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Feasibility of an Air Liaison Officer Career Field

Improving the Theater
Air-Ground System

Thomas Manacapilli, Steven Buhrow

Prepared for the United States Air Force

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Preface

The Theater Air Control System (TACS) has experienced a number of changes over the past few decades. An important component of TACS, the tactical air control party (TACP), has changed dramatically in terms of the number and types of personnel serving as joint terminal attack controllers (JTACs) and air liaison officers (ALOs). Suggestions developed through the U.S. Air Force's Innovative Development Through Employee Awareness (IDEA) program (Knox, 1998; Wisher, 2006) and master's-level theses (Olivero, 1999; Wisher, 2004), ongoing changes in the Marine Corps ALO program, and field grade-rated officer shortages demonstrate that the time is right to consider an ALO career field.

The study underlying this monograph was sponsored by the U.S. Air Force Directorate of Force Management Policy (AF/A1P), with support from the U.S. Air Force Directorate of Operations (AF/A3O). The research was conducted within the Manpower, Personnel, and Training Program of RAND Project AIR FORCE for a project titled "Air Force Specialty Code Restructuring."

This monograph should be of interest to Air Force leaders and staffs concerned with improving the Theater Air-Ground System (TAGS).

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Summary

Our investigation of the feasibility of an air liaison officer (ALO) career field was initially prompted by a recent suggestion submitted within the U.S. Air Force's Innovative Development Through Employee Awareness (IDEA) program.¹ The IDEA suggestion, previous research, and analysis conducted during the course of this study confirmed several advantages of this proposal.

Research and literature have been generated on this subject—some of it very recent and some going back 20 years. We evaluated the research, papers, and published articles on the subject. We then interviewed current tactical air control party (TACP) personnel, ALOs, and U.S. Army commanders to determine whether the conclusions of two previous studies (Olivero, 1999, and Wisher, 2004) were still valid. Finally, we added a personnel flow analysis, having determined that no one has yet looked at the career field flow and staffing issues.

The most recent requirement for ALOs is specified in a 2008 memorandum of agreement (MoA) between the Army and Air Force. The MoA is consistent with and supports joint doctrine published in Joint Publication 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)* (U.S. Joint Chiefs of Staff, 2003). The authorization structure is specified in the MoA.

¹ There have been two IDEA submissions suggesting the creation of an ALO career field in the past 10 years, Knox (1998) and Wisher (2006). The Air Force responded to the Knox submission in the past but had not yet responded to the Wisher submission as of this writing.

Why Bother?

The current system, in which duty as an ALO is restricted to career aviators, is, at least on the surface, meeting the requirements for air-ground support. If this is true, why seek to change it? Our analysis suggests five reasons that an ALO career field is a better option than the current system.

It is arguable that the current system provides ALOs who are trained and educated in Air Force and joint doctrine. However, interview comments suggest that inexperienced ALOs have allowed Army commanders to micromanage the use of TACP resources, to the detriment of the mission. Also, some experienced TACP personnel commented that “trained” ALOs have doctrinally misused TACP capabilities on their own initiative. The misuse of TACP resources suggests that the ALO system needs review to uncover why mistakes are being made. Career ALOs with more extensive experience in ALO duties and in the mentoring of other career ALOs would be more likely to properly apply Air Force doctrine in combat. (See pp. 13–15.)

The current system provides a sufficient number of ALOs, but it struggles to fill ALO billets—as seen by the use of nonstrike aviators to fill ALO slots and by frequent mismatches in terms of grade requirements. The current system requires from six to 12 months of a 24-month ALO tour for a new ALO to become fully proficient, meaning that the trained ALO will be fully productive only 50 to 75 percent of the time. (See pp. 15–17.)

The current system suffers from lack of continuity in pursuit and follow-up of initiatives to improve the ALO product. Interview comments suggest that new ideas, programs, and processes introduced by a previous ALO tend to be lost with each two-year rotation. Also, the lack of experienced ALOs (beyond two years) in Air Staff and headquarters positions results in poor long-range planning for the improvement of the Theater Air-Ground System (TAGS). (See pp. 17–19.)

The current system results in a high-morale force, but TACP enlisted personnel overwhelmingly agree that an officer ALO career field will provide greater leadership and morale for the TACP force. (See pp. 19–20.)

The current system is marginally more expensive to operate than a career force. A career force might eliminate some of the current aircrew requalification training costs associated with the current system. A program of one-third noncareer ALOs (strike aviators) and two-thirds career ALOs could save \$20 million annually (the cost of requalification training) if pilots currently serving as ALOs remained instead in flying jobs. However, these savings would not be realized if, as is probable, pilots who would otherwise serve ALO tours instead served in rated staff positions. Permanent-change-of-station (PCS) costs are slightly lower for a career ALO force. Other costs are negligibly different between the current system and a career ALO system. (See pp. 21–24.)

Can a Nonrated or Nonstrike Aviator Do the Job?

Historically, only aviators could control aircraft, only aviators could function as battalion ALOs, and only aviators could serve as brigade-and-above ALOs. Each of these stances has been abandoned over time. (See pp. 25–27.)

Systematic surveys of current and past ALOs and TACPs have shown that the majority agree that nonrated officers can do the ALO job. The majority also agree that rated experience is not necessary for the ALO job. (See pp. 27–29.)

The Air National Guard (ANG) has had a nonrated ALO program for more than 18 years. While most of the ALOs have deployed only as battalion ALOs, some have deployed recently as brigade ALOs. According to Army officers assigned with the ANG ALOs in combat, they have performed exceptionally well. The U.S. Marine Corps (USMC) has also started using nonrated officers in similar roles. (See pp. 30–31.)

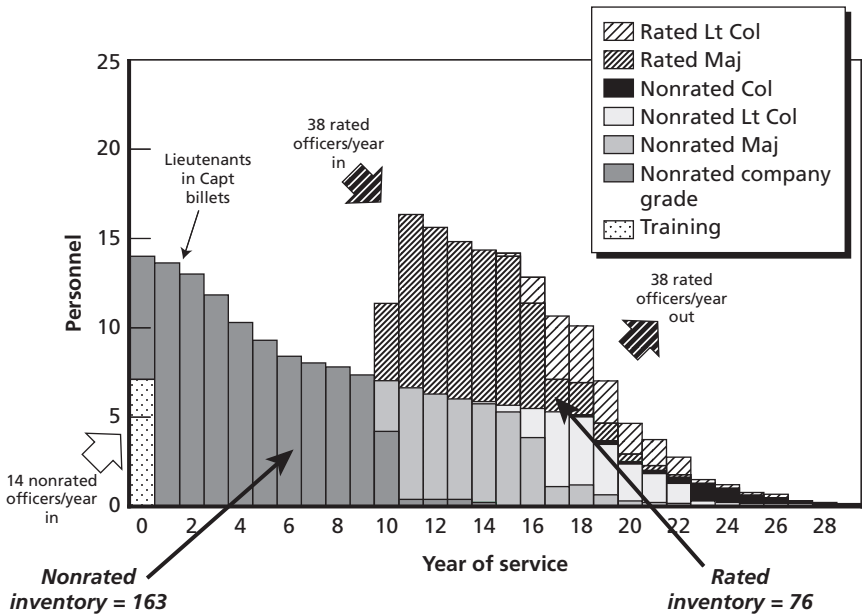
The data from the history of the TACP force, the experience of the ANG, surveys of current and past ALOs, and the recent experience of the USMC support a conclusion that nonstrike aviators and non-aviators can do the ALO job.

Is an ALO Career Force Feasible?

An ALO career field is feasible, and a number of options are presented in Chapter Five. Figure S.1 shows our recommended option, a mix of career ALOs and strike aviators. It accesses individuals into the ALO career field as second lieutenants (14 per year). It requires that lieutenants be placed in billets currently designated for captains, preferably in the air support operations center (ASOC). It still uses some rated officers, providing information exchange between Air Force strike units and Army ground units. It reduces the demand on rated officers by 68 percent (119 per year, to 38 per year). (See pp. 33–47.)

We conclude that an ALO career field is feasible and would be beneficial to the U.S. Air Force.

Figure S.1
Recommended Option: Mixed Force of Career ALOs and Aviators



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We especially want to acknowledge the support of CMSgt David Devine, who arranged trips and meetings, provided contacts and data, and provided wise guidance during the course of the study. Col Michael Adams helped us in making contacts and setting up our visits. Lt Col Mike Hornitschek was also helpful in determining direction for the study.

During the course of the study, we visited a number of locations. We want to especially thank those at Fort Hood, Texas, in the 3rd Air Support Operations Group and its supporting units. Lt Col Mike Dennis and Lt Col David Staven arranged the trip. Col Don Tharp, the group commander, provided excellent comments and ensured that we had all the support we needed. CMSgt Ken Czop, LTC William Smith (U.S. Army), LTC Robert Mente (U.S. Army), Lt Col Michael Dennis, Lt Col Roderick Dorsey, SSgt Francis Lott, SSgt Seth Griffith, Lt Col Robert Beckel, Capt Rob Pettigrew, and others were extremely helpful and provided useful information.

In Peoria, Illinois, Maj Lee Wheeler, a nonrated ALO, arranged our trip. Lt Col Jerry Croegaert (ANG, Commander, 169th Air Support Operations Squadron) led a very informative large-group meeting and participated in equally useful one-on-one interviews, as did MSgt Mike McKee, Lt Scott Grotbo, MSgt Steven Salander, SSgt John Oliver, and other members of the 169th.

At the Air Combat Command (ACC), Col George Bochain, David Gaedecke, and other ACC staff provided excellent feedback on conclusions.

Email discussions and observations from Brig Gen Mike Longoria, Col Ron Watkins, Col Tom Webster, and Lt Col Neil Roghair added further clarity to the issues involved in assessing the ALO force.

Corey Johnson provided excellent background and input based on his experience. Robby Robinson's (Air Education and Training Command staff) questions on unintended consequences provoked the train of thought presented in the latter portion of Chapter Five. Lt Col Todd Serres (Air War College student) also provided a number of new thoughts on the subject. LTC Joel Hamby (U.S. Army and Joint Chiefs of Staff) provided useful information from an Army user perspective.

This work would not have been undertaken if not for the efforts of Lt Col Ray Knox, Maj Mark Wisher, and Capt John Olivero, whose reports, work, surveys, and insight provided the foundation for a potential ALO career field.

Finally, we want to thank Col (ret.) Lee McKinley and Jody Jacobs for their extremely valuable and insightful reviews.

Abbreviations

ABM	air battle manager
ACC	Air Combat Command
ACCE	air component coordination element
AF/A1P	U.S. Air Force Directorate of Force Management Policy
AF/A3O	U.S. Air Force Directorate of Operations
AF/A8PC	U.S. Air Force Combat Forces Division
AFSC	Air Force specialty code
AF/XO	U.S. Air Force Deputy Chief of Staff for Plans and Operations
ALO	air liaison officer
AMLO	air mobility liaison officer
ANG	Air National Guard
ASOC	air support operations center
ASOG	air support operations group
ASOS	air support operations squadron
BALO	battalion air liaison officer
CAS	close air support

ETAC	enlisted terminal attack controller
FAC	forward air controller
FAC-A	airborne forward air controller
FAIP	first-assignment instructor pilot
FM	field manual
GFAC	ground forward air controller
IDEA	Innovative Development Through Employee Awareness
JTAC	joint terminal attack controller
MoA	memorandum of agreement
PACAF	Pacific Air Forces
PAF	RAND Project AIR FORCE
PCS	permanent change of station
ROMAD	radio-operator-maintainer and driver
TAC	terminal attack controller
TACP	tactical air control party
TACS	Theater Air Control System
TAGS	Theater Air-Ground System
USAFE	U.S. Air Forces in Europe
USMC	U.S. Marine Corps
YOS	year of service

Introduction

Background

The appeal of establishing an air liaison officer (ALO) career field has grown out of experience in the field that has led to the following observations (Wisher, 2006):

1. The tactical air control party personnel (TACP) and air support operations center (ASOC) mission areas lack a cadre of career officers, resulting in little mission-area continuity.
2. Constant turnover of ALOs often provides the Army with a highly skilled aviator but an inexperienced ALO.
3. The high demand for rated officers makes it difficult to fill ALO positions.
4. The use of rated officers incurs the additional costs of sending ALOs to requalification training when returning to flying status.

Requirement

A series of memoranda of agreement (MoAs) between the Army and the Air Force have set the requirements for enlisted TACPs and ALOs. The most recent agreement, dated January 23, 2008, supports joint doctrine as described in Joint Publication 3-09.3, *Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)* (U.S. Joint Chiefs of Staff, 2003), and supersedes the previous MoA of June 16, 2003 (see

Headquarters, U.S. Department of the Army, and Headquarters, U.S. Air Force, 2008, 2003).

