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AEROSPACE DOCTRINE

More than Just a Theory*

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IT'S A REAL PLEASURE to be here today among this distinguished group and have the opportunity to lead off this Air Force doctrine symposium.

As I was preparing to speak, I was trying to remember when I became cognizant of doctrine. I'm almost embarrassed to admit that I had been in the Air Force about six years and was attending graduate school when I had to write a paper. So, I elected to write the paper on doctrine. It was the first time that I did much research at all on the subject. As I remember, the paper got a passing grade, but I've gone back and reread that paper on a couple of occasions and I'm not so sure it was ready for prime time. My professors at Duke University were more than kind to me.

I wish that I could briefly welcome you all here, then sit down and take part in this symposium over the next couple of days. That's because doctrine and doctrinal discussions are becoming more and more important in the United States as we see the emergence of true joint doctrine. The current chairman of the joint chiefs has taken the approach that joint doctrine will flow from service doctrine. Therefore, we services have got to have our act together. Otherwise, we can't expect to have our views and the full contribution of our service felt in the joint arena.

Unfortunately, I have to go back to Washington for a tank session scheduled this afternoon. So, I'll take this brief opportunity to share some of my own perspectives on doctrine and save some time at the end for questions.

Last fall, I addressed a combined audience of NATO army and air chiefs on the subject of joint and combined doctrine. My message to them was pretty simple. I said that airpower has fundamentally changed the nature of warfare. But our joint and combined doctrine has not caught up with this development.

I will once again today make that statement and, once again, clearly state that airmen are partly to blame for this situation. Our very early airpower visionaries clearly allowed their concepts to race ahead of technology. Therefore, we found ourselves in a position where there were a lot of unfulfilled promises and false expectations relative to what airpower could and could not do. This generated legitimate skepticism among our comrades-in-arms.

In World War II, as technology began to catch up with vision, we turned to strategic bombing as the rationale for an independent air force. Soon, however, strategic bombing became synonymous with nuclear war and the mission of deterrence. And nuclear deterrence changed all the rules. No longer did we field

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forces to fight wars. Our goal was to prevent them. "Peace is our profession," as one of our commands used to say.

The harsh realities of Korea and Vietnam showed us the limits of nuclear deterrence and revitalized our interest in, and support for, conventional capabilities. These conventional capabilities, however, generally came to be referred to as "tactical airpower." Interestingly enough, "strategic airpower" continued to focus on nuclear deterrence, while "tactical airpower" became the Air Force's primary driver in developing war-fighting doctrine and strategy. And the primary role of tactical airpower was seen as supporting the close battle—either directly in the form of close air support or indirectly in the form of interdiction.

In the end, the Air Force itself defaulted on its doctrine development. The fact of the matter is that we turned doctrine development over to Tactical Air Command and the Army's Training and Doctrine Command. We sent that whole task to the Tidewater Virginia area, and the result was the doctrine of AirLand Battle. For a long period of time, we effectively lost sight of the fact that AirLand Battle was a subset of airpower doctrine and not the doctrine.

Unfortunately, it was not until Desert Storm that we discovered that conventional air operations could not only support a ground scheme of maneuver but also could directly achieve operational- and strategic-level objectives—independent of ground forces, or even with ground forces in support.

So, the challenge for this symposium is very straightforward. It is for you to shape our doctrine development processes to provide airmen from all services both the intellectual and practical framework needed to employ airpower in joint and coalition operations across the spectrum.

If, as I believe, doctrine provides a common foundation for us to use in employing our forces in peace, war, and the numerous gray areas in between, then I would expect for our doctrine to illuminate the judgment of airmen and other military professionals for the joint employment of air forces to accomplish the objectives of the joint force commander—the commander in the field.

I would like to be clear on this point because one of the first challenges in communicating is to analyze your target audience. Our primary audience for doctrine development ought to be the war fighters.

Now that makes a fundamental assumption about all members of the service relative to doctrine. As many of you already know, I often refer to the United States Air Force as a "team within a team"—that is, a team of people who have various core competencies and make up an Air Force team that provides airpower as a part of a joint team. So, not only are we team members with the other services on our nation's joint team, but the Air Force itself is made up of many subteams. We talk about aircrews, maintainers, missileers, space warriors, civil engineers, doctors, lawyers, and even doctrine writers.

