Naval customs and courtesies manual

* A. Coming Aboard 1-* B. After Getting Aboard 1-* 1. Officers 1-* 2. Enlisted 1-* C. How a Ship is Compartmented and Numbered 1-* D. Personal Safety Measures 1-* E. Meals 1-* 1. Officers 1-* 2. Officer Wardroom Etiquette 1-* 3. Ships with more than one Wardroom 1-* 4. Enlisted 1-* 5. First Class Petty Officer and Chief's Messes 1-* F. Ladderwells and Passageways 1-* G. Waiting in Lines 1-* H. Exercise 1-* I. General Quarters (G.Q.) 1-* J. Man Overboard 1-* K. Fire 1-* L. Security Alerts 1-* M. Signal Bridge/Flight Deck/FOD/Vultures Row 1-* N. Flight Deck Jersey Colors 1-* O. Ship's plan of the Day (POD) 1-* P. Ship's Television System & Entertainment 1-* Q. Going Ashore 1-* R. PACKING FOR SEA 1-* 1. How Much To Take? 1-* 2. Laundry and Marking Your Clothing 1-* 3. Civilian Clothing 1-* 4. Bathrobe/Towel Wrap 1-* 5. Sleepwear 1-* 6. Showers/Shower Shoes 1-* 7. Other Accessories 1-* S. CHECKLIST FOR THE SHIP 1-* 1. Uniforms 1-* 2. Other clothing 1-* 3. Shaving and Shower gear 1-* 4. Miscellaneous/Optional Articles 1-* Module 1—Basics of Shipboard life A. Coming Aboard When reporting to the ship for the first time you are required to be in a clean, proper, and complete uniform with your original orders. In addition to your orders, bring a copy of an updated Record of Emergency Data (commonly known as a "Page 2") and a filled out Serviceman's Group Life Insurance (SGLI) form as these documents will be needed by the Ship's Office (you may obtain these documents from your local Personnel Support Detachment, PSD prior to departing for AT). You should report no later than 0730 on the day stipulated on your orders. If reporting while the ship is in port, enlisted personnel will report via the "afterbrow," usually the ramp leading from the pier to either a sponson deck or one of the aft aircraft elevators (if reporting to a carrier). Officers will report via the "officers brow" leading to the Quarterdeck. Note: only larger ships, such as aircraft carriers and large amphibious ships, have two brows. Also, the officer's brow is not always the forward one (e.g., it is aft on all Nimitz class carriers). Cruisers and all smaller ships usually will have one brow. Be sure to find out before hand how the ship you will report to is configured. All Navy ships fly the national ensign (i.e., the United States Flag) from the stern while not actually underway. Remember to stop at the top of the brow, face aft and salute prior to reaching the Quarterdeck when coming aboard during daylight hours. In this case, "daylight hours" range from 0800 to sundown, local time. Hence, there is no need to salute the ensign if reporting aboard at 0730. Have your I.D. card and orders ready. Upon reaching the Quarterdeck, salute, and say "request permission to come aboard, sir." In some cases, the person manning the watch may be junior to you or in some cases, may not even be an officer. Nevertheless, call him or her "sir" as they represent the authority of the ship's commanding officer. Hold the salute until you receive permission to board, then step to the side to present your orders to the Junior Officer of the Watch (JOOW) or Junior Officer Of the Deck (JOOD). Make sure the original copy of your orders is signed with the time and date you reported aboard by the JOOD or Petty Officer of the Watch. Keep in mind that boarding any Navy ship is similar to entering a Navy installation and you are giving full consent to a search of your bags and baggage just by being there. For enlisted personnel, it may be a good idea to tie or tape your belongings in small bundles in your seabag that will not come apart or unfold and are easily re-packed if you have to dump your bag. This also saves time when it comes time to stowing your gear. Although baggage inspection is not the norm when reporting aboard, be prepared to submit your baggage if requested to do so (e.g., this might occur during times of international tension such as Desert Shield/Desert Storm). Most ships will have a designated collateral duty Reserve Liaison Officer (RLO) or equivalent individual. After signing your orders, a member of the Quarterdeck detail will contact the RLO who will act as your initial contact and guide. This individual will most likely accompany you through the process of checking onto the ship. The usual first step is a visit to the ship's personnel office where your orders will be processed. In addition to your original orders, the ship's office will also ask for a copy of your Page 2 and SGLI Forms. Remember to retain a copy of your original orders and keep them on your person at all times during your AT. Unlike Annual Training at a shore command, officer's paperwork is not handled by a Personnel Support Detachment (PSD) aboard ship. The Administration Department of the ship handles all officer records and pay. If reporting to a carrier, you will turn in your paperwork to the Captain's Office, which also falls under the Administration Department. Shortly after reporting aboard, you will need to report to the appropriate Administration Department's office to turn in you paperwork and set up pay for your period of AT. B. After Getting Aboard 1. Officers After checking in with the ship's personnel office you will need to report to the Officer's Mess Office for stateroom assignments and to join the mess. Berthing is tight, even aboard large ships, but every attempt will be made for a stateroom assignment commensurate with your rank. Typically, junior officers can expect to have anywhere from one to five bunkmates, depending on rank. Lieutenant Commanders and above can expect at least one bunkmate. Mess assignments will vary from ship to ship. For a two-week AT, officers can expect to pay a daily meal rate instead of actually buying a share of the mess. The enlisted Mess Specialist staff responsible for the ship's ward room(s) will record your presence at each meal. At the end of your AT, the ship's Administrative Officer will tally up your charges and present you with a bill. 2. Enlisted In most cases, a senior member of the CVIC or Operations Department enlisted team usually will tour you around the ship's spaces of interests and otherwise act as a "buddy" for your first few days at sea. After securing berthing/stateroom assignments and storing your gear, report to the Personnel Office, part of the Administration Department, to turn in your AT paperwork. Like the officers, reserve enlisted records and pay are not handled by a Personnel Support Detachment (PSD) aboard ship. All enlisted records and pay matters are run through the ship's Personnel Office. On some smaller vessels, there may not be a separate ship's Personnel Office. Invariably, the Administration Department will handle all records. C. How a Ship is Compartmented and Numbered Knowing how the carrier is compartmented is crucial for navigating its vast interior. Although ship's personnel will be happy to lend a hand in getting around, it is still useful to have a working knowledge of where things are located. Each compartment of the ship is stamped with a series of alphanumeric numbers, known as "bull's-eyes," which give information on where your are, and what that compartment's function is. The information is given in the following order: deck number, frame number, relation to the centerline of the ship, and compartment usage. Each of these parts is separated by a hyphen. Decks above the main deck are numbered 01, 02, 03, etc. and are referred to as levels. Below the main deck, there are the first, second, third decks, etc. (remember, on a carrier the hangar deck, the one below the flight deck, is the main deck.). Frame numbers tell you where you are in relation to the bow of the ship; the numbers increase as you go aft. The third number in the bull's-eye reflects compartmentation numbers in relation to the ship's centerline. EVEN numbers are to PORT, and ODD numbers are to STARBOARD. The numbers increase as you travel outboard. The last letter stamped on the compartmentation number indicates what the compartment is used for. Below are some typical codes: Carrier Compartment Usage Codes A Supply and storage L Living quarters B Guns M Ammunition C Ship control T Trunks and passages E Machinery V Void F Fuel W Water Example Bull's-eye: 3-75-4-M 3 Indicates the third deck. 75 Indicates the compartments forward boundary is on or immediately aft of ship's frame 75. 4 Indicates the fourth compartment outboard of the centerline to port (even numbers to port, odd to starboard). M Indicates the compartment is used for ammunition (see above). Figure 1.1. Carrier Deck Schematic D. Personal Safety Measures In addition to regulations and naval tradition, follow common sense and good judgment about yourself and your surroundings at all times when aboard the ship. Be aware at all times; a United States Navy warship is, by definition of its function, an extremely hazardous environment. Be cognizant of the following safety related issues: Loss of electrical power aboard ship is always a possibility. It is highly recommended that you bring some kind of personal lighting device, such as a small flashlight, to help you in the event you are "caught in the dark." Upon locating your work center and berthing space, locate all possible routes of escape form each location. In the past, lives aboard ship have been lost to fire or fumes. In part, this was due to a lack of planned escape routes. Take care when listening to personal music devices such as a Walkman, not to turn the volume so high as to preclude the hearing of emergency announcements. Remember that the ship operates 24 hours a day and important announcements could be made at any time. When departing your quarters always wear shoes, even if only for a brief time (i.e., as in traveling to the head). Ladders, metal decks, sharp protrusions and other hazards present problems if walking barefooted. Look for Oxygen Breathing Apparatuses (OBAs) and fire extinguishers in your quarters and workspaces. Ask ship's personnel to give you a demonstration of this important life saving equipment. More deaths aboard ship result from electrical shock than any other type of accident. Most electrical shocks are due to human mistakes or improper procedure rather than equipment failure. The following are common mistakes: Unauthorized use of or modification of electrical equipment. Failure to observe the applicable safety precautions when using or working on energized equipment. Failure to report equipment known to be defective. Use of privately owned electric equipment such as irons, extension cords, hair dryers, and coffee pots may be authorized if inspected and approved by the ship's Electrical Safety Shop. E. Meals 1. Officers The experience of eating meals onboard ship will vary widely depending on the type of ship one is embarked on. Smaller ships have one Wardroom where officers gather, usually in a formal setting, with the ship's commanding officer presiding. In addition to serving as central dining room, the Wardroom also functions as a place to hold important meetings for selected ship's company. Lounge furniture, naval reference books and audio/visual entertainment equipment can also be found in some wardrooms. Ships with just one Wardroom usually do not require the officer to sign up for meals as some larger do. 2. Officer Wardroom Etiquette Maintaining proper etiquette in the Wardroom is very important. For example, always wear the uniform of the day while in the Wardroom. As a visiting officer, it is your responsibility to familiarize yourself with the proper procedure for joining the Mess. On ships with one Wardroom, it is customary to address the senior officer present at the meal and ask permission to join the Mess. For example, if the executive officer (XO) is present, ask, "May I join you XO?" He will acknowledge you with a nod or a reply such as "Very well," or "Please." In some cases, you may have to ask with loud voice to be heard over the general conversation in the room. Note: It is customary to address senior and department head officers on ship by their function i.e., Captain, XO, OPS, SUPPO, WEPS, etc. If you do not know a particular officer's job, ask him to join the mess using his rank e.g., "May I join you Commander?" Follow this procedure for every meal. After receiving permission to join the mess, take a place at the table. Ships with one Wardroom sometimes have a special place for each officer's rolled cloth napkin. If this is the case on your ship, take a rolled napkin marked "guest" before proceeding to the table. Seating is not generally reserved, with the exception however of the Captain's and XO's places which are always reserved. Find out prior to your first meal where their respective places at the table are and be sure never to sit there. After finishing your meal, re-fold your napkin and take a moment to identify the senior officer present (he may have changed during the course of the meal). Obtain permission to leave the mess by asking, "May I be excused, Captain (XO, etc.)?" You will be acknowledged with a nod or a reply such as "Very well." You may then leave the mess (if applicable, remember to put your rolled napkin back in its place). 3. Ships with more than one Wardroom Larger ships, such as carriers, may have two or even three wardrooms, which vary in their formality. For example, a typical aircraft carrier has two Wardrooms: Wardroom One (also known as the "Dirty Shirt Wardroom") is usually forward on the 03 level and is where most of the aircrew tend to eat. Working uniforms are the norm; flight suits, deck jerseys and dirty khakis are all acceptable to wear. This mess always features informal cafeteria style service: grab a tray and silverware and chow down, as it were. Note: this mess may not be open when the air wing is not embarked or when the ship is in port. Wardroom Two is usually run by the executive officer (XO) of the ship. The setting is more formal: no flight suits or dirty khakis are allowed. Follow the same etiquette procedures outlined above for ships with one Wardroom. The style in which meals are served will vary from ship to ship. Dinner is usually the most formal meal and is often presided over by a senior officer. On smaller ships with one Wardroom this may be the commanding officer, on larger ones it might be the executive officer (XO). Some Wardrooms require you to sign up for the dinner meal during lunchtime. Plan to arrive 5-10 minutes early to await dinner call in the Wardroom lounge. Please note that some ships use a cafeteria style for all meals. Be sure to check when you report aboard. On carriers or other large ships, there may be a later dinner called Midnight Rations, or "Midrats", for those on night shift or those still hungry. Most ships organize it on a signed chit basis to be assessed to your mess bill. If this is the case and you are on night shift, a note to the wardroom office from your division officer will keep you from getting charged. Paying for meals varies from ship to ship. As mentioned above, reserve officers will pay to become a temporary member of the mess upon reporting aboard. Meals for a two-week AT typically run about $50 to $60. Ask the officer initially assigned to show you around about what ship's policy is for visiting officers. 