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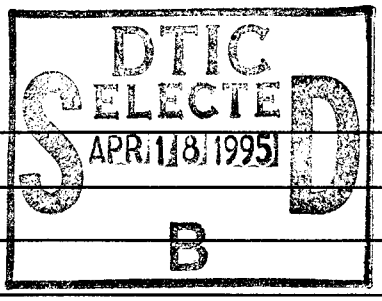

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Composite Wings: The Right Tool for The Job?

by

James W. Hyatt, Major, USAF

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

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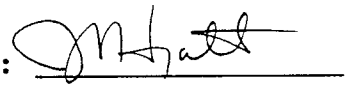
Signature: 

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Abstract of

Composite Wings: The Right Tool for The Job?

United States Air Force (USAF) reorganization in 1991-1992 resulted in a different appearance to the nations land based air forces. One change from this reorganization was tailoring of some USAF wings into composite wings to offer tailored forces for specific missions. While composite operations is not a new concept for naval aircraft aboard a carrier, Marine Air when assigned to a Marine Air to Ground Task Force (MAGTF), or even for USAF aircraft in combat operations, it is new for the peacetime Air Force. This paper addresses responsiveness and mobility advantages and theater organization options realized by theater commanders with the advent of peacetime composite wings.

Table of Contents

SUBJECT	PAGE
Title Page	i
Abstract	ii
Table of Contents	iii
Introduction	1
Thesis	2
Composite Forces	3
The 366th Wing	4
Composite Wing Study	5
Responsiveness	7
Mobility	8
Operations	10
The Air Tasking Order	10
Options for The Theater Commander	12
Conclusion	13
Notes	15
Bibliography	17

INTRODUCTION

The United States Air Force (USAF) reorganized its wing level structure in 1991-1992. While each wing reorganized internally, a select few wings were organized to achieve specific warfighting capabilities previously not resident at the wing level. These wings are composite wings that bring together weapon systems in order to train in specific mission areas. The force size and composition of these wings are tailored to meet envisioned mission requirements.

The 23rd Wing is a composite wing poised to fight the air-land battle in close concert with the US Army. Focusing on close air support (CAS), air interdiction (AI) and airlift,[1] the 23rd Wing utilizes A-10, OA-10, F-16C, and C-130 aircraft to accomplish its mission. The wing is located at Pope AFB which shares a common border with Ft Bragg, home of XVIII Airborne Corps and the 82nd Airborne Division. This allows close interaction with some of the ground forces the wing is tailored to support. The 52nd Fighter Wing is a composite wing located at Spangdahlem Air Base, Germany. This wing has F-16C's, F-15C's, an A/OA-10 aircraft. While the wing assets function in concert with each other, it is as much a matter of composite basing to reflect the overseas drawdown of forces as it is a tailored force for a specific mission. United States Air Forces Europe (USAFE) refers to the 52nd Wing as a multi-aircraft, multi-mission wing.[2] The 366th Wing (often referred to as the 366th Air Intervention Composite

Wing) was established in the spring of 1992 as a quick response, land based air force able to project an intervening force to any theater. The 366th Wing has a squadron of F-16C's, a squadron of F-15C's, a squadron of F-15E's, a squadron of B-1B's, and a smaller than usual squadron of KC-135's. This force mix allows the aircrews to train like they should fight, integrated with other dissimilar airborne assets. Daily training for composite wings usually involves training with assets internal to the wing. The lessons learned regarding asset integration, however, fosters a thought process that extends to joint or coalition involvement.

While composite training increases overall warfighting capability[3], these flying training opportunities are not what make this wing unique. The increased warfighting skills can be and often are achieved by monolithic units when given the same training opportunities.

Thesis

The unique capability possessed by the 366th Wing is its ability to put land based air forces in a theater quickly and establish an Air Operations Center (AOC) to coordinate all aerospace assets. The Wing routinely trains with the flying units exercising the missions from an air tasking order (ATO) produced by the AOC. The ATO produced by the 366th AOC routinely tasks assets that could augment the 366th Wing. The 366th Wing Commander trains to function as a Joint Force Air

Component Commander (JFACC), or if required, as the Joint Force Commander (JFC). This quick response force with its embedded ability to function as the JFACC or JFC and staff gives theater commanders greater flexibility in organizing their areas of responsibility (AOR).

COMPOSITE FORCES

The 366th Wing is addressed in this paper as the standard bearer for composite wings. This is not meant to denigrate other composite wings. The 366th Wing is addressed because it has been operating as a composite wing for the longest period of time and, consequently, has the most information available.

