Soaring With AC-130J

A Decidedly Nontraditional Acquisition Strategy

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Five years ago, the Special Operations Warfighter identified an urgent need for more armed aircraft than was available with the current fleet of aging gunships. The United States Special Operations Command (USSOCOM) responded, and a new and innovative way of producing gunships was initiated.

In April 2009, USSOCOM kicked off an Urgent Deployment Acquisition (UDA) to produce additional close-air support assets by modifying the MC-130W fleet of 12 cargo and tanker aircraft with a Precision Strike Package (PSP). UDA programs are the USSOCOM equivalent of a Joint Urgent Operational Needs Statement. They are initiated to accelerate the fielding of materiel in response to a Combat Mission Need Statement or other urgent, high-priority, out-of-cycle acquisitions. In less than 20 months, the streamlined UDA processes enabled the 73rd Special Operations Squadron (SOS) to deploy to Operation Iraqi Freedom with two modified armed MC-130Ws, nicknamed Dragon Spear. Urgent acquisition programs are rare, and receive high priority for resourcing, issue resolution, testing and fielding—and program documentation is condensed or waived on a case-by-case basis.

The accelerated Dragon Spear program timeline was possible only because of the unique authorities that accompany a UDA. In comparison, the last gunship acquisition program, the AC-130U, took 11 years after the program was initiated to deliver the first modified aircraft to the Air Force Special Operations Command (AFSOC). The difference in program timelines is stark, and the reasons behind it are various. Now USSOCOM is looking to capitalize on the management strategies executed on the Dragon Spear program for more traditional acquisition programs like the AC-130J.

The Special Operations Research, Development, and Acquisition Center (SORDAC) created a small Joint Acquisition Task Force (JATF) to lead the Dragon Spear Program, integrate program activities and report directly to the USSOCOM Acquisition Executive. The JATF was a small group of program management, financial and contracting specialists whose challenge was to execute innovative management strategies and meet the demanding requirements of a UDA. Less than 12 months after the program was initiated, the first modified MC-130W was demonstrating its new suite of weapons, following delivery to Cannon Air Force Base (AFB), to support aircrew training and deployment preparations. Seven months later, an interim capability was deployed to Iraq. And 2.5 years after initiation of the UDA, PSP Capability Release 3—the objective configuration—was fielded on the MC-130W. On Nov. 18, 2011, crews from the 73rd SOS employed the new capability during operations in Afghanistan.

The success of the Dragon Spear program depended on rapid but disciplined program execution. Certain strategies were essential to limit the program's cost and schedule and provided lessons learned for those crafting the AC-130J program strategy. These included:

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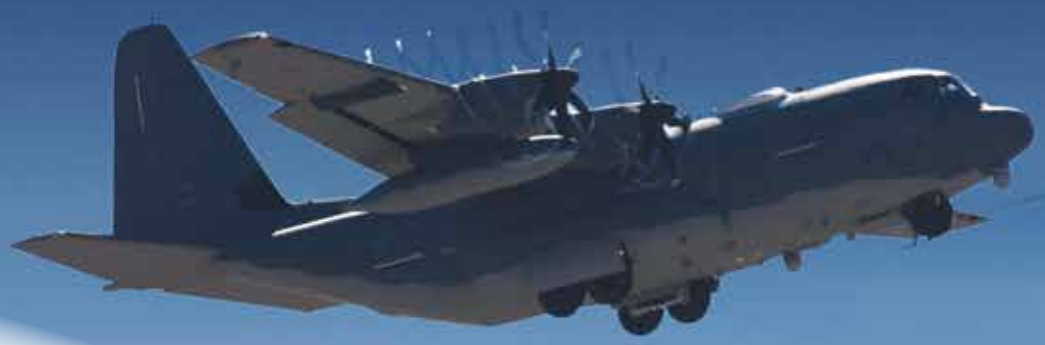


The AC-130J gunship on its first flight. Air Force photo.