4. Enlisted The enlisted mess usually can be found on the 2nd deck and is always cafeteria style. Typically, it is open four times a day for up to a total of 10 hours per day. Enlisted members do not pay for their meals. The rules are easy: grab a tray, grab some food, and grab a seat (usually in this order). Be prepared however, to wait in line. 5. First Class Petty Officer and Chief's Messes Some ships may or may not have an area set aside on the mess decks for a separate First Class Petty Officer's seating area. If you are an E-6, ask whether there is a First Class Mess. The Chief's Mess is run apart from the enlisted galley but still derives its funds from ship's supply so there should be no extra mess dues for TAD (AT) reserve personnel. The mess may request a copy of your orders in order to secure additional funding for the meals you will eat while on AT. Note: the Chief's Mess aboard a carrier usually offers the best food. While the Chief's Mess derives its funds from ship's supply it does not procure food from the Navy supply system. Regardless of your rank, see if you can get invited for a meal during your AT period. F. Ladderwells and Passageways Generally rank has its privilege going up and down ladders, with juniors yielding to seniors. The same goes for narrow passageways. Make way for seniors. Remember you are in a three dimensional environment. Be observant and look up and down before using a ladderwell to see who might be in the way. Be sure to offer proper military courtesy to seniors. Tape pasted down the middle of a passageway or hatchway indicates the deck is being cleaned and waxed. Work is done on one half at a time to keep the passageway open. Stay to the side that is not being worked on. G. Waiting in Lines Officers and chiefs normally have head of the line privileges at the ship's store, check cashing, sick call and dental spaces. Although this is a traditional privilege, this privilege is not always exercised. Sometimes two lines are formed: one for enlisted and one for officers and CPOs. In the case of the ship's store, there might be a line, or lines, to get in (due to the small size of the store's compartment). Ask your ship's guide about normal ship's procedures and policies. H. Exercise Ships usually have some sort of a gym set up with free weights or Universal machines, stationary bike and rowing machines. Exercise contributes to your overall performance and effectiveness while assigned to the ship. If on a carrier, the flight deck is often open for running during breaks between flight operations. Beware of chocks and chains, wing pylons, turning engines and slick decks while running on deck. The hangar bay is another place to run and is usually the only option during bad weather, flight operations or at night. The hazards listed above are multiplied during these times. I. General Quarters (G.Q.) The purpose of general quarters is to prepare the ship to fight, both offensive and defensive operations, as quickly as possible. You need to report to your assigned G.Q. station or work center as quickly as practical. A fast walk should be sufficient to get you there safely. The flow of traffic is generally "up and forward on the starboard side—down and aft on the port side." Travel against the flow of traffic is dangerous and should be avoided. The condition of readiness required for a ship to go into combat is "Condition Zebra." This means the ship is "buttoned up" in all watertight compartments to insure integrity and prevent the spread of fires. This is why you need to get to your G.Q station before the doors and hatches are slammed shut. Proper uniform for G.Q. is sleeves rolled down and buttoned (jacket on over short sleeves), pants legs tucked into your socks or taped at the ankles, and the collar of your shirt buttoned. Flash hoods and gloves are also becoming standards aboard many ships. In some departments you may be required to wear a steel helmet and flotation device. Also, gas masks are often required during advanced drills (G.Q., Man Overboard, and Fire). Note: during G.Q., some intelligence personnel may be required to leave their G.Q. spaces in order to transmit intelligence data to other parts of the ship. This may involve opening and closing the watertight doors between compartments. Should you be required to do this, you must call the Damage Control spaces and inform them of your route of travel prior to departing (e.g., from CVIC to the Flag spaces). J. Man Overboard Routes of travel are the same as for G.Q. when "All hands muster" is called away. You must muster by sight with your respective shop, work center, or division to insure an accurate muster for crew accountability. You will normally be assigned to the Operations Department. If you are on a carrier, you should be assigned to the CVIC/OZ division for mustering purposes (the OZ division is responsible for day-to-day operations of the CVIC—ship's departments and divisions will be discussed in Module 6). Report for "All hands muster" as expeditiously as possible to avoid having your name called out over the 1MC (the ship's public address system). The prospect of Man Overboard is very serious. The "All hands muster" call assists in identifying who might be missing. Some XOs have even been known to "kidnap" one or more of the ship's personnel and then call an "All hands" in order to test the process. Needless to say, should a "kidnapped" person be reported as mustered (either by well-meaning work center colleagues or by mistake) serious repercussions will ensue. K. Fire Fires or suspicious smoke odors are handled and investigated by the duty fire squad. These people have absolute right of way on their way to a fire scene. The words "fire! fire! fire!" along with the location by frame and compartment number and the class of fire will be passed over the 1MC. Stay clear of this area and stay out of the way of personnel responding to the emergency. The event of fire aboard ship is one of the most serious dangers faced by embarked personnel during both combat situations and peacetime. As a reservist, try to complete both Damage Control and Fire Fighting training prior to reporting aboard for AT (both schools are available on drill weekends for reservists in major fleet areas). Should you find yourself in a position to assist ship's personnel in a fire situation and you have the required training experience, do so. Otherwise, get out of the way. For information on DC and Fire Fighting Schools, talk to your unit AT coordinator, Reserve Intelligence Program Officer (RIPO) or Naval Air Reserve (NAVAIRES) Training Department. Also, review the appropriate sections of a current edition of the Blue Jacket's Manual. L. Security Alerts Security alerts are called away in response to threats to ship's security. Stand clear of passageways and ladderwells to make way for the Security Force (they will be armed). If you do not make way, they will be justified in running you over with no apologies. If the security team is in your particular work area the procedure is to lay flat. If the Security Force tells you to do something do it, they will not stand on ceremony. M. Signal Bridge/Flight Deck/FOD/Vultures Row All navy ships have a signal bridge. To the intelligence officer or specialist, this is the area where sighting teams are called to photograph items of interest such as foreign warships, merchantmen, or aircraft. If you are assigned to the sighting team, learn the quickest route to the Signal Bridge in advance. If assigned to a carrier, the flight deck offers a unique source of fascination and entertainment for those who have never witnessed flight operations. Personnel who work on the flight deck receive monthly hazardous duty pay, which should be some indication of how dangerous a job it is. Going up on the flight deck or catwalks during flight operations is prohibited regardless of rank. An easy, and unobtrusive, way to watch flight operations is via the Pilot's Landing Aid Television (PLAT) system. There are several (usually four to five) television cameras that cover the entire flight deck. Continuous views of landings and launches can be seen on any 9TV (SCCTV) or 14TV (ship's entertainment TV system) monitor around the ship. If you want to watch flight operations other than on the PLAT system, an excellent place to do so is "Vulture's Row" located on the island superstructure around the 09 or 010 level. It is likely that you will receive a tour of the flight deck and "Vulture's Row" when reporting aboard with your CVIC guide. Initially, do not visit either of these areas unless you have received a tour first. Vulture's Row offers an unobstructed view of both aircraft launches and recoveries. Picture taking is allowed but remember that using a flash at night is strictly prohibited. While perched on Vulture's Row, be sure to remove your cover and all the small items from your shirt pockets and remember to wear some form of ear protection! As a member of the CVIC team, you may be required to report to Vulture's Row or the Signal Bridge, as part of the sighting team (also known as the "Snoopy" or "Big Eyes" teams). As mentioned above, the sighting team is called away to photograph and identify foreign military or commercial ships of interest as well as aircraft coming into contact with the carrier battlegroup. Exposed film is then developed by the Photo Lab and returned to the CVIC team for analysis. An excellent opportunity to get up on the flight deck to remind yourself there really is a sun is during FOD walk-downs. FOD is the acronym for Foreign Object Damage, the small bits and pieces of debris, nuts, bolts, wire clippings, etc. that can get sucked into a jet engine and cause thousands of dollars damage or possibly even cause a plane to crash. FOD walk-downs are usually held before the start of each major flight evolution. N. Flight Deck Jersey Colors While watching flight operations on the carrier you will notice several different types of crew supporting the aircraft on deck. These crews each wear a different color jersey to identify their function. Jersey Colors RED: Ordnancemen, repair parties and fire fighters. BLUE: Aircraft handling, chockman, and elevator operators. GREEN: Aircraft maintenance men. YELLOW: Aircraft movement directors and catapult officers. BROWN: Plane captains. PURPLE: Fuelers who refuel aircraft between missions. WHITE: Other (medical team, air wing LSOs, sighting teams, safety personnel, and visitors). O. Ship's plan of the Day (POD) The Ship's Plan of the Day lists information pertaining to next days routine, special drills, uniform of the day, etc., and is posted throughout the ship. You are responsible for knowing what is in the POD for the day. Carry a copy of the Plan-of-the-Day with you. It is usually available the night before in the wardroom or mess hall. P. Ship's Television System & Entertainment On carriers, most recreational and some workspaces have a television monitor which is part of the ship's television system (smaller ships may not have a television system). In most cases, three channels are available which offer programming in a twelve-hour cycle. The first carries recently released motion pictures. The second typically shows network programs such as sitcoms and series. The third channel offers training programming (e.g., safety, damage control, enlisted rate training, etc.) for ship's personnel. Some extra channels may be hooked up to live CNN feeds through the use of an onboard satellite dish. Another extra channel may show activity on the flight deck via the PLAT cameras mounted in the ship's stern and flight deck itself. Most ships also have a designated area where the crew can view movies (e.g., a large screen TV in a special area). Most officer wardrooms have a TV with a VCR and a library of movies on tape. Check to see what entertainment opportunities exist on the ship you are assigned to. Q. Going Ashore During your period of AT, it is possible that the ship will visit a port (foreign or domestic). Tradition requires that you obtain permission from the OOD to leave the ship (in the same fashion that you obtained permission to board originally). When requesting permission to leave, present your ID card and have a copy of your orders with you. Before making your way to the Quarterdeck, obtain permission to leave from your supervisor. Formal permission to leave the ship is requested in the following manner: Salute the OOD and say, "i request permission to go ashore, sir." (In the same manner as boarding, always address the OOD as "sir," as he or she represents the authority of the ship's commanding officer.). The OOD will reply, "Very well," and return the salute. If the ship is tied up in port, proceed down the gangplank. Remember to pause halfway and face to salute the national ensign aft during daylight hours. If at anchorage, make your way to the launch boarding area. When returning to the ship, follow the same boarding procedure outlined earlier in this section. When going ashore by launch, junior officers always board first and take the forward seats. Senior officers and VIPs take the rear seats of the launch. Disembarking the launch is done in the reverse order; namely, seniors leave first followed by juniors. Order of Debarkation Maritime tradition dictates an order of debarkation at the conclusion of each at-sea period that is never deviated from. Debarkation at the end of cruise is in the following order: Bodies of any casualties. Wounded. Ship's commanding officer and/or his personal aide. Mail. All ship's personnel who have permission to go ashore. R. PACKING FOR SEA 1. How Much To Take? Within limits set by minimum seabag requirements, take only what you absolutely need for the short time you will be on the ship (remember you will be on AT for twelve to fourteen days not six months). Also keep in mind that whatever you pack, you will have to carry down narrow passageways and ladderwells. It is not uncommon to have to walk a long distance until you locate your berthing location, so pack efficiently. Storage space is also at a premium, so less in this case is always better than more. 2. Laundry and Marking Your Clothing Before turning in your clothing to the ship's laundry, it should be stenciled with the first initial of your last name and the last four numbers of your Social Security Number. Example: A0480. Some ship's laundry may have other requirements in terms of marking your clothing or paperwork that must accompany your laundry. Verify with your point-of-contact onboard what the requirements and laundry days are. Markings should be made in indelible black ink. Generally, felt tip clothing pens or clothing stamp kits are available at the exchange or uniform shop. Mark your clothing well if you ever want to see again. Clothing Marking Guide: Shirts and undershirts: Inside center of neckband where ink will not bleed through. Trousers and underwear: Inside center of waistband. Dark clothing, dungarees: May need to be done in white so markings will show. Do an extra good job since white markings tend to disappear quickly. You may be required to put your wash in a large mesh laundry bag. Most available laundry bags require a large laundry bag pin to close it up. The bag will also need to be marked with your name and/or the location of your living space. Enlisted personnel may have to put laundry in large bag with other personnel's laundry (i.e., division or berthing compartment bag). Bring the indelible black ink pen with you aboard ship. Laundry is usually done twice a week on separate days for officers and enlisted. Inventory your dirty clothes on a laundry list form and attach it to your laundry bag. This assists the ship's laundry in keeping track of your items. Laundry is usually returned the same day, depending on the size of the ship. 3. Civilian Clothing A U.S. Navy warship is not the cleanest place in the world, so do not bring your best civilian clothes. It is easy to get dirty even when boarding the ship. However, do remember to bring civilian clothing appropriate to the climate for liberty calls. 4. Bathrobe/Towel Wrap Showers are generally detached from berthing compartments. It is therefore a good idea to have something to wear while going back and forth to the shower and head. Always be considerate of your shipmates. 5. Sleepwear It is generally not a good idea to sleep in the buff. You never know when a "Man Overboard" or "General Quarters" will be called away. Have your gym shorts or skivvies pull double duty. 6. Showers/Shower Shoes Plan to bring some sort of shower shoes, thongs, flip-flops, etc. As mentioned above, the head and/or shower may be some distance from your quarters. Wearing some kind of footwear into the shower itself will save you from a potential case of athlete's foot or a stubbed toe. Note, aboard ship, "Navy" showers are the norm: 1) wet down, 2) soap up, 3) rinse off. Use no more than 1-2 minutes of water! 7. Other Accessories Although the following items are not required, you might consider bringing them along to capture your memories and make your time at sea more enjoyable. a. Athletic Clothes You are onboard to learn as much as you can about ship's operations and intelligence support to operating forces. Some duty can be long and tiresome. Therefore, it is an excellent idea to exercise to relieve stress and otherwise keep fit. Bring some running or athletic gear to jog or use the athletic equipment on ship (see the section on exercising above). b. Camera A camera is a good idea for recording your AT-at-Sea adventure. Bring all the film you think you might use, as it may not be available in the ship's store. Please note photography may be prohibited in certain parts of the ship. This almost always includes the CVIC or intelligence spaces! Use common sense as well as security awareness when taking pictures. A good rule is to always ask before you take any pictures aboard ship. c. Personal Tape and CD Players Bring only a few select tapes or disks, not your whole collection, plus some extra batteries or an AC converter. Generally speaking, it is a good idea to use batteries, as there might not be sufficient electrical outlets. Please note that all electrical equipment you bring aboard must be cleared. Check when you report aboard! Also, be careful when wearing headphones to listen to your personal music. Do not completely "tune out" the ship. Important announcements can be made at any time. Remember that the ship operates 24 hours a day. d. Mini Flashlight and Belt Pouch It is highly recommended that you bring a small flashlight and keep it with you at all times. Some kind of lighting device is crucial for finding your way back to your rack after "lights out" or during the occasional power outage. In some cases, having your own flashlight can mean the difference between life and death (e.g., during a fire). Should you find yourself on deck, the Carrier Island, or anywhere outside at night, only use a red-filtered lighting device. S. CHECKLIST FOR THE SHIP It is an excellent idea to bring with you everything you will need for your two weeks aboard ship. Although many ships have ship stores, they will not always carry the exact items you need or prefer. Also, since many two week AT-at-Sea tours occur during short exercises or deployment periods, many ship stores will be under-stocked. Plan on bringing some spending money, a phone credit card, and your ATM card. You will want to have some cash for buying souvenirs of your tour or a snack that the mess does not carry. ATM machines are also available to restock your depleted cash supply. Many ships now also have pay telephones available for your personal use, just in case you want to check in with your family or friends and let them know how much fun you are having. 1. Uniforms Plan to bring the uniforms listed below. Of special note, officer's khaki shirts and trousers should be the 100% wash cotton variety known as "working khaki" or the new wool-blend khakis. Do not bring Certified Navy Twill (i.e., 100% polyester) as it is prohibited for duty on ship (polyester can burn or melt in extreme temperatures). When packing uniforms and civilian clothes, be cognizant of the weather in the operational area you expect to be in (i.e., hot or cold climate). Intelligence personnel generally spend a lot of time indoors and may want to bring a uniform jacket or sweater (most ship's computer spaces are notorious for over-air conditioning). Note: proper uniform aboard ship for officers is no ribbons with nametag. 2-3 Khaki shirts (officer & CPOs). Note: long sleeves recommended. 