

ABSTRACT
Major Gian P. Gentile

Investigating Oneself: The United States Air Force and its
Evaluations of Air Power in War and Conflict; by Major Gian P. Gentile,
USA, 54 pages.

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To assess the effectiveness of the American strategic bombing effort in World War II, the Army Air Force (AAF) established the civilian led and controlled United States Strategic Bombing Survey (USSBS). The USSBS produced hundreds of reports that the AAF (and the Navy) used to justify their respective positions in the postwar debates over unification and strategy. Just three years after the 1947 unification of the armed services the newly formed independent Air Force found itself applying air power in Korea. Once the Korean War ended, however, the Air Force chose not to conduct an extensive evaluation along the lines of the World War II USSBS. This lack of interest in conducting an extensive evaluation of the effectiveness of air power in limited war continued when the Air Force did not assess itself by conducting an independent, civilian led evaluation of the Vietnam War. It was not until shortly after the Gulf War in 1991 when the Air Force conducted another intensive evaluation—the Gulf War Air Power Survey (GWAPS)—like the Air Force's World War II predecessor, the USSBS.

In an important way, however, the USSBS was very different from the GWAPS. American airmen played a strong role in establishing the USSBS's organizational structure, in shaping the questions that it would answer, and airmen influenced the conclusions about strategic bombing in World War II that the USSBS reached. The airmen were thus pulling the Survey along in a direction that fit comfortably with the AAF's conceptual approach to air power and its post war interests in establishing an independent air arm. The GWAPS was different. Instead of being pulled in a certain direction by the airmen, GWAPS analysts guided the airmen (albeit at times with heels dragging) toward the GWAPS understanding of the use of air power in the Gulf War.

Analyzing this shift from the USSBS to the GWAPS sheds light on the changing nature of the subtle interplay of advocacy and assessment between the air force and its civilian-led studies of major bombing operations. Exploring the shift can also illuminate the culture of military institutions and how they arrive at "lessons learned" from military operations and apply them to future defense policy, organization, and operations.

**Investigating Oneself: The United States Air Force and its
Evaluations of Air Power in War and Conflict**

**A MONOGRAPH
BY
Major Gian P. Gentile
United States Army**



**SCHOOL OF ADVANCED MILITARY STUDIES
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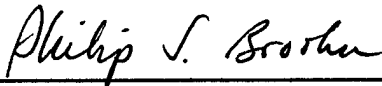
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[According to Pentagon gossip] it appears we are in the grip of historians.

Eliot Cohen, 1992

I--INTRODUCTION

In the immediate months following the end of World War I Colonel Edgar Gorrell, a member of the air service of the American Army Expeditionary Forces, was compiling material on the air service's operations during the Great War. In the course of his work, Colonel Gorrell had come to realize that he needed a study on the effects of aerial bombing on Germany. For such a study he turned to the Assistant Chief of Staff for Intelligence, General Dennis E. Nolan. Like Colonel Gorrell, the general understood that the main reason for the study on effectiveness was to "secure as complete and reliable information as possible upon which the Air Service may base its future bombing plans." The World War I bombing survey that was eventually produced concluded that "bombardment aviation" should be the central mission of an "entire air force."¹ The Survey anticipated the central importance that American airmen would place on the concept of strategic bombing as they developed a theory of air power in the 1930s, and, in addition, the need for subsequent "Surveys" to evaluate the effectiveness of strategic bombing campaigns.

Proving the effectiveness of the application of air power in war has been an important goal for the United States Air Force from World War I to the present. However, from the time that the Colonel Gorell conducted his World War I bombing Survey up through at least the Persian Gulf War in 1991, the American Air Force has not been consistent in conducting extensive evaluations of its use of air power in major wars and conflicts.

To assess the effectiveness of the American strategic bombing effort in World War II, the Army Air Force (AAF) established the civilian led and controlled United States Strategic Bombing Survey (USSBS). The USSBS produced hundreds of reports that the AAF (and the Navy) used to justify their respective positions in the postwar debates over unification and strategy. Just three years after the 1947 unification of the armed services the newly formed independent Air Force found itself applying air power in Korea. Once the Korean War ended, however, the Air Force chose not to conduct an extensive evaluation along the lines of the World War II USSBS. This lack of interest in conducting an extensive evaluation of the effectiveness of air power in limited war continued when the Air Force did not assess itself by an independent, civilian led evaluation of the Vietnam War. It was not until shortly after the Gulf War in 1991 when the Air Force conducted another sweeping evaluation—the Gulf War Air Power Survey (GWAPS)—like the Air Force’s World War II predecessor, the USSBS.²

In an important way, however, the USSBS was very different from the GWAPS. American airmen played a strong role in establishing the USSBS’s organizational structure, in shaping the questions that it would answer, and airmen influenced the conclusions about strategic bombing in World War II that the USSBS reached. The airmen were thus pulling the Survey along in a direction that fit comfortably with the AAF’s conceptual approach to air power and its post war interests in establishing an independent air arm. The GWAPS was different. Instead of being pulled in a certain direction by the airmen, GWAPS analysts guided the airmen (albeit at times with heels dragging) toward the GWAPS understanding of the use of air power in the Gulf War.

Analyzing this shift from the USSBS to the GWAPS is important because it sheds

light on the changing nature of the subtle interplay of advocacy and assessment between the air force and its civilian-led studies of major bombing operations. Exploring the shift can also illuminate the culture of military institutions and how they arrive at "lessons learned" from military operations and apply them to future defense policy, organization, and operations.

As an explanatory tool, the tenets of air power theory can be used to demonstrate and evaluate the shift in Air Force assessments of itself from the World War II USSBS, through the very limited assessments done during the Korean and Vietnam Wars, and concluding with the GWAPS. Although some analysts question whether or not there has been a coherent American air power theory, one can take the long view and discern and extant theory over time that has received a general consensus among airmen and defense pundits.³ Four fundamental tenets constitute air power theory: 1) The unequivocal need for an independent air arm that can conduct independent operations coequal with the army and navy; 2) The primary target for air power should be the war-making capacity and military capability of the enemy; 3) Civilian morale is a fragile target but should not be attacked directly; 4) The air plane, piloted by man, is the technological basis for air power. These tenets of air power theory underpin this essay's analysis of the American Air Force's evaluations of air power since World War II.

II--THE WORLD WAR II UNITED STATES STRATEGIC BOMBING SURVEY AND THE FUTURE OF THE AIR FORCE

Secretary of War Henry L. Stimson officially established the USSBS in November 1944 to analyze the effects of strategic air power in the European Theater. Later,

President Harry S. Truman expanded the Survey's scope to study all types of aerial war against Japan, including the effects of the atomic bombing of Hiroshima and Nagasaki.⁴ In an attempt to keep the Survey's findings impartial, prominent civilians, instead of military officers, were appointed as directors of the Survey's divisions.

The Survey was made up of over 1000 civilian and military specialists, and support personnel. Specialists were placed, according to their expertise, into analytical Divisions; e.g., Military Analysis, Morale, Physical Damage, Transportation, Economic Effects, etc. Each of the Divisions sent out small field teams to collect data on strategic bombing attacks on targets in France and Germany, and later Japan. The Survey also conducted extensive interrogations of key Japanese and German war leaders. The Divisions used the data collected by field teams to write reports reflecting each Division's overall analysis. The Chairman's office then, theoretically, based its *Summary Reports* on the analysis provided by the individual Division reports. The Survey's key directors were Franklin D'Olier (Chairman), Henry Alexander (Vice-Chairman), George Ball, Paul Nitze, Theodore Wright, Fred Searls, and John Kenneth Galbraith.

Because a presidential directive established the Survey and gave it an "official" status, and because the Survey was headed by civilians, ostensibly making it "impartial," the Survey reports have taken on the aura of a document that contains the "truth" about strategic bombing in World War II. In fact, the Survey is a secondary source that interprets the past, but analysts and pundits who have used the Survey in their postwar writings have instead tended to treat it as a primary source. In criticizing such views, retired Air Force General Haywood Hansell once cynically compared the Strategic Bombing Survey to the "Bible."⁵ Yet as Clarence Darrow forced William Jennings Bryan

to acknowledge in the famous 1925 Scopes trial, the Bible was only one of many truths that purported to explain the origins of man. And the Survey contains the "truth" about the effects of strategic bombing against Germany and Japan as the writers of its reports discerned that "truth" through their own attitudes and biases.

The first, and only, book-length study of the Survey, David MacIsaacs's *Strategic Bombing in World War II: The Story of the United States Strategic Bombing Survey*, did not appear until 1976.⁶ It was ironic that such a study was so long in coming considering the influence the Survey was having on postwar scholarship and journalism. MacIsaac accepts the official premise that the Survey conducted an "objective" and "impartial" study of strategic bombing because civilians headed it. Many analysts in postwar writings, therefore, have used MacIsaac's book as a scholarly confirmation of the Survey's purported "impartiality," thereby imposing a sense of "biblical truth" on the Survey's conclusions concerning strategic air power in World War II.

Although Secretary of War Stimson officially established the USSBS in November 1944, its intellectual roots go back much further. During the inter-war years a number of air officers at the Air Corps Tactical School (ACTS) had begun to develop a certain conception of air power that sought to attack an enemy nation's war making capacity. American airmen believed that since modern, industrialized nations were intricately connected by an "industrial web," attacking key target systems within that web would ultimately lead to the break down of the enemy population's will to resist. An instructor at ACTS in 1939 noted, however, that the "essence" of strategy in modern war was to select the correct "vital links" of an enemy's industrial web.⁷

But selecting the "vital links" posed a fundamental problem for American airmen.