As previously mentioned, the 52nd Wing is composite in its basing but not necessarily in its mission accomplishment. The 23rd Wing plans to perform its mission by execution of mission type orders (MTO) versus an ATO. "By assigning an MTO to the 23rd Wing instead of the regular air tasking order (ATO), we have the flexibility to decide what weapons we'll employ, where and when (within the limits of the MTO)".[4] The 23rd Wing utilizes a composite wing operations center (CWOC) to then develop a smaller ATO for the air assets it will control. The intent is to shorten the decision cycle and provide more responsive support to the land forces commander.[5] This concept is similar to that employed by Marine Air in a Marine Air to Ground Task Force (MAGTF). Based on the 1986 Joint Chiefs of Staff (JCS) Omnibus Agreement for Command and Control of USMC TACAIR in Sustained Operations Ashore a MAGTF

commander retains operational control of his organic Marine air assets.[6] While the JFC has authority to assign missions to Marine air to ensure unity of effort toward accomplishment of the mission, most accept that, for interoperability considerations and training familiarity, Marine Air should be the first choice to fulfill Marine requirements for air support.

A unit that works from a MTO is able to focus on a specific portion of the operation. Unless the operation is of small enough scale and scope to have all the assets operating under a MTO, a JFACC and his staff must be ready to coordinate the entire air operation, including that portion serviced by a MTO. The JFC can realize increased flexibility and decentralized execution of air operations through the use of a unit that operates from a MTO. A unit that can develop and coordinate an ATO offers the option to have centralized control of the overall air operation with decentralized execution.

THE 366th WING

The 366th Wing has advantages over a similar assembled force in both mobility and operations. This wing is designed to project power faster than could be accomplished by individual squadrons that are part of monolithic wings. As with most statements that purport to show a measurement of effectiveness (MOE), there are certain assumptions and limitations that must be understood. The 366th Wing force

complement assumes eighteen each of F-16C's, F-15C's, F-15E's, six KC-135's, and the AOC. For comparison to a comparable force from monolithic wings, individual squadron data from existing Timed Phase Force Deployment Data can be utilized. To compare the wings AOC to a similar unit is more difficult. The most closely aligned unit would be a Numbered Air Force Quick Response Package (NAF/QRP). This brings us to our first limitation. The 366th Wing AOC is a smaller unit than a NAF/QRP. As a force tailored for intervention in a crisis scenario the 366th Wing can run the AOC and function as the JFACC and his staff for a limited force size. This force size would be dependent on the force composition (366th units augmented by other aerospace assets). If all units are to be fully tasked via the ATO, the maximum force size is that which equates to approximately 300 missions per ATO (roughly 24 hours). This is a capability not resident in monolithic wings. It is, however, less total capability than that possessed by a NAF/QRP.

COMPOSITE WING STUDY

Air Combat Command (ACC) Studies and Analysis Squadron (ACC XP/SAS) compared the 366th Wing with a comparable monolithic force.[7] This currently unpublished analysis originated from a General Accounting Office 1992 Composite Wing Study directing development of measurements of effectiveness (MOEs) for a comparative cost analysis. The ACC XP/SAS study looked at four areas: Responsiveness--time to

respond to a crisis; Mobility--amount of airlift required and number of personnel deployed; Operations--mission accomplishment and rate of attrition; and Cost--of operations, support, and training. The operational commander, when faced with a crisis, will be most concerned with the responsiveness, mobility, and operations aspects. Cost is a strategic question to be answered by the equipping service component. When the time arrives that a JFC is considering use of a specific force capability, monetary cost is not a major concern. In the area of operations, the JFC should be most concerned with any capability difference that one force brings to the fight.

Responsiveness and mobility are quantifiable areas where the 366th Wing can be compared to similar forces. Another tangible feature is the length of the commanders decision cycle. Reduction in the time associated with the decision cycle allows a military force to maintain a higher operational tempo than its adversary. A higher operational tempo can translate directly to the ability to maintain the initiative and thereby confound the enemy commander's decision cycle.

The ability to dictate the operational tempo combines with certain force structure options to provide the theater commander with added flexibility in his choices of theater organization. A faster ATO development cycle translates to a faster execution of the commander's decision cycle.

