

Document created: 28 February 00

Warden Vs Pape

by

Maj Christopher Bence

PREFACE

The genesis for the topic of this paper comes from the Summer 1997 issue of *Airpower Journal*. Lieutenant General Lawrence P. Farrell Jr., Chief, Headquarters Air Force Plans and Programs, included a list of strategic challenges facing America in the *Strategy Forum Update* section. One of the "provocative questions" he asked to be addressed was, "Is it time for the Air Force to abandon its concept of attacking strategic centers of gravity in order to destroy fielded forces?"

Lt Gen Farrell's question does not solicit specific target sets for airpower's application. Rather, the question seeks to look at where airpower should be focused in order to influence an adversary. Colonel (USAF retired) John Warden III and Robert Pape, the two leading modern-day airpower theorists, debate this very topic.

I would like to extend my sincere thanks and appreciation to Lt Col Wray Johnson and Dr. Harold R. Winton for their patience, criticism, and encouragement throughout this project. Moreover, I want to thank Colonel Phillip S. Meilinger whose wisdom, expertise, and devotion to airpower has greatly influenced my endeavors, especially during our many "airpower" chats at the Naval War College.

As usual, opinions, conclusions, and recommendations expressed or implied within this paper are solely those of the author and do not necessarily represent the views of the School of Advanced Airpower Studies, the United States Air Force, the Department of Defense, or any other US Government Agency.

Since the Wright brothers' historic flight in 1903, man has searched for ways to exploit the potential of the airplane. Airpower theorists have embraced the airplane as a formidable weapon capable of performing a wide variety of missions: from reconnaissance, to protecting troops on the front lines, to striking deep into the enemy's rear area. It is the inherent flexibility of the

airplane that has caused great controversy as to the proper application of airpower. Moreover, as technology changes the dynamics of airpower, so does the theory surrounding its proper application.

Airpower theorists, in their quest for the "Holy Grail" of airpower, have disagreed on how and where airpower must be focused in order to influence an adversary. Currently, two prominent theorists are in the forefront of the airpower debate. Colonel John A. Warden III, recently retired from the US Air Force, and Robert A. Pape, an assistant professor of government at Dartmouth College, have emerged with competing theories of airpower which the military is grappling with today. Warden's theory is based on the premise that the only way to influence an adversary is to affect the leadership or decision-making entity. In contrast, Pape argues that airpower's primary focus should be to coerce an adversary by denying the ability to oppose one's military—in other words, by targeting the enemy's fielded forces.

The purpose of this paper is to examine these two competing airpower theories and argue that Warden and Pape's theories are complementary and must be combined in order to compel an adversary to comply with one's will. First, this article will examine each theorist, highlighting the strengths and weaknesses of his theory. Next, this paper will examine how airpower was applied and the lessons learned in the Gulf War and Bosnia. By doing so, one must conclude that the most effective means of applying airpower is to combine these mutually supporting theories, thereby, achieving the desired military and political end-states.

In his book, *The Air Campaign: Planning for Combat*, Warden established the aim of translating strategic military objectives into theater air campaigns. Warden argues that one cannot build a coherent plan by starting at the lower tactical level. He notes that strategic thinking is different from the traditional way planners have historically approached conflict. One must start at the top by understanding the strategic objectives and the nature of the enemy. With this foundation, one must deductively analyze the situation. It is, therefore, the essence of strategic planning to think deductively; deductive thinking is the power behind good airpower strategists.

