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NAVAL WAR COLLEGE
Newport, R.I.

# THERE IS MORE TO JFACC THAN AN ATO

by

Andrés A. Brugal

Commander, U.S.N.

A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature _____

16 June 1995

Paper directed by Captain D. Watson

Chairman, Joint Military Operations Department

Signed
Faculty Advisor 15 May 1995
Captain Eugene K. Nielsen, USN

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Abstract of

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# PREFACE

The preponderance of the information for this paper results from my personal experience with JFACC afloat. As a staff officer on CJTF-120, I was responsible for CTAPS incorporation and training for deploying Atlantic Fleet CVBGs and was the principal author of the JFACC afloat SOP that was used for both *Ocean Venture '93* and *Tandem Thrust '93*. Many of the issues addressed here are as a result of my participation and observations in both exercises. Some observations on Air Force policy and doctrine are as a result of attending the Joint Doctrine Air Campaign Course and participation in "Blue Flag".

# THERE IS MORE TO JFACC THAN AN ATO

Achieving the means to conduct air strikes against an enemy, using synchronized sea and land-based aircraft in a consolidated effort, has been a recognized operational necessity since the Vietnam War. To this end, the concept of a joint force air component commander (JFACC), wholly responsible for planning and executing all offensive and defensive air operations for the joint force commander (JFC) was developed. By placing responsibility for integrating air power under a single authority, the JFC obtains the most effective and efficient air command organization.

The JFACC concept was used and validated during Operation Desert Storm. Although there were many problems associated with this first use of JFACC in combat*, warfighters today both accept JFACC and agree that it is the most effective means of employing air power and prosecuting the air operation plan of a joint campaign. Often, when discussing JFACC, many in our services fail to recognize the flexible nature of the concept. Too many warfighters seek a "blueprint" of a JFACC structure and once convinced they have found it they infer that all JFACCs must

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* Within the naval service there existed a limited understanding of the roles and responsibilities of a JFACC. Among naval service commanders it was believed that JFACC's function was to write the joint flight schedule (ATO) from component inputs. That assumption led to the assignment of only a handful of air planners to the Central Command Air Force (CENTAF) JFACC staff. Separately, the Marine Corps feared loss of its air assets in support of its ground forces and was accused of husbanding resources. Additionally, there was a lack of a common communications link between the JFACC and other components. This communications "disconnect" forced physical, vice electronic, transfer of copies of the Air Tasking Order (ATO) to flying units, and both the Air Force and Navy were criticized publicly for being unable to communicate.

conform to it. Unfortunately, conflicts are not all the same, requirements differ, warfighters must recognize that because it is flexible, a JFACC's structure can be adjusted depending on situation and purpose. This paper addresses one such flexible structure--JFACC afloat.

**JFACC Afloat**

Since their first exposure to JFACC during Desert Storm, the Navy and Marine Corps have aggressively injected themselves in doctrine development and process refinement. One evolutionary development resulting from this involvement has been the transference of JFACC to Naval ships for operations in theaters where no suitable host AOC* shore basing site exists. This scenario is most likely during the initial stages of a campaign, in maritime forced entry operations or prior to AOC arrival.

To demonstrate the requirement for placing the JFACC afloat, it is best to examine the warfighting continuum (figure 1). Combat is illustrated as a function of time and is defined on a time-line. Where forced entry is required and adjacent or contiguous operational forces are not available the preponderance of combat forces are assumed to be Naval. Protection of these forces requires that local military superiority be achieved in three warfare dimensions: land; sea; and air. For air superiority, Naval forces will seldom be sufficient to meet the requirements, therefore, joint assets (AWACS, KC-10/135s, B-52s,

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* Air Operations Center - A highly centralized Air Force $C^2$ system for single service air operations, used as the building block around which the JFACC staff is formed when an Air Force commander is dual-hatted as JFACC.

etc.) will be introduced into the theater of operations. As the participation of outside air assets increases, the Naval air command structure rapidly looses the ability to coordinate all requirements for additional assets; making a joint command organization necessary. Due to the maritime nature of the operation at this point, the structure of this joint task force reflects a Naval emphasis. Should the conflict requirements escalate along the warfighting continuum, the need may arise for a forced entry. Thereafter, joint force build-up continues and forces are organized to fight a land or continental campaign.