In the agreement, the Air Force agrees to provide eight items:

1. an air component coordination element (ACCE) from the component numbered Air Force to an Army organization, as required, when it serves the joint force land component commander
2. a modular ASOC in direct support of the Army senior tactical command echelon (e.g., division or corps) as the focal point for supporting air operations
3. officers to act as liaisons to U.S. Army Forces Command and U.S. Army Training and Doctrine Command
4. rated officers as ALOs¹ to Army corps, divisions, and brigades to provide liaison and special staff assistance to the ground unit commander
5. battalion ALOs (E-6 or higher) habitually aligned with a maneuver battalion
6. a TACP in direct support to each Army corps, division, brigade combat team, and maneuver battalion for liaison and to provide terminal attack control of CAS missions
7. combat-ready battlefield weather forces in direct support of conventional and unconventional Army units
8. air mobility liaison officers (AMLOs) to liaison elements at Army corps, division, and other jointly validated headquarters to provide air mobility liaison.

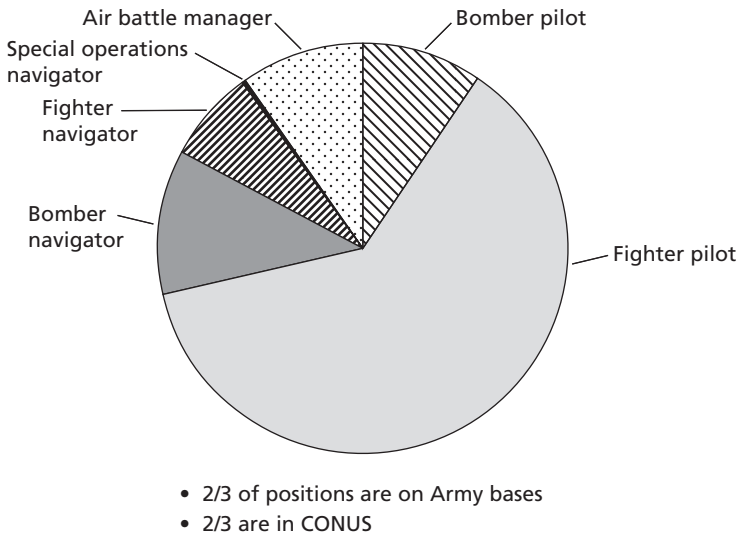
¹ Joint Publication 3-09.3 defines an ALO as

the senior TACP member attached to a ground unit who functions as the primary advisor to the ground commander on air operations. Above [battalion] level, an ALO is an aeronautically rated officer and is an expert in the capabilities and limitations of air power. The ALO plans and executes CAS in accordance with the ground commander's guidance and intent. At [battalion] level, an ALO (commonly called a "BALO" [battalion ALO]) is an Air Force officer or specially-qualified enlisted TACP member who provides the battalion commander direct CAS support. (U.S. Joint Chiefs of Staff, 2003, p. II-9)

The Army also agrees to provide certain elements, but our emphasis is on the Air Force requirement. This portion of the MoA results in a requirement for 336 active and Air National Guard (ANG) ALOs, of which 237 are active-duty personnel. Our focus is on the active force, as the ANG force already employs some career ALOs.

The military manpower authorization file, which is a function of the actual supply, includes an active rated requirement for 62 percent fighter pilots, 10 percent bomber pilots, 7 percent bomber navigators, 11 percent fighter navigators, and 10 percent air battle managers. Approximately two-thirds of the billets are located at Army bases, and two-thirds are in the continental United States. Figure 1.1 represents the distribution of U-suffix Air Force specialty codes (AFSCs) in the active force at the end of FY 2006.²

Figure 1.1
Makeup of the Current Active-Duty ALO Force



RAND MG755-1.1

² A "U" suffix designates the billet as an ALO billet. The remainder of the AFSC designates the actual type of rated officer (e.g., A-10 pilot, B-52 navigator, airborne battle manager).

The MoA requires a rated officer to function as an ALO above the battalion level. For the purposes of this study, we assumed that the previously outlined definition reflects the status quo and would require a new MoA should the Air Force decide to use some nonrated officers as career ALOs. The larger question is whether, in air-to-ground operation support, a career nonrated ALO can, as the primary advisor to the Army, perform as well as or better than a rated attack-qualified ALO serving one two-year tour.

There is no ALO career field today within the active force. An ALO job is typically a one-tour assignment, two years in length, filled entirely by rated officers.

Problem Statement

This study focused on the feasibility of an ALO career field. The feasibility question can be subdivided into two questions:

1. Can a nonrated (or nonstrike)³ officer perform the ALO job effectively?
2. Can the Air Force create a self-sustaining ALO career field?

These two feasibility questions are preceded by an even larger question: Why bother? What is driving the need for change? Is the current system of providing ALOs not working? Are potential cost savings associated with changing the current system? Would the Army get a better product with a career ALO force? Would the Air Force get a better weapon system with a career ALO force?

Analytic Approach

Much research and effort have been directed at the problem statement. Olivero (1999) and Wisher (2004) completed master's theses on the

³ A nonstrike officer would be an officer without any skills, knowledge, or experience in the application of air-ground munitions.

establishment of an ALO career field, surveying 441 individuals and 299 individuals, respectively. These works, while slightly different in emphasis, both came to the same conclusions regarding the need for an ALO career field. Rather than duplicate work already completed, our goal was to add what was missing from the prior studies. This required that we determine whether anything had changed since the theses were published, as well as what questions had not been answered by the theses.

To do this, we traveled to active and ANG air support operations groups (ASOGs); Headquarters, Air Combat Command (ACC); and the Pentagon to interview subject-matter experts: enlisted TACP personnel, ALOs, and Army battalion commanders. We interviewed 27 subject-matter experts: 12 from Fort Hood, six from the ANG, three from the Air Staff, one from the Joint Staff, three from ACC, and two other field personnel. Three of the interviewees had served as or were Army battalion commanders. From the interviews, we concluded that, while equipment and the demand for ALOs has changed, nothing had changed concerning the conclusions of the 441 and 299 previously surveyed subject-matter experts. The interviews validated the previous theses.

After reviewing the two theses, other work, and literature, we saw that no one had done an analysis of whether a career field flow was technically feasible or what a career field flow would look like. We undertook such an analysis and present the results in Chapter Five.

Our goal in this monograph is to assemble the relevant information and studies to address the issue of an ALO career field without duplicating previous work.

Assumptions

We have assumed, for the purposes of this study, that information exchange between Air Force and Army units generates positive value in both. For Army units and air support operation squadrons (ASOSs), information exchange brings the latest in tactics, techniques, and weap-

ons. In Air Force strike⁴ squadrons, ALOs bring back the latest information on Army units, organization, processes, and tactics.⁵

In the study, unless otherwise stated, we used end-year 2006 attrition rates, populations, and manpower authorizations. We did not include air mobility liaison officer positions in the analysis.

Organization of This Monograph

Chapter Two documents the historical discussion and analyses pertinent to creating an ALO career field. Additionally, the appendix contains a lengthy history of the air-ground support mission. Chapter Three explores the overriding question of whether changes would be beneficial. Chapter Four addresses the first feasibility question concerning the ability of a nonrated officer to do the job. Chapter Five addresses the second feasibility question of how a career field might be constructed. Chapter Six summarizes the findings of the study.

⁴ We use the term *strike* to apply more inclusively to the many types of Air Force squadrons involved in interactions with ground forces. The Air Force term *attack* is not typically used in reference to B-52, B-1, and B-2 operations.

⁵ Additionally, Army ground liaison officers also provide important information exchange between Air Force wings and squadrons.

Literature Review

This chapter focuses on literature related to the creation of an ALO career field. A history of the air-ground support mission and ALOs can be found in the appendix.

Knox Paper and Suggestion

Maj Raymond Knox (1988), a former ALO, argued that the two-year assignment is insufficient to create experts in air-ground support. Ideas are constantly reinvented due to the rapid turnover in personnel, and the “TACS [Theater Air Control System] is not as good as it could be” (p. 24).

Knox (1998) also submitted a suggestion to the Air Force, titled “Establishment of an ALO Career Field.” The Air Force rejected the suggestion in October 1998. In his suggestion, Knox proposes six benefits to an ALO career field:

1. continuity in officer leadership (“growing officers . . . makes them experts rather than guest help”)
2. continuity in equipment acquisition and career field management at the Air Staff
3. greater respect for the Air Force ALO by the Army
4. improved morale among enlisted TACP personnel
5. more efficient use of taxpayer dollars (training)
6. reduced demand for scarce fighter pilots.

The Air Staff rejected the suggestion for three reasons. First, the Air Force had done a bottom-up review of all ALO positions and reduced ALO positions by 22 percent (undercutting the scarce-demand argument). Second, the information exchange between Army and Air Force units would not be possible with a separate ALO career field. Finally, an ALO career field was not feasible due to the lack of O-1 and O-2 positions and the scarcity of O-3 positions. The lack of company-grade officers' billets required feeder AFSCs to create a career path.

Olivero Thesis

Maj John Olivero (1999), a former ALO, published a thesis titled *The Professional Air Liaison Officer: Should the U.S. Air Force Develop an Air Liaison Officer Career Field?* The title conveys Olivero's primary research question and was not limited to a nonrated-only solution. This primary question led him to develop additional questions that subdivide into three areas:

1. ALO duties
2. ALO qualifications
3. ALO training.

Olivero assumed that rated-officer shortages require a nonrated ALO career field solution. He used three survey instruments to gather his statistical information. Table 2.1 depicts the populations, the number surveyed, and the return rate of the surveys.

Olivero was able to rank-order ALO tasks by job-level responsibility, an important result for developing a career field training plan. Most tasks were the same for each echelon of assignment. Olivero also developed a table of essential ALO skills and knowledge. The skills or knowledge could be trained in a relatively short period (six to nine months for a nonrated ALO). While CAS cockpit experience was beneficial, it could be acquired through simulator training or a small number of tactical rides.

Table 2.1
Total Surveys and Return Rates

Population Surveyed	Sent	Returned	Return Rate (%)
Active-duty ALOs	220	115	52.3
Active-duty ROMADs	220	175	79.5
ANG ALOs	60	16	26.7
ANG ROMADs	60	35	58.3
Active-duty Army personnel	210	95	45.2
Army National Guard personnel	140	5	3.6
Total	910	441	48.5

SOURCE: Olivero, 1999.

NOTE: ROMAD = radio-operator-maintainer and driver.

Olivero concluded that an ALO does not need to be a rated officer. The Air Force is meeting the Army requirement for qualified ALOs, but due to the on-the-job training time of three to six months for every assigned aviator's one-time, two-year tour of duty, many ALOs are not fully qualified from a productivity standpoint.

Olivero recommends the development of an ALO career field. He provides specific details regarding a training program. He seems to encourage bringing back the BALO positions from the enlisted force into the officer force. He also recommends that CAS pilots continue to fill fighter liaison positions.

Wisher Thesis

Capt Mark Wisher's (2004) thesis (*Can a Non-Rated Officer Effectively Fill the Position of a USAF Air Liaison Officer?*) addressed a similar set of questions to those raised in this monograph. His primary task was to determine whether a nonrated officer can perform as an ALO. In analyzing answers to that question, he also looked at the "why" and "how" of an ALO career field.

Wisher, a former ALO, sent approximately 30 surveys to each of 17 units in the Army, Air Force, and ANG. Wisher received 299 responses and used a nine-point (1–9) Likert scale to compare the responses. Instrument validity was tested using a small-scale test-retest 30 days after the original test. Wisher’s survey employed 12 questions. The first four established demographics. Questions 5 and 6 measured the respondent’s knowledge and experience in CAS operations. The remaining six survey questions focused on the specific thesis questions and are listed in Table 2.2.

Wisher’s thesis concluded that a nonrated ALO was feasible, given the right training, and that the Air Force and Army would benefit from a nonrated ALO career field. That conclusion, while a majority opinion of all groups, was influenced by the CAS operational experience of the individual. Those groups with more CAS operational experience were

Table 2.2
Key Survey Questions in Wisher Thesis

Question Number	Statement or Question
7	“It is important to have an ALO assigned to an Army ground maneuver unit.”
8	“It is necessary to have an ALO be a Rated Officer (i.e., Pilot, Nav[igator], [electronic warfare officer], or [weapon system officer]).”
9	“It is feasible to train nonrated officers to be effective Air Liaison Officers.”
10	“Do you believe that it would be beneficial for the [Air Force] to have its own career field ALOs (with a separate AFSC) rather than Rated Officers filling the ALO position for a two-year assignment (one-year assignment if Overseas Remote)?”
11	“Do you believe that the CAS customer, the US Army, would benefit from the US Air Force having career field ALOs who are nonrated Officers?”
12	“Are you now or have you ever been an Air Liaison Officer?”

SOURCE: Wisher, 2004, pp. 78–79.

NOTE: Analyses of the responses to these questions are presented later in this monograph. Questions 10, 11, and 12 included additional subquestions, depending on the answer.

not as positive as other groups. Although not completely positive, it was still the majority opinion of those with CAS operational experience that a nonrated officer could do the ALO job.

