Common Sense at the Crossroads for Our Air Force

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According to Joel Rubin,

> As the dust settles on the debt ceiling deal, it's become clear that major cuts to defense spending have not only been approved in a bipartisan manner by Congress, but that even more are on the way. This means that the days of unlimited defense spending increases, where all systems can be purchased, are over.
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> So now is the time for tough choices to be made between defense programs that serve our warriors and those that we have maintained for too long due to bureaucratic, parochial or ideological reasons. It's time to stop spending dollars that we don't have on programs that we don't need and that don't make us more secure.[1]

An old proverb states that every cloud has a silver lining. Perhaps the recent debt-ceiling crisis and subsequent failure of the congressional supercommittee, together with continuing financial instability within the United States and global markets, have opened a small window of opportunity for reevaluating current Air Force budget priorities. In fact, the absolute necessity to get maximum bang for the buck could now serve as a catalyst in acquiring a credible and affordable counter-insurgency (COIN) capability for both the United States and its partner nations. In light of the tough budget decisions ahead, will the Air Force shed its affinity for technological wizardry and finally get serious about equipping its forces to fight effectively and efficiently in the battles they will most likely face in the near term?

Background

Global and regional ideological and political struggles have continued to increase the complexity of the security environment; these struggles have directly challenged traditional US military approaches, which have remained focused primarily on large force-on-force engagements in major combat operations. Faced with the powerful conventional war-fighting capability of the United States, our enemies (and those of our allies) have chosen to fight using a hybrid mix of irregular, disruptive, catastrophic, and traditional capabilities as a way to achieve their strategic objectives.[2] Our adversaries' timeline often does not match our own; those enemies seek to exhaust rather than confront us in direct military engagements. They will continue their attempts to undermine and erode the national power, influence, and will of the United States and its strategic partners.[3] Adaptive adversaries such as terrorists, insurgents, and criminal networks as well as states will more frequently resort to irregular forms of warfare as effective ways to challenge conventional military powers.[4] Given the prevalence of irregular threats in the current and expected operating environments, the US military must become as proficient in addressing irregular threats as it is in confronting conventional or regular ones.[5]

The Department of Defense's (DOD) *Quadrennial Defense Review Report* (QDR) of 2010 gave specific guidance to the armed forces of the United States. Two of the six key mission areas specified in that report include topics especially germane to irregular warfare (IW) or COIN operations and the light attack aircraft: (1) "succeed in counterinsurgency, stability, and counterterrorism operations," and (2) "build the security capacity of partner states."[6] A key, explicit QDR initiative to carry out the aforementioned missions gives direction to the Air Force to field a light attack aircraft in its general-purpose forces as a means of enhancing its ability to partner with a wide range of coalition air forces.[7]

One would have anticipated that the Air Force would move swiftly to follow the secretary of defense's guidance on the light attack aircraft;

however, the aftermath of the QDR's release has been flecked with painfully sluggish and intermittent activity amidst mixed and/or muted signals from the Air Force's senior leadership.[8] To be honest, the budget forecast at the time (affecting all US services) was abysmal; although it didn't happen, the forecast for the national defense budget of 2011 predicted a 17 percent decrease in funding.[9] Couple this fact with the stark reality that any further budget cuts could have directly affected the Air Force's ability to procure its desired share of Joint Strike Fighters (JSF) (1,763 F-35s), and one can clearly view the fiscal landscape where any additional procurements confronted outright skepticism. Undoubtedly the Air Force has made the F-35 its number-one priority for the upcoming budget debate. In fact, speakers at a recent airpower symposium that highlighted the Air Force's priorities made no mention of light attack.[10] Later, this article presents options and benefits for procuring light attack aircraft for the Air Force, an especially tough but necessary chore considering the recently announced defense budget cuts, which will likely trim $330–450 billion over the next 10 years.[11]

In December 2008, Air Combat Command (ACC) released its *OA-X Enabling Concept*, which laid out the framework for the fielding of a light turboprop attack/observation aircraft. Although senior leadership initially proved very supportive, the backdrop has changed over the last two years. Faced with the reality of looming budget cuts, current senior leaders at ACC now view any new aircraft procurement as a "zero-sum game."[12] Thus the addition of a new light attack aircraft fleet is now viewed as offsetting funds already allotted toward the purchase of new F-35 JSFs.[13] That perception, though technically correct, is extremely shortsighted and does not account for the massive cost savings that would accrue by purchasing a fleet of light attack aircraft to supplement the current air-to-ground workhorses (i.e., the A-10, F-16, and F-15E). Indeed, these light attack aircraft would pay for themselves in far less than three years' time (through proven sustainment savings) while at the same time meeting real-world combat training and operational needs. Unfortunately, in an ironic and classic DOD bureaucratic

twist, the sustainment savings that would accrue from using the light attack aircraft (operations and maintenance costs) are "colored" differently than procurement funds in the budget and thus cannot be used to directly offset "new" aircraft expenditures. As addressed later, the business case for light attack aircraft supplementing our air and space expeditionary task force deployments while reducing the burden of the A-10, F-16, and F-15E is stark and convincing and could save the Air Force billions of dollars over a decade.

Budget realities aside, former secretary of defense Robert Gates had good grounds for mandating development of the light attack aircraft for the Air Force. Certainly, the United States needs a light attack capability for many reasons, but this article confines itself to an examination of the four principal ones.[14]

Capability of the Light Attack Aircraft

Don't bring a knife to a gunfight.

—Jimmy Malone, *The Untouchables*

Many senior Air Force officials feel that the present complement of fighter aircraft arrayed in Operation Enduring Freedom and Operation Iraqi Freedom can adequately perform the predominant missions of close air support (CAS) and intelligence, surveillance, and reconnaissance (ISR).[15] However, what if our Air Force could carry out these missions just as effectively but at a fraction of the current cost? And what if light attack aircraft could actually provide numerous ancillary benefits to the US military and partner nations while performing successful CAS, COIN, and ISR? Most importantly, what if our nation could realize these goals, all the while preserving the lifeblood of our frontline combat aircraft (A-10s, F-16s, and F-15Es) for initial "kick the door down" actions during future major combat operations?

We must be precise about the niche that the OA-X aircraft will fill; specifically, it is not designed as a one-for-one replacement for our

current air-to-ground fighters. When phase two (seize initiative) and phase three (dominate) of our next major combat operation commence, the OA-X probably will not be involved, at least initially.[16] Rather, it is designed for COIN operations, which typically occur during phase four (stabilize) operations but may take place anytime throughout the life of a conflict.[17] Keep in mind that any major combat operation (once the decision is made) seeks to minimize the time spent in phase two and phase three, as the United States so eloquently demonstrated in both Afghanistan and Iraq. When President George W. Bush stood on the USS *Abraham Lincoln* and announced the end of major combat operations, he essentially heralded the transition to phase four. In Iraq the total time spent in phases two and three amounted to less than two months; since then, the Air Force continued to utilize the same mix of fighter/attack aircraft in Iraq until withdrawal in December 2011. In the eight-plus years that followed President Bush's speech, the Air Force could have successfully deployed the light attack aircraft, saving hundreds of millions of dollars while preserving our frontline fighters for future phase two and three operations.