Compared to the ground or naval officer, target selection and evaluation was a much more complicated and ambiguous task. Airmen were generally not attacking targets similar to their own men and equipment.⁸ Airmen could not quickly determine success or failure in terms of physical destruction because of the short amount of time over the target and the distance separating the airplane from the ground. Evaluating the effects of strategic bombing on certain industrial targets became especially difficult because evaluation required more than just assessing physical damage; it required an analysis of the entire enemy industrial system. And the overall effect of strategic bombing on enemy war-making capacity was never immediately apparent, sometimes taking an extended period of time to manifest itself. Hence the uncertainties of target selection and evaluation created a need for civilian experts to evaluate the effectiveness of strategic bombing.

Air officers also realized that evaluations conducted by civilian experts would become the evidentiary base for establishing the efficacy of strategic bombing and hopefully for the airmen an independent post-war air force. General Henry H. Arnold, air power pioneer during the inter-war years and AAF Commanding General during World War II, noted that the Strategic Bombing Survey's evaluation of American air power in the European theater would "prove to be the foundation of our future national policy on the employment of air power."⁹ Civilian experts would come to play a crucial role in formulating air strategy and their evaluations would assist the airmen in their post-war crusade for an independent air force.

One of the early civilian organizations to assist the airmen was the Committee of Historians (COH). General Arnold formed the Committee in the Fall of 1943 to determine whether or not Germany "could be bombed out of the war during the first three

months of 1944.”¹⁰ What made the Committee significant were the historians who served on it. They were among America’s leading historians in the fields of American and European history: Carl L. Becker, professor of European history at Cornell University; Henry S. Commager, professor of American and European history at Columbia University; Edward Mead Earle, member of the COA, special AAF advisor, and scholar at The Institute for Advanced Studies at Princeton University; Louis Gottschalk and Bernadotte Schmitt, professors of history at the University of Chicago; and Dumas Malone of Harvard University.¹¹

After about three months of examining various types of evidence available to them in Washington D.C. on the German nation and war economy, the historians submitted their report to General Arnold. Although he forwarded the report to President Franklin Roosevelt, General Arnold and a number of other air officers and civilian experts were not satisfied with it. The report, to the dismay of airmen, argued that Germany “could not be bombed out of the war” by early 1944. The Historians also focused their analysis on the effects of strategic bombing on the German individual and the collective morale of the German people. This approach caused tension between the historians and airmen because the latter’s theory of air power called for strategic bombers to attack the industrial web of the enemy nation, not morale directly. When the historians submitted a report that suggested the most lucrative target for strategic bombers was enemy morale and not war making capacity, airmen naturally balked at it. Major General Laurence Kuter, the AAF’s Assistant Chief of Staff for Plans, shrilly commented in December 1943 that what General Arnold received was “a cold, factual, unimaginative report by professional historians.”¹²

General Arnold and other air officers learned from the frustration caused by the written word of the Committee of Historians. When the AAF began to fill the ranks of the USSBS in late 1944 it would do so not with historians like the Committee's Carl Becker but with technical experts, industrialists and economists. Those types of civilian experts would be better able to use scientific "calipers" instead of historical analysis to grasp the imponderables of strategic bombing, take the imponderables apart, and discern from them cause and effect.

Establishing the facts that proved the effectiveness of American air power in World War II laid the foundation for American airmen's claims for a postwar independent air force. Senior AAF leaders understood the importance of proving the efficacy of air power through a civilian-led, scientific evaluation of the American strategic bombing effort against Germany. Civilian experts were able to tackle the complex problems of strategic target analysis that the airmen were unable to grasp while at the same time provide an aura of objectivity in their evaluation. The conclusions brought out in an evaluation of such importance needed to vindicate, not discredit, the use of American strategic air power in World War II, if the airmen were to use it to justify a postwar policy that embraced an independent air force.

AAF officers thus shaped the questions that the Survey answered and constructed an organizational framework that reflected the American strategic bombing emphasis on attacking national economic structures. By the time Survey directors like lawyer George Ball, financier Paul Nitze, and economist John Kenneth Galbraith began their evaluation in early 1945, the AAF had already established the parameters for an evaluation of strategic bombing. Those parameters fundamentally shaped the conclusions that the

Strategic Bombing Survey reached in its evaluation of the effectiveness of strategic bombing against Germany (and later, Japan). A truly "impartial" and "unbiased" report, even though civilians headed it, was never really a possibility.

The USSBS's organizational structure and analytical approach reflected the tenet of air power theory that sought to attack an enemy nation's war making capacity, and, indirectly, the morale of its people. The Survey was organized into six divisions: Chairman's Office and Secretariat; Overall Economic Effects; Physical Damage; Equipment and Utilities; Military Analysis; Morale; Civil Defense; Aircraft; Area Studies; and Transportation.¹³ Although morale was one of the analytical divisions, the Survey approached the subject of enemy morale not as a decisive element in warfare but only in the way lowered morale affected the German's ability to be a productive worker. Moreover, George Ball's Area Studies Division argued that the British fire bombings of German cities were not decisive in lowering productive capacity. The USSBS Morale Division's published report concluded that "strategic bombing [American or British] did not affect the behavior--or the capacity--of the German people to support the war effort."¹⁴

By the Summer of 1945, European Survey analysts like George Ball, Paul Nitze, and John Kenneth Galbraith were completing their final reports on the effects of strategic bombing against Germany. The published European Survey reports supported three overarching conclusions: First, the German economy was not efficiently run, it never achieved its full war potential; Second, attacks mainly by the British on urban areas were not effective in seriously reducing or breaking German war production; Finally, the AAF achieved its most decisive results by attacking German transportation, and should have

devoted a greater effort to bombing German electric power. The Chairman's *Summary Report* went so far as to say that "Allied air power was decisive in the war in Western Europe. Hindsight inevitably suggests that [air power] might have been employed differently or better in some respects. Nevertheless, it was decisive."¹⁵

Although senior AAF leaders did not make official comments on the European Survey's published reports when they began to appear in the Fall of 1945, the reports did confirm for the airmen the soundness of the American conceptual approach to strategic bombing.¹⁶ This was just what the airmen had intended for the Survey to do when they built its organizational structure, shaped the questions that it asked, and imbued Survey analysts with a conceptual framework that ensured a favorable rendering of the American strategic bombing campaign against Germany.

As the European Survey analysts were completing their final reports in the Summer of 1945, some of them were also preparing to continue their work in the Pacific. On 15 August 1945, just six days after the United States dropped its second atomic bomb on Nagasaki, Japan, President Truman issued a formal request for the Survey to evaluate the effects of strategic bombing against the Japanese home islands.¹⁷ The first Survey analysts entered Japan in October, completed the fieldwork of their investigation, and were headed back to the United States by late December 1945.

The Pacific phase of the Strategic Bombing Survey was different, and, more complicated, than its European evaluation of strategic air power. When conducting their evaluation in Europe, Survey analysts followed closely behind the advancing Allied armies into Germany. Many European Survey conclusions about the effects of strategic bombing were shaped while the war was still being fought. In the Pacific, in contrast, the

Survey's entire evaluation was conducted after the war had ended. President Truman further complicated matters for the Survey when he instructed it to evaluate "all types of air attack" against Japan and to submit the reports directly to the Secretary of War and the Secretary of the Navy.¹⁸ In Europe the Survey was fundamentally an AAF inspired evaluation, with the published reports only going to the Secretary of War. By requiring the Survey to evaluate not only the Army Air Forces use of air power against Japan, but also the Navy's, President Truman opened the door for an intense inter-service rivalry between the AAF's representative on the Survey, General Orville Anderson, and the Navy's Rear Admiral Ralph Ofstie. It was a rivalry fueled by the postwar interests over budgets and defense policy of the Navy and the AAF, and it mentally tired out the Survey's vice-chairman, Paul Nitze, when he wrote the Pacific Survey's *Summary Report*.

Both General Anderson and Admiral Ofstie took direct action in trying to shape Survey conclusions that would look favorably on their respective service's role in "winning the war" against Japan. The *Summary Report*, for example, written primarily by Paul Nitze, went through at least five revisions from January to June 1946. Even though the Navy's Admiral Ofstie tried to influence the conclusions that Nitze was drawing about the use of air power against Japan, the published report ended up strongly favoring the AAF. In a striking paragraph about ending the war with Japan, the *Summary Report* argued that Japan would have surrendered "certainly by 31 December 1945 and in all probability by 1 November 1945 even if the atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion had been planned or contemplated." Moreover, the report strongly implied that it was the AAF's conventional

strategic bombing of the Japanese home islands that forced Japan to surrender unconditionally.¹⁹

The Survey's chairman, Franklin D'Olier, was probably the most biased Survey member toward the interests of the Air Force. Demonstrating his bias and air power parochialism, D'Olier allowed General Anderson's report, *Air Campaigns of the Pacific War*, to be published even when Survey Director Paul Nitze and Admiral Ofstie objected due to the report's bombastic nature. The report concluded that air power "*dominated*" all aspects of the Pacific War and that the United States must accept the fact that air power would be the "dominant" military force in future wars.²⁰

Franklin D'Olier and General Orvil Anderson were partial to having the postwar defense establishment built around air power and an independent air force. D'Olier agreed with Harvard law professor and erstwhile AAF civilian expert W. Barton Leach, that the Survey was the most "persuasive" argument made yet "of the national requirement for air power."²¹ D'Olier also understood the influence the Survey was having, and would continue to have, on the reorganization of the defense establishment. In late July 1947 he boasted to Paul Nitze how Secretary of War Patterson told him of the great importance the Survey reports had proven to be with the unification of the armed services. "He [Patterson] said that repeatedly after many hearings our Report had been mentioned, with particular reference to our insistence upon unification."²² The Pacific Survey's *Summary Report* call for unification of the armed services included also a call for a separate "third establishment" which became, as a result of the National Security Act of 1947, the United States Air Force.²³

The embodiment of the newly established, independent American Air Force after 1947

was the theory and practice of strategic air power in World War II as manifested in the USSBS reports. The USSBS confirmed in the minds of airmen the correctness of the use of air power at the strategic level of war. The USSBS, however, did not direct any of its analysis toward the operational level of war or operational art. In the years following the end of World War II the Air Force would find itself applying air power in the age of limited wars, where, arguably, an understanding of the operational level of war was crucial. Unfortunately, the USSBS did not provide airmen with help in that regard, and it would affect their ability to operate effectively in wars where there were limits placed on the use of air power.

