

2

AD-A253 113



UNCLASSIFIED

DTIC
ELECTE
JUL 28 1992
S C D

NAVAL WAR COLLEGE
Newport, R.I.

AIR POWER
DO THE PRINCIPLES APPLY?

by

David C. Nichols
Commander, USN

A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Operations Department.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: D. Nichols

19 JUNE 1992

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

92-20182



UNCLASSIFIED

92 7 27 099

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified		1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT DISTRIBUTION STATEMENT A: Approved for Public Release; distribution is unlimited.	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE		5. MONITORING ORGANIZATION REPORT NUMBER(S)	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)		7a. NAME OF MONITORING ORGANIZATION	
6a. NAME OF PERFORMING ORGANIZATION OPERATIONS DEPARTMENT	6b. OFFICE SYMBOL (if applicable) C	7b. ADDRESS (City, State, and ZIP Code)	
6c. ADDRESS (City, State, and ZIP Code) NAVAL WAR COLLEGE NEWPORT, R.I. 02841		9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION	8b. OFFICE SYMBOL (if applicable)	10. SOURCE OF FUNDING NUMBERS	
8c. ADDRESS (City, State, and ZIP Code)		PROGRAM ELEMENT NO.	PROJECT NO.
		TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) Air Power: Do the Principles Apply? (U)			
12. PERSONAL AUTHOR(S) CDR David C. Nichols, USN			
13a. TYPE OF REPORT FINAL	13b. TIME COVERED FROM TO	14. DATE OF REPORT (Year, Month, Day) 19 Jun 1992	15. PAGE COUNT 19
16. SUPPLEMENTARY NOTATION A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	Warfighting Concepts; Doctrine; Principles of War	
19. ABSTRACT (Continue on reverse if necessary and identify by block number) Current Air Power Doctrine is examined within the context of the Principles of War and other warfighting concepts.			
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION Unclassified	
22a. NAME OF RESPONSIBLE INDIVIDUAL CHAIRMAN, OPERATIONS DEPARTMENT		22b. TELEPHONE (Include Area Code) 841-3414	22c. OFFICE SYMBOL C

DTIC QUALITY INSPECTED

Accession For
DTIC GRA&I
DTIC TAB
Unannounced
Justification

AIR POWER

DO THE PRINCIPLES APPLY?

"...the airplane is the offensive weapon par excellence. All the influences which have conditioned and characterized warfare from the beginning are powerless to affect aerial action."-1

"I have mathematical certainty that the future will confirm my assertion that aerial warfare will be the most important element in future wars, and that in consequence not only will the importance of the independent Air Force rapidly increase, but the importance of the Army and Navy will decrease in proportion."-2

-- Giulio Douhet, 1921

"Air power is the only answer available to our country in this circumstance...[To attempt to beat Iraq on the ground risks] destroying Kuwait in order to save it. [By using air power against targets in Iraq] you would attempt to convince his population that [Saddam Hussein] and his regime cannot protect them. If there is a nation that cannot defend its people against these intruding foreigners--protect their lines of communication, their means of production, their cities--that brings a great burden for their leaders...Air power in peace and war brings a special kind of psychological impact..."-3

-- Michael J. Dugan, 1990

General Douhet's 1920's vintage "command of the air" air power doctrine is alive and well in the 1990's as reflected in former Air Force Chief of Staff Dugan's comments during Operation Desert Shield. For strategic air power advocates from Douhet to Dugan, air power has been the answer. Often it has been the answer before the question is even asked, much less fully developed or understood. Strategic air power has promised relatively quick, clean solutions to complicated political and operational problems. The airmen's implication has been that

