

**Special
Feature**

Real transformation change can only be achieved if the Air Force learns and applies the right lessons from observing successful Lean organizations.

logistics

Transformation and Change

Potential Interfaces: ECSS and Flying-Hour Programs
Red Is Good: Transformational Changes for Air Force Aircraft Maintenance
Flight Line Maintenance: Creech versus McPeak

This edition of the Journal presents three featured articles: “Potential Interfaces: ECSS and Flying-Hour Programs,” “Red Is Good: Transformational Changes for Air Force Aircraft Maintenance,” and “Flight Line Maintenance: Creech versus McPeak”

In “Potential Interfaces: ECSS and Flying-Hour Programs,” the authors identify the processes used to plan and execute flying-hour program hours at both the Air Staff and major command level, to include information technology systems used, in order to identify potential touchpoints for the Expeditionary Combat Support System (ECSS). The article concludes with a series of recommendations to ensure ECSS requirements are met.

The second featured article examines how transformational efforts should be used to achieve simultaneous efficiency and

effectiveness targets for aircraft readiness and reliability. Colonel McAneny makes the case that service-wide changes are required if the Air Force hopes to achieve envisioned transformational benefits within the aircraft maintenance community. These include becoming a learning organization, developing organizational level leaders able to visualize and manage entire enterprise value streams, and finally, facilitating an environment where metrics drive transformational change and the relentless pursuit of continuous process improvements.

In the final article, Lieutenant Colonel Lindsay examines the rationale behind former Chief of Staff of the Air Force, General T. Michael Moseley’s decision to realign the aircraft maintenance unit in the Combat Air Force flying squadron.

Introduction

One's first step in wisdom is to question everything—and one's last is to come to terms with everything.

—Georg C. Lichtenberg

Special Feature

After personally experiencing four organizational structures impacting flight line maintenance and only 5 years following a major Air Force reorganization, many Air Force personnel found themselves contemplating another potential realignment in 2008. Again, this

realignment placed the reorganization of flight line aircraft maintenance, otherwise known as the aircraft maintenance unit (AMU), as a central consideration. Similar to previous considerations, this issue raised an emotional and controversial debate throughout the Air Force. Many sought wisdom and comfort from senior officers. In a number of instances, the only wisdom or comfort offered in public forums was the understanding that the Chief of Staff of the Air Force (CSAF) held the responsibility for training, equipping, and organizing the Air Force to best serve the interest of the United States (US).

Naturally the salute smartly advice offered did not set well in the minds of many officers and senior noncommissioned officers. Many wanted to know the reasons behind the unexpected change in direction. Why had the previous Air Force chief moved to realign the tactical organization to the combat wing organization only to see it being changed back to a structure that resembled the objective wing organization of 1992 to 2002? What happened to the need to align the organization because of frustrating experiences realized during the air war over Serbia in 1999 back to the system established by General Creech? What happened to the need to balance fleet health with operational requirements and the need to have experts with PhDs in both maintenance and operations? Finally, the question that resonated in the minds of many leaders is the question of what failed in the last 5 years for the Air Force Chief to drive realignment.

To address the rationale behind the former CSAF, General T. Michael Moseley's decision to realign the AMU in the Combat Air Force (CAF) flying squadron, this article will provide an historical summary of flight line maintenance up to the late 1970s. Following this rationale is an analysis of the contributions of arguably the two most influential leaders on the placement of the AMU. General Wilbur L. Creech and General Merrill A. (Tony) McPeak laid the foundations for flight line organizations that divide the Air Force into two schools of thought for the proper flight line maintenance structure. The examination of these great Air Force leaders will be followed by an overview of issues leading up to the 1999–2002 Chief's Logistics Review, and the decisions leading up to the 2006–2007 analysis completed by the Air Force Inspection Agency (AFIA) on behalf of General Moseley. After analyzing General Moseley's views on the proper alignment of flight line maintenance, the diminished leadership challenge due to the size and scope of responsibility of the operations group and fighter squadron as expressed by General McPeak will prove to be the main factor behind General

Flight L



Ray A. Lindsay, Lieutenant Colonel, USAF

Line Maintenance

Creech versus McPeak

Article Highlights

Flight line maintainers will forever find themselves in a tug-of-war between the two camps characterized by the views of General Creech and General McPeak.

In “Flight Line Maintenance: Creech versus McPeak” Lieutenant Colonel Lindsay examines the rationale behind former Chief of Staff of the Air Force (CSAF), General T. Michael Moseley’s decision to realign the aircraft maintenance unit (AMU) in the Combat Air Force flying squadron. The article begins with a historical summary of flight line maintenance up to the late 1970s. Lindsay follows this with an analysis of the contributions of the two most influential leaders on the placement of the AMU—General William L. Creech and General Merrill A. McPeak. Creech and McPeak laid the foundation for flight line organizations that today divide the Air Force into two schools of thought regarding the proper flight line maintenance structure. Lindsay then provides an overview of issues leading up to the 1999–2002 Chief’s Logistics Review, and the decisions leading to the 2006–2007 analysis completed by the Air Force Inspection Agency on behalf of General Moseley. Lindsay contends the diminished leadership challenge due to the size and scope of responsibility of the operations group and fighter squadron as expressed by General McPeak was the main factor behind General Moseley’s decision to realign flight line maintenance under the tactical flying squadron. The analysis that follows highlights General Creech and General McPeak’s views on flight line maintenance and how their perspectives will remain as viable options for any attempt at Air Force reorganization. Finally, the article argues that the concept envisioned by General Creech best supports the dynamics and challenges of maintaining Air Force weapon systems.

Moseley’s decision to realign flight line maintenance under the tactical flying squadron. The analysis that follows highlights General Creech and General McPeak’s views on flight line maintenance and how their perspectives will remain as viable options for any attempt at Air Force reorganization. Finally, the research demonstrates that the concept envisioned by General Creech best supports the dynamics and challenges of maintaining Air Force weapon systems.

Historical Lineage of Flight Line Maintenance (1909 -1978)

Logisticians are a sad, embittered race of people, very much in demand in war; who sink resentfully into obscurity in peace.

