

The debate on close air support is misdirected. It focuses only on the aircraft to be employed.

Of Mudfighters and Elephants

WE ARE again confronted with commotion from all quarters regarding what should be done about the Air Force's ability to conduct Close Air Support (CAS). This phenomenon, not unlike the emergence of cicadas, occurs about every seventeen years and is normally associated with the aging of the principal aircraft designated to perform the mission.

For those of us who have been around since the last cycle, the present chorus is familiar. Once again the loudest voices decry the aircraft the Air Force would have to replace, in this case the aging A-10. The backup singers offer familiar renditions—"The Air Force Doesn't Care About CAS," "Do It Like the Marines," and that favorite old standby, "Give It to the Army."

The problem with all this din is that it tends to focus on a few elements of a complex problem.

Concentrating excessively on what aircraft is best suited for the mission—without a clear understanding of the mission and its role in the total application of tactical airpower in support of the Army—

one could easily conclude that a new, highly specialized CAS aircraft is required. Focusing on tanks as the primary target, without first gaining an understanding of the total target set, narrows weapons choices. Limiting the debate to CAS without considering the effect of Battlefield Air Interdiction (BAI) on the battle at the Forward Line of Own Troops (FLOT) is likely to dictate a different set of weapons platforms and weapons solutions. Finally, arguing about service roles and missions tends to elevate (lower?) the debate to an emotional level that may well preclude any rational conclusions about improvements.

A System Within a System

Emphasis on the aircraft may, in the final analysis, be essential. But to begin from that point may well produce solutions that will reduce, not increase, overall combined-arms combat capability. To examine the problem from the bottom up is analogous to the blind man holding the elephant's tail and concluding that an elephant looks like a rope.

Reasonable judgments must

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The Air Force goes right to the ground in the debate over air support vs. battlefield air interdiction. Here, Sgt. Jeffrey Ferguson (left) and TSgt. Dennis A. LeVick call in an airstrike as part of a tactical air control party exercise.



come from a "top-down" perspective. How can the Air Force best assist the Army in winning the battle at the FLOT?

CAS is a complex system with many critical elements. Its command control communications and intelligence (C³I) must be highly responsive, jam-resistant, and sometimes secure. It must interface with ground force command and control and fire-support nets. It must define targets and their location precisely and in near real time.

CAS requires aircraft that have compatible communications with ground forces—for voice, data, and target information. The aircraft must be able to survive in the intense air defense threat of a tactically deployed opponent, where the FLOT will invariably be fluid and ill-defined. It must be able to perform its mission in the daytime, at night, and during adverse weather.

Finally, CAS personnel require unique training (air liaison officers, forward air controllers, etc.) in unique units (Tactical Air Control Centers, Allied Tactical Operations Centers, Air Support Operations Centers, etc.) with unique equipment (digital communications terminals, OV-10 observation aircraft, etc.).

In part because of its complexity

and apparent uniqueness, the CAS system is frequently viewed as an independent mission area. This is a mistake. CAS mission effectiveness will be determined, to a large extent, by the effectiveness of the Army forces at the FLOT and beyond and of the air interdiction and air superiority campaigns conducted by the Air Force.

Another different aspect of the CAS mission is how its requirements are developed. The Army, not the Air Force, develops the basic requirements for CAS. The requirements stem from the Air-Land Battle doctrine and, as such, tell the Air Force what the Army expects in terms of tactical air support. While these Army-developed requirements are general in nature (they do not tell the Air Force how to do the mission or with what systems), they clearly spell out what the Army wants.

Army requirements stress:

- **Flexibility:** Tacair must be able to support Army operations at the FLOT, cross-FLOT, and during deep operations.

- **Availability:** Tacair must be responsive—day, night, and during adverse weather.

- **Survivability:** Tacair must be able to operate in a dense and lethal battlefield environment.

These general requirements are

supported fully by the Air Force and are basic to how the Air Force trains and equips its tactical forces. Yet many of those who seek to "help the Army" apparently are not listening to what the Army and the Air Force are saying.

Differing Points of View

In the current debate, those who advocate AV-8Bs, improved A-10s, and new, specialized CAS aircraft, so-called "Mudfighters," generally think only about the CAS mission. On the other hand, the Army and Air Force keep talking about CAS/BAI. The difference between these two points of view is critical to making the right resource-allocation decisions.

