STRATEGY RESEARCH PROJECT

NAVAL AIR POWER: AMERICA'S QUICK REACTION POWER PROJECTION FORCE: MOBILE, SUSTAINABLE AND NO VISA REQUIRED!

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ABSTRACT

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Introduction of aircraft over the World War I battlefield forever changed the way in which conflicts were to be fought. Naval air power and force projection capabilities enjoy a distinct and indisputable advantage over other forces: the aircraft carrier. Carrier Battle Groups (CVBG), historically the first forces called upon during a crisis, supply our nations leaders with numerous options ranging from intelligence gathering to strike warfare. The unique characteristics of naval forces provide the capability to react quickly and sustain peacetime or combat operations without the requirement of host nation cooperation.

A historical glimpse at the past 10 years can lead one to predict future instability and regional conflict. The CVBG has and will continue to provide options to the National Command Authority. The ability to operate independently, combined with the flexibility provided by naval air power, offer a combination available to no other country or military.

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NAVAL AIR POWER: AMERICA'S QUICK REACTION POWER PROJECTION FORCE; MOBILE, SUSTAINABLE AND NO VISA REQUIRED!

Revolutions historically thought of as violent transitions in the leadership of a country, have taken on a new meaning. They are said to be occurring in numerous domestic institutions and organizations. Business affairs, military affairs, and technology are prime examples. So much of our culture has become effected by this recent phenomenon. Arguably, its roots can be traced to 1989 with the fall of the Berlin Wall, and ultimately the collapse of the Soviet Union. For the military establishment nearly fifty years of consistent national security strategies became obsolete almost overnight. Gone is the relatively well-defined concept of containment (of the Soviet Union), but perhaps more importantly, the "stability" that a peer competitor brought to the formulation of the National Military Strategy. Today a much more volatile world exists. Despite this fact, economic interdependence is expanding through a network of private, public, governmental, and international ventures and alliances that are increasingly important to the United States. Witness the bout of "Asian Flu" that spread through Wall Street in November 1998. For economic growth to occur, stability, security, and access to resources are essential to ensure interests are preserved. Military forces have provided the means necessary to promote peace, ensure free trade routes, and deter

aggression. However, the Department of Defense budgets face stiff competition from domestic programs. Can the military, specifically naval aviation, ready itself for the challenges of an interdependent, rapidly changing, increasingly volatile world?

All United States naval forces will play an increasingly important role in shaping the international environment. Key to achieving stability and providing security in volatile areas is the ability to project power quickly. No other military force can respond as quickly as the aircraft carrier with its embarked air wing and the accompanying battle group. Granted land based aircraft can reach areas quicker, however, the cooperation of a host government and the use of their facilities is absolutely essential. The United States Navy, specifically naval aviation is positioned to meet the requirements of the nation and our allies for the foreseeable future. To support this premise a brief exploration of the historical developments and evolution of carrier aviation and the battle group is necessary. This will be followed by an examination of present day carrier operations focusing on force composition and use by the National Command Authority. To conclude, a critical look at the future, including changes required in the carrier battle group command structure to align with the joint force structure will be presented.

HISTORICAL BACKGROUND

A unique characteristic of naval forces is the inherent expeditionary capability of all ships, the roots of which can be

traced throughout written history. The United States may have had advocates of such capability, but it was not until the early 1900s until it possessed any capacity. President Theodore Roosevelt understood the characteristics and advantages of naval power. His Great White Fleet was used as a tool to implement strategy and protect national interests. The objectives outlined by Roosevelt were simple, protect the West Coast, display an ability to project power and create interest in the new navy. There was, however, a clear second order effect -- the expansion of United States' interests worldwide.[1] Additionally, it signaled to Japan that another naval power was present in the Pacific region.[2]

Advancements in technology were occurring rapidly in the early part of the twentieth century. A "force projection revolution" started in 1911 that continues to this day. When Eugene Ely landed a Curtiss biplane on a wooden deck attached to the USS Pennsylvania a new era of air power was created. Eleven years later the United States commissioned its first aircraft carrier the USS Langley. Simultaneously, the competing power in the Pacific region added their first carrier, Hosho, to their fleet.[3] A new weapons system was developing; its full potential not appreciated by all naval experts until 1941.

