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TWELVE PRINCIPLES Emerging From TEN PROPOSITIONS

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THE STRENGTHS of *10 Propositions Regarding Air Power** are that the volume is simple, slim, assertive, and challenging. These characteristics also contribute to a few of its weaknesses. Because it seems to aim at being a book of airmen's aphorisms, it is necessarily as insubstantial in the depth and strength of many of its arguments as it is slim in size. Its many assertions are not allotted the space to be buttressed by as many proofs. Consequently, elements of some propositions challenge logic, history, and some of the empirical data we have on the "power" of airpower. Some critics will opine that *10 Propositions* continues the tradition of promises, predictions, sweeping declarations, breathless exhortations, and grand but unwarranted syntheses found in the works of Giulio Douhet, William ("Billy") Mitchell, Alexander de Seversky, and—more recently—John Warden. Only Douhet provided a new airpower theory, scholars rightly observe. All true.

Yet, consider that the book was not written for scholars. Consider that the book, where it is faithful to its lofty ideal, is not analysis as much as it is pocket-size synthesis. What is new and good here is a superior idea, executed well: give airmen something simple and fairly solid to stimulate their thinking about air and space power. Without overlooking the arguable soft spots and hyperbole in *10 Propositions*, perhaps airmen can get even greater discernment by a transformational critique of the work. The goal of this critique is to take what's likelier than not true in *10 Propositions* and transform "proposition" into "principle." Twelve principles emerge (table 1).

The first principle is that **propositions are declarations that invite proof or disproof.** Propositions are neither principles nor rules nor verities. A proposition invites caution. It is merely an assertion—a proposal requiring proof in order to become more than a position or platform. Without proof, a proposition can be a falsehood—an untruth. The pre–World War II proposition that "the bomber will always get through," for example, was and is untrue. That proposition was associated with the combat deaths of tens of thousands of airmen. Thus, in the real world and in the world of logic, a proposition occupies roughly the same place as a political campaign promise in the universe of fact and truth.

It is honest to call a thing by its correct name. In the case of *10 Propositions Regarding Air Power*, one concludes that the word *proposition* is both accurate and descriptive. It is also a usefuldisclaimer, because what follows in some of *10 Propositions* cannot be proven or defended easily. While that logic obviously excuses those people who offer contrary propositions, it ill protects those who dare offer "principles." A principle, unlike a proposition, is an assertion of truth. Airmen—given both proposals and cold, hard facts—can make their own choices. This critique aims at distilling the propositions to their underlying, unarguable truths by modifying or refining what *10 Propositions* provides.

The first thing that requires refinement is the proposition that "generally" air control equates to surface control. Humans live on the earth. The land, even in the "Third Wave," is our home. Our terrestrial home remains the seat of purpose. Our government resides on the land. Our children are reared on the land. We cannot dwell on the sea, in air, or in space except at intervals. We can only transit these other media. We have always had and likely will always have ground combat because the ground is so dear to us. Armies are important because the land remains important. Naval forces and air forces ultimately serve to help control and defend the land. Land forces secure and protect both naval ports and air bases, the Achilles' heels of sea power and airpower. For US forces, land forces also provide air defense artillery. Control of portions of space, slices of air, and segments of sea are important primarily because these media abut the land that is our home. Yet, controlling these other media,

* Col Phillip S. Meilinger, *10 Propositions Regarding Air Power* (Washington, D.C.: Air Force History and Museums Program, 1995). This is a small (3" x $5^1/_4$") paperback version of Colonel Meilinger's article on the same subject.

Table 1
Twelve Principles EmergingFrom "Ten Propositions Regarding Airpower

0. A proposition is an assertion, not a proof or a truth.
1. Control the heights or pay the price.
2. Airpower can be a peculiarly "strategic" force.
3. Strike the enemy to create opportunities.
4. Airpower is about applying force to nodes, processes, webs, intersections,and unions.
5. Enemies are bound to be resilient.
6. Combined arms aim at convergent effects.
7. Mass is concentrated force.
8. The object of force application determines the form of force control.
9. The informed application of superior technology can vitiate the enemy.
10. Technology is unconfinable.