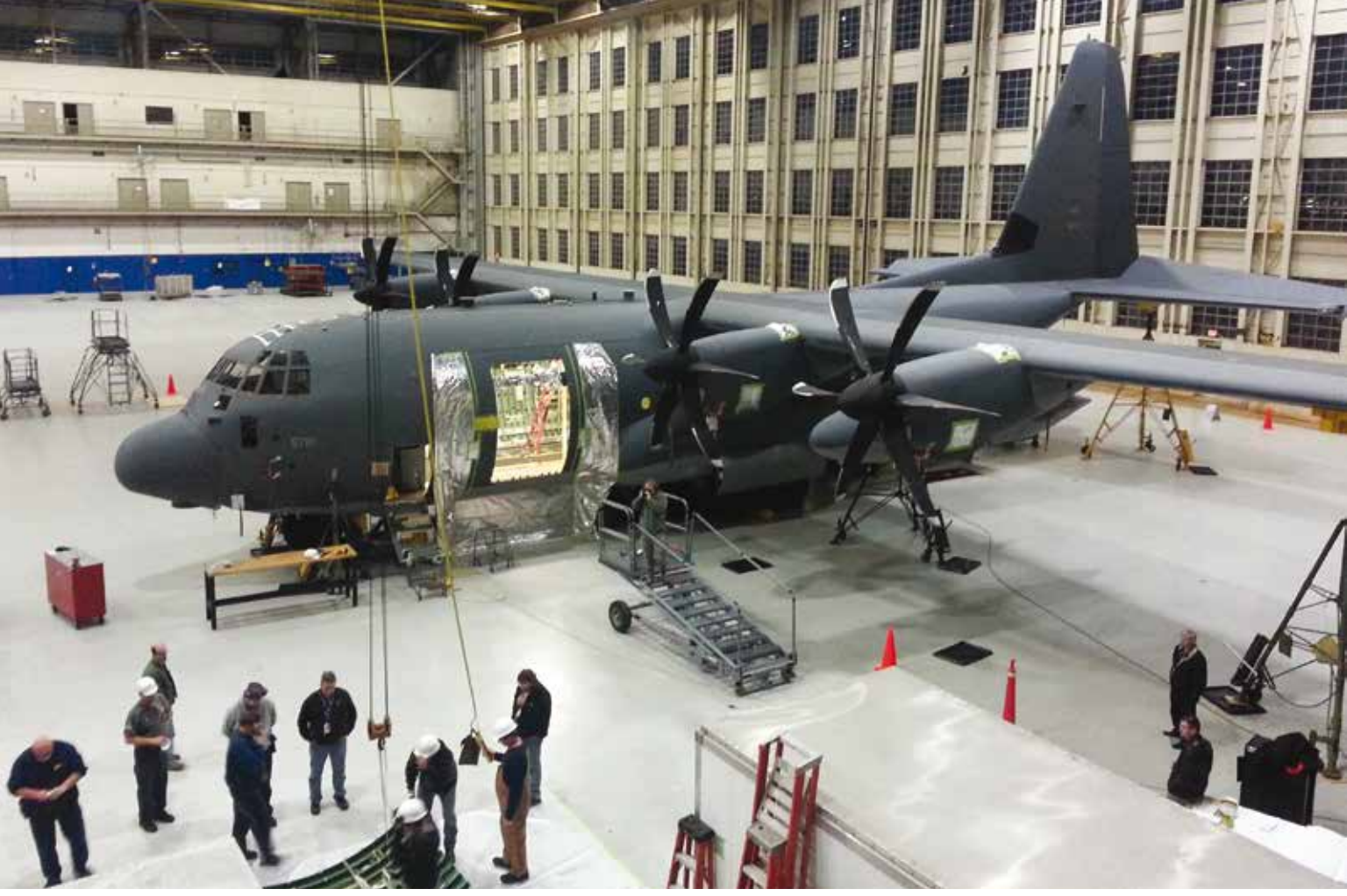
1. **Integrate proven technology in innovative ways to deliver new capability**. The PSP installed on Dragon Spear consists of sensor, communications, strike and operator control subsystems that by themselves weren't groundbreaking and in most cases had been proven in the field on other platforms. By assembling non-developmental and off-the-shelf sub-systems, the JATF significantly reduced both the integration and test timeline and technical risk.

2. **Capitalize on existing resources and subject matter expertise across the Department of Defense (DoD)**. Given the urgent need for additional close-air support on the battlefield, a strategy was crafted to assemble a team of existing experts from a number of organizations. Rather than spend the time and resources necessary to build up an organic and comprehensive program office with all the traditional disciplines, the JATF pulled in resources from across DoD, including all three Services and several contractors to form a network of Combat Acquisition Detachments (CADs).

3. **Fail faster to accelerate development and fielding**. Instead of waiting until the design for the objective configuration had been fully vetted through the systems engineering process, SOCOM decided to field several capability releases building up to the final solution. This sped the process of validating subsystem compatibility, of getting user feedback, and essentially put into practice the slogan "Fail Faster." The faster you learn something doesn't work, the less time and resources are wasted trying to make it work.

Necessity may be the mother of invention, and the urgent requirement that resulted in the Dragon Spear PSP capability drove the innovative management strategies that shaved years and millions off of a more traditional weapon system acquisition approach. Therefore, when USSOCOM decided to replace its entire gunship fleet with new AC-130Js, we incorporated the lessons learned during Dragon Spear to execute the Acquisition Category (ACAT) II program, in a decidedly nontraditional manner.

In 2010, USSOCOM initiated a recapitalization of the aging AFSOC gunship fleet with the AC-130J Program. This program will replace the AC-130H, AC-130U, and AC-130W fleets with new, U.S. Air Force-provided, J-model C-130 aircraft modified with the latest version of the Special Operations-peculiar PSP. Since program inception, the SORDAC program management team has capitalized on the lessons learned and strategies executed for the MC-130W Dragon Spear modification. The challenge is to repeat the success of the MC-130W program under the construct of an ACAT II program as opposed to a UDA. The AC-130J program is paving the way for nontraditional military acquisitions



The AC-130J gunship undergoing modification. USSOCOM photo.

using the lessons learned with the MC-130W, and executing the program at a fraction of the cost and schedule required to produce the previous generation of AFSOC C-130 gunships.