II—LIMITED WAR, VERY LIMITED EVALUATIONS: KOREA AND VIETNAM

The reports of the USSBS helped the Air Force in their fight for independence and provided support to both the Air Force and the Navy in the fierce interservice battles over defense budgets in 1949. In a series of congressional hearings in the Summer and Fall of 1949 the Air Force and the Navy fought a parochial battle over what each believed to be the proper orientation of defense policy and spending. Of course, for naval officers, defense spending should emphasize the role of the Navy as America's first line of defense. Airmen, conversely, argued that the recent use of strategic bombing in World War II demonstrated that air power had revolutionized warfare and defense policy should be oriented around it.²⁴

In late June, 1950 North Korea attacked across the 38th Parallel into South Korea. The Korean War was a new kind of war to the American military, especially the United States

Air Force.²⁵ The recent experience of total war in World War II demonstrated to the Air Force that the proper employment of strategic air power was to bomb with overwhelming force the enemy nation's war-making capacity, thereby breaking its will to resist. Such a course of action seemed to airmen to have been proven in the published studies of the USSBS.

If the political objectives of World War II that the airmen helped to achieve were the unconditional surrenders of Germany and Japan, the political objectives of the Truman Administration in Korea were much more limited. Instead of attacking what many believed to be the root cause of the war in Korea--the Soviet Union, and, later, China--President Truman limited the use of American military power to the Korean Peninsula. For many airmen instead of being able to attack the war-making capacity of China and the Soviet Union they were limited to bombing a small number of strategic targets in North Korea and to supporting the ground operations of the Army.²⁶

One airman writing in a 1953 issue of the *Air University Quarterly Review* argued that "strategic air operations in Korea [were] a classic example of the mal-employment of a military force." Strategic air power was simply not designed for the way it was being used in Korea, argued the airman. He warned that the United States should not draw the wrong lessons from Korea "in future planning." Korea, according to the airman, was simply the wrong kind of war to be applying strategic air power.²⁷ Another air officer writing for the *Review*, Colonel John R. Maney, believed that the American political leadership and many ground officers did not understand "that the Korean War was designed" to further "Lenin's avowed strategy" of world domination. He moaned that the United States was fighting the war in Korea with a "surface strategy." He greatly

approved of former Secretary of the Air Force Stuart Symington's suggestion that the United States take the war directly to the Soviet Union with Air Force delivered atomic bombs.²⁸

When it came to evaluating the effects of air power in the Korean War, members of the Air Staff thought that another study like the World War II USSBS was unnecessary since the preponderance of air power used in Korea was "tactical interdiction."²⁹ The Air Force did conduct a limited evaluation led by Major General Glenn Barcus and the civilian president of the University of Colorado, Dr. Robert Stearns. What became known as the "Stearns Report" did not focus on the effects of strategic bombing on North Korea but rather on the Air Force's use of close air support for ground operations.³⁰ To airmen the Korean War did not fit their conceptual understanding of the primary use of strategic air power and therefore did not warrant a civilian-led evaluation on the scale of the USSBS.

Throughout the 1950s and into the early 1960s the American Air Force oriented itself on preparing to fight not a limited war like Korea but a total nuclear war against the Soviet Union. The Strategic Air Command (SAC), commanded by General Curtis E. LeMay, was the preeminent Air Force organization dedicated to fulfilling the nuclear attack role. SAC's Cold War mission symbolized to most airmen the correctness of using strategic air power to massively attack an enemy nation's war-making capacity. While the Air Force received a larger share of the defense budget during the 1950s than the Army and Navy, within the Air Force itself SAC got the preponderant share of the defense dollars. Moreover, the strategic-nuclear mission dominated doctrinal and organizational development within the Air Force to the point where even the Tactical Air

Command (TAC) was trying to get in on the “strategic bombing” mission.³¹ The Air Force’s fixation on preparing for all out nuclear war with the Soviet Union unfortunately left it unprepared to apply air power in another limited war that the United States would fight during the 1960s: Vietnam.

In 1965, erstwhile Air Force Chief of Staff General Curtis LeMay boasted that in order for the United States to win in South East Asia it should use strategic air power to bomb North Vietnam “back into the Stone Age.”³² Yet it should be pointed out that compared to the industrial might of the United States, North Vietnam was already in the “Stone Age.”

The lessons learned from the American air campaigns in World War II told the airmen that the way to use strategic air power in Vietnam was to bomb the enemy’s war-making capacity, understanding Korea to be an aberration in bombing doctrine. The American air chiefs believed that the Air Force’s approach to a possible strategic air war against the Soviet Union was adaptable to any type of conflict, to include a limited war in Vietnam.³³ They failed to recognize, however, the true nature of the conflict in Vietnam. The war was not in its essence an ongoing battle between the Cold War superpowers--the United States and the Soviet Union. Instead, the Vietnam War was fundamentally a civil war between the Vietnamese people. Also, senior airmen did not truly appreciate the American civilian leadership’s desire to keep the war limited.³⁴

Placing limits on the use of air power, of course, was anathema to the strategic-bombing-minded airmen. They were unhappy with the gradual approach to bombing North Vietnam forced upon them by their civilian masters. Rolling Thunder, the air campaign from 1965-1968 designed to apply incremental pressure on the North

Vietnamese leadership, seemed basically wrong to air officers because it placed what they saw as artificial limits and restrictions on the use of air power. According to airmen, the concept behind Rolling Thunder did not allow the Air Force to apply overwhelming air power on a strategic level quickly and decisively against North Vietnam.³⁵

In late 1972 the Air Force began to use strategic air power the way they believed it should be used. In the Linebacker I and II air campaigns (May-October 1972 and December 1972, respectively) the Air Force attacked the war making capacity and military capability of North Vietnam on a sudden and massive scale. The goal of the Linebacker campaigns was to allow the American forces to withdraw from Vietnam and to compel the enemy leadership to accept a cease-fire agreement. Former President Richard Nixon commented on the television show "Meet the Press" sixteen years later that had the United States bombed North Vietnam in 1969 like it did during the Linebacker campaigns "we would have ended the war in 1969 rather than in 1973."³⁶

Historian Earl Tilford noted that within the Air Force since the end of the Vietnam War an "unhealthy" myth has emerged that posits that the Linebacker campaigns "won" the war for the United States.³⁷ Yet while the Linebacker I and II campaigns were successful in bringing the North Vietnamese back to the diplomatic bargaining table, it is wrong to suggest that a similar approach would have ended the war in 1969 or even in 1965, as some airmen have suggested. With the myth of the Linebacker Campaigns firmly in place in the minds of airmen they moved on to again preparing to fight the Soviet Union in a massive nuclear war, just as they did after Korea. Since, as Tilford argued, the Vietnam experience to airmen "was ambiguous and not amenable to school

solutions,”³⁸ an extensive civilian-led evaluation of air power after the Vietnam War was not conducted.

III--INVESTIGATING ONESELF ONCE AGAIN: THE GULF WAR AIR POWER SURVEY

Uncertainties about the use of air power in the Korean and Vietnam Wars gave way to certainty within the Air Force about the effectiveness of air power in the Persian Gulf War. Indeed, in early January 1991 shortly before the United States initiated its aerial assault on Iraq and Kuwait Colonel John A. Warden, Air Force deputy director for warfighting concepts in the Pentagon, believed that another World War II type Survey would be needed if the United States carried out its planned air campaign. Colonel Warden subsequently sent a memorandum to the Air Force Vice Chief of Staff General John M. Loh pointing out that a “bombing survey would be extremely valuable” and should be performed by an independent commission.” Colonel Warden later pursued the idea of an independent, civilian led Survey after the Gulf War with former USSBS director Paul Nitze. In fact Colonel Warden prepared a special briefing for Nitze and made a strong “pitch for an independent bombing survey.”³⁹

Iraq’s invasion of Kuwait on 1 August 1990 was a surprise not only to Colonel Warden but to most others in the American military. Once President George Bush authorized an American military deployment to the Gulf to help defend Saudi Arabia against a possible Iraqi attack, F15s under the command of Lieutenant General Charles Horner, Commander of Central Air Force (CENTAF), arrived in Saudi Arabia on 9 August 1990. General Horner’s aircraft and airmen proved to be the start of a large buildup of American military forces that would eventually add up to over 500,000

personnel. Desert Shield, as the build-up became known, changed to Desert Storm on 16 January when the United States and other coalition forces launched an air campaign against a wide spectrum of Iraqi targets in Iraq and Kuwait. Many airmen, including Colonel Warden (the conceptual "founding father" of the air campaign against Iraq called Instant Thunder),⁴⁰ believed that air power alone could virtually eject Iraqi forces from Kuwait, a key political goal for the United States.⁴¹ Yet after more than a month of continuous bombing on 24 February the United States and coalition forces launched a ground campaign to achieve the goals that air power may or may not have been able to accomplish if left on its own.⁴² Relying heavily on the conditions set by the air campaign, the ground offensive took a mere four days to defeat the Iraqi forces in Kuwait and compelled the Iraqi leadership to accept an armistice on Coalition terms.