Air Force doctrine should provide an integrating framework to tie together the various elements of the Air Force team, to show how these elements work together, and to provide a basis for integrating airpower with other forms of combat power in joint operations.

While doctrine can be useful in intellectual debates and can provide a valid input for future force programming, its primary purpose should be to guide war fighting and military operations other than war. Doctrine may support "why" we have certain weapon platforms, but its real value lies in providing our people a coherent framework for employing airpower as a team.

So, using the team-within-a-team analogy, Air Force doctrine would then provide a "playbook" for all forms of joint airpower. Or, put another way, Air Force doctrine forms the basis for our participation in developing joint doctrine.

As the nation's most technologically dependent service, it's often tempting for us to focus on individual technologies. Certainly, specialized expertise is an indispensable part of our overall contribution to the nation. But

people like Carl Builder have reminded us that we can become too "stovepiped" and miss the bigger view of how the entire Air Force contributes to the team.

Admittedly, this may be a little bit more of a challenge for airmen than for our friends in the other services. Regardless of their branch, soldiers, sailors, and marines are schooled in combined arms. They employ together. They are linked by objectives and responsibilities that almost always focus on specific geographic objectives.

In the end, the essence of ground combat has been to synchronize the contributions of the various elements of the combined arms team to accumulate a series of tactical battlefield victories. Eventually, the sum of those tactical victories proves sufficient to defeat an adversary or occupy a geographically defined objective that makes the defeat of enemy forces unnecessary.

In either case, the objectives—whether terrain- or force-oriented—facilitate unity of effort for diverse forms of combat power. So, the natural and the legitimate inclination of professional soldiers is to apply airpower as simply another supporting combat arm to be synchronized by the respective land commander in support of his particular objective. That's how they legitimately think about this. So, we've got to think about it from a different perspective as well.

Similarly, although the Navy's current focus is projecting combat air and missile power ashore in support of the joint force commander's objectives, sailors generally understand that their greatest contribution hearkens back to Mahan's ideas of control of the sea.

The combined arms notion thus comes naturally to sailors as they employ together in combat. They share the same risks while they're on board a ship. The predominant form of naval employment is with battle groups, not with single ships. And even though the Navy has not had a rich tradition of publishing tactical doctrine per se, the service culture has historically produced a unifying fleet-strategic-employment perspective within individual sailors.

Thus, the Navy brings a different—and also legitimate—view on airpower employment based on its sea control requirements that can differ significantly from those of the Army or the Air Force.

Now, at the risk of stating the obvious, professional airmen are different. As Gen [Carl A.] "Tooey" Spaatz said, "I guess we considered ourselves a different breed of cat right in the beginning. We flew through the air and the other people walked on the ground; it was as simple as that!"

Our differences form the core of the value we offer the nation. Our expertise has been gained through years of experience operating in air and space. That has given us a perspective that is different from that of the other services.

It's important to remember that we have one full-time air force in this country. We have one air force that focuses on the application of airpower from science and technology to research and development, test and evaluation, production and fielding, and even sustaining forces. We don't do this part-time. It's a full-time job for us. It is not a part of our larger service; it is all that we do. For that reason, we bring a perspective to the table that should never be ignored.

It becomes important when we begin discussions about whose plan one follows when we look at the development of a tactical aircraft master plan. These become important considerations as we go down that road. As I said, we have a distinct view. Don't misunderstand me, though. I'm not claiming we have all the answers or can go it alone. That's certainly not the case.

As this nation's only full-service air force, the essence of what we provide is a capability and a perspective for employing combat power that expands the whole range of available options for our national command authorities (NCA) and any joint force commander to use in the pursuit of America's security interests.

Each service's doctrine, then, springs from its respective fundamental beliefs about warfare formed through experience and expertise in certain technologies and mediums of warfare.

This presents us with a sort of paradox. On the one hand, we owe it to the taxpayers to push the envelope of air and space employment to seek war-fighting advantages that save lives and resources. We are the nation's primary advocates for extracting every ounce of advantage from operating in the mediums of air and space.