Responsiveness

Responsiveness measures the length of time required to respond to a crisis situation. Data for the ACC XP/SAS study was taken from the Wartime Mobilization Plan, HQACC XPJP, Theater Operation Plans, the 366 Wing Decision Makers Guide, and the 12th Air Force "How We Fight" Brief. The MOE used was the total time required from strategic warning to sustained offensive operations. The assumptions were that there would not be an enroute attack, that airlift is available, that the National Command Authority/JCS would use the same amount of time to make the decision to employ US forces for either force selection, and that the deployment was in response to a crisis action vice a major regional conflict (MRC).

The 366th Wing is designed to respond to a crisis situation. The wing has pre-packaged the air assets to facilitate quicker tasking and sourcing of assets. This allows the wing leadership to begin response to tasking within two hours. For the ACC XP/SAS study a 24 hour period was allotted for higher headquarters tasking and sourcing of units from monolithic wings.[8] This trims 22 hours from the response time required.

The 366th Wing trains to operate with a minimum of 48 hours strategic warning as opposed to the more standard 72 hour warning allowed to monolithic units. Training to this higher state of responsiveness is questioned by some as an unsustainable level of readiness. This capability is not the

product of an increased tempo or greater day to day workload. This benefit is a result of a synergy that stems from prior planning, training, and exercising that is accomplished by the 366th Wing.[9] Since monolithic units are not co-located and do not know in advance with which units they will deploy, they do not have the opportunity to develop a coordinated response.

With the embedded command, control, communications, computers and information (C4I) package inherent in the 366 AOC the time required for the composite wing to deploy, build an ATO, and conduct mission planning is advertised as 58 hours. This compares with 96 hours for a comparable monolithic force[10]. The embedded C4I package reduces the time required because of reduced size, weight, and lesser numbers of people to load. This facilitates quicker marshalling and loading. Finally, the institutional knowledge of 366th force composition and size enables greater C4I pre-planning.[11] A NAF/QRP while responding to a crisis must ascertain what forces they will have available and what their specific capabilities are.

These responsiveness advantages allow the 366th Wing to respond to a crisis 84 hours faster (22 hours tasking time, 24 hours strategic warning, and 38 hours of deployment, ATO buildup, and mission planning) than a comparable force assembled from monolithic units.

Mobility

A second significant and unique advantage of the 366th

Wing is a reduction in airlift required. This is for multiple reasons.

First, units in the 366th Wing are able to share certain maintenance and munitions functions. This reduces personnel and equipment requirements. A monolithic force does not have this same luxury. Since they do not know in advance with which other forces they will deploy, they cannot coordinate cross utilization of people or equipment.

Second, the embedded C4I of the 366th AOC gives a more streamlined mobility package than a NAF/QRP. Since the 366th AOC is also the wing operations center, the wing communications package is combined with the C4I package. Additionally, the embedded C4I package travels primarily aboard the wing's organic KC-135 aircraft.

Finally, the 366th C4I package requires 54 people to operate the AOC. The NAF/QRP requires 233 people. This is because the NAF/QRP is designed for a greater width and depth of operations.[12] The 366th Wing plans to operate from one or two deployed locations, reducing the maintenance, munitions, and communications requirements. Monolithic forces and a NAF/QRP must be prepared to operate from multiple deployed locations, with associated ramifications on equipping, staffing, and communicating at each location.[13]

These mobility advantages result in a 31% reduction in required C-141 equivalent loads.[14] A comparable assembled force from monolithic units requires 106 C-141 equivalent

loads vice 73 C-141 equivalent loads for the 366th Wing.[15]

Operations

The opportunity to train regularly with the forces you will fight with has obvious advantages. The ACC XP/SAS study compared the 366 Wing results at Green Flag '94 with the results of comparable forces in the same exercises during two other periods. Fortunately, the three exercise periods were similar in terms of force composition, threat, and mission tasking.[16] While all measured areas were favorable to the 366th Wing, this is essentially a single data point. It would not be prudent to draw any conclusions based upon a single data point.

THE AIR TASKING ORDER

A complaint lodged against the ATO process, as executed in Desert Storm, was its perceived lack of responsiveness to rapidly changing conditions.[17] This perceived lack of responsiveness is in fact a multi-faceted problem. It stems in part from ground commanders not getting all the air support they requested. This was sometimes due to some air assets being assigned higher or equal priority missions elsewhere. The other is a result of an elongated decision cycle associated with the ATO.

The JFACC is responsible to apportion his air forces according to the JFCs guidance and intent. In Desert Storm the JFACC briefed CINCCENT each night on the next days plan, including what targets were to be hit.[18] Since CINCCENT was

also operating as the overall land forces commander, he had opportunity to re-direct the air effort if he desired.