> Yesterday, December 7, 1941 - a date which will live in infamy - the United States was suddenly and deliberately attacked by naval and air forces of the Empire of Japan.
>
> President F. D. Roosevelt[4]

The Japanese clearly understood the capability of a mobile sea based air force. Admiral Yamamoto Isoroku, Commander in Chief of the Japanese Combined Fleet, an ardent proponent of the carrier force, drafted the attack plan. He and his staff devised a plan that took full advantage of mobility, speed, deception, and surprise. With the exception of several mini-submarines, all attacking forces were carrier-based aircraft projecting power from the sea.[5] In November 1941, the Japanese task force assembled around six aircraft carriers sailed towards their objective, the United States Pacific Fleet. American war ships, specifically the carriers, had to be crippled in order for Japan to continue its expansion.[6] At 0730 December 7, approximately 350 Japanese carrier based aircraft were flying towards their assigned targets.[7] Within two hours eight battleships and 10 other craft were sunk or heavily damaged. Seventy-seven aircraft had been destroyed, 88 damaged, and more than 2400 people had been killed.[8] This was a most painful moment in history for American military forces. However, the attack on Pearl Harbor served notice to the leadership of the United States Navy that sea based air power was no longer a theory. The capacity to wage war from these mobile air bases was unprecedented. The aircraft carrier had replaced the battleship as the centerpiece of naval operations.[9]

It has been said that timing is everything - fortunately no American carriers were in Pearl Harbor at the time of the

Japanese attack. After the attack, the United States carrier forces began to wage "hit and run" raids on the fringes of the Japanese controlled area. Little significant damage was done, but a second order effect was the combat and logistical training it provided to the fleet operators.[10]

The expanding role of the carrier was critical for victory in the war. Perhaps the two most significant events or "strategic victories" for the United States in the Pacific occurred in 1942. Both were brought about by air power originating from the sea.

Lieutenant Colonel James H. Dolittle, a United States Army aviation pioneer, orchestrated the first event. On April 18, 1942, Dolittle led a flight of eighteen B-25 bombers from the deck of the USS Hornet on a mission to bomb the Japanese mainland. Little damage was inflicted as a result of the raid; however, the fact that American bombs had landed on Japanese soil had an enormous psychological impact to both combatants.[11] Admiral Halsey, commander of the task force called this event, "one of the most courageous deeds in all military history."[12] It provided an immeasurable boost in morale to all Americans when it was needed the most. It had embarrassing implications for Japanese leadership who had assured the people that war would never touch the homeland. Now, less than five months after the start of the war, Tokyo and other major cities had been bombed.[13] Prior to the Dolittle raid, Admiral Yamamoto had drafted plans to

engage the American carrier fleet at Midway Island, but it was highly criticized and labeled too risky. Upon determining that the raid on Tokyo had been launched from an American carrier, Yamamoto's plans were approved, but would start after a campaign to expand control in the Coral Sea.[14]

Yamamoto had long understood the value of carrier air power. In 1915 he predicted the most important ship of the future would be one that carried aircraft.[15] In order to eliminate the potential of further attacks on the mainland, the Japanese sphere of influence in the Coral Sea, specifically the Solomon Islands and New Guinea, had to be increased. This would enable the Imperial Fleet to control the sea-lanes linking America and Australia and keep Australia from becoming a staging area for attacks upon the empire.[16]

On May 7, 1942, the Battle of the Coral Sea began. By 1200 the next day forces began to withdraw to their respective homeports. For the first time in history opposing naval forces engaged in battle with carrier air power as their primary weapon. A war at sea had erupted, yet no surface combatant was within range of the enemy to fire their main batteries. Operationally, the American forces sunk one carrier, heavily damaged another and turned back the Japanese invasion fleet. Despite the loss of the carrier Lexington, this was a key strategic victory for the Allied forces for it was the first time Japan had been defeated since the beginning of hostilities in the Pacific. Yamamoto was

now able to fully convince Japanese leadership that the American carrier fleet had to be destroyed.[17]

The Japanese defeat at Coral Sea led to the second most significant strategic event in the Pacific, the Battle of Midway. The only weapons system capable of defeating the opposing force in this encounter was the aircraft carrier. Admiral Nimitz, Commander of the United States Pacific Fleet, was so convinced of the carriers capability that he ordered available battleships to remain on the West Coast of the United States.[18] The victory at Midway was arguably the most decisive battle in the Pacific. It prevented the invasion and occupation of Midway Island and prevented future operations against Hawaii. Of greatest importance, however, was the crippling of Japan's carrier fleet.[19]

Historically, no other force previously available had the mobility and force projection capability of the carrier battle group. Even today, what other means is available to serve up "instant air power"? The weapons dropped on Hiroshima and Nagasaki brought an end to the war in the Pacific. However, the carrier, more than any other weapons system made final victory possible.