With this premise, Warden devised a model that enables planners to analyze an adversary. "If we are going to think strategically, we must think of the enemy as a system comprised of numerous subsystems ... we must focus on the totality of our enemy, then on our objectives, and next on what must happen to the enemy before our objectives become his objectives."¹ Within this construct, Warden relates the end state, *objectives*, to the means, *what must happen to compel the enemy*. By focusing on the "totality" of the adversary, one must possess a good understanding of their composition—the enemy's structure, culture, and geography to name a few. In essence, Warden is performing a critical analysis of the enemy (peeling back their system), searching for where airpower should be focused in order to force the adversary to comply with one's desired end state. Warden's model is described by five concentric circles with leadership as the inner circle and expanding to organic essentials, infrastructure, population, and fielded forces.²

The most critical ring in Warden's model is leadership.³ All organizations, whether a state or military organization, have someone or a body of individuals controlling and directing the process. If one could destroy or neutralize this leadership ring, the entire organization would be incapacitated or decapitated.⁴ The strategic goal, therefore, is to force the "leadership" to make

concessions due to the force applied to itself or the rest of the system. Furthermore, Warden argues that each ring consists of one or more centers of gravity (COG) which may be directly or indirectly tied to the inner most ring, leadership. Hence, even if the leadership ring is not directly vulnerable, the planner must still focus on the leadership's mind when targeting the COGs of the other rings. Thus, by successfully affecting the COGs within the other rings, one strives to produce unbearable psychological pressure upon the leadership forcing them to comply with one's will.⁵ At the root of Warden's theory is the premise that by destroying or neutralizing the adversary's leadership ring, one will induce total physical paralysis of the system, rendering it incapable of opposing one's will. Planners, therefore, must consider the enemy's system as a whole, searching for where strategic airpower can be decisively applied to force an adversary to accept one's will.

Warden's "system of systems" is linked so that if one ring is affected, it will negatively affect the rest of the system. Although Warden assumes a highly industrialized adversary, his concept of viewing an adversary as a system is applicable to any group, to include non-industrialized nations, terrorist organizations, and drug cartels. Therefore, strategists using Warden's framework, especially when faced with limited objectives or political, domestic and/or military constraints, are able to identify and target the critical components that will affect the decision-making entity, thereby imposing one's will upon the adversary. This view of the enemy as a system, however, focuses solely on the physical aspects of an adversary and ignores the social and political interactions of a system.

Warden admits that the moral factor is unpredictable due to differences in human nature.⁶ Thus, Warden justifies ignoring the "intangible" factors by saying that if one can destroy the physical side, all the moral factors combined will not change the outcome. In so doing, Warden makes a flawed assumption that the physical aspects can be completely destroyed. As North Vietnam proved, physical destruction may not guarantee ultimate victory, especially when the morale of an adversary's society is united and domestic morale is divided. Therefore, if one is truly going to analyze an adversary, the "moral" factors, as Clausewitz warns, cannot be ignored.

As described earlier, Warden's theory also posits that the most critical and important "ring" is leadership. Therefore, by eliminating or neutralizing leadership, the rest of the system becomes "useless appendages" incapable of functioning. Not all systems, however, have leadership as the most critical COG. Take the United States for example, our political and military organizational structure is well defined and redundant. Commander's intent allows, in fact requires, execution of operations without direct control of one's superior. Further, leadership may decide one thing and the population another—what matters most may actually be what society decides, thus becoming the true strategic COG. Proven by the Vietnam War, American society was the COG targeted by the North Vietnamese, which demanded and ultimately forced the withdrawal of US troops.

All this being said, Warden's theory does provide an excellent starting point in evaluating an adversary. Critical analysis, however, must also include the "intangibles" when determining where airpower's application will have decisive results. Furthermore, leadership must be a primary focus. After all, who decides the winner—the victor or the vanquished? The vanquished is the party who rises and says "enough" or the conflict is not worth continuing. Therefore,

compelling the decision-making entity to comply with one's will must be a primary focus of airpower.

In sharp contrast to Warden's theory, Pape focuses airpower on the enemy's military forces. Pape recognizes, as does Warden, the ultimate objective of any military action is to force the enemy to comply with one's will and that airpower's flexibility makes it an excellent tool for achieving military objectives. But here the two theories depart from one another. Pape argues that the only way to achieve victory and compel an adversary is by "military coercion" through theater air attacks focused at the operational level of war, not through strategic attack.