Wisher recommended that the Air Force develop a nonrated ALO career program. Due to the shortage of company-grade billets for ALOs, Wisher proposed that nonrated lieutenants fill battalion-level or intelligence positions as a first assignment. Rated officers would continue to fill fighter-duty officer positions at the ASOC or Army corps level. Wisher's recommended training program would require from 16 to 47 weeks, depending on whether intelligence officer school is part of the ALO training curriculum.

At the time of this writing, the Air Force had not responded to Wisher's 2006 Innovative Development Through Employee Awareness (IDEA) program suggestion (see Wisher, 2006).

U.S. Marine Corps Articles

A series of *Marine Corps Gazette* articles from the mid-1990s to the early 2000s also addressed the issue of controlling CAS in the U.S. Marine Corps (USMC).

Medeiros (1995, p. 50) stated that "the skills required to be a forward air controller (FAC) do not require an aviation background." Medeiros did not argue for the elimination of rated officers as FACs but, rather, opening up the career field to non-aviators.

Smith (1997) (in his article "Who Can Control a CAS Mission?") argued that the current plan of instruction does not train non-aviators to perform at a high level because it is designed for someone with aviation experience. He went on to say that a non-aviator could do the job if the training program were specifically designed for the non-aviator.

In May 2003, the USMC opened the air controller mission to enlisted personnel and non-aviator officers. The opened billets had previously been filled by aviators and naval flight officers (Lubold, 2003).

Hawkins (2003), in "Close Air Support in the U.S. Marine Corps: A FAC's Perspective," makes an argument for major changes in FAC procedures and training, including the elimination of the nine-line

brief (the means whereby target information is passed from ground to air units). Hawkins did not address the issue of aviators versus non-aviators as FACs. He did, however, address the fact that the systems, policies, doctrine, and procedures for controlling CAS have not changed much in many years. This conclusion indirectly supports Knox, Olivero, and Wisher's contention that the lack of career ALOs has impeded the development of ALO doctrine.

The changing approach within the USMC is not necessarily conclusive, because there are a variety of differences between the USMC and the Air Force. In the USMC, a single service provides an integrated system. Although USMC procedures are the same as joint procedures, the systems for procurement, policy development, and innovation are very different and reflect a different culture and emphasis.

Are Changes Needed?

Before addressing the two questions of feasibility, we must first answer the question of whether changes are even needed. There are at least two areas to investigate: the current product (quality, quantity, and ability to improve the product now and in the future) and the cost to produce the product.

Current Product

In evaluating the current product, we asked the following questions:

1. Does the current system provide well-trained ALOs?
2. Does the current system provide a sufficient number of ALOs?
3. Does the current system provide a capacity to improve the product?
4. Does the current system result in a high-morale force?

Does the Current System Provide Well-Trained ALOs?

The current system does seem to provide sufficiently qualified and trained ALOs. Olivero's survey showed that 74 percent of Army officers were satisfied with the Air Force product (see Table 3.1).

It is not surprising that Army officers are satisfied with the product, and it is not our conclusion that the current system has failed. From an Army perspective, the concern is that air support exists and that it is there when needed. One would not expect the Army to be

Table 3.1
Army Officers' Impressions of ALO Competency

Response	Percentage
"Well trained and knowledgeable"	35
"Meets standards and require[s] little additional training"	39
"Notable deficiencies in training requiring much training"	18
"Clueless about their mission and yours"	4

SOURCE: Olivero, 1999, p. 74, Table 37.

concerned with long-term improvements in the Air Force system, difficulty in staffing ALO positions, or morale issues associated with ALO duty.

In addition, interviews with current ALOs and TACP personnel suggest that Army officers' impressions do not consider all the factors of ALO competency. The TACP personnel are part of TACS, and proper use of the TACPs is essential to maximize the capability of the TACS. While most ALOs do a very effective job in commanding the TACP resource, there were comments that suggested that misuse occurs and can fall into one of two categories.

The first case of misuse of TACP personnel occurs when inexperienced ALOs allow Army commanders to manage the deployment and use of the TACP personnel. Examples given in the interviews included convoy duty, routine foot patrols, guard duty, and kitchen police.

The second case of misuse of TACP personnel occurs when ALOs improperly employ TACP personnel due to a lack of knowledge or experience. Centralized command and decentralized execution form a major doctrinal tenet of the U.S. armed forces.¹ In a ground combat context, it recognizes the Army commander's role in setting objectives and defining the "commander's intent." Decentralized execution leaves the detailed execution of the plan to individual unit command-

¹ "[E]xecution should be decentralized within a command and control architecture that exploits the ability of strike package leaders, air battle managers, forward air controllers, and other front-line commanders to make on-scene decisions during complex, rapidly unfolding operations" (Air Force Doctrine Center, 2005, p. 15).

ers. ALOs have the doctrinal responsibility to employ TACP assets in such a manner as to fulfill the Army commander's intent.² When inexperienced ALOs defer to the Army commander on the deployment of TACP personnel, there is the potential that a valuable asset, the TACP personnel, will be misused. And as a result, the TACS will be inefficiently employed.

One of the examples, cited more than once in the interviews, has the Army commander splitting the two-person TACP teams into one-person teams to spread them across more companies. Experienced ALOs asserted that the ALO, as the expert, should argue to keep the teams together and employ them in a manner that best satisfies the commander's intent, i.e., where the main thrust of the attack is intended to occur. Inexperienced ALOs were more likely to accept the Army commander's decision without argument.

While the end product may satisfy the user, 65 percent of ALOs in Olivero's research responded that it took six months to more than a year to be proficient in ALO duties (see Table 3.2). For a given ALO tour of two years, that represents only 50- to 75-percent fully proficient time.

Table 3.2
Length of Time Required for an ALO to
Become Proficient

Response	Percentage
Immediately	5
2 to 3 months	27
6 months	34
6 to 12 months	24
12 or more months	7

SOURCE: Olivero, 1999, p. 71, Table 33.

² Air Force Instruction 13-1AOCV3 (U.S. Air Force, 2002, para. 2.6) states that "the ASOC director, normally the corps ALO, exercises operational control of all subordinate TACPs."

Wisher's more recent work supports this conclusion:

Today's rated ALOs will tell you that it typically takes them about 6–12 months to get a good feel, or experience, of what their job as an ALO entails, how the Army works, and how they can best support the Army maneuver elements. . . . By the time rated ALOs gain the experience they need to be effective TACP members, it is time to get ready to PCS [permanent change of station] back to another flying assignment. (Wisher, 2004, p. 21)

Interviews with ALOs and TACP personnel supported the need for six to 12 months to become proficient.

Does the Current System Provide a Sufficient Number of ALOs?

The current system is producing the number of ALOs required. Discussions with assignment officers indicated that ALO positions are filled at 100 percent.³ Mismatches in personnel assigned to authorized grade and the use of nonstrike aviators suggest some difficulty in meeting the 100-percent fill requirement. Interviews with ALOs and ASOS commanders have confirmed that heavy demand for fighter pilots has hurt the ability to fill all the requirements, resulting in the use of nonstrike pilots and navigators to fill ALO positions.

Wisher (2004, pp. 1–2) and Olivero (1999, pp. 2, 3, 5, 37) have posited that the demands of the rated community make it difficult to fill rated billets. Thirty-four percent of ALOs listed ALO staffing as a reason that the Air Force should consider an ALO career field (Olivero, 1999, p. 59). Knox also identified staffing problems due to the shortage of fighter pilots and weapon system officers (Knox, 1988).

Olivero found that 51 percent were either selected as nonvolunteers for ALO jobs or took the only job available (Olivero, 1999, p. 69). In Olivero's survey, 37 percent of the ALOs felt that an ALO job had

³ A database search of the number of assigned personnel to authorizations over the past four years appears to show that the Air Force has filled only 60 to 70 percent of the requirement. Assignment officers at AFPC hand-scrub the data to ensure that the 100-percent assigned goal is met. Apparently, the mismatch is caused by difficulties attaching the U suffix (signifying ALO) to newly assigned personnel in a timely manner (often, six months).

hurt their career. Fifty-three percent of ALOs ranked their ALO tour at the bottom or near the bottom of potential assignments (Olivero, 1999, p. 70). Sixty-eight percent of ALOs said that they would not volunteer for a second ALO tour (Olivero, 1999, p. 71).

Since September 2001, the interviews suggested that things have changed in regard to ALO satisfaction with the job. Operations in Afghanistan and Iraq have made the job seem more important and more useful in an Air Force career. But interviewees also suggested that some of the previous attitudes are beginning to return.

Still, despite the 100-percent fill rate, the Air Force has struggled to fill ALO billets for many years. There is an opportunity cost in using scarce experienced pilot resources—particularly fighter pilots—to meet ALO requirements: Rated staff requirements on the Air Staff, on major command staffs, and elsewhere may go unfilled.

Does the Current System Provide a Capacity to Improve the Product? Experts Versus Guest Help

Comments from interviews of previous ALOs and current enlisted TACP personnel suggest that the current practice of short-term ALO duty results in the phenomenon of the wheel being reinvented. Officers on ALO duty come in, receive training, and then see things that could be done better. However, process improvements may not continue beyond one or two more follow-on ALOs. Knox references the same problem in his report (Knox, 1988, pp. 37–38).

By definition, career ALOs would be more committed to the career field and would be around longer. They would help ensure that new processes and ideas continue and ultimately are institutionalized. The result would be a more effective air-ground weapon system.

Additionally, major command and Air Staff planning for the TACS would benefit from a career ALO force. Currently, those positions are filled by senior enlisted TACP personnel (who are knowledgeable but do not always have the rank and position to get things done) and, if available, previous one-tour ALO officers (whose experience may be limited). A career ALO would more likely have the depth of experience required to be an effective planner and would occupy a

staff position with enough seniority to see new programs and changes through to completion.

It is difficult to develop air-ground support expertise without continuity of officers in the functional area. No other functional area makes the claim of developing greater expertise through the use of part-time help. This is not to say that the Air Force does not have expertise in air-ground CAS, but it does not have the best processes to get better. A USMC aviator summarized it as follows:

History demonstrates the Air Force's great success in WWII, Korea and Vietnam at the strategic and operational level. However, its use of air power at the tactical level of war exhibits a pattern of lessons learned and effectively applied, then forgotten by the beginning of the next war. (Bergerud, 2001, p. 6)

Air Force Lt Col Haun makes a very similar observation:

Yet the [U.S. Air Force], born out of the aerial combat experience of World War II, has firmly held to airpower as the means of bypassing military forces and striking directly at the vital center of the enemy. Thus, American airmen are predisposed to discount the effectiveness of air attack against fielded forces. The realities of combat, however, have dictated the need for airpower to attack enemy armies directly without the presence of friendly ground forces. Airmen with little training and doctrine have often had to improvise tactics to fight the war with the resources at hand. This study examined two such groups of airmen in the Misty FACs of Vietnam from 1967 to 1970 and the A-10 FACs over Kosovo in 1999. In both cases, the USAF failed to develop suitable tactics for the direct attack of enemy fielded forces. (Haun, 2004, p. 79)

Wisher found that the majority of Air Force ALOs, Army officers, and enlisted TACP personnel agree that an ALO career field would be beneficial to the Air Force (see Table 3.3). While there was some disagreement as to whether it would improve TACP leadership and morale (TACP personnel agreed that it would), there was complete agreement that it would provide better continuity of leadership, better

Table 3.3
Responses to Survey Item, "Would Career Field ALOs Be
Beneficial to the USAF?"

Response	Percentage				
	Army	TACP	Air Crew	Cadets	Average
No	29	12	27	25	23
Yes	71	88	71	75	76
Better TACP leadership	32	68	49	39	37
Better continuity of leadership	73	85	70	50	70
Better TACP morale	36	55	38	44	43
Free rated officers for staffing shortages	55	51	93	67	67
Better liaison relationship with Army staff	59	68	58	44	57
Better training of ALOs	68	71	68	72	70
More familiarity with Army tactics and commands	82	74	70	56	71
Other	5	25	15	0	11

SOURCE: Adapted from Wisher, 2004, p. 49, Table 14.

NOTE: Not all percentages add up to 100 because respondents did not answer all questions or were undecided. Respondents who answered "yes" only also marked the benefits; therefore, the benefit percentages are a subpercentage of total respondents who said "yes" (e.g., 88 percent [115/131] of the TACPs said "yes"; of those 115 "yes" respondents, 68 percent [78/115] said "better TACP leadership").

staffing, better relationships with the Army staff, better training, and greater familiarity with Army tactics and command.

The conclusion is that the current product is satisfactory, but an ALO career field would provide a better product.

Does the Current System Result in a High-Morale Force?

No direct data indicate low morale in the ALO or TACP force. There have been a number of indicators suggesting that morale could be improved, however.

