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Supporting the Future Total Force

A Methodology for Evaluating Potential Air National Guard Mission Assignments


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Summary

This analysis concentrates on new or enhanced opportunities for meeting combat support mission needs for the air and space expeditionary force (AEF) with a reduced active duty force where Air National Guard (ANG) manpower could be available. In order to meet congressionally mandated end-strength ceilings, the U.S. Air Force must eliminate approximately 40,000 active duty personnel in the next several years, without sacrificing the operational capabilities outlined in Department of Defense (DoD) and Air Force Planning Guidance.1 The ANG, on the other hand, will not undergo significant manpower reductions but will be affected by the Air Force force structure planning under way (in support of the QDR and BRAC) that calls for the retirement of a significant number of legacy aircraft, potentially leaving the ANG with a large number of highly trained, highly experienced personnel with no aircraft to operate and support (DoD, 2001, 2005b).2

In this report, we develop a methodology that can be used to investigate the role that the ANG may play in assuming some of the

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1 Current DoD Strategic Planning Guidance and the QDR specify that capabilities will be created to ensure homeland defense; deter aggression in four major areas of the world, and engage in a number of small scale contingencies if needed; and if deterrence fails in the four areas of strategic importance, to be able to engage in two major contingency operations (MCOs) simultaneously; with the ability to win one decisively while engaging in the other until the first is won; and then win the second MCO. However, DoD Strategic Planning Guidance for FY08 shifts the focus of the military toward irregular, catastrophic, and disruptive threats and capabilities while maintaining the ability to engage in two MCOs.

2 For example, the BRAC Commission calls for the elimination of the flying mission of a number of ANG flying units operating the A-10, F-16, C-130, and C-135 aircraft.
missions the active component may not be able to fully staff under current manpower constraints. Transitioning some missions from the active component to the ANG may be a way to meet that goal without significant cost to the total force. We evaluate mission area opportunities that would capitalize on, or leverage, ANG strengths and would provide effective and efficient approaches to achieving the desired operational effects—supporting the AEF construct from a total force perspective. The report presents a portfolio of potential missions, each with a range of implementation options that could be considered by Air Force leaders for assignment to the ANG.

**Analytic Approach**

As the Air Force continues to align the total force with its primary function—that is, to organize, train, and equip aviation forces primarily for prompt and sustained offensive and defensive air operations (USAF, 2003c, p. 43)—its ultimate goal is to match missions that support this function with providers to create the most effective total force response possible. Because the active component faces manpower shortages for critical missions and the ANG faces force structure reductions (leaving manpower available), some mission assignments could be transferred to the ANG without significant cost to the total force—employing existing Air Force personnel in mission areas required by DoD and Air Force guidance.

Building on past research (Robbert, Williams, and Cook, 1999; Tripp, Lynch, Roll, et al., 2006), we developed a decision framework to help identify a portfolio of roles and missions, currently supported by the active component, in which the ANG could participate supporting the AEF from a total force perspective. Using the total force perspective to develop an analytic framework, we focused specifically on (1) operational and combat support requirements; (2) existing and

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3 We did not consider contractor, civilian, host nation, or other types of mission support because we are looking at using existing personnel to meet existing mission needs, a zero cost alternative.
potential force and basing option; and (3) ANG goals, strengths, and limitations. As shown in Figure S.1, these three areas combine to create assignment criteria for missions, subject to a set of constraints in the active and reserve components. We used these criteria to develop a portfolio of candidate missions, concepts, and basing options. Once identified, candidate missions can be assessed to determine the staffing requirements for various alternatives within a mission and the associated personnel funding requirements for alternatives.\(^4\)

We implemented the analytic framework by using a decision tree to evaluate various roles and missions, subject to mission assignment criteria. From a total force perspective, we focused on the work processes within the mission area rather than on existing mission area assignments. As presented in Figure S.2, the decision tree can be divided into roughly five sections—nature of the mission, ANG strengths, ANG mission feasibility, deployment characteristics of the mission, and workforce requirements. Within each section, the questions in the decision tree help determine from a total force perspective

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\(^4\) We did not address those aspects of the ANG that do not figure into this assessment. Also, the framework does not so much answer the question “What missions should the ANG engage in?” as “What principles should the ANG consider when deciding how best to spend its energy?”
whether a potential mission provides a good match for the ANG, based on a number of factors.