Like the airmen at the end of World War II, air officers after the Gulf War perceived great success in their application of air power to achieve American objectives.⁴³ And also like World War II, there was a desire to manifest that perceived success in a civilian led, independent survey of air power's effectiveness in the Gulf War.

On 25 July 1991 Secretary of the Air Force Donald Rice made a phone call to Eliot Cohen, a professor of strategic studies at the Paul H. Nitze School of Advanced International Studies of the Johns Hopkins University, inviting him to serve as the editor-in-chief (or Director) of what would become known as the Gulf War Air Power Survey (GWAPS). Secretary Rice, in a follow-up memorandum, pointed out to Cohen that the GWAPS would "form conclusions on the implications for future Air Force organization, training and force structure." However, for the GWAPS to be accepted as a credible source of analysis on air power in the Gulf it would have to "conduct its study according

to the highest standards of professional and intellectual integrity and objectivity,” noted Secretary Rice. Cohen accepted the Secretary’s invitation to head the GWAPS, agreeing wholeheartedly that the Air Force should “establish the most accurate possible record of DESERT SHIELD and STORM and learn from it.”⁴⁴

Secretary Rice’s memorandum to Eliot Cohen established the GWAPS by providing it with “terms of reference” for the conduct of its study. The GWAPS mandate was “to review all aspects of air warfare in the Persian Gulf, but focusing especially its analysis on the operational aspects of the American air campaign against Iraq.”⁴⁵ The GWAPS was civilian led and included more than 100 civilian and military analysts. It also included a Review Committee of prominent American statesmen, retired military officers, and scholars to provide advice and criticism on the GWAPS analytical approach and published studies. The Review Committee’s Chairman, ironically, was Paul Nitze.

From August 1991 to January 1993 GWAPS members conducted extensive research and wrote a five-volume study (to include an executive *Summary Report*) on air power in the Gulf War. The GWAPS was organized into “Task Forces,” all but one being civilian led, that focused on thematic aspects of the Gulf War such as operations and effects, logistics, and command and control, to name a few.⁴⁶ The GWAPS conducted the preponderance of its work out of offices in the Crystal City in the Washington, D.C. area.

Arguably, the GWAPS is comparable in stature and magnitude to the World War II USSBS. The fact that the USSBS had over 1000 civilian and military analysts while the GWAPS had just slightly over 100, suggests that the former conducted a much greater amount of research and analysis simply in terms of raw numbers of personnel. It is important to note, however, that the GWAPS did not have to man numerous field teams

to collect evidence inside of Iraq, simply because Iraq, unlike Germany and Japan, was not occupied by American forces after the war. Moreover, regarding the collection of evidence, modern technologies and information systems provided access to large amounts of data to the GWAPS thereby reducing the need for substantial numbers of analysts to conduct research. In highlighting another important difference one could point out that the USSBS produced over 300 reports and studies while the GWAPS wrote "only" five volumes. Such a comparison can be misleading because many of the USSBS's published studies were supporting documents for each of its Division's overall reports. Writing to the Director of the Joint Staff in January 1992, Colonel L.E. Trapp Jr., military assistant to the Secretary of the Air Force, argued that the GWAPS was "equivalent in depth and impact to the landmark Strategic Bombing Survey of World War II."⁴⁷

While there are many similarities between the USSBS and the GWAPS, there are also important differences. Comparing and contrasting the USSBS with the GWAPS reflects the subtle shifts and changes that have occurred since World War II between the Air Force and its civilian led evaluations of the use of air power in war and conflict.

The intellectual beginnings of the USSBS and the GWAPS did not come from outside of the Air Force but from the airmen themselves. After the experience that General Arnold had with the Committee of Historians in early 1944, he determined that another civilian led evaluation of air power's effects against Germany would be necessary--although not manned by historians. Likewise, even before the United States started bombing Iraq in January 1991, air officers like Colonel John Warden of Checkmate began exploring the idea of a civilian-run evaluation of air power in the Gulf War.

Unlike World War II where there was general consensus among airmen to conduct a

civilian led evaluation, after the Gulf War many senior airmen sought to keep Air Force sponsored evaluations under their own institutional control. From January to July 1991 the recommended approach by senior airmen would be to have three different types of evaluations, or “lessons learned,” managed by the Vice Chief of Staff of the Air Force. The Office of Air Force History, according to this line of thinking, would document “objectively the results of all deployment and combat operations much like the historical analyses performed following WWII, Korea, and Vietnam.” Another study would be contracted out to various “think tanks” such as RAND. Tactical Air Command (TAC) would write the third evaluation providing a “combat Lessons Learned” analysis from an “operational perspective.”⁴⁸

Major General Robert M. Alexander, Air Force Director of Plans, presented the Air Force’s approach to Secretary Rice in a briefing on 24 July 1991. It appeared, however, that the Air Force’s “ownership” of the evaluations being written on air power in the Gulf worried Secretary Rice because of the potential for bias. The Secretary commented in a discussion during the briefing about the possibility of getting “pabulum” thus creating a negative view from the “outside” about the “product and process” of the proposed evaluation. Secretary Rice noted that “if there [was] even a hint that we cooked the books, the value of the product will be destroyed.”⁴⁹ Air Force Lieutenant Colonel Wayne Thompson (who would become the historical advisor to the GWAPS) sensed after speaking to Rice that the Secretary “was not satisfied” with the proposed “approach to studying the war.” Echoing Secretary Rice’s concerns, Colonel David A. Tretler, the acting Air Force Historian, cautioned that “no one should exercise coordination, management, or approval authority over the historical studies” written by his agency.

Colonel Tretler pointed out that even back in World War II General Hap Arnold understood the need for an "objective" record of the Air Force's wartime accomplishments.⁵⁰

"Objectivity," was the sine qua non of the USSBS and the GWAPS. Indeed, when one reviews the many memorandums, letters, and directives that surrounded the beginnings of both Surveys the desire to produce "objective" and "truthful" evaluations of air power permeates the dialogue. In early 1944 when they were forming the USSBS, Generals Arnold and Spaatz recognized that the USSBS must produce reports that would be "unbiased and completely impartial" if they were to be received favorably. General Arnold himself understood how a report written by civilian experts would provide the "objective" historical record for the airmen to use in their future fight for independence.⁵¹ Although by 1991 the independence of the American Air Force was no longer in doubt as it was for General Arnold in 1944, the "future" was still dependent on an "objective" and "truthful" rendering of the Air Force's performance in the Gulf War by a civilian-led evaluation. Secretary Rice evidently agreed and thus formed the Gulf War Air Power Survey.

As the GWAPS began its work in August 1991, Director Eliot Cohen provided his team of analysts with a set of "guiding concepts" for their studies. The "approach," outlined by Cohen for the GWAPS, was "at all costs" to maintain a strong sense of "objectivity, honesty, [and] integrity." Cohen drew on the "lineage" of the USSBS by emphasizing what he saw as its "integrity" and presentation of work in "clear English." Early on Cohen recognized the "symbolic ties" of the USSBS to the GWAPS.⁵²

Making the rhetorical connection from the GWAPS to the USSBS, however, was

much more than just symbolism. Throughout the early days of the GWAPS up through the writings of its final reports references were often made about the need to be like the USSBS, especially in terms of the Survey's purported "objectivity." In April 1992, as the Task Forces were heavily engaged with the writing of their final reports, Eliot Cohen told Secretary Rice that he was using the USSBS as a model "in terms of precision, pungency, and clarity."⁵³ In the foreword of each published GWAPS volume and the *Summary Report* there is an introductory comment stating that "in the spirit of impartiality and scholarly rigor...[GWAPS] members had as their standard the observation of Mr. Franklin D'Olier, chairman of the United States Strategic Bombing Survey...[which was to] 'burn into everybody's souls the fact that the survey's responsibility was to ascertain facts and to seek truth, eliminating completely any preconceived theories or dogmas.'"⁵⁴

As Survey Director, however, there were few similarities between Franklin D'Olier and Eliot Cohen. D'Olier was a corporate manager and Cohen a scholar. Aside from his limited military experience as a staff officer in World War I, D'Olier had little understanding of the strategic and operational levels of war. Cohen, conversely, after graduating from Harvard with a Ph.D. in political science, spent five years at the Naval War College teaching strategy, he also served on the Policy Planning Staff for the Secretary of Defense.⁵⁵ While D'Olier of the USSBS was "the amiable figurehead" and made no intellectual contributions to the Survey's work, Cohen was closely involved with the daily running of the GWAPS, and, more importantly, was the intellectual leader during the research and writing of GWAPS volumes.⁵⁶

Probably the most important difference between Cohen and D'Olier was in the area of impartiality. Although D'Olier often proclaimed the need to get at the facts, tell the truth,

and eliminate notions of any predetermined "dogmas," his actions proved otherwise.

Actually, D'Olier was quite dogmatic in his desire to help the airmen gain independence from the Army. The publication of Orville Anderson's *Air Campaigns of the Pacific War* strongly indicated D'Olier's bias.