On the other hand, we cannot let our enthusiasm for our primary mediums of operations blind us to the advantages that can be gained by using airpower in support of land and naval component objectives. We should ensure that our doctrine provides us the tools necessary to orchestrate airpower in conjunction with other component operations because this produces tremendous synergistic effects.

If you think about it, I've just described the essence of effective joint war fighting. I have been in joint assignments for the last six years, and one of the fundamental truths that I've discovered is that joint warfare is not necessarily an equal opportunity enterprise.

We value the unique competencies and capabilities that each service brings to the joint force commander. We want each service to organize, train, and equip forces that are dominant in its medium. We strive to make our forces interoperable, so that the joint force commander can combine them in various combinations for maximum effect.

But we must recognize that when all is said and done, our combat capability comes from the pride, the expertise, and the traditions of the individual services. The unified commands simply offer us the opportunity to combine our nation's combat power for maximum effect.

If the Air Force's central contribution is in providing the nation opportunities to achieve military objectives, independently or in concert with other forces than otherwise would be possible, then Air Force doctrine needs to equip airmen to develop, articulate, and implement these options. That describes a second function of doctrine.

To perform this function requires that we translate airpower theories into war-fighting realities. In the broadest sense, airpower has altered the basic physics of warfare. From the earliest days of aviation, airmen quickly gained an appreciation of how airpower's inherent characteristics such as speed, range, perspective, and flexibility could translate into significant advantages in warfare.

The first use of the so-called third dimension was to gain information about the enemy that you could then turn into a combat advantage. This desire to gather information on the enemy, and at the same time prevent the enemy from doing the same thing to you, imparted a military value to the air. And control of the air quickly became a priority.

Thus was born this continuing cycle of aircraft and weapons improvements that was focused on dominating the air. At the same time, airmen quickly recognized a potential efficiency. Instead of reporting back information on the enemy for friendly artillery to bombard, why not use the aircraft's inherent speed and range to attack enemy targets directly?

So, with a sensor-to-shooter time of "zero," manned aircraft could do their own spotting and attacking of targets—not just within the range of artillery, but deep in the enemy's heartland.

Although it has taken many years for these capabilities to fully mature, we can now see the results of that approach as laid out in some of the visions of early airmen. The need for mass on the battlefield has changed. We don't need to occupy an enemy's country to defeat his strategy. We can reduce his combat capabilities and in many instances defeat his armed forces from the air.

Similarly, airpower has significantly increased our ability to exploit the dimension of time in warfare. Not only do our air and space platforms provide us global awareness on a near-real-time basis, but our ability to quickly project long-range combat power allows us to overcome some of the fog and friction of war.

I would point to the combination of JSTARS [joint surveillance target attack radar system] and night-capable fighters and bombers that deci-

mated two Iraqi armored divisions early in the Gulf War, well before they could reinforce the Iraqi attack at Al Khafji. The initial attack was a surprise. Had we not been able to rapidly mass joint airpower against follow-on enemy armor, the Iraqis would certainly have made a successful coalition defense much more costly in terms of casualties.

We can also dominate the dimension of time through the careful selection of targets and integration of effort to strike the enemy throughout the depth and breadth of his territory. By doing so, we can overwhelm his ability to respond and severely cripple his ability to recover.

In the end, dominance in the air allows us to seize and maintain the initiative for all of our forces. We see that principle embodied in some of our new weapon systems. An example is the B-2, which will begin employing the GATS-GAM* in July of this year. That munition will enable the B-2 to individually target 16 separate aim points on a single pass and put a precision guided munition on each one. This combination will allow us to talk about how many targets you can attack with a given sortie, rather than how many sorties it takes to attack a given target. And that starts to bring a whole new dimension to the idea of being able to dominate the air.

In his *Ten Propositions Regarding Airpower*, Col Phil Meilinger stated, "Whoever controls the air generally controls the surface." I don't think there's much of a debate about the need for air superiority. But there is a lack of appreciation for where air superiority comes from.

No American soldier has been attacked on the ground by an air-breathing vehicle since 1953. From that experience has grown a general feeling that air superiority is a God-given right of Americans. It just happens. It belongs to us. It's an absolute on the battlefield.

But nothing could be further from the truth. The reason we have had air superiority over that period of time is the fact that we have a full-service air force that pays attention to these things, that develops the weapon systems, and that moves them forward.