Current national defense policy directs that military operations will be executed using joint task forces to include possible coalition force participation. In an effort to meet this expectation, the Navy developed and implemented the JFACC afloat concept. Currently two command ships, USS MOUNT WHITNEY and USS BLUE RIDGE, are configured to meet JFACC hosting requirements. These ships have the ability to accommodate several hundred augmentees and sufficient connectivity to meet the requisite C4I requirements. Both ships were used as centerpieces of CINC's joint exercises, USS BLUE RIDGE in *Tandem Thrust '93* and USS MOUNT WHITNEY in *Ocean Venture '93*. In both cases, JFC and JFACC staffs were embarked in the command ships to direct modestly sized campaigns. These exercises helped demonstrate the flexibility of the afloat concept, particularly during *Tandem Thrust '93* where the JFACC was transitioned ashore. Both exercises demonstrated that the option of placing a JFACC

afloat provides higher command authority a greater range of options to executing operations where host nation support has not been secured; or for limited operations requiring predominantly maritime forces. Efforts are being made to provide this joint command ship capability to each of the Navy's numbered fleet commanders.*

To further enhance performance and improve integration into joint operations, the Navy plans to configure all aircraft carriers (CV) with the appropriate C4I suites to either host nominal JFACCs, or to respond to air tasking from an ashore or afloat based JFACC. As will be discussed below, Cvs can serve as initial host sites to direct maritime campaigns, limited navy-dominated contingency strikes or initial stages of expanding interdiction operations, however, CV utility is limited. The $C^2$, staffing and connectivity requirements for multiple based air assets can rapidly exceed the CV's capabilities.

Naval air operations run the length of the warfighting continuum, from presence operations to full-scale war. Depending on scenario and military objectives, Naval striking power may be tasked to perform actions ranging from stand-alone force operations to participating in military operations as a component member of a joint task force. A deployed Naval Expeditionary Force composed of a carrier battle group (CVBG) and amphibious ready group/Marine expeditionary unit (ARG/MEU) need to be able

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* Interview with Captain Michael "Carlos" Johnson, J7A, CINCUSACOM, Norfolk Va.: 22 April 1995.

to enter a theater of operations and perform anywhere along the warfighting continuum.

At the low end, a CVBG, ARG/MEU can be expected to conduct presence operations while preparing for NEO or other special operations. Although these operations may be conducted solely using Naval forces, that likelihood is slim; therefore, joint terms, procedures, and command structure should be used that facilitate incorporation of other services as the conflict develops and expands. An objective of the Naval force should be to provide a nucleus around which a joint task force can form--seemlessly transitioning to joint operations. Resultingly, having the training, manning and $C^2$ architecture in place to initiate the JFACC planning process aboard a CV or large deck amphibious ship gives the CINC greater options as campaign plans are formulated during developing crises.

As the need for military force escalates, the need for additional assets to augment the carrier (AWACS, air force tankers, electronic and reconnaissance assets) requires a more robust planning effort by the battle group, carrier, amphibious and airwing staffs. Once outside assets become an integral part of the military operations a CV based JFACC (or NAVFACC*) should be established with the battle group commander or the air wing commander, (in the case of a CRUDESGRU)** as the JFACC using

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* See appendix 1.

** CRUDESGRUs (Cruiser Destroyer Group) staffs are commanded by a surface line officer vice an aviator.

their staffs in dual (naval/joint) roles. A small contingent of other service or liaison officers (LNO), to perform liaison and coordination roles, would be flown to the carrier to join this staff. Increased demand for additional assets, either carrier or other-service/nation and designation of a Commander, Joint Task Force (CJTF), would require moving up in the continuum and establishment of a totally separate JFACC staff, still CV based but divorced from battle group staff responsibilities. Establishing a separate CV-based JFACC requires significant augmentation to support the extended intelligence and operations planning cycle; to generate a significantly larger air tasking order (ATO); to support airspace and current operations cells*; and to provide component and unit liaison. A fly-away JFACC, as promulgated in the USCINCLANT/USCINCPAC JFACC concept of operations,[1] could meet this requirement. Such an expanded planning effort will also require additional planning spaces and CTAPS** workstations. In conflicts where a shore based JFACC AOC is not feasible and where the level of effort exceeds the capabilities of a CV-based JFACC, (e.g., two CVBGs an ARG/MEU and an Air Force composite wing) deployment of a CJTF flag ship*** with an embarked JFACC would be necessary. These command ships have the manning, work-spaces, CTAPS suite, and communication

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* See appendix 2-The JFACC Planning Process.

** Contingency (Theater Air Control) Automated Planning System (CTAPS) - replacement to CAFMS (computer assisted force management system) the automated ATO planning system used in Desert Storm. CTAPS is a C2 system that makes it easier to redirect aircraft missions during the execution day and accomplish ATO planning functions.

*** USS Mount Whitney, USS Blue Ridge, USS Lassalle

facilities necessary to make them ideal platforms for locating the JFACC to direct operations involving the greater sortie generation, but more importantly the increased communications involved in coordinating this larger force. Once conditions permit the AOC to be established, the JFACC would transition ashore.