Battlefield Air Interdiction, or BAI, is a subset of AI (Air Interdiction). It defines more sharply those AI targets that could have a near-term effect on the battle at the FLOT. BAI targets are of great interest to the Army commander. In fact, their selection is largely determined by the Army. Once the targets are selected, they can be attacked by airpower, or possibly by ground-launched weapons, or, more likely, by a combination of both. Other AI targets are also important to the Army but have less immediate impact on the battle at the FLOT.

It follows that the effectiveness of the AI campaign can dramatically affect the battle at the FLOT. Conversely, the effectiveness of the forces engaging the enemy at the FLOT can dramatically affect the outcome of the AI campaign. AI and CAS are mutually dependent mission areas.

For example, during World War II when the Soviets went on the offensive on the Eastern Front against the Wehrmacht, the Junkers Ju-87 Stuka was arguably as responsive and effective a weapon as it had been in the past. But because the Germans did not have the capability to interdict Soviet forces before they became engaged at the FLOT, even ten, twelve, or more sorties per Stuka per day—closely integrated with the fire and maneuver of the supported ground forces—were insufficient to stem the Soviet onslaught.

Today, the Supreme Allied Commander in Europe could execute the



—USAF photo by SSGT. Eric C. Baker

Although the Army does not tell the Air Force how to support ground troops, it does stress flexibility, availability, and survivability in its requirements for airpower. Before rolling this F-16 into its target, the pilot has ejected flares to decoy ground-launched, heat-seeking missiles.

Follow-on Forces Attack (FOFA) concept and succeed in interdicting Soviet/Warsaw Pact second-echelon forces far in excess of what had been predicted, and it would matter little if the Soviet/WP first echelon reached Frankfurt in a day and a half.

Taking a slightly different slant on the last example, it is clear that success in the AI campaign is greatly dependent on the *need* for the forces being interdicted. The greater the demand for reinforcements at the FLOT, the greater the probability that the AI campaign will succeed. Effective AI increases the probability of success of the battle at the FLOT.

An example of this was the interdiction of the German units attempting to reinforce their front during the Allied invasion of Europe. The demand for reinforcements was so great that the Germans were forced to move during daylight, providing far greater opportunity for the attacking Ninth Air Force aircraft. The results are well known.

Because of the mutual dependence of CAS and AI, the Army and Air Force personnel charged with the responsibility of success on the battlefield view them as inseparable, mutually reinforcing missions. Moreover, both the Army and Air Force understand fully that the fight will be a total, coordinated combined-arms event—at the FLOT, in the rear areas, and well beyond the FLOT. That is what AirLand Battle is all about.

What About Air Superiority?

Some people believe the Air Force is resisting buying system X, Y, or Z because the Air Force is "not really interested in the CAS mission." They imply that the only thing that interests the Air Force is shooting down MiGs and painting red stars on its aircraft. It is difficult for me to dignify this uninformed claim with a reply. However, since it seems to be heard more frequently these days, a response seems required.

First, every type of mission for which the tactical air forces have responsibility ultimately supports the ground forces—including air superiority.

Second, there is no example in the history of modern warfare of an

AI campaign succeeding without the interdictor possessing at least temporary air superiority. AI success will enhance the probability of success in the battle at the FLOT.

Third, either because of the effective application of airpower or by default (in cases when the enemy did not possess or chose not to use airpower assets), US Army and Air

invariably Army) with the advice of his air and land force component commanders. Therefore, the extent to which airpower is allocated to any mission will be determined largely on the basis of Army, not Air Force, requirements. This clearly requires a highly flexible Air Force fighter force structure—one that can shift between CAS and AI,

—USAF photo by MSGT. Patrick Nugent



For purposes of argument, the Air Force's mission breaks down into air superiority, represented by the F-15 (foreground), air interdiction, as shown by the F-16 (right), and close air support in the form of the A-10. In reality, though, the roles are not so clearly drawn. Over a fluid battlefield, one day's air interdiction could become tomorrow's air support.

Force units have not been exposed to persistent air attack since early in World War II. Not surprisingly, many of the current participants in the debate have little appreciation for what it is like to be under persistent attack from the air.

Finally, the Air Force understands the effectiveness of modern aircraft and weapons on ground forces and air bases. It therefore understands the importance of air superiority in the successful prosecution of the land battle.

In the final analysis, the objective of all tactical airpower missions is support of the ground forces. All are interrelated and interdependent. None can be looked at in isolation.

Allocation of tactical airpower to its various missions will be made by a Joint Force Commander (almost

based on the needs of the Army as dictated by the flow of the battle. That is why the two services have continually referred to CAS/BAI rather than to CAS alone.

