Despite some intramural feuding—mostly at lower levels—the Air Force and the Army are cooperating on doctrine, tactics, and equipment.

Sorting Out the AirLand Partnership

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THERE is a deep-seated suspicion in Army ranks, if not at the top, that the Air Force regards close air support of the infantry as a mission of minor importance alongside that of air superiority, in which hot fighters do their stuff high in the sky and at far remove from the grunts on the ground.

According to those of such persuasion, the Air Force's undue fascination with air superiority is reflected in an unspoken policy of favoritism for air-combat fighter pilots that translates into "no medals below 30,000 feet and no promotions below 14,000 feet"—not much exaggeration intended.

This viewpoint is not new. Many in the Army have harbored it ever since the Air Force broke away to become a separate service in 1947. It is being heard more and more, however, as the two services wrestle with topical issues of how best to team up in warfare.

Among these is their mutual prosecution of the close air support (CAS) mission—the Air Force with fixed-wing aircraft, the Army with attack helicopters.

The Air Force is greatly pained by accusations that it slights CAS. The notion is especially galling to Tactical Air Command at Langley AFB, Va., where working with the Army is an accepted way of life and where helping the Army wage and win the decisive land battle is ungrudgingly acknowledged as TAC's reason for being.

TAC Commander Gen. Robert D. Russ takes strong exception to it. He notes that the Air Force "signed up for the close air support mission" right from the start and "has done it superbly" in all combat ever since.

Changes in CAS

"The Army has been delighted with our close air support," the TAC Commander declares. "Army people who have been in battle will tell you what a great thing it has been. The senior leadership of the Army solidly supports the idea of the Air Force doing close air support."

General Russ also points out that

The F-15E dual-role fighter plays a major role in Air Force plans to support the Army's AirLand Battle doctrine with battlefield air interdiction (BAI) sorties against ground targets deep beyond the forward edge of the battle area (FEBA). The first USAF F-15E is shown here at its production rollout. The fighter's versatility is symbolized by its carriage of air-to-air missiles, left, and of air-to-ground munitions, right.

USAF devotes nearly one-third of its tactical fighter wings to CAS and that it puts a premium on air superiority for the most legitimate of reasons—controlling the air makes it possible for ground-attack aircraft on CAS or battlefield air interdiction (BAI) missions to succeed and survive.

This is exactly why the Air Force needs the Advanced Tactical Fighter. The ATF is designed to fly cover for ground-attack aircraft far beyond the forward edge of the battle area (FEBA), a feat that contemporary air-superiority fighters would be hard-pressed to accomplish in the face of increasingly formidable Soviet fighters and surface-to-air missiles. Those fighters and SAMs are changing the nature of conventional warfare that could lie ahead. But they are only part of the picture.

Also in it are many other new weapons and command control communications and intelligence (C^3I) setups for air and ground that are being fielded or developed by the US, the Soviet Union, and their respective allies.

All are making the modern battlefield a much more lethal and mercurial arena, one that is characterized by ever-greater speed, range, precision, and mobility of weapons and forces.

This is most pointedly the case in Europe, where the ability of both sides to engage in conventional warfare assumes greater importance amid the drawdown of intermediate-range nuclear weapons now in the cards.

The key to US prosecution of such warfare is the Army's AirLand Battle doctrine, in which the Air Force is deeply involved. Both services are working harder and more harmoniously than ever to field the forces and weapons and to develop and implement the combined-arms tactics that the doctrine demands.

Ironically, their concerted efforts are giving rise to controversies over roles and missions that are pegged to such questions as:

- Which service should be responsible for close air support, under which circumstances, and with what kinds of aircraft?
- Should the Army, given the increasing ranges of its artillery shells and rockets, have more to say about deep interdiction, a mission traditionally reserved for the Air Force?
- Is the Air Force's control over the offensive counterair mission in danger of being undercut by the Army's move to mount air-to-air missiles on its attack helicopters?

In its development of tactics for AirLand Battle, the Army has come to rely more and more on mobility of troops and on supporting them from the air. The point is made in this scene of a Cobra attack helicopter shepherding armored personnel carriers.