Currently, policy on JFACC afloat basing in the Navy's Atlantic Fleet (LANTFLT) and Pacific Fleet (PACFLT) focus on different points along the continuum, reflecting differences in theaters of operations (see figures 2 and 3).* Because of the large distances involved and the extended delay in arrival of a joint command ship, PACFLT requires that on station Cvs be able to assume the JFACC role. LANTFLT, by contrast, has adequate time to sortie the USS MOUNT WHITNEY with the embarked JFACC, therefore the goal in LANTFLT is to bypass the CV based JFACC and enter the continuum using the command ship. Although each of these situations generates specific communications, manning, training, space, and computer requirements, some concerns remain common.

*Training--*

Within the Air Force, a structured JFACC training plan exists. The Joint Doctrine Air Campaign Course (JDACC), at the Air University, introduces officers to air operations planning. In addition, the course presents students with instruction on

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* Interview with Commander Charles Fleischman, J341, Air Warfare Officer, Commander, Second Fleet, Norfolk Va.: 1 May 1995.

JFACC roles and responsibilities in a campaign. Practical training is received at the Air Warfare Center at Hurlburt Field, Fla.. Here numbered Air Force staffs perform a computer based exercise, "Blue Flag", tailored to theater specifics. This exercise allows the staffs to execute all facets of both offensive and defensive air operations. Lastly, the JFACC Theater Air Strategy Symposium is being developed. This event is structured to expose Flag and General Officers who could potentially be assigned as JFACCs, to the assets and tools available to them in this role.[2]

Because the Navy and Marine Corps have no specific organization identified to serve as a JFACC staff, training has been more ad-hoc. Currently, Carrier Groups ONE (Pacific Fleet) and FOUR (Atlantic Fleet) conduct training for each CVBG and ARG/MEU during their deployment training cycle. Any officers who attend either JDACC or Blue Flag, do so only as a result of individual or staff initiative. Currently, there are no JFACC training requirements or pipeline.

A need exists to identify billets within each CVBG and ARG/MEU that fill the low-end JFACC requirements when a CV or large deck amphibious ship is required to host a JFACC. To provide a staff cadre for situations requiring a CJTF flagship based JFACC, the need exists to create a standing Naval air operations group (AOG). During both *Tandem Thrust '93* and *Ocean Venture '93*, the JFACC staffs came together for the first time ten days prior to exercise start. Many of these individuals had

never heard of JFACC prior to this exposure: all left as experts, but there is no way for the services to track them or use their expertise in the future.

Because in crisis this valuable training time may not be available, the Naval service should create an AOG. This staff could be located at the Navy's Strike Leader Attack Tactics School (SLATS). Basing here would give this group a unique opportunity to interface with all Naval air wings and ability to direct both single service and joint air operations during the deployment training cycles. The addition of more joint air training conducted with squadrons from Nellis AFB would make this possible. In time of crisis, this same staff would fulfill the LANTCOM/PACOM JFACC Conops fly away staff requirements, providing trained ready personnel.

*Command and Control--*

CTAPS, the computer system used to plan, deliver and execute the air operations plan, has been a great improvement over earlier systems, however, problems still exist. As currently configured, CTAPS is a single-host system that does not support interactive exchange of databases or direct inputs from remote sites into the ATO. Additionally, the software as it is now written does not adequately support inclusion of Naval direct support sorties.

The trend today is for tighter control of air in the theater of operations, with the requirement to place more and more sorties on the ATO. Consensus opinion is that centralized

control/decentralized execution*, and sortie reflection on the ATO, would have prevented the F-15--U.N. Blackhawk helicopter shootdown incident over IRAQ. Currently, in Atlantic Fleet's pre-deployment JTFEX (FLEETEX), JFACC is required to show all flights (to include direct support helicopter logistic flights) on the ATO. At least one very senior force commander has postulated that the next "Desert Storm's" ATO will incorporate all helicopter sorties in the joint operations area (JOA). Understandably, this poses a tremendous challenge and adds emphasizes for the need to create a fully interactive software for CTAPS.

Incompatibility between software and hardware used by the Navy and the Air Force is an additional problem. As currently installed, CTAPS software does not perform all functions on the Navy's TAC-3 computers. Experience on exercises has shown the necessity to borrow USAF "Sun-Sparc" work-stations to ensure success.

As we look to the future, early incorporation of CTAPS as an application on JMCIS will help alleviate current hardware and software incompatibility problems. CTAPS software needs to be made more user-friendly, allowing off-site planning and less reliance on highly skilled system administrators.

*Communications--*

Without question, communications capability is the greatest

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* See appendix 3 - Tenets of Aerospace Power.

shortcoming in operating JFACC from a CV or large deck Amphibious ship, due to the volume of data needed to be transferred and the limited satellite transmit ability available. CJTF flagships greatly increase this capability, although not as formidably as shore basing.

JFACC operations require extensive voice and data communication capabilities. In addition to tactical voice circuits, multiple telephone circuits both clear and secure are required. These communication circuits support extensive liaison and planning efforts. During *Ocean Venture '93*, 13 dedicated phone lines were allocated to JFACC*. Often at the height of operations it was felt that this was not enough.