Staring at the Elephant

It is time to take off the blindfold and see the elephant for what it is—the sum of its parts. If we are intent on sharpening its tusks, we had better know to which end they are attached.

As I have contended throughout this article, the current debate is misdirected. It focuses on potential CAS aircraft solutions without first understanding the total problem. I see this as the failure of the current Department of Defense evaluations and the recent studies by the Institute for Defense Analysis and the

Air Force Scientific Advisory Board. The problem, for the most part, is that the study participants were asked the wrong questions. The current contractor studies directed by the Office of the Secretary of Defense (OSD) Close Air Support Mission Area Review Group (CASMARG) are a case in point.

The studies arose because there was disagreement within OSD about the Air Force's decision to replace the aging A-10 with a variant of the F-16, popularly called the "A-16." This prompted the Under Secretary of Defense for Acquisition to direct the Secretary of the Air Force to contract for feasibility studies "of a new CAS aircraft to replace the A-10." The charge to the contractor study teams, after much discussion within OSD and the services, is: "to provide the Under Secretary of Defense for Acquisition with the design, mission performance, and cost basis for an evaluation of USAF aircraft system design alternatives for [these] CAS/BAI missions."

Not surprisingly, a lot of time, effort, and money is being spent to develop aircraft answers. However, the contractors conducting the studies are finding that such factors as C³I, precise target-location information, weapons, etc., have dramatic effects on CAS/BAI effectiveness, independent of the aircraft.

In retrospect, it would have been better to evaluate the factors that led the Air Force to conclude that the "A-16" was the best possible choice. That would at least have broadened the debate and would also have provided OSD with a framework for the prescribed "evaluation of USAF aircraft system design alternatives. . . ."

Survivability, Targets, and Mudfighters

Because of the lack of an overall view of a complex mission area, and because of the focus on aircraft, only a few of the factors involved in providing effective CAS are being addressed. Aircraft survivability, the "small-arms" threat, tank killing, and specialized "inexpensive" CAS aircraft seem to be the most topical.

Regarding survivability, concern has been voiced about the "vulnerable" area of the F-16 compared to

that of the A-10. The claim is made that "the probability of shooting down an F-16, given a hit by a 23-mm, is greater than that of shooting down an A-10, given a hit by a 23-mm." While this may or may not be true, it is certainly not desirable to be hit by anything—period!

Flying around the battlefield looking for the target while soaking up hits isn't conducive to sustaining combat capability, not to mention pilot longevity. The objective is to reduce the probability of any hit! Arguing about which type of aircraft can look the most like a piece of Swiss cheese and still fly is irrelevant. In fact, aircraft survivability may have much more to do with knowing precisely where the target is *prior to* aircraft exposure to the threat than it has to do with how many hits the aircraft can take.

There is no question that the threat is significant and that facets of aircraft design (*e.g.*, performance, hardening, emissions signature, etc.) are important factors in aircraft survivability. The trouble is that some keep shaping the threat to suit their preferred aircraft solution.

It is a fact that "small-arms" fire has downed and will continue to down many aircraft. But to stress only the small-arms threat is, at best, misleading. At a hearing last year, Congress was shown a picture of Soviet infantry practicing individual air defense by *lying on their backs shooting their AK assault rifles in the air!* While it is true that such tactics are used by the Soviets on occasion, the utility of these tactics depends greatly on what's occurring on the battlefield. In a frontal attack against a determined opponent, it is hard to believe that Ivan is going to hop out of his BMP armored personnel carrier at the first sign of a CAS aircraft, lie on his back, and shoot his weapon into the sky! In any case, such tactics would be welcomed by the US Army as they would reduce the amount of steel flying around the battlefield.

There is, of course, a reason to stress the small-arms threat if you believe that "inexpensive Mudfighters" are the way to go: defeating all those infrared and radar missiles is expensive. Missile warning systems, radar homing and warning systems, jammers, auto flare and

chaff dispensers, and the like all cost money—lots of it.

"Mudfighters" unquestionably have some appeal. The problem is that you'll need lots of them; and as the size of a specialized segment of a given force increases, the flexibility of the total force structure is reduced. As pointed out earlier, the ability to shift the weight of tactical airpower among CAS, AI, and Air Superiority is critical to the outcome of the battle at the FLOT.

Optimized Aircraft

I suspect, however, that the Air Force would like to have specifically designed aircraft, optimized for each of its missions. The obvious problem there is that it would require a tactical fighter force four or five times larger than planned. That is not affordable, practical, or needed. The announced decrease by two fighter wings will put a higher premium on aircraft that can perform more than one mission. The smaller the force structure, the more flexible it must be.

