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THE EXPEDITIONARY AIR OPERATIONS CENTER

By

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15. Abstract: Improvements in information technologies, and communications have produced dramatic efficiencies in many information dependent organizations. A long period of decreased military budgets, and a major decrease in force structure have created an environment where we must leverage new information technologies to create efficiencies that will increase combat power as described in *Joint Vision 2010*. The heavy and forward-based Air Operations Center is an organization where these technologies can have a positive impact. Over the past few years, efforts have been made to streamline AOC operations and reduce the logistical "tail" and in theater "footprint" of this unit. Chief among these emerging concepts is the Split Air Operations Center. This research project proposes to explore the Split Air Operations Center concept and analyze its operational acceptability. Specifically, does the Split AOC concept take into account the emerging threats and does it achieve the goals outlined in *Joint Vision 2010*. Lastly, this paper proposes a concept to disperse forward elements of the Air Operations among USAF airborne C4ISR assets. This proposal will create a mobile, survivable, and logistically light Expeditionary Air Operations Center that better adapts to current wisdom on future warfighting and is aligned to meet the goals of *Joint Vision 2010*. Implementation of this concept would flatten the theater C2 structure, decreases decision time, and provide the JFC: a rapidly deployable base line AOC that is not Time Phased Force Deployment Data dependent, a forced entry air command post, and an AOC deployable with our Aerospace Expeditionary Forces.

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Abstract

Current wisdom on the types of asymmetric attacks an adversary might use to deny U.S. Forces entry into a distant theater have caused us to rethink how we plan and execute air power at the operational level of war. Emerging technologies in information management and communications, most notably satellite technology, force us to ask ourselves if we are pursuing the right developmental courses of action, to maximize our effectiveness, and minimize our vulnerabilities in the near to mid-term battlespace. This paper offers a radical if not heretical approach to leverage emerging technologies and redefine the venerable Air Operations Center. Much maligned, and under constant scrutiny for its enormous footprint, the AOC remains the brain of any respectable execution of theater airpower operations.

In its essence this paper attempt to address the inherent dichotomy that exists between the following two quotes.

Our most vexing future adversary may be one who can use technology to make rapid improvements in its military capabilities that provide asymmetrical counters to US military strengths, including information technologies. Alternatively, the high leverage associated with modern systems means that significant improvements in military capabilities can occur very rapidly, outrunning the pace of compensating political or military countermeasures.

Joint Vision 2010 pp. 10-11

Over reliance on, or unrealistic expectations from, information systems could inhibit or lengthen decisions.

Concept for Future Joint Operations, May 1997, p. 27

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The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the U.S. Government, Department of Defense, The United States Navy, or the U.S. Naval War College.

CONTENTS

CONTENTS 4

INTRODUCTION 5

CHALLENGES 7

THE AIR OPERATIONS CENTER 8

Dead Weight 8

The Tests 9

THE ARGUMENT 11

THE PROPOSAL 15

REDEFINING THE AOC 16

Benefits 17

Drawbacks 18

Technologies to Realization 19

Counter Argument 19

SUMMARY 20

CONCLUSION 21

Advanced technologies can make third class powers into first class threats.
Dick Cheney, Former Secretary of Defense

Technology should allow units to be more widely dispersed, lighter, more mobile, increasingly lethal, and have smaller "footprints."
Concept for Future Joint Operations, May 1997, p. 25

Our overseas presence and highly mobile forces will both remain essential to future operations.
Joint Vision 2010 p. 5

INTRODUCTION

Many in the business world see this time as a Revolution in Business Affairs, spurred into being by the dramatic changes in information and information technologies. In the military, we are still debating if this revolution in information and business signals a revolution or evolution in military affairs. Military thinkers, view the present situation with widely varying opinions. History is replete with examples of militaries that did not recognize the changing environment and methods of warfare around them. Militaries that failed to devise, strategic, operational and tactical concepts to that end, were the architects of their own demise. Some historical examples are the militaries that opposed "the transformation of the French Army in the 1790's or Mao Tse-tung's development of the *people's war*".[1] The creation or failure to create effective doctrine to support the changes in the warfare environment has likewise been significant. "Twentieth century examples include Germany's unrestricted submarine warfare in World War I, the Blitzkrieg and strategic aerial bombardment in World War II..."[2]