Current methods of ATO transfer and supporting data among battle group units are inadequate. Attempting to send an ATO over AUTODIN message system is insupportable. At present, both fleets have developed work-arounds, such as PC-PC transfers, TADIXS and computer bulletin boards but a long term solution is required.

**Conclusions**

Through examination of the warfighting continuum and the assumption that Naval units will find themselves first on scene as crises arise, the Navy must be capable of executing the JFACC mission or hosting JFACC staffs aboard ships. In approaching JFACC afloat however, the Navy has focused too heavily on sortie

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* The USS Mount Whitney had 22 distinct direct access phone lines available for *Ocean Venture '93*–this is extremely unique for a warship.

generation requirements. Greater emphasis needs to be placed on command and control capability as the Navy addresses JFACC requirements. The joint command ships provide the added $C^2$ capability necessary to conduct most maritime based operations. As has been discussed, Naval force involvement in military operations encompasses the entire spectrum of the warfighting continuum. At certain points a CV JFACC could perform the necessary requirements and therefore needs to be equipped to perform this responsibility on a limited scale.

A JFACC's job doesn't end with the publication of the ATO. That is only the starting point. Execution day changes and control of the air operations is at the heart of JFACC. To be able to perform this vital function the JFACC requires a $C^4I$ capability commensurate with its responsibilities.