ALO duty is apparently not a popular assignment. In Olivero's survey, 34 percent of ALOs did not volunteer for the job, and, for 17 percent, it was the only job available (Olivero, 1999, p. 69). Only 6 percent volunteered for the job, and 5 percent responded that the duty looked interesting. Fifty-three percent of ALOs ranked the ALO tour at the bottom or near the bottom in comparison with other duty assignments. Twenty-two percent ranked ALO duty at the top or near the top (Olivero, 1999, p. 70). Wisher concludes,

Although nearly all ALO officers are constant professionals, the enlisted members know that their ALO's hearts and minds might not be entirely dedicated to the TACP mission. This part-time . . . ALO leadership affects unit morale and cohesion. (Wisher, 2004, p. 23)

While these results do not necessarily mean that ALOs have low morale, they do support comments in the interviews that many ALOs did not enjoy the job and did not want to be in the job.

In interviews, TACP personnel often suggested that career ALOs could serve as role models for the enlisted force. Interviewees stated that TACP personnel needed an officer TACP career field (i.e., an ALO career field) as combat rescue officers and combat control team officers are to the pararescue and combat control enlisted career fields. When asked why an officer counterpart was important, the answers included setting an example, fighting for TACP needs at headquarters, and leadership that understood their role in the fight. In Wisher's thesis (see Table 3.3), enlisted TACP personnel are the only group who felt that career ALOs would improve morale (55 percent) and leadership (68 percent) in the TACP career field. Fewer than half of Air Force and Army officers agreed—possibly, they are not listening to the TACP personnel.

Olivero reports that the majority of ROMADs (83 percent) and ALOs (95 percent) responded that TACP issues were not being sufficiently addressed at the Air Staff and ACC (Olivero, 1999, p. 62).⁴

⁴ *ROMAD* is an old term that has been replaced by the more generic term *TACP*.

These data support interview comments from TACP personnel and ALOs that the job is “forgotten” at the headquarters.

Cost to Produce

Are there significant cost savings in changing the current system? Creating an ALO career field would reduce costs in some areas and increase costs in others. Increased costs would be expected in initial training and continuation training. Reduced levels would be incurred in PCS costs and, potentially, in aircraft requalification costs.

To evaluate the costs, we compare the current costs with a notional ALO career field composed of two-thirds career ALOs and one-third one-tour crossflow ALOs (the one-third represents a significantly reduced continuation of the current program of assigning strike pilots and navigators to two-year ALO duty). Table 3.4 shows those costs. A more detailed explanation of these two options is found in Chapter Five, as option 1A.

Salary

An ALO career field will have slightly lower salary costs due to no flight pay. But, while the self-sustaining force appears to have a lower

Table 3.4
Comparison of Proposed and Current ALO Training Pipeline

Cost Category	Cost (\$ millions)	
	Current	Mix of Career and Noncareer
Salary	29.28	27.72
Requalification	38.51	12.36–38.51
Training	0.42	0.49
PCS	1.24	0.99

NOTE: Salary and requalification cost differences are unlikely to be realized by the Air Force.

total salary cost (using lieutenants in captain positions), we would not expect to see those savings in the Air Force as a whole. Manpower costs are based on aggregate Air Force grade strengths and not on the grade distributions of individual AFSCs.

Requalification

Potentially, the most significant difference in cost for a career ALO program is a reduction in aircraft requalification training costs. Table 3.5 shows the current estimates. For the purposes of this analysis, we used the lower figure, \$325,000, for the F-16.

The Air Force could potentially save \$26 million per year⁵ by implementing an ALO career force, but only if Air Force pilots serve in a flying job instead of a nonflying job. If they serve in nonflying positions (such as on the Air Staff or major command rated staff), which is where significant rated-officer shortages exist, there would be no cost savings. Either way, the proposal does free up a considerable number of rated officers to do other jobs.

Training

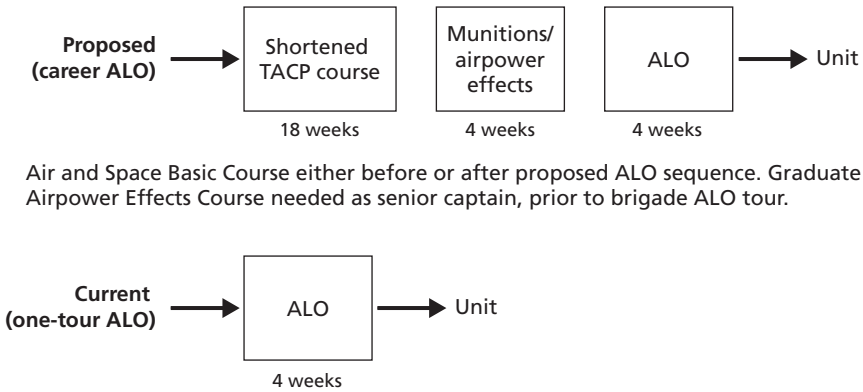
Strike pilots bring considerable knowledge of the employment of airpower, gained through experience. Consequently, a career ALO course for nonpilots would require significantly more training. In Figure 3.1,

Table 3.5
Aircraft Requalification Training Costs
per Person

Aircraft	Requalification Cost per Individual (\$)
F-16	325,000
A-10	380,000
F-15C	700,000

⁵ The \$26 million requalification estimate is based on the number of pilots returning from ALO duty per year times the cost to requalify (assuming the most conservative value, the F-16 cost of \$325,000).

Figure 3.1
Comparison of Proposed and Current ALO Training Pipeline



RAND MG755-3.1

we propose a career ALO course⁶ that adds a shortened TACP course and a munitions/airpower effects course to the current ALO course. Using the current TACP course costs per week and subtracting E-1 pay, we estimate that the 26-week course would cost \$19,740 per person. Using a similar calculation,⁷ the current ALO course is \$3,500 per person.

We also assumed an additional four-week graduate-level course later in the ALO career, with costs similar to the current cost of initially training ALOs. Others have suggested flights in two-seat aircraft. Those costs would significantly increase the cost of ALO training.

Despite the fact that the training curriculum for an individual career ALO would be eight times longer than the current individual ALO training, the total costs are almost insignificantly different: Table 3.4 shows \$0.42 million for the current program and \$0.49 million for a career ALO program. Part of the reason is that career ALO training allows one person to fill multiple ALO assignments, while the

⁶ The proposed course is based on a task analysis outlined in Olivero (1999) and interviews with current ALOs, ANG nonrated career ALOs, and enlisted TACP personnel.

⁷ The calculation is similar in the sense that we also subtract student pay.

current program requires ALO training every time an ALO fills a two-year assignment.

Permanent Change of Station

A career ALO force will cost less in terms of PCS costs due to the fact that a career ALO tour would be longer than the current two-year ALO duty. We assumed a three-year tour of duty, though some locations would require less. The difference is only \$250,000 per year.

Can a Nonrated Officer Perform the ALO Mission?

Introduction

In answering the question regarding the feasibility of a nonrated officer or any nonstrike officer performing the mission, we looked at the following factors:

- historical assumptions and changes over time
- surveys of ALOs, TACP personnel, and Army officers
- interviews of ALOs, TACP personnel, and Army officers.

Historical Evidence

The appendix includes a detailed chronology of changes in the air-ground controller history.

Terminal Controllers

Prior to and during the Vietnam War, only rated officers could be FACs and terminal attack controllers (TACs).

Through both the Korean and the Vietnam War, it was the FAC qualified fighter-pilot-ALOs that provided terminal air control for CAS air strikes. The enlisted airman, or ROMAD, was limited in their role because the officers were the only ones authorized to clear aircraft “Hot” and the Army wanted Air Force fighter pilots on the ground controlling the fighter aircraft that were providing them CAS. However, it wasn’t until the mid 1980s that the Air

Force realized that they would have problems maintaining pilots both in the cockpit and attached to TACP units for the purpose of controlling CAS Air Force leadership decided it was not necessary for the GFAC [ground forward air controller] to be an officer but that an enlisted man, if properly trained, could control air strikes in the close air support environment—thus the Enlisted Terminal [Attack] Controller (ETAC) was born. (Wisher, 2004, p. 9)

Prior to 1986 (except for program verification) the [Air Force] had restricted the terminal control of close support missions to ALOs, [airborne forward air controllers] and GFACs, who by definition and doctrine were rated (pilot/weapon system officer) officers. As a result of rated manpower shortages and a need for more qualified terminal air strike controllers the [Air Force] instituted a training program for selected enlisted members of TACPs. (Knox, 1988, p. 15)

As these accounts indicate, it was long assumed that the TAC job could be performed only by a rated officer, but now that function is performed by enlisted personnel.

Battalion ALOs

Prior to 1998, only rated officers could be BALOs. In 1998, the Air Force made the decision to use ETACs to perform BALO duty. At the time, there was concern about whether the enlisted personnel would have credibility with Army maneuver commanders. Interviews with both Army commanders and current BALOs indicate that the conversion has been a success.¹

In 2003, Gen Mike Hagee, Commandant of the USMC, opened up ALO positions to non-aviators (Lubold, 2003).

¹ We were not able to locate any information suggesting that the use of ETACs was not effective, nor did we find in any of the interviews with ALOs or Army battalion commanders anything negative regarding the use of enlisted ALOs at the battalion level. Of note is the fact that the ANG still uses second lieutenants for these positions, but we found nothing to indicate any difference in performance.

Brigade-and-Above ALOs

Prior to 2005, only rated officers could serve as ALOs at brigade-and-above levels. ANG nonrated officers are now serving as brigade ALOs. They have also deployed as brigade ALOs. Interviews with Army officers serving with one nonrated brigade ALO indicate that the individual did an outstanding job.²

Current Assignments

The manpower requirements database, which is a function of the rated officer supply, calls for 60 percent of ALO billets to be filled by strike pilots; despite this, a June 2007 snapshot of the personnel database showed only 45 percent of the ALO billets filled by strike pilots. In fact, navigators filled 33 percent of the billets despite having only 16 percent of the authorizations. So, while the majority of the requirement is for strike pilots, the reality is that strike navigators are substituted for strike pilots.

Previous Research

The two major analytical efforts—Olivero (1999) and Wisher (2004)—affirmatively answer the question of whether a nonrated officer can perform ALO duty. Olivero's surveys, while also validating the current process of using ETACs as BALOs, showed that 66 percent of current ALOs felt that there should be an ALO career field. Eighty-seven percent of ROMADs agreed with the need for an ALO career field, but only 51 percent of Army officers agreed.

The lack of an Army consensus may center on the fact that the Army is satisfied with the current ALO system. It could also indicate a desire not to break something that is working well.

In Table 4.1 (taken from Olivero, 1999), only 28 percent of actual ALOs considered experience as a rated officer essential to the skills and knowledge of an ALO. Furthermore, only 11 percent and 2 percent,

² The individual, a field-grade officer, is a former enlisted TACP member with experience as an enlisted BALO. As an ANG officer, he served as the 82nd Airborne Brigade ALO.

respectively, considered experiences in the cockpit doing CAS or as an airborne FAC (FAC-A) to be essential. Thus, the vast majority of the very individuals doing the job do not consider aeronautical skills or expertise to be essential to that job.

Table 4.2 is an adaptation of Table 4.1 for each of the three major groups (ROMADs, Army officers, and ALOs), showing the top-ranked categories of skills and knowledge having more than 50 percent agreement by one or more of the three interested groups (see Olivero, 1999). No group considered aeronautical experience to be essential. They did consider knowledge of aircraft weapons, effects, tactics, and employment as essential.

Table 4.1
ALOs' Rankings of Essential ALO Skills and Knowledge

ALO Skill or Knowledge Area	Percentage
Knowledge of aircraft weapons and their effects	95
Knowledge of aircraft tactics and employment	87
Knowledge of enemy air defenses	83
Knowledge of Army operations	73
Knowledge of other fire-support assets	70
Knowledge of the targeting process	56
Knowledge of Army staff coordination	51
Knowledge of the military decisionmaking planning process	39
<i>Must be an aeronautical rated officer (pilot/navigator)</i>	28
Knowledge of radio systems	27
<i>Experience in the fighter cockpit doing CAS</i>	11
<i>Experience in the cockpit as an FAC-A</i>	2

SOURCE: Adapted from Olivero, 1999, p. 46, Table 4.

NOTE: Percentages reflect the number of ALOs listing a skill or knowledge area as essential.

Table 4.2
Essential ALO Skills and Knowledge

ALO Skill or Knowledge Area	Percentage		
	ROMADs	Army Officers	ALOs
Knowledge of aircraft weapons and their effects	92	92	95
Knowledge of aircraft tactics and employment	79	86	87
Knowledge of enemy air defenses	77	70	83
Knowledge of Army operations	77	56	73
Knowledge of other fire-support assets	68	53	70
Knowledge of the targeting process	58	80	56
Knowledge of Army staff coordination	81	—	51
Knowledge of the military decisionmaking planning process	55	—	—

SOURCE: Based on data in Olivero, 1999, pp. 48–50, Tables 7, 8, and 9.

NOTE: Values represent at least a 50-percent ranking by one or more groups.

Wisher (2004) used a different analytical approach, a nine-point Likert scale, to measure agreement with a series of questions. Table 4.3 shows the average response to the question of whether it is necessary for an ALO to be a rated officer. Except for one group, the respondents were neutral, neither agreeing nor disagreeing with the statement.

