ships, aircraft, etc.)
- **Support** – Support requirements may include basing, medical support, detainee operations, IO, fire support, ship, submarine, aircraft, or other attachments. Support considerations include transit to target area, air support, fire support, medical support, quick reaction force, and target security.

V. Naval Special Warfare Craft

<table>
<thead>
<tr>
<th>Mark VIII SEAL Delivery Vehicle (SDV)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mission</strong></td>
</tr>
<tr>
<td><strong>Payload</strong></td>
</tr>
<tr>
<td><strong>Speed</strong></td>
</tr>
<tr>
<td><strong>Range</strong></td>
</tr>
<tr>
<td><strong>Crew</strong></td>
</tr>
</tbody>
</table>
**Mine-Resistant Ambush Protected Vehicle (MRAP)**

<table>
<thead>
<tr>
<th>Mission</th>
<th>Ground mobility vehicle used to carry SEALs in a variety of terrain. The vehicle is designed to protect the crew from explosive events.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>420 miles</td>
</tr>
<tr>
<td>Speed</td>
<td>60+ mph</td>
</tr>
<tr>
<td>Payload</td>
<td>Varies significantly depending on the configuration</td>
</tr>
</tbody>
</table>

**Rotary Wing and Tilt Rotor Aircraft**

<table>
<thead>
<tr>
<th>Mission</th>
<th>Rotary-wing support can be provided by many sources from various services and agencies. These include dedicated support (DS) SOF aircraft and general support (GS) conventional aircraft. They can provide precision overland and overwater insertion and extraction, ISR, and/or fire support. Rotary-wing aircraft are also used by SEAL snipers as overwatch platforms for fire support and to assist in guiding tactical movement of ground forces during assaults.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payload</td>
<td>Varies significantly on the type of aircraft, configuration, and environmental conditions.</td>
</tr>
<tr>
<td>Speed</td>
<td>RW ~110-170 knots/TR ~250 knots</td>
</tr>
<tr>
<td>Range</td>
<td>Varies significantly on fuel tank configuration and ability to conduct in-flight refueling</td>
</tr>
</tbody>
</table>
VI. SPECWAR Future Capabilities

Naval Special Warfare continues to execute some of the most dynamic missions for the DOD. Future officers will work in diverse environments from Helmand Province in Afghanistan to the Horn of Africa, and need to be culturally attuned to a variety of regions. The focus of NSW and USSOCOM is persistent engagement with our partners and allies around the world. The Commander, USSOCOM, wants a special operator that can work in a joint and interagency environment, act as a diplomat for our country, and continue to represent the best quality warrior in the military.

VII. EOD Mission

The mission of Navy EOD is:  \textit{TO PROTECT PERSONNEL AND PROPERTY}

Navy EOD has the ability to render safe the following types of Unexploded Ordnance (UXO):
\begin{itemize}
  \item Ground Ordnance (projectiles, rockets, grenades, landmines)
  \item Air Ordnance (bombs, missiles, aircraft explosive hazards, and dispensed munitions)
  \item Improvised Explosive Devices (IEDs)
  \item Weapons of Mass Destruction (WMDs) (chemical, biological, radiological, and nuclear weapons)
  \item Underwater Ordnance (mines, torpedoes, and depth charges)
\end{itemize}

VIII. EOD History and Overview

The Explosive Ordnance Disposal (EOD) community was officially organized as a warfare community in July of 1978 as the Special Operations Community, but the core missions and skills of EOD teams were employed and practiced far before the community’s birth. A need for ordnance disposal skills was recognized during WWII, as German and Japanese military operations left behind large quantities of dud-fired ordnance. Mine Disposal School was founded in May 1941. Bomb Disposal School was founded in January 1942 by (then) LT Draper Kauffman; based, in large part, on the British Bomb Disposal model. The first two Navy EOD commands were established in 1953.

Today, all four services have EOD Technicians, all of whom are trained at the Naval School Explosive Ordnance Disposal (NAVSCOLEOD) at Eglin Air Force Base, Florida. Navy EOD Technicians go through additional rigorous training that enables them to operate across a wide range of environments. Navy EOD exists today as the only special operations capable Explosive Ordnance Disposal Technicians who are able to support Naval Special Warfare and Army Special Forces elements through the full range of military operations. Navy EOD is comprised of approximately 425 officers and 1200 enlisted personnel.

The Navy EOD community is primarily focused around the core competencies of EOD: Underwater Mine Countermeasures (UMCM), Special Operations Forces (SOF) support, Expeditionary Diving and Salvage Support Operations, and a variety of other skill sets. Navy EOD units can deploy as a shipboard detachment with a Carrier or Expeditionary Strike Group, as a land-based asset assigned to conventional or special operations, or as an independent unit capable of conducting operations in theatre.
IX. EOD Mission Areas

The mission areas of Navy EOD are:

- **Expeditionary Mine Countermeasures (MCM).** Historically mine countermeasures (MCM) has been made up of three components: EOD personnel (Underwater MCM), surface ships (Surface MCM), and aviation units (Air MCM). Today, EOD units are able to deploy as an Expeditionary MCM package comprised of unmanned underwater vehicles (UUVs) and EOD technicians. Without requiring the services of certain surface and aviation platforms, the Expeditionary MCM package is able to provide additional options for Fleet Commanders around the world. EOD personnel are specifically tasked with diving, detecting, rendering safe, and disposal of armed underwater ordnance. Additionally, EOD personnel render safe dud-fired mines, torpedoes, limpet mines, and depth charges.

- **Special Operations Forces (SOF) Support.** As the chosen EOD force for Naval Special Warfare and Army Special Forces, Navy EOD Technicians lend their expertise to SOF units to ensure they achieve mission success. The skills learned in the EOD training pipeline lend themselves to participation in these types of operations. Navy EOD Technicians will participate in advanced training with the SOF unit to include Close Quarters Combat (CQC), advanced Freefall parachuting, and other specialized techniques in order to support the entire spectrum of operations with which that unit may be tasked.

- **Expeditionary Diving and Salvage.** Expertise in diving is a vital skill needed for the disposal of underwater ordnance. All Navy EOD Technicians are Navy Divers and are trained in open-circuit SCUBA and the Mk-16 Mod 1, a computerized mixed-gas re-breather with low magnetic properties that allows EOD Technicians to operate on ordnance at up to 300 feet beneath the surface. Navy EOD Officers also serve at Mobile Diving and Salvage Units (MDSU) with Navy Divers in order to conduct salvage, recovery, ship’s husbandry, deep submergence, and saturation operations.

X. EOD Organization

The Type Commander (TYCOM) for Navy EOD is the Commander, Naval Expeditionary Combat Command (NECC). Under NECC, Navy EOD forces are divided into two Groups: EODGRU ONE in Coronado, CA and EODGRU TWO in Little Creek, VA. Each group contains EOD Mobile Units (EODMU) which are comprised of companies and platoons. Each EOD platoon consists of one officer and three to eleven enlisted EOD Technicians, depending on the platoon’s mission. Each Group also contains an EOD Training & Evaluation Unit (EODTEU) and a Mobile Diving & Salvage Unit (MDSU).

<table>
<thead>
<tr>
<th>WEST COAST</th>
<th>EAST COAST</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMEODGRU ONE (Coronado, CA)</td>
<td>COMEODGRU TWO (Little Creek, VA)</td>
</tr>
<tr>
<td>EODTEU-1 (Point Loma, CA)</td>
<td>EODTEU-2 (Ft. Story, VA)</td>
</tr>
<tr>
<td>EODMU-1 (Coronado, CA)</td>
<td>EODMU-2 (Little Creek, VA)</td>
</tr>
<tr>
<td>EODMU-3 (Coronado, CA)</td>
<td>EODMU-6 (Little Creek, VA)</td>
</tr>
<tr>
<td>EODMU-5 (Guam)</td>
<td>EODMU-8 (Rota, Spain)</td>
</tr>
<tr>
<td>EODMU-11 (Imperial Beach, CA)</td>
<td>EODMU-12 (Little Creek, VA)</td>
</tr>
<tr>
<td>MDSU-1 (Pearl Harbor, HI)</td>
<td>MDSU-2 (Little Creek, VA)</td>
</tr>
</tbody>
</table>

XI. EOD Personnel

**EOD Technicians and Officers**

- Basic
- Senior
- Master
- Officer
The EOD Badge. The EOD insignia is often referred to as the “crab” and is issued by all four services. The crab holds significant meaning for all EOD technicians. The Wreath is symbolic of achievements and laurels gained through minimizing accident potentials through ingenuity and devotion of EOD service members. The Bomb is copied from the World War II bomb disposal badge and represents the historic and major objective of the EOD attack, the unexploded bomb. The three fins on the bomb represent the major areas of nuclear, conventional, and chemical/biological interest. Lightning Bolts symbolize the potential destructive power of the bomb and the courage and professionalism of EOD personnel in their endeavors to reduce hazards as well as to render explosive ordnance safe. The Shield represents the EOD mission, to protect personnel and property.

All graduates of Naval School Explosive Ordnance Disposal (NAVSCOLOEOD) are issued a Basic EOD badge. Whereas other services typically rely on time to dictate when an EOD Technician is awarded the subsequent EOD badges, Navy EOD Technicians pride themselves on proving their expertise and professionalism through a comprehensive board process. Enlisted EOD Technicians must spend two years before taking a board to become a Senior EOD Technician. After earning the Senior EOD badge, a Navy EOD Technician must prove themselves through a grueling, 30-day board process where they must demonstrate expertise and proficiency in order to earn the Master EOD badge.

Like their enlisted counterparts, EOD officers graduate NAVSCOLOEOD as Basic EOD Technicians. However, EOD officers no longer complete Senior and Master EOD qualifications. Instead, new EOD officers spend 18 to 24 months demonstrating EOD proficiency and leadership before completing scenario-based oral and performance based qualification board while leading an EOD platoon. Successful completion of these requirements leads to qualification as an EOD Officer. The EOD Officer Qualification badge looks the same as the Master EOD Technician’s, except it is gold rather than silver/pewter.

XII. EOD Tools and Equipment

The following list is by no means all-inclusive of the equipment Navy EOD Technicians use. Rather, these are examples of some of the most commonly used pieces of equipment.

Foster-Miller TALON Bomb Robot

- Weight: 115-156lbs
- Payload capacity: 100lbs
- Arm lift: 10lbs at full extension
  20lbs total lift
- Cameras: 3 IR-illuminated

iRobot EOD Packbot Bomb Robot

- Weight: 68lbs
- Payload capacity: 46lbs
- Arm lift: 10lbs at full extension
  30lbs total lift
- Cameras: 4 total: 2 color, 1 drive, 1 surveillance
MK-16 Mod 1 Underwater Breathing Apparatus (UBA)

The Mk-16 Mod 1 UBA re-breather produces no bubbles, instead exhaled CO\textsubscript{2} is ‘recycled’ with low acoustic and magnetic properties. It is electronically driven, the UBA uses 3 oxygen sensors which monitor the partial pressure of oxygen in the Diver’s breathing loop and automatically adds O\textsubscript{2} if the ppO\textsubscript{2} is not within pre-established parameters. The Diver monitors rig performance through a primary and secondary electronics display. Divers utilizing the UBA are capable of diving to 300 feet of sea water (FSW). The MK-16 can use two diluent gases: N\textsubscript{2}O\textsubscript{2} for dives 150 FSW or shallower, or HeO\textsubscript{2} for deeper dives.

MED-ENG EOD IX Bomb Suit

This suit provides extensive blast and fragmentation protection. It comes in multiple layers: trousers, groin protector, torso, and helmet. The IX Bomb suit also incorporates a fan and full body cooling system. The entire suit weighs over 85lbs.

XIII. EOD Memorial

The EOD Memorial is located at NAVSCOLEOD at Eglin Air Force Base, FL. During the first Saturday in May every year, EOD technicians gather to place names on the wall of those individuals who have been killed in the line of duty during the previous year. The EOD Memorial contains names of sailors, airmen, soldiers, and Marines who have died in the performance of their duties since World War II. Since September 11\textsuperscript{th}, the Navy EOD community has lost 21 EOD Technicians in the line of duty. The two most recent casualties include Explosive Ordnance Disposal Chief (EODC) Jason Finan and Explosive Ordnance Disposal Senior Chief (EODCS) Scott Dayton.

EODC Jason Finan. Jason Finan was born on 26 August 1982 in Anaheim, CA. He enlisted in 2003 and deployed to Iraq with EODMU THREE. EODC Finan served as the Leading Chief Petty Officer of Navy EOD Platoon 3-6-1, deploying with SEAL Team FIVE and Special Operations Task Force-Iraq. In
October 2016, EODC Finan was killed when the vehicle he was riding in struck an improvised explosive device while engaged in combat with ISIL fighters.

**EODCS Scott Dayton.** Scott Dayton was born on 30 July 1974 in Woodbridge, VA. He enlisted in 1993 and served in operational units all across the world, including multiple deployments to Iraq and Afghanistan. EODCS Dayton served as the Leading Chief Petty Officer of Navy EOD Platoon 2-8-2, assigned to Combined Joint Task Force: Operation Inherent Resolve. In November 2016, EODCS Dayton was killed by an improvised explosive device while operating in Syria.

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Sources:

1. NAVY WARFARE PUBLICATION (NWP 3-05) NAVAL SPECIAL WARFARE
2. [https://www.sealswcc.com/ SEAL SWCC History and Information](https://www.sealswcc.com/)
6. EOD Memorial: [http://www.eodwarriorfoundation.org/eod-memorial](http://www.eodwarriorfoundation.org/eod-memorial)
I. Overview

The Information Warfare Community (IWC) was created in 2009, bringing together officers, enlisted, and civilian professionals who possess extensive skills in information-intensive fields. This corps of professionals receives extensive training, education, and work experience in information, cyberspace, intelligence, counterintelligence, human-derived information, networks, space, meteorological, and oceanographic disciplines. Members of the IWC continually develop and deliver warfighting capabilities in support of U.S. Navy, Joint and national war fighting requirements.

Information as a warfighting discipline. Until 2009, the information-intensive communities of Oceanography, Cryptologic Warfare, Information Professional, and Intelligence were treated principally as individual enablers necessary to support the Navy’s traditional warfighting pillars. Recognizing the enhanced combat power of fusing the Navy’s manpower, information and cyberspace capabilities, the Chief of Naval Operations consolidated these communities under the banner of Information Dominance. In February of 2016, the Information Dominance Corps was redesignated the Information Warfare Community. The Navy’s aggregate information capability has begun to emerge as a modern warfighting enterprise, and serves as a potent asymmetric complement to its kinetic warfare capabilities. Information Warfare has been established as the Navy’s newest warfighting discipline in support of the Navy’s primary tenet of Warfighting First, and information itself has become a potent weapon.

II. Mission

Gain a deep understanding of the inner workings of our adversaries, develop unmatched knowledge of the battlespace, provide our operating forces with sufficient over-match in wartime command and control, and project power through and across cyberspace. The focus of the IWC is:

- Information Warfare
- Kinetic and non-kinetic weapon/defense
- Development and experimentation of manned and unmanned vehicles
- Expansion of the electromagnetic maneuver warfare concept to include space and cyberspace in partnership with the fleet
- Cybersecurity
- The warfighting pillars:
  - Assured Command and Control (C2). Through the Navy’s networks, the IWC assures secure and rapid sharing of information across all commands and most platforms, and ensures the ability of commanders to direct operations and coordinate the application of force.
  - Battlespace Awareness. The IWC maintains awareness of the physical environment (i.e. weather, air column, water column, topography, infrastructure, etc.) of the operating area, as well as a robust awareness of the capabilities, vulnerabilities, movement, trends, intentions, and threats posed by potential adversaries thus enabling informed decision making by operational and tactical commanders. Put another way, knowing the enemy and the environment.
Integrated Fires. IWC capabilities include cyberspace operations, electronic warfare, and information operations that are used to deny, disrupt, defeat, or manipulate an adversary’s capabilities, or enhance and coordinate the application of force by U.S. and coalition assets.

III. Personnel and Capabilities

The IWC is made up of Information Professional Officers (IP), Cryptologic Warfare Officers (CW), Intelligence Officers (INTEL), and Oceanography Officers (METOC). Below is a chart depicting the officer designators and associated enlisted ratings.

<table>
<thead>
<tr>
<th>Officer</th>
<th>Information Professional (IP)</th>
<th>Cryptologic Warfare (CW)</th>
<th>Intelligence (INTEL)</th>
<th>Meteorology/Oceanography (METOC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Warfare Officer (IWO)</td>
<td>182X, 682X, 782X</td>
<td>181X, 681X, 781X</td>
<td>183X, 683X, 783X</td>
<td>180X, 680X</td>
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<tr>
<td>Enlisted Systems Technician (IT, B460)</td>
<td>Cyber Warfare Engineer 184X, 784X</td>
<td>Cryptologic Technician (CT, B5XX) (CTI, B51X; CTM, B520; CTN, B525; CTR, B540/B550; CTT, B550)</td>
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<td></td>
</tr>
<tr>
<td>Enlisted Information Warfare Specialist (IW)</td>
<td>Intelligence Specialist (IS, B600)</td>
<td>Aerographer's Mate (AG, A410)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>IT Civilian</td>
<td>Cryptologic Civilian</td>
<td>Intelligence Civilian</td>
<td>METOC Civilian</td>
</tr>
<tr>
<td></td>
<td>Space Cadre 5500X, 6206X, Subspecialists</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Information Professional (IP)**

Information Professional (IP) officers operate, maintain, secure, plan, acquire, and integrate three network domains afloat and ashore. The domains are separated based on the classification of information being transmitted on them [ref. (6)]:

- **NIPRNET**: Non-Classified Internet Protocol Routing Network, used for Unclassified information only
- **SIPRNET**: Secret Internet Protocol Routing Network, used for information up to and including information classified at the Secret level
- **JWICS**: Joint Worldwide Intelligence Communications System, used for information up to and including Top Secret (TS) and Sensitive Compartmented Information (SCI).

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Key Concept: The IWC core capabilities that support Navy mission objectives are, assured Command and Control (C2), Battlespace Awareness, and Integrated Fires.
The two primary assignments for IP officers are either Fleet Information Warfare or Cyber and Net-Centric Commands that are summarized below [ref. (13)]:

1. **Fleet Information Warfare**. These Navy IP officers are responsible for vital shipboard functions that support everything including air operations, ship machinery control, logistics, intelligence systems, medical, and quality of life systems. While the same systems exist on smaller combatants, IPs at sea are typically found only on large deck platforms such as CVNs, LHDs, and LHAs.

2. **Cyber and Net-Centric Warfare Commands**. These are assignments ashore and include a myriad of IP facilities as well as various staffs.

**Cryptologic Warfare (CW)**

The Cryptologic Warfare Community provides the Commander with kinetic and non-kinetic means of achieving key objectives by affecting adversary and protecting friendly capabilities. This is achieved through the application of:

- Cyberspace Operations (CO), categorized as: Offensive Cyberspace Operations (OCO) and Defensive Cyberspace Operations (DCO), and Department of Defense information network (DODIN) operations and defense.
- Signals Intelligence (SIGINT) – The collection and analysis of electromagnetic signals from an adversary’s communication, radar, and weapons systems.
- Electronic Warfare (EW) – Includes Electronic Attack (EA) which targets an adversary, Electronic Protection (EP) which protects friendly units, and Electronic Support (ES) which includes the detection of Indications and Warnings (I&W).

Assignments for CW Officers begin with the 8-week Cryptologic Warfare Basic Course (CWBC). Following graduation from the Basic Course, CW Officers are typically assigned to one of four National Cryptologic Centers - San Antonio, Texas; Kunia, Hawaii; Augusta, Georgia; or Fort Meade, Maryland. Following their initial tour, Cryptologic Warfare Officers have several educational opportunities. One is the Naval Postgraduate School. Another is the Junior Officer Career Cryptologic Program, a competitive three-year program that offers participants the opportunity to develop broad technical and operational expertise through a combination of academics and an intensive internship at the National Security Agency. Follow on tours provide opportunities for critical CW assignments, such as a Cryptologic Resource Coordinator (CRC), the Information Warfare Commander (IWC), and positions within the Cyber Mission Force (CMF) – to include National Mission Teams (NMT), National Support Teams (NST), Combat Mission Teams (CMT), Cyber Protection Teams (CPT), or Combat Support Teams (CST). There are also opportunities to be imbedded with SEAL teams and Marine Units.