# Figure 1. JFACC (AFLOAT) IN ENABLING OPS

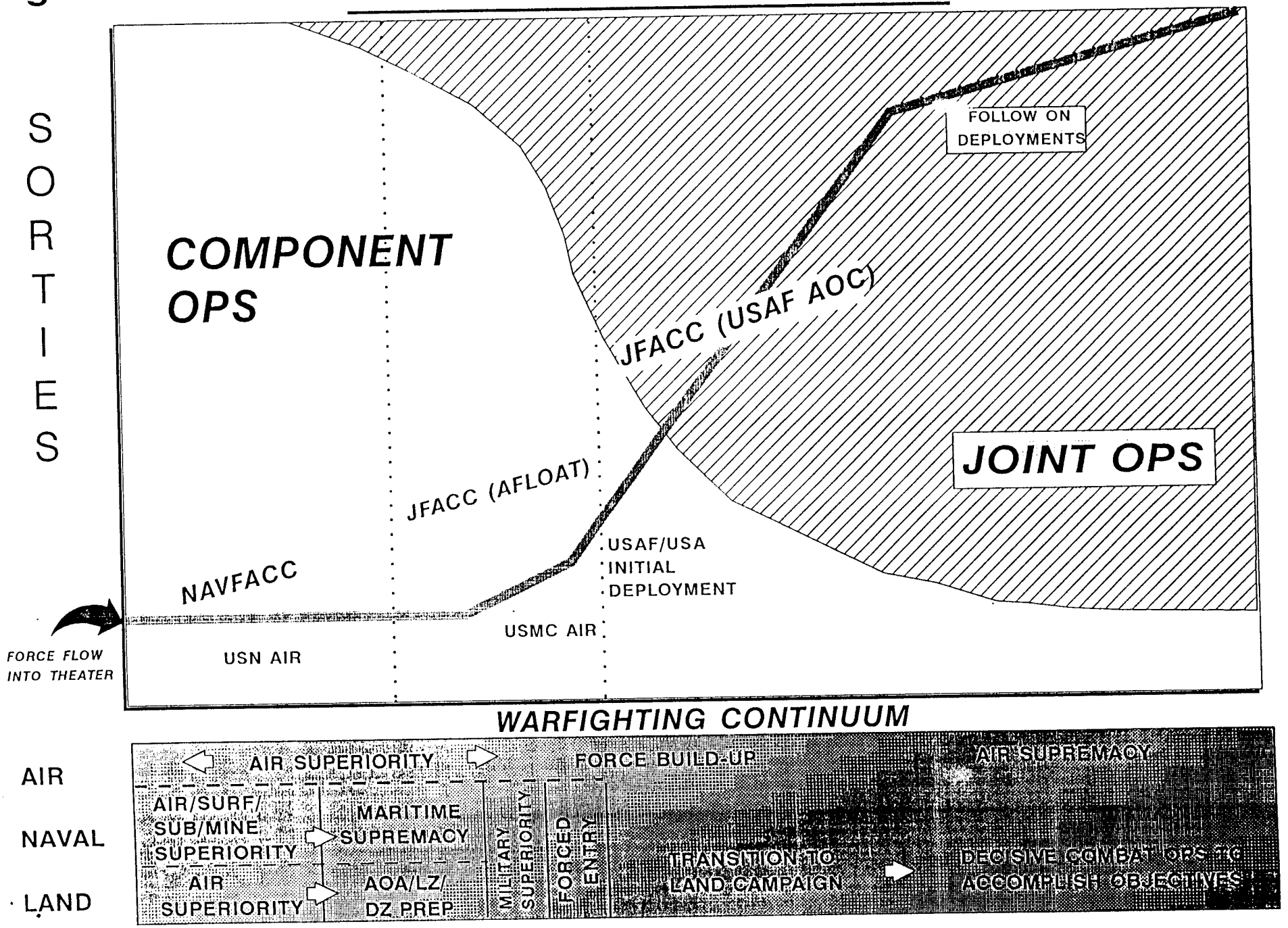

FIGURE 2

# JFACC Afloat

## Atlantic Fleet Perspective

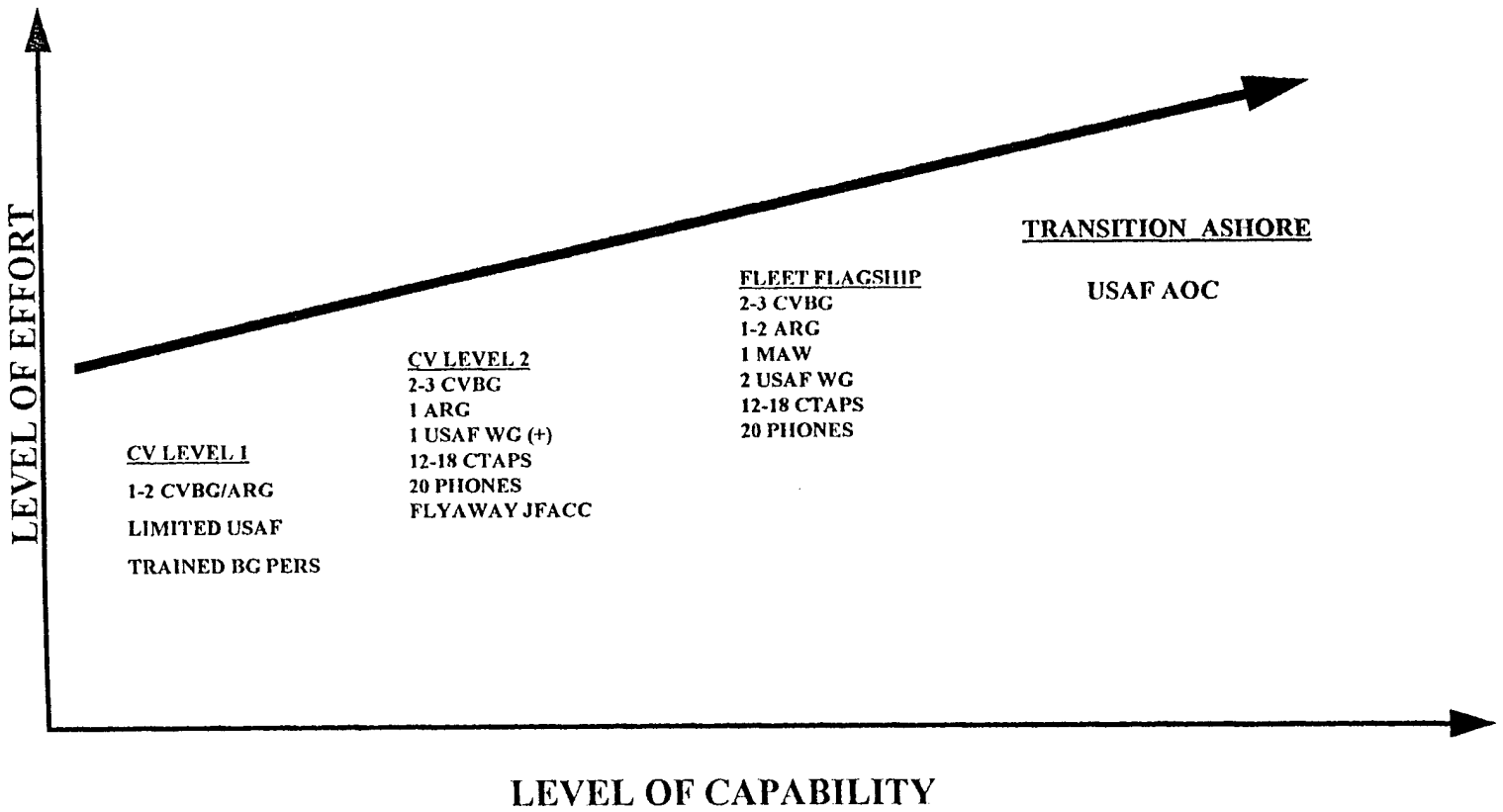

FIGURE 3

# JFACC Afloat

## Pacific Fleet Perspective

| ENABLING JFACC | CV BASED JFACC | LCC BASED JFACC | TRANSITION ASHORE USAF AOC |
|---|---|---|---|
| - SINGLE CVBG/ARG<br>- LIMITED USAF<br>- CORE BG JFACC (20 PERS)<br>- HOST CTAPS SUITE<br>- 180-200 SORTIES | - FLYAWAY TEAM IN PLACE (60 PERS)<br>- 2 CVBG/1 ARG/1 USAF WG/<br>- 12 CTAPS/ 20 PHONES<br>- 1000 SQ/FT<br>- 400-500 SORTIES | - 20 ADDITIONAL TARGETEERS<br>- 2-3 CVBG/1-2 ARG/1 MAW<br>- 2 USAF WINGS<br>- 12 CTAPS / 30 PHONES<br>- 1500 SQ/FT<br>- 800 SORTIES | - 3 CVBG +<br>- 2 ARG<br>- 2 AF WG |