The AirLand Battle doctrine is bringing such questions to the fore—not so much because the services are steeped in parochialism, but because they must iron out their differences in order to make the best use of their increasingly versatile weapons and forces for the benefit of both.

The Key Elements

The key elements of AirLand Battle are the close-in fight at the FLOT (forward line of own troops) that involves CAS, the "deep fight" beyond the FLOT against enemy rear-echelon units moving up as reinforcements, which involves BAI, and the protection of friendly forces in rear areas against enemy operational maneuver groups (OMGs) capable of penetrating there aboard helicopters or over land.

In such circumstances, the linear battlefield is no more, and close air support becomes a much more ubiquitous and perilous mission.

As General Russ explains it: "The traditional understanding of CAS was that of fire support for our troops on this side of a line against theirs on the other side of the line. That's no longer the case. The line has turned fluid.

"Our Army now has the ability to pick up troops with helicopters and drop them on the other side, and the Soviets can do the same.

"So we would find ourselves in a very different situation—a battlefield with some of our troops behind theirs and some of theirs behind ours. There won't be a continuous line. It will look more like a sine wave, with pockets going in both directions."

Consequently, says the TAC Commander, CAS aircraft will almost certainly have to overfly enemy mobile SAMs and increasingly lethal, numerous, and accurate antiaircraft guns while heading to and from their assigned CAS arenas—"and this means that the A-10 becomes outdated. It is a good CAS airplane, excellent at what it does now. But it's too slow to survive the battlefield of the 1990s.

"And that's why we need a modernized CAS airplane."

For CAS in the coming decade, the Air Force has in mind a two-

seat, A-16 variant of the F-16, an inherently superb air-superiority fighter that is now being deployed mainly for ground attack. But the A-16 has its detractors outside the Air Force. They contend that the A-16, unlike the A-10, would not be built for punishment and could not withstand the hits from ground fire that it would inevitably take, no matter how fast it might fly.

General Russ says that this misses the point, which is: "We don't want to get hit. If a CAS airplane is heavily armored, but isn't fast and doesn't go anywhere, sooner or later somebody is going to come up with a shell that will be able to knock it out of the sky."

He adds: "There are those who would like to go back in time. They say to us, 'No, the battlefield of the 1990s won't look the way you see it, and we want all of our airplanes to be on this side of the line in the classic sense of CAS.'

"If their view is correct, then we probably don't need a new CAS airplane, and there's no hurry in getting one. But I believe that if they would look at the realities—the surveillance systems that are seeing deep, the helicopters and their mobility, and other elements, they would see our point."

Critics of fast fighters for CAS also argue that they would lack crucial CAS characteristics peculiar to the A-10 or to the propeller-driven "mudfighters" favored by some. Among such characteristics are the ability to loiter and to eyeball troops on the ground so as to hit the enemy and miss the friendlies.

TAC's view, on the other hand, is this: There is no way that any aircraft will be able to survive while loitering over the lethal modern battlefield, and the air-to-ground accuracy of the F-16 at high speed has been amply demonstrated over and over.

What is more, says Maj. Doug Jenkins, assistant chief of the TAC Commander's Action Group, "CAS aircraft will also have to be able to penetrate through the FLOT to attack targets traditionally associated with BAI."

Why? Because the real-time intelligence of battlefield situations on which AirLand Battle is predicated will make it possible to attack targets of opportunity beyond the FLOT in wide variety and at the drop of a digit from computer-controlled, airborne reconnaissance platforms. As a result, all attack aircraft will be in heavy demand and will have to be versatile.

This makes orphans of single-purpose CAS aircraft. They will not fit into the "force packaging" of air assets that TAC foresees for its contribution to AirLand Battle.

Enter the A-16

Enter the A-16. Whether it will be the airplane to do CAS and double in BAI, as the Air Force is proposing, is a matter that will be settled later this year. As directed by the Office of the Secretary of Defense, Air Force Systems Command's Aeronautical Systems Division has contracted with several military aircraft manufacturers to study the mating of the CAS mission with the A-16 and with other possible aircraft.

Results are expected fairly soon. The Air Force will analyze them and come to a conclusion around August. The betting is that the Air Force will stick with the A-16.