**Cryptologic Technicians (CT)**

CTS are the enlisted Information Warfare Specialists of the Navy. Due to the highly technical and specialized nature of their jobs, the CT community is broken into various branches:

- Cryptologic Technician, Collection (CTR) – Provide expert in-depth analysis on complex digital communications signals, exploit signals of interest to identify, locate, and report worldwide threats. Provide tactical and strategic signals intelligence, guidance, and information warfare support to surface, subsurface, air, and special warfare units.
- Cryptologic Technician, Interpretive (CTI) – Provides language support for national and naval missions. Languages could include Arabic, Persian-Farsi, Chinese, Korean, Russian, Spanish, Hebrew; and less commonly taught languages like Somali, Urdu, Hindi, Baluchi, Swahili, and more obscure Arabic dialects.
- Cryptologic Technician, Maintenance (CTM) – Maintain, configure, and install cryptologic and ancillary systems used to conduct Information and Cyberspace Operations.
- Cryptologic Technician, Networks (CTN) – Conduct network focused target development; plan and execute both offensive and defensive cyberspace operations.
- Cryptologic Technician, Technical (CTT) – Operate electronic intelligence-receiving and direction-finding systems, as well as systems that produce high-power jamming signals used to deceive electronic sensors and defeat radar-guided weapon systems.
SIGINT Capabilities

Ship’s Signals Exploitation Space (SSES). The Navy’s afloat Signals Intelligence (SIGINT) collection and analysis work center is SSES. SSES provides real time SIGINT tactical support using ship’s sensors and national resources in support of national, theater, and fleet cryptologic requirements. Operationally, SSES collects and analyzes foreign signals and provides tactically relevant time-sensitive I&W data extending beyond the horizon. All aircraft carriers (CVN) and amphibious assault ships (LHA/LHD), as well as many CGs and DDGs have a SSES. On CVNs and LHA/LHDs, a junior CW officer will head a division of CTs who work in SSES, but on smaller ships (i.e. CGs and DDGs) a smaller CT detachment will man SSES that is usually headed by a LT or a CWO. [ref. (6)]

EP-3 Aries. The Navy’s most capable airborne SIGINT collection platform is the EP-3. The EP-3 provides commanders with near real-time tactical SIGINT and full motion video intelligence. With sensitive receivers and high-gain dish antennas, the EP-3 exploits a wide range of electronic emissions from deep within targeted territory. The crew fuses the collected intelligence along with off-board data and disseminates the collaborated information for direct threat warning, indications and warnings, information dominance, battle space situational awareness, suppression of enemy air defenses, destruction of enemy air-defense, anti-air warfare, and anti-submarine warfare applications. In addition to Pilots, NFOs, and AWs, aircrew qualified CTs, CW Officers, Intelligence Officers and ISs, are assigned to and fly in EP-3 squadrons. [ref. (8)]

Intelligence (INTEL)

The Naval Intelligence Community provides evaluated intelligence about an adversary’s capabilities, vulnerabilities, movement, trends, and intentions in support of planning and operations. Intelligence allows anticipation or prediction of future situations and circumstances and it informs decisions by illuminating the differences in available courses of action.

One goal of naval intelligence is to reduce the risk to operations by identifying adversary capabilities, vulnerabilities, and intentions. It attempts to impart knowledge of the situation through the application of three basic intelligence functions that form the foundation of required analytical support to the commander:

1. **Intelligence Preparation of the Battlespace (IPB)** – Intelligence Preparation of the Battlespace (IPB), sometimes also referred to in Joint Doctrine, as Joint Intelligence Preparation of the Operating Environment (JIPOE), is the systematic and continuous analysis of the adversary, terrain, and weather in the assigned or potential battlespace. Its goals include understanding the adversary’s forces, doctrine, tactics, training, and probable courses of action, together with the
physical and environmental characteristics of the target area. IPB identifies gaps in knowledge that require intelligence collection efforts.

2. **Indications and Warning (I&W)** – The goal of Indications and Warning (I&W) is to provide early warning of potential hostile action. To accomplish this goal, the analyst must be familiar with an adversary’s operational order of battle (i.e. inventory) and normal operating patterns. The intent of I&W is to prevent surprise and reduce risk through early detection of adversary actions that may threaten friendly forces.

3. **Targeting** – Targeting is a function of both intelligence and operations, in which an adversary’s critical vulnerabilities are identified for possible attack or disruption. Targeting is an analysis process in which the components of a target, or target system, and their vulnerabilities and relative importance are assessed to determine what effect their loss or impairment would have on the adversary. Intelligence can indicate where selective employment of force can have a major effect. For example, the destruction of a single enemy radar site can render multiple surface-to-air missile (SAM) sites useless. Targeteering, which is an intelligence function, identifies which weapons will achieve the desired effects on a specific target.

**Intelligence Specialist (IS)** is the enlisted rating associated with INTEL Community. While all ISs have a common core of duties (assist in collection, processing, analysis and dissemination of intelligence products and reports; prepare and present intelligence briefs; assist in mission planning and debrief; assist in IPB; and safeguard classified materials), the four areas of IS specialization are:

1. Imagery Analyst – Process, interpret, measure, and annotate imagery and geospatial products
2. Naval Special Warfare Analyst – Provide intelligence support for NSW mission planning, and assist in processing, interpreting, and disseminating collected information
3. Strike Warfare Analyst – Support strike mission planning, mission debrief; assist in assessing enemy vulnerabilities; perform target analysis, and bomb hit assessment
4. OPINTEL Analyst – Produce Operational Intelligence (OPINTEL) by collecting, analyzing, and processing all-source intelligence regarding an adversary’s trends in military operations, training, and capabilities; perform Indications and Warning (I&W).

**Carrier Intelligence Center (CVIC).** Pronounced ‘civic,’ several different work centers comprise CVIC, which is an afloat intelligence production and analysis center located aboard every CVN. Most of these work centers are collocated within a suite of spaces on the ship. CVIC serves as the organic intelligence center for a Carrier Strike Group (CSG). Numerous intelligence activities are conducted in CVIC such as imagery interpretation and reporting, intelligence production, strike planning, OPINTEL, mission debrief, and providing I&W to other U.S., coalition, and allied operational units. As such, CVIC maintains close liaison with other fleet assets, naval shore commands, and joint intelligence and operational commands. CVIC maintains close liaison with fleet and theater I&W watches, Navy and joint intelligence reachback agencies, and specialized national or theater targeting/analytical centers. CVIC provides timely, customized, relevant all-source intelligence products and I&W for operational commanders and mission planners in all mission areas. [ref. (6)]

**Joint Intelligence Center (JIC).** The JIC is the afloat intelligence production and analysis center located aboard every LHA/LHD that supports the operational commanders of an Amphibious Ready Group (ARG) in the same basic ways that CVIC serves within a Carrier Strike Group. The most notable difference between a CVIC and a JIC is the presence of Marine Corps intelligence functions working jointly in the JIC. [ref. (6)]
Levels of Intelligence

**STRATEGIC**
Senior Military and Civilian Leaders
Combatant Commanders
- Assist in developing national strategy and policy
- Monitor the international situation
- Assist in developing military plans
- Assist in determining major weapon systems and force structure requirements
- Support the conduct of strategic operations

**OPERATIONAL**
Combatant and Subordinate Joint Force
Commanders and Component Commanders
- Focus on military capabilities and intentions of enemies and adversaries
- Monitor events in the Joint Force Commander’s area of interest
- Support the planning and conduct of joint campaigns
- Identify adversary centers of gravity

**TACTICAL**
Commanders
- Support planning and conducting battles and engagements
- Provide commanders with information on imminent threats to their forces
- Provide commanders with obstacle intelligence

Intelligence Sources (i.e. the “-INTS”)

| GEOINT -- Geospatial Intelligence
| Imagery
| IMINT - Imagery Intelligence
| Geospatial Information
| HUMINT -- Human Intelligence
| Debriefings
| Interrogation Operations
| Source Operations
| Document and Media Exploitation
| SIGINT -- Signals Intelligence
| COMINT - Communications Intelligence
| ELINT - Electronic Intelligence
| Technical ELINT
| Operational ELINT
| FISINT - Foreign Instrumentation Signals Intelligence
| MASINT -- Measurement and Signature Intelligence
| Electromagnetic Data
| Geophysical Data
| Materials Data
| Radio Frequency Data
| Radar Data
| Nuclear Radiation Data
| OSINT -- Open-Source Intelligence
| Academia
| Interagency
| Newspapers/Periodicals
| Media Broadcasts
| Internet

**Key Concept:** Each “-INT” provides one source of information leading to all source analysis. Thus, intelligence is derived from all available sources, such as HUMINT, SIGINT, OSINT, and is combined into customized and relevant intelligence products supporting warfare commanders.
Meteorology/Oceanography (METOC)

Both the terms ‘METOC’ and ‘OCEANO’ are used to refer to the Oceanography community that provides actionable information to include meteorological, climatological, oceanographic, and space environment observations, analyses, prognostic data or products and meteorological and oceanographic effects. The METOC Community has four Warfare Directorates that support the warfighter.

- Undersea Warfare Directorate – Supports Anti-Submarine and Mine Warfare using state-of-the-art technology to capture the characteristics of the water column, provide predictions of sensor and weapon performance, employ Unmanned Underwater Vehicles (UUV) and side scan sonar, and conduct advanced planning.
- Expeditionary Warfare Directorate – Provides Naval Special Warfare (NSW) with information that defines the physical environment allowing optimization of mission planning for tactical advantage. Deployments with SEAL teams are common, requiring outstanding physical fitness and an ability to conduct METOC support operations in remote locations.
- Weather Services Directorate – Supports several distinct operations:
  - Fleet Operations – METOC support for afloat units. Officers are generally attached to a specific ship (LHD/LHA/CVN), Strike Group, or Numbered Fleet.
  - Maritime Operations – Responsible for providing afloat units with enroute weather (WEAX) and Optimum Track Ship Routing, a service designed to keep ships safely away from hazardous weather.
  - Aviation Operations – Focused on flight weather support to aviation units around the world.
- Precise Time and Astrometry Directorate
  - Positioning and Timing – The Naval Observatory is the preeminent authority in the areas of Precise Time and Astrometry, and distributes Earth Orientation parameters and other Astronomical Data required for accurate navigation and fundamental astronomy.
  - Navigation – Focused on providing hydrographic surveys supporting real world operations, as identified by Combatant Commanders and other DoD customers. Consists primarily of USNS hydrographic survey vessels and the Fleet Survey team. Their combined objective is to deliver navigation products within a single deployment (45-60 day turnaround).

Aerographer’s Mate (AG) is the enlisted rating associated with the METOC community. AGs collect, measure, and analyze elements of the physical operating environment (land, sea, air, space). They prepare weather forecasts and weather briefs. They prepare and disseminate air space and water column analysis in support of operations. They predict how the physical environment impacts the performance of sensors and weapons systems.

IV. Differences between Unrestricted Line, Restricted Line, and Staff Corps Officers

Unrestricted Line (URL) Officers serve in all warfare communities in the United States Navy and are eligible for command opportunities both at sea and ashore. These are the primary officer communities in the Navy. The United States Naval Academy is committed to graduating Unrestricted Line Officers, but each year exceptions are made that allow midshipmen to be assigned Restricted Line and Staff Corps.

Restricted Line (RL) Officers provide highly specialized, technical services that directly support the missions of the United States Naval Service. Restricted Line officers are not generally eligible for command at sea; however, they may command auxiliary vessels and various shore activities. Restricted Line officers wear rank insignia identical to those of Unrestricted Line officers.

Staff Corps (SC) Officers provide various highly specialized services necessary to naval installations, units, service members, and their families. Staff Corps officers may command auxiliary vessels and various shore activities, and may attain command within their own corps. Unlike Line Officers, Staff Corps officers wear their rank on the right collar, and their corps insignia device on the left collar. The corps insignia replaces the star worn by line officers on sleeves and shoulder boards.
V. Restricted Line Communities

**Engineering Duty Officer.** EDOs apply technical expertise, practical engineering judgment, and business acumen to the research, development, design, acquisition, construction, life cycle maintenance modernization, and disposal of ships and submarines and their associated warfare support systems.

**Aerospace Engineering Duty Officer.** AEDOs provide professional management and technical direction in the entire air weapon system acquisition process from design to production and later product improvements of naval aircraft, spacecraft, and weapons. AEDOs test and evaluate new aircraft, weapons systems, and weapons in various stages of development.

**Aerospace Maintenance Duty Officer.** In addition to working in fleet maintenance organizations throughout the fleet, AMDOs are very much involved in all aspects of material acquisition and support as top-level Program Managers in NAVAIR and as Commanding Officers of the Naval Aviation Depots. In addition, AMDOs are involved in all aspects of material acquisition and support as top-level Program Managers in NAVAIR and as COs of the Naval Aviation Depots.

**Information Warfare Community.** IWC is comprised of four communities: Information Professional (IP), Cryptologic Warfare (CW), Intelligence (INTEL), and Meteorology and Oceanography (METOC). USNA midshipmen who are physically qualified can be assigned directly to a small number of Cryptologic Warfare and Information Professional billets, as well as a SWO-Option in any of the four: SWO (IP), SWO (CW), SWO (INTEL), and SWO (METOC). Once SWO-Options qualify as a Surface Warfare Officer, are within six months of promotion to O-3, and have completed specified career milestones, they will be re-designated and transferred to their IWC Community. IWC is discussed in depth in Week 16 of this Pro-Book.

**Public Affairs Officer.** The Public Affairs (PAO) community is responsible for ‘Telling the Navy Story.’ Navy Public Affairs comprise three functional areas:

1. Media Operations: PAOs work with media outlets to communicate with the American public.
2. Internal Communications: PAOs produce publications, briefings, and video news programs to communicate with Sailors, their families, reservists, retirees, and civilian employees.
3. Community relations: PAOs reach out to the American public through ‘hands-on’ programs like public tours, Congressional and VIP visits and embarks, speaking engagements, open houses, and special events. PAOs serve at sea, ashore, and in joint assignments, and are always deployed where Navy news is being made. All PAOs join the community through lateral transfer. Today there are about 190 officers in this community, the smallest in the Restricted Line.

**Human Resources.**

The Human Resources Community (120X) is charged with “delivering Human Resources expertise to define, recruit, develop, assign, and retain a highly-skilled workforce for the Navy Total Force mission.” Its core competencies include Workforce Requirements; Training and Education Development; Personnel Management; and Recruiting.

**Foreign Area Officer.**

FAOs are the Navy’s maritime international engagement professionals, providing a unique combination of operational experience, cultural knowledge, and language expertise to the fleet. Directly supporting the National and Maritime Strategies, FAOs are force multipliers, forging critical global relationships through persistent and credible presence in 70 counties.

VI. Staff Corps Communities

There are five Navy Staff Corps communities: Medical, Supply, Civil Engineer, Judge Advocate General, and Chaplain.
• **Medical Community.** All officers in the Medical, Medical Service, Dental, and Nurse Corps are licensed medical professionals and are organized under the Bureau of Medicine and Surgery.
  o **Medical Corps.** The Medical Corps consists of commissioned doctors who are responsible for maintaining the general health and medical readiness of personnel in the Navy and Marine Corps. They provide direct support to Navy and Marine Corps operational communities ashore, at sea, and on deployment. In addition, these physicians provide medical and administrative services for hospitals and clinics supporting active duty, retirees, and family members.
  o **Medical Service Corps.** This is the most highly diversified Corps within the Medical Community, and includes 2,700 officers who are specialists in clinical, scientific, and administrative health care fields. Health care scientists and clinical care specialists make up about 60 percent of the total Corps, serving in 31 different specialties including aerospace physiology, psychology, physical therapy, physician assistant, optometry, pharmacy, biochemistry, and radiation health, while health care administrators comprise the remaining 40 percent.
  o **Dental Corps.** Commissioned dentists provide dental services on shore and onboard large ships, such as aircraft carriers and amphibious ships. While on sea duty, a Dental Corps Officer is responsible for preventing and controlling dental disease, oral surgery, and supervising dental hygiene. On shore duty, dental officers may also provide a wide variety of specialty services such as orthodontics and implants. In addition, dental officers frequently advance their education through residency or expand their career paths by managing clinics or teaching. There are currently over 1,100 active duty Dental Corps Officers.
  o **Nurse Corps.** Established in 1908 by President Roosevelt, the Nurse Corps is composed of over 4,200 Active Duty and Reserve professional registered nurses from all specialties who provide quality healthcare worldwide to the active duty force, retirees, and beneficiaries, they care for many patients whose illnesses and injuries are no different from those found in civilian facilities. They also care for those who suffer from a variety of injuries and illnesses attained from the operational theater. Additionally, they are educators, researchers, and executives in military medicine.

• **Supply Corps.** Supply Corps Officers handle the supply phases of the naval logistics. The broad responsibilities of the Supply Corps are closely related to those of many executive positions in private industry. The 2,900 Supply Officers are the business managers of the Navy and they are responsible for the supply support of the ships of the active fleet, operational units, and hundreds of naval shore installations. The most important responsibility of the Supply Corps is the worldwide, integrated Navy Supply System, which gets the Fleet what it needs, where and when it needs it.
  o The Supply Corps of the United States Navy traces its beginnings to February 23, 1795 when the nation’s first Purveyor of Public Supplies, Tench Francis, Jr., was appointed by President George Washington. The Supply Corps is one of the oldest staff corps in the U.S. Navy. The official motto of the Supply Corps is ‘Ready for Sea’ - reflecting the Supply Corps’ longstanding role in sustaining warfighting.
  o Supply Corps areas of responsibility are supply chain management, logistics, combat support, readiness, quality–of–life, contracting, and fiscal issues.
  o Supply Corps officers are proficient in a variety of disciplines such as supply management and expeditionary logistics, inventory control, disbursement, financial management, contracting, information systems, operations analysis, material and operational logistics, fuels management, food service, and physical distribution.
  o Supply Corps Purpose: To optimize the Naval Support Network to meet the Operational Readiness and Quality-of-Life Requirements of our Maritime Forces.
  o Supply Corps Mission: To deliver sustained global logistics and Quality-of-Life Support to the Navy and Joint Warfighter.

• **Civil Engineer Corps.** The U.S. Navy Civil Engineer Corps (CEC) was established in 1867 to build and maintain the naval shore establishment. Its officers are the Navy’s uniformed professional engineers and architects responsible for executing and managing the planning, design, construction, operation, and maintenance of the Navy’s shore infrastructure. CEC Officers work
in one of three areas: construction contract management, public works, or the Seabees. The Seabees consist of highly skilled personnel, schooled in both construction and defensive combat. Seabees are responsible for a wide variety of military construction and humanitarian efforts in times of peace or war, to include:
- Constructing and repairing aircraft runways and parking aprons
- Constructing munitions storage areas and large scale camp sites
- Erecting bridges and constructing roads
- Renovating schools, medical clinics, and municipal facilities
- Repairing piers and wharves, underwater and above
- Constructing border outposts, expeditionary camps, community outreach centers, and medical clinics

**Judge Advocate General Corps.** The JAG corps was established in 1967 and is composed of lawyers who provide legal services to commands, service members, and their families. The Judge Advocate General directs an organization of more than 730 judge advocates in addition to other enlisted and civilian personnel, and provides legal and policy advice to the Secretary of the Navy in all legal matters.

**Chaplain Corps.** The Chaplain Corps is the Stuff Corps established within the Department of the Navy to provide for and manage the delivery of religious ministry by religious ministry professionals within the Department of the Navy and, as authorized, beyond, e.g. to the USCG.
- Chaplains are Religious Ministry Professionals endorsed by Religious Organizations accredited with the Department of Defense, to serve in the military. Each chaplain is true to his/her religious tradition, there is no ‘generic’ religion or worship service, while at the same time respecting the beliefs of others and cooperating with chaplains of other religious traditions. Navy chaplains serve with the Navy, Marine Corps, Coast Guard, and Merchant Marines on ship and shore, in CONUS and OCONUS. The four core capabilities of a Navy chaplain are as follows:
  - To PROVIDE religious services, teaching, pastoral counseling, and ministry according to his/her faith tradition.
  - To FACILITATE the free exercise of worship and the provision of religious needs for those of other faith traditions.
  - To CARE for all, including those of the same faith tradition, other faith traditions, or no faith tradition at all. CARE entails treating all with dignity and respect.
  - To ADVISE the Command and leaders at all levels on issues of morale, morals, ethics, spiritual well-being, and emerging religious requirements.
- Unique to the chaplain is that ONLY the chaplain has Absolute Confidentiality. The chaplain cannot reveal what has been communicated to her/him by Sailor, Marine, or authorized civilian without the permission of the person who communicated the information.

<table>
<thead>
<tr>
<th>Medical Corps</th>
<th>Dental Corps</th>
<th>Nurse Corps</th>
<th>Medical Service Corps</th>
<th>Civil Engineer Corps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chaplain Corps (Christian)</td>
<td>Chaplain Corps (Jewish)</td>
<td>Chaplain Corps (Muslim)</td>
<td>Supply Corps</td>
<td>Judge Advocate General’s Corps</td>
</tr>
</tbody>
</table>
VII. The Limited Duty Officer and Chief Warrant Officer Programs

The Limited Duty Officer and Chief Warrant Officer programs are two separate programs that provide the Navy with officer technical managers. Both programs provide the opportunity for outstanding senior enlisted personnel to compete for a commission without the need for a college degree. Combined, these two communities make up more than eleven percent of the officer corps.

- **Limited Duty Officers (LDOs)**. As officer technical managers of the Line or Staff Corps, LDOs progressively advance within broad technical fields related to their former enlisted ratings. They fill leadership and management positions at the Ensign through Captian level that require technical background and skills not attainable through normal development within other officer designators. LDOs serve as, but are not limited to serving as, division officers, department heads, OICs, XO, and COs, ashore or afloat. *LDOs wear identical rank structure to that of Unrestricted Line officers.*

- **Navy Band Officers**. Officers in the Navy Band are Limited Duty Officers who started their careers by enlisting in the Navy Band. Enlisted personnel must be at least an E-6 in order to apply. Upon commissioning, they are assigned to one of fourteen bands, and will rotate every two to three years. Senior billets are those with the Navy Band, Washington, and the U.S. Naval Academy Band.