Revolution or evolution aside, information is more crucial today than ever. How a commander makes decisions affecting the battlespace in this information robust environment will become increasingly important. "Even for higher level commanders, the accelerated operational tempo and greater integration requirements will likely create a more stressful, faster moving decision environment."[3] Moreover, the necessity to manage and synthesize data is growing at an unprecedented rate. As a result, the military must develop innovative ways to streamline decision-making and exploit what John Boyd called the OODA Loop. Specifically, Boyd's theory contends that "all rational human behavior, individual or organizational, can be depicted as a continual cycling through four distinct tasks–observation, orientation, decision, and action...the *OODA Loop.*" [4] Information gives us the opportunity to create a winning decision cycle by "acting more rapidly (and accurately) than the enemy"[5].

Evolution or revolution, network-centric warfare[6] is coming. It may take decades to realize, but it is the warfighting of the future. In the interim we must develop ways to improve our efficiency and survivability on the battlefield. In essence, we must be prepared to change the methods that we bring the fight to the enemy. In the near future, the enemy may be able to determine the tempo of operations, and even deny us entry into the region through asymmetric warfare. We must retain the ability to react faster than the enemy expects, or faster than the enemy can act. Information can give us this ability to synchronize our forces, make them more lethal, and less vulnerable. This is especially true in the emerging world where the U.S. military is likely to be called on after deterrence has failed and hostilities have opened in a remote region that it is in our national interest or in the interest of or allies and friends.

CHALLENGES

"In 1985, America appropriated about $400 billion for DoD (in constant FY97 dollars), which constituted 28 percent of our national budget, and 7 percent of our gross national product. We had more than 2.2 million men and women under arms..."[7] By the summer of 1997 Secretary of Defense Cohen stated that "America has responded to vast global changes by reducing its defense budget by some 38 percent, its force structure by 33 percent and its procurement programs by 63 percent... the DOD budget is $250 billion, 15 percent of the national budget and an estimated 3.2 percent of our gross national product."[8] Current force structure has fallen from "1.45 million"[9] in 1997 to approximately "1.38 million as of Oct 1999"[10]. With theses changes, one of the greatest imperatives that U.S. military services face is; can we leverage order of magnitude leaps in information to capture or create similar order of magnitude increases in warfighting capabilities? Revolution or no, new information technologies and smaller force structure demand more efficiency in doctrines and methods of warfighting.

With the end of the cold war and much smaller defense budgets, the need for light, lean, and lethal expeditionary forces continues to expand. The emergence of failing states around the globe will create an increasing demand for U.S. intervention in many ways to include our armed forces. Moreover, we are in the middle of an information revolution that is capable of streamlining business and creating new efficiencies on an ever-increasing scale. It is this combination of factors that demand we leverage opportunities to explore new and more efficient methods of warfighting.

THE AIR OPERATIONS CENTER

The history of the Air Operations Center is rooted in the concepts of centralized command and control and the Joint Forces Air Component Commander (JFACC). It is central to the theme of planning the employment of airpower. The AOC is an evolution of many systems over time to achieve the synchronization and massed effects that air power theorists such as Billy Mitchell and Dohet had been arguing since WWI. Today, the AOC is a key factor in the planning and execution of the theory that air power can produce strategic effects, given proper targeting controlled by airmen.

In Operation DESERT STORM the AOC highlighted itself by the skillful development of the air campaign to decapitate Saddam Hussein. It also produced many concerns at the operational level. The most specific concerns were related to the enormous logistical burden required to move it into theater. Over the past few years the U.S. Air Force has struggled to become more efficient and responsive to crisis. This struggle is most notable in the controversy that surrounds efforts to create a lighter more Time Phased Forces Deployment Document (TPFDD) Friendly AOC.