Eliot Cohen took strong steps to preclude an Air Force centered, doctrinaire approach to the GWAPS's evaluation of air power in the Gulf War. In the Spring of 1992, as GWAPS analysts were writing drafts of their findings and critiquing each other's work, Cohen highlighted a rather hyperbolic phrase concerning the final events in the ground war to drive the Iraqi army from Kuwait. The phrase boasted that for the retreating Iraqis, "the incredible destruction on the misnamed Highway of Death, [was] where at least some of these poltroons received their just deserts at the hand of coalition air forces." Cohen responded that this type of "overblown rhetoric" was "unacceptable for the Survey," and it did not go in line with what he considered to be the GWAPS "analytical and level-headed" approach.⁵⁷ Actually, the great majority of GWAPS analysts understood, like Cohen, the need for impartiality and intellectual honesty.⁵⁸

It is useful to compare the professional backgrounds of the USSBS analysts to those of the GWAPS. Paul Nitze perceptively pointed out to GWAPS leaders at a Review Board meeting that the USSBS, "in its attempt to be independent, selected people who had no expertise in the areas they were to study."⁵⁹ Nitze may have been getting at the lack of professional military experience of most of the USSBS personnel, to include himself.

Of course one must acknowledge the historical context in which the USSBS conducted its evaluation. The reason why the USSBS had virtually no analysts with

professional military backgrounds (save for the professional military officers like Orville Anderson and Ralph Ofstie) was that a defense establishment simply did not exist during the years leading up to World War II. Very few Americans served in the armed services during the 1930s, meaning that very few USSBS members would have had professional military service in their records. More importantly, the relationship between the military and academic institutions for research and development was only in its infancy during World War II. When the GWAPS conducted its study in the early 1990s, that relationship had become institutionalized in the American defense establishment. The majority of GWAPS personnel had some connection in one form or another to the defense establishment.

A few examples can give the flavor of the backgrounds of GWAPS members. The Chief of the Operations and Effects Task Force, Barry Watts, had been a career Air Force officer before signing on to the GWAPS. During his service with the Air Force, Watts had flown 218 combat missions over Vietnam. He also taught philosophy at the Air Force Academy. Like other senior GWAPS members, Watts had written numerous published works on military history and defense issues. In addition to Watts, John F. Guilmartin, Chief of the Weapons, Tactics, and Training Task Force, was a career military officer. He too flew combat missions in Vietnam. Guilmartin took a leave of absence from his position as an associate professor of history at the Ohio State University to serve on the GWAPS. Although Thomas C. Hone, head of the Task Force on Command, Control, and Organization, did not have professional military experience like Watts and Guilmartin, he did, however, teach strategy at the Naval War College and served as a contract historian for the Office of Air Force History. The executive director

of the GWAPS, Colonel Emery M. Kiraly, was a serving air force officer and had been Colonel John Warden's deputy in Checkmate during the development of the Instant Thunder air campaign plan against Iraq.⁶⁰

The professional experiences of GWAPS and USSBS personnel shaped the analytical framework that they brought to their evaluation of air power in the Gulf War and World War II respectively. USSBS members, as already noted, were for the most part industrialists, financiers, economists, engineers, and a small assemblage of lawyers and behavioral scientists. Their professional experience fit comfortably with the American conceptual approach toward strategic bombing of attacking "national economic structures." Moreover, the strident effort on the part of the airmen to shape the organizational structure of the Survey and the questions that it would answer allowed USSBS analysts to accept the American conceptual approach to strategic bombing as their framework for analysis. Certainly, the GWAPS members shared a common framework for analysis, but it was very different from that of the USSBS. The difference reflects maturation on the part of the GWAPS from the USSBS toward a more independent and impartial evaluation of air power in war and conflict.

In the late 1970s and early 1980s, after the American military's traumatic experience in Vietnam, there was a renaissance among defense intellectuals (both military and civilian) that focused on the operational level of war; the level between strategy and tactics. Harry Summers in his well-known book, *On Strategy: A Critical Analysis of the Vietnam War*, created a kind of populist movement within the American military that partly blamed America's loss in Vietnam on a lack of operational vision.⁶¹ Yet a more deep rooted and sophisticated understanding of the operational level of war--informed by

the Prussian military theorist, Carl von Clausewitz--began to take hold in the defense establishment after Vietnam. Civilian and military defense intellectuals especially embraced the notion of operational art--the creative part of war that links political objectives to tactical application of military force--as a way of rejuvenating in American defense circles an intellectual approach to warfare. This way of thinking about warfare manifested itself in the late 1980s with the Army's Airland Battle doctrine and Colonel John Warden's book *The Air Campaign*; both were profoundly shaped by the concept of operational art. Even in the late 1990s Clausewitz still informs the thinking of many defense analysts. A professor of strategic studies at the Marine War College noted that "the Clausewitzian theory of war remains huge within the American DOD/National Security community--among academics and practitioners alike."⁶²

Most of the primary contributors to the GWAPS volumes, to include the Task Force Chiefs, were informed by Clausewitzian theory. For example, Mark Coldfelter, a contributing author to the GWAPS Planning volume, wrote an important book in 1989, *The Limits of Air Power: The American Bombing of North Vietnam*. In the book, Clodfelter argued that Clausewitz's famous dictum that "war was a continuation of policy by other means," was the only "true measure for evaluating air power's effectiveness" against North Vietnam. Barry Watts authored a short study that analyzed future war using the Clausewitzian construct of "friction."⁶³ Indeed, the forward of each GWAPS volume points out that its analysis concentrates on the "operational level of war in the belief that this level of warfare is at once one of the most difficult to characterize and one of the most important to understand."

It would be wrong, however, to think that being informed by Clausewitzian theory and

focusing their analysis of air power in the Gulf War at the operational level forced GWAPS members into a doctrinaire approach to their work. Political scientist John Mersheimer has argued that the best tool available for lessening the possibility of flawed ideas affecting defense policy and strategy is "intellectual pluralism. A healthy national policy depends on independent-minded defense intellectuals challenging the government and one another."⁶⁴ Comparing the intellectual environment of the USSBS to the GWAPS can bring Mersheimer's point out more clearly.

David MacIsaac lamented that the USSBS needed historians to provide balance toward evidence and interpretation. MacIsaac acknowledged that debate over findings did occur among USSBS analysts, but it was "ruled" by "an insurance man (D'Olier) and two investment bankers (Alexander and Nitze)" who held "the reins of authority."⁶⁵ The majority of GWAPS task force chiefs, conversely, (to include the GWAPS Director) had Ph.D.s in either political science or history and had spent many collective years in academe. This is not to say that an academic background necessarily guarantees objectivity. Yet a "scholarly" approach did instill in the GWAPS a rigor for intellectual independence. Cohen noted that the GWAPS, "unlike many studies, [were] leaving an audit trail, in the form of footnotes, bibliographic essays, and open statements of where large uncertainties remain."⁶⁶ The USSBS members certainly challenged each other over evidence and the conclusions that they reached. They were probably less effective, though, than the GWAPS in establishing an intellectual climate that would have led to a more independent and impartial study.

One thing that the GWAPS had to help it ensure impartiality and independence that the USSBS did not was the GWAPS Review Committee.⁶⁷ The idea behind the Review

Committee was to have a group of distinguished scholars, statesmen and senior military leaders who would act as a corporate body to review the GWAPS work, providing it with “credibility and prestige necessary to support the final product.” The Review Committee was not, however, intended “to serve as ornaments” for GWAPS credibility. Instead the Committee played a “key role in both the study process and the final” GWAPS volumes by recommending analytical methods and in “identifying gaps in the overall project.”⁶⁸

The Committee met formally in March 1992 and January 1993 to review the work of the GWAPS. Bernard Lewis, a professor of political science at Princeton University, cautioned Eliot Cohen and his Task Force leaders to maintain balance in their analysis by keeping “in mind that losers tend to study what went wrong while winners study what went right.” Another one of the Review Committee’s civilian scholars, Richard Kohn of the University of North Carolina at Chapel Hill, advised the group that they needed to be very careful in the use of counterfactual speculation. Aware of the controversy over the USSBS’s counterfactual about Japan’s surrender at the end of World War II, Kohn noted that it would be very difficult for the GWAPS “to answer what if questions.” He was simply unsure if they could assess events that “didn’t happen.”⁶⁹

There were retired senior military officers on the GWAPS Review Committee like General Michael J. Dugan of the Air Force, Admiral Hunnington Hardisty of the Navy, and General Maxwell Thurman of the Army. These retired officers who sat on the Committee certainly held strong parochial interests toward their respective services. One might have expected inter-service wrangling to occur over GWAPS conclusions similar to the fierce parochial debates between Admiral Ralph Ofstie and General Orville Anderson of the Pacific USSBS. Yet in comparison to the USSBS, the GWAPS Review

Committee seems remarkable in its desire to avoid service parochialism and bias. Instead, their overall goal was to advise the GWAPS analysts on the best ways to produce a balanced assessment of air power in the Gulf War. Secretary of the Air Force Donald Rice and Cohen agreed that there were “ferocious battles during the writing of the USSBS” over service parochialism. Both men also acknowledged that even though there would be “creative tension” within the GWAPS and the Review Committee over “differences of opinion,” it would be nothing along the lines of the USSBS.⁷⁰

Paul Nitze (who of course had been caught in the middle of the battle between Ofstie and Anderson over certain USSBS conclusions) told the Review Committee that he believed the job GWAPS analysts had done on their respective volumes to be “superb.” Yet in an informal discussion with Eliot Cohen, Nitze thought that the most critical issue for the GWAPS to address was the effectiveness of “the strategic air campaign against Iraq.”⁷¹ Nitze may have sensed an underlying problem with evidence that Cohen and other GWAPS analysts were confronting as they conducted their research and analysis.