TRANSFORMATIONS

While the war in the Pacific established the carrier and its embarked air wing as the centerpiece of naval operations, technological advancements served to increase its capability. The summer of 1950 saw the beginning of the Korean War and with

it combat aircraft powered by jet engines. The launch and recovery (landing) of carrier aircraft was conducted with greater speed and efficiency. With the addition of steam catapults and angled flight decks, launch and recovery operations could be done simultaneously and with it a greater margin of safety.[20]

Technical transformations would make for a more lethal force, while the National Security Strategy had tremendous impact on the shaping of naval forces. With little original thought given to the title, the United States Navy adopted, "The Maritime Strategy". This concept postulated that the military problem to be global in nature, thus the Navy's mission was to prevent Soviet control of the sea.[21] To control the sea, a force must patrol the sea. From the end of World War II through present day the Navy has maintained a forward presence in the Mediterranean and the Western Pacific/Indian Ocean. Much as Roosevelt's Great White Fleet of the early 1900's, the presence of the aircraft carrier and its accompanying ships has been strategically important in promoting regional stability and controlling sea lines of communication.[22]

With forward presence comes the potential for rapid employment of force. It should come as no surprise that United States Navy aircraft, specifically carrier-based aircraft, were among the first weapons systems used in the Vietnam War. As stated earlier, the carrier gives our leaders options that no other force can provide. Prior to the Gulf of Tonkin incident

photo intelligence missions were flown from the decks of carriers. These aircraft were among the first to be fired upon, and the first to suffer combat losses.[23]

Vietnam has been well chronicled; numerous tactical lessons learned were applied and adapted to improve weapons systems. However, one facet of naval aviation, its ability to move its operating base where required was appreciated at a very early stage in the war. Early air campaigns, such as Operation Rolling Thunder, found carriers operating in the northern Tonkin Gulf. Yankee Station became the geographic spot from which carrier operations in the north were centered. Lack of adequate airbase facilities in the south was detrimental to the early phases of the ground campaign. General William Westmoreland, Commander U.S. Military Assistance Command, Vietnam, was extremely impressed by the ability of carrier air to respond to the needs of ground forces. He requested a southern station be created, thus Dixie station became a center for naval aviation in the south.[24]

The war in Vietnam was a long, costly emotional episode in American history. Naval aviation shared all the costs of the conflict while successfully carrying out its assigned missions. The majority of effort was focused towards projecting power ashore. However, due to the "packaging" of a carrier air wing, command and control, electronic warfare, and combat search and rescue assets were vital to all forces deployed to this region.

Naval aviators were involved in all facets of the air campaign and the majority of the missions began from the decks of carriers.[25]

Even as the war in Vietnam ended, a carrier battle group was called upon yet again in a time of national crisis. An American merchant ship, the SS Mayaguez was stopped and eventually seized by Cambodian forces while transiting international waters on May 12, 1975. No other force was close enough or possessed the mobility to lend assistance except the USS Coral Sea Battle Group. After the incident, the captain of the Mayaguez was quoted as saying, "that if it had not been for the intervention of the Coral Sea and the destroyers Wilson and Holt he and his crew would have become prisoners in Cambodia."[26]

The few historical episodes described above hopefully has fostered an appreciation of the carrier's mobility and power projection capability. Aircraft carriers and the accompanying battle group do not require permission from host nations to operate as ground forces and United States Air Force assets do. Aircraft flying from the decks of carriers do not require 8,000 feet of concrete to land on; no host nation can deny their take-off. No military commander who if given the option would refuse the use of over 70 percent of the earth's surface as a potential base of operations for his or her forces. Consider this statement by the last Chairman of the Joint Chiefs of Staff:

> I know how relieved I am each time when I turn to my operations officer and say, 'hey, where's the nearest

> carrier?' and he can say to me 'It's right there on the spot.' For United States interests, that means everything.
>
> GEN J. M. Shalikashvili[27]

WHAT CAN A CARRIER BATTLE GROUP DO FOR THE WARFIGHTER?

First, one must understand what a carrier battle group really is. Quite simply, it is a collection of capabilities that enable the naval force or battle group to control the area in which it patrols. The types and number of support vessels will vary slightly, but the capability required to control the entire battlespace -- subsurface, surface, and the surrounding airspace is intrinsic to each deploying carrier group. The battle group as a "package" contributes its own multi-dimensional force protection, it protects itself while simultaneously projecting power or providing a deterrent. Organic capabilities within each carrier battle group include a minimum of one surface combatant and one fast attack submarine capable of launching Tomahawk cruise missiles.[28] In addition, surface ships can also provide fire support to ground units with their 5-inch guns. Cruisers and destroyers are designed with small helicopter landing platforms, which are used to stage helicopters for combat search and rescue, anti-submarine warfare, and anti-surface ship warfare missions. Sophisticated radar provides detailed reports of both shipping and local air activity, and can be sent via electronic means to any commander in the operating area who possesses compatible equipment to receive the signal.[29] Land based maritime

patrol aviation, acting in direct support, also provides the battle group with long range reconnaissance, intelligence gathering, and protection from both enemy surface and subsurface threats.[30]

Each ship is unique, but the weapons system which is thought of most often in times of crisis is the aircraft carrier. A carrier is a collection of weapons systems, that when combined together, dominate the area in which it operates.