2-3 Khaki trousers (Officers & CPOs) 1 Uniform jacket or windbreaker (khaki) 3 Sets of dungarees (Enlisted) 1 Uniform sweater (optional but recommended) 1 Uniform of the day (Enlisted Dress Uniform appropriate for season). 5-12 Pair underwear 5-12 T-shirts 5-12 Pair of socks 1 Pair of black steel-toed leather shoes (note: Corfams not allowed aboard ship) 2. Other clothing 1 Bathrobe (optional but highly recommended) 1 Pair of gym shorts 1 Pair of running shoes 2 Pair of gym socks 2 Gym shirts 1 Pair of shower shoes (thongs or flip-flops highly recommended) 3. Shaving and Shower gear 1 Bar soap and container 1 Can shaving cream and razor 1 Toothbrush & toothpaste 1 Comb/brush 1 Can of deodorant 4. Miscellaneous/Optional Articles If Needed Ample supply of prescription drugs that ship's store or infirmary may not have. 1 Mesh laundry bag 1 Laundry bag fastener pin 1 Indelible ink marker 1 Towel and washcloth 1 Alarm clock (battery powered highly recommended) 1 Set of stationary (optional) 1 Small, potable tape player and tapes (optional) Or 1 Small portable CD Player and CDs (optional) Some Reading material (optional) Page 2 2-* A. Carrier Battlegroup (CVBG) 2-* B. Amphibious Ready Group (ARG) 2-* C. Battlegroup Platforms 2-* D. Carrier Battlegroups Elements 2-* E. Aircraft Carriers 2-* 1. Nimitz Class (CVN) 2-* 2. Enterprise Class (CVN) 2-* 3. Kitty Hawk and John F. Kennedy Class (CV) 2-* F. CRUISERS 2-* 1. Ticonderoga (AEGIS) Class (CG) 2-* 2. California Class (CGN) 2-* 3. Intelligence-related spaces aboard Cruisers 2-* G. Destroyers 2-* 1. Arleigh Burke Class (DDG) 2-* 2. Spruance Class (DDG) 2-* 3. Kidd Class (DDG) 2-* H. FRIGATES 2-* 1. Oliver Hazard Perry Class (FFG) 2-* I. Amphibious Warfare ships 2-* 1. Blue Ridge Class (LCC) 2-* 2. Iwo Jima Class (LPH) 2-* 3. Tarawa Class (LHA) 2-* 4. Wasp Class (LHD) 2-* J. Fast Attack Submarines 2-* 1. Los Angeles & Improved Los Angeles Class (SSN) 2-* 2. Sturgeon Class (SSN) 2-* K. AUXILIARIES 2-* 1. Sacramento Class (AOE) 2-* L. AIR WINGS 2-* M. CARRIER AIR WING PLATFORMS AND MISSIONS 2-* 1. F/A-18C/D/E/F HORNET 2-* 3. F-14 TOMCAT 2-* 4. E-2C HAWKEYE 2-* 5. S-3A/B and ES-3B VIKING 2-* 6. EA-6B PROWLER 2-* 7. SH-60 SEA HAWK (and Variants) 2-* 8. Other Associated Aircraft 2-* N. Naval Aircraft Trends 2-* 1. Fixed Wing 2-* 2. Rotary Wing 2-* MODULE 2—CARRIER BATTLEGROUP & Amphibious Ready Group (ARG) PLATFORMS AND MISSIONS A. Carrier Battlegroup (CVBG) Modern carrier battlegroups (CVBGs) and Amphibious Ready Groups (ARGs) incorporate a diverse mix of platforms to carry out their power projection missions. The typical breakdown for a current carrier battlegroup includes one carrier (CV or CVN), two cruisers (CGs and/or CGNs), three destroyers (DDs and/or DDGs) or frigates (FFs and/or FFGs) and one auxiliary (AE, AOE, or AOR). Some battlegroups also include a fast attack submarine (SSN) operating in a support role. The ultimate content of the battlegroup will depend on the specific mission of the Task Force. Additionally, nuclear powered carriers (CVNs) are often coupled with the most up to date air warfare (AW) and undersea warfare (USW) platforms (surface or subsurface). Nuclear cruisers normally will be attached to nuclear carriers. The modern carrier battlegroup forms a potent power-projection platform. As will be discussed forthwith, the embarked carrier air wing employs a diverse mix of offensive and defensive aircraft capable of carrying out intense and sustained combat operations against targets ashore and on the sea. The assets of the battlegroup itself maintain sophisticated combat systems for conducting local combat actions in defense of the carrier. B. Amphibious Ready Group (ARG) Amphibious Ready Groups consist of anywhere from five to twenty-plus amphibious warfare ships carrying between one to fifty thousand marines, depending on the mission. The combined Marine troops and air wing form Marine Air/Ground Task Forces (MAGTFs) of varying sizes (see below). MAGTFs include their own command staffs, ground troops, close air support (AV-8B Harriers and assault helicopters) and service/maintenance support. The most basic ARG is the Amphibious Squadron (PHIBRON) consisting of three to five ships and a Marine Expeditionary Unit (MEU) of two thousand marines with enough supplies for fifteen days of combat. Advantages of the PHIBRON/MEU team include quick response and forward deployment. This makes them ideal for evacuation of U.S. personnel abroad facing hostile conditions (see below) or amphibious raids. The next operational level up is the Amphibious Group (PHIBGRU) consisting of sixteen to twenty-four ships and a Marine Expeditionary Brigade (MEB) of fifteen thousand marines equipped for thirty days of combat. This group is capable of larger, extended operations. The ships in the PHIBGRU include Maritime Pre-positioning Ships (MPS) loaded with ammunition, supplies and material. Finally, there is the Amphibious Task Force (ATF) consisting of twenty ships and a full Marine Expeditionary Force (MEF) of twenty-five to fifty thousand marines capable of sixty days sustained combat operations. This is the largest, most powerful MAGTF. Typical ARG missions include non-combatant evacuation (NEO), in extremis hostage rescue (IHR), tactical recovery of aircraft and personnel (TRAP), and maritime interdiction force operations (MIFO). A Navy/Marine Corps PHIBGRU performed a NEO to evacuate U.S. citizenry from Liberia during the 1991 civil war. U.S. Navy warships performed an extended MIFO in support of United Nations economic sanctions against Iraq during operations Desert Shield and Desert Storm also in 1991-2. C. Battlegroup Platforms Typical platforms found in the battlegroup include: Carrier (CV/CVN)—The carrier's primary mission is air power projection, either to targets ashore or at sea. The carrier is the center around which the other ships in the battlegroup evolve. CVN indicates a nuclear powered carrier. Cruiser (CG/CGN)—Cruisers attached to a battlegroup primarily perform air-warfare (AW) missions to protect the carrier and other ships from air threats. Cruisers are also equipped with missiles for surface-warfare (SUW), and Light Airborne Multi-Purpose System (LAMPS) helicopters for undersea-warfare (USW). CGN indicates a nuclear powered cruiser. Destroyer (DD/DDG)—Most modern destroyers are optimized for a particular warfare task, such as USW, AW or SUW; typically, they also have some capability to conduct the other two as well. DDG indicates the destroyer can fire guided missiles. Frigate (FF/FFG)—The main mission of the frigates is USW, although they usually have some capability for conducting AW and SUW. FFG indicates the frigate can fire guided missiles. D. Carrier Battlegroups Elements Eleven carrier battlegroups and one training carrier operate in the fleet. At the core of each group, reporting directly to the battlegroup commander, is a permanently assigned carrier (CV or CVN), carrier air wing (CVW), a carrier group (CARGRU), a cruiser/destroyer group (CRUDESGRU), and a tactical destroyer squadron (TACDESRON). Submarine support for each battlegroup usually consists of one or two nuclear powered attack submarines (SSNs). The summary of a typical carrier battlegroup follows below: Ship Type Primary Mission Typical Number in Battlegroup Aircraft Carrier Power Projection 1 Cruiser AW 1-2 Destroyer USW/SUW/AW 2-3 Frigate USW/SUW/AW 2-3 Submarine USW 1 Auxiliary Support 1 E. Aircraft Carriers 1. Nimitz Class (CVN) Displacement: 72,916 tons light, 96,000 - 102,000 full load. Length: 1040 feet along the flight deck (317 meters). Beam: 252 feet (76.8 meters). Speed: 30+ knots (34.5+ miles per hour). Power Plant: Two nuclear reactors, four geared steam turbines, four shafts (thirteen to fifteen years between re-fuelings or 800,000 to 1,000,000 miles). Complement: 3,200 regular ship's compliment + 2,480 aircrew. Defense: Four NATO Sea Sparrow, three to four 20mm Vulcan Phalanx (CIWS). Air wing: 80 aircraft including F-14s; F/A-18s; EA-6Bs; E-2Cs; S-3A/Bs; SH-60Fs, HH-60Hs. Nimitz CVN-68 (LANTFLT) Dwight D. Eisenhower CVN-69 (LANTFLT) Carl Vinson CVN-70 (PACFLT) Theodore Roosevelt CVN-71 (LANTFLT) Abraham Lincoln CVN-72 (PACFLT) George Washington CVN-73 (PACFLT) John C. Stennis CVN-74 (PACFLT) Harry S. Truman CVN-75 (LANTFLT) Ronald Reagan CVN-76 (Building) The Nimitz class nuclear powered aircraft carrier is the largest, most powerful, capable aircraft carrier class in the world. The general arrangement of these ships is similar to the previous Kitty Hawk class with respect to flight deck, hangar, elevators, and island structure, e.g., the island is aft of the Number 1 and 2 elevators, with the Number 4 elevator on the port side aft of the angled deck and opposite the Number 3 elevator (see illustration below). The angled deck is canted to port at 9�3' and is almost 800 feet long. The general excellence of the Nimitz design precluded major changes to later ships in the class. CVN-71 and subsequent ships incorporate improved magazine protection; CVN-73 and later ships feature improved topside ballistic protection; CVN-74 and later ships are constructed with HSLA-100 steel. There are eight ships of this class commissioned in various states of readiness, and one under construction. Figure 3.1. Nimitz Class CVN Top View.* Figure 3.2. Nimitz Class CVN Side View. The U.S.S. John C. Stennis (CVN-74), the seventh of the class, was commissioned in 1996. The eighth of the class and the newest aircraft carrier in the U.S. Navy, the U.S.S. Harry S. Truman (CVN-75), was commissioned in July 1998. The final ship of the class, U.S.S. Ronald Reagan (CVN-76) is also under construction and is scheduled to be commissioned in 2008. 2. Enterprise Class (CVN) Displacement: 73,502 light; 75,700 standard; 93,970 full load Length: 1,040 feet along the flight deck (317 meters). Beam: 133 feet (39.9 meters). Speed: 30+ knots (34.5 miles per hour). Power Plant: Eight nuclear reactors, four geared steam turbines, and four shafts. Complement: 3,215 regular ship's compliment + 2,480 aircrew. Defense: Three NATO Sea Sparrow, three 20mm Vulcan Phalanx (CIWS). Air wing: 75 aircraft, including F-14; F/A-18; EA-6B; E-2C; S-3A/B; SH-60F; HH-60H. There is one ship in this class: Enterprise CVN-65 (LANTFLT) Figure 3.3. Enterprise Class CVN Top View. Figure 3.4. Enterprise Class CVN Side View. Built to a modified Forrestal class design, Enterprise was the world's second nuclear-powered warship (the cruiser Long Beach (CGN-9) was completed a few months earlier). The first of the eight reactors installed achieved initial criticality on 2 December 1960, shortly after the carrier was launched. After three years of operation during which she steamed more than 207,000 miles, Enterprise was refueled from November 1964 to July 1965. Her second set of cores provided about 300,000 miles steaming. Refueled again in 1970 the third set of cores lasted for eight years until replaced in 1979-82 overhaul. There are two reactors for each of the ship's four shafts. The eight reactors feed 32 heat exchangers. Aviation facilities include four deck edge lifts, two forward and one each side abaft the island. There are four 295 foot C-13 Mod 1 catapults. Hangars cover 216,000 sq. ft with 25-ft deck head. The Enterprise carries 8,500 tons of aviation fuel (12 days flight operations). She recently completed a fourth refueling. 3. Kitty Hawk and John F. Kennedy Class (CV) Displacement: 60,100 tons light, 81,773 full load. Length: 1,063 feet along the flight deck (323.8 meters). Beam: 130 feet (39 meters). Speed: 30+ knots (34.5 miles per hour). Power Plant: Eight boilers, four geared steam turbines, four shafts, and 280,000 shaft horsepower. Complement: 3,150 regular ship's compliment + 2,480 aircrew. Defense: Three NATO Sea Sparrow, three 20mm Vulcan Phalanx (CIWS). Air wing: 75 aircraft including F-14; F-18; EA-6B; E-2C, S-3A/B; SH-3G/H or SH-60F There are three ships in this class: Kitty Hawk CV-63 (PACFLT) John F. Kennedy CV-67 (LANTFLT) Constellation CV-64 (PACFLT) Figure 3.5. Kitty Hawk Class CV Top View. Figure 3.6. Kitty Hawk Class CV Side View. These carriers are based on an improved Forrestal class design featuring improved elevator and flight deck arrangement. Both Kitty Hawk (CV-63) and Constellation (CV-64) were modernized recently under the service life extension program (SLEP), which extends their projected service life fifteen years beyond their original thirty year service life. America (CV-66) will not be upgraded and probably will be decommissioned in 1996. These ships are larger than those of the Forrestal class and have two elevators forward of the island structure and portside elevator on the stern quarter rather than at the forward end of the angled flight deck. Note: The John F. Kennedy has a number of modifications not inherent to the Kitty Hawk class and is therefore referred to as its own class. F. CRUISERS 1. Ticonderoga (AEGIS) Class (CG) Displacement: 7,015 tons light, 9,590 full load. Length: 567 feet (172.8 meters). Beam: 55 feet (16.75 meters). Speed: 30+ knots (34.5 miles per hour). Power Plant: Four General Electric LM 2500 gas turbine engines; two shafts, 80,000 shaft horsepower total. Complement: 364 (24 officers + 340 enlisted). Weapons: Tomahawk land attack and anti-ship missiles, eight Harpoon SSMs, ASROCs, SM-2MR SAMs, two 20mm Vulcan Phalanx (CIWS), two Mk 45 127mm (5 inch) DP guns, six MK-46 torpedoes (two triple launchers). Figure 3.8. Ticonderoga (AEGIS) Class CG Side View. Note: this view shows the external twin Mk 26 Mod 1 launchers on CG-47through CG-51. Ticonderoga class guided missile cruisers are the world's most capable air warfare (AW) ships, developed to provide extensive carrier battlegroup defense against aircraft and anti-ship missiles. There are twenty-seven ships of this class active in varying states of readiness (CG-47 through CG-73) and are the only remaining U.S. Navy cruisers remaining in active service. Built to a modified Spruance class destroyer design, they are equipped with the state-of-the-art SPY-1 phased array radar system that forms part of the AEGIS AW weapon system. For this reason, they often are referred to as AEGIS class cruisers and form the backbone of the AW mission for battlegroups they are assigned to. Additionally, these ships have major undersea warfare (USW) and strike capabilities. The wide array of weaponry carried, including surface-to-air missiles (SAMs), surface-to-surface missiles (SSMs), anti-submarine rockets (ASROCs), five-inch deck guns, 20mm Phalanx, and embarked LAMPS III helicopter, make these ships among the most versatile in the Navy. The first six ships of the class (CG-47 through CG-52) have two external twin Mk 26 Mod 1 launchers for the Standard SM-2MR SAM. Subsequent ships have two 61-cell Mk 41 vertical launch system (VLS) capable of firing the SM-2MR, the Tomahawk Land Attack Missile (TLAM), and anti-submarine rockets (ASROC). At least eight ships of this class fired in excess of one hundred Tomahawk land attack missiles at targets in Iraq during Operation Desert Storm and the period immediately after. One of these ships, the U.S.S. Princeton (CG-59), struck an Iraqi bottom-laid influence mine on 19 February 1991. Although she took damage to her hull, her AEGIS weapon system remained operational. She was subsequently towed to Dubai, UAE for repairs. Ticonderoga CG-47 Monterey CG-61 Yorktown CG-48 Chancellorsville CG-62 Vincennes CG-49 Cowpens CG-63 Valley Forge CG-50 Gettysburg CG-64 Thomas S. Gates CG-51 Chosin CG-65 Bunker Hill CG-52 Hue City CG-66 Mobile Bay CG-53 Shiloh CG-67 Antietam CG-54 Anzio CG-68 Leyte Gulf CG-55 Vicksburg CG-69 San Jacinto CG-56 Lake Erie CG-70 Lake Champlain CG-57 Cape St. George CG-71 Philippine Sea CG-58 Vella Gulf CG-72 Princeton CG-59 Port Royal CG-73 Normandy CG-60 2. California Class (CGN) Displacement: 10,450 tons (full load). Power Plant: Two General Electric nuclear reactors, two geared turbines, and two shafts. Length: 596 feet (181.8 meters). Beam: 61 feet (18.6 meters). Speed: 30+ knots (34.5+ miles per hour). Complement: ~584 (~40 officers + ~544 enlisted). Aircraft: Helicopter landing capability: landing area only, no support facilities. Weapons: Four Harpoon SSMs, eighty SM-1MR SAMs, two 20mm Vulcan Phalanx (CIWS), two Mk 45 127 mm (5 inch) DP guns, eight ASROCs, four MK-32 torpedoes (single launcher). California CGN-36 (PACFLT) South Carolina CGN-37 (LANTFLT) Figure 3.10. California Class CGN Side View. This was the first class of nuclear-propelled surface warships intended for series production. These ships essentially are nuclear-propelled version of guided missile designs proposed in the early 1960s. They have the older SM-1 series SAM on single arm, Mk13 Mod 3 launchers (fore and aft), two 5 inch guns (fore and aft), anti-ship capability with Harpoon SSMs, and USW capability with ASROCs, These do not carry TLAMs. Both of the remaining two ships of this class remain in commission, but are being held in a reserve status in a stand down status. 3. Intelligence-related spaces aboard Cruisers Some cruisers have the Ship's Special Exploitation Space (SESS) capability, which allows them to conduct cryptologic support mission for the battlegroup. Enlisted Cryptologic (CT) specialists who form a cryptologic direct support element (DSE) man the SESS. Cruisers do not have dedicated onboard intelligence centers. G. Destroyers 1. Arleigh Burke Class (DDG) Displacement: 6,625 tons light, 8,315 full load. Length: 466 feet (142 meters). Beam: 59 feet (18 meters). Speed: 31 knots (35.7 mph, 57.1 kph). Power Plant: Four General Electric LM 2500-30 gas turbines; two shafts, 100,000 total shaft horsepower. Complement: ~323 (23 officers + 300 enlisted). Aircraft: None. LAMPS III electronics installed on landing deck for coordinated DDG 51/helo USW operations. Weapons: 90-cell VLS for TLAM, ASROC, SM-2MR. Eight Harpoon SSMs, two 20mm Vulcan Phalanx (CIWS), one Mk 45 127mm (5 inch) DP Gun, six MK-32 torpedo (two triple launchers). Figure 3. 