Dead Weight

> *Deploying US forces over long distances to unfamiliar surroundings will be a continuing challenge. Combat operations could closely follow deployment, particularly if forcible entry operations are required. In other cases, combat operations to achieve limited objectives might be conducted without establishing preliminary lodgments in the operations area, or perhaps before the joint force is fully formed.*
>
> Concept for Future Joint Operations, May 1997, p. 14

The Air Operations Center (AOC)[11] offers itself as a target of opportunity to those who seek to leverage information and streamline the operational level of air warfare planning

and execution. After Operation DESERT STORM the AOC concept revolved around the deployment of "1500-2000 warriors... requiring 25 C-17 missions and... 10-15 days."[12] According to Lt. Col. Rocky Kimpel, deputy director of EFX 98,

> "...the 1991 Persian Gulf War required the management effort of nearly 2,000 people based in Riyadh, Saudi Arabia. It would be "a nightmare" if, in a similar conflict, a large forward-based AOC took a hit from a missile or car bomb, which would effectively decapitate the allied war effort, Kimpel noted. The Gulf War AOC was underground and well protected, but in other theaters, such facilities might not be available."[13]

This leads to the pressing questions about the survivability of the AOC of the future. Specifically, will current and future plans meet the need for a light, mobile, survivable Air Operations Center that is aligned with both the Expeditionary Air Forces of the next 10 years and the principles of the fighting vision laid out in Joint Vision 2010? If so, how? And if not, why and what do we have for alternatives?

The Tests

The fusion of all-source intelligence with the fluid integration of sensors, platforms, command organizations, and logistic support centers will allow a greater number of operational tasks to be accomplished faster.

Joint Vision 2010 p. 13

Over the past decade the U.S. Air Force has experimented with a number of "Split AOC" options to reduce the size of this in-theater footprint. In his School of Advanced Air Power Studies paper, Major Lee White describes many of the experiments and exercises in detail. His conclusions focus on the critical nature of communications and the inefficiencies associated with running split AOC operations. Major White also points out that there are many psychological and inter-personal difficulties that the commander must overcome to conducting split AOC operations. Some of these include the

commander's reluctance to be physically separated from the JFC, and the fact that many Joint Force Commanders tend to rely on the size of the staff as an indicator of the usefulness and effectiveness of what air power has to offer. Though Major Whites paper offers extensive analysis on the exercises of the last decade, he is decidedly contemptuous of the Split AOC concept as a near term fix. . Interestingly, his conclusions center around the concept that efficiencies achieved through smaller lift requirements are mitigated by the need for more robust communications nets and links. He demonstrates that with split AOC operations, communications become an operational center of gravity that enemies will likely target or exploit. Decidedly, the most interesting facet of recent split AOC operations has been how rapidly we are maturing these operations and overcoming the technological, psychological, and physical obstacles.

Significant concepts for the AOC of 2004 were tried during Expeditionary Force Experiment '98, or EFX 98 CONOPS. "It was called an experiment rather than an exercise because it focused more on evaluating technology than on training people."[14] During this joint force exercise, not only was a split AOC operation exploited, but also a naval AOC was established "on-scene" and afloat.

> "A major goal was to see how small and light the Air Force could make the forward Air Operations Center... to run the AOC, only 115 command-and-control personnel deployed forward with the AEF commander... However, they had some assistance, acquired courtesy of a concept called "reachback." Supporting them were about 300 people at a Rear AOC established at Langley AFB, Va... Using video teleconferencing, the Internet, radios, telephones, and other means of data transfer, the forward-based people could see and hear their counterparts at Langley and from there, could "lay hands on" and "reach back" to get the best subject matter experts all over CONUS... [15]

Over the initial periods of the experiment, the JFACC transited to the AOR with a team of 20 AOC key staff members. Using a special Boeing 707 called "Speckled Trout," the JFACC was able to monitor and issue directives from this airborne platform while enroute to the theater. This was made possible by a new antenna being tested by Boeing called GBIS. "The antenna was developed by Boeing and is capable of receiving up to 1.3 megabytes of information per second. The high transfer rate allows timely receipt of large amounts of battlefield information into an aircraft." [16]

Notably, there is not only an increasing acceptance and emphasis on remoting operations in this experiment and later exercises such as JFEX 99, but more positive feedback with the exercises.

THE ARGUMENT

This era will be one of accelerating technological change. Critical advances will have enormous impact on all military forces. Successful adaptation of new and improved technologies may provide great increases in specific capabilities. Conversely, failure to understand and adapt could lead today's militaries into premature obsolescence and greatly increase the risks that such forces will be incapable of effective operations against forces with high technology.