So again, when we get into these discussions about who understands the business of air superiority, we ought to pay attention. Because when it is not your central focus, many times it lacks focus at all.

It's interesting to reflect on our experience in Korea. The Air Force had 38 aces in that conflict. There was only one Navy ace during the war and only one Marine Corps ace, who was assigned as an exchange pilot with the Air Force! This does not have anything to do with individual aviation skills. The Navy and Marines had, and still have, superb aviators. But in Korea, the Navy and Marine Corps found themselves entering a conflict without the equipment that would allow them to prevail in the air. We found the aircraft of these two services unable to engage the MiG-15. So, the opportunities for kills were just unavailable.

On the other hand, the Air Force had paid attention to air superiority and had developed the F-86 to perform that role. The F-86 was there at the time we needed it. That was the reason the Air Force far exceeded the other services in the number of aces. It didn't have anything to do with individual skills; it had to do with paying attention to a fundamental mission area.

When you look at the aces in the Vietnam War, the Air Force had three and the Navy had two. Our exchange ratio against a fifth-rate air force was about 2.55 to 1—not a very successful outcome. I attribute a lot of this to the fascination and focus our Air Force had on nuclear war at one extreme, and on the land battle at the other. So, in the lead-up to Vietnam, we failed to pay attention to the larger issue of air superiority.

Many of us flew the F-4, and it was a wonderful multipurpose airplane. But anybody who claimed to be using it as an air superiority platform didn't fly very many hours in the F-4. We had to go to it as an expedient, not as an aircraft designed for air superiority.

Afterwards we went to work on this one more time and came up with the F-15. So, when we got into the Gulf War, we saw that out of 41

*Global positioning system (GPS) aided targeting system—GPS aided munition.

Iraqi aircraft shot down by coalition air forces, 35 were downed by Air Force aviators, three by the Navy, two by a single Saudi pilot flying an F-15, and one by a marine on exchange duty with the Air Force flying F-15s.

In the end, it's a combination of equipment and the way you are trained to employ that equipment that produces these kinds of results. So, we can't draw too big a conclusion from all this. However, we ought to pay attention to this idea that there's value in being focused on what you do—all the time. You can put your resources where they need to go, and this gets translated into other benefits.

As I said before, we no longer debate the need for air superiority. History is replete with examples where we or others did not have it, and that resulted in unnecessary loss of life, primarily for people on the ground at such places as Guadalcanal, the Kasserine Pass, and the Basra "Highway of Death."

It is our duty as airmen to remind our military brethren in the surface forces of the critical importance of air superiority to their operations. On the other hand, I am not sure we have fully thought about this idea of control of the surface.

Traditionally, we've relied on the Army to feed us information on emerging battlefield targets. Beyond the Army's area of responsibility, we've conducted interdiction and strategic attack against predominantly fixed targets. When situations have required a faster response against moving targets, we've improvised—sometimes more successfully than others. We went to the Fast FAC [forward air controller] concept, and we've done other things to improvise in the sensor-to-shooter business.

We need to get out in front in this area. Let's face it: how would we want to halt an invading army? When we talk about war plans nowadays, we talk about various phases—the halting phase, the buildup phase, the counterattack phase, and the termination phase. How would you halt an invading army in the opening days of a crisis, particularly if your land forces were not in place or were otherwise engaged? We need to understand the wider framework for leading and integrating the response of the joint force.

Similarly, we are increasingly involved in contingencies short of war. Have we provided our sister services sufficient doctrine for employing joint airpower in conjunction with peace operations? Do we have a doctrinal framework that could help us sort out our command and control requirements when airpower is conducting an air occupation of an area, like we've been doing over Iraq since 1991 in order to enforce United Nations sanctions?

This is what I mean when I say we have to target our doctrine at the war fighter.

Colonel Meilinger's second proposition concerning airpower is also worth some discussion because it's often misunderstood. It says that "airpower is an inherently strategic force."

Some of our critics have misconstrued this to mean that the justification for an independent air force lies in strategic bombing, or in its ability to win wars by itself. I reject that argument. I don't think there's the need for any discussion. And I think airmen are a little paranoid in this area. We've got to get beyond that. I don't see a threat out there of someone wanting to reabsorb the Air Force. Airpower is a strategic force in that it offers the opportunity to defeat an enemy's strategy—sometimes directly but most often in concert with other forces.