Army officers agreed with the statement that there was a necessity for an ALO to be a rated officer. In interviews with Army personnel and Air Force personnel who work with the Army, the consensus was that the Army is reluctant to endorse change when there is no driving need to make a change. From an Army perspective, there is no need to change the current system, since the current system is meeting the Army's needs. The Air Force perspective was presented earlier, in Chapter Three.

Table 4.3
Necessity That an ALO Be a Rated Officer

Subject Group	Average Likert Score (1–9 scale)	Corresponding Rating
Army	6.0	Agree
TACP	5.4	Neutral
ALO	5.3	Neutral
1C4	5.5	Neutral
Aircrew	5.7	Neutral
Cadets	5.8	Neutral

SOURCE: Wisher, 2004, p. 36, Table 9 (Question 8).

NOTE: 1C4 is the TACP enlisted AFSC. Likert scores of 0.5 to 1.9 indicate strongly disagree, 2.0 to 3.9 indicate disagree, 4.0 to 5.9 indicate neutral, 6.0 to 7.9 indicate agree, and 8.0 to 9.5 indicate strongly agree.

Recent Interviews

It was clear in interviews with ALOs, TACP personnel, ASOG and ASOS commanders, ANG nonrated ALOs, and Army officers that nonrated personnel can perform the ALO mission.³ While the Army response was affirmative, it was also the most cautious. Interviewees suggested that Army culture likes to see what is worn on the uniform as an identifier of ability, and that “wings” on uniforms are a source of comfort, because the Army has seen what aviators can do in the ALO job. There were a few examples of nonrated personnel (and, in one case, an enlistee) who filled in as ALOs in the field. In each case, the Army commander was less than thrilled initially, but as time went on, the commander completely trusted the individual’s ability to do the ALO job.

³ We interviewed 27 personnel: 12 from Fort Hood, six from the ANG, three from the Air Staff, one from the Joint Chiefs of Staff, three from the ACC, and two other field personnel. Included in those totals were three current and former Army commanders.

Also of note, interviews with Army officers serving with a non-rated ANG brigade ALO indicated that the Army was completely satisfied with the individual's level of performance. The individual was characterized as one who fought for Air Force doctrinal use of TACP resources with Army officers, often two grades above, and was accepted by the ground commanders as the authority on the use of airpower.

Is an ALO Career Field Feasible?

Definition of a Career Field

One definition of *career* is “a profession for which one trains and which is undertaken as a permanent calling” (Merriam-Webster, 2005). In our definition of an ALO career field, we assume that it includes specialized training, multiple assignments, and career progression.

How to Create a Career Force

A career force requires career progression. An ALO career force must have a proper mix of company-grade and field-grade assignments. Based on 2006 retention and promotion rates, a typical nonrated line force will have 64 percent company-grade officers and 36 percent field-grade officers. Force management is relatively easy when authorizations (or spaces) match the actual force (or faces).

When spaces do not match faces, personnel managers use a variety of personnel levers to balance the force. In the officer force, special pay and bonuses are offered to increase retention. In addition, individuals may crossflow into or out of a career field, depending on overall grade staffing.

Crossflow can be permanent or temporary, depending on the needs of the career field. Temporary crossflow is employed when the Air Force does not want or need to create career-field experts. Two examples of temporary crossflow are recruiters and instructors. In the case of recruiters and some instructors, individuals receive special duty

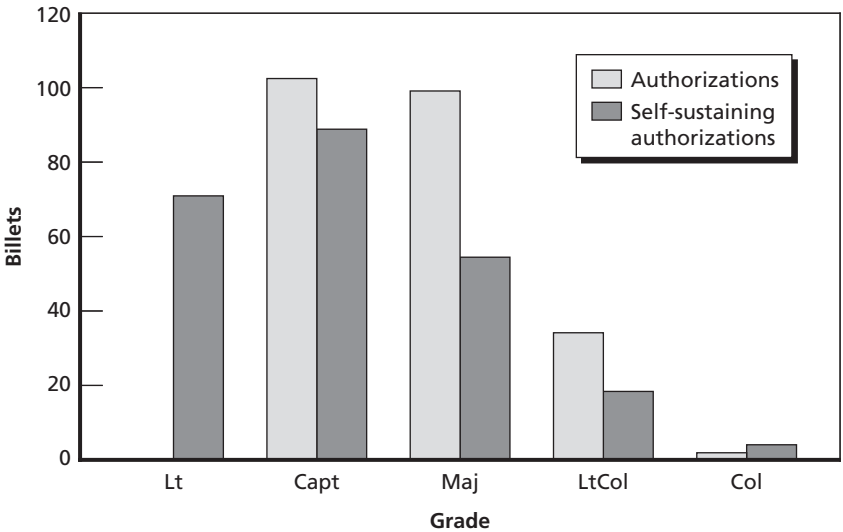
identifiers for the length of the assignment and revert to their original AFSC upon completion. For other instructors, a prefix is assigned to their current AFSC. ALO duty is a similar type of temporary cross-flow, but instead uses a U suffix to replace the specific aircraft suffix attached to the AFSC (e.g., a fighter pilot AFSC is 11Fx; if the person flies an A-10, it is 11FxB, and when serving as an ALO, it is 11FxU).

In the development of an ALO career force, our goal is to minimize the use of special pay, bonuses, and temporary crossflow to shape the career force.

Figure 5.1 shows total ALO authorizations by grade, compared to the distribution of authorizations required to create a self-sustaining career field. The total authorizations (237) equal the total self-sustaining authorizations (237). As the figure indicates, there are currently no lieutenant ALO authorizations and too many major and lieutenant colonel authorizations to create a self-sustaining career field.

The imbalance in authorizations requires some adjustments to create a career field. One assumption would be to treat lieutenant and

Figure 5.1
Authorizations by Grade



captain billets as the same (i.e., call them company-grade billets). Fortunately, there are more captain billets than required for a self-sustaining force, but, unfortunately, there are not enough captain billets to make up for the lack of lieutenant billets. Another option would be to let lieutenants serve in other, feeder career fields and then transfer them to the ALO career field as captains.

Temporary crossflow can solve part of the imbalance in authorizations. This is similar to what is done today (for ALOs), except that *all* the authorizations utilize temporary crossflow. A simple solution is to create a self-sustaining career field using as many of the authorizations as possible and then supplement the career field with temporary crossflow. Additionally, the authorizations should be reviewed to determine whether field-grade officers are actually required where currently indicated. The current distribution of grades in ALO authorizations was undoubtedly driven, at least in part, by the available supply. If no lieutenants were available for temporary crossflow from rated duties, there would have been no point in establishing lieutenant authorizations. Similarly, if a preponderance of the crossflow availables were field-grade officers, this may have affected the authorized grade distribution.

Current ALO Force

The current active-duty ALO force is composed almost entirely of one-tour-only assignments. Some positions, such as ASOG and ASOS commanders, utilize individuals with previous ALO experience. An exception to the practice of using one-tour-only assignments is the ANG, which fills all its ALO positions with career ALOs.

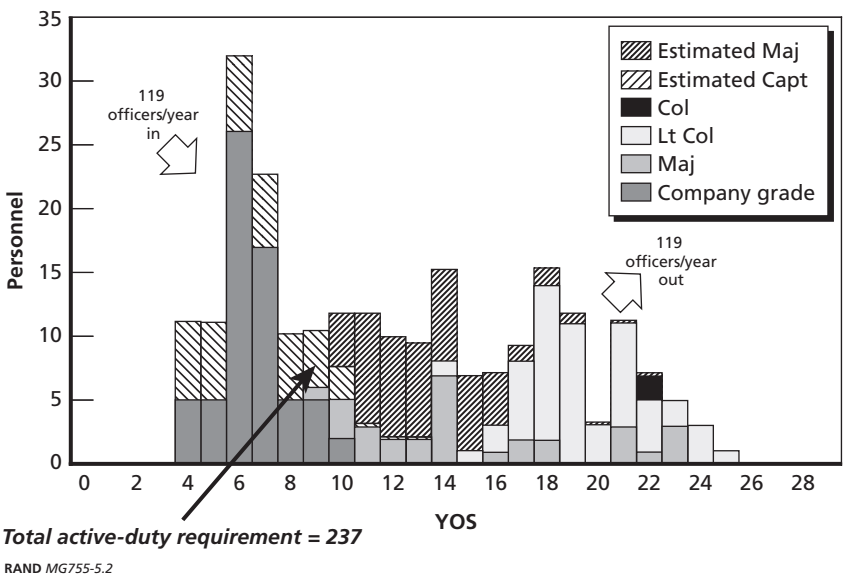
Figure 5.2 depicts the end FY 2006 active-duty ALO force. Because the personnel data system does not immediately update a new ALO's current AFSC with the new U suffix, only 64 percent of the current ALOs have their U suffix.¹ In Figure 5.2, to account for the actual 100-percent fill, we proportionately distribute the unknown staffing by

¹ The ALO assignment officer verified that 100 percent of the ALO authorizations are filled and that the suffix takes six months to appear in the assigned individual's record.

the appropriate year of service (YOS) and the corresponding grade. In Figure 5.2, “Estimated Capt” is an estimate of the remaining captain staffing proportionately distributed across years of service. Similarly, “Estimated Maj” is an estimate of the staffing of majors.

Because the ALO force is not a career force, there is no need to build a self-sustaining force. Filling the FY 2006 active-duty authorizations requires 119 officers per year entering two-year ALO assignments. Since 119 officers also exit ALO duty every year,² the same number require requalification training in their primary aircraft system. The average cost to requalify a pilot ranges from roughly \$325,000 (F-16) to \$700,000 (F-15).³

Figure 5.2
Current YOS Distribution of Active-Duty ALO Force



² Theoretically, 119 would crossflow out. In actuality, due to separations and retirements, the number would be slightly lower.

³ These requalification costs are unofficial estimates provided by Headquarters, U.S. Air Force Combat Forces Division (AF/A8PC).

ALO Career Force Options

A simple approach to creating a career force involves evaluating two basic options: a mix of rated and nonrated officers and only nonrated officers. The only-rated officers option represents the current state. Variations of these options include different points of accession and use of crossflow.

While the Air Force generally accesses officers as second lieutenants in YOS 0,⁴ some occupations do not have enough higher-grade billets to keep their lieutenants. An example is the Space and Missile Operations AFSC, which requires a portion of its officers to retrain into a new AFSC at the end of the first assignment. So, in essence, the new AFSC is gaining individuals at a YOS greater than zero. We use the term *accessions* to define individuals who enter an AFSC as second lieutenants in YOS 0. We use the term *late entry* for individuals who enter an AFSC beyond YOS 0.

Crossflow, as used in reference to the options, can be either *temporary* or *permanent*. Temporary crossflow occurs when individuals remain in ALO duty for one tour. For the case of gaining AFSC in a permanent crossflow action, we use the term *late entry* when an individual remains in the career field. When discussing crossflow, we are referring primarily to temporary crossflow.

Option 1: Combination of Rated and Nonrated Officers

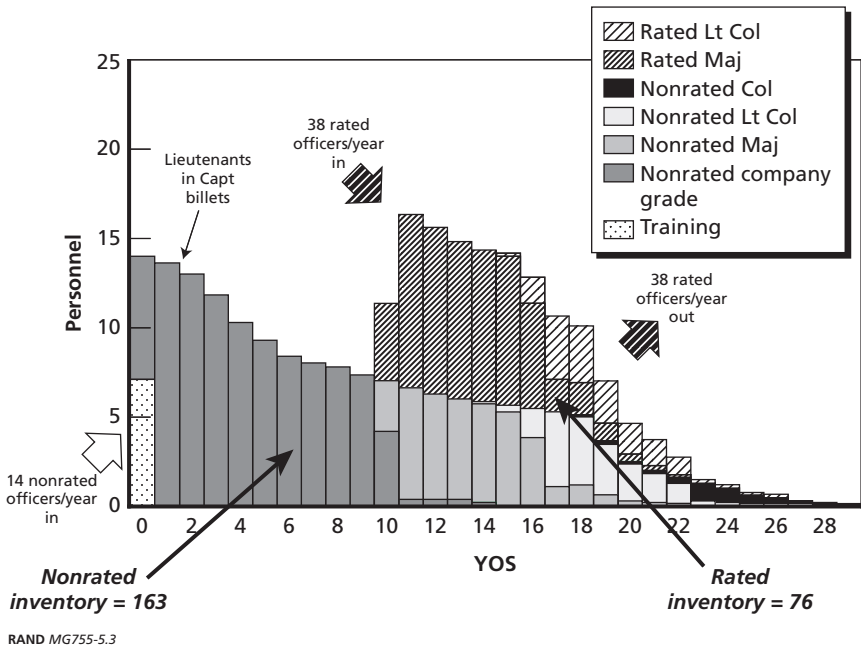
We constructed two variants of this option. The variants differ in the point at which an individual starts an ALO career and in the number of temporary crossflows required of the rated community.