The nominal carrier air wing (CVW) is composed of several different types of aircraft (for descriptions of individual capabilities see the appendix). Knowledge of individual aircraft capabilities lends insight, but it is most important to understand the operational capability of the carrier air wing as a whole. What ability does the carrier have to respond in areas where vital interests or American lives are at stake? The ability to strike quickly and sustain operations is critical, and each deploying carrier battle group must demonstrate the capacity to engage in "surge operations." The Center for Naval Analysis has published numerous articles on this subject, the most recent covering flight operations that occurred in July 1997 onboard the USS Nimitz.

Participating in Joint Fleet Exercise 97-2, the embarked carrier air wing flew 771 strike sorties over a four-day period. A strike sortie being defined as penetrating hostile airspace to conduct interdiction, close air support, or suppression of enemy

air defenses. The maximum range of the sorties flown was 500 nautical miles, with the average falling between 200-300 nautical miles. An additional 204 sorties were flown to support strike missions, provide command and control, and logistical support. While this exercise was unprecedented, one carrier cannot carry this level of effort on indefinitely. Routine and unscheduled maintenance must be performed on both aircraft and shipboard systems. Also, fatigue becomes a critical factor in any real-world operation or exercise that demands a significant increase in operations tempo. The supported commander can expect a level of effort as described for a period of approximately four days at which time operations must be shut down for a minimum of 24 hours in order to refuel, rearm, and perform required maintenance tasks. Aircrew, flight deck personnel, and other flight operations support departments also need time to rest. Sustained operations of 100-130 strike sorties per day can be supported indefinitely from one carrier. Unlike surge operations, sustained operations consist of 12-16 hours of flight operations followed by daily maintenance and logistical operations.[31]

OFTEN THE ONLY OPTION!

> When word of crisis breaks out in Washington, it's no accident the first question that comes to everyone's lips is; where is the nearest carrier.
>
> President W. J. Clinton[32]

Small skirmishes with Iraq have continued despite the end of the Gulf War in 1991. The political situation in the Gulf region is extremely complicated and unpredictable. Prior to Operation Desert Fox, plans had been in place to strike Iraqi targets on several occasions over the past year. Contingency plans normally include the use of United States Air Force aircraft based at Prince Sultan Air Base in Saudi Arabia. Due to the often unpredictable and complicated domestic political situations of regional coalition partners, Pentagon planners have drafted plans that exclude over 50 combat aircraft that may become stuck on the ground due to host nation concerns. Other countries, notably Turkey, have placed various restrictions on U.S. forces that stand ready to confront Iraq.[33]

Only a naval force provides the means for unrestricted operations while maintaining a highly visible forward presence. Only the carrier provides instant air power.[34] As a true expeditionary force, the carrier battle group is a highly discernible instrument for the enforcement of United States foreign policy.[35] The carrier provides leaders with a vast menu of response options; a carrier is a puissant instrument of diplomacy, and an effectual instrument of war. General J. P. Hoar, former Commander of Central Command singled out carrier aviation's ability to provide intelligence photography in regions where none previously existed, such as Somalia during Operation Provide Relief.[36]

The carrier battle group, in effect, gives our leaders a "911" force. Depending on the scenario and the needs of the commander, the carrier can operate close to or out of sight of any potential adversary. Naval forces are cost effective due to the nature of their deployment cycles; as an expeditionary force they marshal in the regions where national interests may be threatened.[37]

> Naval forces are not simply a tool of international policy, they are a precondition of it. Perhaps Oliver Cromwell said it best: "A man-of-war is the best ambassador."
>
> John Douglass[38]

A prominent example of the use of a carrier battle group to shape the environment was recently displayed in 1996 in the crisis between Taiwan and China. In a response to Chinese war games that happened to coincide with Taiwan's national elections, President Clinton sent two carrier battle groups through the Taiwan Straits to promote and restore regional stability. Over 170 United States Air Force aircraft were in the region, yet carrier battle groups were chosen as the instruments to promote stability. The U.S. Air Force vision of "Global Reach-Global Power" does not readily lend itself to the sustained presence required to promote stability or support American interests.[39] Only through sustained presence can America's interest be preserved. The carrier battle group serves as a warning to potential adversaries and provides comfort and stability to an ally.[40]

TRANSITIONS: STRATEGY

Post Cold War strategies for the military have been somewhat difficult to formulate. For example, with a drawdown of overseas infrastructure the United States Army created Light Divisions, a force designed to ease transport demands. Army supplies were moved onto pre-positioned ships, an idea that was often rejected during the Cold War due to the capability of the Soviet Navy to interdict strategic sealift. The United States Air Force introduced "Global Reach - Global Power," based on a view that air power could respond globally to any crisis.[41] Additionally, a new concept, the Air Expeditionary Force (AEF) was developed. The AEF can be tailored to meet specific requirements; it establishes a military presence and can possess a capability beyond that of carrier air power.[42] It should be noted however, that the AEF requires host nation support and permission to conduct operations. In view of this dilemma, planners described how B-1 and B-52 bombers could provide rapid power projection, but would be unable to penetrate hostile airspace without the support of carrier air power.[43]

The Navy also struggled to create a vision for the future. Desert Storm, a rousing military operational success, was an indicator to the Navy that the "Maritime Strategy," a Cold War left over, was obsolete. Fleets, which trained to fight in the open ocean, found themselves in the confines of the littoral.