The approved AC-130J acquisition strategy included "cross-decking" the Dragon Spear PSP configuration onto a donor MC-130J aircraft. By the time the AC-130J program reached a Milestone B decision in February 2012, both the strike package and the aircraft were proven and fielded systems. Program development and risk management were focused on the integration of the PSP with the MC-130J airframe. Incremental capability upgrades were considered, but the principle of reducing cost, schedule and risk by integrating proven technologies was applied again, rather than develop unique hardware and software solutions.

The streamlined documentation permitted under a UDA allowed the Dragon Spear program to hit the ground running as soon as the necessary Acquisition Decision Memoranda were signed. Although Dragon Spear was an ACAT II program as opposed to a UDA, program management was able to leverage the MC-130W program to complete all required Milestone B documentation in one year. This included the Life-Cycle Cost Estimate, Acquisition Program Baseline, Single Acquisition Management Plan and others.

Program management relationships were also established during this time. Again, USSOCOM rejected the model of a large program office in favor of a distributed network of CADs, capitalizing on existing expertise across DoD as well as experience gained executing the Dragon Spear program. Prior to Milestone B, a Program Specific Memorandum of Agreement was signed committing six organizations from within USSOCOM, the Air Force and the Navy to the various roles necessary to execute the program. A small organic program management team, at the USSOCOM Headquarters, acts as the program integrator and synergizes program development, integration and test schedules with other closely related strike programs. As with the Dragon Spear JATF, SORDAC is taking advantage of the resources and expertise available across the Department and keeping the organic AC-130J program office lean.

Soon after the Materiel Development Decision, program leadership became eager to get to work—on a real airplane, instead of documentation and power point briefings. The production line schedule for MC-130Js did not have a donor airplane identified for the AC-130J program until the first quarter of fiscal year 2015. However, in June 2011, the AFSOC Commander approved a course of action, proposed by SORDAC, to pull an MC-130J out of the fleet two years ahead of

the original donor plan. This enabled the risk reduction plan to validate PSP subsystem compatibility with the MC-130J airframe and obtain user feedback as early as possible. While program management understood certain details of the configuration design would not be finalized in time for the first airplane modification, the benefits of getting actual hardware on an airplane far outweighed the management and technical challenges of retrofitting a small percentage of the PSP kit. The AC-130J executed its first flight in January 2014, less than two years after Milestone B, and the program can now move from estimating, predicting or assuming system performance to characterizing actual capability.

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While the general strategy for the AC-130J program was to emulate Dragon Spear as much as possible, several challenges became apparent early in the AC-130J program. "Cross-decking" the PSP from a MC-130W to a MC-130J airframe was not as straightforward as anticipated. The J-platform has a different aircraft environment than the MC-130W and the modification had to be revised to accommodate the unique vibration profiles, pressurization levels and physical interfaces throughout the cargo compartment. In some cases, military standards were revised since the Dragon Spear modifications, and some previously sufficient certifications required additional testing to meet the new requirements. Small differences in the airframes would result in big problems if not adequately addressed in the planned aircraft modification. Through the practice of "failing faster," hardware interferences were discovered during installation—and environmental qualifications that fell short of the J-platform specific requirements, were brought up to the new standard. The AC-130J team heightened its focus on the detailed installation design required to implement the cross-decking strategy. Some designs have been modified to account for the unique characteristics of the J-platform, and all installation plans were thoroughly reviewed for compatibility.

Airworthiness reviews and the requirements to acquire a military flight release are different for the AC-130J than when the Dragon Spear was considered a temporary modification on the MC-130W. In 2011, the engineering review process was streamlined for a temporary modification that would be reversed after a defined, finite period. To maintain the aggressive AC-130J program schedule, the Air Force engineering authority at Wright-Patterson AFB implemented an innovative strategy of interim reviews and flight releases that recognized the incremental build-up approach to flight test incorporated in the program schedule.

Streamlined, efficient and fast-paced strategies do not have to be limited to urgent deployment acquisition programs. Available to any program is a conscious and deliberate program management approach to tailor roles and responsibilities, utilize resources available across DoD, and build upon the success of previous programs to reduce risk. The effectiveness of these tools has been demonstrated in getting vital capability into the hands of the user faster and more affordably. The AC-130J program offers the latest example of how program managers can implement tailored nontraditional processes to meet the demanding needs of our warfighters.

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MDAP/MAIS Program Manager Changes

With the assistance of the Office of the Secretary of Defense, *Defense AT&L* magazine publishes the names of incoming and outgoing program managers for major defense acquisition programs (MDAPs) and major automated information system (MAIS) programs. This announcement lists all such changes of leadership for both civilian and military program managers that occurred in recent months.

Navy/Marine Corps

Douglas Dawson relieved **Capt. Michelle Guidry (USN)** as program manager for the Tactical Airlift Adversary and Support Aircraft (PMA-207) on April 17.

Capt. William Guarini (USN) relieved **Steven Lose** as program manager for the AN/AQS-20A Sonar Mine Detecting Set (PMS-403) on March 6.