Availability Codes	
1st	Avail and/or Special
AI	

strategic air power is somehow immune to the rules, principles, and tenants of military art which govern the employment of all other forms of military power. Moreover, non-airmen could never understand much less properly employ this unique, stand-alone military capability. By targeting the will of the enemy population and the industry necessary to make war, air power could strike directly at the strategic objective--the strategic center of gravity--without wasting time at the operational or tactical levels of war and the associated anachronistic notions of operational art and campaigning. Although airmen recently have begrudgingly acknowledged the requirement for ground and naval forces (largely to avoid the fate of their fallen hero quoted above), their true feelings, as evidenced by writings in professional journals, appear to be that air power can win wars all by itself. In moments of magnanimity and in the full spirit of jointness, airmen will allow that there:

"...could be a perception that recognizing the tremendous role air forces have had in past successes would somehow cheapen the contribution made by ground forces...This fear could not be further from the truth since Desert Storm revealed how essential ground and amphibious forces can be to air power's effectiveness.-4

Identifying a possible weakness in air power doctrine with respect to operational art, the airman quoted above continued:

"Air Force doctrine's lack of guidance on the exercise of operational art may explain why some Air Force officers before the gulf war seemed to believe that the sole purpose of theater air power was to support a ground commander's scheme of maneuver. As a result, these airmen did not realize that campaign objectives could be achieved more effectively by using surface forces to support an air component commander's scheme of employment."-5

And finally, the modern airman's defining statement:

"In modern war, if the conquest and annexation of territory is (sic) not the casus belli but rather the modification of enemy behavior, the national objective can be achieved by the projection of strategic air power alone without reference to the enemy's surface forces--land or sea. Every bomb and aircraft deflected for whatever use from this primary strategic air purpose...imposes an unaffordable opportunity cost."-6

U.S. air power has made a difference. But, is it the ultimate weapon airmen claim it to be or is it just another weapon in our warfighting toolbox? The purpose of this paper is not to work Douhet's zero-sum-gain math problem to find ground truth in the continuing debate over the relative merits, utility and importance of each service branch and its associated forms of military power. Nor, contrary to the tone of the introduction, is the purpose to ridicule air power doctrine or to bash Air Force or Navy airmen. In one sense, the airmen quoted above have the right mindset. Strategy, operational art, doctrine, tactics--all the concepts and notions we carry with us onto the battlefield--should be constantly questioned, examined and refined. However, these airmen are dangerously wrong in another sense. No single form of military power is adequate, much less optimum, to defend the United States and its interests. The objective of this paper is to offer some ideas on air power doctrine and employment. To do this, current air power doctrine is examined within the context of the principles of war and other warfighting concepts. Air Force Manual 1-1, Volume 1, Basic Aerospace Doctrine of the United States Air Force is used as the reference for current air power doctrine--the airman's view. Historical examples from World War II through Desert Storm are used to illustrate ideas and

lessons to apply in fighting the next war. The scope includes theater level employment of strategic and tactical air power armed with conventional weapons. Nuclear war is beyond scope.

AIR POWER AND THE PRINCIPLES OF WAR

OBJECTIVE - The airman's view: air power is "not constrained to achieving tactical objectives as a prerequisite to obtaining strategic objectives" and has the unique ability to "pursue tactical, operational, or strategic objectives--or all three at the same time."-7

Possibly true in theory, this view is rarely true on the battlefield. It conflicts with the air power tenet that "defeat of the enemy's aerospace forces is the airman's first priority in warfare."-8 Gaining air superiority has no inherent value in and of itself. It is a tactical objective, a step in a sequence of tactical and operational objectives aimed at facilitating or enabling the accomplishment of strategic objectives. Air superiority is almost always required before air power can fully pursue operational or strategic objectives or, more importantly, before theater level campaign objectives can be pursued. Thus, unless the enemy presents no air threat, air power, like other forms of military power, always faces an approach to achieving strategic objectives which begins with and constantly revisits tactical and operational objectives.

Historically, the major problem with matching airmen and air power to objectives has been the airmen's pursuit of long term strategic objectives while ignoring immediate campaign level

operational objectives or, put another way, the airmen's attempt to use air power directly to accomplish strategic objectives when there is no target tied to strategic objectives at which to aim that air power. U.S. experience in World War II and Vietnam illustrates this lesson.