—Admiral Isaac Campbell Kidd, USN

In the early years of aviation (1909 to 1945), flight line maintainers were embedded in flying squadrons. This was a time when US Airmen were trying to establish an independent identity. Aircraft inventories grew exponentially and with the introduction of the B-17 and B-29, aircraft systems became more complex.¹ Aircraft maintenance technicians were initially jacks of-all-trades and were responsible for all maintenance performed on the aircraft. They slowly evolved from generalist to specialist due to the complexity of new weapon systems.² As the Air Force evolved, so did the concepts of maintenance. Under Army Air Forces Regulation 65-1, the traditional air organization divided aircraft maintenance into four echelons.³ First echelon maintenance closely resembled maintenance performed by today’s crew chief and aerospace ground equipment (AGE) technician. It consisted of servicing aircraft and aircraft equipment; preflight and daily inspections; and minor repairs, adjustments, and replacements. All essential tools and equipment had to be air-transportable.⁴ Second echelon maintenance was similar to what is termed today as heavy on-aircraft maintenance. It consisted of more in-depth servicing of aircraft and equipment; performance of the periodic preventive inspections; and such adjustments, repairs, and replacements, to include engine changes, as done by the use of hand tools and mobile equipment authorized by the combat unit’s tables of allowance. The majority of second echelon equipment also had to be air-transportable though some support elements required ground transportation.⁵ Third echelon maintenance was comparable to today’s combat logistics support. It included repairs and replacements that required mobile machinery and other equipment of such weight and bulk that it had to be moved by ground transportation. The technicians were highly specialized, with an emphasis in field repairs and salvage, removal and replacement of major units, assemblies, fabrication of minor parts, and minor repairs to aircraft structures and equipment. This echelon specialized in heavy field repairs within a limited time.⁶ The fourth and final echelon mirrored today’s depots. It included operations needed to completely restore worn out or heavily damaged aircraft to a condition of tactical serviceability and also included the periodic major overhaul of engines, unit assemblies, accessories, and auxiliary equipment.⁷

One of the unique characteristics of this concept of maintenance echelons is that the first two echelons were owned and the actions were performed by the using organization, while

Article Highlights

maintenance in the remaining two echelons was performed by the Air Service Command (ASC). Additionally, the third echelon of maintenance resembled the theater centralized intermediate repair facilities employed today.⁸ Of special note, the echelon structure caused maintenance personnel similar frustrations and perceptions as those realized today. There were instances where one squadron of maintenance personnel worked around the clock to prepare their aircraft for the next day's mission while the maintenance personnel of a sister squadron in the same bomb group played basketball. Additionally, the flight line maintainer often complained that the ASC subdepots were unresponsive to the urgency of day-to-day mission requirements. To remedy the perception regarding ASC maintainers, General Arnold directed control of third echelon maintenance under Bomber Command, marking the first attempt to combine all maintenance at an operational location under a single commander.⁹

During the period between the two World Wars, the pendulum for the aircraft mechanic swung from an orientation on specialists back to one on generalists. Reductions in the size of the Air Force and its manning made this change necessary. The issue of generalizing or specializing flight line maintenance remains a topic of debate today—as seen during periods following wars, the debate is often reenergized by a reduction in forces.¹⁰ In 1947, the Air Force had to face massive reductions. Similar to trends exhibited in the recent past, the most highly skilled aircraft technicians left the Air Force for more lucrative civilian job opportunities. The resulting strategy developed to address this challenge was the *Hobson Plan*.¹¹

The *Hobson Plan* established a wing structure that contained a combat group, a maintenance and supply group, an airdrome group, and a medical group. For flight line maintenance, the combat squadron within the combat group was responsible for first and second echelon maintenance.¹² A key milestone following the *Hobson Plan* was a 1948 survey that outlined a plan to increase peacetime effectiveness, reduce cost, and establish sound organization for mobilization. In 1949, the outcome led Strategic Air Command (SAC) to establish command guidance, SACR 66-12, that would hold the maintenance organization accountable for the full utilization of personnel, equipment, and facilities to produce the maximum aircraft availability. Tactical Air Command (TAC) elected to not establish command level guidance, but instead, to delegate authority to wing commanders to establish the policy and structure that best fit their unit. A similar concept of leadership would resurface in the latter years.

The new and more complex weapon systems of the 1950s brought with them the need for specialization within flight line maintenance. The 1950s also brought in a new era in aircraft maintenance. With the publishing of Air Force Manual (AFM) 66-1, *Maintenance Management Policy*, flight line maintenance was moved from flying squadrons to a squadron aligned under a single authority for all maintenance activities within a wing. With the new alignment came standardization across all major commands, metrics designed to measure a unit's performance, and a system of data collection and reporting.¹³

The US entry into Vietnam caused another shift in the alignment of flight line maintenance. Tactical units chose to disband the organizational alignment directed by AFM 66-1. Instead they chose to organize in accordance with Pacific Air Forces Regulation (PACAFR) 66-12. In this command structure the combined organizational maintenance squadron (OMS), which is equivalent to the aircraft maintenance squadron of today, was disbanded. All

Lindsay concludes, "General Creech had it right by stating the flying squadron and AMUs are a single entity married by a commonality of mission and camaraderie. That marriage, regardless of command channels, is always the combat unit." The organizational structure that best supports the right alignment for flight line maintenance should be one where trained, educated, and experienced experts are available when things do not go as planned. That organization is the one envisioned, standardized, and perfected by General Creech.

Article Acronyms

AEF – Aerospace Expeditionary Forces
AFB – Air Force Base
AFFWO – Air Force Future Flying Wing Organization
AFIA – Air Force Inspection Agency
AFM – Air Force Manual
AGE – Aerospace Ground Equipment
AMU – Aircraft Maintenance Unit
ASC – Air Service Command
CAF – Combat Air Forces
CLR – Chief of Staff's Logistics Review
COMAFFOR – Commander Air Force Forces Logistics Staff
COMO – Combat Oriented Maintenance Organization
CSAF – Chief of Staff of the Air Force
CSAR – Combat Search and Rescue
CWO – Combat Wing Organization
DOGM – Deputy Operations Group for Maintenance
EAF – Expeditionary Aerospace Forces
IAF – Israeli Air Force
MAF – Mobility Air Forces
OAF – Operation Allied Force
OG – Operations Group
OMS – Organizational Maintenance Squadron
PACAFR – Pacific Air Forces Regulation
PBD – Program Budget Decision
POMO – Production Oriented Maintenance Organization
SAC – Strategic Air Command
SACR – SAC Regulation
SecAF – Secretary of the Air Force
SOF – Special Operations Forces
TAC – Tactical Air Command
US – United States

OMS functions, to include munitions loading, were assigned to the tactical squadrons.¹⁴ This concept was not completely new to tactical squadrons. In the mid-sixties, TAC initiated a similar concept with a TAC enhancement program whereby maintenance and support personnel augmented the tactical squadron to give it an independent operating capability.¹⁵ In the face of another reduction of forces following the Vietnam War, tactical units returned to the structure defined under AFM 66-1.