11. Arleigh Burke Class DDG Side View. Arleigh Burke DDG--51 (PACFLT) John Paul Jones DDG-53 (PACFLT) Curtis Wilbur DDG-54 (PACFLT) Stout DDG-55 (LANTFLT) John S. McCain DDG-56 (PACFLT) Mitscher DDG-57 (LANTFLT) Laboon DDG-58 (LANTFLT) Russell DDG-59 (PACFLT) Paul Hamilton DDG-60 (PACFLT) Ramage DDG-61 (LANTFLT) Fitzgerald DDG-62 (PACFLT) Stethem DDG-63 (PACFLT) Carney DDG-64 (LANTFLT) Benfold DDG-65 (PACFLT) Gonzalez DDG-66 (PACFLT) Cole DDG-67 (LANTFLT) The Sullivians DDG-68 (LANTFLT) Milius DDG-69 (PACFLT) Hopper DDG-70 (PACFLT) Ross DDG-71 (LANTFLT) Mahan DDG-72 (LANTFLT) Decatur DDG-73 (Under Construction) Mc Faul DDG-74 (LANTFLT) Donald Cook DDG-75 (Under Construction) There are twenty-two ships in commission with seven more building (a total of forty ships are planned). The Arleigh Burke class will form the backbone of the U.S. destroyer fleet for the twenty-first century. The class features the AEGIS AW system and an all steel hull construction following lessons learned from the devastating Exocet SSM attacks on the H.M.S. Sheffield, during the Falklands War, and the U.S.S. Stark (FFG-31) in 1987 in the Persian Gulf. Additionally, all hull exterior surfaces employ stealth design techniques such as angled construction to minimize radar cross section. It is also the first class of U.S. Navy ship with an integrated system for defense against the fallout associated with NBC warfare. Like their larger Ticonderoga class cousins, this class also employs the SPY-1D phased array radar fire control system for use with up to ninety SM-2MR surface-to-air missiles. The class also is equipped to handle, fuel and rearm SH-60B/F helicopters but do not have any on board hanger capacity. Later ships of the Flight II variant in this class (DDG-68+) will include a number of combat capability improvements such as the Joint Tactical Information Distribution System (JTIDS), Tactical Information Exchange Subsystem (TADIXS), upgraded sonar, and the SM-2MR Block-4 SAM. 2. Spruance Class (DDG) Displacement: 5,770 tons light, 8,040 full load. Length: 563 feet (171.6 meters). Beam: 55 feet (16.8 meters). Speed: 33 knots (38 mph, 60.8 kph). Power Plant: Four General Electric LM 2500 gas turbines, two shafts, 80,000 shaft horsepower. Complement: 383 (30 officers + 353 enlisted). Aircraft: Two SH-60 Seahawk LAMPS III helicopters. Weapons: Eight TLAM (two quad launchers) in seven ships, 61-cell VLS for TLAM and ASROC in twenty-four ships, eight Harpoon SSMs (two quad Mk 141 canisters), twenty-four NATO Sea Sparrow, two 20mm Vulcan Phalanx (CIWS), two Mk 45 127mm (5 inch) DP Guns, six MK-32 torpedoes (two triple launchers). Figure 3.12. Spruance Class DDG--Side View. Note: this view shows the external Mk 16 ASROC launcher aft of the forward 5-inch gun (replaced on later units with Mk 41 VLS). Spruance DD-963 (LANTFLT) Connolly DD-979 (LANTFLT) Paul F. Foster DD-964 (PACFLT) Moosbruger DD-980 (LANTFLT) Kinkaid DD-965 (PACFLT) John Hancock DD-981 (LANTFLT) Hewitt DD-966 (LANTFLT) Nicholson DD-982 (LANTFLT) Elliot DD-967 (PACFLT) John Rodgers DD-983 (LANTFLT) Arthur W. Radford DD-968 (LANTFLT) Leftwich DD-984 (PACFLT) Peterson DD-969 (LANTFLT) Cushing DD-985 (PACFLT) Caron DD-970 (LANTFLT) Harry W. Hill DD-986 (PACFLT) David R. Ray DD-971 (PACFLT) O'Bannon DD-987 (LANTFLT) Oldendorf DD-972 (PACFLT) Thorn DD-988 (LANTFLT) John Young DD-973 (PACFLT) Deyo DD-989 (LANTFLT) Comte De Grasse DD-974 (LANTFLT) Ingersoll DD-990 (PACFLT) O'Brien DD-975 (PACFLT) Fife DD-991 (PACFLT) Merrill DD-976 (PACFLT) Fletcher DD-992 (PACFLT) Briscoe DD-977 (LANTFLT) Hayler DD-997 (LANTFLT) Stump DD-978 (LANTFLT) Spruance class DDGs originally were built as specialized USW ships, with only point defense missiles in the AW role. They have subsequently been provided with anti-ship and strike capability using Harpoon SSMs and TLAM, respectively. Other improvements include the installation of a Mk 41 vertical launch system (VLS) capable of firing SM-2MRs, TLAM, and ASROCs, upgrade of the electronic warfare suite to SLQ 32V(2), LAMPS III recovery system, the Halon 1301 fire fighting system and improved anti-missile and target acquisition systems. Of note, SM-2MR surface-to-air missiles fired by Mk 41 VLS equipped vessels can be controlled by separate AEGIS fitted vessels such as Ticonderoga class CGs and Arleigh Burke class DD-s, thus further increasing battlegroup AW capability. Five ships of this class fired over one hundred TLAMs at targets in Iraq during Operation Desert Storm. The U.S.S. Paul F. Foster (DDG-964) fired the first TLAM and hence the "opening shot" of the Gulf War on 17 January 1991. The U.S.S. Fife (DDG-991) fired sixty TLAMs, virtually emptying her sixty-one cell Mk 41 VLS. 3. Kidd Class (DDG) Displacement: 6,950 tons light, 9,574 full load. Length: 563 feet (171.8 meters). Beam: 55 feet (16.8 meters). Speed: 33 knots (38 mph, 60.8 kph). Power Plant: Four General Electric LM 2500 gas turbines, two shafts, 80,000 shaft horsepower. Complement: 363 (31 officers + 332 enlisted). Aircraft: One SH-2F LAMPS. Weapons: Eight Harpoon SSM (two quad launchers), sixty-eight SM-2MR SAM (two twin Mk 26 Mod 0/1 launchers) ASROC, two 20mm Vulcan Phalanx (CIWS), two Mk 45 127mm (5 inch) DP Guns, six MK-32 torpedo (two triple launchers). Figure 3.13. Kidd "Ayatollah" Class DDG--Side View. Chandler DDG-996 (PACFLT) Originally designed for the Royal Iranian Navy, the U.S. Navy acquired the ships in July 1979 after the fall of the shah (for this reason they are often referred to as the "Ayatollah class"). The fours ships of this class are the most powerful multi-purpose destroyers in the fleet. Specific capabilities include AW (using SM-2MR SAMs), USW (using LAMPS-I helicopter, ASROCs, torpedoes, and sonar), and SUW (using octuple Harpoon launcher and two Mk 45 five inch guns). Additionally, these ships feature advanced air-intake and filtration systems in order to handle dust and sand prevailing in Persian Gulf operating area as well as greater air-conditioning capacity. The Kidd features a distinctive pale gray paint scheme for operations in the Persian Gulf. Both the Kidd and Scott took part in Operation Desert Storm. Only one ship of this class remains active U.S. Navy service. The remaining three ships of this class, the USS Kidd (DDG-993), USS Callaghan (DDG-994), and USS Scott (DDG-995) are scheduled for transfer to a foreign navy under the Security Assistance Program (SAP). H. FRIGATES 1. Oliver Hazard Perry Class (FFG) Displacement: 2,750 tons light, 3,638 full load. Length: 445-453 feet (133.5-135.6 meters). Beam: 45 feet (13.7 meters). Speed: 29 plus knots (33.4+ miles per hour). Power Plant: Two General Electric LM 2500 gas turbine engines; 1 shaft, 41,000 shaft horsepower total. Complement: 300 (13 officers + 287 enlisted). Aircraft: One SH-2F LAMPS (FFG- 7, 9-27,30, 31,34), two SH-60B LAMPS III (FFG- 8,28,29,32,33,36-61). Weapons: Up to forty Harpoon and SM-1MR (one single Mk 13 Mod 4 launcher), one 20 mm Vulcan Phalanx (CIWS), one OTO Melara 76mm gun, six MK-46 torpedoes (two triple launchers). Figure 3.14. Oliver Hazard Perry Class FFG Side View. There are a total of fifty-one ships built for this class, but only 39 ships remain in active naval service. Ten of these ships are part of the Naval Reserve force. The Perry class FFG forms a capable USW platform with the LAMPS-III helicopter onboard. The Mk 13 Mod 4 missile launcher provides secondary AW and SUW capability. Ships of this class are often referred to as "FFG-7" (pronounced FIG-7) after the lead ship, U.S.S. Oliver Hazard Perry (FFG-7). Of note, two ships of this class suffered heavy damage while patrolling in the Persian Gulf. On 17 May 1987, two Iraqi fired Exocet SSMs hit the U.S.S. Stark (FFG-31), one of which detonated near berthing spaces resulting in heavy loss of life. On 14 April 1988 the U.S.S. Samuel B. Roberts (FFG-58) struck a mine which detonated an estimated 250 pounds of TNT. The explosion heavily damaged propulsion systems and blew a nine-foot hole under the keel. In both attacks, the ships suffered intense fires aggravated by the all aluminum construction of the hull. Nevertheless, exceptional damage control efforts carried out by their crews kept both ships on the surface and enabled them to reach friendly ports in the Persian Gulf. The Stark returned to the United States on her own power and underwent repairs. The Roberts was transported to the United States on the Dutch-flag heavy-lift ship, Mighty Servant 2. McInerney FFG-8 Curts FFG-38 (Naval Reserves) Wadsworth FFG-9 (Naval Reserve) Doyle FFG-39 Duncan FFG-10 Disposed of through SAP Halyburton FFG-40 Clark FFG-11 (Naval Reserve) McClusky FFG-41 George Phillip FFG-12 (Naval Reserve) Klarkring FFG-42 Samuel Eliot Morrison FFG-13 (Naval Reserve) Thach FFG-43 John H. Sides FFG-14 (Naval Reserve) De Wert FFG-45 Estocin FFG-15 (Naval Reserve) Rentz FFG-46 Clifton Sprague FFG-16 Disposed of through SAP Nicholas FFG-47 John A. Moore FFG-19 (Naval Reserve) Vandergrift FFG-48 Antrim FFG-20 Disposed of through SAP Robert G. Bradley FFG-49 Flatley FFG-21 Disposed of through SAP Taylor FFG-50 Fahrion FFG-22 Disposed of through SAP Gary FFG-51 Lewis B. Puller FFG-23 Disposed of through SAP Carr FFG-52 Jack Williams FFG-24 Disposed of through SAP Hawes FFG-53 Copeland FFG-25 Disposed of through SAP Ford FFG-54 Gallery FFG-26 Elrod FFG-55 Boone FFG-28 (Naval Reserve) Simpson FFG-56 Stephen W. Groves FFG-29 (Naval Reserves) Reuben James FFG-57 Stark FFG-31 Samuel B. Roberts FFG-58 John L. Hall FFG-32 Kauffman FFG-59 Jarrett FFG-33 Rodney M. Davis FFG-60 Underwood FFG-36 Ingraham FFG-61 Commelin FFG-37 I. Amphibious Warfare ships 1. Blue Ridge Class (LCC) Displacement: 18,874 tons (16,987 metric tons) full load. Length: 636 feet (190 meters) Speed: 23 knots (26.5 miles, 42.4 km, per hour). Power Plant: Two boilers, one geared turbine, one shaft; 22,000 horsepower. Complement: LCC-19; 780 (19 officers) + 170 flag staff. LCC-20; 777 (50 officers) + 193 flag staff. Weapons: Four 76.2 mm DP guns, two Mk 25 Sea Sparrow launchers, two 20 mm Mk 15 Vulcan Phalanx. Aircraft: none embarked, stern helicopter deck capable of accommodating any helicopter except CH-53. Figure 3.17. Blue Ridge Class LCC Side View. The LCC is an amphibious command ship. There are two ships in this class. LCC 19 is the flagship of the forward deployed Seventh Fleet in the western Pacific. LCC 20 is flagship of the Second Fleet in the Atlantic. The ships have a good cruising speed of 20 knots as well as excellent satellite communications and analysis systems as befits command ships. Embarked craft include two LCVP landing craft and one 10 meter personnel launch carried in Welin davits. There is no helicopter hanger but a rear landing pad can accommodate large helicopters such as the CH-53. The LCC is based on the Iwo Jima class described above. Both ships feature air conditioned spaces and fin-stabilizers. The ships differ from the Iwo Jima class in that they have a large central superstructure vice an island. There are prominent fore and aft communications masts. Blue Ridge LCC-19 (PACFLT) Mount Whitney LCC-20 (LANTFLT) 2. Iwo Jima Class (LPH) Displacement: 11,000 tons light, 17,515-18,300 tons full load. Length: 611 feet. Speed: ~5,000 nautical mile range at 23 knots. Power Plant: Conventional steam plants (two boilers). Complement: 685 (47 officers) + 2,090 Marines (190 officers). Weapons: Four 76.2 mm DP guns, two Mk 25 Sea Sparrow launchers, two 20 mm Mk 15 Vulcan Phalanx, four to eight 12.7 mm machine guns. Aircraft: embarked CH-46 Sea Knights, CH-53 Sea Stallions, UH-1 Iroquois and AH-1 Sea Cobras (can also carry RH-53/MH-53 minesweeping helicopters or AV-8B Sea Harrier). Figure 3.16. Iwo Jima Class LPH Side View. The LPH is an amphibious assault helicopter carrier. Like most amphibious assault ships (see below) the LPH has the general appearance of a conventional aircraft carrier including an island superstructure, straight flight deck and associated aircraft elevators. Unique to the LPH is its folding side elevator located forward to port; and one to starboard, aft of the island. The ship features excellent medical facilities including a 300 bed hospital. LPH 9 has an Air-Surface Classification and Analysis Center (ASCAC). LPH-12 carries two LCVP landing craft in side davits. There are seven of these ships active commissioned between 1961 and 1970. They are named in honor of famous Marine Corps amphibious assaults. None of these ships remain in U.S. Naval Service. One ship of this class, the USS Guadalcanal (LPH-7), has been retained by the Navy for use as a museum. 3. Tarawa Class (LHA) Displacement: 25,120 tons light, 39,400 full load. Length: 833 feet (249.9 meters) Speed: 24 knots (27.6 miles per hour) Power Plant: Two boilers, two geared steam turbines, two shafts, 70,000 total shaft horsepower. Complement: Ships Company: 58 officers, 882 enlisted; Marine Detachment: 1,900 plus. Weapons: Two Mk 45 127 mm (5 inch) DP Guns, two Vulcan Phalanx (20 mm), six Mk 67 AA 20 mm guns. Aircraft: embarked CH-46 Sea Knights, CH-53 Sea Stallions, and UH-1 Iroquois. Figure 3.18. Tarawa Class LHA Side View. The LHA is a multi-purpose assault transport, combining many of the characteristics of the LPH and LHD configurations. The ship has the general profile of an aircraft carrier with its superstructure starboard, straight flight deck, helicopter elevators to port (folding) and aft, as well as a large well deck for accommodating landing craft. In addition to aircraft and landing craft, the LHA can carry substantial amounts of palatalized cargo, dry stores, and 1,200 tons of JP-5 fuel. The boilers are the largest ever installed on a U.S. Navy warship and are highly automated. Communications systems include SATCOM as well as long range HF. The entire ship is air conditioned. This class also features a 300 bed hospital. There are a total of five ships in this class: Tarawa LHA-1 (PACFLT) Nassau LHA-4 (LANTFLT) Saipan LHA-2 (LANTFLT) Peleliu LHA-5 (PACFLT) Belleau Wood LHA-3 (PACFLT) 4. Wasp Class (LHD) Displacement: 28,233 tons light, 40,532 full load. Length: 844 feet (253.2 meters). Speed: 20+ knots (23.5 miles per hours). Power Plant: Two boilers, two geared steam turbines, two shafts, 70,000 shaft horsepower. Complement: Ship's Company: 104 officers, 1,004 enlisted; Marine Detachment 1,894 troops. Weapons: Three Vulcan Phalanx (20 mm), six Mk 67 AA 20 mm guns, two Mk 29 Sea Sparrow launchers. Aircraft: embarked CH-46 Sea Knight (Assault), CH-53 Sea Stallion (Assault), AV-8B Harrier (VSTOL), SH-60B Sea Hawks (USW). Figure 3.19. Wasp Class LHD Side View. The Wasp class LHD is based on the LHA 1 class described above, but is intended to be convertible from an assault ship to an USW ship with embarked LAMPS helicopters. Like the LHA class, it resembles an aircraft carrier with a straight flight deck, aircraft elevators, and Starboard Island superstructure. It also has a stern mounted well deck for landing craft. The omission of 5 inch guns for and aft results in a "squared off" flight deck. The LHD can carry 1,200 tons of JP-5 jet fuel and copious amounts of dry and palatalized cargo. The ship accommodates three large 200 bed hospitals. There are six ships planned for this class with four in service: Wasp LHD-1 (LANTFLT) Kearsarge LHD-3 (LANTFLT) Essex LHD-2 (PACFLT) Boxer LHD-4 (PACFLT) Bataan LHD-5 (Construct.) Bon Homme Richard LHD-6 (PACFLT) J. Fast Attack Submarines 1. Los Angeles & Improved Los Angeles Class (SSN) Displacement: 6,080 tons standard, 6,927 dived. Length: 360 feet (109.73 meters). Speed: 20+ knots dived (23+ miles per hour). Power Plant: One nuclear reactor, two geared steam turbines, one shaft. Complement: 13 officers, 116 enlisted. Missiles: Tomahawk Land Attack Missile including nuclear, conventional, and submunitions variants (TLAM-N/C/D), Tomahawk Anti-Ship Missile (TASM), and Harpoon. Torpedoes: 4 - 21 in (533 mm) tubes amidships. Mk 48 torpedo. Mines: Can carry and deploy mines. Weapons Complement: Total of 26 weapons can be tube-launched, for example - 8 Tomahawk, 4 Harpoon, 14 torpedoes. Figure 3.20. Los Angeles Class SSN Side View. There are a total of eighty-five boats active in this class (SSN-688 through SSN-773) with four more scheduled for commissioning. Those boats from SSN-719 onward are known as the "Improved" Los Angeles class. They are equipped with a Vertical Launch System (VLS), placing 12 Tomahawk-capable launch tubes forward and external to the pressure hull. Additionally, dive planes are mounted on the bow (vice sail) for under-ice operations. The Los Angeles class SSN is the finest attack submarine in the world and features superior quieting technology coupled with versatile weapons systems ranging from traditional torpedoes to land attack cruise missiles. The Los Angeles class SSN performs a number of important missions including USW, SUW (firing Harpoons), Strike (using TLAMs), and general carrier battlegroup support. A number of third world countries are acquiring modern state-of-the-art non-nuclear submarines, potentially posing a threat to deployed carrier battlegroups. The SSN supports battlegroup operations by providing USW detection and sanitization, intelligence collection, special forces delivery, surface warfare, and strike warfare. During Operation Desert Storm, two Los Angeles class SSNs launched TLAM missiles at targets in Iraq. 2. Sturgeon Class (SSN) Displacement: 4,260 tons standard, 4,960 dived. Length: 292-300 feet (89-91 meters). Speed: 20+ knots, dived (23+ miles per hour). Power Plant: One nuclear reactor, two steam turbines, one shaft. . Complement: 12 officers, 95 enlisted. Missiles: Tomahawk Land Attack Missile including nuclear, conventional, and submunitions variants (TLAM-N/C/D), Tomahawk Anti-Ship Missile (TASM), and Harpoon. Torpedoes: 4 - 21 in (533 mm) tubes amidships. Mk 48 torpedoes. Weapons Complement: Total of 23 weapons, for example 4 Harpoon, 4 Tomahawk and 15 torpedoes. Up to 8 Tomahawks can be carried in most of the class in place of other weapons. Figure 3.21.