NUMBER OF TARGETS/INTENSITY

**Appendix 1. A proposal for NAVFACC.**

The Navy should change how it plans and executes air operations to parallel the JFACC process. At the same time it must retain the demonstrated flexibility and responsiveness characteristic of Naval aviation. One such process NAVFACC (Naval Force Air Component Commander), is presented here. These changes provide an effective template for seamless joint integration.

Naval air operations should be conducted from an ATO. Naval aviators are well versed in reading and understanding an ATO, however, the same does not hold true for surface warriors. Because of the vital role surface ships play in the joint air defense scheme, surface officers must be able to understand the ATO equally as well as aviators. To align with existing JFACC models, battle groups should eliminate or reduce operational messages (e.g., OPTASK Anti Air Warfare, Anti Air Warfare Commanders intentions, Codes of the Day, etc.). This vital information will be included in the fleet or force ATO/SPINS, providing a "one stop shop" single source document.

The air wing and the CV's operations department should be organized to support development and execution of the ATO. This allows them to perform the plans and operations functions of a JFACC when necessary. For development of the ATO, the air wing is reorganized into planning teams which plan one day's ATO, rest, then fly an ATO planned by a separate team. As part of the ATO development cycle, battle group ships requiring air support

(e,g., AEGIS cruiser requesting fighters for air intercept control (AIC)) submit requests using the appropriate Joint Message Text Formats. Further, these air support requests must be submitted 48-36 hours prior, to ensure inclusion in the ATO. While these parameters may require firm operational or training decisions by the battle group ships as early as 72 hours prior to execution, opportunity exists for modification throughout the process.

Under these proposals, production of the ATO is accomplished by Strike Operations and released no later then 12 hours prior to execution in order to meet planning requirements for non-Navy support aircraft. ATO execution is done by the Strike Warfare Commander (STWC) watch team. This team is responsible for making "execution day" changes once the ATO is published, and meets emergent requirements or priority changes. Reorganization of this watch team will be needed to ensure elements of CV Air Operations, Strike Operations and CAG are included.

Lastly, elements of the naval battle group should be reorganized to mirror the joint structure for air warfare. Naval warfare commanders should be organized into a Warfare Commanders Targeting Board (WCTB) to perform those functions associated with the JTCB. The Anti-Air Warfare (AAWC) Commander should assume AADC and ACA responsibilities. If deployed in a naval Joint Task Group (JTG), the Marine commander assumes land force commander responsibilities.

Although not perfect, these changes go a long way in creating a structure which reflects how Naval air can expect to fight once integrated into a JTF. The Naval combined warfare commander system is not broken, however, it was designed for independent blue water operations. As a result, the CWC concept conflicts with joint doctrine centralization of air asset control. Implementing these changes is one step towards adjusting our command structure for the next fight.

**Appendix 2 -- The JFACC Process**

Each service is equipped with air assets having distinctive capabilities. Although some crossover exists in each service's air capabilities, by and large they are unique and complementary. When a Joint Task Force is formed, all air assets combine under the JFC. The JFACC is tasked to select the appropriate assets for each mission, thereby efficiently and effectively taking advantage of all components' air assets.

To accomplish this goal, the JFC provides a statement of military objectives and a clear definition of desired end state. The JFC's objectives normally identify initial targeting priorities, planning guidance, appropriate maneuver and movement control, fire support coordinating measures and criteria for defining direct support sorties. As part of the air operations planning process, JFACC translates the JFC's guidance into recommended apportionment of the joint air effort. After approval by the JFC, the apportionment decision gives guidance on how the air effort will be divided, either geographically or against various mission areas.

To determine the recommended apportionment of the air effort, the JFACC constructs a phased air operations plan which is derived from higher level objectives. The plan's objectives should flow logically from the JFC's objectives to national objectives. Its phases will complement, but may not directly coincide with, the JFC's theater campaign plan. During plan development, the JFACC's air operations planners identify

specific target and, obviously, adjust to JFC targeting priorities which correlate directly with achieving each phase objective. An analysis is done on each target set to determine the required force application necessary (i.e., type of aircraft or weapons system versus level of destruction) for each target to arrive at the recommended apportionment.