If the USSBS’s focus was on the effects of strategic bombing on Germany and Japan’s war-making capacity, the GWAPS directed most of its analysis toward the operational aspects of the American Air Force in the Persian Gulf War. But the GWAPS did produce a volume on the effects of the air campaign against Iraq. However, unlike the World War II USSBS, which had access to evidence in Germany and Japan, the GWAPS could not enter Iraq once the war ended. Access to Germany and Japan was important for the USSBS because its analysts could collect evidence on the effects of strategic bombing and interview key wartime leaders.

Air power was used in the Persian Gulf War not as an end in itself but to bring about

some sort of effect against the enemy. Arguably, then, the GWAPS volume, *Effects and Effectiveness*, was crucial because it would explore the *raison-detre* for the air campaign against Iraq: to produce effects on the enemy in support of American and Coalition objectives. Cohen and other GWAPS analysts were aware of the problems that they had with evidence, especially with regard to the volume on effects. Cohen stated that he did not want the GWAPS to come to definitive conclusions if they did not “have evidence” to support their conclusions. Cohen knew well of the problems that the USSBS had had with the interpretation of evidence. At a meeting in late August 1991 with the faculty of the Air University at Maxwell Air Force Base, Cohen discussed with Mark Clodfelter the issue of evidence. Clodfelter told Cohen that the biggest issue for the GWAPS was not having “access to Iraq.” Cohen agreed and noted that the GWAPS needed “to be more forthright than [the] USSBS on holes in our data.”⁷²

The primary authors of the GWAPS volume, *Effects and Effectiveness*, Thomas Keaney and Barry Watts, argued that their own study, “because of its focus on operational-strategic effectiveness, ended up being closer in content and intent to USSBS volumes...than any other GWAPS reports.” Watts and Keaney also admitted that there were some important differences “between the two, particularly regarding data and sources.” They pointed out that the most critical “hole” in evidence was the fact that without access to Iraqi leaders and pre-war plans, their volume was limited in its ability to discern Iraqi “intentions, before and during the Gulf War.” However, since the aim of the air campaign against Iraq was not to overwhelmingly attack its industrial capacity to make war (as was the case during World War II), the *Effects* volume argued that it did not necessarily have to rely on extensive evidence of the Iraqi war economy. Moreover,

modern technologies such as satellite imagery of bomb damage assessment used during the Gulf War provided GWAPS analysts with a good deal of evidence on effects.⁷³ Still, the authors of the volume seemed to understand the problem that they had with evidence. As a result, they cleverly used the USSBS as a “baseline” to “mitigate” the problem.

In a June 1992 GWAPS review session on the *Effects and Effectiveness* volume Alexander S. Cocharan recommended that since the Air Force rejected the lessons learned from Vietnam and Korea the *Effects* volume should “refer back to World War II.” Colonel Emery M. Kiraly followed Cocharan by suggesting that in order to “validate” the “findings” of the volume, the authors should make a comparison of the GWAPS to the USSBS. Making such a comparison would, according to Thomas Keaney, provide a “baseline” for the GWAPS. Establishing a “baseline” was critical for the authors of the *Effects and Effectiveness* study because of their inability to gain access to Iraq to collect evidence.⁷⁴

The ‘baseline’ discerned from the USSBS allowed the volume’s authors to de-emphasize the problems that they had with access to Iraq by showing how their volume would go beyond, as they argued, the more narrow approach taken by certain reports of the USSBS toward the effects of strategic bombing on Germany. The *Effects* volume noted that if one only used physical damage as a measure for strategic bombing’s effectiveness, then bombing attacks, say, on a given industrial plant could be considered successful simply by the amount of physical damage caused to the plant. However, physical destruction of structures did not always equal the overall effects one desired on an enemy system. According to the authors of the *Effects* volume, certain reports of the USSBS (and by subtle implication the USSBS in general) were unable to make nuance

distinctions between effects and effectiveness. In light of the “neglect of such effects in parts of the World War II survey,” the authors believed that it was “incumbent” upon them “to try” to move beyond these shortcomings in their evaluation of the effects of the air campaign against Iraq.⁷⁵

Thus the GWAPS *Effects* volume cleverly drew attention away from its extant problem of lack of evidence by creating a pejorative distinction between itself and the USSBS. But in so doing the GWAPS volume inaccurately presented the conclusions reached by John Kenneth Galbraith’s USSBS report, *The Effects of Strategic Bombing on the German War Economy*. The GWAPS *Effects* volume argued that Galbraith’s report narrowly focused its analysis on economic statistics and “indices” rather than trying to determine the second and third order effects--or effectiveness--of strategic bombing on the German war economy.⁷⁶

This was a flawed rendering of Galbraith’s USSBS argument. In fact a close reading of Galbraith’s USSBS report shows that it does acknowledge the decisive effects of strategic bombing on the German war economy precisely because of its appreciation for the second and third order effects of bombing on enemy economic “systems.”⁷⁷ The discussions between Galbraith and his Economic Effects Division further demonstrated that they were not solely fixated on economic statistics and “indices” in their evaluation of the overall effectiveness of strategic bombing.⁷⁸ What the authors of the GWAPS *Effects and Effectiveness* volume did, in order to create its “baseline” distinction, was to conflate many of Galbraith’s postwar writings on strategic bombing--which were in fact decidedly critical of the AAF’s efforts in World War II--with the economist’s published Survey Report.⁷⁹

In comparison to the problems with the interpretation of evidence that Paul Nitze had when he drew conclusions about why Japan had surrendered at the end of World War II, the GWAPS clever rendering of Galbraith's economic report was only a minor foible. Indeed, for the analysts of the Pacific portion of the USSBS there was clearly competing evidence (based largely on interviews of Japanese leaders) as to why the war ended. Yet Nitze seemed to have been less concerned with acknowledging contradictions with the evidence and more interested in proving his argument about the decisiveness of conventional strategic air power, and, the indecisiveness of the Soviet war declaration and atomic bomb in ending the war against Japan. The result was the well-known counterfactual stating that Japan would have surrendered "...certainly prior to 31 December 1945, and in all probability prior to 1 November 1945...even if the atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion had been planned or contemplated."⁸⁰ Prudence may have called for such a bold statement to be followed with a discussion on evidence, but none was forthcoming. GWAPS analysts writing on air power's effects almost a half-century later would be more forthright than the USSBS about problems with evidence.

Understanding the limits of evidence kept GWAPS authors from taking a similar step toward bold counterfactual speculation as Nitze had done many years earlier. When drawing conclusions about the affects of air power on the Iraqi army in Kuwait, the volume on *Effects* argued that even after accepting the fact that the air campaign had destroyed "large amounts of Iraqi equipment...whether or for how long the Iraqi troops could have held on even without a ground attack can be no more than matters of speculation."⁸¹ One can clearly see the authors' desire to avoid a counterfactual statement

arguing that Iraq would have surrendered soon due to crippling air attacks even if Coalition forces had never conducted a ground invasion.

The *Effects* volume, therefore, did not make exorbitant claims about the effectiveness of air power against Iraq. In fact the volume's principal authors, Watts and Keaney, concluded the volume by cautioning against the view held by many airmen that the application of American air power in the Gulf War, especially regarding the use of radar-evading, stealth bombers and precision guided bombs, indicated a revolutionary change in the nature of war. The two authors argued that instead of demonstrating inconsistency with past wars, the Gulf War demonstrated the "limits to strategic air attack encountered at least as far back as World War II."⁸²

There were, however, those willing to go the distance and champion the cause for air power in future debates over defense policy and organization. Air Force historian Richard P. Hallion argued in his 1992 book, *Storm Over Iraq: Air Power in the Gulf War*, that the ground war against Iraq "could not be decisive in the way that earlier ground wars had been." Hallion then professed that the Gulf War had proven that "Air power can hold territory by denying an enemy the ability to seize it, and by denying an enemy the use of his forces. And it [air power] can seize territory by controlling access to that territory and movement across it."⁸³

Hallion wrote *Storm over Iraq* around the same time that GWAPS analysts were reaching their conclusions about air power in the Gulf War. It is interesting to note that like the USSBS European and Pacific *Summary Reports*, but unlike any of the GWAPS volumes, Hallion's book finishes with a section titled "Toward the Future." Like the two USSBS reports Hallion called for a future defense policy to be fundamentally based on air

power. Using a favorite phrase of General Orville Anderson, Hallion boasted that “today, air power is the *dominant* form of military power.”⁸⁴ The GWAPS, although clearly willing to point out the accomplishments of air power in the Gulf War, did not make defense policy recommendations, as did the two USSBS *Summary Reports* and Hallion’s book, *Storm over Iraq*. Eliot Cohen noted in a letter to the Review Committee in August 1992 that the GWAPS volumes were written “with an awareness of the policy issues” that the Gulf War raised. The volumes were not, however, crafted to “make specific recommendations for future policy,” argued Cohen.⁸⁵

The other GWAPS Volumes certainly acknowledged the achievements of air power in the war against Iraq, but they also pointed out its shortcomings. *The Command and Control* volume, for example, concluded that the American Air Force “did win an overwhelming victory” in Desert Storm. But the primary authors of the volume (Thomas C. Hone, Mark D. Mandeles, and Lieutenant Colonel Sanford S. Terry) cautioned that the advanced technology used in the Gulf War by the Air Force to “solve old command and control problems” had in fact “created new problems” in managing air power assets in combat.⁸⁶ Williamson Murray, the principal author for the *Operations* volume, agreed that the air campaign was decisive and “destroyed whatever willingness” the Iraqis might have had to fight a ground war against the American-led Coalition. But like the other GWAPS volumes, Murray warned against claiming too much for the air campaign: “In the end, the campaign was relatively successful, but only because the time and air assets that were available to attack those enemy forces were almost limitless....”⁸⁷ The GWAPS volumes thus brought out both the good and the bad of the American-led air campaign against Iraq.