Sturgeon Class SSN Silhouette. There are four of this class still in active naval service. The Sturgeon class is slightly smaller than the Los Angeles class and slightly larger than the older Permit class. Despite their age, boats of the Sturgeon class will continue to play an important part of the Navy's USW program until the end of the century. In addition to the traditional role of USW, the Sturgeon also performs SUW and Strike. Several Sturgeons have been modified to carry both Swimmer Delivery Vehicles (SDVs) as well as Deep Submergence Rescue Vehicles (DSRVs) K. AUXILIARIES 1. Sacramento Class (AOE) Displacement: 19,200 tons light, 51,400 - 53,600 full load. Length: 793 feet. Speed: 26 knots; 6,000 nautical mile range at 25 knots. Power Plant: Conventional steam plant. Complement: 601 (33 officers). Weapons: two Vulcan Phalanx, NATO Sea Sparrow (Mk 29 octuple launcher). Cargo Capacity: 177,000 barrels of fuel; 2,150 tons munitions; 500 dry stores; 250 tons refrigerated stores. Figure 3.22. Sacramento Class AOE Side View This type of auxiliary is typical of the ships used by the battlegroup for underway replenishment of petroleum, munitions, provisions, and fleet freight. Two embarked UH-46E Sea Knight helicopters provide vertical replenishment (VERTREP) capability. Long suspended fuel lines provide underway replenishment (UNREP) capability of fuel. This class consists of four units. Sacramento AOE-1 Seattle AOE-3 Camden AOE-2 Detroit AOE-4 L. AIR WINGS As mentioned earlier, the carrier air wing forms the primary offensive capability of the deployed carrier battlegroup. The air wing is a balanced force that performs a multitude of missions for the battlegroup commander. These include fleet air defense, attack and strike missions, early airborne warning, electronic warfare, SUW, USW, AW, and day-to-day logistics. The air wing is a self-contained unit with its own commanding officer and administrative support (air wing organization will be discussed in Module 6). Listed below is a typical carrier air wing (CVW). Note that it contains both fixed and variable wing aircraft of different class and capability. Actual CVW compositions may vary. Typical Carrier Air Wing (CVW) AC Type AC Name Mission No. of Squadrons Planes per Squadron F/A-18 Hornet AW/Strike 3 10-12 F-14 Tomcat Air Superiority 2 10-14 E-2C Hawkeye Surveillance 1 4 S-3A/B Viking USW/Attack/EW 1 8 ES-3B Viking EW Surveillance 1 (detachment) 2 EA-6B Prowler EW 1 4 SH-60 (helicopter) Sea Hawk USW/OTH/SAR 1 6 C-2 Cod Cargo/Transport 1 (detachment) 2 Note: All A-6E Intruder aircraft and squadrons were retired in 1997. At that time, the typical CVW was changed to three F/A-18 squadrons and two additional S-3 aircraft were added per squadron to absorb the A-6E's former missions. M. CARRIER AIR WING PLATFORMS AND MISSIONS 1. F/A-18C/D/E/F HORNET The F/A-18 is a single seat, twin engine, supersonic, strike/fighter aircraft. It combines a multi mode air-to-air or air-to-ground capability. While in air-to-air mode, the Hornet carries Sparrow, or Sidewinder AAMs. In air-to-ground mode the Hornet can deliver up to 9,000 lb. of ordnance on target including HARM, Shrike MK 80 series GP, Walleye, Rockeye, APAN, Gator, LGBs, MK 82 - 500 pound bomb, MK 83 - 1000 pound bomb, and MK 84 - 2000 pound bombs. The 490 pound MK 20 Rockeye contains 247 individual bomblets, which can penetrate six inches of, steel plating. The 750 pound APAM CBV 59 contains 717 bomblets can penetrate four inches of steel plate. The AGM-62 Walleye is a Vietnam-era TV guided bomb. Launched from a standoff distance of 15 nautical miles, it is an extremely accurate weapon. The AGM-45 Shrike is a 400 pound anti-radiation missile with a 51 pound warhead. The more capable 800 pound HARM (High Speed Anti-Radiation Missile) carries a 146 pound warhead and actively homes in at Mach 3+ on hostile radar sources (e.g., SAM sites). For very close encounters (e.g., less than 2,000 feet from an enemy plane), the Hornet has an M-61 Vulcan cannon capable of firing 578 rounds of 20 mm ammunition at a blistering rate of 6,000 rounds per minute. The Hornet flies with the Navy and Marine Corps team in several variants. The most widely deployed version is the F/A-18C. The two-seat F/A-18D version is used mostly in a training role but retains full combat capability. In the future, the newer, re-engined and redesigned F/A-18E and F "Super Hornets" will replace the older C/D models. The new engines in the Super Hornet improve fuel consumption and extend combat range by 40 percent while also increasing payload capability by 20 percent. Additionally, the Super Hornet employs low observable construction which make them stealthier to radar detection than the original Hornet. Figure 3.25. F/A-18E Hornet Front and Side Views.* 3. F-14 TOMCAT The F-14 Tomcat is a two seat, supersonic, all weather fighter/interceptor. Its primary mission is fleet air defense from hostile aircraft. Carrying 20,000 pounds of fuel, the Tomcat has an un-refueled combat radius of 400 nautical miles. The Tomcat is designed to take out air threats at long distances using its power AWG-9 radar system and AIM-54 Phoenix AAM. Closer in targets can be engaged with the medium and short range AIM-7 Sparrow and AIM-9 Sidewinder AAMs respectively. Like the Hornet, the Tomcat also has an M-61 Vulcan cannon capable of firing 20 mm shells. Figure 3.26. F-14A Tomcat Front and Side Views. 4. E-2C HAWKEYE The E-2C Hawkeye is an all weather, twin turbo-prop, early warning command and control aircraft. It is easily recognized by its huge, distinctive rotating radome. It is sometimes referred to as a "mini-AWACS." Transit speed ranges from 200 to 250 knots, dropping to 140 to 170 knots while on station. Its combat radius extends to over 200 nautical miles (roughly five hours of flight time). It is crewed by two pilots and three naval flight officers (NFOs). A typical squadron deploy with five aircraft and seven full crews. Figure 3.27. E-2C Hawkeye Front and Side Views. 5. S-3A/B and ES-3B VIKING The Viking is an all weather, twin engine USW platform. The Viking is crewed by two pilots and two naval flight officers (NFOs). On station time is up to 7.5 hours. The Viking has in-flight refueling capability which can extend its on station time even longer. With the ability to also act as a tanker, the S-3 often supports other aircraft by providing fuel to extend their combat radius. Maximum speed is 450 knots. While on station, its cruising speed ranges from 180 to 220 knots. The Viking is a very capable USW platform that frequently takes on multi-mission roles such as refueling, AEW, and SUW (e.g., shooting Harpoon missile and dropping MK 80 series bombs). The S-3B features advanced sensing systems and radars that make it a capable SUW platform. Of note, an S-3B successfully sank an Iraqi Hovercraft with iron bombs during. Operation Desert Storm. The USW optimized S-3A/B is being replaced in the fleet by a new, electronic warfare version model, the ES-3B. This variant features a host of sophisticated electronic sensors, including a powerful Inverse Synthetic Aperture Radar (ISAR) for near photographic quality radar imaging. Figure 3.28. S-3 Viking Front and Side Views. 6. EA-6B PROWLER The EA-6B conducts airborne ESM and ECM operations as well as radar search to support battlegroup surveillance and attack operations. It can fire both the TALD and HARM missiles. It is crewed by two pilots and two NFOs, which control various radar and EW jammers. Top speed is 570 knots with a cruising speed of 400 knots. The Prowler is designed to support both offensive and defensive combat operations. Its powerful radar, ESM, and ECM jammers can completely confuse enemy command and control radars. Should the enemy decide to illuminate, the Prowlers can launch a volley of destructive HARMs that will follow hostile electronic signals to their origin. Figure 3.29. EA-6B Prowler. 7. SH-60 SEA HAWK (and Variants) The SH-60 Sea Hawk and its variants replace the older SH-2 Sea Sprite and SH-3 Sea King now being phased out of active service. The SH-60B Sea Hawk holds the designation of LAMPS III and is an important asset in the over-the-horizon (OTH) targeting platform with secondary USW capability The SH-60F Ocean Hawk is a carrier based USW helicopter equipped with dipping sonar. While in the USW role, the Ocean Hawk carrier 25 sonobuoys and 2 Mk 46 torpedoes. The HH-60H Sea Hawk performs combat search and rescue (SAR) duties. Figure 3.30. SH-60 Seahawk Front and Side Views. 8. Other Associated Aircraft The following two helicopters are not assigned technically to the carrier air wing but nevertheless play an important role in naval aviation. a. CH-53 SEA STALLION/SEA DRAGON/SUPER STALLION The CH-53 is a massive, two engine, seven bladed heavy lift helicopter. The Navy and Marine Corps team operates several variations of this platform. The CH-53 Sea Stallion performs heavy lift, minesweeping and assault missions and is based mostly on large deck amphibious warships. The Sea Stallion can carry 38 troops in assault mode and four tons of freight in cargo mode. Additionally, the Navy and Marines operate the MH-53 Sea Dragon and CH-53 Super Stallion variants which also perform assault and minesweeping missions. Operating in assault mode the CH-53E Super Stallion carries 52 fully equipped troops. While acting in a minesweeping role, the CH/MH-53 carries two 12.7 mm machine guns and tows the Mk 103 mine cutter, Mk 104 magnetic minesweeper, Mk 105 hydrofoil system, or Mk 106 acoustic sweep array. All of these minesweeping systems utilize the AQS-14 mine-hunting sonar system. Figure 3.31. CH-53 Sea Stallion Front and Side Views. b. CH-46 SEA KNIGHT The venerable CH-46 is a large two engine, twin rotored cargo and assault helicopter in use since the Vietnam War era. The cargo/lift variant can be found on many amphibious and auxiliary ships and forms the backbone of the vertical replenishment (VERTREP) effort. While in the replenishment role, the Sea Knight can carry almost 3,000 pounds of cargo internally. The Marines also operate an assault version that carries eighteen fully equipped troops. It is based on amphibious warships. Figure 3.32. CH-46 Sea Knight Front and Side Views. N. Naval Aircraft Trends 1. Fixed Wing With the end of the Cold War, many critics claim that the days of the super-carrier are over. Although designed for a war with the now defunct Soviet Union, Navy carrier battlegroups nevertheless retain an important edge in post Cold War operations. These include quick response to regional crises, virtually unlimited staying power in regional problem areas where there is no infrastructure for other U.S. forces, flexibility for power projection operations, high degree of self-sustained capability, support for joint and U.N. actions, and general deterrence. In order to maintain this edge, naval aviation must modernize to meet the specific challenges posed by the post Cold War world. The CVX, the planned follow-on to the current Nimitz-class carriers, is currently in the discussion phase. Planned as new ship design from the keel up, the mission is to design a carrier that will provide the U.S. Navy with a platform well into the next century. In fact, the design team is actually soliciting the ideas and lessons learned of former and current carrier sailors and marines so that the design can be as functional as possible. With the failure of the A-12 program and the decommissioning of all of the A-6E Intruder squadrons, the F/A-18 C will maintain the carriers' attack capability. After that, an existing or new attack platform must be ready to take over. Initially, that aircraft will be F/A-18(E/F) Super Hornet strike fighter which improves on the original Hornet design. In the end, maintaining a viable attack capability is crucial to the continued mission of the carrier battlegroup. As more Third World and so called "non-aligned" countries develop or buy advanced air-to-air fighter aircraft, the mission of fleet air defense becomes more important. At least six other nations operate aircraft carriers only four of which are NATO members. These countries include: The U.K., France, Italy, Spain, India and Russia. Each of these countries operate a variety of fighters from these platforms. U.S. fleet air defense falls under the aegis of the F-14 Tomcat, a fighter whose performance and flexibility remain unmatched by any other naval aircraft. Using the Tactical Aerial Reconnaissance Pod System (TARPS)*, the F-14 adds reconnaissance, battle damage assessment, and PHOTINT collection to its mission. Although capable of carrying air to ground weapons, its primary role remains that of a fighter. Of course, the best synthesis of air-to-air/air-to-ground missions can be found in the F/A-18 Hornet as mentioned above. Critics of the F/A-18 cite its relatively short combat radius (with full ground load). It is hoped that the re-engineering the F/A-18 will overcome many of the F/A-18's original shortcomings. The latest version of the F/A-18 named Super Hornet was rolled out of the assembly plant in September of 1997 and is currently undergoing testing. Of note, the only Navy air-to-air kills during the 1991/1992 Persian Gulf War against Iraq were scored from F/A-18s originally slated for an attack mission. With the demise of the Soviet Union, the global USW threat virtually disappeared overnight. Ironically, the biggest USW threat now facing U.S. naval forces comes from Russian and German built diesel-electric export submarines (SSs). The general decrease of worldwide deployed submarines affected two U.S. USW platforms, the land-based P-3 Orion and the carrier-based S-3A Viking. P-3 squadrons face stiff reductions in the near future while most all S-3A Viking aircraft will be modified to the ES-3B electronic warfare variant. The ES-3B features Inverse Synthetic Aperture Radar (ISAR) which makes it a potent OTH platform. The ES-3B performs both SUW and EW missions. 2. Rotary Wing In general, older sea-based platforms, such as the SH-2 Sea Sprite and SH-3 Sea King, will be phased out of fleet inventory and be replaced by the newer SH-60 Sea Hawk. The Sea Hawk embodies the third upgrade to the Light Airborne Multi-Purpose helicopter program (LAMPS III). Other naval helicopters include the CH-46 which forms the backbone of vertical replenishment (VERTREP) efforts and the CH/MC-53 which tackles mine clearing, assault, and heavy cargo lift duties. Neither of these two platforms is scheduled for retirement soon. Page 3 The post Cold War world has seen a rapid growth on potential air, surface, and subsurface threats facing our naval forces. This increased threat resulted in part from the numerous advanced weapons systems, sensors and delivery platforms now available on the open market, especially since the end of the Cold War. Countries supplying these systems include North Korea, People's Republic of China, and the former Soviet Union. With more and more third world countries in possession of these improved weapon systems, the reaction time available to friendly forces operating in sensitive areas (such as the Persian Gulf) decreases. During the Cold War, U.S. defense doctrine used a trip wire concept The overall battlegroup commander is the Composite Warfare Commander (In deciding the assignment and location of warfare commanders and coordinators the CWC should take into account the tactical situation, size of force and the capabilities of the available assets to cope with the expected threat. Such analysis may lead the The battlegroup commander requires a clean tactical picture to control his forces effectively. To maintain such a picture the) or communications limitations; and (c) has optimum facilities for receipt, processing, and display of information concerning unit readiness and the tactical situation. Within the battlegroup, the to maintain more direct control of assets. Methodologically speaking, the As with any command theory or doctrine, the Page 4 4-* A. CARRIER ORGANIZATION 4-* B. Commanding Officer 4-* C. Typical Carrier Departments 4-* 1. Administrative Department 4-* 2. Air Department 4-* 3. Aircraft Intermediate Maintenance Department (AIMD) 4-* 4. Chaplain Department 4-* 5. Communications Department 4-* 6. Deck Department 4-* 7. Dental Department 4-* 8. Engineering Department 4-* 9. Maintenance Management Department 4-* 10. Medical Department 4-* 11. Navigation Department 4-* 12. Operations Department 4-* 13. Safety Department 4-* 14. Supply Department 4-* 15. Training Department 4-* 16. Weapons Department 4-* D. Air Wing Organization 4-* 1. Air Wing Commander (CAG) 4-* 2. Deputy Air Wing Commander 4-* 3. Operations Officer 4-* 4. USW Operations Officer 4-* 5. Air Intelligence Officer 4-* 6. Maintenance Officer 4-* 7. Weapons Officer 4-* 8. Landing Signal Officers (2) 4-* 9. Flight Surgeon 4-* 10. Carrier Air Wing Intelligence Team 4-* MODULE 4—TYPICAL SHIP ORGANIZATION Navy warships will of course vary in size and function. Most however, have similar organizational structures. For purposes of instruction, we will examine the organizational structure of the modern aircraft carrier as the largest expression of ship administration. Keep in mind that individual ships will incorporate different organizational structures. A. CARRIER ORGANIZATION When fully manned, an aircraft carrier is home to as many as 5,000 personnel—the size of a small city. Thinking of a carrier as a city is a useful way to understand its organization. At the top and comparable to a city's mayor is the ship's Commanding Officer (CO), who is ultimately responsible for the entire ship and the accomplishment of its assigned mission. Next in line and acting as city manager is the Executive Officer (XO). From the XO on down, the ship's individual functions are handled by the ship's company via different departments. These departments are in turn divided into divisions, each specialized in an area of the ship's operation and mission. The carrier battlegroup's primary mission is power projection to targets ashore and at sea. The central element of the carrier's offensive punch is its embarked air wing (CVW). The typical carrier air wing normally consists of nine squadrons, each with individual missions, which join the carrier while it is deployed. B. Commanding Officer The Commanding Officer of an aircraft carrier must satisfy two requirements: He must be an unrestricted line officer (which enables him to command at sea) and he must be a naval aviator. He is always the rank of Captain (O-6). Through his XO (who in most cases is also is a Captain), the CO runs the ship via its various departments. C. Typical Carrier Departments Typical carrier departments are listed below: Typical Carrier Departments Administration Maintenance Management Air Medical Aircraft Intermediate Maintenance Navigation Chaplain Operations Communications Safety Deck Supply Dental Training Engineering Weapons Each department is further subdivided into divisions with personnel manning these divisions assigned to "Watches," "Sections," or both. 1. Administrative Department The Administrative Department is responsible for maintaining all administrative data and paperwork necessary for the ship to function properly. These functions include data processing, as well as recreational, police, and postal services. This department is also responsible for operation of the ship's Public Affairs Office as well as the onboard television and radio stations. This department typically handles personnel records, including visiting Naval Reserve personnel (see Module 1). 