In the recent USLANTCOM joint exercise, Ocean Venture 93, the JFACC identified the following phases for the air operations plan: first phase--achievement of electronic supremacy; second phase--air supremacy; third phase--maritime supremacy; and lastly the ground supremacy phase. These were derived from the stated guidance and objectives delineated in the JFC's theater campaign plan. The JFC's stated priorities established the scheme of the air operations plan and resulting target priorities. The JFACC then formulated a campaign logic structure to reach the stated goals.

To achieve supremacy in a specific area, targets were identified and prioritized by strategic significance and were subsequently prosecuted in a logical, sequential manner, e.g., neutralization of the enemy's microwave relay station as the first priority target for the electronic supremacy phase. In *Ocean Venture '93*, the commander's apportionment decision was expressed as a level of effort using broad direction. "Maintain air and electronic supremacy. Apportion air effort: at least two thirds toward Air Interdiction, minimal Counter Air, have Close Air Support package available."[3] Other commanders have used

percentages of air effort to express apportionment.

Within the JFACC, development of the apportionment recommendation is done by the Guidance Apportionment and Targeting Cell (GAT). During pre-hostilities the GAT obtains intelligence and consolidates inputs from components to develop an air operations plan. After commencement of hostilities the GAT adjusts the phased apportionment recommendations daily to meet real-time battlefield situations. As a separate process the GAT performs the task of prioritizing or "racking and stacking" components' target nominations. The GAT is normally comprised of senior mission planners from each component, targeteers and weaponeers from the intelligence division, and it may include representatives from the JFC staff.

Because of the GAT's influence in target selection, the JFC normally establishes the Joint Targeting Coordination Board (JTCB), an organization formed to perform broad targeting oversight functions and to serve as a Joint Force Commander level review mechanism.[4] The JTCB provides a forum for component commanders or their representatives to express concerns over target priorities vis a vis JFC's guidance when such issues have not been resolved in the GAT by component liaison officers. Additionally and more importantly, the JTCB provides an instrument for review of overall campaign progress.

Normally JFACC is formed around the service component commander having the preponderance of air assets and the ability to coordinate the air effort. Historically that has been the Air

Force. To perform the control function, JFACC is supported by an AOC; a large single service $C^2$ organization, composed of scores, sometimes hundreds of personnel. The AOC is divided into various divisions responsible for the planning, execution, communications, and intelligence functions. When tasked as JFACC, the Air Force AOC is augmented by service liaison officers, weapons systems experts and component liaison cells. By having planners and liaison officers from each of the components in the AOC it is possible to centralize planning and control of all joint air operations. Collocation of component air planners permits the give and take required in planning air operations. The process normally requiring numerous messages or phone calls, may now be conducted on a face to face basis. The principle function of the AOC is publication of the Air Tasking Order/Special Instructions (ATO/SPINS). This single source document provides mission information and other essential information which advises air defense units of the what, where, and when of friendly air, thereby greatly reducing the probability of fratricide.

The JFACC plans division is responsible for development and production of the ATO/SPINS. Planners determine the best combination of target, weapons system and support requirements, and they ensure air tasking is properly integrated and deconflicted. The operations division is responsible for the "current day" joint air effort. After ATO start, Operations assumes command authority for ATO execution. The Chief of

Operations and his watch team will analyze, prioritize and if necessary, redirect ATO tasked assets. Additionally Operations will coordinate preplanned and emergent air support requests. Through this means, JFACC is able to exploit the flexibility of air power.

Two separate responsibilities normally assigned JFACC are Area Air Defense Commander (AADC) and Airspace Control Authority (ACA). As AADC the JFACC is responsible for planning air defense positions, coordinating joint air defense assets, and allocating air defense resources. Through subordinate air defense units the AADC controls air defense resources from all components. The ACA is responsible for coordinating and deconflicting all airspace requirements including NGFS, SPECOPS, aerial mining and artillery outside the fire support coordination line (FSCL). These airspace coordination measures are published by the ACA in the Airspace Control Plan (ACP) and modified in the daily Airspace Control Order (ACO).

## Appendix 3. -- Tenets of Aerospace Power

JFACC doctrine states that unity of effort in control and execution of air operations is best achieved through a single commander. The U.S. Air Force has defined seven principles (tenets) which define and highlight those distinctive qualities which are unique to air power and serve as guidelines for its employment.[5] They are:

**TENETS OF AEROSPACE POWER**
CENTRALIZED CONTROL/DECENTRALIZED EXECUTION
FLEXIBILITY AND VERSATILITY
PRIORITY
SYNERGY
BALANCE
CONCENTRATION
PERSISTENCE

**Centralized Command/Decentralized Execution.** The first and sometimes called "master" tenet. Centralized control permits the air commander to use his geographically dispersed air assets' speed and versatility to concentrate force, whether in offensive strike missions or defensive air patrols. It allows the commander to establish and enforce theater-wide priorities, execute synergistic operations, establish appropriate balance and assure persistent attacks.[6] Centralized control is best exercised at the operational level, where decisions of force packaging, targeting, routing and deconfliction of strikes must be decided. Success at the tactical level requires attention to detail and the ability to adapt quickly to exploit fleeting opportunities. Decentralized execution of the air operation allows tactical commanders at the wing or squadron level to

decide on the specifics, e.g.: target area tactics; timing between elements in the strike; deception tactics; etc.