+1. Effective integration can produce superior force.

in and of themselves, is not sufficient for controlling the land. We "generally" controlled the air in Europe, Japan, Korea, Vietnam, and Iraq. Yet, only the ground forces could wrest the kind of control that historically counted most. Control of the land "generally" or often requires seizing it from the opposing ground forces.

During World War II—and for a variety of reasons—German production increased as Allied bombing increased. During the Gulf War, the Iraqi government did not alter its war aims until ground forces came pouring toward Baghdad. Controlling the air did not evict Iraq from Kuwait, although it certainly helped set the stage for Iraq's hasty retreat as our fierce coalition soldiers and US marines pressed the attack. "Generally," we control the air over Iraq and Bosnia today. Generally, that control is not wholly relevant. A failure to understand the relevance of the land (or the sea) can lead to other muddled assertions and unnecessary squabbles with our land and naval partners. For example, to call the air control over parts of Iraq and parts of the former Yugoslavia an "air occupation" is to use imprecise language to produce incredulity. It is to the author's great credit that he does not make such an assertion. But it is both correct andrelevant to assert, as he does, that "in reality, the attainment of air superiority has not yet brought a country to its knees" (page 54, this edition). The author's quest for balance, here and throughout, manifests both reasonableness and praiseworthy scholarship.

Even so, airmen should understand and can assert that air and space power can swing the balance, because **failure to control the heights can impose extraordinarily dear penalties on people forced to operate on the land and the sea.** An adversary's air and space forces, if they control the right elevations of air and slices of space, can force us to pay a heavy price for operating beneath this umbrella of control. We might still meet our objectives, but doing so will assuredly cost us considerably more blood and treasure. The record on that is irrefutable. Air and space power are, as Gen Ronald R. Fogleman, Air Force chief of staff, frequently reminds us, "an economy-of-force force." Forces operating to control the air, space, and sea work in combination with those on the land to meet our objectives at an overall reduction in the real costs of warfare—*if* they are employed properly.