Pape contends that, "almost all military missions ... must coerce to succeed."⁷ Unlike deterrence, which aims to maintain the status quo, coercion theory seeks to change an adversary's actions by manipulating costs and benefits. As such, Pape defines three types of coercive air strategies: punishment which targets industry and infrastructure in order to inflict pain and suffering on civilians so as to spur revolt; decapitation which targets leadership and communication facilities in order to paralyze the adversary; and denial, which targets military forces.⁸ In exploiting the adversary, Pape argues that airpower should be focused at destroying fielded forces, thereby, "denying" an adversary the capability of achieving military or political objectives. In doing so, Pape dismisses the utility of "strategic attack" by arguing, "the critical element of air power is theater attack, not strategic bombardment."⁹

Pape points out that denial theory, by focusing on fielded forces, "weakens [an adversary] to the point where friendly ground forces can seize disputed territories without suffering unacceptable losses."¹⁰ Within this construct, Pape defines territory as the ultimate goal in conflicts. Moreover, Pape espouses the "Ground Power School's" argument that ground forces are the only mechanism that can take and hold territory. Therefore, airpower's flexibility and lethality must be used to "do most of the work, leaving friendly ground forces to mop up [the enemy]."¹¹ As such, Pape strives to minimize casualties normally associated with ground campaigns through airpower. Denial theory's focus, therefore, is to exploit the vulnerabilities of the adversary's fielded forces. In doing so, Pape aims to reduce the risks to one's own ground forces while making the cost to continue so unbearable that the enemy concedes their military and political objectives.

Military coercion, as a primary instrument of response, is a legitimate issue facing the military, especially in today's unpredictable world. However, focusing efforts solely on an adversary's fielded forces ignores the "fog and friction" of international politics and is one-dimensional at best. True, if one destroys the entire fielded force of a nation in conflict, the desired end state may likely be achieved. However, this type of "ideal war" is far from reality. Focusing airpower against fielded forces yields quantifiable results that can be easily measured, especially when compared with trying to measure strategic effectiveness. However, this focus alone will limit a nation's ability to achieve its strategic objectives. Furthermore, one may be hard pressed to apply Pape's denial theory in a military operation other than war, especially when his assumption that territory will be the basis for conflict is not applicable. Moreover, how does one apply this theory to an adversary or crisis where large fielded forces are not involved?

Although he states that denial theory applies to irregular forces as well, Pape assumes a conventional force-on-force conflict.¹² He argues that, in order for coercion theory to be successful, one must remove (separate) the guerrillas from the population.¹³ However, by his own acknowledgment, "guerrillas should be largely immune to coercion; coercers should expect to pay the full costs of military success to extract political concessions."¹⁴ Nations, however, cannot afford to 'pay the full price' associated with a long, protracted, and potentially bloody operations associated with applying Pape's theory in these situations.

Furthermore, Pape argues that denial is the more effective form of coercion than punishment or decapitation. But Pape also admits that denial strategy is subject to three limitations.¹⁵ First, concessions can only be obtained over specific territory denied to the opponent. Second, military pressure must be continually applied until a settlement has been reached. Finally, denial is expensive because it requires occupation of the disputed territory by ground forces. These limitations contradict the very nature of today's societal demands for quick, cheap, and bloodless military operations, as well as the requirement to reduce the risks to ground forces.

Finally, one must challenge Pape's dictum, "strategic bombing does not matter [and] is not likely to matter in the future."¹⁶ Pape is essentially calling for the United States to adopt a force-on-force strategy of attrition. True, airpower may "prepare the battlefield" for ground forces, but the only hope this strategy has to avoid attrition warfare is that, as soon as the US flag is waived, the adversary will give up and go home. If this should fail, the United States would be committed to a protracted air and ground war at considerable expense and loss of life.