- **Chief Warrant Officers (CWOs)**. Although intended primarily as technical specialists, CWOs may also serve as division officers, department heads, OICs, XO, and CO, ashore or afloat. Like Staff Corps officers, CWOs wear special insignia above the rank devices on their shoulder boards and sleeves to indicate their field of expertise. The ranks of CWO start at CWO2 and end at CWO5.

![Chief Warrant Officer Rank Structure of the United States Navy](image)

### Sources:

1. OPNAV Instruction 5300.12, October 2009, *Establishing the Information Dominance Corps*
6. NWP 2-01, *Intelligence Support to Naval Operations*
7. NTTP 6-02, *C4I Infrastructure*
12. Joint Publication 3-05, *Special Operations*
13. Information Professional Officer Career Handbook 2014
14. Joint Publication 2-01.3, *Joint Intelligence Preparation of the Operating Environment*
15. Joint Publication 3-12 (R), *Cyberspace Operations*
I. The Ethos of a United States Marine

Being a Marine is a state of mind. It is an experience some have likened more to a calling than a profession. Being a Marine is not a job—not a pay check; it is not a military occupational specialty (MOS). It is not male or female, majority or minority; nor is it a rank insignia. Rather, being a Marine comes from the eagle, globe, and anchor that is tattooed on the soul of every one of us who wears the Marine Corps uniform. It is a searing mark in our innermost being that comes after the rite of passage through boot camp or upon commissioning when a young man or woman is allowed for the first time to say, “I’m a United States Marine.” And unlike physical or psychological scars, which, over time, tend to heal and fade in intensity, the eagle, globe, and anchor only grow more defined—more intense—the longer you are a Marine. ‘Once a Marine, always a Marine.’

II. The Marine Corps Warfighting Philosophy

To understand the Marine Corps’ philosophy of warfighting, you first need an appreciation for how we view the unchanging nature of war itself – its moral, mental, and physical characteristics and demands. A common view of war among Marines is a necessary base for the development of a cohesive doctrine because our approach to the conduct of war, through maneuver warfare, derives from our understanding of the nature of war.

War is a violent clash of interests between or among organized groups characterized by the use of military force. The essence of war is a violent struggle between two hostile, independent, and irreconcilable wills. It follows that the object in war is to impose our will upon the enemy. At first glance, war seems a simple clash of interests. On closer examination, it reveals its complexity and takes shape as one of the most demanding and trying of human endeavors. War is an extreme test of will. Friction, uncertainty, fluidity, disorder, and danger are its essential features. War displays broad patterns that can be represented as probabilities, yet it remains fundamentally unpredictable. Each episode is the unique product of myriad moral, mental, and physical forces. Individual causes and their effects can rarely be isolated. Minor actions and random incidents can have disproportionately large—even decisive—effects. While dependent on the laws of science and the intuition and creativity of art, war takes its fundamental character from the dynamic of human interaction.

We thus conclude that the conduct of war is fundamentally a dynamic process of human competition requiring both the knowledge of science and the creativity of art but driven ultimately by the power of human will. The challenge is to develop a concept of warfighting consistent with our understanding of the nature and theory of war and the realities of the modern battlefield. What exactly does this require? It requires a concept:
• That will help us function effectively in an uncertain, chaotic, and fluid environment—in fact, one with which we can exploit these conditions to our advantage.
• With which we can sense and use the time-competitive rhythm of war to generate and exploit superior tempo.

1 Marine Corps Warfighting Publication 6-11, Leading Marines, Chapter 1, p. 7-8, 13, 25.
2 Marine Corps Doctrinal Publication 1, Warfighting, Chapter 1, p. 3-4
3 Marine Corps Doctrinal Publication 1, Warfighting, Chapter 1, p. 19
• That is consistently effective across the full spectrum of conflict because we cannot attempt to change our basic doctrine from situation to situation and expect to be proficient.
• With which we can recognize and exploit the fleeting opportunities that naturally occur in war.
• That takes into account the moral and mental as well as the physical forces of war because we have already concluded that these form the greater part of war.
• With which we can succeed against a numerically superior foe because we cannot presume a numerical advantage either locally or overall.
• With which we can win quickly against a larger foe on his home soil with minimal casualties and limited external support.

The Marine Corps concept for winning under these conditions is a warfighting doctrine based on rapid, flexible, and opportunistic maneuver. In order to fully appreciate what we mean by maneuver, we need to clarify the term. The traditional understanding of maneuver is a spatial one; that is, we maneuver in space to gain a positional advantage. However, in order to maximize the usefulness of maneuver, we must consider maneuver in other dimensions as well. The essence of maneuver is taking action to generate and exploit some kind of advantage over the enemy as a means of accomplishing our objectives as effectively as possible. That advantage may be psychological, technological, or temporal as well as spatial. Especially important is maneuver in time—we generate a faster operating tempo than the enemy to gain a temporal advantage. It is through maneuver in all dimensions that an inferior force can achieve decisive superiority at the necessary time and place.

_Maneuver warfare is a warfighting philosophy that seeks to shatter the enemy's cohesion through a variety of rapid, focused, and unexpected actions which create a turbulent and rapidly deteriorating situation with which the enemy cannot cope._

### III. Mission

“We are warfighters within a warfighting organization. Our Corps performs two important functions for our Nation— we **Make Marines** and we **Win Battles**.

Fundamental to our character as a Marine Corps is our role as the **Nation's force-in-readiness**. We must continue to be ready for operations across the range of military operations. At the same time, we recognize the current and future fight may not be what we experienced in the past. It will encompass not just the domains of land, air and sea, but also space and the cyber domain. It will include information operations and operations across the electromagnetic spectrum. It will involve rapidly changing and evolving technologies and concepts, which will force us to be more agile, flexible and adaptable. Most importantly, it will require Marines who are smart, fit, disciplined, resilient, and able to adapt to uncertainty and to the unknown.” Commandant of the Marine Corps, General Robert B. Neller

### IV. Enduring Principles

Principles define fundamental beliefs that form the foundation from which Marines derive their ethos and basic operating instincts. The following principles help to further define the cultural identity of Marines in the most basic terms— they express what we believe:

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4 Marine Corps Doctrinal Publication 1, *Warfighting*, Chapter 1, p. 71-73
6 Marine Corps Operating Concept, *How an Expeditionary Force Operates in the 21st Century*, p. 28
Every Marine a Rifleman. Every Marine - regardless of military occupational specialty - is first and foremost a disciplined warrior.

Every Marine Officer a Provisional Rifle Platoon Commander. Every officer – regardless of occupational specialty - is first and foremost a capable and disciplined platoon commander.

Expeditionary Naval Force. Marines are ‘soldiers of the sea,’ an integral part of the Naval Services — lean, versatile, flexible, and ready. We are organized, trained, and equipped to conduct naval campaigns and operate on and from naval platforms, or to fight in protracted campaigns ashore.

Combined Arms Organization. In 1952, Congress directed the Marine Corps’ composition as an air-ground combined arms force. This integrated force, known as the MAGTF, has unique and incomparable warfighting capabilities. Our MAGTF contains organic air, ground, and logistics elements under a single command element, making it an effective and integrated combined arms force.

Ready and Forward Deployed. Congress’ intent that the Marine Corps serve as the ‘force in readiness’ was founded on a recognized national need for a force capable of rapid response to emerging crises. This requirement mandates high standards of readiness across the force. We are routinely forward deployed around the globe and stand prepared to respond quickly in times of crisis.

Agile and Adaptable. The Marine Corps’ agility is based on its expeditionary mindset and flexible structure, able to operate either from the sea or in sustained operations ashore. We can adapt quickly with unparalleled speed across an extraordinary range of military operations. Our organizational design and training facilitate a seamless transition between these operations, providing the necessary capability to operate effectively.

V. Organization

The Marine Corps is a task-organized, multi-capable military organization. It is a middleweight force that lies between our Special Operations Forces and our nation’s heavier forces in the Army with a force that complements both. It is scalable and adaptive. The way the Marine Corps scales its force is through task-organized Marine Air-Ground Task Forces (MAGTFs). The MAGTF is the Marine Corps’ principal organization. It provides combatant commanders with scalable, versatile expeditionary force able to respond to a broad range of contingency, crisis and conflict situations. MAGTF (regardless of size) is composed of the following four elements:

1. **Ground Combat Element (GCE):** Infantry (battalion, regiment, or division) augmented with tank, artillery, Light Armored Reconnaissance (LAR), Amphibious Assault Vehicles (AAV), combat engineers, and reconnaissance assets.

2. **Aviation Combat Element (ACE):** Contains aircraft to support the tactical situation. Tactical helicopters with fixed wing assets for close air support

3. **Logistics Combat Element (LCE):** Provides all necessary logistical support to the MAGTF including Transportation, Engineering, Embarkation, Medical/Dental, and Headquarters and Service.

4. **Command Element (CE):** Administration, intelligence, operations, logistics, communications, medical, legal, chaplain, etc.
Types of MAGTFs:

1. **Marine Expeditionary Force (MEF)** The MEF is the largest principal warfighting element in the active force structure of the Marine Corps and is usually commanded by a Lieutenant General. The size and composition of a deployed MEF varies depending on the needs of the mission. Each MEF has one to three Marine Expeditionary Units (MEU) assigned to it that deploy throughout the globe.

2. **Marine Expeditionary Brigade (MEB)** The MEB is the next largest MAGTF structure the Marine Corps employs. Unlike the MEF, which has permanent structure, the MEB is typically stood up for specific theaters and engagements, such as MEB Afghanistan (MEB A), or deployed as a smaller, forward deployed element of the MEF. The MEB is typically commanded by a Brigadier or Major General.

3. **Marine Expeditionary Unit (MEU)** In combat and non-combat situations alike, the Marine Expeditionary Unit (MEU) is our nation’s self-contained, forward-deployed response force. Embarked aboard amphibious assault ships, the MEU maintains a constant state of readiness, able to plan and launch a mission within six hours.

4. **Special Purpose MAGTF (SPMAGTF)** A special purpose MAGTF (SPMAGTF) may be formed to conduct a specific mission that is limited in scope and focus and often in duration. A special purpose MAGTF may be any Expeditionary Operations size, but normally it is a relatively small force—the size of a Marine Expeditionary Unit or smaller—with narrowly focused capabilities chosen to accomplish a limited mission.\(^7\)

VI. Rifle Platoon

**Mission**  The primary mission of a Marine Rifle Platoon is to locates, close with, and destroy the enemy by fire and maneuver or to repel his assault by fire and close combat. The goal of all initial Marine Corps training is to make each Marine a competent element of a Rifle Platoon, either as a platoon commander or a platoon member.

**Rifle Platoon Organization** The platoon is composed of three rifle squads. Each squad consists of three fire teams. The Rifle Squad is normally employed as part of the rifle platoon and will be assigned a mission as a base of fire or as a maneuver element.

The fire team is the basic fire unit and is organized into the following roles:

1. **Rifleman** – acts as a scout for the fire team, carrying and employing the M16A4 Service Rifle.

2. **Team Leader** – the Fire team leaders initiate the action directed by the squad leader. In the attack, fire team leaders act as fighter-leaders, controlling their fire teams primarily by example. Fire team members base their actions on the actions of their fire team leader. Throughout the attack, fire team leaders exercise such positive control as is necessary to ensure that their fire teams function as directed. They carry and employ the M4 Carbine.

3. **Automatic Rifleman** – carries the M27 Infantry Automatic Rifle (IAR), providing the bulk of the firepower for the fire team, and serves as the Assistant Fire Team Leader.

4. **Grenadier/Assistant Automatic Rifleman** – carries and employs the M203 40mm grenade launcher that provides the fire team with an indirect fire asset to compliment the rest of the team’s direct fire weapons. They also carry extra ammunition for the Automatic Rifleman.

The fire team is the smallest and most efficient tactical element in the Marine Corps; this four-man team provides sufficient firepower and exceptional flexibility on the battlefield. Marines depend on the Marines they fight alongside, and nowhere is this commitment more evident—or critical—than in a Marine fire team.

VII. Officer Military Occupational Specialties

**Ground Officers**
- Cyberspace Officer
- Tank Officer
- Assault Amphibious Vehicle Officer
- Ground Supply Officer
- Financial Management Officer
- Judge Advocate*
- Communication Strategy Officer
- Military Police Officer
- Aircraft Maintenance Office
- Aviation Supply Officer
- Low Altitude Air Defense Officer
VIII. Origin

**Birth of the Marine Corps**

The United States Marine Corps is a direct descendent of the British Royal Marines, who were founded in 1664. When the 2nd Continental Congress drew up plans for a Navy, it also established a Continental Marine Corps. **November 10, 1775 marks the United States Marine Corps’ official birthday.** Tun Tavern in Philadelphia, Pennsylvania is recognized as the birthplace of the Marine Corps.

Samuel Nicholas, a Philadelphia merchant, was commissioned a Captain and ordered to raise the required number of Marines to form two battalions. He is considered the first Commandant of the Marine Corps.

IX. Traditions

**First Amphibious Landing during The Battle of Nassau**

The attack on New Providence, Bahamas, led by Samuel Nicholas, was the first amphibious raid in the history of the Marine Corps. Landing on 3 March 1776, the Marines took the British defenders completely by surprise. The British withdrew from Fort Montague and the Marines captured the fort without firing a shot.

**Early Traditions**

- **Quatrefoil** – One of the traditions, which evolved from the late 1700s and early 1800s, was the use of the Quatrefoil. It enabled our sharpshooting Marines in the riggings of sailing ships to distinguish between friend and foe. Our boarding parties attached crossed pieces of rope to the top of their covers. From this evolved the Quatrefoil. Today the cross-shaped braid is worn on top of the officer’s barracks cover.

- **Leatherneck** – The Marines long-standing nickname ‘Leatherneck’ goes back to the leather collar, or necklace, which was worn from 1775 to 1875, that was intended to ensure the Marines kept their heads erect, and to protect their necks from sword slashes. The high collar on the blue dress uniform commemorates it today.

- **Rank Of Sergeant Major** – In 1798 Congress established the rank of Sergeant Major. The first Marine to rise to the rank of Sergeant Major was Sergeant Major Archibald Sommers. In 1957, the 21st Commandant, General Pate, established the billet of Sergeant Major of the Marine Corps as the Commandant’s senior enlisted advisor. The first Sergeant Major of the Marine Corps was Sergeant Major Bestwick.

- **Marine Corps Band** – The Marine Band was established in 1798 and has played for every President except George Washington. Thomas Jefferson gave them the title ‘The President’s Own.’

- **Mameluke Sword** – In 1805, the Ruler of Tripoli, Prince Hamet, presented the Mameluke sword to First Lieutenant Presley O’Bannon as a token of gratitude for the Marines’ actions during the Barbary Pirate Wars. A replica of that sword was adopted for use and is carried by all Marine officers. The Mameluke Sword is the oldest weapon still in use today by any of the U.S. Armed Forces.

- **The Scarlet Stripe** – The scarlet trouser stripe first appeared on uniform trousers in 1798, and reappeared in 1840 and 1859, partly because of the military fashions of the day. The popular story, which cannot be supported by fact, is that during the battle of Chapultepec during the Mexican War in 1847, 90% of the Marine officers and noncommissioned officers were casualties. Thirteen of the twenty-three Marine officers participating in this battle were decorated for bravery. Thus, the scarlet stripe, or ‘blood stripe,’ worn today on the blue dress trousers is to commemorate all the officer and noncommissioned officer casualties at the battle.

- **‘The Grand Old Man of the Marine Corps’** – Archibald Henderson was appointed the 5th Commandant of the Marine Corps in 1820 and remained commandant until 1859, a period of 38 years, and is known as ‘the Grand Old Man of the Marine Corps.’

- **Marine Corps Emblem** – During the post-Civil War period, in 1868 the Marine Corps emblem was adopted. The emblem consisted of an eagle with spread wings sitting on top of a globe of the Western Hemisphere with an anchor in the background. The eagle symbolizes the nation, the globe worldwide service, and the anchor naval traditions.
• **Two Medal of Honor Recipients** – Gunnery Sergeant Dan Daly and Major Smedley Butler are the only Marines who have been awarded two Medals of Honor for two separate actions. Gunnery Sergeant Dan Daly was awarded the Medal of Honor for his actions during the Boxer Rebellion in China in 1900 and the Banana Wars in Haiti in 1915. He is also remembered for saying, “Come on, you sons of bitches! Do you want to live forever?” during the Battle of Belleau Wood in WWI. Major Smedley Butler was awarded the Medal of Honor for his actions during the Mexican War in 1914 and the Banana Wars in Haiti in 1915.

• **Father of Marine Aviation** – The development of Marine aviation began in 1912. 2nd Lieutenant Alfred A. Cunningham was the first Marine to earn naval aviation wings. Lieutenant Cunningham worked to establish Marines as aviators and is considered the father of Marine Corps aviation.

**United States Marine Corps Forces Special Operations Command (MARSOC)**

The Marine Corps has long been involved in special operations. During World War II, Marines served in the Office of Strategic Service (OSS) and operated behind enemy lines in support of indigenous resistance to Axis occupation. In the Pacific theatre, the Marine Raiders conducted reconnaissance, raids, and other special operations. However, the Marine Raider Regiment was ultimately redesignated prior to the end of the war. Following the terrorist attacks of 9/11 and the expansion of the Global War on Terrorism, the Marine Corps began to reassess its historical aversion to the establishment of a standing Marine special operations unit. MARSOC was established on 24 February 2006 as a component of U. S. Special Operations Command (USSOCOM). One of its primary roles since its inception has been to train, advise, and assist friendly host-nation forces to enable them to support their government’s security and stability against internal and external threats.

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WEEK 13: USMC WEAPONS AND PLATFORMS

I. Rifle Platoon - Individual Weapons

M4 Carbine

**Primary Function:** Infantry Weapon—less weight and shorter barrel than the M16 making it more appropriate weapon for shorter distances and confined spaces.

**Caliber:** 5.56x45mm NATO

**Weight:** 7.5 lbs (with 30 round magazine)

**Effective Range:** Area TGT – 600 meters, Point TGT – 500 meters

M203 40mm Grenade Launcher

**Primary Function:** The M203 is a single-shot, 40mm grenade launcher that attaches to the M16A4 assault rifle and the M4 Carbine. When targets cannot be accessed by direct fire, Marines use the M203 Grenade Launcher to engage enemies. Typically, this weapon is carried by either the Fire Team’s Grenadier or Fire Team Leader.

**Caliber:** 40x46mm NATO

**Effective Range:** Area TGT - 350m, Point TGT - 150 meters

M27 Infantry Automatic Rifle (IAR)

**Primary Function:** The M27 is the automatic weapon that delivers accurate suppressive fires in support of the Fire Team. It is a lightweight, magazine-fed 5.56mm weapon. The M27 is intended to enhance an automatic rifleman’s maneuverability and displacement speed.

**Caliber:** 5.56mmx45mm NATO

**Weight:** 7.9 lb (3.6 kg) empty

**Effective Range:** Area TGT 800m, Point TGT 550m
M32 Multi-Shot Grenade Launcher (MSGL)

**Primary Function:** The MSGL is a lightweight 40 mm six-shot revolver-type grenade launcher capable of firing 6 rounds in 3 seconds.

- **Caliber:** 40mm x 46 and 51mm grenades
- **Weight:** 15.4 lb (7.0 kg) empty
- **Effective Range:** Area TGT 400m, Point TGT 250m

### II. Rifle Company/Battalion - Crew Served Weapons

**M249 Light Machine Gun**

**Purpose:** The M249 light machinegun provides Marines with a lighter smaller caliber machinegun that can be used in conjunction with the M240B medium machinegun or depending on the mission as a smaller lighter machinegun that still provides a continuous and high rate of fire to engage long-range targets.

- **Ammunition:** 5.56X45mm NATO-standard ammunition
- **Weight:** 17 pounds with bipod and tools
- **Length:** 41 inches
- **Maximum effective range:** 1000 meters
- **Maximum range:** 3600 meters
- **Rate of fire:** 85 rounds/minute sustained, 725-850 rounds/minute cyclic
- **Capacity:** Ammunition comes in 100- or 200-round belts. The M249 can also accept the standard 30-round M16 magazine
M240B Medium Machine Gun

Purpose: The M240 Machinegun provides Marines with a continuous and high rate of fire to engage long-range targets. It is a heavier automatic weapon than the M249 but provides a faster rate of fire and a longer effective range. Typically, the tripod is employed when the weapon is to be used for defensive situations, or when precise fire is needed in support of maneuver units. The bipod is always attached and is suitable for use while patrolling.

Ammunition: 7.62mm
Weight with bipod: 24 pounds
Maximum effective range with tripod: 1,800 meters
Maximum range: 3,725 meters
Can be mounted on tanks and light armored vehicles

MK-153 Shoulder Launched Multipurpose Assault Weapon (SMAW)

Purpose: Portable anti-armor rocket launcher. Its mission is to destroy bunkers and other fortifications during assault operations as well as other designated targets with the dual mode rocket and to destroy main battle tanks with the HEAA rockets.