In Desert Storm, we hit hard, smart, and deep; and we put few people at risk. We had a theater commander in chief in Gen H. Norman Schwarzkopf, who understood the asymmetrical application of power. Airpower decisively changed the military balance and enabled the coalition to close with Iraqi land forces after gaining tremendous advantages over them.

Now, this is not a universal formula for success. Circumstances will always be unique. But it does point out some general prospects. First, there will almost always be asymmetries in war. Second, given prudent policy, the US will possess technical advantages. Third, it is preferable for the US to substitute materiel for putting humans at risk where possible.

While most of us would agree with these assertions, not enough airmen have a basic concept of what's required to integrate air and space sensors; command and control; Army aviation and ATACMS [Army tactical missile system]; Navy and Marine strike aircraft and cruise missiles; or our own fighters, bombers, and tankers.

I admit I'm treading somewhat on tactics, techniques, and procedures, but I believe our doctrine needs to provide a strong underpinning that transcends major air commands and stovepipes and that gives all airmen a broader vision for employing joint airpower.

The ultimate goal of our doctrine should be the development of an airman's perspective on joint warfare and national security issues—not just among our generals, but among all airmen in all specialties.

At the strategic level, our mid- to senior-level leaders need to understand potential political implications of various airpower employment options. All airmen should understand, and be able to explain, what it means when we say that the Air Force offers the nation economy-of-force options for achieving our national interests. And yes, airmen should be well versed in airpower theory—although this is probably more an issue of education than doctrine.

At the operational level, our doctrine should provide the framework for theater air employment to include how we integrate the effects of Army, Navy, and Marine systems with our own combat assets. In my view, perhaps the best example of operational-level doctrine that cuts across service lines is what we find in Korea. The deep battle construct developed for use in Korea enables the joint force commander, Gen Gary Luck, to (1) distinguish support to the land force mission from support to the joint force mission; (2) tailor control measures so all components generate maximum combat power; and (3) fine-tune these arrangements to fast-changing circumstances.

This is a practical theater doctrine. It has not been accepted as a universal doctrine, but it's the most mature doctrine for joint operations that the United States has produced to date.

By generalizing somewhat, Air Force operational doctrine should mirror this type of doctrine to provide a useful framework for all airmen, not just those serving in Korea.

By the time we get to the tactical level in doctrine, we're really close to tactics, techniques, and procedures. I think the Multi-Command Manual 3-1 series provides a solid foundation for employment of aircraft at the small-unit level.

Practically speaking, however, when you look at the tactical-, operational-, and strategic-level doctrine being spread geographically and functionally throughout the Air Force, we've got a continuing challenge to ensure our doctrine remains consistent within our own service, not to mention staying consistent with joint doctrine.

Despite this challenge, the payoff of getting it right is tremendous. The ultimate promise of our doctrine is its potential to accomplish the mission, achieve the war fighter's objectives, and—not insignificantly—to save lives on the battlefield.

Every improvement in airpower's capabilities and usefulness increases the importance of doctrine. The greater the combined capabilities of modern joint forces, the more important our doctrine becomes.

Perhaps Sir Winston Churchill said it best:

> Those who are possessed of a definitive body of doctrine and deeply rooted convictions based upon it, will be in a much better position to deal with the shifts and surprises of daily affairs, than those who are merely taking short views, and indulging their natural impulses as they are evoked by what they read from day to day.

I think Churchill had it right. When our doctrine provides us the opportunity to reflect upon our expertise and our experience; when it is available for reference, not only by airmen, but by members of other services; when it matures and reaches the point that it makes a definite impact in the joint doctrine arena; when it is under-

stood not only by our own airmen but also by soldiers, sailors, and marines; then we'll know we're getting close to our goals.

In closing, I'd like to offer you my full support as you pursue the very difficult challenge that I have laid out. I wish you success as you go forward in this symposium for the rest of the week. Thank you very much.

Anyone who has to fight, even with the most modern weapons, against an enemy in complete command of the air, fights like a savage against modern European troops, under the same handicaps and with the same chances of success.

—Field Marshal Erwin Rommel

Contributor

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