Naval forces were operating in close proximity to United States Army, Air Force and coalition units. Several of the Navy's weapons systems had severe restrictions placed upon them in this new environment due to the increased density of friendly and neutral shipping and air traffic.[44]

Building on the experiences of Desert Storm the Navy produced "…From the Sea," a white paper and vision statement published in 1992. As with the other Services, the Navy attempted to assess the capabilities required by naval forces as we enter the next century. As research was conducted, the authors saw sets of changes occurring throughout the world and attempted to predict the effect on our military strategy. These worldwide changes necessitated an evolving National Security Strategy, increasing global economic inter-dependence, and quick advancements in technology.[45]

The current National Security Strategy identifies peacetime engagement, deterrence, and fighting/winning our nations wars as the role of military forces.[46] Strategy based on world events is sure to change as new episodes in history begin to unfold. Regardless of events, the requirement for a visible and viable military presence will continue. As Army and Air Force overseas infrastructure is decreased, the carrier battle group will remain forward deployed, offering military options free of host nation restrictions.[47]

A secondary effect of reduced infrastructure is the loss of professional military relationships with our foreign counterparts. "…From the Sea" and subsequent editions of the white paper continue to promote the Navy as the nation's premier forward deployed force, but have failed to address an extremely important issue. The leaders within the carrier battle group will soon emerge as the agents responsible for maintaining relationships with allies and building new coalitions. What capability makes the Navy attractive to current and prospective world partners? First, the Navy is an expeditionary force; it will be forward deployed, operating in international waters and airspace. Second, with the ability to operate below, on, and above the sea and on land, the carrier battle group brings a comprehensive perspective that is attractive to our allies and coalition partners.[48]

In the near future carrier battle group staff members will need to act as an enabling force for its sister services. This role will necessitate a strong background in joint, bilateral, and coalition operations. In addition, naval officers will be required to possess the ability to explain the central concepts of the United States Army and Air Force to potential coalition partners.[49] As the enabling force, the carrier battle group staff will act not only as the maritime component commander, but also the air component commander. This concept is not new, but lends

itself to realignment within the carrier battle group command organization.

TRANSITIONS: COMMAND STRUCTURE

Each carrier battle group is led by a warfare designated (surface warfare, aviator, submariner) flag officer (O-7/O-8). Organizationally, the "Admiral" has a personal staff, a Chief of Staff (senior O-6, warfare designated) and functional department heads (N1, N2, N3, N4, N5, N6) which make up the "Battle Group Staff." Similar to other layered command structures, each major department further divides responsibilities into specific functions. For example: Operations (N3) contains four departments Sea Combat (N31), Air (N32), Combat Direction Center (N33) and Command and Control (N34). Each sub-department is further divided into specific mission areas such as helicopter (N321) or undersea operations (N312).[50] The two war fighting component commanders, the carrier air wing commander (senior O-6 aviator), and the destroyer squadron commander, (senior O-6 surface warfare officer), are organized in a similar manner.[51] The current battle group command (figure 1) structure is adequate to assume maritime command duties within a Joint Task Force (JTF). However, future operations will require the battle group staff to assume duties other than those historically led by the Navy such as the Air Component Commander.[52] These additional

command roles require a reorganization of the command structure within the carrier battle group.