Ammunition: 83mm
Weight:
To Carry: 16.6 pounds (7.54 kg)
Ready-to-Fire (HEDP): 29.5 pounds (13.39 kg)
Ready-to-Fire (HEAA): 30.5 pounds (13.85 kg)

Maximum effective range:
1 x 2 Meter Target: 250 meters
Tank-Sized Target: 500 meters
MK19 Mod 3 Automatic Grenade Launcher

**Purpose:** At the smallest unit level, the lightest weapons often carry the day, as maneuverability is one of the primary assets of a Marine fire team. When high-volume, suppressive fire support is required, there are few weapon systems as effective as the MK19 Mod 3 Automatic Grenade Launcher. Capable of destroying most light-armored vehicles, protecting supply convoys, and even defending against hovering rotary aircraft, the MK19 provides Marine infantry battalions with the means to deliver massive direct fire or indirect fire from hidden positions. The MK19 rapidly fires explosive 40mm grenades, making it an ideal weapon against armored, mechanized, and enemy infantry forces.

**Ammunition:** High-explosive, dual-purpose M430 40x53mm grenades

**Weight:** 72.5 pounds

**Weight with tripod:** 120 pounds

**Maximum effective range:** 1,500 yards

**Nearest safe distance to launch:** 75 meters in combat/310 meters in training

.50 Caliber Machine Gun

**Purpose:** The Browning .50 Cal Machine gun provides Marines with automatic weapon suppression fire for offensive and defensive purposes. This weapon can be used effectively against enemy personnel, light armored vehicles, and slow, low-flying aircraft.

**Ammunition:** .50 caliber rounds

**Weight:** 128 pounds (84-pound gun; 44-pound tripod)

**Length:** 65.13 inches

**Maximum effective range:** 1,829 meters with tripod mount
FGM-148 JAVELIN

**Purpose:** The greatest assets to Marines fighting on the ground are maneuverability and firepower, and perhaps no weaponry provides a better combination of both than the FGM-148 Javelin Anti-tank Missile. In fact, after firing the Javelin, Marines can begin moving to a different area before the missile even reaches its target, preventing the enemy from discovering their position.

**Features:** The FGM-148 Javelin is a fire-and-forget missile with lock-on before launch and automatic self-guidance. The system takes a top-attack flight profile against armored vehicles, but can also take a direct-attack mode for use against buildings and targets under obstructions. The missile also has the ability to engage helicopters in the direct attack mode. It can reach a peak altitude of 500 feet in top-attack mode and 190 feet in direct mode.

BGM-71 TOW Missile

**Purpose:** Tube launched, optically tracked wire-guided anti-tank missile capable of penetrating armor 30-inches thick at more than 3,000 meters.

**Features:** The TOW is one of the most widely used anti-tank guided missiles and can be found in a wide variety of manually carried and vehicle mounted forms, as well as on helicopters.
Purpose: Marines are known for their exceptional ability to work cohesively as a unit, and nowhere is this more evident than when mortar teams are providing effective, indirect fire on a target. With 60mm and 81mm mortars, Marines work together to provide constant and accurate high-angle suppressive fire on targets they may not be able to even see. Marine mortar teams locate targets by converting chart data to firing data, delivering mortar fire in timely response to the ground units they support.

Features: Serving as lightweight, portable artillery, mortars are fired by dropping each round into the muzzle. The round slides down the base of the barrel where it strikes the firing pin located inside the base cap. The flame from the exploding cartridge ignites the propelling charge, producing the gas pressure that drives the round up and out of the barrel, high into the air. After it has reached its apogee, the mortar round falls to the target.

Types of Mortars: 60mm mortars are organic to the rifle company and have a range of 3,500 meters. 81mm mortars are an asset of the infantry battalion and have a range of 5,700 meters. Both mortars can fire:
- High Explosive (HE) shells (several varieties) – Effective against lightly armored targets, personnel and fortifications
- Smoke rounds – Effective as a screening or signaling round
- Illumination rounds – Effective in night missions requiring illumination of an enemy target

III. Additional Weapons and Platforms

M777 Howitzer
**Purpose:** Marines on the ground rely on the Marines by their side, but they also depend on Marine fire support from long range. The M777 Lightweight 155mm howitzer provides timely, accurate, and continuous firepower in support of Marine Infantry forces. In 2005, the Marine Corps began fielding the M777, a much smaller, lighter (9,000 pounds lighter) and more maneuverable towed cannon weapon than its predecessor, resulting in improved transportability and mobility without impacting range or accuracy. 7-ton trucks are used to move the M777s, enabling Marine artillery units to move faster between positions. A must for equipment in an expeditionary force, the howitzer is also highly deployable, able to be lifted externally by both the MV-22 Osprey and CH-53E Super Stallion.

**High Mobility Multipurpose Wheeled Vehicle (HMMWV)**

**Purpose:** Since the mid-1980s, there has not been a Marine vehicle more utilized for a wider variety of missions than the Marine HMMWV. Operating on every area of the battlefield, Marine HMMWVs are truly multipurpose vehicles, serving such functions as command and control, troop transport, shelter carrier, towed weapons mover, armament carrier, TOW missile system carrier and even ambulance. For Marine units requiring specific vehicle configurations, Marine HMMWVs have several kits that can be easily installed to meet the requirements of each mission.

**Features:** 6.2 litre, V8 diesel engine; 3 speed, automatic transmission; Four-wheel drive, independent rear suspension; Can be mounted with the M2 .50 cal, M240 or M249 machinegun; Fording capable with deep-water fording kit installed; Armored plating and bullet-resistant glass can be mounted.

**M142 High Mobility Artillery Rocket System (HIMARS)**

**Purpose:** Transportable by the KC-130 Super Hercules, the HIMARS is the Marine Corps’ most advanced artillery system, accurately engaging targets over great distances under all weather conditions.
conditions. With high volumes of lethal rocket and missile fire, the HIMARS delivers precise
strikes from over 40 miles away. A weapon system mounted on a truck, the HIMARS provides
fire support for Marines fighting in every corner of the battlefield.

**Features:** From 40 miles out, HIMARS munitions are accurate within 26 feet; Six tubes hold
200-pound rockets; Crew of three Marines; 24,000 pounds; Fires M270 artillery rockets and anti-
aircraft missiles; Ready to fire within 15 minutes of being unloaded; Consists of a launcher, carrier
and a Fire Control System; Able to launch rockets and move to a different location before the
enemy can locate its firing position.

**Medium Tactical Vehicle Replacement (MTVR)**

![Medium Tactical Vehicle Replacement (MTVR)](image)

**Purpose:** With a highly survivable armor package, off-road mission profile and large cargo and
crew compartment, the MTVR brings Marines and supplies to the fight fast, even in the most
austere environments. The MTVR Armor System (MAS) provides complete 360-degree
protection, including overhead and underbody armor that can withstand small-arms fire,
Improvised Explosive Devices (IEDs) and mine blasts. In addition to transporting Marines and
hauling fuel, water, food and supplies on paved roads, dirt roads or makeshift roads, the MTVR is
also the primary mover of the M777 Lightweight 155mm howitzer.

**Features:** Can transport up to 15 tons of payload at a maximum speed of 65 miles per hour,
Cargo compartment is 26 feet long, 8 feet wide and 12 feet high, Can ford five feet of water, all
MTVR model variants can carry three Marines in the cab, Independent suspension provides
excellent off-road maneuverability, Features a central tire inflation system

**Light Armored Vehicle (LAV-25)**

![Light Armored Vehicle (LAV-25)](image)

**Primary function:** Marines are known for being adaptable, versatile, and reliable. With
numerous variants and a proven track record on the battlefield, the LAV-25 has also earned this
reputation. Marine Light Armored Vehicles combine speed, maneuverability, and firepower to
perform a variety of functions, including security, command and control, reconnaissance and
assault. Able to operate on land, in water, carry communications equipment, and provide a
weapons platform, the LAV is not just part of a combined arms force—it is one. **Features:** Can drive in 4- or 8-wheel drive; Can reach speeds of 62.5 mph on land; Powerful diesel fuel engine; 360-degree traversing turret; Armed with 25mm cannon and two M240 machine guns; Operated by a crew of three Marines; Includes two 4-barrel smoke grenade launchers

**Mine-Resistant Ambush-Protected (MRAP) Vehicle/MRAP All-Terrain Vehicle (MATV)**

**Purpose:** With V-shaped hulls, raised chassis and armored plating, the Mine Resistant Ambush Protected Vehicle (MRAP) and MATV have proven to be the single most effective counter to Improvised Explosive Devices (IEDs). Blast-resistant underbodies and layers of thick, armored glass offer unparalleled protection, while all-terrain suspension and run flat combat tires ensure Marines can operate in complex and highly restricted rural, mountainous, and urban terrains.

**M1A1 Abrams Tank**

**Purpose:** Marine equipment is not typically described as being ‘heavy,’ but exceptions can be made when ‘heavily armored’ and ‘heavily armed’ are also part of the description. At close to 70 tons, the M1A1 Abrams is among the heaviest tanks in the world, but it more than makes up for its heft with tremendous firepower and surprising maneuverability. The principal battle tank of the Marine Corps, the M1A1 provides armor-protected firepower in support of Marine ground forces. **Features:** Bulk of firepower comes from its 120mm smoothbore main gun; Mounted guns include a M2 .50 cal machine gun and two M240 machine guns; 2 six-barreled smoke grenade launchers; Powered by a 1,500 horsepower gas turbine power plant system; Speeds top out at approximately 41 mph; Ammunition is stored in a blowout compartment for crew safety; Operated by a crew of four Marines; Six periscopes provide 360-degree view.
Assault Amphibian Vehicle (AAV)-7

**Purpose:** From ship to shore to objective, no equipment better defines the distinction and purpose of Marine Corps expeditionary capabilities than the AAV-7 Amphibious Assault Vehicle. Designed to assault any shoreline from the well decks of Navy assault ships, AAVs are highly mobile, tracked armored amphibious vehicles that transport Marines and cargo to and through hostile territory.

**Features:** Typically, the first vehicles to land during beach raids and assaults; All-welded aluminum hull protects crew from small arms fire; Eight smoke grenade launchers; Turret armed with .50 cal machinegun and 40mm grenade launcher; Can be outfitted with Mine Clearance Line Charges; Operates at speeds of 45mph on land; 8-10 knots in water; Can carry 21 combat-loaded Marines and 3 crewmembers; Can transport 10,000 pounds of cargo; Can fire on land and water; Enough fuel to drive 300 miles inland.

AH-1Z Super Cobra/Viper

**Purpose:** No aircraft defines the role of close air support better than the Marine AH-1 Super Cobra/Viper. Whether it is providing cover for advancing ground forces or escorting assault support helicopters en route to a landing zone, the AH-1Z is called on when Marines need firepower from the air.

**Features:** Able to project multiple missiles, rockets and 20mm cannon fire on targets otherwise inaccessible, the AH-1 has played a major role in every U.S. military conflict since Vietnam. Today it continues to provide the precision, armament, and tactical situational awareness to fight in close proximity with our Marines below. Equipped with enhanced navigation displays that distinguish friends from enemies, data transfer systems that deliver real-time aerial reconnaissance to Marines on the ground and composite rotor blades and tail booms that can withstand 23mm cannon fire, the Marine AH-1 is the perfect example of why Marine Aviation has been called ‘flying artillery.’
UH-1Y Huey/Venom

Purpose: No single aircraft provides a better blend of all six Marine Aviation functions than the Marine UH-1. A case study in Offensive Air Support, Assault Support, Command and Control, and Aerial Reconnaissance, the Marine utility helicopter of choice is truly a microcosm of Marine Aviation. With low-flying AH-1s aimed in on the hostile street ahead and hovering UH-1s covering adjacent rooftops, combat Marines can engage under the watchful eye of close air support.

Features: When outfitted with door-mounted .50 caliber and 7.62 machine guns and teamed alongside AH-1s, Marine UH-1s arm MAGTF commanders with unprecedented response, situational awareness and a 360-degree field of fire support for advancing ground forces. The four-bladed UH-1Y Venom features cockpit avionics, a satellite data link network, and 50% increase in range and speed over the UH-1N it replaced in 2014. Now, with a 125% boost in payload and the power to keep up with the larger helicopters they escort, utility helicopters will continue to support Marines for decades to come.

CH-53E Sea Stallion/Super Stallion Helicopter

Purpose: The heavy-lift helicopter of the Marine Corps can carry a 26,000-pound Light Armored Vehicle, 16 tons of cargo 50 miles and back, or enough combat-loaded Marines to lead an assault or humanitarian operation; but perhaps what’s most amazing about the largest military helicopter in the U.S. is what it achieves despite its size. Though powerful enough to lift every aircraft in the Marine inventory except the KC-130, the CH-53E Super Stallion is compact enough to deploy on amphibious assault ships, and has the armament, speed, and agility to qualify as much more than a heavy lifter.

Features: Armed with window-mounted .50-caliber machine guns, chaff and flare dispensers for anti-air defense, an in-flight refueling probe for limitless range and a forward-looking infrared (FLIR) imager for night and all-weather navigation, the Marine CH-53E is commonly called on...
for assault transport of Marine ground forces. Though long-range insertion missions are standard protocol for this Marine workhorse, it is the rapid resupply of Marines at the forefront that makes the Super Stallion one of the most used aircraft in Marine Aviation.

**MV-22 Osprey Tiltrotor**

**Purpose:** With the speed and range of a turboprop, the maneuverability of a helicopter and the ability to carry 24 Marine combat troops twice as fast and five times farther than previous helicopters, the Osprey greatly enhances the advantages Marines have over their enemies. The Osprey’s impact was felt immediately upon its arrival in Iraq. Commenting on its advanced expeditionary capabilities and staggering operational reach, a top Marine commander went as far as to say it turned his battle space “from the size of Texas into the size of Rhode Island”.

**Features:** Designed for expeditionary assault, raid operations, cargo lift and special warfare; Built with composite materials, fly-by-wire flight controls, digital cockpits; Vertical takeoff and landing, and short takeoff and landing capabilities; In-flight refueling.

**F/A-18 Hornet**

**Purpose:** A basic tenet of all Marine aircraft is the requirement for usability in multiple missions, and the Marine F/A-18 upholds this doctrine. Able to be quickly configured for fighter or attack missions, or a combination of both, the twin-engine, all-weather, day or night Marine jet can be used for fighter escort, enemy air defense suppression, reconnaissance, air control and the calling card of Marine Aviation: close air support.

**Features:** With external and internal weapon stations able to deliver Sparrow, AMRAAM and Sidewinder air-to-air missiles, air-to-ground munitions in the form of Harpoon and Maverick missiles, general purpose, cluster and laser-guided bombs, and a 6-barrel 20mm gun in the nose section for extremely close encounters, few aircraft in the world are counted on as heavily as the F/A-18 Hornet.
**AV-8B Harrier II**

**Purpose:** Representing, arguably, the greatest breakthroughs in aircraft technology, the Harrier was the first VSTOL-capable (vertical/short takeoff and landing) jet in the Marine inventory, giving MAGTF commanders new flexibility on the battlefield. With the ability to attack anywhere, the Harrier forces the enemy to defend everywhere, exposing vulnerabilities the enemy must divert resources to protect.

**Features:** 22,000 pounds of thrust enable the Harrier II to hover like a helicopter, and then blast forward like a jet at near-supersonic speeds. Like every aircraft in the Marine fleet, this aircraft is used for multiple missions, which include attacking and destroying surface and air targets, escorting helicopters, engaging in air-to-air defense, providing reconnaissance and applying offensive and defensive support with its arsenal of missiles, bombs and an onboard 25mm cannon. Offering the versatility to conduct almost any mission, the Harrier II provides the ideal blend of firepower and mobility to effectively counter enemies engaged by our ground forces.

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**EA-6B Prowler**

**Purpose:** It is the ability of the EA-6B Prowler to neutralize enemy air defenses that enables Marines to gain the air superiority needed for mission success. Enemy air defenses rely on early warning radar to indicate an impending air strike. However, to acquire a signal, they have to send a signal, and it is the electronic warfare equipment arming Marine Prowlers that illuminates these electronic footprints. The Marine Prowler’s ability to detect, sort, classify, jam, and destroy air defenses leaves the enemy with two options: leave the radar on, or turn it off. Either way, their defenses are reduced to expensive but useless metal.

**Features:** Information is not allowed to return to an enemy’s radar because EA-6Bs intercept it first, and the methods by which these signals can be exploited are numerous. Marine Prowlers are equipped with five tactical jamming pods, electronic surveillance systems, radar-seeking HARM
missiles, non-kinetic fire systems that leave electronic equipment disabled but intact, and
countermeasures that mask the approach of our nearby ground-attack aircraft.

The EA-6B is reaching the end of its service life and it will likely be out of service by the time the
Class of 2023 selects their fleet platform after completing flight school.

**F-35B Lightning II**

![F-35B Lightning II Image]

The **F-35B Lightning II** is the replacement for the aging F/A-18A/C. Variants of the F-35 will be
used by the Air Force (A-Variant), Marine Corps (B-Variant with V/STOL capability), and Navy
(C-Variant with carrier capability), as well as a number of international partners. The Marine
Corps is the first service to stand-up an operational squadron.

**KC-130J Hercules**

![KC-130J Hercules Image]

**Purpose:** To achieve the global reach and rapid deployability our nation requires, Marine Aviation
must be able to deliver Marines, fuel, and cargo where needed. Answering the call is the Marine
KC-130 Hercules. A tactical tanker/transport aircraft that stretches more than 90 feet in length and
130 feet wing to wing, the KC-130 Hercules can resupply austere battle zones, provide a Direct Air
Support Center, insert ground troops, and perform medevac operations. It is during the mission of
tactical aerial refueling, however, that the Marine KC-130 has earned the reputation for being best in
the world.

**Features:** Able to carry more than 12,000 gallons of fuel and simultaneously refuel two aircraft at
300 gallons a minute, the Hercules has been called the workhorse of Marine Aviation. Recently, the
first armed version of the Marine KC-130 was employed—named the Harvest HAWK (Hercules
Airborne Weapons Kit). With the ability to deliver air-to-ground Hellfire missiles, precision-guided
bombs, and 30mm auto-cannon rounds, Marines in the air now have another way to support Marines
on the ground.
RQ-7B Shadow

Purpose: The recent development and fielding of Unmanned Aircraft Systems (UAS) has delivered even more capabilities to our Marines. One such aircraft, the RQ-7B Shadow, is deployed in squadrons as an asset of the Marine Expeditionary Force or Marine Expeditionary Brigade. Designed to provide reconnaissance, relay communications and assist in target acquisition, the RQ-7B Shadow keeps an eye above the battlefield for extended periods of time, constantly relaying information between Marine air and ground controls. The Shadow enhances the capabilities of Marine commanders across the spectrum of military operations and was first deployed during Operation Iraqi Freedom in September 2007.

Features: Remotely piloted; Conducts reconnaissance, surveillance, target acquisition, indirect fires adjustment, battlefield damage assessment and rear area security support; Equipped with electro-optical and infrared (EO/IR) sensors, communications relay payloads and laser designators; Video and laser targeting is used to locate enemy positions; Launched from a trailer-mounted pneumatic catapult; Fixed, 3-wheel landing gear; Total endurance time up to 6 hours; max speed 135 mph; gross weight 375 lbs; range 68 miles.

Sources:
1. http://www.marines.com/operating-forces/equipment
CHINA’S GLOBAL EXPANSION

Over the past two decades, China's People's Liberation Army (PLA) has transformed itself from a large but antiquated force into a capable, modern military. Its technology and operational proficiency still lag behind those of the United States, but it has rapidly narrowed the gap. Moreover, China enjoys the advantage of proximity in most plausible conflict scenarios, and geographical advantage would likely neutralize many U.S. military strengths.

A sound understanding of regional military issues — including forces, geography, and the evolving balance of power — will be essential for establishing appropriate U.S. political and military policies in Asia. Research and studies by groups such as RAND show that China is not close to catching up to the United States in terms of aggregate capabilities, but also that it does not need to catch up to challenge the United States on its immediate periphery. Furthermore, although China's ability to project power to more distant locations remains limited, its reach is growing, and in the future U.S. military dominance is likely to be challenged at greater distances from China's coast. To maintain robust defense and deterrence capabilities in an era of fiscal constraints, the United States will need to ensure that its own operational concepts, procurement, and diplomacy anticipate future developments in Chinese military capabilities.

The Chinese Communist Party’s (CCP) foreign policy reflects its strategic objectives. China seeks to displace the United States in the Indo-Pacific region, expand the reaches of its state-driven economic model, and reorder the region in its favor as the preeminent power. China’s most substantial expansion of its military access in recent years has occurred in its near-abroad, where territorial disputes in the East and South China Seas persist, but China has also expanded its military operations further from the Chinese mainland. China seeks this presence based on its changing military focus and expanding international economic interests, which are increasing demands for the PLA to operate in more distant maritime environments to protect Chinese citizens, investments, and critical sea lines of communication.