The decision to utilize the light attack aircraft will depend primarily on the threat environment. OA-X aircraft cannot carry as much ordnance or traverse the battlespace as swiftly as our current suite of air-to-ground aircraft. However, they have already demonstrated sufficient combat capability that certainly could supplant and/or augment our workhorses in reduced threat environments across the globe. Given the current environment in Iraqi Freedom and Enduring Freedom, light attack aircraft could fill 95 percent of all mission sets occurring today. They have demonstrated state-of-the-art digital connectivity; full-motion-video transmission; data-link connectivity, including J-series messaging via Situational Awareness Data Link / Link 16; advanced sensor pod capability (with laser designation/illumination/range finding); and secure tactical communications via satellite communications. In fact OA-X aircraft have already validated air-to-ground voice and data links with every operational US and North Atlantic Treaty Organization communication suite.[18]

Neither is precision-munition capability an exclusive bastion for the Air Force's frontline fighters today. Using an Embraer Super Tucano (or A-29), Colombia's air force killed a leading member of the Revolutionary Armed Forces of Colombia (FARC) in 2008 with a laser-guided Griffin munition.[19] Hawker Beechcraft's AT-6 Military Standard 1760 bus compatibility allows outfitting the aircraft with a myriad of US precision-guided bombs, rockets, and missiles.[20] The IW arena, which depends upon winning the support of the relevant population and limiting collateral damage, demands precision targeting.[21] As we have heard, in IW operations what you "do not" hit is as important as what you "do" hit.

Finally, the light attack aircraft has demonstrated impressive numbers for deployment range and on-station loiter. The AT-6, for instance, boasts a no-wind deployment range of 1,725 nautical miles (nm) while landing with a fuel reserve exceeding 45 minutes. In addition the AT-6 has calculated an AGM-114 Hellfire standard configuration load with a 400 nm combat radius and loiter time of two hours on-station. Reducing the combat radius, say to 200 nm, doubles the on-station loiter time available.[22] In essence this capability equates to continuous A-10 or F-16 ISR/CAS coverage without having to rendezvous with a tanker for aerial refueling. The presence of light attack aircraft for the entire coverage period would benefit ground troops tremendously.

Enabling Partnership Capacity with the Light Attack Aircraft

Arguably the most important military component in the War on Terror is not the fighting we do ourselves, but how well we enable and empower our partners to defend and govern themselves.

—Secretary of Defense Robert M. Gates, 2007

Do not try to do too much with your own hands. Better the Arabs do it tolerably than that you do it perfectly. It is their war, and you are to help them, not to win it for them. Actually, also, under the very odd conditions of Arabia, your practical work will not be as good as, perhaps, you think it is.

—T. E. Lawrence, 1917

The strategic importance of building partner capacity is well documented both throughout history and in current DOD directives. The QDR of 2010, as did its predecessor in 2006, gives specific direction to ensure that the United States continues to build up the security capacity of its partner states.[23] Similarly, the Air Force adopted 12 new service core functions in 2010, among them building partnerships.[24] Although the Air Force has since reversed course on its fledgling building partnerships doctrine, the priority of enabling partnership capacity remains. In fact, in November 2011, Lt Gen Dick Newton, the assistant vice-chief of staff and director of the Air Staff, stated that building international partnerships is crucial, "particularly with a distressing economy that persists in convergence with other geopolitical uncertainties that are out there."[25] Finally, ACC's IW operating concept notes that "Building Partnership Capacity . . . is effectively both a preventive measure and an exit strategy for the United States for operations across the spectrum of conflict."[26] We can measure partner capacity in many ways, but certainly modern history has taught us that we cannot maintain security in the midst of COIN without the effective use of aviation resources.

Unlike the administration of President John F. Kennedy, whose initial response involved building up a US special forces capability to address his nation-building strategy, the current strategy concentrates on building up the capacity of other nations to obtain and maintain their own security and stability.[27] Therefore, the US Air Force should not provide the air assets for all of our partners but should assist in the buildup of their organic air operations capability (as should the other services). Unfortunately, military strategists ignored this approach in Iraq for several years.[28] In fact, one could easily make the case that the

United States' "large force" departure in Iraq was delayed by years due to our poor and incomplete exit strategy, specifically with regard to rebuilding Iraq's air force, which we decimated during phase two and phase three operations. After the destruction of that air force, more than six years passed before we delivered the first T-6 Texan II (military training platform) for Iraqi pilot training! We should have established a comprehensive plan to supply replacement training and operational aircraft as well as rotary-wing assets well prior to March 2003, when Iraqi Freedom kicked off.

A study by the RAND Corporation, *Air Power in the New Counterinsurgency Era*, observes that creating a wing-level organization for aviation advising "is likely the single most important initiative [the] USAF can take to enhance its own counterinsurgency capabilities."[29] Although the Air Force has established an air advisory group based at Randolph AFB, San Antonio, it has much to accomplish in order to comply with RAND's guidance. In an Air Force Special Operations Command white paper, Col Billy Montgomery outlines the general concept of an IW wing comprised of aircraft capable of six distinct functions: light mobility, medium mobility, heavy mobility, light strike, rotary wing, and manned ISR.[30] Note that the light attack aircraft adeptly fulfills two of these roles (light strike and ISR). The concept of the wing entailed providing a cohesive structure to train, deploy, sustain, redeploy, and reconstitute together. Units under the IW wing were designed to conduct both operational and partner-training missions in-theater while the structure inherent in the wing provided an institutional safeguard to prevent approaching IW and building partner capacity in a haphazard, ad hoc manner—which happened in the Vietnam era.[31] We could have avoided many of the problems intrinsic to our painfully slow progress in Iraq had the Air Force formed an IW wing trained and prepared to support partner ground forces with ISR, mobility, and strike missions in 2003.

Currently, the only alternative the United States can offer a partner nation in the way of fixed-wing, armed aircraft is the F-16. Many of our

partners find themselves in Iraq's former and present situation. That is, they don't necessarily need F-16s to rebuild their air forces (although they definitely want them and will receive them eventually); instead, they need reliable, capable, easy-to-maintain, and affordable airframes to train their pilots and maintenance crews and to conduct basic sovereignty missions such as border security, ISR, and CAS. The F-16 offers tremendous capability, but it clearly is not the right fit for most of our allies. The light attack aircraft, however, fulfills all of the traditional sovereignty roles while providing an extremely reliable airframe with low life-cycle costs—something the F-16 does not offer. The air forces of many other partner nations (e.g., Afghanistan) are simply less adept at handling the complexity of an F-16 fleet, from both a flying and maintenance perspective. After a successful transition to the light attack aircraft, Afghanistan (and many other countries like it) may consider bolstering its air force with additional, more technically sophisticated aircraft, but it should first acquire a reliable, easy-to-maintain light attack aircraft.