2. Air Department The Air Department gives direct support to the embarked air wing. The Air Department is in charge of launching and landing aircraft, fueling, moving, and controlling fixed and variable wing aircraft. It is also responsible for the routine handling of aircraft on the flight deck and in the hangar bays. Note: Smaller vessels with embarked helicopter detachments should have some flavor of an Air Department, although it may be very small. 3. Aircraft Intermediate Maintenance Department (AIMD) The AIMD provides industrial level maintenance for the air wing and the ship's ground support equipment. 4. Chaplain Department Onboard the carrier, the Chaplain Department is dedicated to promoting the spiritual, religious and personal morale of embarked military personnel. The Chaplain Corps extends this mission to all military personnel and their dependents. The Chaplain Department also coordinates all personal emergency communications from the American Red Cross, provides pastoral care and counseling, and directs operation of the ship's library. Smaller vessels may not have their own chaplain, especially if they are deployed with a CVBG. In these cases, a chaplain will fly from the carrier via helicopter to conduct services. 5. Communications Department The Communications Department sends and receives messages to and from other ships, aircraft and shore facilities via various sophisticated electronic equipment. Such equipment includes computers, satellites, cryptographic devices, and high power transmitters and receivers. 6. Deck Department The Deck Department is charged with the most traditional of nautical responsibilities. Enlisted Boatswain's Mates (BM) maintain the exterior of the ship's surfaces, anchor and moor the ship, man the rescue and assistance lifeboats, and monitor underway replenishment. The BMs' most prevalent (and audible) duty is the "piping away" of different events over the ship's intercom. This department is headed by the ship's First Lieutenant (a job title, not to be confused with the Army, Air Force or Marine Corps rank of O-2). 7. Dental Department The Dental Department provides comprehensive dental care, encompassing simple preventative care through emergency services for all embarked personnel. Note: Only large ships, such as carriers and amphibious warfare ships, have embarked Dental Departments. This department, along with Medical and Supply, are known as support departments. 8. Engineering Department The Engineering Department maintains the ship's power plants providing steam for propulsion and aircraft launch catapults. It also provides all life support systems, fresh water, heating, air conditioning, ventilation, hot water, electrical power, telephone service, and maintains the ship's sewage system. The ship's Chief Engineer, or "Cheng", heads this department. 9. Maintenance Management Department The Maintenance Management Department is responsible for the scheduling and coordination for all off-ship maintenance (i.e., repairs at shipyards or dry docks) and planned organic maintenance ship-wide. 10. Medical Department The Medical Department is responsible for maintaining the health of the crew, the treatment of sick and injured ship's personnel, disease prevention and the promotion of good health ship-wide. The head of this department must be an officer of the Navy Medical Corps (MC). Additionally, the Medical Officer also advises the ship's CO on ship's hygiene and sanitation conditions. Smaller ships may not have an embarked Medical Officer in which case Hospital Corps personnel run the department under the administrative auspices of the Operations Department (see below). 11. Navigation Department The enlisted navigation Quarter Masters (QMs) and the ship's navigator brief the Commanding Officer and the Officer-of-the Deck (OOD) on the position of the ship, the direction of travel and the safest sea lanes to traverse. Computations are made using celestial navigation, electronic machinery and visual reports. The Navigation Department is also responsible for executing all military traditions, customs and honors onboard ship. 12. Operations Department The Operations Department is responsible for collecting, cataloging, analyzing and distributing combat information vital to the accomplishment of the ship's offensive and defensive missions. Heading this very important department is the ship's Operations Officer, or "Ops." This individual is one of the busiest persons on the ship. Intelligence, photographic intelligence, local air traffic control, and missile system maintenance are types of services provided by this department. The ship's intelligence officer and the CVIC spaces fall under this department on a carrier. On other ships, 3905 enlisted Intelligence Specialists and/or collateral duty intelligence officers fall under the Operations Department. As a reserve intelligence officer (1635) or enlisted Intelligence Specialist, you most likely will be assigned to this department during your AT-at-Sea. The Operations Department will be discussed in more detail in the next module. 13. Safety Department The Safety Department is responsible for ongoing training and education programs, equipment dangers, procedural hazards, and accident prevention. It is found only on aircraft carriers. As mentioned earlier, a ship can be an extremely dangerous place to work (see Module 1). While onboard, constantly be aware of maintaining posted safety regulations and procedures. 14. Supply Department The Supply Department is responsible for feeding and paying the ship's crew, including the running of ship's wardroom(s) and messing spaces. This department holds responsibility for the laundry and dry cleaning services, stores, barbershops, and recreation services. This department also stocks spare parts for underway ship and/or aircraft repairs. Heading this department is the ship's Supply Officer, or "Suppo," a member of the Navy Supply Corps (SC). The Supply Officer may have assistants for disbursing, food service, ship's store, or wardroom mess. 15. Training Department The Training Department is responsible for the continued coordination of enlisted advancement exams, reenlistments and coordination of special schools. Training also handles general damage control and 3M training. 16. Weapons Department The Weapons Department maintains and operates the ship's various weapons systems. Personnel of the Weapons Department also assemble, test and maintain bombs, missiles, torpedoes and small weapons ammunition. On smaller ships, this department might fall under the administrative auspices of the Deck Department (see above). D. Air Wing Organization If assigned to a carrier or other vessel with embarked aircraft, it is important to familiarize yourself with their organization. It mirrors to a large extent, the ship's organizational structure. The embarked aircraft squadrons retain their corporate identity and basic organization, but each squadron also supplies specific personnel, such as ship mess cooks, stewards, and laundry, to various departments listed above. 1. Air Wing Commander (CAG) The CAG is directly responsible for the operational readiness and tactical performance of the air wing. He is responsible for the coordination and supervision of all activities of the embarked squadrons and detachments, and for the material readiness, communications, and intelligence functions of the air wing. The CAG does not fall directly under the carrier's commanding officer. Rather, he is a co-commanding officer. Both the carrier CO and CAG report to the composite warfare commander under the CWC concept discussed earlier. 2. Deputy Air Wing Commander The primary duty of the Deputy CAG is to assist the CAG, acting in effect as his executive officer. The Chief of Staff will ensure the activities and functions of the CAG staff adhere to the desires of the CAG. 3. Operations Officer Responsible for supervising the training, operations, and readiness of all air wing squadrons. The Operations Officer standardizes operational procedures between squadrons, coordinates and develops operational contingency plans, and supervises the execution of those plans. 4. USW Operations Officer Responsible for USW operations conducted by air wing assets. The USW Operations officer provides advice on the operational employment and training of the air wing USW squadrons. 5. Air Intelligence Officer The Air wing Intelligence Officer is responsible for the collection, preparation, and dissemination of intelligence material needed by the CAG to plan and execute operations with air assets. He also directs and supervises the Mission Planning (MP) work center of CVIC. 6. Maintenance Officer This individual is responsible for monitoring and coordinating the maintenance of air wing assets, and ensuring all necessary equipment and spare parts required by the squadrons is available. The Maintenance Officer also reports to the CAG regarding the impact on operational readiness by maintenance and material conditions in the squadrons. 7. Weapons Officer Advises the CAG on loading, handling, and expenditure of the weapons employed by the air wing. This individual will assist the squadrons in all matters relating to weapons handling and employment. 8. Landing Signal Officers (2) Two LSOs are normally assigned to the air wing. They coordinate with pilots to improve recovery (i.e., landing) operations and safety awareness. 9. Flight Surgeon The Flight Surgeon provides medical care for the officers and men of the air wing. He is tasked with keeping the CAG informed of particular medical problems affecting the air wing. 10. Carrier Air Wing Intelligence Team This group consists of the squadron intelligence officers and intelligence specialists assigned to the squadrons in the air wing. The Air Wing Intelligence Officer is the leader of this team and as such is the Mission Planning Coordinator. All squadron intelligence personnel work in CVIC when embarked. That is, they integrate into a combined CV/CVW intelligence team. The Carrier Air Wing Intelligence Team provides direct support to the air wing with cyclic event briefs/debriefs, and in-flight aids in support of exercises and/or operations. Except for the TARPS officer, the members of this team also augment the SUPPLOT. The TARPS officer normally works in the Multi-Sensor Interpretation (MSI) area of CVIC. Page 5 MODULE 5—The OPERATIONS DEPARTMENT This module will cover the organization within the operations department. As with ship's organizational structure in the previous module, the Operations Department from ship to ship will vary slightly. As before, we will use an example from a typical carrier for purposes of instruction. Elements of a typical carrier Operations Departments include the Combat Direction Center, Air Operations, Intelligence Center, Meteorology, Electronics Material Office, and Strike Operations. Already mentioned in the previous module, the Carrier Intelligence Center (CVIC) is administratively located within the Operations Department. A majority of CVIC's contacts will be with other divisions within Operations and the Air wing. Specific functions within each division of the Operations Department are abbreviated by a two-letter code beginning with "O" for Operations. They are listed below: A. The Combat Direction Center (CDC) The CDC is not a specific department per se, but a function within operations (see below). The CDC's mission is to keep the Commanding Officer apprised of the overall tactical situation and recommend courses of action as appropriate. CDC accomplishes this mission by collecting, processing, displaying, evaluating, and disseminating tactical information in a timely fashion. CDC is vested with tactical decision making responsibility with respect to ship's defensive systems and makes recommendations to warfare commanders for overall battlegroup defense. Specific divisions are listed below: 1. OI Division OI Division is responsible for tracking all surface and air contacts. This division provides tactical information support, control of the ship's defenses, and supports ship's safe navigation. Enlisted Operations Specialists (OSs) typically man this division. 2. OW Division OW Division analyzes data collected from the electromagnetic spectrum. Its mission is to detect, identify, and classify air, surface, and subsurface contacts via passive detection means aided by the use of electronic support measures (ESM) equipment. Enlisted Electronics Warfare Technicians (EWs) typically man this division. 3. OX Division The OX Division provides mission support to the battlegroup's undersea warfare assets. It is responsible for the ship's USW defensive systems and is the fusion center for all USW operations conducted by the carrier's USW aircraft such as LAMPS helicopters and S-3A/Bs (see Module 2). 4. OEM Division This division maintains the Phalanx Close In Weapons System (CIWS) for short-range defense against cruise missiles or aircraft. Most every ship has this system to help protect it from anti-ship cruise missiles. Enlisted Fire Control men (FCs) typically work in this division. 5. Meteorology (OA Division) Meteorology (which is often referred to as "Metro") monitors environmental conditions affecting the battlegroup and provides data to use weather for possible tactical advantage. This is accomplished by providing forecasts of radar effectiveness and acoustic propagation conditions to aid in optional positioning and use of accompanying ships and aircraft. Enlisted Aerographer Mates (AGs), the navy's weathermen, work in this division. 6. Strike Operations Division Strike Operations Division coordinates with all warfare commanders to establish a viable AIRPLAN for battlegroup functions. During air operations, Strike Operations coordinates with Air Operations (see below), CDC, and the Air Department (AB, AP) to ensure that air sorties are managed to meet the requirements dictated by combined warfare commanders. In support of the air wing, Strike Operations aids in weaponeering of ordnance (i.e., determines what ordnance will best be employed to destroy either individual or specific sets of targets). B. Intelligence Function On a carrier, the CVIC supports the battlegroup's intelligence requirements by supplying the Commanding Officer, embarked staffs, and air wing with operational, technical, and strike planning information. This is accomplished with a variety of intelligence related systems located in CVIC and in the Supplementary Plot (SUPPLOT) spaces (see Module 10 for a description of systems). These systems provide operational intelligence (OPINTEL) information, intelligence research data, and reports on the collection efforts of the air wing aircraft. Note that if you are assigned to a smaller vessel the intelligence spaces will vary. Like CDC, a carrier CVIC actually encompasses several individual divisions, which are listed below: 1. OP Division OP Division provides photographic support to the ship, air wing, and the embarked staff. OP has two labs onboard a typical carrier. The main photo lab handles photographic support for administrative and official events. The CVIC photo lab processes hand held photography from aircrew as well as TARPS film (the TARPS system is discussed in Module 10). 2. OS Division The OS Division is responsible for providing special intelligence communications to the warfare commanders both internal and external to the battlegroup. Typically, OS Division personnel are enlisted cryptologic specialists (i.e., CTs). In some cases, ships will receive a special NAVSECGRU Direct Support Element (DSE) consisting of additional CTs, which provide tailored support (e.g., CTIs for specific area interception operations). 3. OZ Division The personnel in this division are responsible for the day-to-day operation of CVIC and SUPPLOT spaces. Personnel in the OZ Division include intelligence officers (1630s), enlisted Intelligence Specialists (ISs) and Data Processing Technicians (DPs), Electronics Technicians (ETs), and Interior Communications Technicians (ICs). C. Air Operations (OC Division) The Air Operations Division is responsible for airspace management around the carrier, and monitoring the status of all airborne aircraft. These functions are performed in the Carrier Air Traffic Control Center (CATCC). Enlisted Air Traffic Controllers (ACs) work in this division. D. Electronic Materials Office (EMO) The EMO Division is responsible for all electronic maintenance of tactical and navigational radar systems onboard the ship. The EMO also provides maintenance for the ship's internal and external communications systems, ship's computers, and tactical display systems. Enlisted Data Systems Technicians (DSs) man these ADP systems. E. OE Division The OE Division is the formal name to the division within the EMO which provides electronic maintenance electronic systems ranging from radar to the ship's television system. Enlisted Interior Communications Technicians (ICs) man and upkeep the various communications and electronic systems within the ship. The following figure graphically illustrates the various functions and divisions of the Operations Department discussed above: Figure 3.6. Typical CV Operations Department. Page 6 MODULE 6—Intelligence WORK CENTERS The ship's intelligence work centers coordinate to provide the commanding officer or higher embarked authority with the most up-to-date tactical picture. Most ships will have some kind of intelligence coordination center and personnel assigned to it in either a primary or collateral duty. Of course, the ultimate intelligence fusion center is found on the carrier itself. Smaller ships in the battlegroup act as information gatherers, reporting sensor and positional data in real time to the carrier. The total intelligence fusion effort then takes place across many different platforms and work centers. Learning where you fit in is crucial to maximizing your effectiveness as a reservist. The carrier CVIC is the largest single intelligence work center in the battlegroup. We will start there and examine how the intelligence effort is divided into not one but several areas on and off the carrier itself. A. OVERVIEW OF CVIC CVIC is only one part of the total intelligence effort on board the carrier. It is considered to have two major functional groups; Mission Planning (MP) and Multi-Sensor Interpretation (MSI). Overall, the CVIC must be responsive to the air wing, ship, and embarked staff(s). This involves a great deal of coordination with other functional areas including Operations, Weapons, Strike Operations, EW, SSES, and many other non-organic sources to be effective. The flow of information between CVIC and other intelligence work centers on the carrier is the key to success. CVIC continually strives to maintain a comprehensive, current and accurate operational intelligence picture. CVIC provides the embarked air wing with the capability to process and analyze collected information rapidly, combine it with other tactical intelligence, and correlate this data with other information in the database. The CVIC can generate mission planning material for the embarked commander and air intelligence briefing and planning materials. The major physical sections of CVIC include: Mission Planning (MP) Debriefing Area Multi-Sensor Interpretation (MSI) Chart Vault Photo Lab Strike Plot Library Sensitive Compartmented Intelligence Facility (SCIF) SUPPLOT SSES Note that MSI, MP, Strike Plot, Administration Spaces, Library, SCIF, and Photo Lab are what physically constitute a CVIC. The SSES, SUPPLOT, Main Photo Lab, and Chart Vault, although closely associated with CVIC, are normally located in different areas of the carrier. 