- Joint Vision 2010 p. 11

When you think of the word expeditionary, what comes to mind? Expedite literally (Latin) means "to free one caught by the feet"[17]. Perhaps it is time to start thinking in terms of freeing our feet. It is time to grow wings and put our effort into rounding out this concept we call Expeditionary Air Force. The AOC remains our concrete shoes.

A friend of mine once told me that the art of packing a suitcase for a trip is to only bring what you definitely need, and not what you night need. The AOC is the USAF's

typical answer to crisis. When it comes to a contingency – we bring everything for fear of having to do without. For years we have been packing our "suitcases and toolkits" with cart blanche on how much we can bring. It did not hurt that we owned the airlift as well.

Technology allows us to change our way of doing business. As an Expeditionary Air Force we can provide the theater commander with the same tools in a much smaller package. Frankly, it will just depend on what we define as our suitcase. This paper advocates a suitcase, orders of magnitude smaller. Some will look at it as a thimble.

As discussed above. the U.S. Air Force is currently looking at the process of remoting many of the AOC functions to cells located in the U.S. to leverage information technology and create a lighter force structure and forward presence. Ironically, the focus still remains on a ground-based structure. Since we have demonstrated that technologies to allow the JFACC to remain in control of decision process while enroute to the theater of operations, why should we base this operation on the ground? With the proliferation of missile technology, and the evidence that future adversaries will most likely use asymmetric means to deny U.S. forces entry/lodgment in the region, why do we continue to pursue an operational warfighting structure that is dependent on a ground based infrastructure?

To be truly "expeditionary" we must be able to deploy our combat power into a theater rapidly and with as much indigenous capability as possible. In their essay on "The Coming of Age of Air and Space Power", Goure and Cambone examine a "New Paradigm" for the conduct of warfare in the third dimension. In this landmark vision of Air and Space Power of the future, they foresee that the proliferation of WMD and the

enemies' pursuit of asymmetric strategies may deny U.S. forces the opportunity to conduct our traditional methods of warfighting.

> "This approach would thereby seek to avoid the *set piece* nature of the existing predictable model, in which the United States gains a lodgment and then attacks out of it, thereby giving the enemy time to establish his defenses and employ long-range strike systems before the United States can assemble an effective defense."[18]

In essence, we need an AOC that does not need to be set up or built up. We need something that arrives on scene ready to go. Likewise, Jeffery Cooper points out in his essay that:

> "...the new American way of war must also provide a capability for "forcible entry" instead of administrative insertion into a theater. Our new campaign model must also incorporate the capability to operate in *immature*, unprepared theaters without extensive preparation or host nation support; further, we must be prepared to conduct these deployments in non permissive environments."[19]

These authors assert that under this new paradigm of warfare, air and space forces will be able to immediately begin offensive operations when they arrive in theater. This concept is *not* how we conduct operations now. This concept is a marked departure from our doctrinal way of implementing air and space power. This new vision does not emphasize the halt and build up phases of the operational level of war, rather it focuses on going to the heart of the matter immediately. It advocates immediately striking critical command and control nodes and then moving on to "shatter his fighting units' cohesion"[20].

Many of the concepts that the Center for Strategic and International Studies vision proposes are years off. The ability to realize many of these proposals will take years of investment and fundamental changes in the way we acquire and implement colossal leaps

in technological advances. It will change our doctrine on how we apply and integrate technologies with new and old platforms, and "systems of systems". The Airspace Expeditionary forces were designed with this new vision firmly in mind. How then, can we believe that the Air Operations Center we are developing can support this new vision? Even new approaches to the AOC do not go far enough in reducing the size of this TPFDD dependent behemoth. A land based AOC remains a ball and chain around our rapidly deployable AEF's.

While it is nice to dream of the future and of the whiz-bang systems that are promised down the road, the future promises to be an era of continually dwindling resources and budgets. Hoping that this trend does not continue, hoping that we get the funding for these new high tech systems, and hoping that our archaic and unresponsive procurement process is revised does not look likely in the near term. As an Army classmate of mine eloquently pointed out... "hope is neither an approved method or an acceptable course of action." As military planners then, how can we enhance our warfighting capabilities with our legacy systems? How can we get our systems ready to meet the challenges of Joint Vision 2010? The answer, as it applies to the Air Operations Center, is to use current systems combined with new technologies to create a leap forward in capabilities that will free the Air Operations Center from its current state. This new concept is not with out costs. This new concept AOC suggests not only a new way of fighting, but also a fundamental change in the way theater air operations are controlled and implemented. It suggests not only a way to capitalize on the information revolution, but a change doctrinally in how we fight. The Expeditionary Air Forces have leveraged technologies such as precision guidance and stealth to create a new way of

fighting. What I am suggesting is a change of force structure and missions for current platforms, leveraging information technology in order to implement a new way to plan and control the air war.