As we saw in both Iraq and Afghanistan, building a partner nation's air force takes time, and in the meantime, insurgents continue to get a vote. Therefore, the United States should position itself to prosecute air-to-ground COIN operations at any time—with a light attack aircraft in its arsenal. In this manner, the United States could augment a partner nation's air force by providing simultaneous operations and training missions in-country immediately. Furthermore, the light attack aircraft, which can operate from austere runway environments, does not need robust, hardened, and million-dollar aerodrome facilities. The United States needs an indigenous light attack capability to "stave off the wolves" when necessary, while it builds the partner nation's air force.[32] And let's not forget the F-20 debacle, whereby the United States attempted to sell an air-to-air capability that it wouldn't purchase itself, thus defacing any credibility in the weapons system. Without question, the Air Force must develop a cadre of experienced light attack instructors who can impart their proficiency to our partner nation's air forces.

Second- and Third-Order Effects of the Light Attack Aircraft

The US Air Force is facing a crisis. Its inventory of aircraft is in critical condition, and the drawdown asymmetry will worsen the situation unless something fundamentally changes. . . . On paper, the Air Force's aircraft are old. In reality, they are even older than the numbers show. It is a fact that military equipment wears out faster in the harsh environment and high operations tempo of the Middle East. The heat, sand, and wind combine to create one of the harshest climates on Earth, especially for high-tech equipment.

—Lt Col Clint Hinote, "The Drawdown Asymmetry," 2008

This can't go on. At some time in the future, they will simply rust out, age out, [or] fall out of the sky.

—Secretary of the Air Force Michael W. Wynne

Creating a Ready Pool of CAS/COIN Assets and Pilots While Preserving Our Legacy Air-to-Ground Aircraft

Establishment of an indigenous light attack fleet within the Air Force would have numerous ancillary benefits for both that service and the nation. First, it would create a pool of experienced COIN and CAS instructor pilots who could conduct both operational and training missions with/for a partner nation. As we have observed throughout our Air Force's history, our tactical prowess in CAS and COIN has ebbed and flowed with the termination of each major engagement.[33] Historically, Air Force competencies in COIN have simply atrophied as soon as circumstances permitted. Outside of Air Force Special Operations Command, no systemic protection of these capabilities has saved the critical core elements from extinction, and resurrecting the professional competencies that once existed is a difficult and time-consuming task. This author knows from firsthand experience that piloting and

planning skill sets for COIN and CAS are fleeting and perishable without consistent practice.

Second, consider the airframes in our nation's arsenal in 10–15 years. Which aircraft will be capable of conducting CAS/COIN? The answer to this question is significant, especially in light of the announcement on 27 January 2012 that the Air Force will retire five of its A-10 squadrons over the next decade.[34] Certainly JSFs would prove proficient for most air-to-ground roles, but the Air Force will likely reserve these aircraft primarily for deep-strike strategic attack, interdiction, or high-value target roles. In addition, the service projects the F-35A as the only variant to sport an internally mounted gun, specifically the General Dynamics GAU-22/A Equalizer 25-millimeter (mm) (0.984-inch), four-barreled Gatling cannon, internally mounted with a meager 180 rounds.[35] Why is this point important? Often, the gun represents the most important weapon in a COIN aircraft's arsenal because it allows precision fire while minimizing collateral damage and injury to noncombatants. Consequently, the A-10 is generally regarded as the world's most effective COIN and CAS platform.[36] Aimed cannon fire permits tactical ground parties to "call for fire" with friendly troops in close proximity to enemy troops; moreover, terminal attack controllers can observe an aircraft's nose position (the bullets have to travel in the same direction as the nose/fuselage of the aircraft) and determine with confidence whether or not the attacking aircraft is positioned correctly to avoid fratricide. Light attack aircraft can carry 400 rounds of .50 caliber internally (A-29 Super Tucano) or 800 rounds of .50 caliber / 20 mm externally with two gun pods (A-29 or AT-6). Furthermore, no COIN scenario could persuade combined force air component commanders to apportion and allocate a $250 million aircraft for a role that an $11 million aircraft could aptly fill.[37]

Finally, the Air Force is operating the oldest fleet in its 64-year history. Our current fleet of F-16, F-15E, and A-10 aircraft is already stretched thin by overuse in the Gulf region. If we continue to use these aircraft at the current flying-hour rates, attrition may prevent

them from providing significant assistance in 10 years.[38] In fact the average age of our most effective COIN/CAS airplane today, the A-10, is 29.8 years.[39] Like the F-16, it has already gone through a service life extension program.[40] Finally, as mentioned before, the light attack aircraft offers the only logical solution for conducting both training and operational COIN missions with our partner nations.

Improving Air-to-Ground Integration with the Light Attack Aircraft

> *Additionally, once in theater, there is little to no cross tell or interaction between the key leaders of the air and ground units. Each service is attempting to improve its COIN capability individually, but there is no joint effort to do so. This lack of unity of effort unnecessarily hinders the joint force from reaching its operational objectives. . . . In such operations [COIN], tactical air units providing support should be intimately familiar with the ground commander's scheme of maneuver, short and long-term objectives and overall plan for air on a particular mission.*
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> —Col Sam Milam, 2009

The Air Force has done an admirable job standing up a division tasked with documenting all lessons learned from major exercises and combat deployments. One lesson, captured consistently from every major combat deployment, tells us that air-to-ground integration between Air Force and Army units needs improvement.[41] One might correctly label this a "lesson observed" but never fully "learned." One of the most salient lessons reveals that the Army's and Air Force's planning cycles often do not intermesh, leading to missed opportunities to exploit the asymmetry realized with a properly executed ground commander's scheme of maneuver backed up by all the capabilities of a properly executed air maneuver plan. Too often Army battalions plan their operations without any Air Force input.[42] The light attack aircraft has a tremendous opportunity to improve air-to-ground coordination by colocating at Army forward operating bases. Historically, Air Force air support operations units (charged with liaising between forward Army

units and aircraft/aircrews allocated to support these units) have had to be extremely proactive to ensure a seamless connection between airpower and ground power. Part of the reason for this discontinuity derives from the fact that the traditional positioning of aircrew and ground-maneuver leaders across the battlespace makes face-to-face briefings and debriefings a rarity. Consequently, aircrews fly their armed reconnaissance and/or CAS missions and seldom receive feedback on the effectiveness of their sorties, whether they employed kinetic options or not. Since light attack aircraft do not require expansive, built-up airfield facilities, we can locate them closer to the units they will actually support. According to Army Field Manual 3-24 / Marine Corps Warfighting Publication 3-33.5, *Counterinsurgency*, "Unity of effort must be present at every echelon of a COIN operation. Otherwise, well-intentioned but uncoordinated actions can cancel each other or provide vulnerabilities for insurgents to exploit."[43] Finally, the light attack aircraft's ability to land on short, austere runways and refuel overwing gives it limitless opportunities to liaise directly with elite special operations forces.[44]

Currently, the fact that rotary-wing platforms can immerse themselves completely into the ground commander's scheme of maneuver lends them a major COIN advantage over legacy Air Force aircraft. For this reason, Army attack aviation platforms conduct close combat attack rather than the CAS outlined in Joint Publication (JP) 3-09.3, *Close Air Support*. Army attack pilots employ with an abbreviated five-line close combat attack procedure versus what they would term JP 3-09.3's "cumbersome" and "time-consuming" CAS nine-line procedure currently utilized by all fixed-wing CAS platforms as well as Marine Corps attack aviation.[45] Imagine having the benefit of this close coordination with the Army plus the ability to fly much longer distances, loiter on station for more hours, and traverse the battlespace quicker, all the while employing precision munitions from distances far in excess of those typical of attack aviation. These examples highlight the fact that basing aircraft closer to the fight has its advantages—not only for battlefield coordination but also in terms of response time. This proximity to the

fight would enable light attack aircraft to respond to incursions into a forward operating base's perimeter defense as well as participate in small-unit clearing operations, whether in a surveillance or direct-fire mode. Light attack aircraft can (and should) be deployed to locations where our frontline fighters wouldn't dare land—which, by the way, describes a large portion of our partner nations' backyards (Afghanistan, Mali, Yemen, Nigeria, etc.). The OA-X is the ideal aircraft for our mission of building partner capacity in developing countries!