Following the US withdrawal from Vietnam, the Air Force's attention shifted to maintaining higher states of readiness in Europe. Unfortunately, the reduction of forces and requirement for higher readiness were in opposition. Unhappy with the inability of the flight line maintenance units to generate the desired sortie rates, the US looked to recent Israeli Air Force (IAF) successes in the 1973 Arab-Israeli War to find answers. In essence, the US team examining the IAF's structure for flight line maintenance found the efficiencies were gained from the alignment of personnel directly responsible for sortie generation to the flight line and all others to the squadrons not in direct support of day-to-day sortie generation. Inspired by the Israeli concept of maintenance, the Air Force established the production oriented maintenance organization (POMO). The primary objectives of this new structure were to increase the effectiveness of maintenance, support for the operational mission, and unit readiness.¹⁶ Under the POMO concept, flight line maintenance personnel were organized into aircraft maintenance units and were cross-trained to perform a variety of general aircraft maintenance tasks.¹⁷

General Wilbur L. Creech: The Reformist

Workers take more responsibility when they have a sense of ownership

—Gen Wilbur L. Creech, USAF, Ret

General Wilbur (Bill) L. Creech took over command of TAC in 1978. He is described as the antithesis of the blustery, cigar-chomping, tantrum-throwing generals who had long been the favored role models in the combat-pilot ranks.¹⁸ General Creech inherited one of the world's most formidable combat units. TAC had 3,800 aircraft, 115,000 full-time civilian employees, and 65,000 military personnel scattered around the world at 150 military installations. However, as great a military machine as he had in numbers, over half of his aircraft were not mission capable and an average of 220 aircraft were out for longer than 30 days (hangar queen). Finally, training sorties were dropping at a rate of 8 percent per year. As a result, frustrated pilots were leaving the Air Force at an alarming rate.¹⁹

Although flight line maintenance had experienced a major organizational shift under POMO, the structure was not sufficient to produce the required sortie rates. To accurately capture the atmosphere within the command at the time, one 1 FW crew chief expressed his view of aircraft maintenance as follows: "We were all aware that a human being was strapping into that jet, but there was a lot of sloppy work done to get it into the air, and if it missed its sortie, it was no big deal."²⁰ A Nellis Air Force Base (AFB) pilot described the atmosphere as follows: "Used to be you could take an airplane off, but your radar wasn't working or the inertial navigation system didn't work. So even when we did fly, the sorties were often low quality."²¹ With an understanding that a

picture is worth a thousand words, the state of affairs is easily highlighted by the following statement: "It all added up to a lackluster fighter force, beset with apathy, sagging morale, and horrifying statistics. Only 20 percent of 'broken' planes were getting repaired in a typical 8-hour shift. Pilots who needed a minimum of 15 hours of flying time a month were getting 10 or less. The average plane, which had flown 23 sorties a month in 1969, was flying only 11 by 1978. Finally, for every 100,000 hours flown, seven planes crashed. Investigators blamed many of these crashes on faulty maintenance."²²

To further improve processes established under POMO, General Creech elected to break up the 2,000-person wing maintenance operations into much smaller squadron repair teams.²³ The streamlined organizational maintenance effort focused on a squadron of 24 planes, rather than a much larger 72 aircraft wing approach to flight line maintenance. Starting on a trial basis at a few installations, General Creech created squadron repair teams, drawing technicians from each of the maintenance disciplines. The team would work only on their own squadron's aircraft. Additionally, instead of operating out of rear-area dispatch locations, Creech's plan moved them right down to the flight line.²⁴

TAC established the combat oriented maintenance organization (COMO). Under COMO, General Creech focused heavily on the flight line maintenance organization and its teaming with the assigned flying squadron. In addition to establishing a common awareness of purpose and mission through unit patches and organizational ball caps, COMO dedicated to each flying squadron and AMU its own AGE team, crew chiefs to each aircraft assigned, schedulers, analysts, debriefers, and supply support.²⁵ Although AMUs and their affiliated flying squadron had two separate command channels, they trained, exercised, and deployed as a single entity. Pilots quickly noticed the changes in their crew chief's attitudes. The crew chiefs were spending time on their days off cleaning and enhancing the appearance of the aircraft which now sported their names.²⁶ When pilots returned from sorties, the crew chiefs were standing at attention, saluting proudly.

The crew chiefs' behavior was not directed or mandated by their leadership; instead, it was driven by the pride they held for their aircraft and a pride they wanted their pilots to share when they flew their aircraft.²⁷ The natural progression of the relationship was the development of a strong camaraderie between the crew chiefs and their pilots. Squadrons built strong identities and tradition by painting squadron colors on the tails of their aircraft.²⁸ Finally, a healthy competition evolved between squadrons as they worked diligently to beat other squadrons in the wing on both pilot performance and quality of maintenance.²⁹

COMO was institutionalized by multiple command and TAC Regulations 66-5. General Creech's leadership and the effectiveness of his reform were soon reflected in the statistics. In 1 year alone, the sortie rate rose 11 percent. By 1980, the average fighter aircraft use rose from 17 hours a month to 24 hours a month. Within 2 years of General Creech taking command, TAC improved the aircraft mission capable rate by 10 percent—on average, over 60 percent of the aircraft were mission capable.³⁰

It is also very important to consider General Creech's opinions on the need to organize for war. In his description of COMO, he explained that the organizational structure trains wartime leaders.

General Creech believed strongly in squadron identity. He also emphasized the need for units to organize in peacetime as they would deploy and fight in wartime. As previously mentioned, he supported the synergy of squadron sized units which consisted of an AMU organized and equipped to deploy with and maintain the aircraft assigned to their perspective flying squadron.³¹

When questioned about keeping the AMUs organizationally separate from the flying squadron, Creech listed three reasons. The first was the need for the flying squadron commander to remain focused on flying in order to remain credible in the mission. The second centered on his philosophy regarding training for war. He wanted maintenance leaders focused on maintaining aircraft and he wanted operations leaders focused on combat flying. Finally, he supported the need for maintenance officers to have a clear track for career progression. This represented his recognition that great maintainers should be home-grown by experts schooled in the art and science of aircraft maintenance.³²

General Creech helped lay the foundation of one of the mightiest military machines seen throughout the history of the Air Force. His impact would neither be forgotten by the generations that followed nor would his service be appreciated more than by those he served with or mentored. Following the successes of air power during Desert Storm, Lieutenant General Charles (Chuck) Horner, the Joint Forces Air Component Commander commented that General Creech gave the Air Force the organization and training that made success possible. General David C. Jones, a close associate of General Creech, ranked General Creech (along with General Curtis E. LeMay) as one of the two most influential men in his [Jones] long Air Force experience.³³

General Merrill A. McPeak: Renaissance Man

The common habit of referring to technology in terms of its capabilities may, when applied within the context of war, do more harm than good.