After we evaluated the mission area using the decision tree, we determined whether or not the mission could be considered a strong candidate mission for the ANG (the last branch of the decision tree). However, even if a mission is “not a strong candidate,” the ANG may still be assigned that mission responsibility if, from a total force perspective, it is required for the good of the total force.

Potential ANG Mission Assignments

In conducting this research, we focused on the needs of the Air Force as a whole in achieving operational effects to enable the AEF. We investigated how the ANG could contribute to the warfighter mission in ways that would leverage ANG strengths and provide effective and efficient approaches in achieving the desired operational effects from a total force perspective. Although all the studies follow the same general methodology, they vary in amount of detail and specific analysis. Our goal is to present enough information to illuminate the potential new mission areas, not to complete four identical analyses.

The first analysis evaluates options for assigning portions of Predator operation and support missions to the ANG to facilitate the rapid absorption of this system into the Air Force inventory. In the second analysis, we evaluate options for assigning air mobility command and control missions supporting the Falconer Air and Space Operations Center (AOC) Air Mobility Division and functional AOCs, such as the Tanker Airlift Control Center (TACC), to the ANG. The third analysis evaluates options for assigning portions of Commander of Air Force forces (COMAFFOR) staff functions to the ANG. The fourth analysis evaluates the effect of using the ANG to conduct all or some intermediate-level maintenance (ILM) functions, also known as backshop maintenance, for active component flying units in addition to meeting ANG ILM requirements in the post-BRAC environment.

The use of the ANG in each of these missions could offset additional staffing requirements that may be needed in the active compo-
tent for these operations. Thus, the active component staffing could be used elsewhere—in other critical mission areas or toward end-strength manpower reductions—applying best employment practices to the total force. Each mission that we evaluate could benefit from deep knowledge and experience, strengths of the ANG.

We briefly describe each of the analyses.

**Predator**

The overall success of unmanned aerial vehicle (UAV) advanced concept technology demonstration (ACTD) programs and the use of UAV prototypes, including Predator, in recent operations have led to the rapid fielding of these vehicles into the Air Force inventory—without the usual planning afforded to the introduction of new weapon systems. In addition, Predator operations in Afghanistan and Iraq have shown that qualitative mission enhancements and operational efficiencies can be attained when some operational command and sensor exploitation remain in the United States. These reachback operations represent a new direction for Air Force command and control (C2) operations and raise questions of how to absorb these capabilities into the total force mix. In addition, potential applications of UAV systems in the homeland defense (HD) mission could further increase the size of the UAV fleet and complicate overall C2 operations. QDR and BRAC deliberations also raise many questions about the desired mix of mission assignments among the active and reserve components. (See pp. 21–33.)

We evaluated options for assigning portions of Predator operation and support missions to the ANG to facilitate the rapid absorption of this system into the Air Force inventory. The use of the ANG for this mission can offset additional staffing requirements that would be needed in the active component for these operations. Thus, the active component staffing can be used elsewhere—in other critical mission areas or toward end-strength manpower reductions.

We also examined the effectiveness and efficiency of options for the assignment of different mixes of operations and support responsibilities to the active component and the ANG for the Predator A. We developed the following options based on consideration of the Predator
end-to-end system operation and support requirements, the needs of the warfighter and the Air Force, and the comparative advantage and strengths of the ANG:

- The ANG could assume responsibility for Predator operations and support under current active component staffing rules.
- The ANG could assume responsibility for Predator operations and support using current contractor-accepted standards (cross-skilling).
- Launch and recovery elements (LRE) and ground control station (GCS) operations could be separated at individual units. GCS operations could be conducted centrally at one or two command and control sites that could be shared with the active component. In addition, this option includes examining the possibility of controlling multiple air vehicles from one control station. Multiple air vehicle control (MAC) could reduce staffing or could increase operational capability if staffing were not reduced.

The analysis has implications that are much broader than this single family of UAVs and could impact other operations. In summary,

- Current Predator operations are well suited for transfer to the ANG.
- Launch and recovery operations could be separated from the command and control of the air vehicles, thereby leveraging ANG strengths and enhancing multi-aircraft control.
- Employing cross-skilling policies that exploit ANG strengths could provide more efficient operations and support while maintaining a significant deployment capability (without mobilization).