An additional benefit for air-to-ground integration lies in the fact that air support operations squadrons (ASOS) could regularly receive dedicated currency support from joint terminal attack controllers (JTAC). Historically, JTAC controls with live aircraft have always been in high demand, never more so since the catastrophic events of 11 September 2001. In fact, part of the Air Force's resistance to raising the total number of JTACs (a perennial request by the Army, which appreciates their services and wants hundreds more of them) concerns the argument that the number of sorties available does not justify keeping more JTACs current and qualified. To placate the Army, the Air Force developed the joint fires observer (JFO) program, which places qualified Army Soldiers in a "JTAC-like" role without giving them the authority to grant clearance to aircrews for live drops (except in emergencies).[46] These JFOs also have currency requirements, but they are less onerous than those for JTACs—and their currencies can be updated concurrently with their paired JTACs. The Air Force could assign or directly align light attack aircraft to support these ASOSs, thereby guaranteeing a steady pool of current and qualified JTACs—a colossal luxury. Further, assigning these aircraft directly to the ASOSs would give many of the service's "shiny pennies" (fast-track pilots / aircrew members on the road to becoming generals) an incentive to get their hands dirty and learn firsthand about joint integration and the operational level of war with a sister service. (Typically these shiny pennies want to fly their entire career.) Finally, since the light attack aircraft would be flying locally, they could stay on station easily for a three-hour training session (without external tanks), a major improvement

over current training opportunities, which often result in only 20–30 minutes of air support at a time. Additionally, with the state-of-the-art communications suite, JTACs could actually practice with all the combat tools of the trade (full-motion video, secure voice, data link, digital nine-lines, remotely operated video enhanced receiver [ROVER] feed, etc.). Only rarely do JTACs get to practice with all of these tools.[47]

Unfortunately, the empirical data clearly shows that the Air Force does not value joint air-to-ground interdependence, certainly not over shiny, new fifth-generation capability like the F-35. Three salient data points illustrate this fact. First, in 2003 ACC put the finishing touches on a yearlong effort by a select tiger team and published its ASOS manpower study. This study outlined the recommended billets and manning authorizations to execute the mission of the tactical air control party (TACP) and represented truly groundbreaking integration work by the Air Force. After the study's publication, ASOS commanders and Army battalion commanders were jubilant—finally the JTAC mission had the priority it deserved; however, the manning gains were short lived. In early 2005, ACC published its Interim TACP manning guidance, which effectively chopped ASOS manning in half. Unfortunately, this "temporary" guidance became permanent. Today, TACP and JTAC manning sits at approximately 40 percent of the 2003 study's recommendations.[48] Second, as an answer to the Army's transformation efforts in 2004, ACC announced it would increase its JTAC force to 1,100 billets from 535 current billets. The deal brokered with the Army was part of a compromise to support the Army down to the company level with Air Force JTACs, some of them dedicated and others from a "pool" of JTACs. The Army would have preferred to garner an independent clearance authority for its Soldiers, especially for its field artillery forward observers, to "clear" fighters and bombers "hot" for bomb drops and strafing runs. Nevertheless, the Air Force convinced it to accept a new designation for its highly qualified forward observers to act as JFOs, essentially the eyes and ears of the JTAC. In 2011 the Air Force was nowhere near 1,100 JTACs and, in fact, hadn't crested over the 600 mark.[49] Finally, and perhaps most ominously, the Air Force an-

nounced on 27 January 2012 that it was disbanding five A-10 squadrons (three Air National Guard units, one reserve unit, and one active duty squadron), mentioned above: "Facing a new age of fiscal austerity, the Defense Department is trying to pivot away from the counter-insurgency campaigns of the past decade."[50] Clearly, this move preserves newer antiaccess and fifth-generation capability at the expense of a credible COIN competence.

Improving Our Tactical Pilots with the Light Attack Aircraft

By colocating the light attack aircraft at A-10 bases, the Air Force would directly improve its conduct of COIN missions.[51] Recall how the service used to train its fledgling A-10 pilots: with no simulator, only a cursory check in a rudimentary aircrew-training device, and then off for a solo ride in the A-10 (there are no two-seat A-10s). Today, A-10 pilots benefit from a high-fidelity simulator, but they still have no two-seat trainers. Numerous benefits accrue to having an aircraft with a similar mission set and two seats, not to mention the preparation for that first solo flight. Nothing can take the place of having another set of eyeballs to examine foibles in flight, in real time. For instance, if students experience difficulty with bombing, only one ride in a two-seat light attack aircraft could reveal the problem: perhaps they are setting their aim-off distance improperly, something that can be corrected on the spot. Similarly, if students can't determine when to pull lead on a simulated "bandit," a real-time input and/or demonstration could save hours and hours of costly flights, remedial training, and debriefing. Several other benefits come to mind: currency flights won't necessarily tie up limited instructors in a squadron, and combat search and rescue missions can include a backseater to enhance situational awareness and data recall/transmission. Furthermore, as long as A-10 pilots utilize the light attack fighter to keep their skills honed razor sharp, they won't generate any high-cost-per-flight-hour bills, and they won't age our frontline fighters.

We could also utilize light attack aircraft at F-22 bases and F-35 bases, where enormous operations and maintenance costs will likely keep the number of flying hours low for the foreseeable future.[52] Skills accumulated with flying the light attack aircraft could apply to aircraft across the board because all fliers could keep piloting acumen up to speed without piling on onerous bills. What's more, the light attack aircraft would increase the number of absorbable cockpits for the Air Force. For many years, the service has struggled to create enough experienced aviators to fill demands for rated staff duty—a situation that will only get worse as combat aircraft are drawn down and more pilots are channeled over to remotely piloted aerial systems.[53]

The Business Case

Under the current specter of decreasing DOD budgets, we would do well to look for measures that would garner savings while still giving the military the muscle it needs to prosecute the COIN fight around the globe. Given the fact that the light attack aircraft has a proven COIN capability, let's compare its sustainment figures with those of the A-10, F-16, and F-15E (see figure on the next page).

One can see quickly why the argument for a light attack aircraft corps is so compelling. ACC performed two studies, one in 2008 and the other in 2009. The first study concluded that replacement of just one-and-a-half squadrons of deployed fighters with the light attack aircraft would save well over $300 million per year in fuel and operations costs.[54] The second study focused strictly on fuel costs alone, concluding that deployed air expeditionary task forces could save nearly $90 million per year in fuel expenditures.[55] Increasing fuel costs and maintenance requirements for an older, end-of-life-cycle fighter fleet today and in the future will only magnify those savings.