In the American and British combined bomber offensive of World War II, air power immediately went deep into the heart of Germany for its favorite targets, industry and the will of the people. However, German industry and will were more durable than expected. In spite of the airmen's promises, the bomber did not always get through and when it did the results were questionable. In late 1943, P-51's and P-47's equipped with long range fuel tanks were introduced to escort the bomber. At this point a significant operational objective in support of a theater level campaign began to be accomplished--the destruction of German air power--not by bombing ball bearing, airplane or synthetic rubber factories, but by blowing German air out of the sky and killing its trained and experienced pilots and by using tactical and strategic air to destroy German air on the ground. However, the airmen still refused to focus on campaign level operational objectives. The ground commander was forced to wrest control of air power from the airmen to ensure that air power was properly used in support of immediate campaign objectives associated with Overlord--in essence, isolation of the battlefield and battlefield air interdiction. A similar situation was seen in Desert Storm. Airmen were reluctant to shift their attention from Bagdad and strategic targets to the KTO and battlefield

preparation in support of the ground offensive phase of the campaign.

In Vietnam air power was again asked to keep its promise of direct accomplishment of strategic objectives. Political and military leaders, encouraged by airmen, chose air power not to achieve operational objectives but to aim directly at strategic political objectives. They felt that air power could be "used on a rationally calculated basis to alter the enemy's capability and will to the point where the advantages of terminating the conflict were greater than the advantages of continuing it."-9 The goal was to break the enemy's will and force negotiation not by conquest but by coercion. This goal was not achieved. The targets needed to conform to the airmen's strategic bombing theory did not exist in North Vietnam; they did not exist due to the characteristics of the society and infrastructure of North Vietnam and/or because they were off limits due to political constraints. As General Lemay contended, it is probably true that U.S. airmen could have bombed North Vietnam back to the stone age if not for political constraints. But, that is a moot point as it would not have accomplished strategic political objectives. It only serves to highlight the powerlessness of air power in accomplishing the objective in this situation and the danger of reliance on air power's promise of quick and simple solutions.

OFFENSIVE - The airman's view: air power is "inherently offensive--even when defending, they attack."-10

Although airmen have no concept of offense or defense--they

only attack--they could have a point here. As a principle of war "the offensive" implies: initiative; proacting rather than reacting; controlling the tempo, pace, cadence of the war; controlling the enemy's envelope rather than reacting to his attempts to control yours. Since the U.S. doesn't start wars, we always begin the fight on the backside of the initiative curve. The enemy has it; we don't. Because air power has the potential to stress the enemy across a large area of space and time, air power can be a key element in reaching that important crossover point from initiate to initiator. Desert Storm provides the classic example. As illustrated by the Battle of Britain and Desert Shield, air power can also be a key element in buying time to prepare to seize the initiative. However, the potential trap here is believing that air can always and almost instantly get us out of serious strategically and operationally disadvantageous positions. Air always requires a cooperative enemy. The enemy must be vulnerable (or made to be vulnerable) to air power for air to be effective. Application of air power in quantity and consistency across every level of the enemy is required. And, finally, air can't seize or maintain the initiative by itself. Air can stun and stop enemy initiative but, in effect, applies a one dimensional pressure which must be integrated with action on the ground and sea if offensive initiative is to be gained and maintained.

MASS and MANEUVER - The airman's view: "The speed with which aerospace forces maneuver...allows them to achieve mass faster than surface forces." Air power "does not sacrifice maneuver when

mass is achieved--mass and maneuver can be employed simultaneously" and "the simultaneous employment of mass and maneuver by aerospace forces creates tremendous leverage when applied against surface forces."-11

The airman lumps mass and maneuver together, adds a time and distance dimension--speed--and creates a long lever over the earth-bound. Any force can mass and maneuver. Time is the critical element. Let's examine these principles as they apply to any form of military power and then explore the implications for air power.