**Air Mobility Command and Control**

Recent military operations in Afghanistan and Iraq have illustrated several problems associated with the planning and execution of airlift, exemplified by the backlogs of cargo and a lack of understanding of the airlift support request process (Tripp, Lynch, Roll, et al., 2006).
The Air Mobility Division (AMD) is responsible for planning, coordinating, tasking, and executing the airlift component of the theater distribution system. Recent operations have also shown that qualitative mission enhancements and operational efficiencies can be attained when some operational command and control remains in the United States (for example, the overall success of UAV reachback for operational planning, execution, and real-time data exploitation) (Tripp, Lynch, McGarvey, et al., 2006). These capabilities leverage a few forward-deployed personnel who help gather knowledge and sequence tasks for the combatant commander. Many current air mobility missions that require forward-deployed C2 capability could reach back for in-depth planning and execution support. These reachback opportunities represent a new direction for Air Force C2 operations and raise questions of how to absorb these capabilities into the total force mix. (See pp. 35–53.)

We evaluated the following options for assigning air mobility C2 missions supporting the Falconer AOC Air Mobility Division and functional AOCs, such as the Tanker Airlift Control Center (TACC), to the ANG:

- Providing augmentation for experience and additional manpower, using individual personnel or small groups of personnel deployed forward
- Providing augmentation using a unit-based, force-provider construct. Individual ANG units deployed forward would be tasked to perform specific processes or functions
- Assuming responsibility for air mobility command and control at regional AOC and TACC reachback locations with the support of a small forward-deployed active component
- Assuming responsibility for air mobility command and control (AOC and TACC) at a centralized reachback location with the support of a small forward-deployed active component
- Sharing mobility C2 responsibilities with the active component at regional or centralized reachback locations.
The AOC mission indemnifies ANG units with a critical capability that may be difficult for the active component to achieve given the need for experienced staffing and depth of operational knowledge to meet the tiered operational demand placed on AOCs.

The operational C2 mission also has implications for infrastructure and basing because many of these missions are performed via on-site augmentation, as an integrated split operation, or via reachback for supporting products and services with broad regional or global application. There may be value for basing command and control forces in regional centers that draw from several state ANG units. There may also be value in creating regionally managed local centers if there are key recruitment areas that the ANG can tap. Likewise, C2 and C2 support missions can be organized and presented in a manner that is output-blind to work location.

Although many issues associated with unit augmentation, reachback, and deployed in-garrison forces remain unresolved, there appears to be a consensus that the ANG could be beneficial to both forward presence and HD mission areas, thus extending the global reach of military power. However, new missions supporting the air mobility C2 mission require an understanding of how the ANG can use its strengths to add value and yet remain an ANG force. That means understanding how ANG forces are recruited, organized, sustained, and employed.

We also looked at trade-offs between establishing a strategic partnership between a supporting ANG unit and its client AOC, and establishing air mobility C2 providers that would work with all AOCs and combatant commanders having air mobility tasks to be done. This initial look found added value in the existing Falconer ANG-active component partnerships; it also recognized the importance of Air Combat Command and the Air and Space Expeditionary Force Center having sufficient flexibility in assigning C2 forces to combatant commanders. The analysis indicated that a single, centralized site would give ANG commanders greater flexibility in fulfilling emerging requirements with volunteers when deployment was a necessary part of duty. However, this flexibility is of less value when reachback is the primary method of performing work. There may also be long-term benefits to accessions and force management when the air mobility mission requirement can
be spread among several state ANG organizations. More work needs to be done, but this would appear to be especially important for state Adjutant Generals (AGs) with a group or wing-level air mobility force capability.

In summary, we found the following:

- Adding an AMD augmentation unit could extend current ANG Falconer AOC augmentation.
- Some AOC-AMD functional tasks may be well suited for a reachback support mission and ANG force presentation.
- TACC is a complex operation requiring a variety of air mobility support functions, many of which could be improved through ANG involvement.
- Utilizing the ANG to provide forces working C2 missions via reachback could yield gains in both effectiveness and efficiency.
- ANG growth in the air mobility command and control mission area may currently be constrained by the ability of the individual states and the National Guard Bureau (NGB) to release manpower from other missions.