The Army is staying out of this one. Clearly, however, there is much sentiment among green-suiters in favor of heavily gunned, so-called mudfighters for CAS—the kind that some Air Force officers derisively refer to as "disposable, throwaway fighters."

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Says an Army officer in Washington, D. C.: "If we had our way with CAS fixed-wing aircraft, we could make companies like Beech and Cessna rich overnight."

But the Army leadership is not talking this way. The Army's official viewpoint is echoed by Army Lt. Col. David G. Hofstetter, deputy director of the joint TAC-TRADOC AirLand Forces Application (ALFA) agency headquartered at Langley AFB.

Says he: "The Air Force doesn't tell the Army how to fight the land battle, and the Army doesn't tell the Air Force how to fight the air battle. Unless we're willing to tell the Air Force that it shouldn't be the expert in CAS, we've got to give the Air Force our CAS requirements and let it come up with the right airplane."

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The emphasis that the Air Force gives to support of land force is exemplified by this hunter-killer team of an OV-10 observation aircraft and an A-10 close air support (CAS) aircraft over Fort Irwin, Calif. Above right: An insider's view of an OV-10 spotting for an A-10.

Even so, there is—as there has always been—a strong undercurrent of sentiment in Army ranks to the effect that CAS aircraft should come under the full control of the service they exist to support, be they fixed-wing or not.

Meanwhile, the Army is doing some eye-catching things with its AH-64 Apache attack helicopters in CAS exercises. Equipped with armor-busting, laser-guided Hellfire missiles among other weapons, the Apache has demonstrated to the satisfaction of the Air Force and the Army that it is a formidable CAS aircraft in low-threat environments and that it does surprisingly well now and then in high-threat arenas as well.

Especially is this true when the Apaches work with A-10s, as has been the case for some time in joint air attack team exercises at Fort Hood, Tex., and elsewhere. The Apaches have been resoundingly successful at laser-designating targets for A-10s attacking in two-ship and four-ship flights and armed with Maverick antitank missiles.

As the Apaches lase for the A-10s, they also launch their Hellfires. They have pulled this off as far as twenty kilometers beyond the FLOT, with the Apaches jamming the radars of opposing air defense artillery systems in behalf of the Thunderbolt IIs and themselves. At Fort Hood, Apaches have also practiced attacking in concert with F-16s, sometimes at night and quite deep.

The A-10 isn't much good at night—and this is yet another reason why TAC wants the A-16. The A-16 would come equipped a derivative of the LANTIRN (Low-Altitude Navigation and Targeting Infrared for Night) system that is already earmarked for USAF's F-15E and F-16C/D BAI fighters.

Night Capability

As General Russ puts it: "An extremely important change in the way we'll conduct air-to-ground warfare comes from our introduction of firepower from aircraft at night. We have talked about night capability over the years, but our accuracy left something to be desired.

"Now we have it. We're talking about the same accuracy at night as we have during the day. We're talking about *surgical strikes* at night that are going to be really, really good. LANTIRN is critical to this.

"So is the F-15E. It will be able to go in deep and accurately take out command posts, bridges, storage sites—everything—at night, before we go in and drop our area bombs that are less accurate."

A prime factor in Air Force planning for air-to-ground combat, says the TAC Commander, is "our ability to see deeper into enemy territory on a recurring basis, to have much better intelligence on what he's doing, where he's moving, where he's massing."

Vital to this will be the computerized Air Force Joint Surveillance and Target Attack Radar System (Joint STARS) aircraft that is being developed to look deep for enemy armored units on the move and to transmit its digital data in quick time to air and ground commanders.

General Russ would like the pace of Joint STARS development to pick up a bit. The system could come into play in the early 1990s. It will team with reconnaissance satellites, AWACS aircraft, TR-1 surveillance aircraft, and penetrating reconnaissance aircraft to "give the ground commander the ability to see the battle area more fully and deeply than he's ever been able to see it before and on an almost real-time basis," declares General Russ.

"This means that the Army commander, who is generally the overall commander, will be able to see interdiction targets that are the Air Force's to go after, and he will want to have more to say about attacking them—because those forces on which he is getting direct intelligence are the forces that will be in his backyard tomorrow, or within twenty-four hours. The Army is developing some systems that will go back there—ATACMS [Army Tactical Missile System] and others. Therefore, our targeting philosophy and how we do the interdiction mission becomes different from what it was in the past."

