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OCCASIONAL
PAPER

Use of the C-27J Fixed-Wing Aircraft for Conducting Army Mission Critical, Time Sensitive Missions in Counterinsurgency Operations

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Summary

The Army believes that it needs a replacement for the C-23 Sherpa aircraft that provides, among other things, transport of MCTS cargo and passengers to brigade combat teams and supporting forces conducting combat operations. This issue is particularly relevant in counterinsurgency (COIN) operations in Iraq and Afghanistan where ground forces are widely dispersed across long resupply distances. Since the Army must be prepared for similar contingencies in the future, this requirement will be a continuing one for the Army. The Army leadership believed it found a good replacement for the Sherpa in the C-27J Spartan aircraft. This occasional paper answers two questions concerning this issue. First, is the C-27J Spartan, in fact, a reasonable C-23 Sherpa replacement for the MCTS cargo and passenger mission? Second, are there ways to improve the resupply routes and the air tasking procedures that are currently being used by the Army to provide direct MCTS support?[1]

Comparing the C27J Spartan and C23 Sherpa for the MCTS Mission

While there is no quantitative definition of MCTS, it usually refers to the delivery of supplies or personnel to a point of urgent need in a short time period, typically less than 24 hours and usually much less. Examples of MCTS cargo include such items as blood, repair parts for grounded aircraft, and ammunition. Some cargo, such as helicopter rotor blades, is somewhat large; other cargo—ammunition, for example—may be fairly heavy. As a result, an aircraft tasked for the MCTS mission should be properly sized for the cargo it will carry. MCTS missions in dispersed COIN operations also imply that the aircraft needs to possess a reasonably long range and the capability to land and take off on a short, rough field. Finally, a reasonable cost to procure and operate the aircraft is important.

In all performance categories, the C27J Spartan is superior to the C23 Sherpa. Its range is substantially greater. It has twice the cargo capacity, can carry more troops, and is able to take off in a shorter distance and from rough airfields. This enhanced performance comes at a greater procurement cost, but the operating costs appear to be similar to those of the Sherpa.

The additional performance is important. In Afghanistan, for example, the Army has been unable to use Sherpa aircraft because they lack the altitude performance needed in that

[1] In April 2009, the Chief of Staff of the Army (CSA) decided that the C-27J Joint Cargo Aircraft and all funding for it should be given to the Air Force. After the CSA informed the Secretary of Defense of this decision, Requirements Memorandum Decision (RMD) 802 was published. This memorandum goes beyond just the C-27J and affects the C-23 and to some extent the C-12 aircraft. This programmatic change does not alter the findings of our study. Irrespective of whether the Air Force or the Army owns and operates the C-27J aircraft, the Army needs to have access to a responsive reresupply system that can deliver MCTS shipments to the forward operating bases. This requires an air scheduling system that incorporates rapid approval procedures and does not lead to excessive aircraft hold and procedural delays.

mountainous country. Instead, the Army is forced to rely heavily on CH-47 helicopters and contracted fixed-wing aircraft to perform the MCTS mission there. The main issue this substitution raises for the Army is cost, although relying on contracted air support (sometimes from foreign sources) to perform critical battlefield tasks is problematic. CH-47 operating costs are high—on the order of five times that of the Spartan and Sherpa. Moreover, the extensive use of CH-47s for these missions causes substantial wear on the aircraft and reduces the number available for their primary assault role. The commanders in Afghanistan have repeatedly noted a shortage of rotary-wing lift assets to conduct operations across that very large battlespace.[2] Contracting aircraft for the MCTS role also carries substantial cost and may incur other operational limitations. Given these factors, the C27J Spartan is a reasonable replacement for the C-23 aircraft in the MCTS role. In fact, such a replacement would provide a substantial improvement in capability over the older aircraft.

Improving Air Tasking Procedures for the MCTS Mission

Unlike the normal airlift systems used by the Services to move materiel and personnel, the movement of MCTS items is handled separately in recognition of their high priority. One consequence is that neither the Army nor the Air Force possesses an air tasking system that is optimized for MCTS deliveries. A flow graph of the Army and Air Force air tasking procedures is shown in Figure S.1. The bottom half of the chart (shown in blue) summarizes the jointprocess used to plan and execute airlift within the Central Command (CENTCOM) area of operations. The joint process involves several decision points, different organizations, and multiple approvals. Further, the same process is used to move both MCTS and non-MCTS cargo and personnel. The top portion of the figure (shown in green) summarizes the Army's air tasking procedures, which utilizes both formal and informal processes to plan and execute air missions.[3] If the Army bypasses the Air Force's tasking process, its process is faster and more direct but is only available for use with Army-controlled aircraft. The joint air tasking process is based on a 72-hour planning cycle, while the Army process is based on a 24-hour planning cycle. Both processes can accommodate emergency shipments (MCTS missions), but the Air Force process requires general officer approval to change a tasking. Colonel-level approval is required to change an Army tasking.[4]

In summary, the Army's direct support approach using its organic aircraft is inherently more responsive for moving MCTS shipments. The Air Force's general support, common-user airlift approach, with its competition between users, its more complex scheduling procedures,