**COMAFFOR Staffing Functions**

Recent military operations in Bosnia, Kosovo, Afghanistan, and now in Iraq have increased the awareness of the importance of the COMAFFOR staff (Lynch and Williams, forthcoming). The COMAFFOR staff is the operational commander’s instrument for shaping the combat power of the force presented across time, maintaining service administrative control, and providing combat support sustainment capability to maintain the desired level of combat power. In the past, COMAFFOR staffing requirements were drawn from personnel in a numbered Air Force (NAF). However, NAFs had limited staffing and some functional staff positions were not represented. This resulted in forces dealing directly with MAJCOM functional staff (what was called a “skip echelon” concept). During Operation Enduring Freedom (OEF), the decision not to deploy a COMAFFOR staff forward overburdened the
deployed combined air and space operational center (CAOC) personnel who were drawn into performing staff functions.\(^5\) (See pp. 55–71.)

Historically, the Air Force emphasis has been on the AOC and operational-level air and space tasking order (ATO) development and command and control functions at the expense of developing staff capabilities. After the initial campaign in Afghanistan, the need to build a forward staff was recognized by the combatant commander and supporting MAJCOM. This brought greater visibility to the need to provide a commander with not just an AOC, but also a fully functioning staff. These experiences influenced the present operational level headquarters restructure, now under way, resulting in the creation of the Warfighting Headquarters (WFHQ) (USAF, 2003b).\(^6\) The Warfighting Headquarters construct being implemented today is a component command structure that includes a Falconer AOC and a fully functional staff centered on COMAFFOR warfighting tasks.\(^7\)

We evaluated options for assigning portions of COMAFFOR staff functions to the ANG. AOCs are already being successfully augmented with ANG personnel. Currently, operations in Southwest Asia are being supported with both a forward staff and a reachback capability from CONUS. This may make the warfighting headquarters staff, the Air Force forces (AFFOR) staff, a good potential mission for ANG participation. If properly configured, it may allow some level of in-garrison work either from the CONUS headquarters site or via staff reachback from ANG home stations. We evaluated the following specific options for the ANG:

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\(^5\) Discussions with General T. Michael Moseley, formally 9AF Commander, COMAFFOR and Joint Forces Air Component Commander (JFACC), during Operation Iraqi Freedom (OIF), currently Vice Chief of the Air Force, Spring 2004.

\(^6\) The Air Force has experimented with how best to meet staff requirements, generally keeping COMAFFOR capability at the Numbered Air Force level, but sometimes pulling it back to the MAJCOM when necessary to maintain operational tempo in the joint operations area or to better coordinate theater-wide combat support such as during the Kosovo operation.

\(^7\) The term WFHQ was changed to C-NAF in Program Action Directive 06-09, dated November 7, 2006.
• Assuming some responsibilities within COMAFFOR staff providing experience, additional manpower, and a surge capability by
  – providing augmentation using individual personnel or small groups of personnel using AFFOR staff unit type code (UTC)
  – providing augmentation using a unit-based, force-provider construct. Individual ANG units could be tasked to perform specific processes or functions
  – providing augmentation by using a unit-based and AOR-specific force-provider construct. Individual ANG units could be assigned to specific theaters or areas of responsibility.
• All the above examples could be enhanced by creating a centralized COMAFFOR command function support center at which forward deployed operational level commanders can reach back for functional staff and operational force management resources.

We found that all three options could improve COMAFFOR staff support. However, the unit-based option with units assigned to specific AORs holds the most promise for significantly improving COMAFFOR support. If a decision to utilize the ANG in this area is made, reachback should be considered in unit design. The idea of providing some portions of COMAFFOR staff functions from CONUS appears desirable. Improvements in technology, coupled with continually improving communication capability, have reduced the need for some face-to-face interaction. The ANG may be well suited to support the WFHQ if significant portions of that support could be located in CONUS. As the ANG gains expertise and capability in this area, the active component may be able to reduce the manpower requirements needed to support COMAFFOR responsibilities.

Intermediate-Level Maintenance
BRAC calls for the retirement of a significant number of legacy aircraft, leaving the ANG with a large number of highly trained and highly experienced personnel with no aircraft to support and operate (DoD, 2005a, Appendix Q). Further, the Future Total Force (FTF) plan increases the crew ratio of fighter aircraft and creates associate
basing relationships in the active and reserve components. The resulting increase in sorties per month needed to maintain pilot proficiency may have a direct effect on the maintenance requirements for each aircraft and, consequently, on maintenance staffing requirements. (See pp. 73–111.)