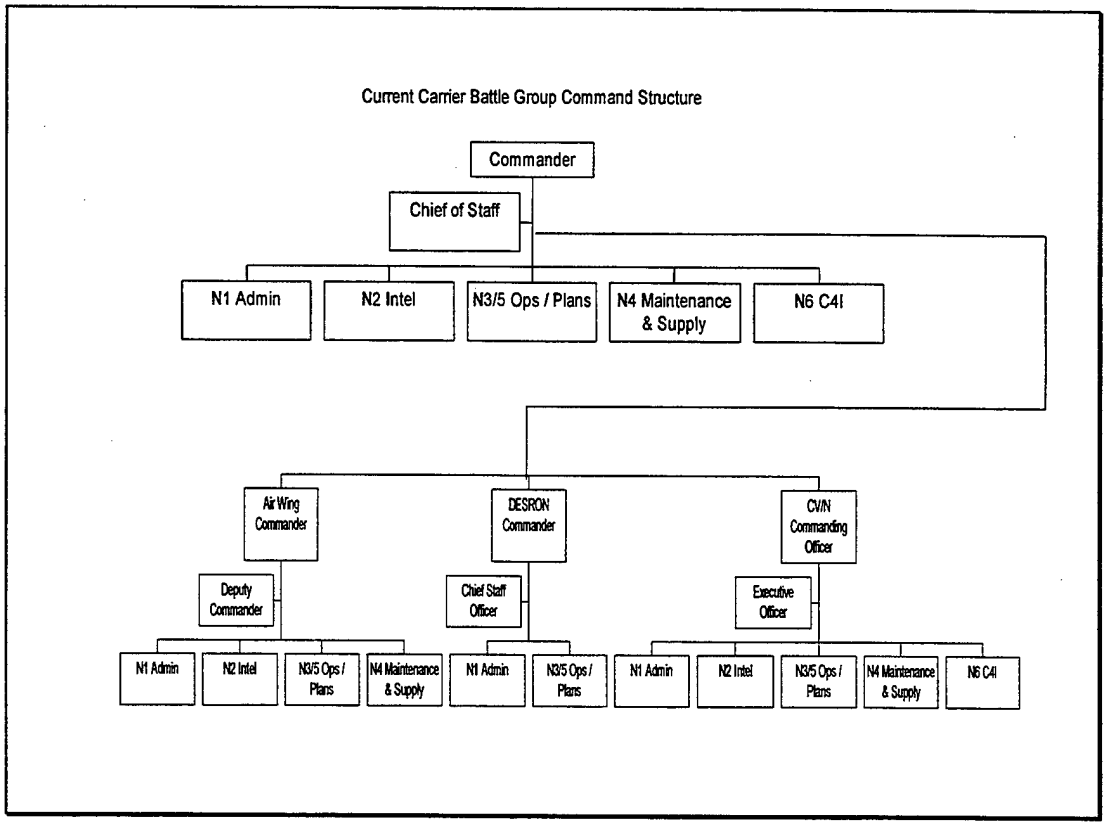

Figure 1

There are no advantages in layered commands. Carl von Clausewitz recognized this fact and warned against reduced efficiencies and effectiveness of command and control.

> Every additional link in the chain of command reduces the effect of an order in two ways: by the process of being transferred and by the additional time needed to pass it on.[53]

Based on the author's experience working within the command configuration described above, the following reorganization was developed:

The "Admiral" retains a personal staff, or the N1 organization (flag aides, flag secretaries, writers, etc.). He/she is the battle group commander and fulfills any other role assigned -- JTF Commander, Joint Force Air Component Commander (JFACC), etc.

A senior O-6, currently "the Chief of Staff," will act in the same capacity as the "Director of the Joint Staff." He/she will also serve as the deputy commander and act as the commander in his/her absence.

The carrier air wing commander, the destroyer squadron commander, and commanding officer of the carrier replace the functional department heads. These leaders represent the primary organizations within the carrier battle group.

The Admiral's functional department heads and their sub-divisions are dispatched to the organizations that can best utilize their expertise. Aviation and power projection specialists become members of the air wing staff. Surface and subsurface warfare officers are absorbed in the destroyer squadron commander's staff. Logisticians, communication specialists, and intelligence personnel will be incorporated into the carrier's organization. No billets or personnel are eliminated; officers and other specialists will serve in positions that suit their background and experience. In effect the coagulating layers of horizontal command disappear and a streamlined vertical chain is created. There will be those who

argue that this vertically developed chain will not function as effectively as the current chain of command.