Mass--concentration of power at the decisive place and time--is the result of proper application of the principle of economy of force. Maneuver at the theater level--which includes elements of both strategic and tactical mobility--facilitates that concentration of power. Maneuver at the operational level--tactical mobility--facilitates the application of that power. The rate at which that power is concentrated and applied adds the time dimension--speed to the airman. The concept of applying the impact of time--timeliness, quickness, rate of activity, velocity, alacrity--is an under-utilized consideration in warfighting. It's paid much lip service but rarely fully appreciated. The side which has the time advantage or is able to control the use of time--tempo--should never lose. Time should have its own place on the list of principles of war. Mass is important but the time at which it is applied and the rate at which it is applied are much more important.

Although this concept of time as a principle of war goes

well beyond the simple speed at which military hardware and troops can travel, time, without question, is the airman's greatest advantage in the mass and maneuver evolution just described. The airman can maneuver to mass and then maneuver after he masses but the fact is there's not much density or depth (staying power) when he does mass. However, this lack of density and depth may be offset if mass is applied at the right time and/or often enough. Density and depth can be created by repeated application of massed air power at relatively short intervals over a period of time.

Agility is another aspect of air's time advantage within these mass and maneuver principles. Agility can be defined as a combination of the rate at which a force is able to respond to change on the battlefield and the range of actions (options) with which it can respond. A force with a high level of agility can exploit time. Agility gives a force the ability to take advantage of small (in time) windows of opportunity or, conversely, close windows of vulnerability, as the battlefield or theater situation evolves. Clearly, air power is inherently agile. This agility--the ability to do many things quickly and repeatedly over a large area of space and time--can also have the effect of a force multiplier. Although inherent in air power, exploitation of agility will not happen unless it is understood and built into strategy, doctrine and campaign planning. A potential pitfall is locking air power into a rigid, unresponsive, centralized command and control process and/or into a static, scripted campaign plan which does not allow for exploiting this key air power advantage.

Finally, air can add another dimension to mass and maneuver. On the ground, force is maneuvered to create mass (and the associated depth and density) and then maneuvered to achieve a breakthrough against a relatively small part of the enemy force within a relatively small area of the battlefield or theater. Although air must use time to create artificial depth and density, it's force can be applied over a much larger area of the battlefield or theater. It can stress entire enemy systems or even entire enemy forces. Coupled with mass and maneuver by ground and sea forces, this can paralyze an enemy and make him unable to respond. Desert Storm is the classic example.

Economy of Force - The airman's view: "this principle...describes precisely the greatest vulnerability of aerospace power. The misuse of aerospace power can reduce its contribution more than enemy action. Because aerospace power is precious, it must be conserved by caring and competent airmen."-12

The idea that only airmen understand how to use air power surfaces again. Just beneath the surface is the implication that the poor dumb ground commander will use air power against tanks instead of against ball bearing factories and people's wills. Moreover, the notion of conservation of assets implied by the caring airman's view indicates that possibly the airman doesn't fully understand the principle of economy of force.

Economy of force does not connote conservation of power nor does it necessarily imply most efficient use of power. The principle of economy of force implies a distribution of force resulting in a concentration of power (mass, depth, density) in

an operation at one place and time--hopefully the decisive place and time--at the expense of (risk to) operations at other places at the same time. From this perspective, other than air's inherent strategic and tactical mobility advantages--and these are significant as described above in the mass and maneuver section--the application of this principle is the same regardless of the form of military power being employed.

From another perspective, economy of force may be viewed in terms of a tooth-to-tail ratio--the amount of striking force impacting the target as opposed to supporting the strikers. The tail in this case is not logistics. It is air assets used in direct support of strike missions--suppression of enemy air defense systems, tanking, air space management, etc. An average Navy strike is 75% tail. If the data could ever be compiled, it is likely that the first week of Desert Storm air operations would show a similar ratio. In the mind of the airman, there are valid doctrinal and tactical reasons for this. To the non-airman it could portend a small return for a large level of investment and the need for doctrinal recomputation to raise that tooth-to-tail ratio.