Option 1A: Accession Only

Option 1A (see Figure 5.3) is our recommended option. It accesses individuals in the ALO career field at YOS 0 (14 per year). It requires

⁴ Many non-line corps officers (medical, legal, and chaplain) are accessed at grades above second lieutenant. Additionally, some officers return to the Air Force or transfer from other services with grades higher than second lieutenant and years of service greater than zero.

Figure 5.3
Option 1A: Mixed Force with Accessions

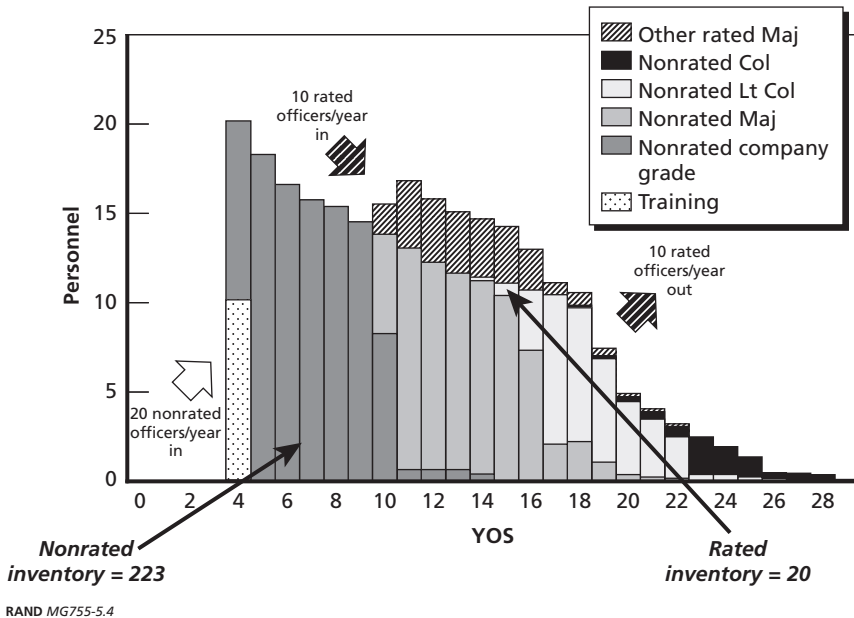


that lieutenants be placed in captain billets, preferably in the ASOC. It still uses rated crossflow, which provides for information exchange between Air Force strike units and Army ground units. It reduces the demand on rated officers by 68 percent (from 119 per year to 38 per year). It slightly overproduces colonels by two individuals.

Option 1B: Late Entry

Option 1B (see Figure 5.4) utilizes late-entry additions to the career field from feeder AFSCs at YOS 4 (20 per year). It does not require that lieutenants serve in captain billets. It reduces the rated requirement by 91 percent (from 119 per year to 10 per year). The temporary crossflow still provides information exchange between Air Force strike units and Army ground units. But, at only 10 per year, it is questionable whether there is enough crossflow to be valuable. This force overproduces lieutenant colonels and colonels by six individuals.

Figure 5.4
Option 1B: Mixed Force with Late Entry



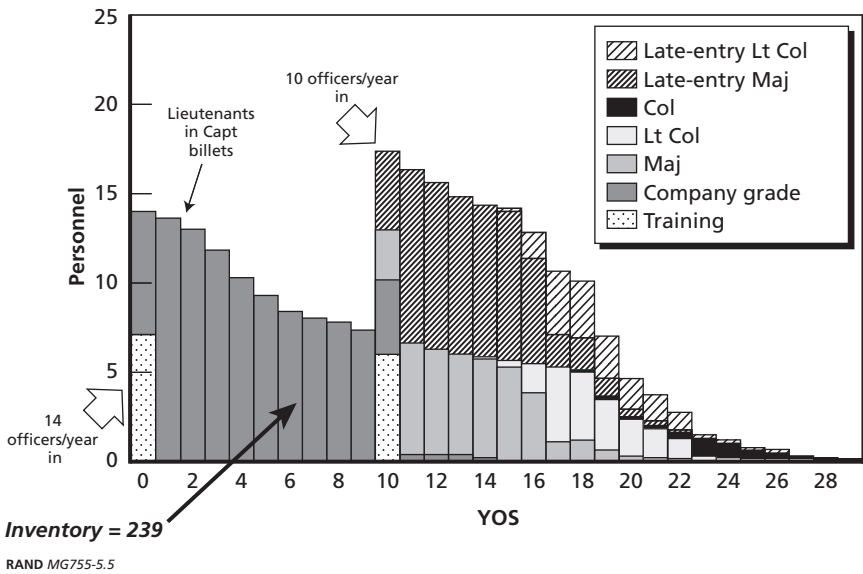
Option 2: Use Only Nonrated Officers

In option 2, no rated officers serve as ALOs. The lack of rated officers results in little information exchange with Air Force strike units. Also, without a dynamic training or refreshing program, ALOs will not have the latest information on tactics, techniques, and procedures. The Army does gain some insight into Air Force processes, but it lacks information on how a strike unit functions. In option 2, all crossflow is late entry into the career field.

Option 2A: Accessed Immediately with Some Late Entry

In option 2A (see Figure 5.5), ALOs enter the career field as accessions in YOS 0 (14 per year) and again at YOS 10 as late entries (10 per year). In this option, lieutenants must fill captain billets. It is questionable whether individuals can be retrained at such a late point in their

Figure 5.5
Option 2A: Nonrated-Only Force with Accessions and Late Entry

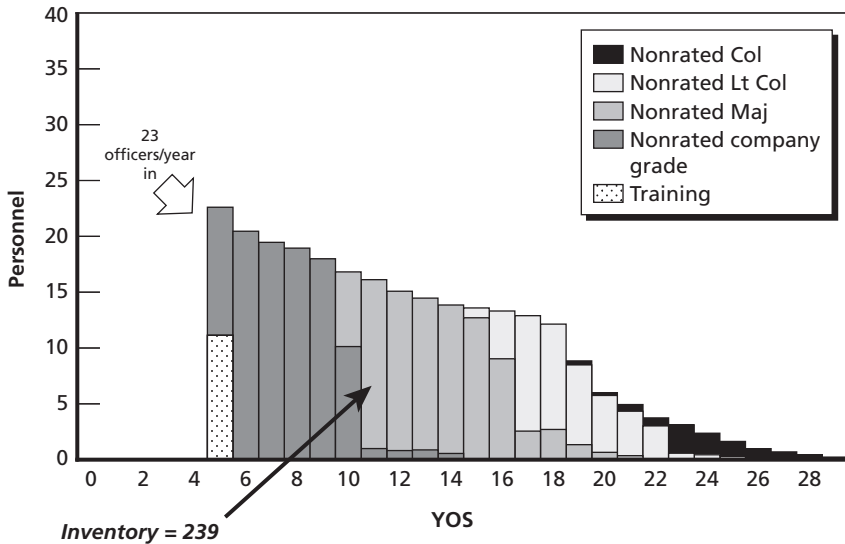


careers (10 years) without some prior knowledge or experience (e.g., as grounded pilots, intelligence officers). This option overproduces colonels by two individuals.

Option 2B: Late Entry Only

Option 2B (see Figure 5.6) improves on option 2A by eliminating the very late entry at YOS 10. Option 2B brings in 23 officers per year from feeder AFSCs at YOS 6. Unfortunately, YOS 6 entry probably requires two assignments in feeder AFSCs. More desirable is one assignment for three to four years, so that the individual can begin his or her long-term career job as soon as possible. This career field overproduces colonels by two individuals.

Figure 5.6
Option 2B: Nonrated-Only Force with Late Entry



RAND MG755-5.6

Comparison of Options

In comparing the options, we next examine the positive aspects of each option and the respective costs.

Key Features

The knowledge transfer between Army ground units and Air Force CAS units is an important benefit of the current system. We posit that experienced ALOs are better than inexperienced ALOs and that career ALOs working on ALO issues at headquarters are better than individuals with one-tour ALO experience. We also conclude that an ALO career field would provide better morale, especially to the enlisted TACP force, as opposed to forcing individuals to do jobs that they do not want to do or that they think will not benefit their careers. Our interviews and previous research (Wisher, 2004; Olivero, 1999) suggest that Army commanders prefer rated officers—and the higher the rank

the better—but, in time, they do accept individuals who are proficient in their jobs. We recognize that putting lieutenants in captain authorizations is not a good option, though a careful review of authorizations may reveal that a more junior-grade distribution is acceptable. We also assume that learning one job is better than being trained in two jobs during company-grade years, unless the job directly relates to an ALO job.

In Table 5.1, we compare each of these criteria for each of the previous options. The first two options, 1A and 1B, mixes of rated and nonrated officers, have the most positive features. Option 1B requires training in two jobs: one to start the individual’s career and the second at the beginning of the individual’s ALO career. If the first job is in an intelligence-related career field, that can be a plus, but, otherwise, there are sunk costs involved in training the individual twice.

Table 5.1
Comparison of Positive Features

Feature	Current	Option			
		1A: Mixed Force with Accessions	1B: Mixed Force with Late Entry	2A: Nonrated Only with Accessions and Late Entry	2B: Nonrated Only with Late Entry
Transfer of Air Force CAS information to Army	X	X	X		
Transfer of Army information to Air Force CAS	X	X	X		
Builds experienced ALOs		X	X	X	X
Builds better planners		X	X	X	X
Improves rated staffing		X	X	X	X

Table 5.1—Continued

Feature	Current	Option			
		1A: Mixed Force with Accessions	1B: Mixed Force with Late Entry	2A: Nonrated Only with Accessions and Late Entry	2B: Nonrated Only with Late Entry
Improves TACP morale		X	X	X	X
Army acceptance	X	X	X		
No lieutenants in Capt billets	X		X		X
Train in one career field		X			

Cost Differences

In comparing the cost of the five options (including the current system), we examined the required ALO training and PCS costs. For reasons discussed in Chapter Three, we did not include differences in salary or requalification training costs.

Table 5.2 shows the results of this analysis. Cost differences between the options are negligible.

Table 5.2
Comparison of Costs

Cost Category (\$ millions)	Current	Option			
		1A: Mixed Force with Accessions	1B: Mixed Force with Late Entry	2A: Nonrated Only with Accessions and Late Entry	2B: Nonrated Only with Late Entry
Training	0.42	0.49	0.55	0.57	0.66
PCS	1.24	0.99	0.92	0.92	0.88
Total	1.66	1.48	1.43	1.49	1.54

Similarity to Other Career Fields

Today, an ALO assignment is a one-tour-only assignment, much like those of recruiters and instructors. Success as a recruiter is based, in part, on a person's knowledge of and experience in the Air Force; other required knowledge is easily taught. Instructor duty takes advantage of career knowledge and adds some techniques so that knowledge and experience can be imparted to others. While one can always learn how to be a better recruiter or instructor, most people can do a good job with relatively little training and experience. Some would argue that ALO duty is the same: An individual with strike experience adds a little training to do a fairly effective job. Unlike instructors or recruiters, however, the ALO's tour length is much shorter and the training is longer, resulting in less productivity.

Another example of a similar AFSC is acquisition manager, 63Ax, in which a large influx of scientists, engineers, contracting officers, and grounded pilots and navigators form a large late-entry force. Some officers start out as acquisition managers and stay in the career field, but the large number of field-grade authorizations requires late entries. Additionally, there is significant temporary crossflow of rated officers into acquisition offices, though most of these officers maintain their rated AFSC.

Unintended Consequences of Preferred Solution

In the remainder of this chapter, we explore some potential unintended consequences of a shift to a nonrated ALO career field.

Effect on Strike Pilots

Reducing the number of ALO opportunities will probably reduce the number of squadron (ASOS) and group (ASOG) commander opportunities for strike aviators. In time, the career ALO would be more likely to be selected for ASOS and ASOG command positions.

While ALOs have not received joint service credit under past rules, ALO duty is a career-broadening opportunity with a strong joint

flavor. Strike aviators performing ALO duty have the rare opportunity to add ground operations experience to their air operations experience.⁵ This type of dual experience will later prove useful for senior officers vying for high-level joint positions.

Effect on Air Battle Managers and Mobility Pilots

We did not consider air battle manager ALO⁶ or air mobility liaison officer positions, but we would expect that, if the Air Force creates a new career field, the need for air battle managers to serve as ALOs will diminish. Similarly, air mobility liaison responsibilities might also see a reduction.

Effect on ASOS and ASOG

It would be difficult to argue that a career ALO program would not improve effectiveness, morale, and leadership in both organizations. We assume that some fraction of ALO positions would still be filled by strike aviators, so the transfer of information would continue.

Effect on Army

The Army may be reluctant at first to accept the change, maybe even perceiving less of a commitment to the Army mission by the Air Force. Also, seeing “clean shirts” (no aviator badges) may indicate to an Army officer a lack of knowledge or ability. Historical and anecdotal evidence suggests that this reaction is short-lived. Ultimately, the Army is concerned about effectiveness. If career ALOs perform at or above the current level, these concerns will pass in time.