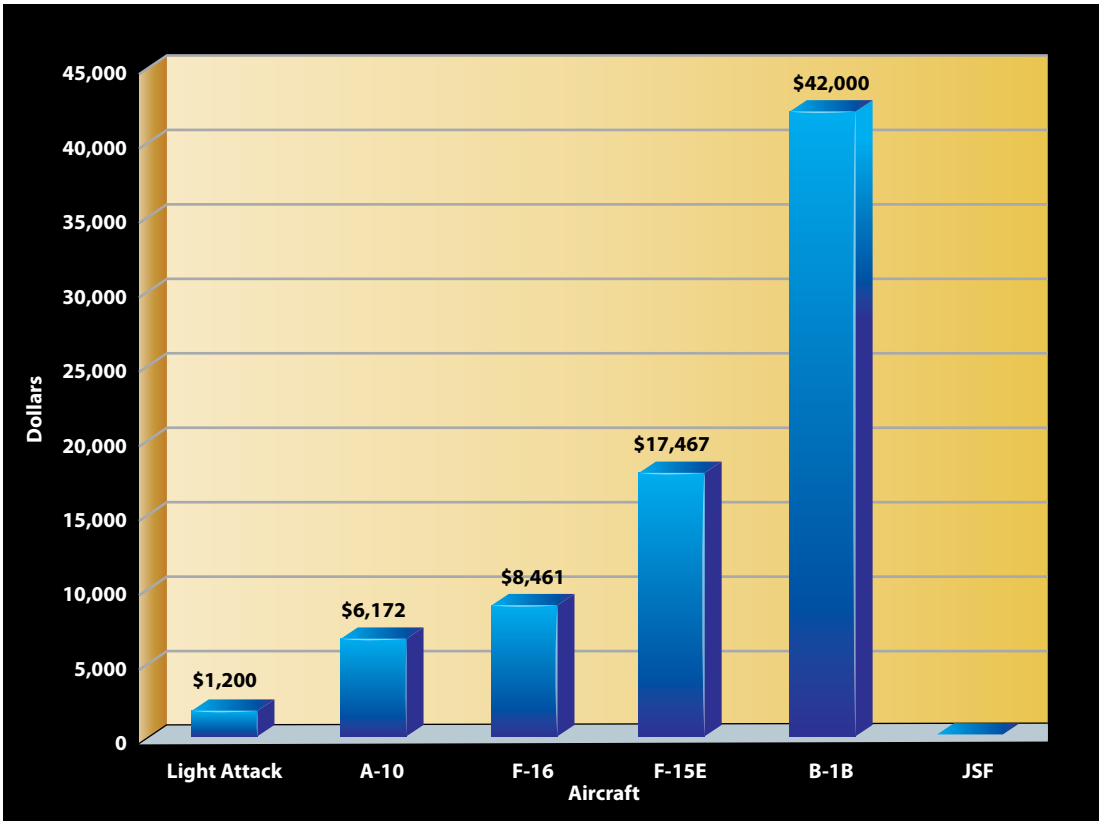

Figure. The business case: Estimated cost per flight hour. (Calculations of cost per flight hour vary according to the entering arguments and source. Figures for fiscal year 2010 come from Air Force Instruction 65-503, *US Air Force Cost and Planning Factors*, 4 February 1994, http://www.e-publishing.af.mil/shared/media/epubs/AFI65-503.pdf, and "Department of Defense FY 2011 Reimbursable Rates," Office of the Under Secretary of Defense [Comptroller], http://comptroller.defense.gov/rates/fy2011/2011_f.pdf, with a conservative 10 percent hike for current fuel rates. For A-10, F-16, and F-15E aircraft, figures include costs for fuel, depot-level repairables, and other depot maintenance. AT-6 and A-29 [Super Tucano] open sources serve as the basis for the $1,200 estimate per hour.)

Now let's take this cost per flying hour further to demonstrate substantial savings annually. Admittedly this example is simplistic and not all-encompassing, but the entering arguments are conservative and ex-

tremely thought provoking. In 2010, US Air Forces Central (AFCENT) flew 33,679 CAS missions.[56] Let us assume that light attack aircraft could have performed 95 percent of those sorties (31,996). The comparison of cost per flight hour across the board assumed the following mix of AFCENT sorties: 40 percent A-10 (12,798 sorties), 30 percent F-16 (9,599), 20 percent F-15E (6,399), and 10 percent B-1 (3,200). Furthermore, calculations used a nominal four-hour sortie (probably a grossly conservative number considering the average duration of all these aircraft after air-to-air refueling). Based upon the estimated cost per flight hour above, 31,996 sorties were flown at a total annual cost of $1,625,510,912.[57] Compare this with a light attack cost of $153,580,800.[58] That's a savings of $1,471,930,112 in 2010 alone, an amount that could purchase 136 light attack aircraft—more than enough to augment COIN capability in-theater for years to come. Also keep in mind that AFCENT does not track Marine Corps sorties (AV-8) in its yearly total and that the calculation made no allocation of savings due to dramatically diminishing tanker hours, so the potential savings are drastically higher than the approximately $1.5 billion reported above.

So why the tepid response for the light attack aircraft from today's senior leaders in the Air Force? Perhaps other than fighter pilots' natural aversion to considering a turboprop aircraft (an aversion that disappears after their first sortie), one major reason comes to the forefront. The OA-X represents a new procurement; therefore, its acquisition becomes part of a "zero-sum" game. Senior leaders view any additions of the light attack aircraft as cutting into other procurements of new aircraft—specifically, the F-35 JSF.[59] Reluctant to take any of the future 1,763 JSF slots, they are unwilling to remove current fighters from the inventory. Never mind the fact that these light attack aircraft would pay for themselves in a matter of years (based upon savings accrued from reducing the legacy fighters' hours, thus extending their life expectancy as well). Those savings accrue in another "bucket" of money separate from new aircraft procurements. Surely this accounting stratagem can be transformed to allow for common sense. Unfortunately, given the escalating costs of the JSF program and the debt-ceiling

agreement for a $330–450 billion reduction in defense spending over the next 10 years, resistance to adding additional numbers of light attack aircraft to the budget may only grow.[60]

It is becoming abundantly clear that light attack aircraft, either for our partner nations or our own Air Force, are not a priority. In November 2011, Secretary of the Air Force Michael Donley listed the Air Force's priorities: JSF, KC-46A tanker, new long-range bomber, continued development of remotely piloted air systems, and modifications of space systems for improved communications and missile warning.[61]

Nevertheless, another option may allow further purchases of the light attack aircraft without necessarily affecting the JSF buy. The OA-X could be "noncombat" coded for Air Force usage, as was the T-33 in a bygone era.[62] In this case, we could purchase the light attack aircraft in large numbers for training but not necessarily for combat. The Air Force could still use the aircraft as a trainer for air advisers engaged in building partner capacity, a JTAC trainer for ASOSs, and a companion CAS/COIN/forward air control–airborne / combat search and rescue trainer for ACC—but not for direct combat operations. In this capacity, it is uncertain whether the State Department could still employ the OA-X for slow-moving intercept, border patrol, or counternarcotics activity.