We examined use of the ANG to provide major segments of intermediate-level maintenance (ILM). We evaluated two options in which the ANG assumes responsibilities to support active component ILM needs by developing and fielding new component maintenance squadrons (CMS) and equipment maintenance squadrons (EMS). We also evaluated post-FTF options in which the ANG assumes responsibilities to support maintenance needs at active bases. The specific options are as follows:

- The ANG assumes ILM responsibilities for moderately deploying sections of the CMS and EMS. High-deploying sections of the ILM are the responsibility of the active component.
- The ANG assumes ILM responsibilities for moderately deploying sections of the CMS and EMS. The active component provides some of the manpower within these sections, in addition to assuming responsibility for the high deploying sections of the active ILM.

The ANG CMS and EMS units would be tasked to provide intermediate-level aircraft maintenance capability to the active component flying units located at bases having a mix of ANG technicians and traditional guardsmen. The ANG unit commanders would be responsible for meeting active unit ILM requirements and would continue to report through the National Guard Bureau and to support both federal and state missions.

The ANG ILM squadrons would act as a source of supply to the active unit for component and equipment maintenance activities. These ANG ILM units could also provide upgrade training resources and experiences for active duty maintenance technicians assigned to the active flying units. Whether colocated at active bases or located off-site, ANG ILM units could take advantage of the ANG’s deep main-
tenance knowledge and skills and could offset staffing requirements in the active component.

Because the ANG may have difficulty meeting the deployment requirements for sections of the CMS and EMS with high deployment demands, we excluded these sections from consideration for ANG involvement, leaving these positions with the active units. We also excluded from consideration personnel in four sections within the current CMS and EMS that have heavy deployment requirements in the AEF rotational scheme: the Aerospace Ground Equipment (AGE) Flight, Conventional Munitions Flight, and the Fuels section and Egress section of the Accessories Flight. We estimated the number of active duty personnel authorizations that would no longer be required and the resulting total annual personnel funding requirements. In constructing these estimates, we varied the mix of full- and part-time ANG staffing and changes in the annual flying program proposed under the FTF initiative.

Since it is not altogether obvious what the appropriate full-time/part-time ANG personnel mix would be, for each option we varied the mix of full-time to part-time positions. A higher percentage of full-time positions may increase active component confidence that adequate support is being provided. Each option also varied the flying program or utilization rate. Using a typical F-16 unit, we evaluated two different options for ANG staffing mix and utilization rate. Each option has variations that create a range in the slots made available to the active component and in annual personnel funding requirements. The number of active component authorizations made available in an option depends on the level of involvement by the ANG and the number of slots retained by the active component in the ILM. The costs depend on the full- and part-time staffing mix employed by the ANG and the number of slots retained by the active component in ILM. Both options and their variations make active component positions available that could be redirected to other requirements. There are additional options that lie on a spectrum between the specific options shown in this report. The exact mix of full- and part-time staffing would need to be carefully determined—as would the proportion, if any, of ILM positions retained by the active component. Our analysis of F-16 ILM,
for example, suggests that there are opportunities within these parameters to leverage important skills of the ANG and to relieve stress on the active component by freeing up low-deployment positions.

In conclusion, our analysis suggested the following:

- A large fraction of current ILM operations at active component flying wings is well suited to the characteristics of the ANG.
- BRAC and FTF initiatives significantly change the ANG and active component maintenance environment.
- The ANG’s deep experience in ILM missions could provide efficient operation of ILM functions while also providing reserve surge capability through drill positions.
- Given the AEF tasking requirement of some ILM specialty areas, the active component should retain some ILM authorizations to enhance expeditionary capability.
- Implementation issues imply significant trade-offs.
- Implementation efforts may require individual technicians at ANG units to voluntarily relocate to new ILM units being formed at active duty air bases. However, ANG unit moves are unlikely to be sufficient to form these new ILM units.

**Overarching Concepts and Conclusions**

Transferring some missions to the ANG would employ available ANG personnel while freeing up some active component personnel for use in other critical mission areas—at little to no cost to the total force. (See pp. 113–116.)

The four mission areas discussed in this report—Predator support, air mobility command and control, COMAFFOR warfighting support, and base-level intermediate maintenance—provide insights into specific functions and roles where the Air National Guard—with its depth of knowledge and experience—may be well suited to support the warfighter. Through the evaluation of each of these mission areas, we garnered several overarching principles and concepts:
Several mission areas and specific roles are well suited for ANG assignment.

The Air Force could benefit from a continual review of assigned roles and missions.

The ANG may need to consider the demographics or other characteristics of an area before assuming a new role or mission.