UNITY OF COMMAND - The airman's view: "Aerospace forces should be centrally controlled by an airman."-13 Unity of command is "important for all forces, but it is critical to prudent employment of aerospace forces...centralized command and control is the key...momentary misapplication of aerospace forces is much more likely to have immediate strategic consequences than is the

case with surface forces."-14

Misapplication of air power is no more critical than misapplication of any other form of power. In fact, because of air power's inherent agility, it may be less so because air can be much more rapidly refocused if it has been pointed in the wrong direction. However, that's not the issue. The crux of this principle is not centralized command and control. It is unity of effort--coordinated, complementary and integrated use of different forms of military power in pursuit of common objectives. The concepts of efficiency and synergy are implied. The U.S. military has traditionally ignored this principle. Each individual service is placed in the theater or on the battlefield and does what its organizational culture predisposes it to do. In spite of this, we usually win because of overwhelming resource and logistics advantages. In fact, it is within only the past few years that we have been able to understand and develop forces and force structures which have the capability to exploit this principle. Congressional, OSD and CJCS/JCS emphasis on jointness demonstrates our determination to move in that direction.

Historically, even through Desert Storm, air is the greatest offender in this area. Because air power is a clear U.S. comparative advantage, it is absolutely critical that air signs up to the unity of effort principle. The arrogance of the airmen--"we're a special form of military power, not like the rest, and able to win by ourselves"--is not helpful. Air may be able to win battles but it cannot win wars. Moreover, to achieve political objectives in today's world, we must not just win battles or wars. We must win cleanly, quickly and decisively. The

level of violence used must be like a rheostat which is turned up, objectives quickly accomplished, and then turned back down. True unity of effort is required to fight in this manner. Attrition warfare by long term application of resource and logistics advantages will not achieve political objectives in today's world.

OTHER CONCEPTS AND CONSIDERATIONS

The previous section addressed air power doctrine and employment in terms of six of the nine U.S. Joint Chiefs of Staff approved principles of war. In the interest of brevity, the principles of security, surprise, and simplicity, although equally important, were not addressed due to their fundamental nature and intuitive ramifications for air power. This section presents some other concepts and considerations for air power employment.

Technology's Impact - Advanced technology makes air power agile. In the previous section addressing mass and maneuver, agility was defined as: a combination of the rate at which a force is able to respond to change on the battlefield and the range of actions with which it can respond. Agility is measured by response time and options available. Air power's inherent agility can offer the commander a wide range of options in a relatively short time across all levels of warfare from the strategic to the tactical. This inherent agility comes from the technical characteristics, the technology, of air power. This technology has given us a powerful tool. However, it came with a potential pitfall. Because

of our fascination with the technological solution there is a danger of substituting science and technology for strategy, operations and tactics. Science and technology offer more options at each level but will never supersede the requirement for military art in conventional warfare. The technology of air power will not allow us to routinely ignore the rules and survive.

Precision and Lethality - Precision and lethality can allow air power to compensate for what it lacks in terms of mass. The precise strategic bombardment promised by World War II's airmen was not achieved. Average bomb miss distances were in terms of thousands of feet if not miles. The most optimistic post-war estimates claimed that no more than 1 bomb in 30 actually did any damage to a planned target. In Vietnam, the U.S. dropped more than three times the tonnage of World War II.-15 Aside from claims that Linebacker II forced the North Vietnamese to the bargaining table in 1972 (the American Congress had already legislated the U.S. out of Vietnam and the North Vietnamese knew it), the results speak for themselves. In Desert Storm, the airmen's promise of precision--actually hitting targets--finally became a reality. Lethality came with that precision, and air power finally made the impact it had promised since 1920. Airmen hit and destroyed targets which made a difference in the war. By any measure, it was a high point, if not the high point, of Desert Storm.