China in 2018 indicated interest in establishing bases in Cambodia and Vanuatu. Although both governments have publicly stated they are not willing to host a Chinese military base, Phnom Penh in the last two years has agreed to receive new military aid from Beijing and participate in bilateral exercises with the PLA.

China’s leaders in 2013 announced the Belt and Road Initiative (BRI), also known as One Belt, One Road or OBOR). This initiative aims to strengthen China’s connectivity with the world. In a basic sense, it is a term for an umbrella initiative which covers a multitude of investment projects designed to promote the
flow of goods, investment, and people. This includes high-speed rail, highways, pipelines, energy projects like power plants, and investments in port infrastructure to create a “21st Century Maritime Road.” The new connections fostered by the BRI/OBOR could reconfigure relationships, reroute economic activity, and shift power within and between states. It combines new and old projects, covers an expansive geographic scope, and includes efforts to strengthen hard infrastructure, soft infrastructure, and cultural ties. The current plan extends to 65 countries with a combined Gross Domestic Product (GDP) of $23 trillion and includes over 4 billion people. President Xi of China has said: “In pursuing the Belt and Road Initiative, we should focus on the fundamental issue of development, release the growth potential of various countries and achieve economic integration and interconnected development and deliver benefits to all.”

In 2017, China’s leaders stated that the OBOR, which at first included economic initiatives in Asia, South Asia, Africa, and Europe, now encompasses all regions of the world, including the Arctic and Latin America, demonstrating the scope and reach of Beijing’s ambition. While some OBOR projects appear to be motivated by economic considerations, OBOR also serves a greater strategic purpose. China intends to use OBOR to develop strong economic ties with other countries, shape their interests to align with China’s, and deter confrontation or criticism of China’s approach to or stance on sensitive issues.

President Xi has promoted the “21st Century Digital Silk Road” alongside OBOR. Chinese state-owned or state-affiliated enterprises, including China Telecom, China Unicom, China Mobile, Huawei, and ZTE, have invested or submitted bids globally in areas such as 5G mobile technology, fiber optic links, undersea cables, remote sensing infrastructure connected to China’s Beidou satellite navigation system, and other information and communications technology infrastructure. While providing benefits to host countries, these projects will also facilitate China’s efforts to expand science and technology cooperation, promote its
unique national technical standards, further its objectives for technology transfer, and potentially enable politically-motivated censorship. Data legally acquired via some of these projects may also contribute to China’s own technological development in areas such as artificial intelligence.

China is also pursuing global leadership in strategic industries through state-backed investment, as outlined in its Five-Year Plans, “Made in China 2025” industrial strategy, and other national documents. China seeks to be the world leader in artificial intelligence by 2030, for example. Many of the key technologies China is targeting are integral to the rapid technological change occurring in multiple industries. These capabilities are key not only to economic growth, but to the United States’ ability to maintain its military advantage. The report identifies a wide range of efforts China has undertaken to achieve its national technology goals.

**IMPLICATIONS OF CHINA’S ACTIVITIES**

The Department of Defense has not viewed every one of these activities as a problem, and U.S. policy supports principles under which countries determine their own economic interests and needs. However, the Department of Defense is concerned by actions China’s government has taken that are out of step with international norms, diminish countries’ sovereignty, or undermine the security of the United States, our allies, or our partners.

China’s expanding global activities in some of the areas listed above present military force posture, access, training, and logistics implications for the United States and China. The PLA’s first overseas military base in Djibouti and probable follow-on bases will increase China’s ability to deter use of conventional military force, sustain operations abroad, and hold strategic economic corridors at risk. The PLA’s expanding global capabilities provide military options to observe or complicate adversary activities in the event of a conflict.

Some OBOR investments could create potential military advantages for China, should it require access to selected foreign ports to pre-position the necessary logistics support to sustain naval deployments to protect its growing interests in waters as distant as the Indian Ocean, Mediterranean Sea, and Atlantic Ocean.

China’s wider global activities could also be leveraged to exert political influence. While many of China’s generous investment financing offers benefit their host nations, they often come with strings attached. There are numerous examples of cases in which Chinese investment and project financing that bypasses regular market mechanisms has resulted in negative economic effects for the host country; in which economic deals have carried costs to host country sovereignty; or in which China has employed economic incentives or economic coercion to achieve specific political objectives. China’s attempts to gain veto authority over other countries’ decisions, and its coercion directed at U.S. allies and partners in particular, will likely threaten U.S. posture and access if not addressed.
When discussing the Indo-Pacific region and geopolitical strategy, policy makers, strategists, and academics often refer to the “First and Second Island Chains.” The extensive chains of Pacific islands ringing China have been described as a type of wall, a barrier to be breached by an attacker or strengthened by a defender. They are seen as springboards, potential bases for operations to attack or invade others in the region. In a territorial sense, they are benchmarks marking the extent of a country’s influence. Senior officials and analysts in the West frequently refer to the first and second island chains ringing China to describe both the region’s geography and predict China’s intentions. In comparison, strategists and academics in China often assert that the United States uses its military forces and relies on the first and second island chain to encircle or contain China and prevent the PLA Navy from operating freely in the Western Pacific. As China’s regional maritime power expands, they have become benchmarks that in many ways define the field of play, both from a defensive and offensive operational standpoint. The range and development of Chinese missiles, as well as the operating patterns of China’s military, all seem to be linked to this geography and viewpoint.
**U.S. RESPONSE**

The Department of Defense has responded to these implications in line with the *U.S. National Defense Strategy (NDS)* and in support of whole-of-government action. The NDS identifies long-term strategic competitions with China and Russia as the principal priorities for the Department of Defense. The Department of Defense is implementing four strategic ways:

1. building a more lethal force to gain military advantage;
2. strengthening allies and partners to generate robust networks that can advance shared interests;
3. reforming the Department of Defense to realize greater performance and affordability;
4. and expanding the competitive space to create U.S. advantages and impose dilemmas on competitors.

Importantly, competition does not mean conflict is inevitable, or preclude cooperation with China on areas of mutual interest. The NDS sets the U.S. military relationship with China on a path of transparency and non-aggression.

The Department of Defense also supports a whole-of-government response as China’s expanding global activities are not primarily or exclusively a military issue. The Department of Defense will continue to assess the military implications of China’s expanding global access in support of these actions, and ensure the Department provides combat-credible military forces needed to fight a war and win, should deterrence fail.

### CHINA’S MILITARY & GEOSTRATEGIC ENVIRONMENT

China’s military is broken down into the following services: People’s Liberation Army (PLA), Navy (PLAN), Air Force, Rocket Force, and Strategic Support Force.

The PLA Navy (PLAN) is Asia’s largest navy, with an inventory of more than 300 surface combatants, submarines, amphibious ships, patrol craft, and specialized units. The PLAN is rapidly replacing obsolescent, generally single-purpose ships in favor of larger, multirole combatants with advanced anti-ship, anti-air, and anti-submarine weapons and sensors. This modernization aligns with China’s growing emphasis on the maritime domain, with increasing demands on the PLAN to conduct operational tasks at increasing distances from the Chinese mainland using multi-mission, long-range, sustainable naval platforms with robust self-defense capabilities.

The PLAN is organized into three fleets:

- North Sea Fleet based in the Yellow Sea and headquartered at Qingdao Naval Base.
- East Sea Fleet based in the East China Sea and headquartered at Ningbo Fleet Headquarters.
- South Sea Fleet based in the South China Sea and headquartered at Yulin Naval Base.

<table>
<thead>
<tr>
<th>Strength of the Fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
</tr>
<tr>
<td>SSBN</td>
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<tr>
<td>SSN</td>
</tr>
<tr>
<td>SSK</td>
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<tr>
<td>Aircraft carriers</td>
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<tr>
<td>Destroyers</td>
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<tr>
<td>Frigates</td>
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<tr>
<td>Corvettes</td>
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<tr>
<td>Fast attack craft (missile)</td>
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<tr>
<td>Patrol craft</td>
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<tr>
<td>Minesweepers (ocean)</td>
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<tr>
<td>Mine warfare drones</td>
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<tr>
<td>Hovercraft</td>
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<tr>
<td>LPD</td>
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<tr>
<td>LSTs</td>
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<td>LSMs</td>
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<tr>
<td>LCMs-LCUs</td>
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<tr>
<td>Survey/research</td>
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<tr>
<td>Intelligence vessels</td>
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<tr>
<td>Training ships</td>
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<tr>
<td>Troop transports (AP/AH)</td>
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<tr>
<td>Submarine support ships</td>
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<tr>
<td>Salvage and repair ships</td>
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<tr>
<td>Supply ships</td>
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<tr>
<td>Fleet replenishment ships</td>
</tr>
<tr>
<td>Support tankers</td>
</tr>
<tr>
<td>Hospital ship</td>
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<tr>
<td>Icebreakers</td>
</tr>
</tbody>
</table>
Major Naval Units of the PLAN

Surface Vessels

**Luhu Class Destroyer**

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>The flagship of the North Sea Fleet is the <em>Luhu</em> Class Destroyer. More than 400 feet long and 4x anti-ship missiles located amid ships.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>The <em>Luhu</em> class is one of the first modern multi-role guided missile destroyers built by China. There are currently two units in active service with the People's Liberation Army Navy Surface Force.</td>
</tr>
</tbody>
</table>
| Weapons               | 16 x C-802 ASCMs  
1 x 8-cell HHQ-7 SAM launcher  
2 x 100mm Guns  
6 x Torpedo Tubes |
| Aircraft              | 2 helicopters |
**Luyang III Class Destroyer**

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>The Luyang III is 515ft in length and has flat-panelled active electronically scanned array (AESA) radar.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>The Luyang III is the most capable guided missile destroyers in the PLAN. Informally referred to as Chinese Aegis, portraying it as a peer of contemporary United States Navy ships equipped with the Aegis Combat System.</td>
</tr>
</tbody>
</table>
| Weapons               | 1 x 24-cell SAM launcher  
64 x VLS cells (YJ-18 or HHQ-9A)  
1 x H/PJ-38 130mm Gun, 1 x H/PJ-12 30mm Gun  
6 x Torpedo Tubes  
Advanced Physical and Electronic countermeasures, Surface search and navigation radars, hull-mounted and towed array sonar, and air search / fire control radars |
| Aircraft              | 2 helicopters |

**Liaoning 16 Aircraft Carrier**

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>The ski-jump catapult is the most recognizable visual recognition of the Liaoning 16. The carrier sits at 999 ft length.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>The first aircraft carrier commissioned into the People's Liberation Army Navy Surface Force, she is classified as a training ship, intended to allow the Navy to experiment, train and gain familiarity with aircraft carrier operations.</td>
</tr>
<tr>
<td>Weapons</td>
<td>Liaoning is equipped only with air defence weapons (18 cell missile system) and must use its aircraft for surface attack.</td>
</tr>
<tr>
<td>Aircraft</td>
<td>Total of 40 fixed wing and rotary wing aircraft most notably the J-15 Flanker X2.</td>
</tr>
</tbody>
</table>
Submarines

**Jin Class Strategic Missile Submarine (Type 094)**

The Type 094 (NATO reporting name: Jin class) is a class of ballistic missile submarine developed by China for the People's Liberation Army Navy Submarine Force. Although a class of six boats was originally expected, construction appears to have been stopped at four. By 2018 Jin class boats have not been sent on long-range deterrent patrol missions, possibly due to various problems and design flaws. Instead these boats are patrolling in South China Sea, relatively close to China's coastal waters. The South China Sea is becoming a bastion for Chinese SSBN operations.

Crew: 140

Propulsion: Nuclear

Armament: 12x JL-2 Submarine Launched Ballistic Missiles
6x 533 mm torpedo tubes

**Shang Class Attack Submarine (Type 093)**

The Type 093 (NATO reporting name: Shang class) is a class of second generation nuclear-powered attack submarines designed in conjunction with Russian experts and deployed by the Chinese People's Liberation Army Navy Submarine Force. The 093G is now confirmed to have a vertical launching system (VLS) for YJ-18 supersonic anti-ship missiles, and anti-ship variants of the CJ-10 cruise missile.

Crew: 100 total

Propulsion: Nuclear

Armament: 6x 553 mm (21.8 in) or 650 mm (26 in) torpedo tubes
VLS tubes for either YJ-18 or CJ-10 (Type 093G) anti-ship missiles

**Yuan Class Submarine (Type 039A)**

The Type 039A submarine (NATO reporting name: Yuan class) is a class of diesel-electric submarine in China's People's Liberation Army Navy. It is China's first AIP (air-independent propulsion) powered submarine and presumed to be one of the quietest diesel-electric submarine classes in service. The Yuan-class SSK is integrated with advanced noise reduction techniques including passive/active noise reduction, asymmetrical
seven-blade skewed propeller, the 039A is expected to be as quiet as other modern diesel-electric submarines, which are very difficult to track.

Crew:  36 total

Propulsion: Diesel-electric

Armament:  6x 533 mm (21 in) torpedo tubes, YJ-832 ASCM capable

Aircraft

Su-30 Flanker

The Su-30 Flanker is a heavy class, all-weather, long-range strike fighter comparable to the American McDonnell Douglas F-15E Strike Eagle. The Su-30 is upgraded with avionics, maritime strike capabilities and electronic warfare systems.

The Su-30 Flanker is known to be the primary aircraft capable of conducting maritime intercepts of the U.S. reconnaissance aircraft P-8 and P-3 operating in the East and South China Seas.

J-15 Flanker X2

The J-15 Flanker is a 4th generation, twin-jet, all-weather fighter aircraft. The J-15 is the carrier based aircraft in the PLA Air Force.

On 6 May 2010, the aircraft conducted its first takeoff from a simulated ski-jump.

On 25 November 2012, the aircraft successfully performed its first takeoff and landing on China's first aircraft carrier Liaoning.

Missiles

YJ-12

The YJ-12 is a Chinese supersonic anti-ship cruise missile. The YJ-12 is capable of evasive maneuvers to avoid anti-missile threats. A saturation attack by YJ-12's fired at long range would pose a grave threat to
American carrier strike groups; once the wave of sea-skimming missiles appeared over the horizon and was detected by ships' own sensors, they would only have some 45 seconds to engage before impact and if there were enough, short range defenses would be overwhelmed.

There is a surface-launched variant called the YJ-12A with a range of 250nm, which is equipped with a rocket booster for initial acceleration. The YJ-12B is a land-based variant with a range of 160 nm.

**YJ-18**

The YJ-18 is a Chinese family of anti-ship and land attack cruise missiles. The United States Department of Defense believes the YJ-18 is similar to the Russian 3M-54 Klub, with a subsonic cruise mode and a supersonic terminal attack; the missile is credited with a range of 290 nautical miles. The missile can be launched from vertical launching systems, and possibly from submarine torpedo tubes.

Chinese media claims the missile has an inertial guidance system using BeiDou Navigation Satellite System data, and carries a 660 lb high-explosive warhead or an anti-radiation warhead to destroy electronics at short range.

**Dong-Feng 21 Missile**

Also known as the “Carrier Killer Missile”, the Dong-Feng is a two-stage, solid-fuel rocket, single-warhead medium-range ballistic missile (MRBM) in the Dong Feng series. Originally developed as a strategic weapon, the DF-21’s later variants were designed for both nuclear and conventional missions. The latest DF-21D was said to be the world's first anti-ship ballistic missile (ASBM).

The US Department of Defense stated in 2010 that China has developed and reached initial operating capability (IOC) of a conventionally armed high hypersonic land-based anti-ship ballistic missile based on the DF-21. This is the first ASBM and weapon system capable of targeting a moving aircraft carrier strike group from long-range, land-based mobile launchers. The DF-21D is thought to employ maneuverable reentry vehicles (MaRVs) with a terminal guidance system. The upgrades enhance China’s ability to prevent US carriers from operating in the Taiwan Strait.
CHINA MILITARY INCIDENTS

2001: Hainan Island Incident
April - A U.S. surveillance plane collides in mid-air with a Chinese air force plane near the southern Chinese island of Hainan, leading the Chinese plane to crash into the sea and forcing the U.S. aircraft to land on Hainan. An 11-day standoff over China’s holding of the plane and 24 crew members raises tensions with the new administration of President George W. Bush.
2005: Peace Mission
August - China and Russia hold their first joint military exercises. The exercise consisted of combined land, sea, and air elements simulating an intervention in a state besieged by terrorists or political turmoil. The force practiced air and naval blockades, an amphibious assault, and occupying a region.

2007: Missile Test
January - Reports say China has carried out a missile test in space, shooting down an old weather satellite. The US, Japan and others express concern at China's military build-up.

2012: South China Sea
May - Philippines and Chinese naval vessels confront one another off the Scarborough Shoal reef in the South China Sea. Both countries claim the reef, which may have significant reserves of oil and gas.

2012: Loaning 16
September - China launches its first aircraft carrier, the Liaoning - a converted former Soviet Kuznetsov-class aircraft vessel.

2015: Spratly Islands
October - China expresses anger at US naval ship sailing by artificial reefs Beijing is building among disputed Spratly Islands in South China Sea.

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https://www.brookings.edu/blog/brookings-now/2019/05/17/charts-of-the-week-chinas-belt-and-road-initiative/


RUSSIA’S GLOBAL ENGAGEMENT

Since returning to power in 2012, Russian President Putin has sought to reassert Russia as a great power on the global stage and to restructure an international order that the Kremlin believes is tilted too heavily in favor of the United States at Russia’s expense. With the exception of its recent Syria intervention, Russia’s foreign policy priorities traditionally have focused primarily on the post Soviet region and the West. However, Russia (like the Soviet Union before it) actively pursues foreign relations on a global scale. Russia is one of five permanent members of the U.N. Security Council, where it plays a significant role. Until 2014, Russia was a member of the Group of Eight (G8), together with the West’s seven leading economies (including Japan). It is also a member of BRICS, an alternative group of states with large economies that also includes Brazil, India, China, and South Africa. In these and other international fora, Russia has engaged on global issues such as nonproliferation (including combatting the nuclear weapons programs of Iran and North Korea), counterterrorism, counterpiracy, and global health.

Russia is a leading oil and gas exporter and the second largest major weapons exporter in the world (its top clients are India, China, and Vietnam). Russia has constructed nuclear power plants in Europe, Iran, India, and China, with more under construction or planned. In addition, Russia has cultivated a variety of bilateral partnerships around the globe. In Asia, Russia’s main partner is China, with which it has close security, economic, and political relations, although Russia has concerns about China’s inexorable rise. In addition, Russia has cultivated good relations with Japan, with which it still has a territorial dispute over islands Russia annexed at the end of World War II. It also has developed good relations with India, Pakistan (more recently), Afghanistan, Vietnam, and across Southeast Asia.

In the Middle East, Russia’s Syria intervention is exceptional in scope but reflects a long-standing policy of fruitful relations with regional governments including Algeria, Egypt, Iraq, Libya, and Sudan. In Latin America, Russia has sought to reengage with Soviet-era partners Cuba and Nicaragua, as well as Venezuela, Brazil, and others.

U.S.-RUSSIAN RELATIONS

For more than 25 years, the U.S.-Russian relationship has gone through positive and negative periods. The spirit of U.S.-Russian “strategic partnership” forged by Presidents Bill Clinton and Boris Yeltsin in the early 1990s was gradually overtaken by increasing tension and mutual
recrimination, in large part as a consequence of disagreements over Russian efforts to reestablish a sphere of influence in the post-Soviet region and over U.S. promotion of NATO enlargement to Central and Eastern Europe and military intervention in the former Yugoslavia.

Presidents George W. Bush and Vladimir Putin believed they could restore U.S.-Russian relations, particularly in the aftermath of the terrorist attacks of September 11, 2001. The two countries reshaped their relationship on the basis of cooperation against terrorism and the economic integration of Russia with the West. However, tensions arose again around a number of issues, including the Iraq War; the so-called color revolutions in Ukraine, Georgia, and Kyrgyzstan involving protests against electoral fraud that unseated corrupt regimes; Russian energy and security pressure on its neighbors; and U.S. and NATO plans for missile defense. Cooperation continued in some areas, but the August 2008 Russian-Georgian conflict caused bilateral ties to deteriorate to their lowest point since the Cold War.

Upon entering office, the Obama Administration believed it could prompt yet another “reset” of relations with Russia’s new president, Dmitry Medvedev, a relatively liberal Russian political figure who nonetheless remained informally subordinate to Prime Minister Putin. During a July 2009 meeting in Moscow, Presidents Medvedev and Obama established the U.S.-Russia Bilateral Presidential Commission consisting of 21 working groups to address a broad spectrum of issues. The commission’s working groups met regularly for more than four years, until their activities were suspended as a result of Russian actions in Ukraine.

U.S.-Russian relations worsened with Russia’s disputed December 2011 parliamentary elections and Putin’s March 2012 return to the presidency. In 2014, U.S. relations with Russia deteriorated further in reaction to Russia’s invasion and annexation of Ukraine’s Crimea region and Russia’s sponsorship and support of separatist militants in the Donetsk and Luhansk regions (the Donbas). The United States, in coordination with the EU and a number of other states, promised to impose increasing costs on Russia until it “abides by its international obligations and returns its military forces to their original bases and respects Ukraine’s sovereignty and territorial integrity.” The United States suspended discussions on trade and investment and military-to-military contacts, as well as certain kinds of nonproliferation and energy research cooperation. Russia also was removed from the G8, and the United States, EU, and other allies introduced sanctions on Russia for its actions.