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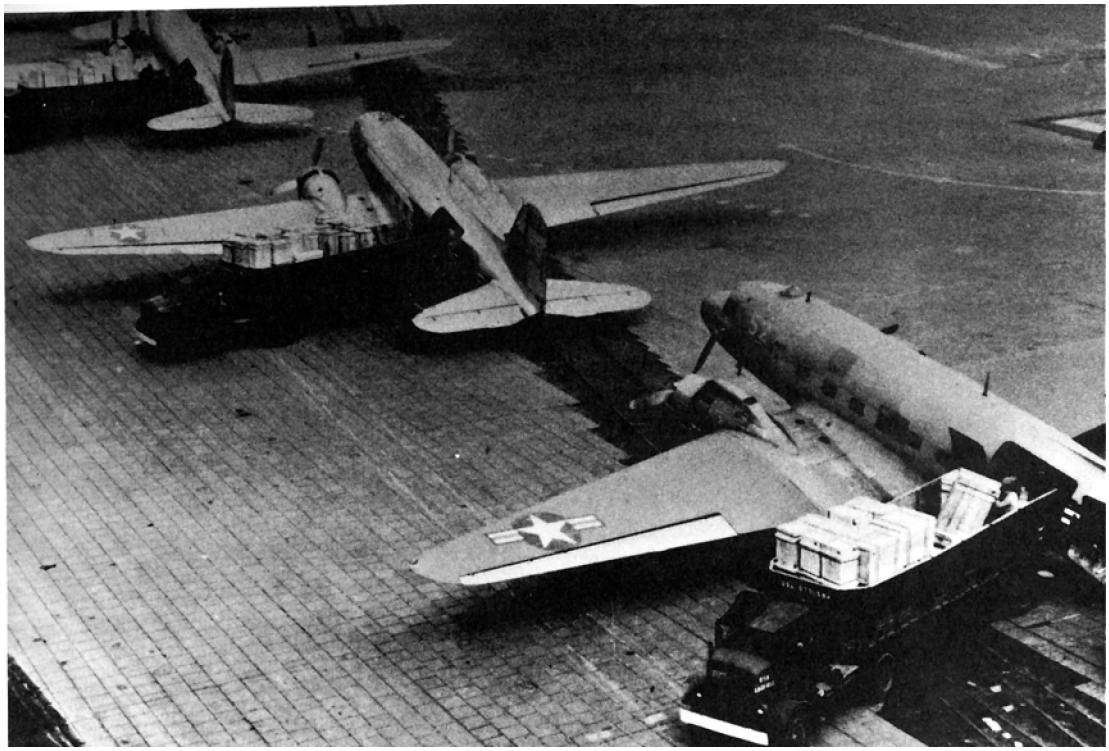
It is doubtful that anything is "inherently" strategic—aircraft, spacecraft, airpower, and space power included. Rather, everything seems to depend on purpose, objective, and use. **Air and space power can be a peculiarly "strategic" force,** but they do not constitute an inherently strategic force. To say that airpower is "inherently strategic" and that "aircraft can routinely conduct operations that achieve strategic level effects" (pages 54–55) may be to misunderstand "strategy" and to use this misunderstanding to make a set of overly ambitious assertions. There is nothing "routine" about strategic operations. The only support the historical record provides would force us to substitute "ground armies" for "aircraft," if accuracy and not exhortation were the goal. The history surrounding the Berlin airlift—described by the author as "a demonstration of air power's peaceful application" and a "strategic victory" that was "achieved without firing a shot" (page 55)—overlooks some of the facts. It fails to appreciate that the airlift continued because US resolve was punctuated by ground forces, naval forces, and nuclear forces that were at increased levels of attack readiness. The airlift was not explicitly violent, but the tacit violence waiting in the wings was awesome. Could it not have been the allied solidarity, the armies in Western Europe, the armadas of ships, the bombers movedto the periphery of the old Soviet Union, and the fighter escort in the air corridors—not just the C-47s—that helped enable the strategic victory? Thus, it was not



During the Berlin airlift, C-47s flew thousands of tons of food, coal, and other supplies daily to the western sectors of Berlin. However, to call the airlift an example of airpower's peaceful application and a "strategic victory" that was "achieved without firing a shot" simply overlooks some of the facts. The airlift was not explicitly violent,but the tacit violence waiting in the wings was awesome. Could it not have been the vast armada of allied ships, fighter escorts, and bombers moved to the periphery of the old Soviet Union that helped enable the strategic victory?

the airlift itself that produced the strategic effects, but the whole employment of air, sea, and land power to underscore US and allied resolve. The airlift was only the more visible manifestation. The airlift truly was an operational success, but as a strategic success, it was not so much an Air Force feat as it was a United States and allied one. To say that "basically, air power delivers strategic information" and to call bombs "negative" information and food "positive" information (page 55) is to employ a very private and idiosyncratic logic and lexicon. Later in the piece, the positive information—food—is portrayed using the negative example: "food bomb" (page 65). This kind of stuff is too coy or silly to encourage airmen to emulate it. Rather, those airmen who understand that air and space power, properly employed, can be peculiarly strategic in effect, take away the right lesson. Air can have peculiarly strategic effects because it can range far and wide, deliver all kinds of helpful and hateful commodities, attack from unexpected axes, terrorize the enemy, flatten the enemy's statehouses, fracture the enemy's formations, badly hurt or destroy war-supporting industry, support the friendly invasion, or rapidly blunt the enemy one. Properly and precisely employed, the effects of air can be peculiarly strategic. That, I believe or hope, is what the author meant to say.