—Martin van Crevald

Following Desert Storm, arguably the greatest air campaign in the history of the US military, the Air Force found itself faced with another major reorganization—the entire Air Force was about to undergo cosmetic surgery. To some, the Air Force would be leaner and meaner. However, to others, the Air Force returned to its historical lineage. At the center of this major reconstructive surgery was the wing organization and the placement of flight line maintenance. Many were confused about the CSAF's decision to move flight line maintenance to the flying squadron after the existing organizational structure perfected by General Creech proved so effective. Additionally, although SAC was not organized under COMO, General McPeak chose to standardize all flying organizations throughout the Air Force with the AMU in the flying squadron.

To set the stage for the path General McPeak followed, it is important to understand the appreciation he had for General Creech's accomplishments. This appreciation is best captured in Lieutenant Colonel (Lt Col) James Slife's book, *Creech Blue*. In his book, Slife writes the following:

In the hours before the start of Operation Desert Storm on 16 January 1991, the Air Force Chief of Staff General Merrill A. McPeak, wrote a letter to one of his old bosses. In it, he said, 'We are about to harvest the results of years of hard work and leadership by you and a handful of other great Airmen. We will do well. But we need to recognize that we are beholden to you, because you really built this magnificent Air Force we have today.'³⁴

The success of the Air Force is highlighted by General McPeak's comments:

Our in-commission rate for every aircraft in-theater hovers around 93 percent. If I didn't know the people involved, I would think they were lying. It sounds too good, really. Our people around the Air Force have been doing great work."³⁵

In the face of another drawdown, General McPeak wanted to ensure the Air Force had relevance and its purpose, goal, and mission to be the country's dominant air component would remain unchanged.³⁶ His restructuring plan contained three main underlying operating principles. The first was to streamline the organization by eliminating layers of command. Second, McPeak's plan stressed eliminating activities that added little value. Finally, he sought true accountability for performance at every level by combining authority and responsibility where possible.³⁷

Although General McPeak's restructuring impacted policy, as well as MAJCOM and Air Staff alignment, one of his prime targets was the alignment of the AMU. General McPeak considered the squadron to be the basic combat unit, which he described as the team that flies and fights. The team consisted of the aircrews that fly and the crew chiefs that service the aircraft.³⁸ General McPeak felt the integrity of the team could be restored by returning responsibility for on-aircraft maintenance to the flying squadron commander. According to General McPeak, this move made it clear that the mission of the Air Force was to fly and fight, and the flying squadron commander was the leader for that mission.³⁹

It is important to understand two main aspects of General McPeak's plan to realign the AMU under the flying squadron commander. First, this concept was similar to that of the traditional Army Air Force structure noted earlier. Air Force heritage influenced many of the reforms General McPeak pushed during his time as CSAF. Additionally, the concept mirrored the Composite Strike Air Force concept used by TAC in the 1950s and 1960s. This concept required a squadron and support to deploy and operate autonomously.⁴⁰ Second, his reasoning rested with the launch, flight, and recovery requirements of the combat unit. General McPeak anticipated less troubleshooting for flight line maintenance because of the Air Force's investments to improve reliability and maintainability of weapon systems.

As General McPeak analyzed options for the wing structure, one of the key issues he wanted to address was the balance of responsibilities between groups. For instance, he highlighted the fact that the maintenance deputy (DCM), under the tri-deputy structure supervised more than twice as many people as any other deputy. He also stressed that this was accomplished with very few officers and a low officer-to-enlisted ratio. When compared to the operations group (OG), he stated the OG was small and heavily officer oriented. He described this as being not much of a leadership challenge.⁴¹ General McPeak emphasized that this imbalance would be partially corrected by moving the AMU

back to the flying squadron, which would in turn give the flying squadron commander a much wider scope and offer a much tougher set of responsibilities.⁴² Referring to the expanded responsibilities of the flying squadron commander, General McPeak stated:

A squadron commander, a flight line operational squadron commander, no longer has 65 college-graduate volunteers under his command. He has got 300 guys, most of whom are not college graduates, trying to do something ugly out there with airplanes. The lieutenant colonel now has a completely different problem, and he is better prepared to handle the kind of intellectual challenge that high command involves. So we make people flexible, by which I mean break the mold on static thinking.⁴³

General McPeak also reemphasized the need to restore the sense of teamwork between aircrews and their crew chiefs.⁴⁴ The question that stands out is whether or not the teamwork could be restored without the alignment of the AMU in the flying squadron. He pointed out that the teamwork would prove crucial to the success of deployed operations. He also emphasized that war plans often call for mobilizing single squadrons. Unfortunately, the flying squadron commander was faced with serious on-the-job training in field conditions. To prevent this, the right structure is one that aligns peacetime with wartime organizational configurations.⁴⁵

To further strengthen his position, General McPeak pointed out that the air forces of a number of nations as well as the US Navy operate with flight line maintenance aligned within the flying squadron. Finally, he reinforced his stance by recalling the traditional flying squadron that was established in the early years of US aviation, "We ourselves used to be organized this way. Why did we get away from it? Frankly, because maintaining aircraft is a tough complicated business. And we organized to solve the logistics problems."⁴⁶ With investments in improving reliability and maintainability, General McPeak felt it was time to put emphasis where it rightly belonged. He stressed that the Air Force existed to operate and employ equipment, not to fix it.⁴⁷ One can speculate he meant for intermediate level maintenance responsibilities to transfer completely to the depot, leaving the operational flying wing leaner and more expeditionary in its organizational construct.

Chief of Staff's Logistics Review (CLR): PhDs in Operations and Maintenance

Those who build great companies understand that the ultimate throttle on growth for any great company is not markets, or technology, or competition, or products. It is one thing above all others: the ability to get and keep enough of the right people.

—Jim Collins

When the Air Force completed its first major air campaign following Desert Storm, there were no praises of logistics successes as seen in the previous war. Instead, there was widespread criticism of failed processes and failures in leadership. Operation Allied Force (OAF) highlighted problems that raised major concerns about the tactical air force's ability to maintain required readiness levels. It may be said that OAF was arguably the culminating point for many failures of the combat unit under the objective wing established by General McPeak.