Having analyzed Warden and Pape's airpower theories, one should realize neither theory alone exemplifies the "Holy Grail" of airpower, but combined, represents an airpower theory focused to achieve decisive results. Every situation is comprised of numerous factors, each interacting in different ways. By focusing airpower simultaneously on leadership and the fielded forces of an adversary, strategists influence both the decision-making entity and their basis of power, thereby forcing the adversary to comply with one's will. Airpower's two most recent tests, the Gulf War and Bosnia, represents both ends of the conflict spectrum, war to military operations other than war (MOOTW). In order to evaluate this conclusion, one must examine how airpower was applied in both of these scenarios.

The events of early August 1990 presented Warden an excellent opportunity—Iraq's invasion of Kuwait set the stage for Warden to apply his airpower theory in an actual crisis. As the Director of the Checkmate Division of the Air Staff, Warden's staff was the lead planning unit for the air campaign in the Gulf War. Operating from President Bush's four national-strategic objectives, Warden developed five theater-strategic objectives for the air campaign.¹⁷ From these objectives, a four-phase air campaign was developed utilizing Warden's 5-ring model.

Phase I, the strategic air campaign, was designed to seize air supremacy and strike a wide range of strategic COGs within Iraq. Warden's goal was to apply shock and paralysis, thereby creating the conditions for victory without a ground campaign.¹⁸ Phase II started the transition to the operational level by striking Iraq's air defense network in Kuwait. Phase III, using Warden's system of systems model, shifted the primary focus to Iraqi forces in Kuwait. In doing so, airpower was to "prepare the battlefield" for the ground campaign. Finally, phase IV was the air

support for the ground campaign. The results of the air campaign are well known. General Schwarzkopf executed phase I, II, and III simultaneously with emphasis on strategic targets gradually shifting to operational targets as the air campaign evolved. In effect, both Warden and Pape's theories were executed simultaneously, forcing Iraq to comply with coalition objectives.

In contrast, suppose one applied only Pape's theory to the Gulf War. Airpower would have been combined with ground forces to eject Iraq from Kuwait. This campaign would have played into Saddam Hussein's stated objective of dragging US forces into a war of attrition against Iraq's strength—her battle hardened ground forces. Even if victorious, a high price would have been paid with the numerous casualties associated with attrition warfare. Moreover, by not striking strategically, Iraq's military might, especially nuclear, biological, and chemical (NBC) weapons and production facilities, would still represent a formidable threat to the region. Accordingly, was Warden's strategic air campaign the sole reason Saddam Hussein agreed to UN sanctions and withdrew from Kuwait? This debate continues today, but, although the strategic air campaign paralyzed Iraqi leadership, Saddam Hussein's forces showed no signs of retreat. Therefore, one must conclude that the combination of the strategic air attacks, focused on leadership, and the theater air attacks on Iraq's fielded forces produced the desired end state—Iraqi withdrawal from Kuwait.

Bosnia presented several challenges for airpower's application in MOOTW. Constrained by the need to limit collateral damage to a civilian population caught in the middle of an ethnic war, the United States undertook its largest "non-war" military operation and NATO's first-ever military operation.¹⁹ With airpower limited to tactical applications, and with hostilities increasing and negotiations stalled, NATO needed a way to force the Serbs to comply with UN resolutions and negotiate a peace.

Airpower's flexibility was first demonstrated in Operation Provide Promise, the delivery of humanitarian aid and supplies to Bosnia. Used as a deterrent, strategists used Provide Promise to restore peace and stability in former Yugoslavia. One month after the start of Provide Promise, due to increasing hostilities, Operation Deny Flight sought to protect UN forces delivering aid. Attempting to stop Serbian atrocities, Deny Flight banned all unauthorized flights over the Republic of Bosnia and Herzegovina.²⁰ Restricted by rules of engagement (ROE) requiring pilots to "physically witness" acts of hostilities before engaging, Deny Flight proved ineffective and very difficult to enforce, especially against Serbian helicopters. The Serbs quickly took advantage of the ROE and, by July 1996, there had been over 5,700 reported violations.²¹ Thus, both Provide Promise and Deny Flight proved unsuccessful because neither focused airpower simultaneously on the Serbian decision-making entity nor their power base, the Serbian military forces.