Does air produce *strategic paralysis*? The term sounds lofty and powerful, but the bald truth is that a state suffering from strategic paralysis is unable to terminate the war—actually or legally. It's paralyzed. Paralysis does not equate to defeat. Such a state's armed forces may remain tactically vital, requiring defeat in detail. After defeat in detail, the paralyzed state may require occupation. Are defeat in detail and support of occupation tasks too trivial for airpower? Of course not. Air and space power can be powerful even when only employed to achieve tactical effects.

Airpower may be an "offensive weapon" (page 55), but the proposition may overlook the more important truth: **it is by striking the enemy that military forces create opportunities.** There are a number of ways and combinations of ways to strike the enemy. Cruise missiles; ballistic missiles; and long-range, depressed-trajectory missiles or artillery do not seem to be less

effective as offensive weapons than airplanes. Organic, rotary-winged aircraft do not seem to be inferior to the faster ones for close support of the ground battle. Because some Army, Navy, and Marine Corps organic assets are available without quarrelor the tortuous timing and ritual of the air tasking order (ATO), they might even be superior in some circumstances. One suspects that commanders in the Army, Navy, and Marine Corps believe this to be the case. All of these (missiles, Army helicopters, Navy and Marine attack aircraft—even remotely piloted vehicles) are part of our nation's airpower arsenal. Airmen engaged in strike must not forget their unsung comrades-in-arms: support personnel, medical personnel, land-based missile forces, space forces, and transportation and logistics personnel. Striking the enemy with Air Force airpower creates opportunities, but everyone in the Air Force contributes to those strikes. Air strikes are only one way to create opportunity. Naval and ground commanders have others. Those who strike are but a team within a team.

Does airpower obviate the need for a tactical reserve on the ground, as the author suggests (page 58)? An economy-of-force force is not a magic force. One might offer that people who bear the consequences of bad propositions or tragic misjudgments ought to make their own risk assessments. Airmen may assert the "ubiquity" of airpower (page 58), but the ground forces pay the price if the claim is hyperbole. On the other hand, to say that air and space do in fact support or execute strike and that strike creates opportunities seems to be irrefutable without ignoring those who work to make strike possible—as well as the opportunities it creates.

To base the effectiveness of airpower on the adequacy of "intelligence" (page 58) illuminates airpower's greatest shortcoming. Airpower can blow a door off its hinges, but—unlike a simple soldier or marine—airpower cannot see what is behind the door. Airpower cannot attack what it cannot sense. Without knowledge, airpower cannot defer attacking that which it ought not attack. One cannot assess the effects of air attacks without understanding and predicting the relationship of targets to adversary capability. Today, as the author suggests, we airmen are unable either to assess or predict to perfection. All we know with certainty is that combat has cumulative effects and that at some point these take their toll on the enemy. To assert that "the real air assessment usually comes after the war" (page 60) is either to admit that we have scant idea just what it is we are contributing or to embrace the post hoc fallacy as a principal measure of effectiveness. Airpower, when integrated with ground power and naval power, can bring a fight to its culminating point. How much of that movement can be produced by air always defies easy assessment.

Airpower can blow a door off of its hinges, but—unlike a simple soldier or marine—airpower cannot see what is behind the door.

What we do know with certainty, however, is that **air and space power are about applying force to the enemy's nodes, processes, webs, intersections, and unions to impede the production, transportation, and control of enemy combat power.** When *10 Propositions*, published in February 1995, asserts in an earlier section that "the last American ground soldier killed by air attack was in 1953" (page 53), it forgets the friendly-fire episodes of Vietnam, of the Gulf War, and the tragedy that occurred on 14 April 1994. Friendly fire casualties are a risk when airpower attacks targets of opportunity or engages in close support. Attacks against cruise missiles, small ground formations, vehicles, and helicopters may be essential in some cases, but they do not hurt the enemy's nodes, processes, webs, intersections, and unions enough to impede significantly the production, transportation, and control of enemy combat power.