The Commander Air Force Forces logistics staff (COMAFFOR/A4) raised issues over aircraft arriving for combat with high-time engines, engines overdue time changes and grounding inspections, and aircraft requiring phase inspections immediately upon arriving in the area of responsibility. To make matters worse, many units arrived to their designated combat locations without critical tools for repair. This resulted in aircraft spending several days nonmission capable while units awaited tools that were standard pieces of equipment for deployed operations.⁴⁸ Without the intervention of COMAFFOR/A4, the combat effectiveness of some units may have been in jeopardy.

To gain a better understanding of the problems experienced by the deployed forces, several field visits by the COMAFFOR/A4 revealed a myriad of issues. First, several deputy operations groups for maintenance (DOGM), who were charged with oversight of all maintenance activities within the operations group, lost sight of the bigger picture because of being bogged down in day-to-day operations. Second, flying squadron commanders paid little attention to the logistics of supporting their operational requirements. Finally, both officer and enlisted maintenance leadership throughout many areas of operations neglected or were never schooled on the requirements for sustaining fleet health in high operational tempo environments.⁴⁹ In essence, they failed to monitor and manage the accelerated phase flow and time change requirements needed to sustain their combat operations.

In order to remedy the problems seen with the combat unit, the United States Air Forces in Europe (USAFE) team led by Commander USAFE, General John P. Jumper, approached then-CSAF, General Michael E. Ryan, about the need to address issues seen during OAF. USAFE's briefing to the Chief highlighted the following five areas:⁵⁰

- Light, lean, and lethal expeditionary aerospace forces (EAF) requirements
- Operating in environments highlighted by constrained resources
- Decreasing mission capable rates and an aging fleet
- OAF experiences and lessons learned
- Deployable squadron concept does not suit EAF requirements

In terms of the proper placement for flight line maintenance, the Headquarters USAFE team emphasized two critical perspectives to General Ryan—the two most important things the Air Force does are to fly and fix airplanes. Arguing the case for the Air Force to grow leaders with expertise or a PhD in each but not both, they recommended the consolidation of maintenance under a single authority for maintenance within the wing structure.⁵¹ Although General Ryan did not approve USAFE's request, the team's efforts served as the catalyst of what became known as the CSAF's Logistics Review or CLR. Following CLR, near-term and long-term testing of several options, the Air Force moved forward with changes that consolidated flight line maintenance in an aircraft generation squadron under a single authority for aircraft maintenance, the maintenance group commander. Interestingly enough, the final changes were institutionalized nearly a year after General Jumper became CSAF.⁵²

It is important to capture the potential influence General Creech had upon General Jumper. That influence was so strong

that General Jumper, as CSAF, took the opportunity to provide the foreword to Lt Col James C. Slife's book on General Creech, *Creech Blue*. In the foreword, General Jumper praised General Creech as a leader, a visionary, a warrior, and a mentor.⁵³ General Jumper also credited General Creech with essentially transforming the Air Force. By working closely with General Creech over a number of years, General Jumper recalled his influence over not only tactics, training, and leader development, but also organization. Without a doubt, General Jumper's back-to-basics philosophy mirrored that of his mentor in both practice and his determination for the proper alignment for flight line maintenance. Like his mentor, General Jumper felt the complexity of operational requirements and the challenges of effectively managing a fleet of aircraft in the wing structure were best accomplished by a career maintenance O-6.

Number 18's Return to Renaissance

There are going to be times when we can't wait for somebody. Now you're either on the bus or off the bus.

—Ken Kesey

On 19 July 2007, the eighteenth CSAF, General T. Michael Moseley, sent a correspondence to key Air Force leaders that temporarily stopped time for many in the aircraft maintenance and operations career fields. In the memo, he spoke of inputs to "potential adjustments and enhancements" to the existing wing organization. He surveyed squadron, group, and wing commanders for their input to the wing organizational structure. After informing his audience that he felt the major parts of the wing and group structure were right for both home station and deployed operations, he expressed his opinion as to where crew chiefs should work or where an AMU should be positioned. His beliefs are quoted as follows:⁵⁴

- The Air Force's mission is to deliver decisive effects on a global scale; our task is to properly organize, train, and equip the Air Force to deliver those effects ... both from expeditionary locations and from home station
- Relative to mission ... there is no empirical evidence that either organizational template is better relative to fleet health.
- There is also no historic evidence that squadron-level maintainers that served in flying squadrons were disadvantaged in promotions or career options.
- The expeditionary or deployed organization and home station template should be focused on assigned mission ... vice function.
- The home station organization template should be the same as deployed ... and we should not look to change the structure somewhere enroute between home station and the expeditionary location.
- The structure should facilitate the training and experiencing of those officers that will command both expeditionary operations and home station operations—at all levels (squadron, group, wing, NAF, and theater)

After identifying these key beliefs, General Moseley highlighted the need to find the right organizational template—one that keeps leadership focused on mission, vice function. General Moseley believed that many of the views on the proper

placement of the AMU were distorted by emotionalism and urban myths surrounding fleet health, sortie generation, promotion rates, and home station/deployed organization parallels. Finally, he emphasized the right structure should prepare the next generation of officers to command at higher levels.⁵⁵

General Moseley closed the memo by recognizing the need to be cautious by not injecting additional turbulence into the Air Force in the midst of another drawdown of personnel presented by Program Budget Decision (PBD) 720.⁵⁶ He stressed that his near-term focus was PBD 720 execution and program objective memorandum build. However, he believed that the right path for the future alignment of the AMU was under the flying squadron commander.⁵⁷ Prior to General Moseley releasing his correspondence to key Air Force leaders, his team had already been examining new Air Force organizational concepts which also included options for the alignment of flight line maintenance. One of the taskings directed by General Moseley was Sierra Bravo. It was conducted in conjunction with the Defense Advanced Research Projects Agency. The other tasking was conducted by the Air Force Inspection Agency (AFIA). It became known as the Air Force Future Flying Wing Organization (AFFWO).