THE PROPOSAL

We have a number of assets that currently manage aspects of the air war. Much of the operational level of the air war execution is already conducted from platforms such as Rivet Joint, JSTARS, ABCCC, and AWACS. In the near future, the Airborne Laser (ABL) will augment these with Theater Missile Defense (TMD) capabilities housed in a 747-400 platform. These platforms currently operate in the tactical and operational levels of war.

During the Cold War, and even for some time after that the RC-135 operated mostly at the strategic/national level of authority. Periodically it would provide information to the theater CINC at the operational level. ABCCC and AWACS were designed as tactical platforms, and as Maj. Thomas Nine points out in his essay *The Future of USAF Airborne Warning and Control: A Conceptual Approach*, "Time, has evolved these assets roles and missions"[21]. In fact he goes on to demonstrate that AWACS has under gone three[22] changes to it roles, missions and capabilities. Over time, the missions of these platforms evolved from the tactical to operational levels of war and back again. With the proliferation of stealth, improved passive sensors, and JTIDS, the mission for AWACS will certainly become more advisory in nature. Many of these legacy systems are forecast to be in the operational inventory for some time to come. For example, "... the USAF sees the E-3 (AWACS) remaining viable until retirement between 2025 and 2035, provided the proper sustainment funding occurs".[23]

When the Cold War ended, the Rivet Joint (RC-135) community made great strides in redefining their mission to support the operational and tactical level commanders. While intelligence safeguards have prevented this platform from evolving into providing anything but rudimentary tactical level support, the community has successfully redefined its mission to support the theater commander at the operational level of war. It is evolutions of systems such as the RC-135 and the E-3, which we should look to as a model.

REDEFINING THE AOC

While experimentation continues for both a split and in the longer term a "distributive AOC"[24] , it is the purpose of this paper to demonstrate that the forward element should be divided up functionally among airborne assets such as Rivet Joint, AWACS, JSTARS, ABCCC instead of being ground based. Moreover, when ABL becomes operational, it should form the nucleus of the TMD expeditionary cell.

This proposal does not examine the fine details of such an endeavor. The specific divisions, equipment, costs and employment characteristics are beyond the scope of this paper. The question really remains if we should do it or not. There is an assumption that based on this research. That assumption is that today, information and communications systems technologies are capable of providing the architecture to make this vision a reality. That in mind, that we must take this step towards an interim solution to leveraging information in the battlespace over the next 5 to 15 years. An airborne AOC will demonstrate the following:

Benefits

1. Footprint Reduction -- Implementation of this concept creates savings in forward presence. With limited space on board these platforms, the amount of forward staff would be constrained as well. This concept would define the "suitcase" we could bring. Aircraft seat availability will force us to only take a few key people. In the case of most of these platforms, staffs would be limited to 2-3 key people. Platforms such as AWACS and possibly the Airborne Laser will be able to accommodate larger cells depending on mission configuration. In essence, this airborne battle staff becomes the "worst case" environment. Predictions about the possible battlespace of the next 5 to 10 years clearly demand that we be prepared to conduct this kind of operation. This proposal envisions also allows TPFDD adjustment to bring the full AOC into theater later in the crisis if necessary. It is important to emphasize that this proposal gives us a base operating capability we can count on. It envisions the AOC being able to enter the AOR with a small footprint and a short tail. It prevents the JFACC from having to wrestle with the CINC when he changes the TPFDD to get more shooters, bullets, or more of something else into theater. Perhaps *Joint Vision 2010* states this best: "The combination of seamless operations with reduced "buildup time" and a smaller, more widely dispersed footprint will make it much more difficult for an adversary to find and attack our forces."[25]

2. Network Centric – While this concept is more "nodal" than network centric, it is an interim step that will move us closer to that ultimate goal. It drives the Air Force to network centric warfare. It divides the staff up among the airborne assets and nets them together. This creates a true networked operations cell. Dispersing elements of the forward staff among these platforms creates an environment that applies the hive theory to the staff as well as the sensor platforms themselves. This dispersal de facto creates a more survivable and mobile AOC.