Thus, the *intelligence* that counts may be more the abstract noun than the concrete one. The intelligent questions to ask and answer are those that help identify the enemy's nodes, processes, webs, intersections, and unions that produce, transport, or control combat power. Smart enemies will attempt to hide and defend these. The author correctly notes the importance of thinking in terms of systems and assessing effects of attacks on key elements in an enemy's systems. The next step is to appreciate that it is combat power production, transportation, and control that count. The ground soldier in contact with the enemy harbors no doubt as to "what" produces enemy combat power in the form of incoming rounds. The airman, like the corps commander and the commander in chief (CINC), also must look to the sources of those rounds (factories, depots, caches), their transportation (road, rail, airfields), and their control (command centers, communications nodes, leadership) and aim at their destruction.

One of the reasons that airpower's individualized contribution to military success defies easy assessment is that enemies are bound to be resilient— *bound* meaning both that they are obligated to resist and also that we ought to count on it. Douhet's vision of destroying an enemy's will to resist by air attack remains a vision. We must expect enemies and their hostile will to be tough and durable. Bunkered or dispersed, disciplined

troops can take tremendous poundings from bombs and artillery and still fight effectively. Anecdotal evidence from a few eager-to-please and compliant prisoners of war flies in the face of a much larger body of empirical data. Our Army and Marine Corps, for example, would not bolt and run if pounded by enemy air. Some would die, but thesurvivors would not run. Murderous enemy air attacks against our naval combatants in World War II did not cause the US Pacific fleet to disengage. Yet, enemy troops on the move over road or rail and columns of enemy combat power in transport are as lucrative targets for air as ship convoys are for submarines. The disruptive effects of applying airpower's striking power to the enemy's combat power production, transportation, or force-control nodes, processes, webs, intersections, and unions are well documented. Airpower, properly employed, can produce tremendous shock and disorientation, but these are merely opportunities to be exploited.

Speed and surprise do not, as the author suggests, "sometimes substitute for mass" (page 61). Rather, speed and surprise aim at massing or concentrating effects—both physical and psychological. To assert that there is such a thing as "the conquest of time" (page 61) by airpower is to posit some magical, superluminal power that airpower lacks. Squadrons of bombers and fighters can move more quickly than the ground corps or the carrier battle group. They can strike deep and hard, but they do not conquer time. The World War II bombing of Dresden and Hamburg, for example, produced tremendous shock and destruction in a very short period of time, but the dislocation was not enough to bring the ruling Nazis to their knees. Time is critical to opportunity, but air cannot thoughtfully be described as "dominating . . . time" (page 60). Perhaps air "exploits" time to concentrate its physical and psychological effects to erode the resilience of enemies more rapidly. Yet, even attacking 150 cities at once may not be enough to end the fight.

Airpower can conduct "parallel operations" (page 61), but so can naval forces and ground forces. Parallel operations against a diverse set of targets simultaneously and at multiple levels are nothing new. Capt (later Rear Adm) J. C. Wylie's notion of cumulative strategy and the targeting logic of the single integrated operational plan (SIOP) are three to four decades old. Parallel operations are not a new discovery. Gen U. S. Grant used them in the Civil War. To use air attacks against Washington, D.C., to illustrate the effectiveness of parallel air operations and then ask, "Could we have maintained our balance in the face of such an onslaught?" (page 63) is somewhat off the mark. Might we not inquire, "Where was the US Navy in this case? Why did the Army's air defense artillery not mitigate these attacks? Where was the US air defense fighter force?" The author chose the example. Why he chose one that apparently or inadvertently trivializes our own Army, Navy, and Air Force is a puzzle. A proposition—a hypothesis—proved by a hypothetical case does not bolster the strength of the argument.

Is it just bad luck that too few airmen are CINCs, or is it because airpower always supports something larger than the application of airpower?