A memo from the Secretary of the Air Force (SecAF) generated Sierra Bravo. The memo directed the CSAF in March 2006 to examine possibilities for a new Air Force structure. The SecAF directed that options considered should begin with a theoretical mission. He also directed to not use General Spaatz's template of the bomb group, but instead, to start from scratch. SecAF reemphasized the focus was mission first and then determining the right size to meet that mission.⁵⁸

In follow-up correspondence, SecAF provided the following guidance:

I want you to take a target that would reduce airfield operations, to include pilot input by 30 percent with a stretch to 40 percent. Therefore a dedicated air base would be reduced to seventy percent with a stretch to sixty percent staffing without backfills.... This reduction can be accomplished a number of ways, consolidating maintenance ... eliminating local tower operations ... having the pilots service their own aircraft for minimal needs ... designating the area as the pit stop ... kind of like a Navy carrier....⁵⁹

Like General McPeak, General Moseley found himself faced with the opportunity to find the best Air Force structure in the face of another large reduction in forces. With regards to the right alignment for flight line maintenance, the design principles for Sierra Bravo focused on the following key principles:

- Mission precedes ownership and size.
- Home station organization design must be applicable to air expeditionary force (AEF) expeditionary bases.
- Centralize installation, maintenance and logistics support in forward operating areas (FOA).
- Streamline readiness and link expeditionary combat support to AEF cycle.
 - Standardize a core capability package by mission type.
 - Train as a unit, deploy as a unit, fight as a unit.
- Realign functions based on enhanced capability, vice present day community identification.
- Sustainable career development path to leadership positions.

With the assumption of regionalized installation, maintenance, and logistics centers in place and working effectively, Sierra Bravo called for all maintenance and operations combined under a fighter group commander with deputies for both maintenance and operations. The specific recommendation for flight line maintenance was to leave it combined in an aircraft maintenance squadron.

The next critical input to the CSAF on reorganization was the AFFWO analysis from the AFIA.⁶⁰ In a January 2007 update, the AFIA focused on answering four CSAF areas of interest. They examined the history of wing organizational structures, three aspects of organization, of which two impacted the alignment of flight line maintenance, leadership development, and the benefits of reorganizing in relation to the turbulence of doing so.⁶¹

In examining the history of the Air Force wing organization, the AFIA was masterful in graphically showing the transformation of operations- or maintenance-led sortie generation. The AFIA highlighted that the Air Force often elected to centralize maintenance following periods of large drawdowns of personnel or forces. After providing a historical perspective to peacetime and contingency flight line organizations, the team found that large expeditionary wings were closely aligned to their home station operations and that in a few instances there were

supported the CWO structure. In the end, the AFIA stated there was no conclusive evidence that either the objective wing or combat wing organization had a measurable impact (positive or negative) on combat effectiveness.⁶³

The next consideration for the AFIA research team was whether or not the Air Force was organized properly in order to develop future flying wing and expeditionary leadership. This analysis found that promotions to O-5 for pilots declined while support officer promotions had increased since the implementation of the CWO; however, they attributed this to pilots recalled to active duty to fill vacant operations billets, pilot shortages, and pilots who lacked appropriate professional military education. Although the CSAF distributed guidance highlighting a masters degree or professional military education was not a prerequisite for promotion, many nonrated officers felt the necessity to complete both in order to remain competitive with the rated career fields. The team also found that pilots were not afforded the same proportion of command opportunities as their mission support counterparts. As for senior leader concerns, the CAF GOs expressed concern about future wing commanders lacking experience with maintenance and lacking leadership experience of enlisted personnel. The team's final analysis was that there was no conclusive evidence the organization had a measurable

Flight line maintainers will forever find themselves in a tug-of-war between the two camps characterized by the views of General Creech and General McPeak.

slight differences in flying wing organizations which were largely dependent on mission design series, mission, location, and nature of operation. Senior leaders surveyed indicated home station and expeditionary organization was "about right."⁶²

The second consideration for the organizational alignment of flight line maintenance focused on sortie generation. The AFIA found that factors such as funding for spares, age of the aircraft, operations tempo, and reduction of forces influenced capability. Because of these factors, they found no correlation between combat wing organization (CWO) and the objective wing on aircraft availability, mission capable rates, or sortie generation rates. The team also found that combat air forces (CAF) general officers favored flight line maintenance under the flying squadron commander because of the expanded leadership opportunities and unity of effort. On organization at the wing level and below, the team found that commanders were split on blending maintenance into the operations group. Finally, the AFIA found a majority of the mobility air forces (MAF) and Special Operations Forces (SOF) GOs favored the current wing structure because it was better suited for mobility and special operations, and because the deployed tempo of MAF and SOF units are much greater than a fighter squadron.

One can easily argue that the missions of the MAF and SOF provide a greater leadership challenge due to continuously managing dispersed forces. This fact supports the argument that if development of future leaders is the key consideration, the MAF and SOF are better suited than their CAF counterparts for the alignment of AMUs in the flying squadron. In addition to the MAF and SOF GOs, the maintenance community as a whole

impact on developing flying wing and expeditionary leadership.⁶⁴

The final AFIA analysis was related to the benefits of reorganization over the turbulence of doing so. The team found no evidence that combat capability or leadership development would be either hindered or improved through reorganization. They felt opportunity cost, effort, and time might be better spent on other AFSO21 events and initiatives which would provide a higher return on time invested.⁶⁵ As for senior leaders, the majority were comfortable with the existing organization, but they did state that they would support change if deemed necessary. If change was necessary, the majority of these leaders favored either flight line maintenance under the operations group or a fighter or bomber group that contained all operations and maintenance functions. The team concluded that the benefits of suggested changes would not outweigh in the near term the turbulence caused by the changes.⁶⁶

Unfortunately, there was no evidence that the AFIA attempted to address the issues CLR identified and tried to address in 1998. There was no discussion of the flying squadron commander's attention being divided between combat sorties and logistics. The AFIA also chose not to (or failed to) address why, in times of drawdowns or declining levels of readiness or mission capable rates, the Air Force often elected to centralize wing-level maintenance under the leadership of seasoned maintenance officers. General Moseley's reorganization would have been the first to deviate from this tendency.

Following the July 2007 report from the AFIA, General Moseley distributed a memorandum (December 2007)

announcing his intentions to reorganize wing maintenance and logistics. Regarding flight line maintenance, his decision and reasoning mirrored that of General McPeak. He stated that the Air Force's main priority was to properly organize, train, and equip our Airmen so they could deliver decisive effects globally. Since the squadron was the building block of the Air Force organizational structure, he felt it should be organized for mission success. He emphasized the need to facilitate the training and expand the experience of officers who would command expeditionary operations.