Summary and Conclusion

The US military's COIN operations are not going away. If the Air Force developed a terrific, fearsome airborne COIN capability without a reasonable chance of ever employing it, then clearly the service would have wasted the time and money necessary to develop that capacity. So it is indeed prudent to evaluate the next most likely region for conflict. The International Crisis Group lists the following hot spots as probable areas for what it calls "Next Year's Wars": Syria, Iran/Israel, Afghanistan (we're already there), Pakistan, Yemen, Central Asia, Burundi, Congo, Kenya/Somalia, Venezuela, Tunisia, and Myanmar.[63]

The next logical question that follows is, In which of these regions would one expect the light attack aircraft to play a significant role? The answer is all of them. That's right—all of them. Iran would pose an initial challenge since our legacy phase-two and -three workhorses (as well as other elements of our conventional forces—Tomahawk missiles, bombers, naval air, etc.) would have to suppress the electronic surface-to-air threats. That done, however, a COIN-like environment would exist in which light attack aircraft could flourish.

Former secretary of state Gates tried for years to persuade the Air Force to take small wars seriously, but, as he remarked, "It's been like pulling teeth." The secretary wanted to "institutionalize and finance our capabilities to fight the wars we are in today and the scenarios we are most likely to face in the years ahead." Gates spoke of his aversion to the "99-percent exquisite service-centric platforms that are so costly and so complex that they take forever to build."[64] If the Air Force ever becomes serious about adopting Gates's mantra, then it will have to make some hard decisions with respect to the technologically advanced approach it has taken to fighting our nation's wars. Perhaps the service could reduce or postpone some of its planned F-35 buy to accommodate a near-term surge in COIN and building partnership capability, thereby reducing the rapid devaluation of its current frontline fighters.

Simply by postponing the development and/or purchase of the over-budget and delayed F-35 and instead purchasing light attack aircraft, the Air Force would find that these platforms would pay for themselves in a very short time. Ponder this point: such a fundamental change in strategy regarding a light attack platform can result in ongoing sustainment and life-cycle savings; after paying off the OA-X purchase price, the Air Force could use that near-perpetual windfall every year thereafter to procure the same number of postponed F-35s. The correct paradigm is not an "either or / zero sum game" decision but a "both and / win-win game." The light attack platform represents an investment that actually improves the likelihood of the Air Force's actually being able to afford the F-35.

The light attack aircraft is built specifically to conduct COIN and CAS missions in the environment in which the United States will most likely operate in the coming years. This new paradigm results in the following for every hour flown in the OA-X:

- Money back to Air Force coffers for current and future needs through enormous savings in cost per flying hour.
- A significant increase in the United States' building partnership capacity.
- More training opportunities for ground personnel (JTACs, JFOs, special forces teams, SEALs, etc.), resulting in better trained ground troops.
- Enhancement of CAS and COIN proficiency among fighter/attack pilots.
- An increase in flying proficiency and flying time for pilots assigned to our most advanced airframes (F-22, F-35, and B-2).
- An improved currency and training regimen for our fighter squadrons (two-seat instruction for A-10 pilots, landing currency, and combat search and rescue training).
- Improved opportunities in air-to-ground integration for Airmen to interface directly with deployed special forces and Army units.

None of these improvements will come to our Air Force without hard decisions about the future buy of F-35s. As the Air Force ponders its future, one can only hope that it will consider beefing up its COIN and CAS capability in the near term with the light attack aircraft. If the service is truly serious about developing what Gen Edward Rice (commander of Air Education and Training Command) calls a "culture of cost consciousness," then surely it will make the right decision and develop the best Air Force to combat the next most likely threat to America's interests.[65] ✪

Notes

1. Joel Rubin, "How the Debt Deal Creates an Opportunity to Cut Nuclear Weapons," *Ploughshares Fund* (blog), 3 August 2011, http://www.ploughshares.org/blog/2011-08-03/how-debt-deal-creates-opportunity.

2. Department of Defense, *Irregular Warfare (IW) Joint Operating Concept (JOC)*, Version 1.0 (Washington, DC: Department of Defense, 11 September 2007), 16, http://www.fas.org/irp/doddir/dod/iw-joc.pdf.

3. Ibid.

4. Department of Defense, *Irregular Warfare: Countering Irregular Threats; Joint Operating Concept*, Version 2.0 (Washington, DC: Department of Defense, 17 May 2010), 4, http://www.au.af.mil/au/awc/awcgate/irregular/iw_joc2_0.pdf.

5. Ibid., 8.

6. Department of Defense, *Quadrennial Defense Review Report* (Washington, DC: Department of Defense, February 2010), 17, http://www.defense.gov/qdr/qdr%20as%20of%2029jan10%201600.PDF.

7. Ibid., 29.

8. "Air Forces in Irregular Warfare," Center for National Policy, 6 May 2010 [review and transcript of remarks by Gen Norton Schwartz, Air Force chief of staff], http://www.centerfornationalpolicy.org/ht/display/ContentDetails/i/18324.

9. Office of the Under Secretary of Defense (Comptroller), *National Defense Budget Estimates for FY 2011* (Washington, DC: Office of the Under Secretary of Defense [Comptroller], March 2010), 1, http://comptroller.defense.gov/defbudget/fy2011/FY11_Green_Book.pdf.

10. Ben Lambeth, Senior Fellow for the Center for Strategic and Budgetary Assessments and an adjunct associate for the RAND Corporation, conversation with the author, September 2011. Ben, who served as an introductory speaker for Gen Philip Breedlove (Air Force vice-chief of staff) at the Daedalians' Airpower Symposium in September 2011, had originally included two slides in his remarks addressing light attack. However, he was discouraged from mentioning them since the Air Force had no interest in tackling the topic.

11. Josh Rogin, "Jack Lew Tries to Explain the Defense 'Cuts' in the Debt Deal," *Foreign Policy*, 4 August 2011, http://thecable.foreignpolicy.com/posts/2011/08/04/jack_lew_tries_to_explain_the_defense_cuts_in_the_debt_deal; and Jill Laster, "Priorities Emerge As Budget Woes Intensify," *Air Force Times*, 29 November 2011, http://www.airforcetimes.com/news/2011/11/air-force-priorities-emerge-budget-woes-dick-newton-speech-112911w/.

12. Air Combat Command, *OA-X Enabling Concept* (Langley AFB, VA: Air Combat Command, 23 December 2008); and Carlo Munoz, "House Appropriators Eye Major Reductions to Joint Strike Fighter Funding," *Inside the Air Force*, 1 October 2010, 3. "All told, the Air Force could lose $4.1 billion from its FY-11 budget request" (ibid.).

13. Gen William M. Fraser III, ACC commander, conversations with the author during Joint Forces Command Component Commanders' Conference, March 2010; and Maj Gen Thomas K. Andersen, former ACC/A5R chief (Requirements), conversations with the author, August 2011.