1. Mission Planning (MP) The main mission planning areas of support are flight operations and strike support. Individual functions within mission planning generally fall into two categories: photographic reconnaissance and strike mission planning. The second major group within CVIC is multi-sensor interpretation (MSI) which focuses on collection, reporting and reconnaissance. It is defined as the employment of two or more sensors simultaneously or covering of the same target with two or more sensors on the same mission. The "products" of MSI are reports generated from multi-sensor analyses such as TARPS photography from F-14s and ISAR imagery from ES-3Bs). MSI contributes to the overall strike support readiness effort. When considering MSI systems there are two areas of concern: reconnaissance and interpretation. MSI Reconnaissance is concerned with collecting intelligence. Ideal reconnaissance systems should have all of the following basic capabilities; all weather performance, day and night performance, provide location of target data, identification and status of target(s), and good resolution. Multi-sensor systems currently include; optical photography, side looking airborne radar (SLAR), synthetic aperture radar (SAR), inverse synthetic aperture radar (ISAR), infrared systems (IR), LASER systems, and passive electronic countermeasures (PECM). Combining sensors usually results in producing the greatest amount of intelligence data about a potential target. There are several MSI systems in this area: NIPS A/B, PC-NIPS , GCCS-M, JDDS, STRED, and GALE LITE. The CVIC may also have access to tactical circuits such as TACINTEL, TADIXS-A, OTCIXS, TDDS, TADIXS-B, and TIBS. Later modules will cover these systems in depth. All incoming film collected by airborne platforms (e.g., helicopters and TARPS missions) and the ship's onboard sighting team is developed and processed in the photo lab. It is then taken to the multi-sensor interpretation (MSI) area located in CVIC for analysis, evaluation and dissemination to operators. This area is a collection of various publications frequently used by intelligence personnel in CVIC. It can include both classified and unclassified data. There are various commercially available as well as classified GENSER publications found here dealing with worldwide combat fleets, weapons systems and aircraft. Also found in CVIC libraries are hard copies of some electronic displays, microfiche collections, and CD-ROMs. Aircrew are debriefed in this are following mission completion to assess the overall success or possible shortcomings of the mission. Debriefing is discussed in the next module. The SCIF is a special restricted area where Top Secret/SCI material is stored. The SCIF is managed by the Special Security Officer (SSO) and reports directly to the ship's Intelligence Officer. Special access is required to utilize information stored in this area. This area, not physically located in This is the other photo lab found on board a carrier. As already mentioned, it handles more carrier-oriented photography duties such as administrative and publicity duties. It nevertheless can support intelligence related efforts should extra processing be needed (e.g., in support of a major exercise). Module 3 mentioned that some cruisers and smaller vessels have a Page 7 MODULE 7—BRIEFING, DEBRIEFING & REPORTING "Briefing is fun." —CAPT D. Warshawsky, USN (ret.) Former Commanding Officer, Fleet Intelligence Training Center Pacific Briefing, debriefing, and reporting constitute the most important activities of the intelligence officer or enlisted intelligence specialist. It is highly probable that you will be involved in one or more of these activities in some aspect during the period of your AT-at-Sea. This module will review both the content and execution of the various types of briefs intelligence personnel are expected to perform. Taking the time to hone your skills in these areas will help to ensure you report aboard prepared to make a significant contribution from day one of your AT-at-Sea experience. A. Briefing Topics Briefs given by CVIC personnel center around a number of topics depending on the type of mission or task at hand. For example, briefs can be used to transmit information to decision-makers as well as describe a task, such as an air mission, that needs to be accomplished. Briefing duties center on, but are not limited to, the following types of subject matter: 1. Strike Support Brief CVIC and squadron intelligence officers and members of the embarked aircrew team up to give this type of brief to aircrew prior to a combat exercise or actual mission. It focuses primarily on the perceived threat in and around the target area. The Strike Leader (i.e., senior aviator) then summarizes the strike course, way points, refueling points, landfall points, the target characteristics and the return route back to the carrier. He also outlines in detail the objectives of the mission. In an actual combat situation, this is a crucial, if not the most important, type of brief you can participate in. It prepares aircrew effectively to carry out their mission, be it peacetime or wartime. 2. Port Brief Prior to arriving at a certain port of call, the CVIC or intelligence personnel may be asked to give a Port Brief for the benefit of ship's company. On a carrier this brief might be broadcast throughout the ship on the television system. This type of brief outlines the characteristics of the port, including customs regulations, local port authority, the identification of restricted or "off-limits" areas, and any special information pertinent to navy personnel visiting the area. This type of brief may be combined with a Country Brief (see below). 3. Platforms Brief Prior to reaching a certain operating area or beginning an exercise, CVIC personnel may be tasked with giving a Platform Brief. This type of brief summarizes information on a particular platform of interest to the battlegroup and air wing. It may, for example, give the performance characteristics of foreign or U.S. aircraft, surface ships, or weapon systems. Such a brief may utilize graphics, imagery, line drawings, and/or video footage (if available) of the platform of interest. 4. Country Brief A Country Brief details a broad overview of a specific country of interest to the deployed battlegroup. The country could be one the battlegroup will visit in port or potentially operate against. This type of brief summarizes political, economic, and military characteristics for the country of interest. The brief may treat each subject broadly or concentrate on one or more topics as required. For example, CVIC or intelligence personnel might be tasked with the preparation of a country brief that concentrates mainly on order of battle and current political information. For example, this country could be in the battlegroup's expected area of responsibility. 5. Current Intelligence Brief This type of brief constitutes an important intelligence "product." A Current Intelligence brief typically summarizes world political and military events using as inputs a variety of intelligence sources, both open and classified. Classified sources usually come in the way of received message traffic and documents in the classified vault or SCIF (if applicable). Open source intelligence (OSCINT) can come from commercial television (if receivable on the carrier), newspapers, on-line (or downloaded) commercial databases, or CD-ROM computer sources.* 6. Operational Intelligence (OPINTEL) Brief This brief is narrower in scope than the current intelligence brief described above. The OPINTEL brief outlines the tactical picture relevant to the battlegroup. It summarizes the intentions of the battlegroup for a defined period of time (the next 24 hours, for example), identifies battlegroup assets available, ship positions, target locations, and other data of a tactical and perishable nature. Typical customers of this type of brief include members of the embarked flag staff and aircrew. 7. Event Brief The Event brief is a generic term that describes many different types of briefs that are necessary to conduct regular battlegroup operations. The most typical Event brief supports air operations. For example, when the Carrier and Carrier Air Wing (CV/CVW) are involved in cyclic operations, there will be a requirement to present an event brief for each event to be flown. This event brief is to be made far enough in advance of launch time so as to support the subsequent section or element briefs being conducted by the aircrews in squadron ready rooms. This usually translates to two hours prior to launch time. Normal Event Brief Topics: Introduction/level of classification/event number/date. Weather conditions. Current intelligence and/or threat of the day. Launch/recovery times. Launch/recovery states (case I, II or III). Battlegroup emissions control (EMCON) posture. Card of the day, which summarizes communications frequencies, etc. Carrier position and intended movement (PIM). Carrier mission/movement intentions. Divert fields/blue water operations. Hot areas and/or restricted airspace. Flight information derived from the AIRPLAN. Squadron numbers. Number and type of aircraft. Mission to be performed. Control/Communications Buttons. Sector Coverage. Vectors/Range & Bearings. Surface picture. Items of interest. ROE (Rules of Engagement). Photo of the day. Closing. As can be seen, the Event brief is a comprehensive dissemination of information and preparation for it will take some time and effort. Fortunately, most CVICs have a watch staff that can assist the briefer to prepare. Most briefs prepared by the CVIC staff employ similar elements such as maps, charts, and photos. Chances are that a small library of briefing overhead "templates" will exist within CVIC (be sure to ask). Information gathered for previous briefs sometimes can be updated or overwritten as required for all the day's following briefs. 8. Intelligence Estimate In some cases, the Staff Intelligence Officer may be asked to prepare a written Intelligence Estimate (IE) to assist the commanding officer of the battlegroup or amphibious task force in the preparation of his overall estimate of a potential combat situation. The IE also disseminates intelligence information to embarked flag staffs and other concerned parties in the battlegroup. Although the IE is a formal, written document, it is often briefed to concerned individuals and is therefore included here for the reader's interest. The IE follows a formal construction of approximately five written paragraphs. The first paragraph describes the mission, focusing attention and comprehension to the purpose and required tasks involved. The second paragraph describes the enemy situation and outlines conditions in the area of operations (AOA). It also provides basic encyclopedic data such as geography of the AOA, transportation data, communications, political, social, and economic data. The third paragraph describes enemy capabilities, outlining courses of action available to the enemy, which, if followed, will affect the accomplishment of the friendly mission. No detailed analysis is provided in this paragraph. The fourth paragraph presents analysis of enemy capabilities, providing detailed examination of the each of the capabilities listed in paragraph three. Finally, the fifth paragraph lists conclusions drawn by the analyst, which the commanding officer uses to make operational decisions. B. General Briefing Techniques Much exists about what a brief should consist of, but it is also important to know how to give and prepare a brief, regardless of its content or type. Taking our cue from Captain Warshawsky at the beginning of this module, we also need to remember that briefing can be fun as well. Above all, a good brief is: 1) accurate, 2) brief (hence its name), and 3) clear. These are the "ABCs" of briefing and should be kept in mind during all phases of brief preparation and execution. Before preparation of your brief can begin, you must first thoroughly understand the brief's purpose. For example, will you give a brief that imparts information, such as a current intelligence brief, supports decision making, or supports a mission? First, analyze the problem. What are the who's, what's, when's, where's, and why of the problem? Research your task appropriately keeping in mind that quantity of research does not always equal quality research. Remember, never brief what you do not know. Know where to turn aboard ship for supplementary information that will support brief preparation and to answer any questions you may need to follow-up with later (e.g., charts, visual aids, photographs, mission planning systems, etc.). Next, outline and word your brief with appropriate notes, memory aids or other cues that will assist the brief's execution. Finally, practice your brief with another member of the CVIC or ship's intelligence support team. This is especially useful when participating in multi-person briefs. Generic Brief Format: A. Introduction 1. Greeting 2. Name (Rank/Rate) 3. Subject of Brief a. Value Statement (why is brief important?) b. Overview of brief (include name of other briefers as appropriate) 4. Classification (if applicable) B. Body of Brief 1. Maintain logical organization (incorporate one of the following styles): a. Chronological b. Geographic c. Order of importance d. Cause and/or effect 2. Transition statements a. Smooth flow from point to point b. Keep to outline 3. Visual aids a. One for each major point of the brief b. Avoid complex or distracting graphics C. Conclusion 1. Summary of brief a. Verbal and graphic b. Re-state specific or key terms c. Do not present any new information 2. Re-state classification 3. Open for questions and answers When giving a brief, avoid over-reliance on notes and scripts. Audiences bore easily when read to from a prepared script. Rather, think of the brief as a dynamic process in which information is transmitted from the briefer to the audience. As such, the briefer must remain actively involved in the briefing process. Maintaining proper eye contact with the audience is a good way to keep both yourself and those you brief involved and interested. Intelligence briefs are usually presented to a small group of individuals and the voice of the briefer is rarely electronically amplified. Therefore, speak distinctly and clearly so as to be heard in whatever spaces the brief takes place. Emphasize important points with hand gestures or use a pointer. When not in use your hands or pointing device should remain still at your sides. Avoid distracting gestures with your arms or legs (e.g., putting your hands in your pockets or tapping your foot unconsciously). Finally, maintain the proper bearing and attitude. In many cases, those who you brief will be senior in rank to you. Remember to show proper military respect and bearing. C. DEBRIEFING After aircraft missions, pilots are debriefed in CVIC. Both the squadron intelligence officers and CVIC personnel take place in the debriefing process. Typical debriefs include analyzing how well mission objectives were met (or not met), describing any difficulties encountered, identifying intelligence errors, describing encounters with hostile or monitoring aircraft or ships, and generally the reporting back of information of interest for analysis. Good debriefing is a delicate balance of effort, knowledge and professionalism on the part of both the intelligence officer and the aircrew. The basic information required is: 1. Where? 6. Why? 2. What? 7. How long? 3. How many? 8. Route to? 4. In what manner? 9. Route from? 5. When? Other required information includes, ordnance released, fuel given/received, names of aircrew, frequencies copied, mission changes, etc. Note: Debriefing requires the intelligence officer to at least know the basics of air operations at sea in order to know which questions to ask. D. Reporting Intelligence personnel aboard ship use several reporting formats to transmit contact and other observational data to the appropriate authority. The drilling Naval Reservist should have been exposed to some or all of these various reporting formats in the course of previous training ATs. It is a good idea to review the procedures for filing these reports so as to report aboard fully prepared to make a significant contribution. Several reporting formats are discussed below. 