The most effective formula for such professional development was to structure Air Force units by mission and not by function. He restated his belief that aligning maintenance units responsible for sortie generation with the flying squadron they supported was best for the Air Force. He also stressed that as a vital element of the flying squadron's mission success, the maintainers that directly supported sortie generation belonged in the chain of command of the squadron they supported. Finally, he articulated that the alignment of flight line maintenance under the fighter squadron provided a scalable capability that can easily be presented to the combatant commander. Of interest, he directed the realignment only for fighter and combat search and rescue flying squadrons and stated further examination of options for bomber, airlift, SOF and intelligence, surveillance, and reconnaissance platforms was required.⁶⁷

Critical Analysis and Conclusion

If it is not advantageous, do not move

—Sun Tzu

Days before the kickoff of another Air Force reorganization, the US military's primary air arm would see a changing of the guard in its two highest positions. With a new SecAF and CSAF, one of the first orders of business was to halt the reorganization. Whether General Norton Schwartz fully supported General Moseley's decision on reorganization is uncertain. One can only speculate his operational background places him in the category of the MAF, SOF GOs that favored the current CWO. Considering the turbulence caused by turnover of Air Force leadership, the questions surrounding nuclear surety, and the state of the Air Force in the midst of personnel cuts under PBD 720, General Schwartz may have viewed the proposed changes as ill-timed. During a question and answer session with the men and women of the 325th Tactical Training Wing at Tyndall AFB in Florida, General Schwartz commented that a collective decision had been made to not integrate aircraft maintenance with the operational flying squadrons. He stated that not doing so would help ensure that in years to come more sophisticated cadres of aircraft maintenance personnel will be more tightly focused on maintaining critical weapons systems. He followed this by stating that the partnership between maintenance and operations is integral to success. He stressed the need for a deep bond and camaraderie between crew chiefs and the aviators they support. He closed the query with a strong statement summarizing his views on maintenance: "Maintenance is not a part-time business and full-time attention is needed for the long haul to sustain our rigorous standards."⁶⁸ General Schwartz's closing statement reflects the principles and views of General Creech.

Flight line maintainers will forever find themselves in a tug-of-war between the two camps characterized by the views of

General Creech and General McPeak. The McPeak structure had many characteristics of the organization implemented by General Spaatz. It also placed a heavy emphasis on the prestige of the fighter pilot-led organization—"the quarterback that leads his team to victory."⁶⁹ There are a number of benefits to the objective wing structure. It does help develop rated leaders who are better prepared to handle budget, training, resource, and enlisted personnel issues as well as lead flying operations. Another key benefit of the AMU within the flying squadron is the fact that enlisted personnel are often awed and inspired by the mystique of the fighter pilot. This is the natural order of Air Force business. Documented Air Force history typically glorifies the pilot as the great leader and little emphasis is given to leadership at other levels of responsibility. In General McPeak's analogy of the quarterback leading the team to victory, the appreciation for the offensive line, running backs, receivers, and defense is often overlooked. A commander cannot achieve success without the dedication and commitment of his or her team.

The need to develop future wing commanders is a legitimate concern, especially when one considers that pilots are arguably the least experienced of all Air Force specialties in leading large organizations prior to assuming wing command. In spite of this lack of experience, they are often tasked to lead major Air Force programs outside of their operational purview. Lt Col Walter Burns probably captured this point best when he wrote,

Very few flying squadron commanders had any experience with maintenance personnel other than their crew chiefs, and now they were responsible for them. The Air Force seems to have done a poor job of preparing pilots for operational squadron command. One flying squadron commander operating under the objective wing structure stated that he was certainly not trained for the job beforehand even though he'd attended the obligatory squadron commander's course.⁷⁰

Although the objective wing has strong benefits for the growth and development of rated officers, it did present challenges for the maintenance leadership assigned to the OG. Senior maintainers have commented that the objective wing structure stifles the growth and grooming of maintenance officers and senior noncommissioned officers—core elements of growing seasoned maintainers are lost because of failures in accountability, mentoring, and oversight of all aspects of effectively leading and managing an AMU. Additionally, the DOGM was put in place to provide the needed balance between officer development, sortie generation, and fleet health, yet they found themselves often in conflict with the flying squadron commanders. In several instances, the conflict resulted in the DOGM seeking new opportunities outside of the OG in order to preserve career opportunities.⁷¹

The perfect scenario for maintenance under the flying squadron is a true remove and replace environment for line replaceable units—one in which troubleshooting is the push of a button to isolate the faulty part and where reliable parts are readily available. Even with today's most recent acquisition, the F-22 Raptor, the prime contractor is allowed approximately 8 years after fielding its first operational Raptor to mature the weapon system to the levels of performance sold to the Air Force. In the meantime, each sortie and new unknown maintenance challenge is on the backs of certain Air Force specialists supporting the platform. If the reorganization had gone as General Moseley had planned, the F-22 would have definitely been an

exceptional leadership challenge for the flying squadron commanders.

Unless the Air Force changes requirements placed on defense contractors or air logistics centers and holds them accountable, reliability and maintainability will always be an issue for weapon systems from the initial acquisition to their retirement to the bone yard. As long as the military is affected by budget constraints, fleet management challenges of aging aircraft will always impact readiness. Until the Air Force further improves the quality of life for the flight line maintainers and ensures reduction in forces do not short-change true personnel requirements, the challenges of balancing training and operational requirements will remain at the forefront of leadership challenges.

The organization that best resolves all of the issues previously mentioned for both peacetime and contingency operations is that built by General Creech. General Creech had it right by stating the flying squadron and AMUs are a single entity married by a commonality of mission and camaraderie. That marriage, regardless of command channels, is always the combat unit. The combat unit is strengthened by a squadron of aircraft that proudly displays both the pilots' and the crew chiefs' names as well as their squadron's colors on the tails.

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The area of greatest controversy between operations and maintenance is the need to balance fleet health with operational requirements. General McPeak emphasized the need to restore the trust between the AMU and the flying squadron. A thorough analysis is required to truly understand whether or not the trust is really degraded between the maintainers and aircrews.

Unfortunately, mistrust is often a result of either operations or maintenance failing to understand each others requirements. Together, operations and maintenance must unite in highlighting shortfalls that prevent them from being a successful team. Mistrust is not a natural order for any flying squadron/AMU team and it should not be expected or tolerated. If a critical shortfall is determined to be mistrust among existing leadership, then replacement of the leadership is essential in order to ensure success of the mission.

The new CSAF's decision to stay within the confines of the CWO brought a great sigh of relief throughout the maintenance and much of the operations communities. However, one cannot help but wonder whether or not the Air Force will find itself facing another restructuring in years to come. Will the alignment of flight

line maintenance remain at the center of any proposed restructuring resulting from a further reduction of forces? Will the need to grow future Air Force leaders override the need to ensure balance is retained between operational and fleet health requirements? Will the concept perfected by General Creech remain at the forefront of the most efficient structure for ensuring combat capability to our nation's Air Force or will it be overshadowed by the need to better grow future leaders as expressed by General McPeak? Finally if a decision is made to realign the AMU to the flying squadron, how does the Air Force ensure the issues surrounding OAF are not repeated?