Since 2014, the United States has imposed sanctions on more than 520 individuals and entities in response to Russia’s aggressive actions in and toward Ukraine. Former President Barack Obama, in issuing decisions to curtail economic relations, declared Russia’s activities in Ukraine as threatening the peace, security, stability, sovereignty, and territorial integrity of Russia’s neighbor and, in turn, as constituting a threat to U.S. national security.

On January 6, 2017, the Office of the Director of National Intelligence (ODNI) released a declassified report on Russian activities and intentions related to the 2016 U.S. presidential election. The report states that the Central Intelligence Agency, the Federal Bureau of Investigation (FBI), and the National Security Agency have “high confidence” that President Putin “ordered an influence campaign in 2016 aimed at the US presidential election” in order to “undermine public faith in the US democratic process.”

Like the Administrations before it, the Trump Administration says it seeks to rebuild constructive relations with Russia. Many observers, including from the previous Administration, concur that improved U.S.-Russian relations would be welcome. A key debate, however, revolves around whether the United States can succeed in building improved relations with Russia while maintaining strong commitments to its allies and standing firm on fundamental principles. Some observers believe that at least incremental progress is possible. Others have expressed doubt that the United States can successfully cooperate with Russia, even on an issue as central to the Administration as the fight against the Islamic State.

Because of conflicting interests between Russia and the West and because Russia’s future intentions are uncertain, how Russia develops its military presents real challenges to the United States and its allies. Russia's military appears to have improved significantly since the war in Georgia in 2008. Uncertainty
about the future strength of the Russian military poses challenges for Western defense planners. Russia could seek to strengthen its numerous ground forces to achieve greater parity with the West, or its economy and demographics may force it to constrain the size and quality of its forces. Russia may also focus its military investment across competing priorities, including preparing for war with NATO, military dominance against former Soviet republics, or global power projection.

**RUSSIA’S MILITARY**

Russia’s armed forces surprised most U.S. and European observers with their actions in Ukraine starting in March 2014 and in Syria starting in September 2015. Since the end of the Cold War, conventional wisdom about the Russian military has tended to indicate a force in relative decline, with aging Soviet-era equipment and with technology and a philosophy of warfare lagging well behind that of the United States and many NATO allies. Analysts noted that the shortcomings of Russia’s military appeared to be confirmed by its relatively lackluster performance in the 2008 conflict with Georgia.

Over the past several years in particular, many analysts have been struck by the improved capabilities exhibited by the Russian military, as well as the unexpected ways in which Russia has used its military:

- Russian special forces, elite airborne troops, and naval infantry effected a swift and bloodless seizure of Crimea in March 2014.
- The subsequent Russian involvement in the conflict in eastern Ukraine highlighted the practice of “hybrid warfare,” centered on the use of irregular “separatist” forces covertly backed by the regular military, along with an information and propaganda campaign orchestrated to create misdirection and spread an alternate international narrative.
- The campaign in Syria, in addition to serving a number of broader Russian interests and diplomatic objectives, has allowed Russia to test and display how various components of its military work together in an expeditionary setting.
- The Syria operation has demonstrated noteworthy capabilities, such as the launch of long-range cruise missiles from naval vessels in the Caspian Sea and the deployment of Russia’s most modern combat aircraft. It also has highlighted the Russian military’s ability to effect “area denial” with an air defense “bubble” of overlapping advanced missile systems.
- At the same time, Russia has been upgrading or constructing new facilities in the Arctic and reactivating Soviet bases in the Arctic that fell into disuse with the end of the Cold War. In December 2014, Russia launched a new Arctic Joint Strategic Command. In addition, Russia has been forming two new brigades specializing in Arctic warfare.
- Over the past several years, Russia also has adopted an increasingly aggressive posture with its air and sea patrols and military exercises.

**Russia’s Military Strength**

Russia pursued an ambitious modernization program as it steadily increased defense spending, at least until 2016, when the defense budget declined for the first time in years. In 2010, Russia announced a new 10-year State Armaments Program (SAP) for 2011-2020, calling for approximately 20 trillion rubles in new weapons procurement over that period (approximately $328 billion as of December 2016). The procurement goals of the SAP include:

- In the coming decade, Russian armed forces will be provided with over 400 modern land and sea-based inter-continental ballistic missiles;
- 8 strategic ballistic missile submarines and about 20 multi-purpose submarines;
• Over 50 surface warships;
• Around 100 military spacecraft;
• Over 600 modern aircraft including fifth generation fighter jets, as well as more than 1,000 helicopters;
• 28 regimental kits of S-400 air defense systems, 38 battalion kits of Vityaz missile systems, and 10 brigade kits of Iskander-M missile systems;
• Over 2,300 modern tanks, about 2,000 self-propelled artillery systems and vehicles, and more than 17,000 military vehicles.

Since 2014, the Russian economy has been negatively affected by falling oil prices and international sanctions, with a prolonged recession accompanied by severe currency depreciation, high inflation, and increased capital flight. The downturn has strained public finances and complicated long-term budgetary and planning efforts. Accompanying an overall decline in defense spending from 2016, the approval of a new 30-trillion ruble (approximately $492 billion) SAP for the period 2016-2025 was postponed until 2018 due to the instability of economic conditions. Additionally, some analysts doubt that the Russian defense industry can produce and deliver the full complement of equipment at the pace and scale envisioned by the SAP.
### Major Units of the Russian Navy

#### Surface Vessels

The Russian Navy’s major combatant surface ships, frigates and larger, comprise some 32 units assigned across all 4 fleets.

**Admiral Kuznetsov Class Aircraft Carrier**

<table>
<thead>
<tr>
<th>Visual Identification</th>
<th>The ski-jump catapult is the most recognizable visual recognition of the Kuznetsov. The carrier sits at 1,001 ft in length.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>The design of Admiral Kuznetsov-class implies a mission different from that of the United States Navy's carriers. The carrier is intended to support and defend strategic missile-carrying submarines, surface ships, and naval missile-carrying aircraft of the Russian Navy.</td>
</tr>
</tbody>
</table>
| Weapons               | 12 x SS-N-19 SSM 12 x SS-N-19 SSM  
4 x SA-N-9 SAM (24 missiles)  
8 x twin 30mm Guns  
2 x RBU 12,000 anti-submarine mortars  
Air/surface radar, sonar, and ECMs |
| Aircraft              | 18x SU-33 fighters, 6x MIG-29K fighters, 4x KA-31 helicopters, 2x KA-27 helicopters |

**Sovremenny Class Destroyer**

| Visual Identification | The two four-cell anti-ship missile launchers installed port and starboard of the forward island and set at an angle about 15° are the most recognizable feature of the Sovremenny. |
### Mission
The Sovremenny class, Soviet designation Project 956, is a class of anti-ship and anti-aircraft guided missile destroyers of the Russian Navy primarily tasked with anti-ship warfare, while also providing sea and air defense for warships and transports under escort.

### Weapons
- 8 x SS-N-22 SSM
- 2 x SA-N-7 SAM (44 missiles)
- 4 x 130mm Guns
- 4 x Torpedo Tubes
- 2 x RBU 1000 anti-submarine mortars
- Air/surface radar, sonar, and ECMs

### Aircraft
1x Ka-27 series helicopter

### Visual Identification
The black search radar located behind the main superstructure is the most recognizable visual recognition of the **Grigorovich**. The frigate sits at 409 ft in length.

### Mission
The functions of **Admiral Grigorovich** class frigates are air defense, escorting of other warships and anti-submarine warfare.

### Weapons
- 8 x SS-N-27 SSM
- 24 x SA-N-7C SAM
- 1 x 100mm Gun
- 2 x 6-barrel 30mm surface-to-air Guns
- 4 x Torpedo tubes
- 1 x RBU 6000 anti-submarine mortar
- Advanced Air/surface radar, sonar, and ECMs

### Aircraft
1x Ka-27 anti-submarine warfare helicopter, or 1x Ka-31 airborne early warning helicopter

### Submarines
Russia currently has 65 submarines. Historically the backbone of the Russian Navy, 75% of the 65 operational submarines are over 20 years old and are slowly being replaced with highly capable platforms. Russia will continue production of its fourth-generation DOLGORUKIY-class submarines through 2020. Russia is also planning to construct a fifth-generation strategic missile SSBN between 2031 and 2050.
**Borei Class Strategic Missile Submarine**

The Borei class, also referred to by the Russian designation Project 955 Borei, is a class of nuclear-powered ballistic missile submarines being built for the Russian Navy. The class is intended to replace the Soviet-era Delta III, Delta IV and Typhoon classes in Russian Navy service.

Crew: 107 total

Propulsion: Nuclear

Armament: 16 x Bulava Submarine-Launched Ballistic Missiles  
4 x 533 mm torpedo tubes  
Possible SSM and/or SAM capability

**Yasen Class Attack Submarine**

The Yasen class, also referred to by the Russian designation Project 885 Yasen is a series of newest Russian nuclear-powered cruise missile submarines being constructed for the Russian Navy. It is projected to replace Russia's Soviet-era nuclear attack submarines.

Crew: 64 total

Propulsion: Nuclear

Armament: 8 x VLS launchers holding a combination of 32 SS-N-27 and/or SS-N-20 missiles  
8 x torpedo tubes

**Akula Class Attack Submarine**

The Akula class, also referred to by the Russian designation Project 971 are series of nuclear-powered attack submarines (SSNs). The Akula incorporates a double hull system composed of an inner pressure hull and an outer "light" hull. This allows more freedom in the design of the exterior hull shape, resulting in a submarine with more reserve buoyancy than its western analogs. The distinctive "bulb" or "can" seen on top of the Akula's rudder houses its towed sonar array, when retracted.
Crew: 73 total

Propulsion: Nuclear

Armament: 4x 533 mm torpedo tubes (28 torpedoes)
4x 650 mm torpedo tubes (12 torpedoes)
1–3x surface-to-air portable missile launcher fired from sail (18 missiles per launcher)
12 x SS-N-21 or SS-N-27 missiles

*Varshavyanka Class Patrol Submarine*

The Varshavyanka class is an improved version of the Kilo class submarines, featuring advanced stealth technology, extended combat range and ability to strike land, surface and underwater targets. The Project 636 class boats displace 3,100 tons, reach speeds of 20 knots, and can dive to 300 meters. These attack submarines are mainly intended for anti-shipping and anti-submarine operations in relatively shallow waters.

Crew: 52 total

Propulsion: Diesel-electric

Armament: 6 x 533 mm (21 in) torpedo tubes (18 torpedoes)
8 x SS-N-27 SSM or SS-N-30 LACM
24 x mines (in lieu of torpedoes)
6-8 x SA-N-5/8 SAM

*Aircraft*

**Su-35 Flanker-E**

The Su-35 Flanker-E is the designation for two improved derivatives of the Su-27 air-defence fighter. They are single-seat, twin-engine, and supermaneuverable aircraft. The Sukhoi Su-35 Flanker-E is the top Russian air-superiority fighter in service today, and represents the pinnacle of fourth-generation jet fighter design. Distinguished by its unrivaled maneuverability, most of the Su-35’s electronics and weapons capabilities have caught up with those of Western equivalents, like the F-15 Eagle.

The Su-35 Flanker-E is the most common Russian fighter to conduct intercepts against U.S. Military reconnaissance aircraft conducting operations in the Eastern Meditteranean and Black Sea.
Missiles

SS-N-26 Strobile

The SS-N-26 Strobile missile is a Soviet / Russian supersonic anti-ship cruise missile.

Advantages:
- Over-the-horizon firing range
- Full autonomy of combat use ("fire and forget")
- A set of flexible ("low-profile sea-skimming", "high-low") trajectories
- High supersonic speed in all phases of flight
- Full harmonization for a wide range of platforms (surface ships, submarines and land-based launchers)
- Possible use of the missile in electronic countermeasures environment and under enemy fire

SS-N-27 Sizzler

The SS-N-27 Sizzler missiles are Russian group of surface ship-, submarine-launched and airborne anti-ship and coastal anti ship (ASHM), land attack cruise missiles (LACM) and anti-submarine missiles. The missile can be launched from a surface ship using a Vertical Launch System (VLS). It has a booster with thrust vectoring capability. The missile launched from a submarine torpedo tube has no need for such an addition but has a conventional booster instead. The air launched version is held in a container that is dropped as the missile launches, detaching from the container.
At the height of the Cold War in the 1960s, there were several incidents between forces of the U.S. Navy and the Soviet Navy. Incidents included planes of the two nations passing extremely close to one another at high speeds, ships bumping one another, and both ships and aircraft making threatening movements against those of the other side. In 1968, the U.S. proposed talks on preventing such incidents from becoming more serious. These talks eventually led to a formal agreement signed by both sides in Moscow on May 25, 1972 (“Agreement On the Prevention of Incidents On and Over the High Seas”).

The Russian military intervention in the Syrian Civil War began in September 2015, after an official request by the Syrian government for military aid against rebel groups. The intervention initially consisted of air strikes fired by Russian aircraft stationed in the Khmeimim base at targets primarily in north-western Syria, against Syrian opposition militant groups opposed to the Syrian government, including the Syrian National Coalition, the Islamic State of Iraq and the Levant (ISIL), al-Nusra Front (al-Qaeda in Syria) and the Army of Conquest. In addition, Russian special operations forces and military advisors were stationed in Syria. Prior to the intervention, Russian involvement in the Syrian Civil War had mainly consisted of supplying the Syrian Army with arms and equipment. At the end of December 2017, the Russian government said its troops would be based in Syria permanently.

The relevance of this agreement remains today. The importance of understanding the challenge presented by Russia and its military forces is highlighted by many recent incidents at sea that include the following examples (not all inclusive):

**April 2016** – A pair of Russian Su-24 fighter jets performed several low-altitude passes on the USS DONALD COOK Arleigh Burke class guided missile destroyer while the ship was conducting exercises with a Polish helicopter in international waters in the Baltic Sea 70 nautical miles (130 km; 81 mi) off Kaliningrad.

**February 2017** – Multiple Russian SU-24 “Fencer” fighter jets and an Il-38 sub-hunting quad-engine aircraft buzzed the U.S. Navy destroyer USS PORTER (DDG 78) in the Black Sea.

**January 2018** – A Russian Sukhoi SU-27 “Flanker” fighter jet came within five feet of an EP-3 Aries before crossing through the U.S. aircraft’s flight path, forcing the EP-3 to fly through the SU-27’s flight wash.
November 2018 – A Russian fighter jet flies dangerously close to a U.S. Navy reconnaissance plane on Monday over the Black Sea. A Navy EP-3E Aries II reconnaissance aircraft was flying in international airspace when it was intercepted by a Russian Su-27 fighter in an interaction that lasted about 25 minutes.

June 2019 – A Russian Sukhoi SU-35 fighter jet harassed a U.S. Navy P-8A Poseidon patrol plane over the Mediterranean Sea.

June 2019 – On 7 June 2019 the USS CHANCELLORSVILLE (CG 62) came close to a collision with the Russian destroyer Admiral Vinogradov. United States Seventh Fleet stated the Russian destroyer came within 50 to 100 feet of USS CHANCELLORSVILLE and did not adhere to proper “rules of the road”.

Sources:


WEEK 16: GLOBAL CHALLENGES – NORTH KOREA

NORTH KOREA SECURITY CHALLENGES

For almost 70 years, the United States has been committed to security on the Korean Peninsula. It has used a range of military and diplomatic tools to underscore its commitments to its treaty ally South Korea and to deter North Korean aggression. Apart from occasional crises and provocations, deterrence appears to have been robust. The risk of large-scale conflict, while ever present, has remained relatively low.

However, because of a combination of developments on the peninsula—the most important of which is North Korea’s burgeoning nuclear program—this situation may be changing. Under leader Kim Jong-un, North Korea has dramatically fastened the pace of nuclear weapon development—especially delivery vehicles, such as long-range missiles. At the same time, the rhetoric out of the North has become even more confrontational. Kim Jong-un’s regime appears stable, but a long series of arrests and killings of apparent rivals and the North Korean people’s growing awareness of outside events and increasing involvement in trade point to the potential for sudden volatility.

In addition, South Korea’s doctrine of disproportionate response to provocations and emphasis on preemption exacerbate escalatory dangers. The recent rapprochement between the two Koreas and the bilateral and multilateral summits now under way may ease these tensions. Should those talks fail to resolve key issues, however, the military situation in Korea could remain very dangerous.

As of early 2019, North Korea has not conducted any nuclear-capable missile or nuclear tests in more than a year, has declared its support for the denuclearization of the Korean Peninsula, and has reversibly dismantled portions of its WMD infrastructure. However, the Intelligence Community in the United States continues to assess that North Korea is unlikely to give up all of its nuclear weapons and production capabilities, even as it seeks to negotiate partial denuclearization steps to obtain key US and international concessions.

North Korean leaders view nuclear arms as critical to regime survival, according to official statements and regime-controlled media.

- In his 2019 New Year’s address, North Korean President Kim Jong Un pledged that North Korea would “go toward” complete denuclearization and promised not to make, test, use, or proliferate nuclear weapons. However, he conditioned progress on U.S. “practical actions.” The regime tied the idea of denuclearization in the past to changes in diplomatic ties, economic sanctions, and military activities.
In Singapore in June 2018, Kim said he sought the “complete denuclearization of the Korean Peninsula”—a formulation linked to past demands that include an end to U.S. military deployments and exercises involving advanced U.S. capabilities.

The United States continues to observe activity inconsistent with full denuclearization. North Korea has underscored its commitment to nuclear arms for years, including through an order to mass-produce weapons in 2018 and an earlier law—and constitutional change—that affirmed the country’s nuclear status.

North Korea continues its efforts to mitigate the effects of the U.S.-led pressure campaign, most notably through diplomatic engagement, counter-pressure against the sanctions regime, and direct sanctions evasion.

- Kim Jong Un has sought sanctions relief through a campaign of diplomatic engagement that included his first summits with foreign leaders since taking power in 2011. He met with South Korean President Moon Jae-in three times in 2018, leading to agreements to reconnect roads and rail lines, establish new military parameters, promote reforestation, and facilitate cultural exchanges.
- Kim has also sought to align the region against the U.S.-led pressure campaign in order to gain incremental sanctions relief, and North Korean statements have repeatedly indicated that some sanctions relief is necessary for additional diplomacy to occur.
- By late 2018, the enforcement of new UN sanctions had led to a precipitous decline in North Korea’s monthly export revenue compared with 2017, a change that also reduced imports.
- North Korea generates revenue through overseas labor, cyber-theft operations, and illicit commercial exports of UN Security Council-prohibited goods.
- Throughout 2018, the United States and its allies observed North Korean maritime vessels using at-sea, ship-to-ship transfers of petroleum from third-country tankers to acquire additional refined petroleum as a way to mitigate the effects of UN sanctions.
North Korea’s conventional capabilities continue to pose a threat to South Korea, Japan, and U.S. forces in the region. As a way to offset adversary military advantages, Kim Jong Un continues to pursue advanced conventional weapon programs and capabilities, including more accurate artillery and ballistic missile strike capabilities and UAVs.

Given the continued and growing threat from North Korea, its nuclear and missile programs, and its proliferation of related technology, the U.S. Department of Defense continues to manage the North Korean security challenge through close coordination and consultation with the international community, particularly South Korea and Japan. The United States remains vigilant in the face of North Korea’s continued provocations and steadfast in its commitments to allies in the region, including the extended deterrence commitments provided through both the nuclear umbrella and conventional forces.

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<tr>
<th>Strength of the Fleet</th>
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<tr>
<td>Type</td>
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<tr>
<td>Submarines - Strategic</td>
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<td>Submarines - Patrol</td>
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<td>Submarines - Coastal</td>
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<td>Submarines - Midgets</td>
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<td>Frigates</td>
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<td>Amphibious craft</td>
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<tr>
<td>Hovercraft (LCPA)</td>
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<tr>
<td>Minesweepers</td>
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<tr>
<td>Depot ships for midget submarines</td>
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<tr>
<td>Survey vessels</td>
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</table>
RECENT NORTH KOREAN INCIDENTS

2006 July - North Korea test fires seven missiles including a long-range Taepodong-2 missile, which crashes shortly after take-off despite it reportedly having the capability to hit the US.

2006 October - North Korea conducts its first nuclear weapons test at an underground facility. The UN imposes economic and commercial sanctions on North Korea.

2009 April - North Korea launches a long-range rocket, carrying what it says is a communications satellite; its neighbours accuse it of testing long-range missile technology. Condemnation from the UN Security Council prompts North Korea to walk out of six-party talks and restart its nuclear facilities.

2009 May - North Korea carries out its second underground nuclear test. UN Security Council condemns move in June.

2012 October - North Korea claims it has missiles that can hit the US mainland after South Korea and Washington announce a deal to extend the range of South Korea's ballistic missiles.

2013 February - UN approves fresh sanctions after North Korea stages its third nuclear test, said to be more powerful than the 2009 test.

2014 March - North Korea test-fires two medium-range Rodong ballistic missiles for the first time since 2009, in violation of UN resolutions.