14. On the topic of light attack aircraft, see the following: Richard Mesic et al., *Courses of Action for Enhancing U.S. Air Force "Irregular Warfare" Capabilities* (Santa Monica, CA: RAND Corporation, 2010); Lt Col Albert M. "Buck" Elton II, "An Air Commando Solution to an Irregular Warfare Problem," research report (Maxwell AFB, AL: CADRE/AR, May 2008); Air

Combat Command, *OA-X Enabling Concept*; Col Billy Montgomery, *USAF Irregular Warfare Concept*, white paper (Hurlburt Field, FL: Air Force Special Operations Command, 2007); Maj Brett Blake, "AT-6—the Best USAF Investment for the Long War," research report (Maxwell AFB, AL: Air Command and Staff College, 2007); Maj Arthur Davis, "Back to the Basics: An Aviation Solution to Counter-Insurgent Warfare," research report (Maxwell AFB, AL: Air Command and Staff College, 2005); Lt Col Michael W. Pietrucha and Lt Col J. David Torres-Laboy, *The Case for OA-X* (Langley AFB, VA: ACC/A3D Joint Integration Division, June 2009); Maj Steven J. Tittel, "Cost, Capability, and the Hunt for a Lightweight Ground Attack Aircraft" (master's thesis, US Army Command and General Staff College, 2009); Col Robyn Read, USAF, Retired, "Irregular Warfare and the US Air Force: The Way Ahead," *Air and Space Power Journal* 21, no. 4 (Winter 2007): 42–52; Maj David L. Peeler Jr., "A Method and Estimate for Counterinsurgency Aircraft Procurement," *Small Wars Journal*, February 2008; and Lt Col Clint Hinote, "The Drawdown Asymmetry: Why Ground Forces Will Depart Iraq but Air Forces Will Stay," *Strategic Studies Quarterly* 2, no. 2 (Summer 2008): 31–62, http://www.au.af.mil/au/ssq/2008/Summer/hinote.pdf.

15. "Air Forces in Irregular Warfare."

16. Joint Publication 5-0, *Joint Operation Planning*, 11 August 2011, III-42, III-43, http://www.dtic.mil/doctrine/new_pubs/jp5_0.pdf.

17. Ibid., III-43.

18. AT-6 aircraft have participated in three major Air Force / Air National Guard / joint exercises (Joint Expeditionary Force Experiment, April 2010; ANG Operational Assessment, October 2010; and North American Aerospace Defense Command's Falcon Virgo, November 2010), validating all of the aforementioned attributes and capabilities. Derek Hess, AT-6 director, Hawker Beechcraft Defense Corporation, conversation with the author, 18 August 2011.

19. The Israeli Griffin laser-guided bomb is not to be confused with Raytheon's 33-pound Griffin small tactical munition missile, which provides the AT-6 light attack aircraft a precision capability paired with standoff ranges up to 12.5 kilometers. See "Griffin Small Tactical Munition (STM)," Defense Update, 2011, http://defense-update.com/products/g/31122010_griffin_sgm.html.

20. Chris Kraul, "Modest Brazil Warplane Fitting into Nations' Plans," *Los Angeles Times*, 23 February 2010, http://articles.latimes.com/2010/feb/23/world/la-fg-ecuador-warplane23-2010feb23. Derek Hess validates AT-6 precision-weapon capability—among them Joint Direct Attack Munitions, laser-guided bombs, ATK's Direct Attack Guided Rocket, AGM-114 Hellfire, and Raytheon Griffin. Hess, conversation with the author, 18 August 2011. What's more, the AT-6 recently demonstrated a deployment range in excess of 1,725 nm with four external fuel tanks. Derek Hess, AT-6 director, Hawker Beechcraft Defense Corporation, conversation with the author, 22 November 2011.

21. Mesic et al., *Courses of Action*, 39.

22. Hess, conversation with the author, 18 August 2011.

23. Department of Defense, *Quadrennial Defense Review Report*, 17.

24. House, *Department of the Air Force, Presentation to the House Armed Services Committee, United States House of Representatives, Fiscal Year 2010 Air Force Posture Statement, Statement of the Honorable Michael B. Donley, Secretary of the Air Force, and General Norton A. Schwartz, Chief of Staff, United States Air Force*, 111th Cong., 1st sess., 19 May 2009, 3, http://www.au.af.mil/au/awc/awcgate/af/posture2009.pdf.

25. Laster, "Priorities Emerge."

26. Air Combat Command, *Irregular Warfare Operating Concept* (Langley AFB, VA: Air Combat Command, 25 July 2008), 13.

27. G. Hale Laughlin, "Aviation Development in Nation-Assistance Strategies," *Horizons Magazine*, no. 3 (Fall 2009): 19–21.

28. "The 1991 Gulf War, the intervening years of no-fly-zone enforcement, and the invasion of 2003 left the Iraqi air force completely devastated. With the exception of some base infrastructure, almost nothing remained to build upon. . . . The US Air Force in particular never developed a capability to conduct a project of this magnitude. . . . MNSTC-I created an entirely new organization, called the Coalition Air Force Transition Team (or CAFTT . . .) to oversee the creation of the Iraqi air force. This organization has taken some time to mature. . . . In fact, the CAFTT did not make use of the extensive expertise of USAF Special Operations Command forces until 2005." Hinote, "Drawdown Asymmetry," 43, 44, 61n38.

29. Alan J. Vick et al., *Air Power in the New Counterinsurgency Era: The Strategic Importance of USAF Advisory and Assistance Missions* (Santa Monica, CA: RAND, 2006), xviii, http://www.rand.org/pubs/monographs/2006/RAND_MG509.pdf.

30. Montgomery, *USAF Irregular Warfare Concept*, 12.

31. Conversation between Col Billy Montgomery and Mr. Jerome Klingaman, former director of strategy and plans, 6th Special Operations Squadron, 14 December 2006.

32. Lt Col George Monroe, USAF, retired, editor, *Comancheros*, e-mail conversation with the author, 13 January 2010.

33. For a discussion of this aversion to keeping a perennial skill in COIN activities, see Elton, "Air Commando Solution," 16–26.

34. Jeff Schogol, "5 A-10 Squadrons to Be Cut," *Air Force Times*, 30 January 2012, http://www.airforcetimes.com/news/2012/01/airforce-5-a10-squadrons-cut-013012.

35. "F-35 Joint Strike Fighter Media Kit Statistics," JSF.mil, August 2004, http://www.jsf.mil/downloads/down_mediakits.htm. See also *Wikipedia: The Free Encyclopedia*, s.v. "Lockheed Martin F-35 Lightning II," http://en.wikipedia.org/wiki/F-35_Lightning_II#cite_note-F-35_Stats-145.

36. The A-10 sports the GAU-8 Avenger 30 mm Gatling gun, capable of carrying 1,174 rounds and delivering accurate fire from more than 9,000 feet.