1. Maritime Reporting System The Maritime Reporting System provides a standardized method for drafting requests, orders, contact reports, status reports, summaries, and planning messages within a maritime operational environment. The resultant messages are intended to be both human and machine capable. The formatted message most commonly used by intelligence personnel at sea is the Maritime Force Locator (Intelligence Information Reports (The RECCEXREP is a formatted message used to report the exploitation of tactical reconnaissance imagery. Each reconnaissance mission flown normally requires a RECCEXREP, describing routes and results. This type of report is governed by the Navy publications NWP 10-1-13 (Supplement 1). The MISREP is used to report the results of air missions. It provides timely details of mission results to theater operations commanders. Page 8 The module will focus on the actual hardware and software systems found in the intelligence spaces onboard navy warships. These tools allow the battle staff to function in today's time sensitive warfare environment. Keep in mind that automated data processors (systems to support combat operations. The goal is to take advantage, as quickly as possible, of the latest technology to aid in decision making and formation of the overall intelligence picture. The specific types of equipment found onboard vary from ship to ship. Many of the systems described in this module can be found onboard carriers and large deck amphibious ships. Smaller ships may have few if any. Discussion begins with higher-order systems and progresses down to individual systems. This section should not be substituted for the actual systems briefs or sessions designed to train the user in their operation. Rather, this section presents summaries of their basic function, mission and incorporation into intelligence activities. Where possible, each section provides points of contact or numbers to call for further information or training opportunities. Much of the information in this section can be found in various Navy publications which describe intelligence systems, notably Afloat Intelligence Systems Handbook produced by the Navy and Marine Corps Intelligence Training Center (GCCS-M, also known as JMCIS,), where operators perform tasks There are a number of GCCS-M environments, GCCS-M Afloat, GCCS-M Ashore, and GCCS-M Tactical Mobile. GCCS-M Afloat systems are located on board ships and are the primary Intelligence Specialist and Intelligence officer's tactical display and Common Operating Picture (COP) workstation. GCCS-M ashore support the CNO and FLT CINCS providing a single integrated C2 system to process the combat readiness, positional information, and employment scheduling, of own and Allied forces. GCCS-M Tactical Mobile provides fixed and mobile sites C2 support to maritime patrol and surveillance missions. Basic hardware in TAMPS is a computerized method of planning and optimizing mission routes against hostile targets. TAMPS is employed extensively by embarked Navy air wings and Marine Corps aviation units to provide planners a common automated system for rapidly processing large quantities of digitized terrain, threat and environmental data, aircraft, avionics, and weapon systems parameters. The system has an intended capability to meet the tactical mission planning and digital data upload requirements of fixed and rotary wing aircraft, standoff weapons, avionics systems mission support systems and unmanned air vehicles. TAMPS core software provides flexible interfaces to a wide variety of USN and USMC C4I systems to provide users near-real-time updates to weather and intelligence databases. A modular, open systems architecture was developed to satisfy specialized aircraft, weapons, and avionics systems requirements while maintaining consistent displays and user interactions across all platforms. Platform unique requirements are provided via a Mission Planning Module (MPM) system that integrates with appropriate core libraries and servers providing a complete planning environment for any user platform. This integrated MPM planning environment is used to develop, analyze, store missions, and create mission planning products (including digital loads, strip route charts, and pilot kneeboard cards) to support tactical aviation combat operations. TAMPS is hosted on the Navy Standard Desktop Tactical-support Computer 2 (DTC-2) which is comprised of commercial off-the-shelf (COTS) hardware. The bulk of fleet TAMPS installations consists of a DTC-2 unit containing three work stations; one data base administrator station and two mission planner stations. A portable configuration of TAMPS is hosted on the ACE/VME single workstation computer. The aircraft types compatible with Page 9 Books a-* Books and Reports a-* Journals and Periodicals a-* CD-ROMs a-* World Wide Web Uniform Resource Locators (URLs) a-* Bibliography & Internet sources Books Books and Reports Bearden, Bill, reviser, The Bluejacket's Manual, 21st (or current) edition, Naval Institute Press, Annapolis, 1990. Berkman, Robert, Find It Fast: How to Uncover Expert Information on Any Subject, 3rd Ed., (Harper & Collins, 1994), 1-800-427-7372. Couhat, Jean L., and Bernard Pr�zelin, ed., Combat Fleets of the World, English Language Version, Naval Institute Press, Annapolis, (latest edition). Friedman, Norman, Naval Institute Guide to World Naval Weapons Systems, Naval Institute Press, Annapolis, 1989. Jane's Information Group, Various Publications, including Jane's Fighting Ships, All the World's Aircraft, Jane's Naval Combat Systems, etc. Updated yearly. Knott, Richard, CAPT, U.S. Navy, The Naval Aviation Guide, 4th (or current) edition, The Naval Institute Press, Annapolis, 1985. Lowenthal, Mark, The U.S. Intelligence Community: An Annotated Bibliography (Garland, 1994), ISBN 0-81531423. Navy and Marine Corps Intelligence Training Center, Afloat Intelligence Systems, 11 March 1994 (or latest version), NMITC, 2088 Regulus Ave., Virginia Beach, VA 23461. Office of Naval Intelligence, Strategic Planning for the Office of Naval Intelligence: Vision and Direction for the Future, July 1992. Polmar, Norman, The Ships and Aircraft of the U.S. Fleet, 14th (or current) edition, Naval Institute Press, Annapolis, 1987. Richelson, Jeffery T., Sword and Shield, Soviet Intelligence and Security Apparatus, Ballinger Publishing, Cambridge, MA, 1986 (or latest edition). Richelson, Jeffery T., The U.S. Intelligence Community, 2nd (or latest) edition, Ballinger Publishing, Cambridge, MA, 1989. Thompson, Alan, D. CWO4, USAR, Open Source Intelligence Resources for the Military Intelligence Officer, 434th Military Intelligence Detachment (Strategic), U.S. Army Reserve. Available via OSS, Inc., 11005 Langton Arms Court, Oakton, VA 22124-1807. United States Joint Chiefs of Staff, Joint Warfare of the U.S. Armed Forces, Joint Pub 1, National Defense University Press, Ft. McNair, Washington, D.C., 1991. Journals and Periodicals The Economist, Subscription Department, P.O. Box 58510, Boulder, CO 80321-8510. Jane's Intelligence Review, Jane's Information Group, London. Intelligence, Electronic Newsletter, Oliver Schmidt, ed. For more information send e-mail to: CD-ROMs Jane's Information Group, Jane's Executive Information System, CD-ROM for PC, UNIX, NeXT and Macintosh, Jane's, London, 1993. Quanta Press, Inc., USA Wars: Desert Storm, CD-ROM for Macintosh, PC, 1992. Software Toolworks, Inc., World Atlas, Version 3.0, CD-ROM for the Macintosh, 1993. Wayzata Technology, Wayzata World Factbook, incorporating the CIA World Factbook, CD-ROM for Macintosh, PC or UNIX, 1993. World Wide Web Uniform Resource Locators (URLs) NATIONAL AGENCY FOR INTERNATIONAL DEVELOPMENT....USAID (gopher://gopher.info.usaid.gov/1) The regional and country focus files give a good overview of economic and development issues plus an indication of US interests in the country. ARMY COUNTRY HANDBOOKS.... (Everything you could ever want to know about Ethiopia, Indonesia, Japan, Philippines, South Korea and Yugoslavia. Provides background material to country experts for the deployment. Unfortunately there are no maps or pictures, which really make the hard copy pubs useful. CENTRAL INTELLIGENCE AGENCY..... (The CIA Factbook is available on-line which can be useful. The intelligence reading list is interesting from a professional development standpoint. CIA MAPS FROM THE UNIV OF TEXAS.... (This is a great site. All the 8X10 CIA Briefing Maps are available in .GIF format. Download the ones you need before you deploy since they are large files. Load them up into Harvard Graphics or PowerPoint. They make really great base maps (better than clip art or JMCIS) for briefs and staff papers. CONGRESS - SEARCH LEGISLATION AND THE CONGRESSIONAL RECORD....THOMAS ( ) Provides full text search capability for the Congressional Record and legislation. Can provide useful information if the issue gets to the floor of either house but unfortunately does not provide committee and subcommittee testimony which is of more frequent interest. INTELLIGENCE COMMUNITY.... (The mission statements are a good summary of what the various agencies provide, but not much else here. Interesting in the fact that it exists at all. OSD PUBLIC AFFAIRS POLICY....DEFENSE ISSUES (These are major policy speeches and can serve as a useful source of unclassified information about an issue when dealing with foreign visitors especially. OSD PUBLIC AFFAIRS SPEECHES AND PRESS RELEASES.... (Provides OSD press briefings and releases searchable by key word. Especially valuable are the Background Briefings. These include background briefings attributable to a Senior Military Official on a variety of topics that provide some useful insights on the long range plans. PRESIDENTIAL AND WHITE HOUSE STAFF - SEARCHABLE .... (Allows key word search of all presidential and executive office of the president personnel (Press secretary, National Security Adviser) speeches, releases and public letters. A great source for policy guidance and unclassified background material. This covers the entire Clinton Presidency. STIMSON CENTER (Collection of policy papers and research material on confidence building measures, and chemical and nuclear weapons control. STATE DEPARTMENT FOREIGN AFFAIRS NETWORK.... (The Bosnia link provides full text of speeches, briefings and documents on the Balkans. The DOSFAN gopher can be searched by key word... e.g. search on "Cambodia" to get the US policy and an overview of the issues as seen by senior State Officials. The Regional Bureaus provide copies of congressional testimony and speeches by Under and Asst. Secretaries; the publications directory includes the full set of Human Rights Reports (a real gold mine of background information), economic reports and copies of DISPATCH the State Department weekly magazine for Foreign Service Officers with good info on foreign policy. DISPATCH is available as a text file or as a .PDF file (compressed image viewable with ADOBE ACROBAT which can be downloaded for free from the NY TIMES FAX page below). INTERNATIONAL ORGANIZATIONS ASIA STUDIES SERVER DIRECTORY (Comprehensive collection of pointers to servers providing information on countries throughout Asia. A real gold mine. CITY NET COUNTRY FILES (Another collection of pointers to servers addressing country and regional issues. They cover the entire world and are nicely organized providing basic background info and more sophisticated data. COUNTRY COMPENDIUM FROM YAHOO (Another collection of pointers to country specific servers. EAST ASIA STUDIES DIRECTORY. (felsing/ceal/welcome.html) Another collection of background information and pointers to servers providing information on East Asian countries. EAST ASIA STUDIES UCSB (University of California at Santa Barbara maintains background information and set of pointers to other servers focused on Asia. HUMAN RIGHTS ORGANIZATION Directory (gopher://gopher.humanrights.org:5000) Pointers to Human Rights Watch and other Human Rights organization servers which can provide useful background in developing countries. Good coverage of Indonesia, Cambodia etc. INDIA HOMEPAGE.... (A great collection of pointers to servers covering the subcontinent. INT'L FEDERATION OF RED CROSS/RED CRESCENT SOCIETES.... ( ) Good info on natural disasters. They have a disaster response handbook that is excellent and the lessons learned comparing Haiti, Rwanda and Somalia are valuable. INTERNATIONAL AFFAIRS.... (ian/ianres.html) Good source of academic studies. JANE'S DEFENSE PUBLICATIONS.... (Highlights of the Jane's Defense Publications series including selected articles and an archive of great pictures updated weekly. The pictures are useful for briefs. MIDDLE EAST STUDIES DIRECTORY (A collection of pointers to servers covering the Middle East. ONLINE INTELLIGENCE COUNTRY SERVERS (A commercial operation which is doing many of the things that the Open Source Intelligence System is working on. Watch this server, it could become very useful. RUSSIAN AND EAST EUROPEAN STUDIES (cjp/rees.html) Background and pointers to servers providing information on Russia and Eastern European Countries. The servers in Russia are interesting in what they provide. UNITED NATIONS DOCUMENTS.... ( ) The UNSCOM reports and other periodic reports to the Secretary General and Security Council are particularly useful. The UNSC resolutions are all available on the server. Other items of interest include UN daily highlights, Daily Journal and Press Releases. NEWS AP WIRE SERVICE.... (Top AP world, domestic, business and sports reports. ASIAWEEK MAGAZINE (@/Asiaweek/) Time-Warner's premiere weekly focused on Asian current events, politics, people and business. The search feature makes this a real gold mine when looking for background info. CHINA NEWS DIGEST.... (gopher://cnd.cnd.org:70/11/English-Menu) The Global edition provides an extensive compilation of news from and about China and Taiwan. Unfortunately no database of the CND that allows you to search by key word. Good to check as you steam by or have a Hong Kong port call. CNN SEARCH TODAY'S NEWS.... ( ) Selected stories including pictures from Headline news. If your CNN reception drops on deployment this is a good way catch that hot story in toto that you are only getting bits of from the broadcast. Search feature is especially useful. ELECTRONIC NEWS SEARCH.... ( ) A directory to a wide range of foreign domestic press servers (not necessarily all in English) HEADLINE NEWS OF INDIA (Various newspapers from the subcontinent complementing the HINDU. HINDU, THE.... (Selected news and commentary from the leading newspaper of India. Usually one or two extensive military articles of particular interest each week. INDONESIA NEWS AND POLICY MONTHLY ( ) A monthly newsletter produced by the Indonesian Embassy in Washington disseminating news and government policy information. NEW YORK TIMES...TEXT ( ) In exchange for some demographic and marketing data (for now), you get access to the current days NY Times international, national and business news in text form vice selected articles in .PDF image form available via NY TIMESFAX service. NEW YORK TIMESFAX ( ) A daily 8 page news, business, sports and crossword puzzle extract from NYT. Files are about 100K and requires that you have ADOBE ACROBAT which can be downloaded (~1.5MByte) from the Times server. NEWS FROM JAPAN.... (ASAHI SHIMBUN is one of Japan's leading newspapers. Good information on the Japanese perspective and particularly on events in Southeast Asia that fail to make the editorial cut in the US. NEWS FROM JAPAN.... (Selected news and commentary from SHIMA news in Japan. A different perspective. NEWS FROM KOREA.... (Selected news and commentary from Korea. The material on Kim Chong-il is very interesting, and provides an interesting perspective on how our allies view the world. NEWS OF CAMBODIA (A Cambodian Daily published by the Malaysian Star Group. NEWS OF MALAYSIA...STAR (News from one of Malaysia's leading dailies. The current days major stories and the last week's issues are available for review including pictures. NEWS OF SOUTHEAST ASIA (news:misc.news.southasia) Provides news articles and discussion of news of, from and about Southeast Asia. Articles are from many of the leading newspapers and magazines world wide. NEWS OF SRI LANKA (mabhaya/info.html) Background information and pointers to various news sources on Sri Lanka from South Asia and around the world. NEWS PROSPECTS FOR THE COMING WEEK FROM THE BBC.... (A weekly compendium of VIP travel and conferences where the news will be generated. OPEN MEDIA RESEARCH INSTITUTE (RADIO FREE EUROPE) Daily Reports....SEARCHABLE (Search by key word the last three years of RFE/OMRI Daily Reports. OPEN MEDIA RESEARCH INSTITUTE (RADIO FREE EUROPE) (OMRI DAILY REPORTS covering the news from Russia and Eastern Europe are available plus selected articles from TRANSITIONS their weekly magazine providing in depth analysis and opinion on events within the former Warsaw Pact countries. Especially good coverage of the Russian elections. THAILAND, LAOS, BURMA AND CAMBODIA NEWS ARCHIVES... (Archives of the soc.culture.thai, Laos, Burma and Cambodia newsgroups. While there is lots of garbage there are also lots of news reports from Reuters, AP, Asahi News, Bangkok Post, LA Times NY Times and Wall Street Journal that people have downloaded and posted (illegally no doubt). Good Stuff to look at as you transit the SCS. TIME - SEARCH LAST YEAR'S MAGAZINES .... (@itSeShHOMQAAQJNS/time) Over a year's worth of TIME magazine articles are in a WAIS database that you can search by key word. TIME DAILY provides high interest current news stories. Good source of background on an emergent issue. TIMES OF LONDON (Great coverage of UK, EU and former Commonwealth countries. VOICE OF AMERICA

REPORTS.... (gopher://gopher.voa.gov:70/11/newswire) The last seven days of VOA stories covering the world and the US are available. VOA was reporting on the civil unrest in Bahrain months before it was picked up in the national media and more candidly that in the intelligence products. Coverage of events in smaller countries is great. MILITARY ORGANIZATIONS & STRATEGY ACADEMIC DEFENSE RESOURCE.... (gopher://gopher.nato.int/11/secdef) A collection of pointers to national, academic and think tank servers on defense issues. CHINESE NAVY.... (wen/plan.html) A privately maintained site with good background information of the PLAN from open sources and great collection of pictures. DEFENSE MAPPING AGENCY....MAPS 'R US ( ) Excellent on-line access to all the gazetteers in the world!!! Links to other MC&G servers and geographic information systems and descriptions of DMA products. INFORMATION WARFARE INSTITUTE.... (A description of information warfare as an emerging discipline with pointers to military, agency and academic material on the subject. A good introduction to the field but not "tactical". MILITARY SCIENCE RESOURCE.... (gopher://ukoln.bath.ac.uk:7070/11/Link/Tree/War) Another collection of pointers to national, academic and think tank servers on defense issues. NAVAL AVIATION SERVER COLLECTION (amraam/vulrow.html) A collection of pointers to a growing collection of servers devoted to all aspects of Naval Aviation. Great collection of images. NATIONAL DEFENSE UNIVERSITY.... (NDU and its Institutes and Colleges provide a wide range of National Security Strategy, Military Strategy and Foreign Affairs studies and reports. The Strategic Forum articles are short and topical. The C2WC may be interested in some of the Advanced Concepts papers on Information Warfare - these are good for staff training but tend not to address the tactical issues C2WC deals with daily. The publications are in a WAIS database so you can search via key word. NATO INFORMATION RESOURCES.... (gopher://gopher.nato.int/11/natodata) NATO review articles on Bosnia are good. There are also a number of strategy articles on the former USSR and peacekeeping operations such as UNTAC in Cambodia from an Australian perspective which are good. NAVY SERVERS.... ( ) Pointers to Navy servers of all types. Tends to be heavy on the research labs and engineering centers as you might expect. The Public Affairs servers has a searchable database of Navy News reports going back several years which the PAO can occasionally find useful. USCINCPAC.... ( ) The WGS-84 Transition Primer and a review of the theaters Cooperative Engagement strategy are presented. Access to unclassified exercise information is restricted. SEARCH ENGINES These sites provide the ability to search various databases by key word. Construct a tight search criteria to avoid being overwhelmed. They all have guidance on how to use AND and NOT modifiers to narrow the search. Results are usually presented with the highest "quality" sites at the top of the list. EXCITE Search engine ( ) LYCOS ( ) MCKINLEY ( ) SEARCH ENGINE COLLECTION (coste/searchingtools.html) W3 CATALOG (WEBCRAWLER ( ) WORLD WIDE WEB WORM (

method statement for demolition works
social studies graphs and charts worksheets free
160b25f1bc5bd8---78019487256.pdf
160bbcb9fa5004---18290618882.pdf
what makes someone catatonic
intex saltwater system cs8110 parts
160a3acc396709---mularixazoxibig.pdf
fifa world cup unblocked games
where is the thermal fuse on a whirlpool cabrio dryer
gozenoxoxixuneritupo.pdf
graduation party invitation templates free word
l blend worksheets for first grade
74804007897.pdf
38963317705.pdf
muvasuvukijede.pdf
activity assessment form for nursing homes
37657415319.pdf
i get to love you ruelle lyrics
87309681026.pdf
fiwemebu.pdf
nalumomisevijepadovim.pdf
active sentence to passive sentence
wasoganuf.pdf
vivah full movie openload