2017 July - Pyongyang test fires a long-range missile into the Sea of Japan, with some experts stating the missile could potentially reach Alaska.
Sources:


Director of National Intelligence, Statement for the Record, Senate Select Committee on Intelligence, “Worldwide Threat Assessment of the U.S. Intelligence Community.” 29 January 2019.


For decades, Iran has vexed the international community. It introduced Islam as a form of governance in 1979 and has supported militants abroad and defied international norms. In May 2018, the Trump administration withdrew from the 2015 nuclear agreement negotiated by six world powers and Iran. The administration argued that the deal did not adequately curb Tehran’s nuclear program or address its missile program, human rights abuses, and support for terror. Washington re-imposed sanctions as part of a “maximum pressure” campaign to change Tehran’s behavior. Tensions between Iran and United States escalated over attacks on tankers in 2019 in the Gulf of Oman.

Iran’s regional ambitions and improved military capabilities almost certainly will threaten U.S. interests in the near future, driven by Tehran’s perception of increasing US, Saudi, and Israeli hostility, as well as continuing border insecurity, and the influence of hardliners. The U.S. Intelligence Community assesses that Iran will attempt to translate battlefield gains in Iraq and Syria into long-term political, security, social, and economic influence while continuing to press Saudi Arabia and the UAE by supporting the Huthis in Yemen.

In Iraq, Iran-supported Popular Mobilization Committee-affiliated Shia militias remain the primary threat to U.S. personnel, and we expect that threat to increase as the threat ISIS poses to the militias recedes, Iraqi Government formation concludes, some Iran-backed groups call for the United States to withdraw, and tension between Iran and the United States grows. The United States continues to watch for signs that the Iranian regime might direct its proxies and partners in Iraq to attack U.S. interests.

Iran’s efforts to consolidate its influence in Syria and arm Hezbollah have prompted Israeli airstrikes as recently as January 2019 against Iranian positions within Syria and underscore the growing concern about the long-term trajectory of Iranian influence in the region and the risk that conflict will escalate.

Iran’s retaliatory missile and UAV strikes on ISIS targets in Syria following the attack on an Iranian military parade in Ahvaz in September 2018 were most likely intended to send a message to potential adversaries, showing Tehran’s resolve to retaliate when attacked and demonstrating Iran’s improving military capabilities and ability to project force.

Iran continues to pursue permanent military bases and economic deals in Syria and probably wants to maintain a network of Shia foreign fighters there despite Israeli attacks on Iranian positions in Syria. The United States assesses that Iran seeks to avoid a major armed conflict with Israel. However, Israeli strikes that result in Iranian casualties increase the likelihood of Iranian conventional retaliation against Israel,
judging from Syrian-based Iranian forces’ firing of rockets into the Golan Heights in May 2018 following an Israeli attack the previous month on Iranians at Tiyas Airbase in Syria.

In Yemen, Iran’s support to the Huthis, including supplying ballistic missiles, risks escalating the conflict and poses a serious threat to U.S. partners and interests in the region. Iran continues to provide support that enables Huthi attacks against shipping near the Bab el Mandeb Strait and land-based targets deep inside Saudi Arabia and the UAE, using ballistic missiles and UAVs. More than 3.4 million barrels of oil pass through the 20km wide Bab al-Mandab Strait each day. In 2016, the Navy destroyer USS MASON (DDG 87) successfully defended three other U.S. warships and multiple U.S.-flagged merchant vessels during missile attacks in the Red Sea from Huthi rebels in Yemen. MASON fired SM-2 defensive missiles and became the only warship in U.S. naval history to successfully employ the Evolved SeaSparrow Missile (ESSM) while under attack. MASON’s actions protected 1,000 U.S. Sailors.

**IRAN’S DOMESTIC POLITICS**

Regime hardliners are more emboldened to challenge rival centrists by undermining their domestic reform efforts and pushing a more confrontational posture toward the United States and its allies. Centrist President Hasan Ruhani has garnered praise from hardliners with his more hostile posture towards the U.S., but still struggles to address ongoing popular discontent.

Nationwide protests, mostly focused on economic grievances, have continued to draw attention to the need for major economic reforms and unmet expectations for most Iranians. The United States assesses that Tehran is prepared to take more aggressive security measures in response to renewed unrest while preferring to use nonlethal force. President Ruhani’s ability to reform the economy remains limited, given pervasive corruption, a weak banking sector, and a business climate that discourages foreign investment and trade.
IRAN'S MILITARY

Iran continues to develop military capabilities that threaten U.S. forces and U.S. allies in the Middle East region. Increased harassment of U.S. and allied warships and merchant vessels in the Persian Gulf, Strait of Hormuz, and Gulf of Oman is a consistent concern.

Iran continues to develop, improve, and field a range of military capabilities that enable it to target U.S. and allied military assets in the region and disrupt traffic through the Strait of Hormuz. These systems include ballistic missiles, unmanned explosive boats, naval mines, submarines and advanced torpedoes, armed and attack UAVs, anti-ship and land-attack cruise missiles, anti-ship ballistic missiles, and air defenses. Iran has the largest ballistic missile force in the Middle East and can strike targets as far as 2,000 kilometers from Iran’s borders. Russia’s delivery of the SA-20c SAM system in 2016 provided Iran with its most advanced long-range air defense system. Iran is also domestically producing medium-range SAM systems and developing a long-range air defense system. Iran is also Iran’s ability to use UAVs in conjunction with ballistic missiles.

In September 2018, Iran struck Kurdish groups in Iraq and ISIS in Syria with ballistic missiles in response to attacks inside Iran, demonstrating the increasing precision of Iran’s missiles, as well as Iran’s ability to use UAVs in conjunction with ballistic missiles.

In recent years, the Iranian Islamic Revolutionary Guards Corps (IRGC) Navy has challenged US ships in the Persian Gulf and flown UAVs close to US aircraft carriers during flight operations. Moreover, Iranian leaders since July 2018 have threatened to close the Strait of Hormuz in response to US sanctions targeting Iranian oil exports.

IRAN'S “TWO NAVIES”

Iran in essence has two navies that are distinct organizations with independent strategies, doctrines and missions. It is, in fact, a tale of two navies. The Islamic Revolutionary Guard Corps Navy (IRGCN) emphasizes an asymmetric doctrine to ensure national security in the Persian Gulf against regional neighbors and foreign presence. The Islamic Republic of Iran Navy (IRIN), dubbed by the Supreme Leader of Iran as a strategic force, employs a more conventional doctrine and focuses on forward presence and naval diplomacy. Its mission areas include the Caspian Sea, the Gulf of Oman and out-of-area operations. Both navies have considerable

<table>
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<tr>
<th>Strength of the Fleet</th>
<th>Type</th>
<th>Active</th>
<th>Building</th>
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<tbody>
<tr>
<td>Submarines</td>
<td>3</td>
<td>-</td>
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<tr>
<td>Mini submarines</td>
<td>17</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Frigates</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Corvettes</td>
<td>2</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Fast attack craft - missile</td>
<td>24</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Large patrol craft</td>
<td>7</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Coastal patrol craft</td>
<td>138+</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Inshore patrol craft</td>
<td>300+</td>
<td>-</td>
<td></td>
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<tr>
<td>Landing ships (logistic)</td>
<td>10</td>
<td>-</td>
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<tr>
<td>Landing ships (tank)</td>
<td>5</td>
<td>-</td>
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<tr>
<td>Landing craft (tank)</td>
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</tr>
<tr>
<td>Hovercraft</td>
<td>8</td>
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<tr>
<td>Replenishment ship</td>
<td>1</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Supply ships</td>
<td>2</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Support ships</td>
<td>9</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Water tankers</td>
<td>4</td>
<td>-</td>
<td></td>
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<tr>
<td>Tenders</td>
<td>12</td>
<td>-</td>
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</tr>
</tbody>
</table>
equities and are well positioned to influence and leverage the Strait of Hormuz; a vital chokepoint for the flow of resources and international commerce.

Since undergoing a naval reorganization in 2007, both navies have engaged in dynamic acquisition programs. The IRGCN has continued to pursue smaller, faster platforms equipped with sophisticated weaponry, ideally suited for its asymmetric doctrine. The IRIN, largely neglected since the end of the Iran-Iraq War in the 1980s (with the exception of submarines), has undertaken a major recapitalization program to replace its aging surface fleet and augment its submarine force. Additionally, Iran’s navies have been supplemented by its other military branches through acquisition of air-launched cruise missiles and anti-ship ballistic missiles. These developments are a clear indication that Iran understands the growing importance of controlling the maritime environment in its security calculus.

IRAN’S MINING THREAT AND STRAIT OF HORMUZ

The Strait of Hormuz is one of the most critical chokepoints in the world. Nearly one-third of all seaborne crude oil (18+ million barrels per day) passes through the 21-mile-wide opening between Oman and Iran, as well as approximately 30% of all natural gas shipped on tankers. The strait is even narrower than it looks, since the deep-water shipping channel used by oil tankers is only two miles wide. Iran, with military presence on a number of islands near the strait and along the northern coastline, dominates this critical body of water. This theoretically gives Iran the opportunity to choke off one of the world’s vital economic arteries, potentially inflicting economic losses on regional rivals like Saudi Arabia and even the United States.
Nearly every time Iran feels cornered by pressure from the United States or U.S. regional allies, it brings up the issue of closing the Strait of Hormuz. Iran’s navy has hundreds of small ships and fast attack craft armed with machine guns, rockets, and mine-laying capabilities. Iran has thousands of mines, both simpler, old-fashioned contact mines and newer, more sophisticated smart mines. Mine warfare, however, presents challenges for Iran as well. Deploying mines from submarines would be stealthier and harder for the United States to detect, but the shallow waters around the Strait of Hormuz make that a tricky operation. Deploying from small surface ships is easier, but it is also much easier to detect in the early stages. And mines that come unmoored and drift can present a hazard to all ships, including Iranian military ships and tankers. Iran previously laid mines in the Persian Gulf during the Iran-Iraq War in the 1980s. During the “Tanker War” phase of this conflict, multiple U.S. ships struck mines and suffered severe damage. To counter this potential threat, the U.S. has deployed four active minesweepers to Bahrain for many years.

**FAC/FIAC**

**Fast Attack Craft** - Since the end of the Iran-Iraq War in 1988, the IRGCN has significantly upgraded its fleet in terms of size and lethality, but it has remained a force comprised of smaller platforms. Rather than acquire larger ships as might a more traditional navy, the IRGCN has instead chosen to pursue smaller, faster vessels, armed with capable weapons systems, such as cruise missiles and torpedoes.

**Fast Inshore Attack Craft** - FIAC are lightly armed small-boats that have been a mainstay of the IRGCN since its inception in the 1980s, and they are by far, the most numerous of all IRGCN vessels. Usually fitted with only machine guns and/or rockets, and used en masse, these vessels are capable of harassing merchant shipping and conducting swarm tactics during a force-on-force naval engagement.
Iran has some of the largest numbers of FACs in operation today. Iran has been seen developing "swarm boats" to be used as harassing vessels against U.S. warships conducting transits in the heavily contested littoral waters of the Persian Gulf such as the Strait of Hormuz. To counter the threat, the US Navy has been developing an ASUW Littoral Defensive Anti Surface Warfare doctrine, along with vessels such as the littoral combat ship.

**LAND BASED MISSILES**

**Shahab-3 Medium-Range Missile**

The Shahab-3 has a maximum range of 1,242 miles, making it capable of striking targets beyond its immediate border regions. The Shahab-3 is liquid fueled, and typically carries a single warhead. Although currently armed with conventional high explosive warheads, they are likely also capable of carrying nuclear warheads. As a road mobile system, the Shahab-3 can be launched from any location.

**Fateh-110 Short-Range Missile**

Prompted by its experience in the war with Iraq in the 1980s, Iran actively pursued a ballistic missile arsenal that had greater precision and accuracy. As part of this effort, Iran began developing the Fateh-110 in 1995. The Fateh-110 is a solid fueled short range ballistic missile. The missile is also capable of carrying nuclear or biological warheads. As a road mobile system, the Fateh-110 series can be launched from any location.

**NOTABLE AND RECENT IRANIAN INCIDENTS**

**2008 January** - Five Iranian patrol boats crewed by the Revolutionary Guard approached three United States Navy warships in the Strait of Hormuz: the cruiser USS PORT ROYAL, the destroyer USS HOPPER and the frigate USS INGRAHAM.
2009 September - Iran admits that it is building a uranium enrichment plant near Qom, but insists it is for peaceful purposes. The country test-fires a series of medium- and longer-range missiles that put Israel and US bases in the Gulf within potential striking range.

2011 December – Present Day - The Strait of Hormuz dispute is an ongoing dispute between a coalition of countries and Iran. The dispute arose on 27 December 2011, when Iranian Vice President Mohammad-Reza Rahimi threatened to close the Strait of Hormuz. In late April 2019 Iran said that it will block any shipping if it was barred from using the strategic waterway and in face of US sanctions. Subsequently, a number of naval drills and missile tests were carried out by Iran. A coalition of countries responded by sending a flotilla of warships to deter any Iranian attempt to close the Strait of Hormuz and warned Iran publicly and through letters not to close the Strait.

2015 July - After years of negotiations, world powers reach deal with Iran on limiting Iranian nuclear activity in return for lifting of international economic sanctions.

2016 January - Two United States Navy riverine command boats cruising from Kuwait to Bahrain with a combined crew of nine men and one woman on board strayed into Iranian territorial waters which extend three nautical miles around Farsi Island in Persian Gulf. Patrol craft of Iran's Islamic Revolutionary Guard Corps (IRGC) Navy seized the craft and detained the crew at a military base on Farsi Island for 15 hours.

Sources:


WEEK 18: GLOBAL CHALLENGES – TRANSNATIONAL THREATS

CYBER

The U.S. Intelligence Community expects global cyber threats to continue and emanate from a wide array of state and non-state actors. Our networks, systems, and information are at risk from an evolution of malicious cyberspace activities. The most important emerging cyber threats to our national security will come from exploitation of our weakest technology components: mobile devices and the Internet of Things (IoT). Our social media, web applications, cloud services, and critical infrastructures are also vulnerable to targeted attacks, influence operations, information leaks, and the loss of intellectual property. Adversarial cyber operations range in scope from compromising critical infrastructure and U.S. military technological superiority in fields such as precision guidance and autonomous systems, to the targeting of U.S. military personnel on social media to gain insight into the disposition and movement of our forces. Our top adversaries are developing and using cyberspace to increase their operational reach into our military and civilian systems, exploiting our vulnerabilities, and compromising our national defense. Their capabilities will continue to challenge the adequacy of our current defenses and cybersecurity investments.

Russia and China will increasingly integrate cyberattack capabilities into their militaries, seeking to deny or disrupt our networked forces and infrastructure. Iran and North Korea, although less capable, can launch disruptive cyberattacks and use cyberspace as a means to asymmetrically respond to perceived challenges in political, military, or economic domains. Continuing to partner with our allies to improve their cyberspace defenses will help limit this threat. Establishing an effective cyberspace defense will require a combination of next-generation technologies able to warn of the latest wave of elusive threats and a sound policy framework that balances the public interest with national defense.

TERRORISM

ISIS suffered significant setbacks in 2017 and 2018, but has attempted to maintain relevance by increasing its emphasis on ideology-inspired attacks and shifting its media efforts. Territorial losses in Iraq and Syria and persistent counterterrorism operations against ISIS’s global network have degraded the group’s strength and impeded its ability to exploit instability and societal discontent in the regions where it operates. ISIS members are dispersing and prioritizing clandestine terrorist operations to preserve their core capabilities. Counterterrorism operations have eliminated numerous key senior leaders, operatives, and facilitators, significantly reducing the group’s ability to achieve its self-declared caliphate’s territorial objectives. ISIS’s capabilities have been degraded in numerous countries, including Libya, Afghanistan, and the Philippines; however, ISIS continues to inspire more attacks in major cities throughout the West than any other terrorist organization and to conduct high-profile operations in other countries, demonstrating that it remains a significant terrorist threat to the United States and other Western nations.

The ISIS brand and global network remain strong, with eight formal branches and an increasing number of affiliated networks in Africa, Asia, Europe, and the Middle East. In September 2017, ISIS leader Abu Bakr al-Baghdadi assured supporters that ISIS remains committed to its long-term strategy of establishing a global caliphate, asserting that territorial and personnel losses are temporary setbacks from predestined victory. This rhetoric and ISIS’s anti-Western propaganda resonate with sympathetic attackers, who often lack any direct ties to the group but who carried out some of the most lethal attacks in Europe and the United States in 2017 on behalf of ISIS.

Personnel, infrastructure, and resource losses in recent years have forced the group to reduce the output of its multi-lingual flagship media publications, including its monthly magazine, *Rumiyah*. ISIS’s remaining media apparatus is focused on inspiring actors to conduct low-budget attacks that do not require substantial resources or outside training. These include attacks on cultural monuments, transportation hubs, shopping malls, restaurants, and other civilian infrastructure that the group hopes will garner a high media profile and
sow fear and division among citizens. We assess ISIS will maintain an expansive online presence, which may assume even greater significance as the group exhorts its followers to carry out attacks in its name. ISIS’s use of unmanned aerial systems (drones) for surveillance and delivery of explosives has increased, posing a new threat to civilian infrastructure and military installations. ISIS could also seek to use the chemical and biological capabilities it has honed on the battlefield in areas outside Iraq and Syria. The return of some foreign fighters, with battlefield training and experience, to their home countries probably will increase the capabilities of local cells and networks.

Al-Qa’ida remains a serious and persistent threat to U.S. interests worldwide. In particular, the group’s exploitation of conflicts in Syria and Yemen offers opportunities for reconstituted external attack capabilities. Al-Qa’ida leader Ayman al-Zawahiri’s 2013 guidelines for jihad, intended to “exhaust America and bleed her to death,” still resonate with the group, but al-Qa’ida leaders are struggling to reconcile the regional focus of some affiliated groups, especially in Syria, against al-Qa’ida’s traditional focus on targeting the United States and its close allies.

Al-Qa’ida leaders in Iran have taken on key decision making and dissemination roles, compensating for Zawahiri’s self-imposed seclusion. Al-Qa’ida’s affiliates in Somalia, North Africa, the Sahel (where al-Qa’ida-affiliated groups consolidated into a unified organization in 2017), Yemen, and South Asia threaten local and regional stability and have the potential to support or sponsor attacks against U.S. interests. Al-Qa’ida appears to be preparing for the next generation of leadership by elevating the public profile of Usama bin Ladin’s son, Hamza bin Ladin, and his call to attack the United States in retaliation for his father’s death.

In coming years, it is likely that ISIS will attempt to direct, enable, and inspire attacks in the United States and against U.S. interests across the globe unilaterally and with the assistance of its branches, networks, and cells. ISIS possibly will shift some of its resources to bolster its external branches in Afghanistan, Libya, the Sinai, and Yemen as the group increasingly relies on its global network to conduct attacks in its
name. In addition, ISIS probably will seek to establish a foothold in other ungoverned or undergoverned spaces with populations that are sympathetic to the Salafi jihadist ideology.

International focus on ISIS probably is alleviating some counterterrorism pressure on al-Qa’ida, enabling the group to recover from leadership losses. Al-Qa’ida and ISIS share the same underlying ideology, but it is important to note that ISIS advocates the immediate creation of a caliphate and implementation of its ideology, while al-Qa’ida is more willing to compromise with local groups over ideology and the implementation of its version of Islamic law. Both groups have found ideological traction with subsets of populations alienated by deep-rooted socioeconomic issues, as well as real and perceived grievances.

PROTRACTED CONFLICTS RESULT IN RECORD DISPLACEMENT

Conflicts are driving record population displacement, resource shortages, demographic shifts, and unplanned expenditures of economic and military assets in countries of strategic interest to the United States. As of October 2017, protracted conflicts and ethno-sectarian violence have increased global displacement to the highest levels on record, according to the United Nations. More than 5 million refugees have fled Syria since 2011 to neighboring host nations, including Lebanon, Jordan, and Turkey. Our European allies are also coping with the influx of migrants and refugees, most of whom have arrived during the past 4 years.

Many Middle Eastern countries with large Syrian and Iraqi refugee populations are closing their borders because public service provisions and government finances are being overtaxed, living standards are declining, labor markets are narrowing, and they perceive a lack of burden sharing by countries outside the region. The longer that conflicts continue, the more likely regional ethno-sectarian grievances will become entrenched, leading to additional instability and sowing the seeds of new military and security challenges.
In conclusion, the security environment is becoming more complex with our adversaries’ determined pursuit of advanced technologies across multiple domains to include cyber, space, and WMD, expanding regional and global ambitions and the serious, persistent threat from terrorism. These risks pose an increasing challenge to our warfighters, decision makers, and the Intelligence Community.

Sources:


4/C MIDDLEMEN QUALIFICATION STANDARDS

Reference: Professional Knowledge Book (Pro-Book)

Purpose of MQS: To establish the learning objectives (LO) for Pro-Quizzes, Pro-Exams, Professional Competency Boards (PCB), and Professional Competency Assessments (PCA).