3. Increased Survivability – By virtue of its mobility and dispersal, the AOC becomes a more survivable structure when faced with an enemy who may use asymmetric means to attack the fixed site. The proliferation of theater ballistic missile technology makes "rear areas" of operations increasingly vulnerable and lucrative targets. Moreover, this concept gives the JFC the capability to station some of these assets outside the theater of operations or in more secure areas as the need arises. In austere theaters, sustainment may be more easily accomplished for these assets in other locations out of theater. Their mobility and range allow for their rapid insertion in times of crisis. Data links, transmission relay, and other standoff capabilities allow for a wide range of options for employment and self-protection.

4. Tailored Response Capability – The mix of platforms assigned to the particular crisis will serve as means to tailor the response package sent forward. Equally important however, is the fact that the complete forward AOC, as an airborne element, is a "worst case scenario". Though this concept attempts to establish a baseline airborne capability, some elements could be land, or ship based. Investment in the communications and data processing hardware/software of suitable size for airborne

operations creates opportunities throughout the spectrum of Joint Warfare to employ and base operations throughout the theater.

5. Flattened Command Structure -- Flattens the operational decision making tree by overlaying two layers of command, the operational and the tactical/operational. Though this compression of the chain of command has inherent difficulties, the Navy exercises these types of command relationships on a daily basis. The leveraged decision time reduction may well offset the command relationship complications. For the first time in the independent air forces history, it returns the operational commander to the battlefield. The JFACC (or his rep) truly becomes the on-scene commander/warfighter.

6. Tactical Communications – This is a deceiving statement. It does not imply tactical decision making by the operational commander, rather it creates the reality of "real-time" picture of the unfolding operation. The JFACC/Air Component Commander/decision authority does not watch the battle unfold near real time. He/she watches it unfold in real time. With more MOOTW operations on the horizon and the chances of tactical operations having operational or strategic impact - the decision authority is closer to the action where he can exploit, terminate or tailor air operations according to the CINC's intent. While I am an advocate of space and of space based sensors, for those who are unfamiliar with aerial combat ... seconds do matter. Seconds are so significant that nothing replaces real time UHF communications.

7. Limited Ground Operations Capability -- Many aircraft can have cooling carts applied to them on the ground to give a bare base operating system (some communications and system capabilities) as well (minus their imbedded sensors).

Drawbacks

1. Entry Costs – would be the most significant factor. Leveraging current sensor and communications platforms would reduce long range costs of creating completely new platforms.

2. Coalitions – this highlights an endemic problem with networked warfare. If you have a complete sensor network established with these platforms.... Can coalition representatives fly aboard the platforms? Data filtering software and access will be a critical for developing the Common Operating Picture necessary to exploit these emerging technologies.

3. Limited scope -- This concept while valid for initial deployments into hostile or denied access theaters, is not cost effective in permissive or low risk environments.

4. Weather -- Somewhat vulnerable to weather (Reference benefit 7).

5. Micro-management -- Typically these platforms operate simultaneously at the operational and tactical levels of war. This would make it very easy for micro management of the tactical situation from the operational level. Doctrinally, we will have to test, evaluate and implement way to fight this concept.

6. Jamming/Disruption -- Currently the one of the biggest challenges with forces controlled remotely, and one of the biggest problems with planning operations remotely is the susceptibility to jamming of transmitted data, possible satellite interruption and the delay of bulk transmission of data via satellite. With the installation of "informational warehouses" aboard these platforms, they could serve as a rapidly accessible information node. These platforms can easily relocate into other satellite footprints to download data and relay it through the tactical/operational level net.

7. Service Bias -- It is possible that other services might think that this is just another plot for the Air Force to isolate them from the JFACC. In reality however, the most survivable force structures in the future will depend on widely dispersed command elements that are linked together real time. Joint Service cooperation will be most important in the rear areas where the bulk of the planning will go on. In execution, the JFACC's real time decisions will be more likely based on weapons system capabilities and armament loads.