The Army's Colonel Hofstetter addresses this difference thusly:

"With BAI targets, the ground commander is able to continuously update target coordinates much better than he used to. He is able to provide the Air Force with mission-type BAI requests, rather than with specific targets, as was formerly the case.

"He can tell the Air Force that he wants to prevent an enemy brigade from crossing a grid line between certain hours rather than telling the Air Force to take out a specific bridge, for example, to make that happen. Then he leaves it to the Air Force tactics guys to figure out how to do what he wants."

A US infantry Stinger team on the lookout for intruding aircraft. Such man-portable, shoulder-fired missiles have become formidable threats to attack aircraft over the modern battlefield and have complicated the requirements for such aircraft.

Air Force Col. Cato L. Reaves, who worked with the Army at Fort Hood and who is now director of ALFA, reemphasizes the importance of Joint STARS in all this. He also notes that "deep-attack doctrine is being revised constantly, because new weapons keep coming into the field"—weapons that make the updating of doctrine and tactics not only possible but necessary.

Maybe the most profound change in this regard is the newfound capability and opportunity—for the Air Force with its attack fighters, for the Army with its tanks and helicopters—to fight at night. M1 tank crews, Apache crews, and Black Hawk troop-carrying helicopter crews are getting good at it.

"We're further ahead with our night-fighting tactics than the Russians are with theirs," says Colonel Reaves with evident satisfaction.

Adds TAC's Major Jenkins: "Our future attack forces will have to sustain continuous operations at day and night and under the weather to support the Army. We expect the future battlefield to present a massive array of armor and other valuable targets. And enemy air defenses will make it critical that we destroy those targets on the first pass."

Variegated Tactics

Those defenses, becoming more menacing all the time, are also causing TAC to develop new, variegated tactics for its ground-attack aircraft.

General Russ explains it this way: "I see the challenge to our tactical fighters as being basically the same in terms of the ground threat, but I see it increasing in terms of the air threat.

"The Soviets are doing better with look-down, shoot-down airplanes. They have the capability now. They'll have it in numbers by the mid-1990s.

"That's what's driving our date for [operational capability of] the ATF. It will have the ability to get in there and fight with them.

"But they'll have good look-down, shoot-down capability out in force by then, including their [Mainstay] AWACS airplane, and we are going to have a different regime to worry about—the low-altitude regime in which we now penetrate.

"So I see our tac forces going in at low, medium, and high altitudes, using the whole spectrum. We will need to be unpredictable, though. We may go in low one day and at 10,000 feet the next. Or both."

As Air Force interdiction tactics are fine-tuned to take advantage of the full sweep of the sky, and as Army shells and rockets reach out farther and farther, major problems are looming.

They have to do with interdiction targeting and with management of airspace. And they have generated a behind-the-scenes interservice duel over BAI that is said to be potentially more inflammatory and more divisive than the one over CAS.

The Army's newest 155-mm artillery round has a range of seventeen miles. The Multiple Launch Rocket System (MLRS) now in all-out production for the Army exceeds that range by at least a couple of miles.

ATACMS missiles, ballistic in nature, will outdistance both by far. The first test-launch of an ATACMS missile was scheduled for last month, as was the first flight of the prototype Joint STARS aircraft on which ATACMS batteries ultimately will rely.

Air Force attack pilots have never had to worry about getting hit by the Army's artillery. Chances of that happening were minuscule. It has always been a case of big sky, little bullet.

Now the odds are shortening, especially in situations where low-flying attack aircraft and artillery happen to be shooting at the same target at the same time, which would be a wasteful duplication of effort in itself.

So who will be in charge of seeing to it that this doesn't happen in a given combat theater? The ground-component commander? The air-component commander?

The easy answer is the theater commander, but he may not be able to afford to become preoccupied with interdiction targeting and with allocating air and artillery on all occasions while coping with command and control on a grand scale.

What it comes down to is that there is no easy answer. The issue threatens to cause "a whole lot of table-pounding and yelling" between the Air Force and the Army, one official says.