Borrowing lessons from the Gulf War, Operation Deliberate Force was designed to capitalize upon airpower's speed, flexibility, and precision. Strategically and operationally focused, Deliberate Force sought to force the Serbian leadership to lift the siege of Sarajevo and negotiate for peace. On August 30, 1995, two days after the deadly mortar attack on the crowded Mrkale market in Sarajevo, NATO forces responded with air strikes against 56 pre-identified targets.²² Surgically hitting command and control facilities, lines of communication, weapon storage areas, while minimizing collateral damage, NATO forces simultaneously attacked Serbian strategic and

operational COGs. On September 14, two weeks after initiating Deliberate Force, NATO halted the air strikes when the Serbian leadership agreed to UN demands. According to Secretary of Defense William Perry, "Deliberate Force was the absolutely crucial step in bringing the warring parties to the negotiating tables at Dayton, leading to the peace agreement."²³

Deliberate Force demonstrated airpower's effectiveness in operations that are limited by political, domestic, or military constraints. Airpower cannot unilaterally win, but it can be a decisive element if properly applied. Thus, by focusing airpower simultaneously on fielded forces and leadership, one is best able to compel an adversary in order to achieve the desired end state.

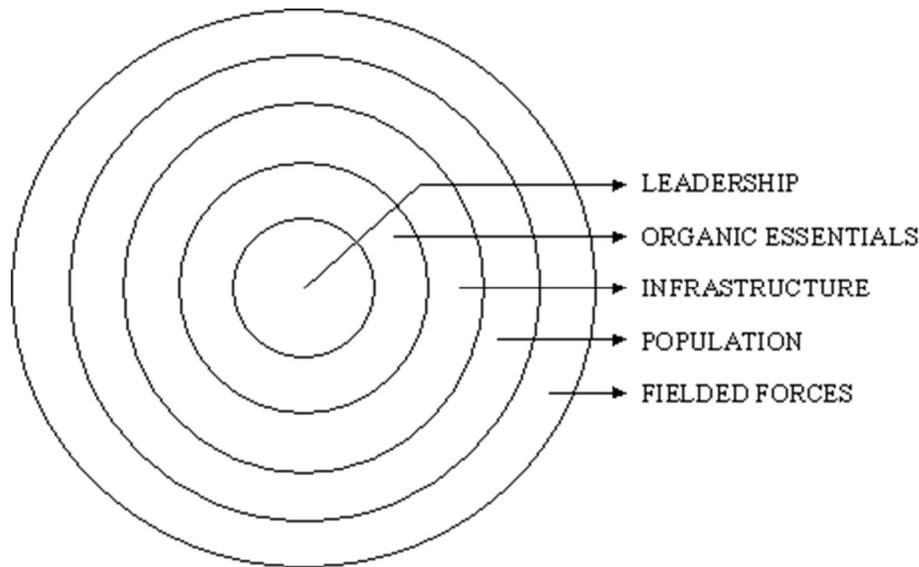
Recognizing that it is the decision-making entity that ultimately determines when to say enough, Warden's theory focuses airpower strategically. After all, who determines the winner, the victor or the vanquished? The vanquished determines when neither the means nor capabilities exist for resistance and complies with the victor's will. Warden, though, assumes the adversary will make a rational decision and ignores the moral factors of war. Warden's 5-ring model, however, provides airpower strategists the foundation to analyze an adversary and determine where airpower should be focused. Likewise, Pape's theory seeks to demolish the military forces of an adversary. However, by focusing solely on fielded forces, Pape's one-dimensional theory of denial promises a long war of attrition. His theory ignores the inherent flexibility of airpower to hit strategic targets simultaneously with tactical and operational targets. Therefore, in order to achieve the political and military end states, airpower must be simultaneously focused on the leadership and the fielded forces of an adversary.