37. Forecasts of JSF per-unit costs are all over the map, depending upon the model priced and the source consulted. "In February 2011, the Pentagon put a price of $207.6 million for each of the 32 aircraft to be acquired in FY2012, rising to $304.15 million ($9,732.8/32) if its share of RDT&E spending is included." *Wikipedia: The Free Encyclopedia*, s.v. "Lockheed Martin F-35 Lightning II." See also "US Acquisition Costs by Weapon System," defense-aerospace.com, accessed 1 February 2012, http://www.defense-aerospace.com/article-view/reports_ar/122979/us-acquisition-costs-by-weapon-system.html; and Office of the Under Secretary of Defense (Comptroller)/CFO, *United States Department of Defense Fiscal Year 2012 Budget Request: Program Acquisition Costs by Weapon System* (Washington, DC: Office of the Under Secretary of Defense [Comptroller]/CFO, 2011). Estimate of light attack acquisition cost courtesy of Mr. Derek Hess, AT-6 program director, Hawker Beechcraft.

38. The F-16C model, for instance, has undergone a service life extension program (SLEP), raising its lifetime hours to 8,000; however, the average F-16C already has nearly 5,500 hours. Many F-16 experts believe that the SLEP has added a maximum of 10 more years to the airframe. Lt Col Will Sparrow, F-16 pilot with 4,000 hours and squadron commander, Alabama Air National Guard, conversations with the author, August 2011.

39. Kent Harris and Jennifer Svan, "War Puts Strain on Air Force's Aging Fleet," *Stars and Stripes*, 6 April 2008, http://www.stripes.com/news/war-puts-strain-on-air-force-s-aging-fleet-1.77360.

40. The A-10 SLEP boosted airframe longevity from 8,000 hours to 16,000 hours while the F-16 SLEP increased its longevity to only 8,000 hours. "F-16 Fighting Falcon: Service Life," GlobalSecurity.org, 7 July 2011, http://www.globalsecurity.org/military/systems/aircraft/f-16-life.htm.

41. For more detail, see Office of Air Force Lessons Learned, *Integration of Airpower in Operational Level Planning* (Washington, DC: Headquarters US Air Force/A9L, 8 August 2008). See also any Center for Army Lessons Learned (CALL) Collection and Analysis Trip report over the past seven years. CALL is based at Fort Leavenworth, KS.

42. A germane case in point is the study of Operation Anaconda, during which 10th Mountain Division planners did not initially include Air Force planners in their preparation. See Headquarters US Air Force/XOL, *Operation Anaconda: An Air Power Perspective* (Washington, DC: Headquarters US Air Force/XOL, 7 February 2005).

43. Army Field Manual 3-24/Marine Corps Warfighting Publication 3-33.5, *Counterinsurgency*, December 2006, 1-22, http://www.fas.org/irp/doddir/army/fm3-24.pdf.

44. The AT-6 demonstrated an austere landing capability early in 2011 by landing on a dry lake bed in Nevada and joining up with a special operations MC-130 aircraft for overwing refueling in the desert.

45. Joint Publication 3-09.3, *Close Air Support*, 8 July 2009, V-40, https://jdeis.js.mil/jdeis/new_pubs/jp3_09_3.pdf. From 2006 to 2010, the author worked at the Air Force Doctrine Center (renamed the LeMay Center for Doctrine Development and Education), Maxwell AFB, AL, where his frequent interaction with the Army's Directorate of Training and Doctrine at Fort Rucker, AL, taught him the perspective of Army attack aviation.

46. See US Army, US Air Force, and US Special Operations Command, memorandum of agreement, subject: Joint Fires Observers, 14 November 2005.

47. The author's experience with ROVER technology offers a perfect example. Most JTACs under his command never practiced with ROVER feeds until they found themselves in Iraq in combat—obviously not the ideal time to learn.

48. The author was an ASOS commander from 2004 to 2006. In late 2004, his squadron reaped the benefits of the ACC manpower study of 2003 and gained an additional 15 JTAC billets; however, every one of those billets was taken back after publication of the subsequent ACC interim TACP manning guidance in early 2005. Today, ASOS commanders deploy with such small numbers of JTACs that often they are forced to keep them in the battalion tactical operations centers and not in the field where they would better integrate with the Army. (Current manning morsel provided by Lt Col Robert Moseleski, recently deployed commander of an expeditionary ASOS in Afghanistan.)

49. Gen Martin Dempsey, the current chairman of the Joint Chiefs of Staff, lamented this fact at the 2010 Component Commanders' Conference, Joint Forces Command, May 2010.

50. Schogol, "Squadrons to Be Cut."

51. Brig Gen Paul Johnson, an A-10 pilot with hundreds of combat missions under his belt, first communicated this idea. General Johnson received the Air Force Cross for his leadership during a hazardous combat search and rescue mission near Baghdad in 1991.

52. F-22 pilots are currently utilizing T-38 trainer aircraft to supplement their flying hours in the F-22, which have been far and few between due to an oxygen generator malfunction.

53. Pietrucha and Torres-Laboy, *Case for OA-X*, 5.

54. Air Combat Command, *OA-X Enabling Concept*, 4.

55. Pietrucha and Torres-Laboy, *Case for OA-X*, 7.

56. Marc V. Schanz, "Boom Time in Afghanistan," *Air Force Magazine* 94, no. 6 (June 2011): 28, http://www.airforce-magazine.com/MagazineArchive/Documents/2011/June%202011/0611afghanistan.pdf.

57. See the following calculations for the estimated total annual cost: $6,172/flight hour x 4 hours x 12,798 sorties = $315,957,024 (A-10 sorties) + $8,461/flight hour x 4 hours x 9,599 sorties = $324,868,556 (F-16 sorties) + $17,467/flight hour x 4 hours x 6,399 sorties = $447,085,332 (F-15E sorties) + $42,000 x 4 hours x 3,200 sorties = $537,600,000 (B-1B sorties) = $1,625,510,912.

58. 31,996 sorties x 4 hours x $1,200/hour = $153,580,800.

59. Fraser, conversations with the author; and Andersen, conversations with the author.

60. On 30 December 2011, the Air Force awarded a contract to Embraer for 20 A-29 Super Tucano light attack aircraft as part of the Light Air Support (LAS) proposal for Afghanistan. The service will likely award a contract for six additional light aircraft as part of the Light Attack and Armed Reconnaissance (LAAR) proposal for a US training capability. Senior Air Force officials are reluctant to commit to any other additional light aircraft.

61. Guy Norris, "Donley Vows to Protect F-35, KC-46, Bomber," *Aviation Week*, 21 November 2011, http://www.aviationweek.com/aw/generic/story_generic.jsp?channel=aerospacedaily&id=news/asd/2011/11/21/01.xml&headline=Donley%20Vows%20To%20Protect%20F-35,%20KC-46,%20Bomber.

62. Col Matt "El Cid" Neuenswander, USAF, retired, an established and current Air Force expert in airpower, joint doctrine, and air-to-ground integration, conceived this idea.

63. Louise Arbour, "Next Year's Wars," International Crisis Group, 27 December 2011, http://www.crisisgroup.org/en/publication-type/commentary/next-years-wars-2012.aspx.

64. David Axe, "Air Force to Get New 'Light' Fighter," Wired.com, 11 August 2009, http://www.wired.com/dangerroom/2009/08/air-force-to-get-new-light-fighter.

65. SSgt Clinton Atkins, "Air Education and Training Command Symposium Begins," Air Education and Training Command, 20 January 2012, http://www.aetc.af.mil/news/story.asp?id=123286143.

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