So too did the USSBS's evaluation of strategic bombing in World War II. Yet the conclusions drawn by the USSBS were shaped and influenced by the powerful post-war interests of the AAF. For the GWAPS in the early 1990s there were clearly similar Air Force interests at work trying to affect the outcome of the GWAPS reports. In fact GWAPS analysts were informed during the writing of their volumes that "gossip" from the Pentagon had it that they were in the "grip of historians."⁸⁸ The implication of this statement being that since many historians made up the ranks of the GWAPS their subsequent conclusions about air power against Iraq would not look favorably on the Air Force's Gulf War performance. The GWAPS, however, based on the available documentary evidence, was able to keep those interests at bay, allowing for an independent study of air power in the Gulf War.

V—CONCLUSION

INVESTIGATING ONESELF, AGAIN? AIR POWER IN KOSOVO

It is a paradox that even though airmen themselves tried to influence the conclusions of the GWAPS it was only the Air Force after the Gulf War that conducted an independent and civilian-led evaluation of its efforts. The United States Army, for example, had a general officer write its story of the Gulf War. The book celebrated the army's performance in the Gulf War concluding that Desert Storm had confirmed that "the strategic core of joint warfare is ultimately decisive land combat."⁸⁹ The Air Force, however, especially Secretary Rice, wanted an independent study that would eschew the type of bias that was proved evident in the army's study. In the Fall of 1992 when the GWAPS analysts were drafting their reports the Chief of Staff of the Air Force, General Merrill A. McPeak, told Eliot Cohen that he hoped the GWAPS would be a "tough,

critical, and merciless account of Air Force performance in the war.” Cohen in turn forwarded the general’s statement to GWAPS members telling them that it was “quite a tribute to the Air Force that we are getting this kind of support for an honest and critical evaluation of the institution’s performance.”⁹⁰

The value of the GWAPS, especially in comparison to the USSBS, was that it focused the preponderance of its analysis on the operational level of war rather than the strategic. Since, as the GWAPS volumes point out, the operational level of war “is one of the most important to understand,” airmen (and other military professionals) should consider carefully the operational implications for future war and conflict brought out in the GWAPS analysis of the Gulf War.

It is also important for the Air Force to continue its practice of conducting civilian-led evaluations of its efforts in future operations. Unfortunately, early indications of how the Air Force will derive operational “lessons learned” from the application of air power in Kosovo suggest otherwise. The Air Force is conducting an extensive evaluation but it is headed by Air Force General Joseph Ralston and does not appear to be structured in any way along the lines of the GWAPS, or the USSBS for that matter, in terms of direct civilian oversight. The potential for such a study is what the army ended up producing after the Gulf War: A story that celebrates success, confirms “preconceived notions and prejudices” about service operations and doctrine, but sidesteps nuance criticisms which can lead to useful lessons learned. Eliot Cohen summed up the essence of how evaluations of military operations should be approached by civilian and military analysts. According to the GWAPS Director, the GWAPS evaluation of air power in the Gulf War was not “an engineering operation or the preparation of a flying mission, complete with

checklists.

It is, by its nature, a looser, more creative enterprise for a very simple reason: we are dealing not with inanimate objects—planes, bridges, or computer programs—but with the study of complex organizations, subtle cultures, and individual human beings, all of whom interacted with one another in complicated ways....”⁹¹

It is doubtful that the current Air Force approach to studying the effects of air power in Kosovo will have such a subtle, sophisticated understanding of military institutions and the application of operational art in war and conflict.

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¹ Quoted in Mauer Mauer, ed., *The U.S. Air Service in World War I: Volume IV, Postwar Review*, (Maxwell Air Force Base: The Office of Air Force History, 1979), pp., 1-3, 220-225.

² Since this essay compares and contrasts the GWAPS and the USSBS, the terms Air Force and Army Air Force (AAF) are used interchangeably, understanding that the United States Air Force did not become as such until 1947.

³ For an excellent survey of the major air power theorists and their theories, see David R. Mets, *The Air Campaign: John Warden and the Classical Airpower Theorists*, (Maxwell AFB: Air University Press, 1998); also see, Carl H. Builder, *The Icarus Syndrome: The Role of Air Power Theory in the Evolution and Fate of the U.S. Air Force*, (New Brunswick: Transaction Publishers, 1994).

⁴ Stimson to D'Olier, 3 November 1944, Box 14, RG 243, NA; Truman to D'Olier, 15 August 1945, Box 14, file 300.6, Record Group 243, United States Strategic Bombing Survey (hereafter referred to as RG243), National Archives (NA), College Park, MD.

⁵ Hansell to MacIsaac, 27 July 1970, Box 3, folder 5, Papers of Haywood S. Hansell, U.S. Air Force Academy Library.

⁶ David MacIsaac, *Strategic Bombing in World War II: The Story of the United States Strategic Bombing Survey* (New York: Garland Publishing, 1976); MacIsaac, "What the Bombing Survey Really Says," *Air Force Magazine*, LVI (June 1973); and MacIsaac, "A New Look at Old Lessons," *Air Force Magazine* (September 1970), 121-127. The first critical analyses of the Survey's findings on Japan and the combat use of the A-bomb did not appear until 1995; see Barton J. Bernstein, "Compelling Japan's Surrender Without the A-bomb, Soviet Entry, or Invasion: Reconsidering the US Bombing Survey's Early-Surrender Conclusions," *Journal of Strategic Studies*, Vol 18, No. 2 (June 1995): 101-148; and, Robert P. Newman, "Ending the War With Japan: Paul Nitze's Early Surrender Counterfactual," *Pacific Historical Review*, LXIV (Summer 1995): 167-194; also see my, "Advocacy or Assessment: The United States Strategic Bombing Survey of Germany and Japan," *Pacific Historical Review*, (Winter 1997): 53-79; and, "A-bombs, Budgets, and Morality: Using the Strategic Bombing Survey," *Air Power History* (Spring 1997): 20-31; and, "Advocacy or Assessment: The United States Strategic Bombing Survey of Germany and Japan," (Ph.D. diss., Stanford University, 1998). For an older, but still useful, analysis of the Survey and its use during the unification hearings see, Laurence J. LeGere, "Unification of the Armed Forces," (Ph.D. Dissertation, Harvard University, 1951), reprinted in Frank Friedel and Ernest May, eds. *Harvard Dissertations in American History and Political Science* (New York: Garland Publishers, 1980), 421-442.

⁷ The Air Corps Tactical School, Course: Air Force "National Economic Structure," (Instructor, Muir Fairchild), 1-3, 1939-1940, File 168.7001-31; Memo by Lieutenant Colonel Donald Wilson, "Long Range Airplane Development," November 1938, File 168.7012-20; and unnamed author, "The Unwaged War," File 168.7012-18, Laurence S. Kuter Papers (hereafter referred to as Kuter Papers), Air Force Historical Research Agency, Maxwell AFB, Alabama (hereafter referred to as AFHRA).

⁸ It is acknowledged that according to Douhet's theory and the American conceptual approach to bombing, strategic bombers might have to attack either the enemy air force on the ground, in the air, or in production factories. But this was only the first step in achieving command of the air that would allow the bombers to attack targets in enemy territory. See, Giulio Douhet, *The Command of the Air*, Translated by Dino Ferrari, 1942, New Imprint by the Office of Air Force History (Washington, D.C.; USGPO, 1983), 35, 57-59. The best analyses of Douhet are David MacIsaac, "Voices from the Central Blue: The Air Power

Theorists," in *Makers of Modern Strategy*, ed. Peter Paret (Princeton: Princeton University Press, 1986), 624-647; and Philip S. Meilinger, "Guilio Douhet and the Origins of Airpower Theory," in *The Paths of Heaven: The Evolution of Airpower Theory*, ed., Philip S. Meilinger (Maxwell AFB: Air University Press, 1997), 1-40.

⁹ Proposed Memo Arnold to the President, "Committee to Survey Results of Combined Bomber Offensive," April 1944, Box 41, RG243, (NA); H. H. Arnold, *Global Mission*, (Harper and Brothers: New York, 1949), 490-491; Futrell, *Ideas, Concepts, Doctrine: : Basic Thinking in the United States Air Force, 1907-1960*, (Maxwell, AFB: Air University Press, 1989), 144; Thomas M. Coffey, *Hap: The Story of the U.S. Air Force and the Man Who Built It* (New York: Viking Press, 1982), 277-278.

¹⁰ Memo from Arnold to the President, 27 January 1944; The Committee of Historians, "Germany's War Potential: An Appraisal," December 1943, revised on 18 January 1944, 41; Box 164, Map Room Files, FDR Presidential Library; and, Giles to Assistant Chief of Air Staff, Intelligence, "Committee of Historians to Analyze and Appraise Current Conditions and Prospective Developments in Germany," 29 September 1943, Box 20; and Earle to Sorensen, 21 October 1943, Box 20, Edward Mead Earle Papers (hereafter referred to as Earle Papers), Princeton University Archives.