Effect on the Theater Air-Ground System

On average, an Air Force officer with more job-specific training and experience will outperform the officer with less job-specific training

⁵ New procedures currently being implemented for determining joint experience may result in joint credit for ALO tours.

⁶ We assumed that, in the short term, the Air Force would continue to fill the 25 air battle manager ALO positions as it has been doing.

and experience. The result will almost surely be a more effective air-ground weapon system.

Since information exchange is a key positive feature of the current Theater Air-Ground System (TAGS) and will not naturally occur with nonrated ALOs, it may require a specific plan of information exchange between Army and Air Force units. This is a difficult concept to measure, both in terms of its effect and the consequences if it were missing.

Effect on “Blueness”

Enlisted Air Force personnel benefit from a different assignment and promotion system than do Air Force officers. Enlisted TACP personnel typically spend their whole career on an Army base, yet none would ever argue that they were not promoted because the Air Force forgot about them. The reason is that enlisted personnel compete for promotion only within their career field. And nearly all enlisted TACP personnel are in the same situation.

When we asked Air Force TACP personnel which service they most identify with, nearly all said the Army. When asked which service they would rather join, they said the Air Force. TACP personnel responded that they had the best of both worlds. They were doing a job that they loved (ground-combat support), and they were in the Air Force.

Officers face different circumstances. The line Air Force officer is not promoted within his or her career field but, rather, in competition against all other line officers in his or her year group. A passed-over Air Force officer serving exclusively on Army bases may blame the promotion failure on the fact that he or she is on an Army base—“out of sight, out of mind.” And the individual may even ask the question, “Why don’t I just serve in the Army, since they appreciate me?” Therefore, it will be important to bring an Air Force officer back into an Air Force environment on a periodic basis to “re-blue” the individual. This will require the development of a career-field plan.

On the positive side, the ASOG and ASOS are distinctly Air Force units, though located on Army bases. In these units, the officer is not one-deep in an Army staff or unit. The career ALO will work, the

majority of time, with and for Air Force personnel and will work in an Air Force organizational structure.

Effect on the Army–Air Force 1948 Key West Agreement

The Key West Agreement has served as the definitive statement on the assignment of roles and missions in the major services. While the specifics of the policies derived from this and other agreements have been modified many times, the fundamental question is whether an ALO career field of nonrated, non–strike-qualified ALOs would violate this agreement and the policies developed over time to institutionalize its basic tenets:

In general terms, the Key West Agreement of April 21, 1948, made the Air Force responsible for strategic air warfare, for defense of the US against air attack, and for air and logistic support of ground units; the Navy, for combat operations at sea; the Army, for land combat and for air-defense antiaircraft artillery; and the Marine Corps, for amphibious warfare. It also assigned each service a number of collateral missions in support of one another. (Canaan, 1992)

The Army received responsibility for land-based missile defense and the Air Force primary responsibility for CAS, thus the “implied” need for ALOs. One unintended consequence of this proposal (non-rated, non–strike-qualified officers as ALOs) could be the takeover of the ALO mission by the Army’s rotary-wing CAS pilots or even Army artillery corps specialists, negating the need for the Air Force to provide ALOs. An ALO career field arguably creates a political slippery slope that may erode the Key West Agreement and the strike qualification precedent of the fighter-qualified A-type FAC of the Vietnam era, and it might reopen the debate over why the Army does not take over all responsibility for CAS.

Recommendations

We conclude that the time is right for the development of an ALO career field. We recommend that the Air Force establish a nonrated ALO career field and that it continue to rotate strike-qualified rated officers through one-third of the ALO billets. While the Air Force performs the air-ground support mission well, this monograph posits that an ALO career field would improve its capability.

An ALO career field is more likely to provide officers to advise the Army who do not abuse key airpower doctrinal concepts, such as centralized command and control and decentralized execution. Inexperienced ALOs have allowed Army commanders to misuse critical TACP resources. An ALO career field will enrich TACP/ALO functional staff expertise in the air-ground strike concept of operations and doctrine. Further, an ALO career field will provide leadership to the TACP force.

The majority of ALOs and TACP personnel, previously surveyed, agree that a nonrated officer can perform the ALO mission. Interviews and the experiences of nonrated ANG officers deployed as brigade ALOs confirm this fact. The USMC is also using nonrated officers in similar roles.

A career field is feasible, but, due to the preponderance of ALO field-grade requirements, it will require some adaptations. A mix of career ALOs and noncareer ALO strike aviators can meet the grade requirements of an ALO force. This option still allows strike pilots to crossflow from strike units to the Army and back again, allowing a transfer of information between Army ground units and Air Force

strike units. A career ALO force will require a new training program devoted to training nonrated officers to be ALOs. While a new training program will cost significantly more than the current training program, that cost is more than offset by the much longer tenure that officers will serve as ALOs. Finally, the use of career ALOs will reduce overall rated noncockpit requirements.

History of the Air-Ground Support Mission

Early Years

Air forces have assigned liaison officers to coordinate operations and keep air units informed of the ground battle as early as World War I. The duties that ALOs perform today and the challenges that they have faced in Operation Enduring Freedom and Operation Iraqi Freedom are not far removed from those of the early days.

One of the first recorded instances of assigning ALOs to work with ground forces was during World War I, when the German military used ALOs to communicate back to air bases to keep the flying units informed of the front location, ground situation, and location of targets (Hallion, 1989, p. 39). Although the U.S. Army conducted combined-arms maneuvers in 1927, there was no mention of the Army Air Corps performing liaisons with ground forces. It was not until preparations began for World War II that the United States developed a system for coordinating air and ground operations.

On August 20, 1940, General George C. Marshall directed his Army G-3, General F. M. Andrews, an Air Corps officer, to initiate staff studies on policies, training programs, and a new tactical doctrine for the close support of ground troops by aviation. This led to a directive to conduct tests on air support in the form of the Fall 1941 Maneuvers (Greenfield and Palmer, 1946, p. 57). These tests were conducted during the Carolina and Louisiana Games for the purpose of improving air-ground cooperation (Cox, 1995, p. 51). The air and ground commanders exchanged liaison officers, and the Army Air Force placed an organization called “Air Support Control” with the ground-force

corps headquarters and placed air support parties with lower ground-force echelons (but primarily at division headquarters) (Cooling, 1990, p. 56). Colocated with ground forces, they transmitted and coordinated requests for air support. This led to the foundation document on air support to ground forces, Field Manual (FM) 31-35, *Aviation in Support of Ground Forces*, published in 1942 (U.S. Army Air Force, 1942).

FM 31-35 defined the roles of an air support officer (equivalent to an ALO), an air-strike control function (equivalent to an ASOC), and an air support party (equivalent to a TACP member). The air-strike control function was defined as the air unit at the headquarters of the support unit whose purpose was to control the operations of the support aviation, advise the support ground commander regarding the capabilities of the air unit, and maintain liaison with the air units. The air support party was defined as a highly mobile group composed of one or more air support officers and necessary personnel and equipment to transmit air requests to air-strike control and to handle communications with the aircraft in-flight net. The air support officer was defined as an air officer who represented the air-strike control node to the ground combat elements. The organizational structure, procedures, and communication nets identified in FM 31-35 would be very recognizable to ASOC and TACP personnel today.

In July 1943, the Army Air Force published FM 100-20, *Command and Employment of Airpower* (U.S. Army Air Force, 1943). FM 100-20 reiterated the need for tactical air and ground operations to be coordinated through the exchange of liaison officers, stating that air and ground liaison officers will be officers who are well versed in air and ground tactics. As the war progressed, the need for ground-air liaison was reinforced, along with the need for improved communication and identification of friendly forces. During the Sicily Campaign, the Army's II Corps experimented with fighter control parties equipped with jeeps carrying air-ground radios. This worked so well that the practice was adopted for the Italy and Normandy campaigns (Hallion, 1989, p. 167).

European Campaign

The Italian Campaign required a range of air support that evolved into the need for improved Air Force liaison with ground forces, which also became standardized for subsequent operations. This included the use of “Rover Joe” forward control post teams—air officers detailed to ground units who roamed from brigade to brigade to control CAS missions (Hallion, 1989, p. 167). These teams evolved into the modern-day joint terminal attack controller (JTAC), equipped with specialized radios. The ALO was called a *tactical air party officer* and was used to coordinate immediate air support requests, artillery marking, and suppression of enemy air defenses and to maintain communication with the flight during the attack.

In 1944, Ninth Air Force began to place ALOs with air support parties at the armored column and armored division combatant commands, in addition to the division and corps levels. Tactical communication squadrons became the organizational structure for air support parties following D-Day. However, the training for the air support parties was limited to high-frequency radio equipment and prewar procedures. Most of the air support parties communicated with aircraft for the first time within the two months preceding D-Day, and in some cases, the air support parties did not work with their air-ground radios until just prior to departure (Cooling, 1990, p. 263). The lack of training and continuity would be a recurring theme for the next 60 years.

Another problem identified in northern Europe was the lack of qualified personnel. CAS required integration between the ALOs at division and corps and their Army counterparts, but much of the time, the staffs were too small to adequately integrate air and ground operations. Additionally, the Ninth Air Force used veteran fighter-bomber pilots as ALOs. The theory was that experienced pilots would be better able to direct CAS missions. However, even with tours limited to 90 days, pilots did not embrace the air support party assignments, especially when their peers were returning to the United States (Cooling, 1990, p. 266).

Experiences in the Pacific theater were similar to those in the European theater. In the southwest Pacific area, 12 air support parties

were formed from three tactical air communication squadrons. Each air control party consisted of two rated officers (pilots and observers) and 20 enlisted personnel, consisting of radio operators, cryptographers, radio technicians, and drivers. Air support parties were placed with 6th Army, one for each corps, division, and independent regimental combat team (Cooling, 1990, p. 323).

Between World War II and Korea

Following World War II, a revised FM 31-35, *Air-Ground Operations* (1946) was published. The organization for the placement of ALOs was little changed from World War II. The division remained the lowest tactical level to have a permanently assigned TACP, but a joint training document implied that lower-echelon ground units probably would receive a TACP only if they were engaged in airborne or amphibious operations (Cooling, 1990, p. 350).

One new development did occur in 1946. General Elwood R. "Pete" Quesada, the commander of the Tactical Air Command, created the Air Indoctrination Course for training Army officers and Air Force pilots in CAS and the air-ground operations system (Schlight, 2003, p. 65). The course appears to have been the first formal training established for ALOs to advise Army ground commanders. The course had two phases. The first was a series of lectures on the TACS and included the tactical air control group, the tactical air control center, the tactical air direction center, TACPs, and ALOs. The second phase focused on the planning and controlling aspects of CAS, rather than actual execution (Schlight, 2003, p. 66). This course evolved initially into the Joint Firepower Control Course and has since evolved into the Joint Firepower Course and ALO Qualification Course.

However, by 1950, the air-ground system atrophied. Tactical Air Command had only one air-ground control agency, the 502nd Tactical Control Group. The small number of TACPs that existed were not skilled in their mission and showed little interest in improvement (Cooling, 1990, p. 349).

Experiences in Korea

Once hostilities started on the Korean Peninsula, three TACPs were placed in the field with the 24th Infantry Division. Almost immediately, portions of two TACPs were killed in action. TACPs were then directed not to position themselves forward of the regimental headquarters. The officers then performed the duties of ALOs and turned over FAC duties to the airborne tactical air coordinators (Cooling, 1990, p. 364). The ban on TACPs moving forward of the regimental level was lifted in October 1950 (Schlight, 2003, p. 150). By the final year of the war, the Air Force was providing each division with between four and six TACPs (Schlight, 2003, pp. 150–151).

In November 1950, the Air Force charted a study group, led by Robert L. Stearns and Major General Glenn O. Barcus, to review air-ground operations. The Stearns-Barcus group concluded that the doctrine was sound, but the Army and Air Force had not provided the necessary trained staffs, control agencies, and communication systems. Recommendations included better training and longer duty tours for FACs, better radio equipment, more vehicles for the TACPs, and improved CAS training for ground commanders (Cooling, 1990, p. 372).

By 1951, the war became defensive in nature, with the Eighth Army defending the main line of resistance, and much of the emphasis shifted from CAS to air interdiction. Few, if any, changes were made in the air-ground organizational structure. However, the placement of TACPs at the battalion level was considered, as was the use of Army FACs (Cooling, 1990, pp. 388–389). As part of the lessons learned process after the armistice, the Fifth Air Force convened an air-ground operations conference. Its recommendations included the need for an FAC and TACP at the front. This translated into an allocation of four TACPs per regiment instead of only four TACPs per division. The justification was that a ground FAC with each battalion could prevent accidents and reduce the risk to aircraft (Cooling, 1990, pp. 394–395). Four TACPs per regiment would roughly equate to one TACP at the regiment level and one TACP for each of the three battalions in the reg-

iment, identical to the structure today for an infantry brigade combat team.