A Soviet Mi-24 Hind-E ground-attack helicopter bears down on a target. Countering such choppers would not come easily.

Prime Weapons for the Future

One thing is clear: Standoff weapons, such as ATACMS and MLRS (the latter has marginally standoff range), are coming into their own, slowly but surely, as prime weapons for the future.

North American and European companies have teamed up by the dozens to develop a variety of such weapons called MSOWs (Modular Standoff Weapons) to be launched from air and ground in long-range attacks against fixed targets, such as command posts and airfields, and in short-range attacks on fixed targets, such as stationary SAMs, and on mobile targets, such as armored columns.

General Dynamics and Rockwell International are leaders of two transatlantic teams of companies competing in the MSOW program. It has gained great political and military impetus from the INF agreement, which at this writing seems headed for ratification by the US Senate.

Air Force Chief of Staff Gen. Larry D. Welch has made it known that the Air Force, which has been accused of having a negative attitude toward standoff weapons, supports the MSOW program.

USAF has eyed standoff weapons for quite a while, but has not moved out smartly to bring them along. Its AGM-130, a longer-range, partly powered variant of the GBU-15 glide bomb, barely qualifies as a standoff weapon and is in danger of dying for lack of funding.

General Russ sees standoff weapons as being well-suited to attacking some targets. But he warns against regarding them as do-alls and as wholesale replacements for manned attack aircraft.

"I'm all for standoff missiles," he asserts, "but the problem with them is that they are very expensive, and you have to weigh them against the value of the targets you're firing them at. It may be worthwhile to fly them against airfields, but you certainly don't want to fly them against trucks.

"Then what happens to the trucks? Who kills the trucks?

"What we need is a full spectrum of weapons—high-cost weapons against high-value targets and lower-cost weapons against lower-value targets.

"People may argue about what the attrition of airplanes will be, but I'll guarantee you what the attrition of a ballistic missile is. You launch one, and it doesn't come back. And interdiction is not a one-shot effort.

"People also talk about how dense the threat is against airplanes, but sooner or later in warfare, the threat will get less dense, to the point where you can reattack over and over, and it will be much cheaper and more effective to do it with iron carried on airplanes."

The TAC Commander makes the point that standoff weapons may be coming along but are not here yet—and until they are, he must go with what he has, meaning manned fighters.

"There are those who have said that fighters can't penetrate anymore, so let's do away with them and buy a force made up wholly of unmanned fighters—drones. Hey, wait a minute. Remember all the money we've invested in fighters and their weapons?

"I'm not here to provide all fighter pilots with a seat to fly in. I support standoff missiles and drones when they have a purpose. But we can't just divorce ourselves from what we already have. We can't erase that and start with a clean sheet of paper and draw up what the new force is now all of a sudden going to look like.

"Our fighters are tied in with the Army, with the maneuvering and the firepower that the Army and we can deliver. And if we put in a new surface-to-surface missile, for example, we have to figure out how to integrate it with the new look and flexibility of tacair and with our scheme of maneuver with the ground forces."

Two Unmanned Weapons

General Russ's fancy has been caught by two unmanned weapons designed to attack ground targets—Northrop's jet-powered Tacit Rainbow remotely piloted vehicle and Boeing's Seek Spinner prop-driven RPV.

Tacit Rainbow, designed to home on radars, is slated for low-rate initial production late this year, and USAF is seeking a second-source contractor for it. It could also be used for jamming. Northrop describes it as "a low-cost, loitering missile system designed to precede friendly aircraft into selected land or sea target areas, search out hostile radars, and then automatically track and disable those radars to clear a path for tactical aircraft."

Ground-launched variants could be launched from the Army's MLRS. From the air, the drones could be launched by fighters or bombers. General Russ wants to leave his fighters out of the picture.

He calls Tacit Rainbow "a good weapon," but resists mounting it on fighter store stations, preferring to reserve them for bombs.

"I can put a 2,000-pound bomb on that station or a 1,000-pound bomb or a Tacit Rainbow with a forty-pound warhead. When I'm going after something big on the ground, I would like to have the bigger bangs on that station.