8. Cultural Problems with Remote Operations: In the near term, breaking the paradigms and cultural/psychological barriers to remote operations will offer our most hidden challenge. In essence,

> "As the battlefield becomes more digitized, the systems more automated, and—especially—as battle becomes more dispersed (a centuries-old trend), an overriding requirement on both the commander and the technical architecture is to maintain, and strengthen, human relationships, mutual support and the mutual understanding on which it is based, laterally and in both directions in the command structure...We believe the future technology *enables* and future battle *demands*, a wider and more diverse set of command relationships."[26]

Technologies to Realization

The Common Operating Picture – Currently under development is the single greatest enabler to the concept of an airborne AOC. That is the Common Operating picture.

Counter Argument

Ironically, the best counter argument to this proposal can also claim its roots in *Joint Vision 2010.* For the near term, it seems that advocates against an airborne Air Operations Center will cite that the best way to ensure the Centers survivability is through integration of the sensors discussed above and in-depth defense as emphasized in Joint Vision 2010. Specifically that "the primary prerequisite for full-dimensional protection will be control of the battlespace to ensure our forces can maintain freedom of action during deployment, maneuver and engagement, while providing multi-layered defenses for our forces and facilities at all levels."[27] Though somewhat satisfying, this argument presumes that an enemy will not be able to achieve operational surprise, and that all asymmetric threats will be able to be countered with the force entry or initial base force.

SUMMARY

The Airborne or Expeditionary Air Operations Center is a concept of operational employment. This concept brings to life a light, mobile, survivable, relocatable, network centric, Combat Ops AOC to theater with an expeditionary force. It is austere, but it keeps the Air Force poised to meet all contingencies with our Air Expeditionary Forces. In its essence, it proposes a streamlined combat AOC that is deployable with the expedition. It gives us the flexibility to deploy this capability into theater with little reliance on the TPFDD process. If a more robust AOC is necessary, its arrival can be delayed until less critical phases in the deployment plan. This concept is designed to overlay one structure on another, reduce the operational planning staff that moves forward, compress the decision structure, and leverage similarities in C2 structure and technology. In most cases, it will be tailored just by what aircraft we deploy to the

contingency, and give the operational commander (JFACC) more direct, real-time visibility over his forces. The largest cost is in developing a true Common Operating Picture and defining doctrinally. This is a completely new approach to employing the AOC that is based solidly on the predicted threats to the warfighting theater of tomorrow and demonstrated capabilities for the near term future. But when it really comes down to it, isn't the current AEF restructuring this revolutionary as well?

CONCLUSION

As communications and information architectures have become more capable, the driving forces of increasing asymmetric threats are making even current plans for increasingly untenable. Embedding the operational level of the war with the tactical/operational appears vexing. The gains however in these streamlined operations are enormous in Time, Space and Force.

Implementation of this concept would create a rapidly deployable baseline AOC to the JFC and JFACC with minimal TPFDD impact. It would flatten and reduce the in-theater C2 structure, and decrease decision time. This proposal is an interim step towards network-centric warfare; it is not an end state. In fact it is more nodal that network centric, but it is a leap in that direction. Though this innovation will may be costly, in the short term, it is right for the expeditionary operations of the near future and most importantly, it develops a capability that is in line with Joint Vision 2010. In the end, it is far less costly than developing an entire system of systems to exploit information advances. For airmen, network centric warfare at the operational level is possible today. It is right for the Expeditionary Air Force. Today it is achievable.