The Air Force established the Air Ground Operations School at Southern Pines, North Carolina, in 1954. Initially, very few improvements were made to air-ground doctrine or tactics, techniques, and procedures (Rowley, 1972, p. 8). The organization that provided the FACs in Korea, the 6147th Tactical Control Squadron, was disbanded, and, in 1957 (Rowley, 1972, p. 8), the Army and Air Force Chiefs of Staff agreed to certain responsibilities toward furnishing, maintaining, and commanding equipment and personnel connected to fire-support coordination. This agreement was published in Army Regulation 95-75 and Air Force Regulation 55-9, dated December 5, 1957 (Chief of Staff, U.S. Air Force, and Chief of Staff, U.S. Army, 1965).

The 1957 agreement stated that Army requests for CAS would be transmitted over Army channels to the Air Force ASOC, the Air Force would provide FACs to air control teams at the battalion level, and the Army would provide personnel and equipment for the air control teams. By 1962, numerous exercises and analyses of the 1957 agreement revealed several major weaknesses.

The problems in the agreement included the inadequate responsiveness of the system to process immediate CAS requests, a lack of mobility for Air Force assets placed in the field to coordinate and commit air support to the Army, a lack of reliable communications, and a lack of trained personnel, continuously available, who were intimately familiar with the coordination and planning techniques for providing air support.

Vietnam Era

In September 1962, the Air Force Chief of Staff, commanding generals of the U.S. Continental Army Command, and the U.S. Strike Command approved new concepts in joint air-ground coordination for testing. These new concepts, which are the foundation of today's current system, included the requirement to establish TACPs at the battalion- and higher-level ground force headquarters, up to and including the

field army. Battalion TACPs consisted of ALOs, FACs, and communication personnel, while the brigade-and-higher TACPs consisted of ALOs and communication personnel. The ALO acted as air advisor to the commander of the ground force and transmitted or monitored (as appropriate) immediate CAS and tactical air reconnaissance requests. FAC duties included controlling CAS strikes from ground or air observation posts. These concepts were tested during four joint exercises, proved far superior to the 1957 agreement, and were adopted by the Army and Air Force Chiefs of Staff into the approved Concept for Improved Joint Air-Ground Coordination in 1965.

As the war progressed in Vietnam, control of CAS missions shifted from ground to airborne controllers. This necessitated the assignment of ALOs at the battalion level. TACPs at the battalion level consisted of an ALO, an FAC, two communication personnel, and a communication vehicle. TACPs at the brigade-and-higher echelons consisted of ALOs, communication personnel, and associated equipment.

The Air Force had significant difficulty in providing the number of trained FACs that were needed to support all the battalions in Vietnam. Because the FACs were fighter pilots, and there was a high demand for fighter platforms in southeast Asia, a pilot shortage emerged. The training time for an FAC was about three years, something that would change little over the years (Rowley, 1972, p. 8). To alleviate the shortage, the Air Staff waived the one-year operational requirement in October 1965. In 1966, the U.S. Strike Command commander recommended that Army personnel be trained as FACs. Army O-1 pilots were trained as spotters but were not qualified as FACs. In mid-1967, non-fighter pilots were accepted into FAC training. FACs were assigned AFSC 1444A if they were fighter-qualified and 1444B if they were not (Rowley, 1972, p. 14). This ended up creating two classes of FACs, because only the fighter-qualified pilots were authorized to work with U.S. Army ground forces. In 1968, Pacific Air Forces (PACAF) required 750 flying hours, as well as one year of operational experience, and by 1969, the Air Staff discontinued the experience waiver to avoid problems with the Army (Rowley, 1972, pp. 14–16).

The question of the need for fighter experience was hotly debated between 1965 and 1970. Supporters of the one-year experience require-

ment believed that inexperienced FACs could be detrimental and dangerous to the air war and could lead to errors in judgment, needless casualties, and loss of overall effectiveness (Rowley, 1972, p. 12). There were also those who believed that non-fighter-qualified personnel performed very well, met the demands expected of them, and were comparable to fighter-qualified personnel (Rowley, 1972, p. 12). Many also held the view that a controller could have years of experience as a fighter pilot and be no more skilled in controlling aircraft than a non-fighter pilot. The evidence that Air Force Headquarters had at the time was that there was not much difference in performance between fighter- and non-fighter-qualified pilots. General Albert P. Clark, Tactical Air Command vice commander, stated that leadership qualities were, in the long run, more important than background and that competence could be acquired through time and experience (Rowley, 1972, p. 12).

Post-Vietnam War Era

By the late 1970s, the battalion TACP consisted of a ground FAC, two ROMADs, and associated communication equipment. Within the Tactical Air Command and PACAF, the battalion TACPs were assigned to tactical air support squadrons. U.S. Air Forces in Europe (USAFE) TACPs were assigned directly as detachments to the 601st Tactical Air Support Group. The tactical air support squadron also provided the airborne FACs, ostensibly one per battalion. The brigade TACP consisted of one ALO and three ROMADs, while the division and corps TACPs had an ALO, a fighter liaison officer, a reconnaissance liaison officer, and an air mobility liaison officer, as well as four ROMADs and maintenance and support specialties. The ALOs were either fighter pilots or weapon system operators (Johnson, 2008). The next major change in TACPs would come with the creation of the ETAC.

The ETAC program began with fits and starts by USAFE, PACAF, and the Tactical Air Command. In the early 1980s, the USAFE Air Ground Operations School was teaching an enlisted FAC course to

noncommissioned officers assigned to the 17th Air Force. PACAF was also qualifying enlisted personnel assigned to TACPs in the Republic of Korea, and, by 1984, the Tactical Air Command decided that it needed to address the issue with the Army, as well as develop standardization across the major commands. On May 22, 1984, the Army and Air Force Chiefs of Staff signed an MoA on the U.S. Army–U.S. Air Force Joint Development Process. The MoA identified 31 initiatives for action. Initiative 25 consisted of recommendations concerning the link between air and ground forces and focused on ALOs and FACs (Davis, 1987, p. 60).

The ALO initiative stated that the Army and Air Force would provide enhanced training in maneuver-unit operations for ALOs and selected FACs. The services agreed to conduct an in-depth review and evaluation of FAC operations and TACP structure. It included enhancing maneuver-unit ground FAC capability with organic helicopter support, executing ground FAC functions while operating from organic maneuver-unit vehicles, and the performance of FAC duties by non-rated officers in an effort to expand the full-time Air Force representation at the maneuver battalion. The services also agreed to conduct a field test as the final phase of the initiative.

The Tactical Air Command conducted its initial review in July 1984, and, by June 1985, after polling USAFE, PACAF, Alaskan Air Command, and the National Guard Bureau, it determined that it could provide BALOs to support 208 battalions (Davis, 1987, p. 77). The Air Staff rejected the initial approach because of the pilot training demands and requested that the Tactical Air Command explore the possibility of using enlisted personnel with experience similar to that of FACs and ALOs. In late 1985, the Army and Air Force conducted a field test at Fort Hunter-Liggett, California, of using enlisted personnel as FACs. This resulted in the creation of the ETAC qualification that would eventually evolve into the JTAC qualification.

The use of enlisted nonrated personnel to perform FAC duties was the first major move to expand the TACP pool of available personnel for FAC and ALO duty beyond fighter pilots and fighter weapon system operators. The next issue to affect ALO staffing was the volunteer assignment program in the 1990s. Because of shortfalls in ALO

staffing, ACC decided to implement a program to use bomber aircrews as ALOs. Initially, ACC placed two bomber ALOs in each of the three ACC air support groups (Headquarters, Air Combat Command, 1993). The bomber ALO test proved successful and was incorporated into the ALO staffing plan (Headquarters, Air Combat Command, 1997).

Further adjustments were made to ALO staffing in 1994, following the signing of the 1994 MoA between U.S. Army Forces Command and the Air Combat Command. The number of ALOs was increased from three to five at the corps level and from three to four at the division level to enhance the planning function.

In November 1995, the Army and Air Force updated the 1965 agreement, "Concept for Improved Air-Ground Operations," with the "Memorandum of Agreement Between the U.S. Air Force and the U.S. Army for Army/Air Force Liaison Support" (Headquarters, U.S. Department of the Army, and Headquarters, U.S. Air Force, 1995). The agreement stated that the Air Force would provide a TACP to each Army maneuver unit, from battalion through corps, for liaison and control of CAS missions and that TACPs would consist of aeronautically rated Air Force officers (ALOs and theater airlift liaison officers) and enlisted specialists representing areas of expertise in integrating air support into ground combat operations. At the time, OA-10 pilots were used as BALOs. However, by 1996, the Air Force was restructuring the OA-10 forces, resulting in ACC being unable to provide BALO support for all aligned battalions (Headquarters, Air Combat Command, 1996). Initially, ACC conducted a feasibility test to see whether ETACs could function as BALOs. The initial test was inconclusive, but the issue was left open for further consideration.

Other initiatives to fill the ALO vacancies included the use of first-assignment instructor pilots (FAIPs) in TACP billets in PACAF and USAFE. Following the combat air forces-ACC Director of Operations meeting in December 1995, ACC allowed the use of non-fighter pilots and navigators to fill 45 percent of fighter pilot ALO billets. However, the Air Force Chief of Staff stated unequivocally at a rated management briefing in June 1996 that the combat Air Force "does not make Air Force policy" (Jarvis, 1997). This led to the Air Force Chief of Staff making a policy change at the four-star Aircrew Management

Summit in September 1996. The policy change mandated fighter or bomber experience for ALOs and prohibited the use of other rated ALOs (FAIP, tanker, airlift) because they were not performing adequately due to a lack of understanding of air-ground weapon employment (Jarvis, 1997).

Following the 1997 four-star retention meeting, the Air Force Chief of Staff directed the U.S. Air Force Deputy Chief of Staff for Plans and Operations (AF/XO) to revalidate ALO requirements, examine where more ETACs might be placed, and provide the Chief of Staff with a decision briefing on ALO requirements (Chief of Staff, U.S. Air Force, 1997). In June 1997, the Air Staff co-hosted with ACC a unit-type code conference to review TACP staffing. The conference focused on converting some ASOC fighter-duty officer positions to air battle manager (ABM) authorizations, increasing the number of ETACs, reviewing the ALO requirements for separate and aviation brigades, and reviewing the requirements for division TACPs (Headquarters, U.S. Air Force, C2 Employment Division, 1997). The outcome was a recommendation to increase the number of ETACs at each echelon, add ABMs as ALOs, and standardize TACP/ASOC staffing. The results were briefed to the Air Force and Army Chiefs of Staff and were taken to the 1997 Army–Air Force Warfighter Talks, as was the recommendation to use ETACs to fill the OA-10 pilot BALO shortfall. The Army and Air Force senior leadership agreed to the TACP/ASOC restructuring and approved the use of ABMs as ALOs, as well as the use of ETACs as BALOs (Chief of Staff, U.S. Army, and Chief of Staff, U.S. Air Force, 1998). The Air Force Chief of Staff directed the implementation of the plan to add ABMs as ALOs and to begin using senior ETACs as BALOs, reiterating that the Air Force would retain a 100-percent staffing level for ALOs. Only fighter/bomber aircrews were authorized to perform ALO duty (outside of the ABMs), and fighter aircrews would fill 55 percent of the requirement (Chief of Staff, U.S. Air Force, 1998).

Concerns regarding the use of ETACs as BALOs focused on whether enlisted nonrated personnel had the skills to advise Army ground commanders on the capabilities and limitations of airpower. Army commanders stated overwhelmingly that they preferred a full-

time enlisted BALO over a part-time rated officer whom they might see only once on an exercise. The Air Force addressed ETAC BALO training by adding a week to the AFSC 1C4X1 Advanced Skills (7-level) Course and focused the course on how to conduct Air Force planning in conjunction with the Army's *military decisionmaking process* and how to advise ground commanders. By 2003, all the remaining OA-10 pilot BALO positions were converted to ETACs.

Transformation to the Modular Army

The Army and Air Force conducted another review of TACP/ASOC requirements in 2003. This culminated in a revised agreement to provide TACPs for all active infantry and armor battalions and cavalry squadrons. The agreement also stated that TACPs would be composed of rated Air Force officers and enlisted technicians capable of planning and integrating air support into ground operations. The most significant change in the MoA was that the Air Force agreed to provide TACs and BALOs to designated maneuver companies based on jointly validated requirements (Headquarters, U.S. Department of the Army, and Headquarters, U.S. Air Force, 2003).

Following reviews of the TACP/ASOC structure in 2005, ALO requirements were fairly stable at the brigade, division, corps, and ASOC levels, and AFSC 1C4X1 continued to provide the manpower for all the BALO requirements. However, the Army decided to modularize and increase the number of its brigade combat teams. This will increase the need for ALOs and BALOs as the Army makes force structure changes. As the Air Force Chief of Staff stated in July 2005,

I agree with this course of action to get us started—there will be an evolving process that we must respond to as we gain experience. This will not be the ultimate solution as the Army goes through its changes. Our participation does not depend on Army funding (or [the Office of the Secretary of Defense]). If we can get outside funding—fine, but we must do this. (Chief of Staff, U.S. Air Force, 2005)

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