This ability to find, hit and destroy small, hardened, key node type targets has tremendous potential to affect the design and outcome of a campaign. In many cases, particularly in the initial stages of a campaign, it is not the number of targets killed that is important. Killing the right targets early--a relatively small set of high value targets on the first day of the war--is the key. This was accomplished in Desert Storm with precision guided weapons, primarily laser guided bombs, not with precision aiming of dumb bombs. Dumb bombs, regardless of the accuracy with which they are aimed, will never come close to matching the effectiveness demonstrated by precision guided weapons against point targets in Iraq. The pitfall is that those precision guided weapons, although having some "under the weather" low altitude employment capability, require approximately 10,000 feet of clear air over the target for reasonable chance of success. In fact, a significant number (more than you'll ever see in lessons learned) of Navy and Air Force laser guided bomb missions in Iraq and the KTO were unsuccessful due to weather. A 2,000 foot ceiling (cloud layer) over Iraq would have been Saddam's best defense. If that had been the case and air had been forced to go low, under the weather, to operate in the visual conditions needed for employment of these weapons, effectiveness would have been reduced by at least an order of magnitude and aircraft attrition would have increased by a similar measure. Air would likely have been reduced to high altitude radar bombing through the clouds--in effect, area bombardment. The ground war might have had an entirely different flavor and importance.

The points of this precision and lethality discussion extend from the micro to the macro. The first and most obvious point is that in the right circumstances air power can offer tremendous benefits to campaigning because of its potential for devastating precision and lethality across a wide range of targets. The second point, in the bigger air power picture, is that air power's capabilities and effectiveness--like every capability of every form of military power--are fragile, highly susceptible to the fog of war and the myriad elements of friction which prevent a military machine of any type from running as smoothly in war as it does on paper or in peacetime exercise. Although Clausewitz never saw an airplane, air power plays to the same basic rules as every other form of military power. The third point pertains to the big picture of warfighting. If your basis for success in warfighting is one capability or one form of military power, you will eventually lose.

CONCLUSION

In spite of the delusiveness of his writings, General Douhet was no fool. He was only trying to make a point. He saw air power as a means to break through the hopeless, static trench warfare of World War I--a way to bring movement back to warfare. However, he apparently failed to realize that technical capability alone does not equate to combat power and effectiveness, nor does it equate to the ability to win wars and achieve political objectives. For every new measure of military power offered by technology, there are political, technological and operational countermeasures. Air power is no exception.

By any measure, air power is a key U.S. comparative advantage. Compared from a technical and tactical standpoint to the rest of the world's air power, the U.S. is in a league by itself. American air power has expanded every dimension of our national security strategy. It has provided more options, flexibility and capability at all levels--from the President to the commander on the battlefield. With some justification, air power has become the touchstone of American military might. But the airmen would have us believe that air power can solve all of our problems all of the time and that air power can stand-alone and is above the principles which govern success in employment of all other forms of military power. History has proven that it cannot.

ENDNOTES

1. General Giulio Douhet, quoted in Jean Ware Wilson, "The Air Power Doctrine of General Giulio Douhet," Unpublished Research Paper, Naval Warfare Research Center, Stanford Research Institute, 1960, p. 2.
2. Ibid. p. 7.
3. General Michael J. Dugan, quoted in Harry G. Summers, A Critical Analysis of the Gulf War (New York: Dell, 1992) p. 95.
4. Lt Col Price T. Bingham, "Air Power in Desert Storm and the Need for Doctrinal Change," Airpower Journal, Winter 1991, p. 40.
5. Ibid. p. 35.
6. Arthur G. B. Metcalf, "Strategic Airpower in Conventional Warfare: Some Considerations," Strategic Review, Spring 1991, p. 23.
7. U.S. Air Force Dept., Basic Aerospace Doctrine of the United States Air Force, AFM 1-1 (Washington: 1991), p. 15.
8. Ibid.
9. Barbara W. Tuchman, The March of Folly, New York, Ballantine Books, 1985, p. 288.
10. U.S. Air Force Dept., p. 15.
11. Ibid. p. 16.
12. Ibid.
13. Ibid. p. 8.
14. Ibid. p. 16.
15. Summers, p. 107.