Signature Authorities: These are identified for each LO and are either a SME (Subject Matter Expert) or a midshipman within the chain of command. By signing off a LO, the signature authority is affirming that the midshipman receiving the signature has demonstrated the requisite knowledge. The signature authority shall fill out all required information (printed name, alpha, signature, and date) or, if a SME desires, he/she may print/sign/date a roster that shall be included in each midshipman’s MQS. Each midshipman is responsible for achieving applicable LOs prior to a quiz/exam/board/assessment.

- Chain of Command (CoC)
  - 4/C midshipmen shall receive signatures from 3/2/1/C midshipmen in their CoC.
  - 3/C midshipmen shall receive signatures from 2/1/C midshipmen in their CoC.
  - 2/C midshipmen shall receive signatures from 1/C midshipmen in their CoC.

- Subject Matter Experts (SME)
  - Based on their billet and/or experience, only some individuals are equipped to provide signatures for specific LOs.
  - Some are in the Brigade (i.e., Company Financial Officer). Others are on the Naval Academy staff (i.e., Senior Enlisted Leader).
  - SMEs are signature authorities for any item in their respective area.
  - A current list of warfare community/service SMEs is provided at the end of the MQS.

I. Midshipmen Regulations

1. Know the requirements for midshipmen behavior & attendance at Formation and Meal. Ref. 5400.6S 1.5

   Print Name (CoC)  Alpha  Signature  Date

2. Know the Athletic Reserve period workout standards including where and when you can workout. Ref. 5400.6S 1.6

   Print Name (CoC)  Alpha  Signature  Date

3. Know when the different midshipmen classes are allowed to utilize Drydock for take-out and sit-down meals. Ref. 5400.6S 1.8

   Print Name (CoC)  Alpha  Signature  Date

4. Understand the process for TAPS and Late Lights. Ref. 5400.6S 1.9

   Print Name (CoC)  Alpha  Signature  Date

5. Understand the Town Liberty Schedule and the Uniform Requirements for each class. Ref. 5400.6S 1.11

   Print Name (CoC)  Alpha  Signature  Date
6. Understand the Weekend Eligibility Requirements and the regulation regarding awarded weekends. Ref. 5400.6S 1.11

Print Name (CoC)   Alpha   Signature   Date

7. Know and understand the Table of Priorities. Ref. 5400.6S 2.1

Print Name (CoC)   Alpha   Signature   Date

8. Understand the Special Request Approval Authority guidelines. Ref. 5400.6S 2.2

Print Name (CoC)   Alpha   Signature   Date

9. Understand the differences between and definitions to Hazing and Discrimination. Ref. 5400.6S 3.2-3.3

Print Name (CoC)   Alpha   Signature   Date

10. Know the Upperclass-4/C Relationship guidelines and the other midshipmen relationships (midshipmen-USNA staff, enlisted personnel, officers, and other midshipmen). Ref. 5400.6S 3.6-3.10

Print Name (CoC)   Alpha   Signature   Date

11. Understand the regulations regarding the consumption of alcohol. Ref. 5400.6S 4.3

Print Name (CoC)   Alpha   Signature   Date

12. Know the required reading that pertains to the different midshipmen ranks. Ref. 5400.6S 4.7

Print Name (CoC)   Alpha   Signature   Date

13. Know and understand the Class Specific Rates. Ref. 5400.6S 6.2

Print Name (CoC)   Alpha   Signature   Date

14. Understand the guidelines regarding Bancroft Room Regulations. Ref. 5400.6S 6.3

Print Name (CoC)   Alpha   Signature   Date

15. Understand proper military protocol for King Hall. Ref. 5400.6S 6.9

Print Name (CoC)   Alpha   Signature   Date
16. Understand the general Uniform rules for USNA-Sponsored Events. Ref. 5400.6S 6.15

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II. Financial Literacy

1. Know and understand the significance of the following related to the Midshipmen Pay System: (Pro-Book)
   1. MyPay
   2. Leave and Earnings Statement (LES)
   3. Pay Day
   4. Held Pay
   5. Advance for Clothing and Equipment (ACE) Loan
   6. Outside Funds
   7. Taxes
   8. Service Member’s Group Life Insurance (SGLI)
   9. Naval Academy Business Services Division (NABSD)
   10. Charitable Allotments
   11. Travel Reimbursement
   12. Commuted Rations (COMRATS)

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2. Know each of the following ‘financial tools’: (Pro-Book)
   1. Checking account
   2. Savings account
   3. Money Market account
   4. Certificates of Deposit (CD)
   5. Bonds
   6. Mutual Funds
   7. Exchange Traded Funds (ETFs)
   8. Stocks
   9. Individual Retirement Accounts (IRA)
   10. Credit Cards
   11. Career Loans

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<th>(Company Financial Officer)</th>
<th>Alpha</th>
<th>Signature</th>
<th>Date</th>
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3. Know the difference between compound and simple interest. (Pro-Book)

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<th>Print Name (CoC)</th>
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4. Know examples of good and bad money habits. (Pro-Book)

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<th>Print Name (CoC)</th>
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5. Know the following: (Pro-Book)
   1. How to obtain a Credit Report
   2. The different levels of Credit Scores
   3. How to dispute fraud in a Credit Report

   Print Name (CoC)       Alpha       Signature      Date


   (Company Financial Officer)       Alpha       Signature      Date

7. Read the lesson on ‘How to Read the Midshipmen LES’ and understand your MIDN LES: http://intranet.usna.edu/FinancialAdvisor/links.php

   Print Name (CoC)       Alpha       Signature      Date

8. Log onto your account on the MyPay website: https://mypay.dfas.mil

   Print Name (CoC)       Alpha       Signature      Date

--- III. Military Courtesies, Customs, and Ceremonies & USNA Notable Graduates ---

1. Know when to render a salute/when not to render a salute and discuss specific situations. (Pro-Book)

   Print Name (CoC)       Alpha       Signature      Date

2. Know how to properly address officers and enlisted personnel. (Pro-Book)

   Print Name (CoC)       Alpha       Signature      Date

3. Know the procedures for colors when conducted ashore and underway. (Pro-Book)

   Print Name (CoC)       Alpha       Signature      Date

4. Know the procedures to half-mast the national ensign. (Pro-Book)

   Print Name (CoC)       Alpha       Signature      Date

5. Know how colors are shifted aboard a U.S. Navy ship. (Pro-Book)

   Print Name (CoC)       Alpha       Signature      Date

6. Know the procedures to board and depart a U.S. Navy ship. (Pro-Book)
IV. U.S. Navy Enlisted Personnel and Shipboard Familiarization

1. Know the difference between a paygrade, a rating, and a rate. (Pro-Book)

2. Know the common ratings by name and abbreviation in this chapter. (Pro-Book)

3. Know the roles of a Petty Officer (PO), a Chief Petty Officer (CPO), and a Command Master Chief (CMC). (Pro-Book)

4. Know and be able to identify by uniform insignia the Navy enlisted ranks (Pro-Book)

5. Understand the NEC system and know the five types of NEC codes. (Pro-Book)

6. Know the five types of enlisted service schools. (Pro-Book)

7. Know the general requirements for enlisted advancement. (Pro-Book)

8. Comprehend and apply the concept of a shipboard ‘bullseye.’ (Pro-Book/Ch. 12 of Bluejackets Manual)
9. Know the duties of the following enlisted deck watches. (Pro-Book)
   1. BMOW
   2. QMOW
   3. Helmsman
   4. Lee Helmsman
   5. POOW

10. Know the topside responsibilities and how to identify deck personnel. (Pro-Book)

11. Know the typical shipboard divisional chain of command. (Pro-Book)

______  ______  __________  _________
Print Name (CoC)  Alpha  Signature  Date

V. Mission and Organization of the Navy

1. Know the mission of the Navy and comprehend the Navy ethos. (Pro-Book)

2. Know the CNO’s Core Attributes. (Pro-Book)

3. Understand the National Security Act of 1947 and know the members of the National Security Council. (Pro-Book)

4. Know the responsibilities of the SECNAV, CNO, and CMC. (Pro-Book)

5. Comprehend the Administrative and Operational chains of command. (Pro-Book)

6. Understand Command and Control as it pertains to the U.S. Navy. (Pro-Book)

7. Know the Geographic and Functional Unified Combatant Commands and their AORs. (Pro-book)
8. Know the numbered Fleet Commanders, their HQ locations, and the Combatant Commander each supports. (Pro-Book)

VI. Operational Mission Area, Capabilities, and the Current Maritime Strategy

1. Know the Navy’s Operational Mission Areas. (Pro-Book)

2. Know the two largest operational units of the U.S. Navy and the typical composition of each. (Pro-Book)

3. Comprehend the National Security Strategy’s four vital national interests. (Pro-Book)

4. Comprehend the National Defense Strategy’s Strategic Approach. (Pro-Book)

5. Understand the Design for Maintaining Maritime Superiority concept and know the CNO’s four lines of effort and four Navy Core Attributes (Pro-Book)

VII. Surface Warfare

1. Know the mission of Surface Warfare. (Pro-Book)

2. Know the different operations and unique capabilities the surface fleet is capable of conducting. (Pro-Book)

3. Know the visual identification, mission, weapons, aircraft, and crew size of U.S. Navy ship classes: (Pro-Book)
   1. CVN-68 Nimitz Class
2. CVN-78 Ford Class
3. CG-47 Ticonderoga Class
4. DDG-51 Arleigh Burke Class
5. DDG 1000 Zumwalt Class
6. LCS Class
7. MCM-1 Avenger Class
8. PC-1 Cyclone Class
9. MK VI Patrol Boat
10. LSD-41 Whidbey Island Class
11. LSD-49 Harpers Ferry Class
12. LPD-17 San Antonio Class
13. LHD-1 Wasp Class, LHA-1 Tarawa Class, LHA-6 America Class
14. LCU & LCM
15. LCAC

4. Demonstrate knowledge of recent events pertaining to Surface Warfare. (Pro-Book)

VIII. Submarine Warfare

1. Know the mission of Submarine Warfare. (Pro-Book)

2. Know the insignia worn by Submariners and its background. (Pro-Book)

3. Know how the following events influenced submarine design and capability: (Pro-Book)
   a. American Revolution
   b. Civil War
   c. Pre-World War Era
   d. WWI
   e. WWII
   f. Cold War

4. Know the visual identification, mission, weapons, specific capabilities, and crew size of U.S. Navy submarines to include SSNs, SSBNs, and SSGNs. (Pro-Book)

5. Be familiar with future projects of Submarine Warfare. (Pro-Book)
6. Know and comprehend the combat systems associated with U.S. Navy submarines. (Pro-Book)

IX. Naval Air Warfare

1. Be familiar with Naval Aviation history as listed in the Pro-Book, and specifically know the following: (Pro-Book)
   a. Name of the first Naval Aviator to successfully take off from and land on a ship
   b. Name of the first aircraft carrier
   c. Location of the first Naval Air Station

2. Know the roles and responsibilities of Naval Aviators, Naval Flight Officers (NFO), Naval Aircrewmen, Flight Surgeons, and Professional Aviation Maintenance Officers and identify their respective warfare insignia. (Pro-Book)

3. Understand the different Naval Aviation operations. (Pro-Book)

4. Know squadron types and meanings and be able to identify the composition of a typical carrier air wing (CVW). (Pro-Book)

5. Know the flight deck jersey colors and the corresponding duties. (Pro-Book)

6. Know the basic enlisted rates of Naval Aviation. (Pro-Book)

7. Comprehend the components of aircraft designations. (Pro-Book)

8. Be able to identify the following U.S. Navy aircrafts designation/name and their role/capabilities, distinguishing features, crew composition, and responsibility: (Pro-Book)
   a. F/A-18E/F Super Hornet
b. EA-18G Growler  
c. F-35C Lightning II  
d. E-2D Hawkeye  
e. C-2A Greyhound  
f. P-8A Poseidon  
g. MQ-4C Triton  
h. E-6B Mercury  
i. MH-60R ‘Romeo’ Seahawk  
j. MH-60S ‘Sierra’ Knighthawk  
k. MH-53E Sea Dragon  
l. MQ-8 Firescout  

9. Demonstrate knowledge of future advances in Naval Aviation. (Pro-Book)

X. Naval Special Warfare and Explosive Ordnance Disposal

1. Know the role LCDR Draper Kauffman played during WWII and his significance to the development of NSW. (Pro-Book)

2. Know the historical reasons for the creation of Naval Combat Demolition Units (NCDUs), Underwater Demolition Teams (UDTs), and modern SEAL Teams. (Pro-Book)

3. Understand the organization and composition of SEAL teams. (Pro-Book)

4. Know the mission and capabilities of NSW. (Pro-Book)

5. Comprehend the benefits of Seabasing. (Pro-Book)

6. Comprehend the limitations of NSW. (Pro-Book)

7. Know the mission and characteristics of and be able to identify each NSW craft. (Pro-Book)
8. Comprehend the mission of Navy EOD. (Pro-Book)

9. Know what drove the need for ordnance disposal skills and the creation of the EOD community. (Pro-Book)

10. Know the mission areas of Navy EOD. (Pro-Book)

11. Understand the organization of Navy EOD. (Pro-Book)

12. Know the difference and relationship between EOD Technicians and Officers. (Pro-Book)

13. Know the tools and equipment Navy EOD Technicians use as listed in the Pro-Book. (Pro-Book)

XI. Information Warfare Community (IWC) and Restricted Line, Staff Corps, Limited Duty, and Chief Warrant Officers

1. Know the three core capabilities of the Information Warfare Community (IWC): (Pro-Book)

2. Know the four IWC officer communities. (Pro-Book)

3. Know the four IWC enlisted communities. (Pro-Book)

4. Know the three network domains used in the Navy and know their associated classification levels. (Pro-Book)
5. Know the function of SSES and the platforms on which it can be found. (Pro-Book)

6. Know the function of CVIC and the platform on which it can be found. (Pro-Book)

7. Know the three Levels of Intelligence. (Pro-Book)

8. Know the three categorizations of Cyberspace Operations. (Pro-Book)

9. Using your Common Access Card (CAC), log in to Navy Knowledge Online (NKO) and complete (1) Uncle Sam’s OPSEC and (2) Privacy and Personally Identifiable Information (PII) Awareness Training. Print certificates of completion and turn in to your Company Training Officer prior to taking this week’s Pro-Quiz. (http://my.navy.mil/)

10. Know the differences between URL, RL, and SC Officers. (Pro-Book)

11. Know the six Restricted Line communities and their roles. (Pro-Book)

12. Know the five Staff Corps communities and their roles. (Pro-Book)

13. Know the four subsets of the Medical Community and their roles. (Pro-Book)

14. Know the purpose of the Limited Duty Officer (LDO) and Chief Warrant Officer (CWO) programs and who competes for these commissions. (Pro-Book)
XII. U.S. Marine Corps Mission, Enduring Principles, Organization, History, and Traditions

1. Comprehend the mission of the U.S. Marine Corps. (Pro-Book)

2. Know the six Enduring Principles of the U.S. Marine Corps. (Pro-Book)

3. Know the elements and organization of the MAGTF, MEF, MEB, MEU, and SPMAGTF. (Pro-Book)

4. Know the locations of the Marine Expeditionary Forces (MEF) and their associated Marine Aircraft Wings (MAW) and Divisions. (Pro-Book)

5. Know the composition of a Rifle Platoon. (Pro-Book)

6. Know the four weapon safety rules. (Pro-Book)

7. Know the origin of the birth of the U.S. Marine Corps. (Pro-Book)

8. Know the historical significance of the Marine Corps early traditions, to include the significance of the Devil Dog and Women in The Corps, as listed in the Pro-Book.

XIII. USMC Weapons and Platforms

1. Know the primary function and effective range, and be able to identify the individual weapons of the U.S. Marine Corps. (Pro-Book)
   a. M16A4
b. M4  
c. M203  
d. M27  

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2. Know the purpose and be able to identify the crew served weapons of the U.S. Marine Corps. (Pro-Book)
   1. M249  
   2. M240  
   3. MK-153  
   4. MK19 Mod 3  
   5. .50 Caliber MG  
   6. FGM-148  
   7. BGM-71  
   8. 60/80mm Mortars  

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3. Know the purpose and features of and be able to identify the additional weapons and platforms of the U.S. Marine Corps. (Pro-Book)
   a. M777  
   b. HMMWV  
   c. HIMARS  
   d. MTVR  
   e. LAV-25  
   f. MRAP/MATV  
   g. M1A1  
   h. AAV-7  
   i. AH-1Z  
   j. UH-1Y  
   k. CH-53E  
   l. MV-22  
   m. F/A-18  
   n. AV-8B  
   o. EA-6B  
   p. F-35B  
   q. KC-130J  
   r. RQ-7B  

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**XIV. Global Challenges – China**

1. Comprehend China’s strategy for global expansion, including the “First and Second Island Chains”. (Pro-Book)

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2. Understand the U.S. policy implications of and U.S. response to China’s recent international activity. (Pro-Book)
3. Be familiar with China’s military capabilities, to include the following. (Pro-Book)
   1. Luka Class Destroyer
   2. Luyang III Class Destroyer
   3. Liaoning 16 Aircraft Carrier
   4. Jin Class Submarine
   5. Shang Class Submarine
   6. Yuan Class Submarine
   7. SU-30 Flanker
   8. J-15 Flanker X2
   9. YJ-12
   10. YJ-18
   11. Dong-Feng 21

4. Know significant recent events involving China’s military. (Pro-Book)

XV. Global Challenges – Russia

1. Comprehend Russia’s current national strategy, including its evolving relationship with the U.S. (Pro-Book)

2. Understand recent Russian military action and modernization efforts. (Pro-Book)

3. Be familiar with Russia’s military capabilities, to include the following. (Pro-Book)
   1. Admiral Kuznetsov Class Aircraft Carrier
   2. Sovremenny Class Destroyer
   3. Admiral Grigorovich Class Frigate
   4. Borei Class Submarine
   5. Yasen Class Submarine
   6. Akula Class Submarine
   7. Varshavyanka Class Submarine
   8. SU-35 Flanker-E
   9. SS-N-26 Stroble
   10. SS-N-27 Sizzler
   11.

4. Know recent military interactions between the U.S. and Russia. (Pro-Book)
XVI. Global Challenges – North Korea

1. Comprehend North Korea’s current national strategy, including development of its nuclear weapons program. (Pro-Book)

   Print Name (CoC)   Alpha   Signature   Date

2. Understand North Korea’s general military posture. (Pro-Book)

   Print Name (CoC)   Alpha   Signature   Date

3. Know recent North Korean military events. (Pro-Book)

   Print Name (CoC)   Alpha   Signature   Date

XVII. Global Challenges – Iran

1. Comprehend Iran’s current national strategy, including its use of proxy groups. (Pro-Book)

   Print Name (CoC)   Alpha   Signature   Date

2. Understand Iran’s general military capabilities, including its Naval command structure. (Pro-Book)

   Print Name (CoC)   Alpha   Signature   Date

3. Understand the strategic implications of Iran’s influence over the Strait of Hormuz, including the threat of mining, FAC/FIAC, and missiles. (Pro-Book)

   Print Name (CoC)   Alpha   Signature   Date

4. Know recent notable incidents involving Iran’s military. (Pro-Book)

   Print Name (CoC)   Alpha   Signature   Date

XVIII. Global Challenges – Transnational Threats

1. Understand the capabilities and vulnerabilities associated with the expanding cyber domain. (Pro-Book)

   Print Name (CoC)   Alpha   Signature   Date
2. Understand the continuing international terrorist threat, including the continued efforts of ISIS and Al-Qa’ida. (Pro-Book)

Print Name (CoC)  Alpha  Signature  Date

3. Understand the national security implications of mass population displacement. (Pro-Book)

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## Subject Matter Experts (SME)

### APPENDIX A

**Surface Warfare Officers**

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### Naval Aviators

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Explosive Ordnance Disposal Senior Enlisted

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Oceanography/METOC Officers

| LCDR  | TELLADO  |
| LCDR  | THOMPSON  |
| CDR   | BLEIDORN  |
| CDR   | INGERSOLL  |
| CAPT  | SANABIA  |

Cryptologic Warfare Officers

| LCDR  | KENNEY  |
| LCDR  | ODUNUKWE  |
| LCDR  | WOOD  |
| CDR   | WALSH  |
| CDR   | DOHERTY  |
| CDR   | EMMERSEN  |

Information Professional Officers

| CDR  | WU  |
| CDR  | MOULIS  |
| CDR  | WENDELIN  |
| CAPT  | BUSS  |
| CAPT  | LINDSAY  |

Intelligence Officers

| LT    | POYNOR  |
| LT    | SETHAPHONG  |
| LT    | UNGAR  |
| LCDR  | MANNING, JR.  |
| LCDR  | MARKS  |
| CDR   | HOFFMAN  |

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| CTTCS  | PARTRIDGE  |
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<td>CARLSON</td>
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<tr>
<td>CAPT</td>
<td>HILL, JR.</td>
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### Chief Warrant Officers and Limited Duty Officers

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
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<tr>
<td>CWO4</td>
<td>GRAVES</td>
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<tr>
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<td>JOSLIN, JR.</td>
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<tr>
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<td>CUMMINGS</td>
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<tr>
<td>LT</td>
<td>TURNER, JR.</td>
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<td>COLBERT</td>
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<td>NICHOLS</td>
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<tr>
<td>LCDR</td>
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