There will always remain varying views regarding the previously stated questions. However, the Air Force owes it to its people to select one flight line organizational structure, perfect it, and put it in place to stand the test of time, ideologies, personalities, and changing of Air Force leadership. The organizational structure that best supports the right alignment for flight line maintenance should be one where trained, educated, and experienced experts are available when things do not go as planned.⁷² That organization is the one envisioned, standardized, and perfected by General Creech.

Notes

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3. Beth F. Scott, Lieutenant Colonel James C. Rainey, and Captain Andrew W. Hunt, eds, *The Logistics of War: A Historical Perspective*, Maxwell AFB-Gunter Annex, Alabama: The Air Force Logistics Management Agency, August 2001, 87-88.
4. Scott et al., 87.
5. Scott et al., 88.
6. *Ibid.*
7. *Ibid.*
8. *Ibid.*
9. *Ibid.*
10. Davis and Walker.
11. Captain Barbara L. Harris, "Challenges to the United States Air Force Tactical Aircraft Maintenance Personnel," Thesis no AFIT/GLM/LSM/92S-18, : Air Force Institute of Technology Air University, Wright-Patterson AFB, Ohio, September 1991.
12. Davis and Walker.
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14. Scott et al., 136.
15. *Ibid.*
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17. Davis and Walker.
18. James Kitfield, *Prodigal Soldiers*, Washington, DC: Potomac Books, Inc, 1995, 174.
19. Jay Finnegan, *Four Star Management*, Boston Massachusetts: Goldhirsh Group, Inc, January 1987, 42.
20. *Ibid.*
21. *Ibid.*
22. *Ibid.*
23. Kitfield, 179.
24. Finnegan, 42.
25. Davis and Walker.
26. Lieutenant Colonel James C. Slife, *Creech Blue: General Bill Creech and the Reformation of the Tactical Air Forces, 1978-1984*, Maxwell AFB, Alabama: Air University Press, October 2004.
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28. *Ibid.*
29. *Ibid.*
30. *Ibid.*
31. Slife, 88.
32. Slife, 89.
33. Slife, 1.
34. *Ibid.*
35. General Merrill A. McPeak, *Selected Works 1990-1994*, Maxwell Air Force Base, Alabama: Air University Press, August 1995, 8.
36. McPeak, 6.
37. *Ibid.*
38. McPeak, 54.
39. *Ibid.*
40. In correspondence with Dr (USAF Colonel ret) Joseph Boyett, Jr, he highlighted the significance of the Composite Strike Air Force, its requirement to operate independently and how it may have helped shaped General McPeak's concept of the combat unit.
41. McPeak, 105.
42. *Ibid.*
43. Major Thomas A. Bussiere, "General Merrill McPeak Leadership and Organizational Change," Thesis, SAAS, Maxwell AFB, Alabama, June 2001, 46.
44. Bussiere, 124.
45. Bussiere, 109.
46. *Ibid.*
47. *Ibid.*
48. Major Ray A. Lindsay and Major Kyle H. Matyi, "CSAF Logistics Review: Focused Improvement for EAF Readiness," Research paper no AU/ACSC/071-077/2002-04, Air Command and Staff College, Maxwell AFB, Alabama, April 2002, 5.
49. Lindsay and Matyi, 7.
50. *Ibid.*
51. *Ibid.*
52. General Jumper became the Air Force Chief of Staff in September 2001. Maintenance was consolidated under Maintenance Groups throughout the Air Force in 2002.
53. Slife, v.
54. General T. Michael Moseley, "Wing Structure," e-mail correspondence, Washington DC, July 2007.
55. *Ibid.*
56. PBD 720 is the Air Force's plan to reduce by 40,000 Active Duty, Guard, Reserve and civilian full-time equivalents in order to self-finance the recapitalization and modernization of the Air Force's aircraft, missile and space inventories.
57. Moseley, July 2007.
58. Colonel Fran Hendricks, "Sierra Bravo: New Base Design Concept for the Air Force," briefing, Washington, DC, HQ USAF, January 2007.
59. *Ibid.*
60. As for the AFIA examination of the AFFWO, the final outbrief/report to the CSAF has not been approved for public release at the time of the research. The information is derived from January 2007 update briefing and piecemeal tidbits of data from HQ USAF staff. Additional queries revealed that little changed in regard to recommendation for flight line maintenance in January 2007 update and July 2007 final briefing.
61. Air Force Inspection Agency, "Air Force Future Flying Wing Organization (AFFWO)," briefing, Washington DC, HQ USAF, January 2007.
62. AFIA briefing, 10.
63. AFIA briefing, 12.
64. *Ibid.*
65. In a 21 February 2006 article Air Force Materiel Command defined AFSO21 as follows: In December, a decision was made to rename the Air Force's continuous process improvement initiatives Air Force Smart Operations for the 21st Century, or AFSO21. AFSO21 is the name assigned to the business-improving initiatives mandated by Secretary of the Air Force Michael Wynne and US Air Force Chief of Staff General T. Michael Moseley. In a Commander's Log, AFMC commander General Bruce Carlson wrote, "Under AFSO21 we're constantly examining all of our processes in an effort to eliminate waste and unnecessary work. By doing so, we will remain fresh and focused on what's important to mission accomplishment ... while continuously improving all we do." "It's (AFSO21) a mindset, a change in our behavior, a way of operating ... and of thinking," he wrote. At the core of AFSO21 are continuous process improvement initiatives such as Lean, Six Sigma and others which have been a part of the air logistics centers' cultures for a number of years.
66. AFIA briefing, 19.
67. *Ibid.*
68. AIC Veronica McMahon, "CSAF: Precision, Reliability Key to Airmen Keeping the Promise," *Air Force Print News*, Tyndall AFB, Florida, September, 2008.
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71. Major Clifton D. Blanks, "Deputy Operations Group Commander for Maintenance (DOGM) – Band aid or Solution?" Research report no AU/ACSC/028/2000-04, Air Command and Staff College, Maxwell AFB, Alabama, April 2000.
72. In correspondence with Dr (USAF Colonel ret) Joseph Boyett, Jr, he stated, "In my opinion that's a significant factor affecting organizational schemes—organizing so that trained, educated, and experienced experts are available when things don't go as planned.

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I knew full well that the maintenance I was going to get would determine the success or failure of the operation. I must get the maximum performance out of the planes assigned to my command, or I would fail to do the job.

—Lt Gen William H. Tunner, USAF

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