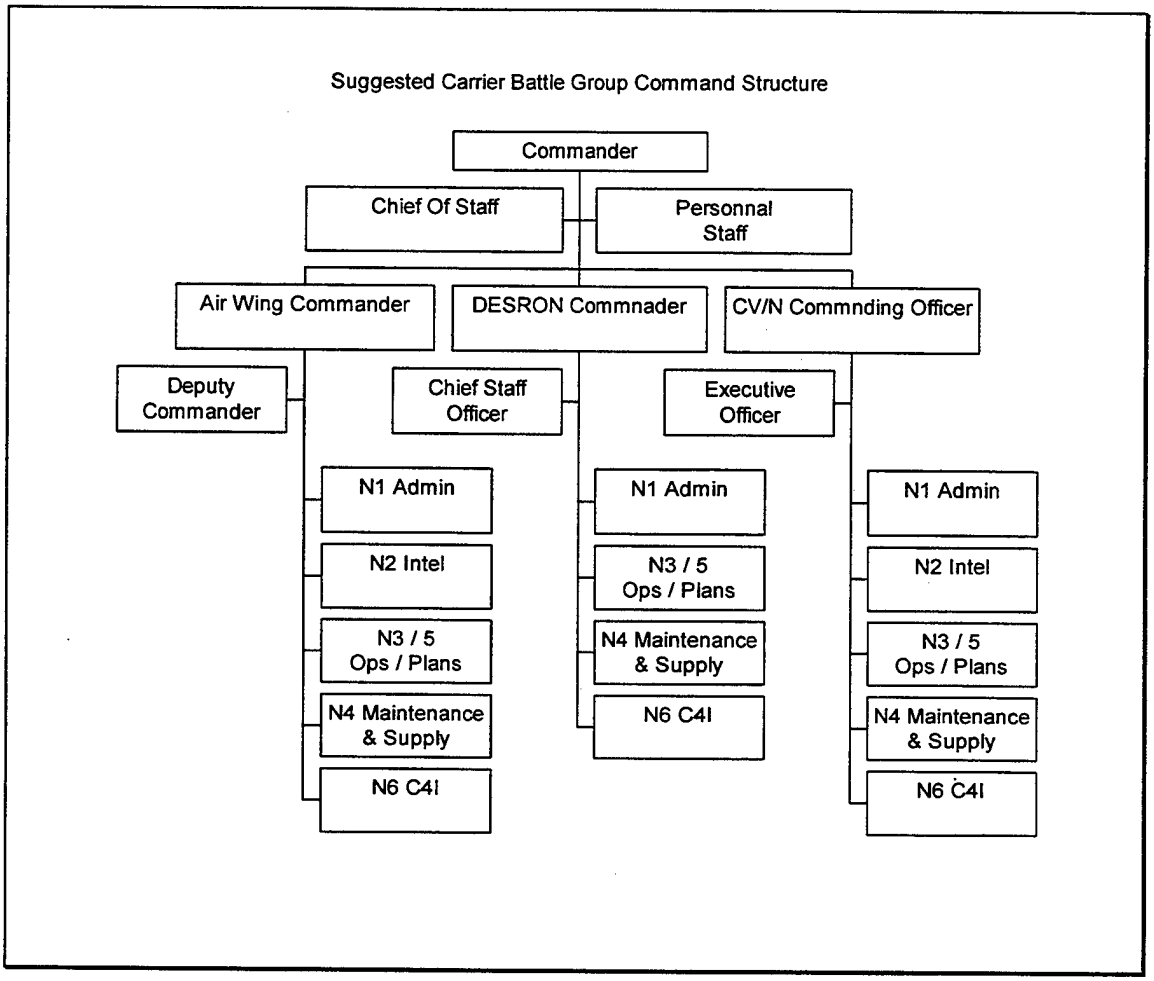

Figure 2

To those in the Navy who would argue, consider the wisdom of Sun Tzu:

> Generally, management of the many is the same as management of the few. It is a matter of organization.[54]

JOINT VISIONS

Dominant maneuver, precision engagement, full dimensional protection, and focused logistics have been identified as the operational concepts that will guide military actions for the

near future.[55] It is important to understand that each concept has specific implications for the carrier battle group and is unique to naval forces.

The carrier battle group will establish sea and air superiority in its operating area. Naval forces will control all strategic lines of communication, which permeate the sea and the airspace above it. Movements by naval forces take place in a controlled environment. The ability to establish three-dimensional operating area superiority allows positioning for optimum weapons employment and strike aircraft routing. Ground force commanders have begun to recognize that the ability to project power from the sea can, and in the future will initiate, as well as facilitate dominant maneuver.[56]

Naval forces, specifically carrier air power, are the most effective method the military possess to commence precision engagement.[57] All carrier strike aircraft can quickly be configured for the delivery of precision guided weapons. The accuracy of guided weapons will improve with technology, but it is vitally important our leaders understand that target identification will become increasingly difficult.[58]

Carrier battle groups have historically been structured using the concept of layered defense. Each layer provides increasing levels of effectiveness. Moving targets are more difficult to locate, track and engage; the sea provides a three dimensional threat arena, it also provides space in which each

movement does not require engagement of the enemy. Threats of chemical, biological, nuclear attack, and terrorist attacks are diminished due to the complexity of locating forces at sea.[59]

When forces arrive in theater, only the carrier battle group arrives with the capability to immediately conduct operations. Naval forces arrive fully loaded with fuel and ammunition. The ability of the carrier and accompanying ships to re-supply at sea, at any time, equates to a sustainable force, free to maneuver, and if required conduct precision engagements.[60]

THE FORCE

The design of aircraft carriers and carrier-based aircraft is extremely unique in the science of force development. A slight change in one component can lead to drastic design changes in the other. Within the next decade the Navy will commission the last of the Nimitz class nuclear powered carriers. The next generation carrier, currently designated CVX, will mark a period of transition for naval air power.[61]

Development of the strike aircraft most likely to be based on the decks of the CVX is much more mature than that of the CVX itself. The Joint Strike Fighter (JSF) program is attempting to shape an aircraft that will share common components, but be tailored to the needs of each Service. One possible feature of the JSF is a capability for vertical take-off and landing.[62] Should this feature be included, it would enable all JSF pilots

to fly from the decks of carriers, including Air Force pilots. An interesting concept, no basing rights required, no host nation support. There are more joint implications to the JSF than are currently envisioned.