**Flexibility and Versatility.** Aviation's unique ability to operate free from the same constraints of surface forces, provides the great flexibility of range and speed employed by aviation forces. Additionally, air power allows for a variety of employment options. It can be used to achieve immediate strategic effect through attacks against an enemy's centers of gravity. It can provide air interdiction to delay, disrupt, or destroy enemy combat forces or their lines of communication; thereby affecting the outcome of surface action before ground forces come in contact with the enemy. Air power can also assist ground forces already in contact through the delivery of precision firepower in a close air support role.

**Priority.** Conceptually, in war, the appropriate priorities are clear and logical. First attacks should be aimed against targets which have the greatest impact on the war as a whole. These are those targets where destruction could result in rapid capitulation by the enemy, i.e., the enemy's centers of gravity. Secondly, air power should be used where it will directly affect operations within a theater, and lastly where it will determine the outcome of individual battles.

Although conceptually these priorities form an elegant template for a commander's operational decisions, reality provides several stumbling blocks. Many factors influence and determine how air power is actually used. These factors are--

political constraints; delayed affect of deep strike on the frontline battle; validity of set priorities in insurgent or military operations other than war; survival of ground forces in contact with the enemy; and battles which may have an overall decisive affect on the war. Regardless, the air commander must set out priorities articulated in the air operations plan, clearly delineating how air power will be used.

In *Ocean Venture '93*, the JFACC set the following priorities: achievement of electronic supremacy, air supremacy, maritime supremacy, and lastly ground supremacy. These priorities were derived from the stated objectives and campaign plan outlined by the JFC. Execution of the air campaign and selection of targets resulted from these stated priorities, providing a synergistic, enabling effect for land and maritime operations.

**Synergy.** The ability of one action to directly impact another, for example, placing a defensive counter air mission in an area where it can cover an interdiction (strike) or close air support mission. Or the impact that interdiction operations against enemy air bases has on the ability of a fleet to close on the shore for an amphibious assault.

**Balance.** The JFACC must balance the risk of using air power against the opportunity presented. The retaliatory strike against Iraq on 27 June 1993 for a planned assassination of President Bush, is a perfect example. The use of very precise air interdiction missions exposing airmen to the risk of SAMs and

AAA had to be balanced against the possibility of collateral damage to civilians from unmanned TLAM cruise missiles.

**Concentration.** Because of the versatility and flexibility of aviation, the temptation to use air power against every possible target is extremely strong. But a prudent commander must err on the side of using too much rather than too little. Dividing the force into many small packages may lead to many failures due to inadequate concentration of firepower, vice one or two significant successes.

**Persistence.** Because of an enemy's possible ability to perform rapid repair on damaged facilities and the inability of air power to occupy an objective as a ground force can, the JFACC must shrewdly determine timing for restrike. If too early, you only shake up what has already been damaged; if too late, the enemy may take advantage of a rebuilt facility.

**Appendix 4. -- HISTORY**

The history of the use of air power is primarily that of divided effort. Initially air power was seen as a supporting arm, tied directly to a ground commander. At the end of World War I, airmen envisioned greater potential for air power using its ability to go beyond the battle lines to strike strategic targets. Airmen, such as Italian General Giulio Douhet, argued for an independent air service and championed the preeminence of air power. Douhet advocated the use of air power against strategic targets both to shape battles and to win wars. Ground commanders however, were skeptical of these ideas and proved reluctant to release their air assets.

Early efforts to use air power strategically were often haphazard. This was exemplified by the lack of coordination in conducting an integrated day/night bombing campaign against Germany, between the RAF and the US Army Air Corp, in 1943.[7] Similarly, in Korea, the Air Force desired to exercise its perceived role in planning and executing the air war, however the Navy avoided any attempts at Air Force control and typically operated and planned independently. As a result, little or no coordination existed between the Far Eastern Air Forces and carrier based Naval air. Strikes were often conducted on the same target, duplicating effort.[8] In Vietnam the system of route packaging for geographic separation of Navy and Air Force air missions resulted in principally independent air operations with as many as seven different air wars being conducted at the same

time.[9]

The conduct of the air war in Desert Storm symbolized a fundamental change. A single commander, the CENTAF Commanding General, was given authority by the CINC to direct the entire air operation, both U.S. and allied. The ability of this single commander to mass all air assets against Iraq, taking advantage of the unique capabilities of each weapon system, contributed conclusively to the quick and decisive victory.

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