"Historically, we have taken the position that we'd rather have Tacit Rainbow ground-launched. And if

The Army is intent on arming its attack helicopters with air-to-air missiles to enable them to defend against Soviet helicopters similarly armed. The top picture shows a Stinger mounted on an Apache alongside ground-attack missiles. In the photo directly above, an Apache launches a Sidewinder during a recent test.

the Army is going to develop it, why does the Air Force have to, too?

General Russ points out that Seek Spinner, on the other hand, is an exclusively Air Force program tailored to TAC's forces in being.

"The tactical forces like it," he says, "because it's a little putt-putt, with a propeller, that folds its wings, can be taken out on trucks, and launched thirty or sixty at a time or however many you want.

"It does the same things as Tacit Rainbow. Both go about the same distance. Tacit Rainbow is a little faster, but Seek Spinner has more loiter time and costs less.

"We can better integrate Seek Spinner with the tac forces we have. We can launch them from the ground to open up corridors for us and then follow them in with fighters and strike. We would have to take Tacit Rainbows up on fighters and launch them from our side. Why would I want to do that when I can launch Seek Spinners from the ground and have my airplanes fully loaded with bombs?"

He acknowledges that air-launching Tacit Rainbows would come in handy "if you want to take them a long way, like to Saudi Arabia, to do it against Iran. So we say, load them up on B-52s, which can carry a ton of them. But not on fighters."

TAC got a scare earlier this year when it was proposed within OSD that the Air Force abort the F-15E production program and bank the big money thus to be saved against the day that it will begin buying ATFs and, as presently planned, the Navy's air-to-surface A-12 Advanced Tactical Aircraft.

"That was a bankrupt idea," General Russ asserts. "Trading our 'now' capability for future capability and docking ourselves for a number of years would not have been a good thing to do."

TAC will take delivery of its first operational F-15E later this year. The TAC Commander calls the fighter "an absolutely superb airplane," adding:

"When I look at the European situation, assuming that the INF Treaty goes through, I see a greatly increased emphasis on conventional forces. The most important thing that the Air Force can do in that connection is to bring on the F-15E, maybe even at increased production rates, because it is dual-qualified—conventional and nuclear, ground-attack and air-to-air."

A Northrop Tacit Rainbow remotely piloted, radar-homing "loitering missile" takes to the air for a test aboard a Navy A-6. Such unmanned airborne vehicles (UAVs) seem to be catching on in all the military services as the means of augmenting manned aircraft.

Enough F-15Es?

He is concerned about having enough F-15Es in the end. The budget crunch forces USAF to cut its planned F-15E force from four wings to three wings of about 320 aircraft and, in keeping with that, to cut its long-term LANTIRN procurement by commensurate numbers.

"If I'm going to deploy F-15Es Stateside and forward-deploy them in Europe and the Pacific, three wings is the absolute minimum I need," General Russ declares.

Dual-role capability for aircraft is being explored by the Army as well—and this, too, may well induce an interservice dustup.

The Army has successfully test-launched heat-seeking Sidewinder missiles and Stinger missiles from its Apache attack choppers and is looking to outfit its advanced Apaches now in development and its next-generation LHX reconnaissance/attack helicopters, now called Advanced Tactical Helicopters, with such missiles.

The Army contends that it must do this in order to defend the choppers against Soviet Hind attack helicopters that are similarly armed for air-to-air combat.

The Air Force has no quarrel with this. It acknowledges the Army's right to helicopter self-defense, which falls into the category of defensive counterair.

But there is a mighty thin line between defensive counterair and offensive counterair, which would come into play should the Apaches go after the Hinds or after the forward bases from which the Hinds are operating.

Joint Chiefs of Staff mission statements define offensive counterair as a totally Air Force mission. This means that the Army in combat would have to get the resident air commander's okay to indulge in offensive counterair—a requirement that the Air Force is bent on maintaining and that the Army almost certainly will try to get waived.

For all sorts of missions, the Army's development of rotary-wing technologies and aircraft is rapidly taking it into fixed-wing, traditionally Air Force domains. And as an Army officer expressed it: "There is going to be some outstanding 'entertainment' between us and the Air Force as we try to work everything out." ■