Current support aircraft (see appendix) will not inhabit the CVX. It is the design of their replacements that potentially could have a profound effect on the design of CVX. The Common Support Aircraft (CSA) program is in an embryonic stage, hence no specific support requirements or design alterations for the CVX exist.[63] A shift towards short take-off and landing or vertical take-off and landing aircraft is most likely required for all future carrier aircraft. Aircraft designed with such features would allow for operations from the current carrier force, as well as the CVX and beyond.[64]

A road map for the eventual replacement of the current Nimitz carrier force is required. The Quadrennial Defense Review has reaffirmed the need for a minimum of twelve carriers, yet no plans for the construction of a series of CVX carriers exist.[65]

However, the opportunity does exist now for the leaders within the Navy to tailor the entire CVX package from cradle to grave. It is most important that the leadership recognizes and conveys the mindset of total force development. In other words, the development of CVX should not limit the capability of the aircraft which will deploy on her due to shortsighted, fiscally driven design decisions.

SUMMARY

The world is constantly changing. World economic growth has reached levels never before thought possible. Economic interdependence is certain to mature and expand. In spite of new alliances and cooperation, great economic inequalities and ethnic tensions challenge world leadership. The gap between the "haves" and "have nots" continues to widen. Much instability exists creating a complex political situation for the world's leaders. If we are to fulfill the vision of our National Security Strategy, forward-deployed forces, free to act in the best interest of the United States and her allies, will remain critical.

History consistently shows that a force, which can be deployed rapidly, has the potential to be an effective means to protect strategic interests. As the overseas infrastructure for the United States military continues to age and erode, the carrier battle group remains the most viable force available to our leaders. The ability to project power from the sea is unique; a carrier presence gives assurances to our allies and deters aggression. The carrier operates in an environment that requires no cooperation of host governments; hence, no visa is required when entering new operating areas. Carrier battle groups remain forward deployed and reduced overseas infrastructure has not diminished their ability to project power.

While we have witnessed political sensitivities to the presence of American personnel in the past, supporting national policy or political objectives may require substantial forces. The carrier battle group and indeed all naval forces are free from such concerns. Because of this fact carriers may be the most cost-effective military asset the United States possesses. Operating costs of a carrier battle group are the same whether sailing off the East Coast of the United States or in the Arabian Gulf. Substantial cost is incurred with the unplanned deployment of CONUS based forces. Force protection of naval forces is organic so no special or additional assets are required.

The effectiveness of a powerful force off the coast of a nation is well documented. The carrier battle group will continue to play a major role in our security strategy. Both the carrier and its accompanying armada will persevere as the nation's "911 Force" well into the next century.

Word count: 5765

APPENDIX

The typical carrier air wing is composed of the following aircraft:

Three F/A-18 Hornet squadrons (36 aircraft) are capable of air superiority missions, strike warfare (precision guided munitions capable), suppression of enemy air defenses (SEAD), close air support (CAS) or any combination. These aircraft are capable of supersonic speeds and can be refueled airborne.

One F-14 Tomcat squadron (10-14 aircraft) provide the same missions as the F/A-18 plus it is the only tactical aircraft in the United States military inventory capable of photo reconnaissance. The reconnaissance mission is being modernized via the installation of digital cameras capable of linking images back to intelligence centers or storing images on a disc.

EA-6B Prowlers (1 squadron, 4-5 aircraft) provide sophisticated electronic warfare techniques to enhance SEAD efforts. They also can disrupt enemy communications, shoot anti-radiation missiles and furnish electronic CAS to ground forces.

E-2 Hawkeyes (1 squadron, 4 aircraft) function as an airborne command and control center (ABCCC). Secure communications, radar data link, electronic signal identification are notable capabilities.

S-3 Vikings (1 squadron, 7-8 aircraft) furnish anti-submarine, anti-surface ship warfare, aerial refueling and long-range surveillance.

SH-60 Seahawks (1 squadron, 6 aircraft) are critical to search and rescue efforts, anti-submarine warfare and logistical efforts among battle group ships.

C-2 Greyhounds (1 squadron, 2 aircraft) are the CVBG cargo aircraft. With a cargo ramp similar to the C-130, Special Forces have used the C-2 as a jump platform.

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