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Notes

[1] Concept for Future Operations, (U.S. Government Printing Office, Washing ton D.C., May 1997), p 24.
[2] Ibid., 23.
[3] *Joint Vision 2010*, (U.S. Government Printing Office, Washington D.C., 1995), p 15.
[4] David S. Fadock, *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis*, (Air University Press, Maxwell Air Force Base, AL, Feb 1995), p 16, quoting John R. Boyd, "Organic Design for Command and Control" (unpublished papers, Air University, May 1987), 23. John Boyd states, "A similar implicit orientation for commanders and subordinates alike will allow them to diminish their friction and reduce time, thereby permit them to exploit variety/rapidity while maintaining harmony/initiative, thereby permit them to get inside the adversary's O-O-D-A loops, thereby magnify adversary's friction and stretch-out his time, thereby deny adversary the opportunity to cope with events/efforts as they unfold." See also *Concept for Future Joint Operations: Expanding Joint Vision 2010* (67), Marine Corps doctrine *(MCDP* 6, 63).
[5] Concept for Future Operations, (U.S. Government Printing Office, Washing ton D.C., May 1997), p 23.
[6] David S. Alberts, John J. Garstka, and Frederick P. Stein, *Network Centric Warfare*, Center for Advanced Concepts and Technology, August 1999), p 3. Describes Network Centric Warfare as "the best term developed to date to describe the way we will organize and fight in the Information Age."
[7] William S. Cohen, Secretary of Defense, "Report of the Quadrennial Defense Review", *Joint Forces Quarterly* (U.S. Government Printing Office, Washington D.C., Summer 1997) p. 8.
[8] Ibid.
[9] Ibid.
[10] *Fiscal Year 1999 Recruiting and Retention*, Department of Defense Press Release, 5 Oct 1999, online, Internet. http://www.defenselink.mil/news/Oct1999/b10051999_bt462-99.html
[11] For simplicity of reference, throughout this paper, the terms Joint Forces Air Component Commander (JFACC), Joint Forces Commander (JFC), and Air Operations Center (AOC), unless otherwise noted, should be assumed to apply equally to joint or combined forces. Thus, for the purposes of this study, these terms will be assumed to include functions performed by the Combined Forces Air Component Commander (CFACC), Combined Forces Commander (CFC), and either a Joint AOC (JAOC) or Combined AOC (CAOC). Likewise, unless otherwise noted, JFC will be assumed to be any commander in chief (CINC) of any unified or specified combatant command, exercising COCOM (combat command authority) as specified by Title 10 ["Armed Forces"] *United States Code*, Section 164. In this paper, the term JFC may include Combined Forces Commander (CFC) functions or those of a Joint Task Force Commander (JTF/CC). For further description of JFC and JFACC command authority, see *Joint Publication 0-2, Unified Action Armed Forces (UNAAF)* (Washington, DC: United States Joint Chiefs of Staff, 1992) and Air Force Doctrine Center, *Air Force Doctrine Document (AFDD) 1, Air Force Basic Doctrine* (Maxwell AFB, AL: Air Force Doctrine Center, 1997), p. 13. Hereafter referred to as *AFDD* 1.
[12] David S. Alberts, John J. Garstka, and Frederick P. Stein, *Network Centric Warfare*, Center for Advanced Concepts and Technology, August 1999), p 110.
[13] Ibid.
[14] Bill McQuillan, *Speckled Trout takes part in first Expeditionary Force Experiment*, AFFTC Public Affairs, On-line, Internet, November 1998.
[15] John A. Tirpak, Senior Editor, *The Long Reach of on Call Airpower*, Air Force Magazine, December 1998.Online, Vol. 81, No 12, Online, Internet, http://www.afa.org/magazine/1298airpower.html
[16] Bill McQuillan, *Speckled Trout takes part in first Expeditionary Force Experiment*, AFFTC Public Affairs, On-line, Internet, November 1998.
[17] Webster's New World Dictionary 4th Edition, (Macmillan, New York, 1999), p 500.

[18] The Center for Strategic and International Studies, *Air and Space Power in the New Millennium*, (Washington, D.C. 1997), p 30.
[19] The Center for Strategic and International Studies, *Air and Space Power in the New Millennium*, (Washington, D.C. 1997), p 75.
[20] Ibid., 79.
[21] Nine, Thomas W. (Maj., USAF), *The Future of USAF Airborne Warning & Control: A Conceptual Approach*, p.
[22] Ibid.
[23] Lt. Col. Bart Dannels, AWACS' Mission Challenges Executive Summary, staff briefing, December 1997, 1.
[24] Lee T. White, Stretching the Umbilical Cord: The Theory, Practice and Future of the Split operations Center. (Air University, Maxwell Air Force Base, AL, June 1998) p 109.
[25] *Joint Vision 2010*, July 1996, p. 21
[26] Defense Science Board 1996 Summer Study Task Force on Tactics and Technology for the 21st Century, (Washington D.C.: Office of the Secretary of Defense, October 1996) V12-V14.
[27] *Joint Vision 2010*, p. 22