One flaw in the current notion of parallel war is the belief that the approach was invented by airmen during the Gulf War. Another flaw in the current notion of parallel operations is that—like the linear image from which the idea is drawn—parallel lines never converge. Parallel-warfare theorists seem to forget that it is the integration and convergence of effects that seem to culminate in success—not the parallel lines shooting off into space. When using examples drawn from the Gulf War in this section, *10 Propositions* fails to note the effect of the over 400,000 coalition troops at Iraq's borders. These were not so irrelevant as to deserve omission. Omitting them, like damning the defensive power of the US Navy, Army, and Air Force air defense force to irrelevance in the ill-chosen example of the hypothetical attack on Washington, is insensitve and may risk calling the validity of the proposition into serious doubt. This clearly could not have been the author's intention.

The principle at work seems to be simpler and more solidly grounded. Combined arms aim at convergent effects, and air and space power—being so wonderfully flexible—can be peculiarly strategic in effect. Air and space power, according to Maj Gen Chuck Link, bring speed, range, perspective, and freedom of maneuver or agility to the fight. These are the invaluable attributes that only air and space power can contribute. Because striking the enemy is the best way to create opportunity, these attributes serve the aim of force application. The objective of force application is to so harmonize the kinds of force applied, where the force is applied, and when it is applied that one increases the lkelihood of a cascading collapse of the enemy's combat power. The more rapidly these effects converge, the better. Air can help the ground commander collapse it on the front, the naval commander collapse it inland of the beach, and the theater commander collapse it from the enemys capital outward. Air strikes can create opportunities, but notions of parallelism are less instructive than an awareness that convergent effects are the real goal.

Precision weapons have not redefined the mean-

ing of mass—the author's assertion notwithstanding (page 63). Mass in scientific terms is one of the forms that energy takes. Mass in military terms is merely the concentration of effects. ***Mass* always has been the shorthand for the concentration of force.** The noun *force* is both abstract and concrete. Combat units—troops, weapon-deliveryplatforms, and weapons—possess energy and are production units. They produce lethality or force. Sometimes production capacity—the lethal or forceful effect—is dependent on the size of the production unit. Sometimes it is dependent on the velocity of the force applied. Sometimes size is unrelated to production capacity. Precision weapons, by concentrating force to hit what they aim at (which may or may not be what they should aim at) achieve the desired lethal effects with fewer engagements than nonprecision weapons. This is much the same awareness as realization that a Green Beret, SEAL, Ranger, or marine may be a greater producer of lethality than a poorly trained, conscripted enemy infantryman. Precision weapons do not redefine mass. Rather, they accept in military science what is true in physics: things have intrinsic energy.

On the other hand, special forces, SEALs, Rangers, and marines cannot precisely air-drop food bombs. This notion of food bombs unfortunately may move small portions of *10 Propositions* from the category of arguable to the category of trivial. Nonetheless, the precision aerial delivery of food bombs—accepting for the moment that such things are germane—poses very important questions left unexplored by the author. Those questions are, Must an airman control the delivery of food bombs? Ought the delivery of food bombs be controlled by a greengrocer type of person? Or ought control of the delivery of food bombs be determined by the objective of "bombing" with food in the first place? It seems that the aim or function of an operation ought to determine its form (as Sun Tzu and Clausewitz urged)—not some a priori assertion of form apart from a consideration of function. While an airman may be uniquely qualified to tell how best to deliver food bombs, one cannot suppose that an airman knows any better than anyone else why it is food that needs delivery or where the food needs to go.

The important principle seems to be that **the object of force application ought to determine the form of force control.** There is nothing talismanic or magic about airpower. If joint professional military education for us and our allies is effective, any strategist of combined arms can advise where best to employ airpower to achieve its effects. Any targeteer can hunt for targets. But it may be unlikely that any airman is better than anyone else in assessing the relationship of targets to effects. Many are less qualified. Is it just bad luck that so few airmen are CINCs, or is it because airpower always supports something larger than the application of airpower? If unattended cockpits dominate at some time in the far future, for example, must "airmen" control them? While the national command authorities might very likely conclude that air and space power ought to be centrallycontrolled in some future fight, the form that control takes certainly will evolve. Must the air component commander and staff reside in-theater or even in one location? In the future, just as today, the object of force application ought to determine the form of force control.