Some mission types require more flexibility in targeting than do others. Fixed, strategic targets are generally not fleeting in their windows of vulnerability nor in their importance to the overall operation. CAS or direct air support is at the other end of the flexibility spectrum. An important CAS target is important immediately because either allied lives are in jeopardy or the success of the mission lies in the balance. This is one reason why the 23rd Wing, and Marine Air assigned to a MAGTF, operate off MTOs. They can have greater flexibility and be more responsive to the more immediate needs of the land forces commander. As forces with a primary mission tasking of ground force support, responsiveness is critical to their success. This does not mitigate the need to shrink the ATO cycle as much as practical for other missions.

Another problem associated with the ATO process in Desert Storm was the lack of a compatible joint information network for distribution of the actual ATO document. The USAF used a Computer Aided Flight Management System (CAFMS). The Navy did not have CAFMS or any ability to receive the ATO electronically.[19] As a result, naval air forces had to rely on the ATO to be hand carried to them, thereby delaying the process. The Marines could receive the ATO electronically but due to computers that were older the process was slow and

cumbersome.[20] Work has been done in the years since Desert Storm ended to develop joint compatible information systems to facilitate electronic ATO transmission. The 366th AOC is suitably equipped for this task.

The 366th AOC, since it is designed to work with assets it is intimately familiar with and has a limit on the scope, breadth, and depth of its operation, has reduced its ATO cycle to 42 hours.[21] This is a 12% reduction from the 48 hour ATO cycle in Desert Storm.[22]

OPTIONS FOR THE THEATER COMMANDER

Composite Wings allow the theater commander to have varied options for direction of the air operation. The 366th Wing has the ability to respond to a crisis quickly with ATO generation capability. It can serve as the nucleus of the air coordination effort until more robust forces arrive in theater. In a large scale crisis the 366th Wing may deploy to provide an intervening force. It can coordinate joint and coalition air operations. If the operation is small enough, it can serve as the JFACC and his staff. The 366th AOC could also serve as the JFACC staff for a JFACC from another service or another unit. This option would bear careful consideration prior to joining a commander and an unfamiliar staff in a crisis operation. If there was already a JFACC coordinating the air operation, the responsiveness of the composite wings provides land based air forces to bolster the forces on hand.

If operating as the JFACC and staff initially, the 366th

AOC might be consumed by a larger force, such as a NAF/QRP, as other units begin to arrive in theater. The 23rd Wing, a Marine Air Wing, or a Carrier Battle Group can take up a position in response to a crisis and carry out specific missions as suits their force composition and operational capabilities.

Another option available to a theater commander would be to open a second front from the air. This would be very similar to the 7440th Composite Wing (provisional) established at Incirlick Air Base, Turkey for Desert Storm. Under the operational control of Headquarters United States European Command (EUCOM) Joint Task Force (JTF) Proven Force was established and placed under the tactical control of US Air Forces, Central Command (CENTAF).[23] The 7440th Wing operated under orders that were similar to a MTO.[24] Based on the scenario and the type missions needed, any of the previously mentioned force concepts could be found well suited to the task.

CONCLUSION

Composite wings are not a new concept. Integration of complementary types of airpower is a logical extension of the argument for the use of combined arms. The USAF was successful in composite operations with JTF Proven Force. Marine Air Wings and Carrier Battle Groups have operated as composite forces for some time. What is unique about the peacetime organization of composite wings into the USAF is the

establishment of a tailored air force to respond to evolving crisis situations.

During peacetime operations the USAF has traditionally operated large monolithic wings to maintain certain economies of scale with a large overall force structure. While the total cost of operating as composite wings in peacetime must be weighed against the benefits, as the force structure draws down the need to maintain a capable fighting force is more critical than ever. The 366th Wing is more responsive with less airlift support required to place forces in theater. The embedded C4I component gives theater commanders a greater range of options in organizing combat air forces in the AOR.

The changing world environment portends a more volatile future. Forces that can respond quickly with a tailored force package will be of great value to theater commanders.

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6. Dwight R. Motz, "JFACC: The Joint Air Control 'Cold War' Continues...", Marine Corps Gazette, January 1993, p. 66.

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8. Ibid.

9. Ibid.

10. Ibid.

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17. Merrill A. McPeak, General, Chief of Staff of the United States Air Force, quoted by Chris J. Krisinger, "A Carrier Air Wing for the Air Force", Airpower Journal, Spring 1992, p. 36.

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