The Gulf War and Bosnia demonstrated this aspect of airpower's decisiveness. Focusing at the strategic level, while simultaneously attacking operational and tactical COGs, the 43-day air campaign paralyzed Iraq. Applying Warden's model, airpower blinded Saddam Hussein, rendered his command and control ineffective, destroyed his war production capability (especially NBC), and destroyed his forces in the field. Likewise, in Bosnia, airpower's application during Deliberate Force compelled the Serbian leadership to sue for peace. Airpower's demonstrated decisiveness has made it "America's" choice to overwhelm an adversary while minimizing risk—especially risk to American lives. General Omar Bradley, the first Chairman of the Joint Chiefs of Staff, said over 40 years ago, "airpower has become predominate, both as a deterrent to war and—in the eventuality of war—as the devastating force to destroy an enemy's potential and fatally undermine his will to wage war."²⁴ As military professionals, it is incumbent upon strategists to ensure airpower is properly applied and focused to ensure the United States is thoroughly prepared for the twenty-first century.

NOTES

1. John A. Warden III, "The Enemy as a System," *Airpower Journal*, Spring 1995, 42.

2.



Warden's 5-Ring Model

- Leadership – Most critical ring comprised of decision making entities, command and control nodes etc.
- Organic Essentials – Second most critical ring comprised of those facilities or processes a state requires to survive (raw materials, power generation facilities, etc.).
- Infrastructure – Third most critical ring comprised of the enemy's transportation system (rail lines, bridges, airfields, ports, etc.).
- Population – Fourth most critical ring. Very difficult to target (morally, internationally) directly. Best approached indirectly as North Vietnam did to the United States.
- Fieldded Forces – Least critical and most hardened by design. Campaigns focusing on this ring tend to be the longest and most bloody.

3. Ibid., 49.

4. Warden used the human body as an analogy with leadership representing the brain. Hence, by removing or neutralizing leadership, one is "decapitating" the enemy.

5. David S. Fadok, "John Boyd and John Warden: Airpower's quest for Strategic Paralysis," in The Paths of Heaven: The Evolution of Airpower Theory ed. Phillip S. Meilinger (Air University Press, 1997), 373.

6. Warden, 43.

7. Robert A. Pape, "The Limits of Precision-Guided Air Power," Security Studies, Winter 1997/98, 96.

8. Ibid., 97.

9. Ibid., 95.

10. Pape, 97. Also see Robert A Pape, Bombing to Win: Air Power and Coercion in War (New York: Cornell University Press 1996).

11. Pape, The Limits of Precision-Guided Air Power, 110.

12. Ibid., 101.

13. Pape, Bombing to Win., 31.

14. Ibid., 74.

15. Ibid., 31-32.

16. Pape, Limits of Precision-Guided Air Power, 98-101.

17. 1) Gain and maintain air supremacy; 2) Isolate and incapacitate the Iraqi regime; 3) Destroy Iraq's nuclear, chemical, and biological (NBC) warfare capability; 4) Eliminate Iraq's offensive military capability by destroying major portions of key military production, infrastructure, and power projection capabilities; 5) Render the Iraqi army units in Kuwait ineffective. See Jerome V. Martin, Victory from Above, (Air University Press, 1994), 71.

18. Martin, 57.

19. Dean Simmons, "Air Operations Over Bosnia," Proceedings, May 1997, 58

20 Ibid., 59

21. Michael O. Beale, Bombs over Bosnia: The Role of Airpower in Bosnia-Herzegovina, (Air University Press, 1997), 72

22. Ibid.

23. Ibid., 32.

24. Fogleman, "Advantage USA: Air Power and Asymmetric War Strategy," Air Power History, Summer 1996, 13.

Disclaimer

The conclusions and opinions expressed in this document are those of the author cultivated in the freedom of expression, academic environment of Air University. They do not reflect the official position of the U.S. Government, Department of Defense, the United States Air Force or the Air University.

This article has undergone security and policy content review and has been approved for public release IAW AFI 35-101.