It is indisputable that "technology and air power are integrally and synergistically related" (page 67). Yet, the principle airmen ought to appreciate is that **the informed application of superior technology can vitiate the enemy**. Having technology is not enough. It must be assimilated in the right things, in the right numbers. It must be applied with superior concepts of operations and codified in superior doctrine. Superior weapons—as I. B. Holley, Jr., rightly observed in *Ideas and Weapons* (1953)—"favor" victory, but they do not assure victory. Rather, the informed application of superior technology—informed by experience and the knowledge gained in realistic training, by sound doctrine, by innovative concepts of operations, and by the warrior spirit—can hurt the enemy badly. If airmen help create the superior technology and devise the superior concepts of operations for employing it, then perhaps airmen ought to control these applications. Likewise, unless airmen so understand our profession that they provide the operational pull and technology push, they mortgage our future.

The goal of *10 Propositions* is to give us airmen something simple and fairly solid to stimulate our thinking about air and space power. We already know that technology and airpower are integrally and synergisticall related. What we must internalize is that it is not enough to have superior technology, which does not guarantee superior airpower—the Me-262 and V-2 being but two examples. We must have the vision to have the right superior technology and apply it in the right ways. Those things that promise to vitiate the enemy are usually the right things, and hurting the enemy is usually the right way.

Likewise, one cannot fail to agree with the proposition that "air power includes not only military assets, but an aerospace industry and commercial aviation" (page 69). It was as true when Mitchell and de Seversky suggested it for airpower as it was when Julian Stafford Corbett, Alfred Thayer Mahan, Teddy Roosevelt, and Winston Churchill suggested it for sea power. The more provocative principle—and the one with more significant consequences for airmen and military airpower—

is that **technology is unconfinable.** This means that in an era of global engagement and economic enlargement, in a future that promises continued real and virtual presence nearly everywhere, the US cannot count on technological monopolies. Powerful, significant, or even superior military technologies canno longer be confined and unavoidably will be deployed more widely in the future than ever before in the past. This includes the technologies necessary for information and counterinformation systems, transatmospheric vehicles, hypersonic systems, ballistic and cruise missiles, satellites, sensors, air surveillance, target acquisition, target engagement, and attack assessment. This means that some aspects of warfare could change rapidly and that unexpected asymmetries could develop. It means that in the near future close-in air bases may no longer be sanctuaries for short-range aircraft. It also means that the battle space may quickly become so lethal that some of the other air propositions are called into question. The principles, however, should endure. This particular principle warns us to keeping thinking and innovating.

This leads to a final principle—one disappointingly omitted from *10 Propositions*. It is that **effective integration can produce superior results.** We fight with combined arms. Jointness is not just something trendy since the Goldwater-Nichols-Hollings Department of Defense Reorganization Act. It's how we must fight. While one form of force may be better suited to a particular function than another, that fact in no way makes one superior and another inferior, one "dominant and decisive," and another subordinate or irrelevant. We must help the author of *10 Propositions Regarding Air Power* meet the objective of the laudable effort. That effort is aimed at increasing our "air-mindedness" without in any way diminishing our appreciation for combined-arms employment. This critique, remember, did not pull its principles out of the ether. Rather, it used and was dependent upon what the author of *10 Propositions Regarding Air Power* provided. The 10 propositions, as the Air Force historian tells us in the book's foreword, are "a group of provocative propositions." They are intended to provoke the discussion and debate that help begin the dialectic, which allows knowledge and wisdom to emerge. That dialectic regarding airpower must occur within each of the services and among them, both in the US and abroad. The aim is effective integration of all the instruments of power.

In summary and toward that end, don't just carry this book—as the Air Force historian suggests—in your flight suit or battle dress uniform (BDU) pocket. Read it carefully and then read it again. It's a good book and easy to read. When you can speak articulately to it, give it to soldiers, sailors, or marines and ask them to read it. When they've finished, ask them what they think. They're your customers. You're their supplier of air and space power. In that dialogue, real learning will continue.

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