One final point on inexpensive CAS aircraft. Maybe you can find a CAS aircraft at \$7 million per copy that can survive the threat and do the job at night and during adverse weather as well as in day, clear-weather conditions. Maybe, but I doubt it. However, I am sure that lots of inexpensive, simple aircraft will need to be flown by lots of expensive, complex pilots—people who tend to marry, have kids, incur dental bills, and eventually stay on to retire (although, regrettably, not often enough these days).

Regarding CAS targets, it seems Washington has gone tank-mad. Tanks are important. They represent shock, firepower, and mobility. The Soviet forces have lots of them, and they are good. But are they *the* target for CAS? I am not certain, and I do not think enough attention has been directed to that question.

We all know that modern Soviet tanks with reactive armor are tough nuts to crack. It is also known that the best way to kill a tank is with another tank. I have been told that a well-trained soldier armed with an effective antitank weapon is next best. Some say the AH-64 also rates high, and, of course, CAS aircraft will take their toll.

Focusing on tanks requires some



In training, the surface threat is simulated by unguided rockets called Smokey SAMs. In the real world, the surface threat is likely to come from missiles such as this new Soviet portable surface-to-air missile, the SA-16. Its launcher appears to be similar to that of the US FIM-92 Stinger missile.

rather specialized and expensive air-delivered weapons. Broadening the view, however, to encompass the total target base at the FLOT might well dictate a different emphasis.

Tanks stripped of their infantry can make one heck of a "statement" on the battlefield, but they will not win the battle. Maybe taking out the less-armored BMPs would eventually do more for tank killing. It certainly would increase the effectiveness of the Army TOW guided-missile teams. In fact, it may be better to increase Army tank-killing resources than to develop a new specialized flying tank killer.

What about tactically deployed POL and ammunition-support elements? Soviet Hip and Hind helicopters? Artillery? The current Army commander in Europe seems to think that artillery is a prime target for CAS. Yet artillery is twenty kilometers or more from the FLOT.

Whether this is a CAS or BAI mission is a moot point. But it certainly requires an aircraft that can survive in the heart of a thick air defense network.

One needs to address the total target set before one can make judgments about what is needed to do what. Tanks are an important target. But killing them is not only a

matter of tradeoff between types of tank-killing CAS aircraft.

Do It Like the Marines?

Why doesn't the Air Force do it like the Marines? (This question comes most frequently from those who see the AV-8B as the preferred CAS aircraft.) The short answer is that the Marines have a different mission. They are a highly skilled and effective amphibious air/ground team. That is what they train for, and that is what drives their equipment requirements.

Marine divisions have less heavy firepower than most Army divisions do. They rely on naval gunfire and tactical air to fill the gap. The AV-8B is ideal in this role. In the Marine Corps, CAS is treated as an extension of artillery, and since the Marines are light in heavy artillery, this concept makes sense. However, the penalty paid to "operate off the beach, right with the troops" is that you trade range and payload to achieve a vertical takeoff and land-

ing (VTOL) capability. This does not mean that the AV-8B cannot and does not do BAI. It simply means that its BAI capability is less than that of a non-VTOL aircraft.

Why not give the CAS mission to the Army? First, the Army does not want it. At least, that is what Army leadership says. Second, give them what? Where do you draw the line? As has already been suggested, CAS, AI, and Air Superiority are interdependent missions. If CAS goes to the Army, the result would be a highly specialized force that would not likely be trained or equipped to do BAI. Air Force force structure, therefore, could not be reduced one for one. This would also reduce, if not eliminate, the close interface between Army and Air Force personnel that has led to a far greater understanding of each service's capabilities and limitations.

Reconsider the Elephant

Congress has recently authorized an additional \$10 million in order to make sure that other aircraft (improved A-10 and AV-8B) are given due consideration. It is difficult to perceive how such action would contribute to a better understanding of where best to spend limited funds to win the battle at the FLOT. On the other hand, understanding the potential contribution of an improved A-10 or AV-8B relative to other alternatives—not just other aircraft—is probably important. Certainly enough studies have already been conducted, but if Congress feels compelled to mandate another, I suggest directing OSD to conduct one that will provide a framework within which alternatives can be evaluated.

When we all take off our blindfolds and look at the elephant, we might see that his tusks are not in such bad shape. In fact, we may find that he can't see the target because he's been blindfolded! Maybe, just maybe, the best thing we can do for the beast is let him "see" the target—precisely. ■

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