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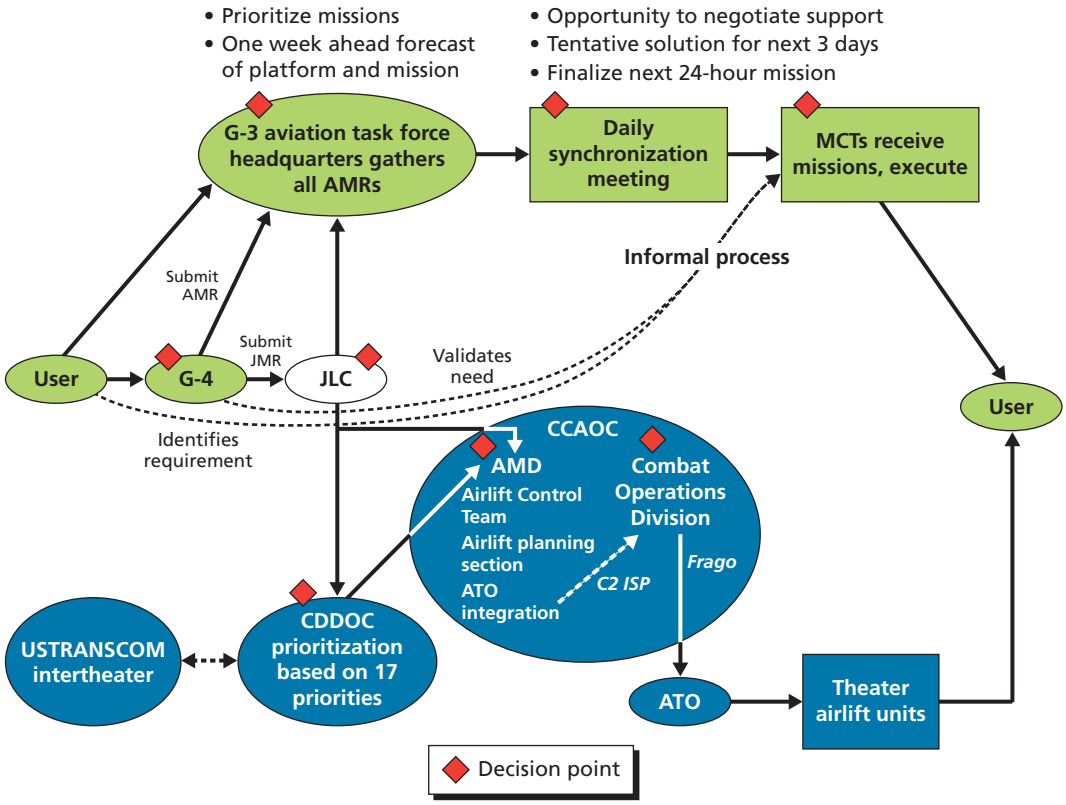
[2] Even the C27J Spartan would not be available everywhere in Afghanistan. There are simply not enough adequate landing areas throughout that underdeveloped and mountainous country. However, using a combination of rotary-wing aircraft, e.g., CH-47s, and fixed-wing aircraft with capabilities similar to the C27J in a hub-and-spoke arrangement could significantly reduce the flight hours incurred by the rotary-wing aircraft.

[3] As described by members of the 101st Airborne Division Combat Aviation Brigade after returning from a deployment to Afghanistan. Some details may be particular to Afghanistan, but we believe that this diagram is representative of the general air tasking process in any theater of operation.

[4] Figure S.1 shows a dashed arrow going from the G-4 to the movement control team box. This illustrates the routing for the informal process. It involves using "space available." In this case, the requestor deals directly with the services' air operations center, and the request is added to the manifest on the next available flight. A similar process is used by the Air Force: If a part needs to move and there is a scheduled flight, a user can request space available to move it. Of course, there is no guarantee that space will be available on the next flight.

Figure S.1
Process for Requesting Air Assets in the Theater



SOURCES: Army Rotary Wing Scheduling Process, LTC McCleary and interviews with 101st AVN Brigade; Tripp et al., 2006.

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and its efficiency criteria in scheduling cargo, requires workarounds for the rapid delivery of MCTS shipments. Both Services, however, should be able to improve the responsiveness of delivering MCTS, but the Army should be in a better position to do so if it retains direct control of its fixed-wing and rotary-wing aircraft. Some possible improvements could include the following:

- Formalize the practice of accepting last-minute MCTS in the air tasking procedures of the Army and Air Force.
- Place some aircraft, whether Air Force or Army, on strip alert for urgent MCTS deliveries.
- Reserve a certain fraction of the cargo bay of each aircraft for last-minute MCTS additions.
- Consolidate Army and Air Force management of air tasking requests and provide real-time visibility to all scheduled Army and Air Force airlift.
- Equip a theater with enough airlift aircraft to provide more direct support aircraft.
- Develop and enforce stricter rules concerning what shipments are considered high-priority MCTS.

In the longer term, each Service's logistics distribution system should be redesigned to better support COIN operations. One important element of the redesign effort should be an improvement in the process for rapidly tasking the delivery of MCTS shipments.