¹¹ Monaghan to Earle, 15 October 1943, Box 20, Earle Papers, Princeton University Archives. The names Carl Becker, Henry Commager, and Edward Mead Earle are generally familiar to contemporary historians. But a cursory check on the other members of the group shows that they too were historians of the first rank. Bernadotte Schmitt, for example, won the Pulitzer Prize for history in 1931 for his book *The Coming of War: 1914* and he served as editor of the *Journal of Modern History* from 1929 to 1946. Louis Gottschalk, scholar of French history at the University of Chicago wrote biographies on Marat and Lafayette and became a leading scholar in comparative studies of revolution. See, Lucian Boia, ed., *Great Historians of the Modern Age: An International Dictionary* (New York: Greenwood Press, 1991); and S. William Halperin, *Some 20th Century Historians: Essays on Eminent Europeans* (Chicago: University of Chicago Press, 1961), xii-xvii.

¹² Memo from Arnold to the President, 27 January 1944, Box 164, Map Room Files, FDR Library; Note of Transmittal to "Germany's War Potential," p. 2; Earle to Sorensen, 29 November 1943, and, Earle to Sorensen, 3 January 1944, Box 20, Earle Papers, Princeton University Archives; L.S. Kuter, "Memorandum for the Commanding General, Army Air Forces," 29 December 1943, File 142.16-12C, v. 10, AFHRA.

¹³ A good reference guide to Survey reports and studies is Gordon Daniels, *A Guide to the Reports of the United States Strategic Bombing Survey* (London, 1981); also see, USSBS, *Index to Records of the United States Strategic Bombing Survey*, (June, 1947).

¹⁴ USSBS, Area Studies Division, *Area Studies Division Report* (Washington, D.C.: USGPO, 1945), 23; USSBS, *The Effects of Strategic Bombing on German Morale, Volume I*, 1.

¹⁵ USSBS, *The Effects of Strategic Bombing on the German War Economy*, 12-14; USSBS, *Overall Report*, 61,64,107-109; USSBS, *Summary Report (European War)*, 12, 15-18.

¹⁶ David R. Mets, *Master of Airpower: General Carl A. Spaatz* (Novato: Presidio Press, 1988), 308-309.

¹⁷ Truman to D'Olier, 15 August 1945, Box 14, file 300.6, RG 243, NA.

¹⁸ Ibid.

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²² D'Olier to Nitze, 25 July 1947, Box 165, Nitze Papers, Library of Congress.

²³ USSBS, Chairman's Office, *Summary Report (Pacific War)*, 27, 32.

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²⁶ Phillip S. Meilinger, "Alexander S. De Seversky and American Air Power," in Phillip S. Meilinger, ed., *The Paths of Heaven: The Evolution of Airpower Theory* (Maxwell AFB: Air University Press, 1997), 269; Crane, *American Airpower Strategy in Korea, 1950-1953*, 44-45.

²⁷ Captain Robert H. McDonnell, "Clausewitz and Strategic Bombing," *Air University Quarterly Review*, vol. VI, no.1, (Spring 1953), 51-53.

²⁸ Colonel John R. Maney, "The Support of Strategy," *Air University Quarterly Review*, vol. VI, no. 3, (Fall 1953), 46-47.

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⁴⁵ GWAPS, *Summary Report*, p., ix. Each GWAPS volume contains the same forward.

⁴⁶ At the beginning of each GWAPS volume there is list a of the respective Task Forces, primary authors and contributors to each Task Force Volume, and a list of the Review Committee members.

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⁴⁹ "Notes from SECAF Meeting," taken by LTC Kearney, 24 July 1991, GWAPS Collection File 0874792, misc. 56, v. 6, AFHRA.

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⁵² Eliot Cohen, "GWSS Guiding Concepts," 7 August 1991, File 0874792, misc. 56, v. 6, GWAPS Collection, AFHRA.

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⁵⁴ See for example GWAPS *Summary Report*, ix-x.

⁵⁵ "Eliot A. Cohen, Current as of 19 February 1992," File 0874754, misc. 41, GWAPS Collection, AFHRA. Cohen had published widely in the defense studies field. His most notable works prior to joining the GWAPS were *Military Misfortunes: The Anatomy of Failure in War* (co-authored with John Gooch) (New York: The Free Press, 1990); and, *Citizen Soldiers: The Dilemmas of Military Service*, (Ithaca: Cornell University Press, 1985).

⁵⁶ Letter from Colonel Emery M. Kiraly to author, 18 October 1999. A review of selected folders in the GWAPS Collection reveals the extent of intellectual and managerial involvement of Cohen. See for example the folders in GWAPS Collection Files 0874788, misc. 56; and 0874789, misc. 56, v. 3., AFHRA. Comparing the minutes of meetings of the GWAPS and USSBS can also shed light on the differences between Cohen and D'Olier. While at the USSBS meetings (especially the one held between USSBS members and the AAF staff in June 1945), D'Olier rarely contributed anything of substance during discussions. Cohen, conversely, during the briefings to the Review Committee was closely involved in the dialogue.

⁵⁷ "[Eliot Cohen] Comments," 27 May 1992, File 0874758, misc. 42, v. 1.; e-mail message from Kiraly to Task Force Leaders, "Expanding DS/DS knowledge base," 1 April 1992, File 0874791, misc. 56, v. 5.; "Minutes GWAPS Internal Review Session, Operations," 7 August 1992," (Minutes were compiled by LTC Wayne Thompson), File 0874788, misc. 56, v. 2.; Cohen to Kuehl, Hone, and Kiraly, "Interim Report," 18 March 1992, File 0874789, misc. 56, v. 3; GWAPS Collection, AFHRA.

⁵⁸ See for example the dialogue between GWAPS analysts during their review sessions in File 0874789, misc. 56, v3; and File 087478, misc. 56, v2; GWAPS Collection, AFHRA.

⁵⁹ "Draft Review Committee Notes," 24 March 1992, File 0874758, misc. 42, v 1, GWAPS Collection, AFHRA.

⁶⁰ Biographical descriptions of GWAPS members are scattered throughout the GWAPS Collection. See, for example: Files 0874754, misc. 41; 0874793, misc. 56, v. 7.; and 0874755, misc. 41; AFHRA.

⁶¹ Harry G. Summers, *On Strategy: A Critical Analysis of the Vietnam War* (Novato: Presidio Press, 1982). In a recent essay historian Russell Weigley argues that Summers's book has caused more confusion and myth-making within the military as to why the United States lost the Vietnam War; see Weigley, "The Soldier, the Statesman and the Military Historian," *The Journal of Military History*, vol. 63, no. 4, (October 1999), 807-822.

⁶² Joe Strange, *Centers of Gravity and Critical Vulnerabilities: Building on the Clausewitzian Foundation So That We Can All Speak the Same Language*, (Marine Corps War College, 1996), 5.

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⁶⁴ John J. Mearsheimer, *Liddell Hart and the Weight of History*, (Ithaca: Cornell University Press, 1988), 14.

⁶⁵ MacIsaac, *Strategic Bombing in World War II*, p. 161.

⁶⁶ Eliot Cohen, memorandum for the Secretary of the Air Force, "Presentation Strategy for GWAPS," 24 August 1992, File 074758, misc. 42, v. 1., GWAPS Collection, AFHRA.

⁶⁷ The Review Committee members were: Paul H. Nitze (Chairman of the Committee) of the Paul H. Nitze School of Advanced International Studies at the Johns Hopkins University; General Michael J. Dugan (retired), former Air Force Chief of Staff; Admiral Huntington Hardisty (retired); Dr. Richard Kohn of the University of North Carolina at Chapel Hill; Dr. Bernard Lewis of Princeton University; Andrew Marshall of the Office of the Secretary of Defense; Phillip Merrill, at the time of the GWAPS was former Assistant Secretary General for Defense Support, NATO; Dr. Henry Rowen of Stanford University; Honorable Ike Skelton, U.S. House of Representatives; General Maxwell Thurman (retired); Major General Jasper A. Welch (retired); and Dr. James Q. Wilson of the University of California at Los Angeles.

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⁷⁰ Cohen to Secretary of the Air Force, "GWAPS report # 17," 27 March 1992, (Rice's margin comments are on this memo), File 0874765, misc. 47, v. 2; Memo for Record, "Briefing for Secretary of the Air Force and GWAPS Review Committee," 14 January 1993, File 0874787, misc. 56, GWAPS Collection, AFHRA.

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⁷³ GWAPS, *Effects and Effectiveness, Volume II, part 2*, pp., 16-21.

⁷⁴ "Minutes of Review Session for Task Force VI, Effects and Effectiveness," 9 June 1992, (notes taken by LTC Daniel Kuehl), File 0874788, misc. 56, v. 2; Watts and Keaney to Cohen, "Pedantic Thunder: Task Force VI Research Agenda and Production Plan," [undated], File 0874790, misc. 56, v. 4, GWAPS Collection, AFHRA.

⁷⁵ GWAPS, *Effects and Effectiveness, Volume II, part 2*, pp., 27-31, 57-63.

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⁸⁰ USSBS, Chairman's Office, *Summary Report (Pacific War)*, 26; Also see, Barton J. Bernstein, "Compelling Japan's Surrender Without the A-bomb, Soviet Entry, or Invasion: Reconsidering the US Bombing Survey's Early-Surrender Conclusions," *Journal of Strategic Studies*, Vol 18, No. 2 (June 1995), 104, 107; and, Bernstein, "The Struggle Over History: Defining the Hiroshima Narrative," in Philip Nobile, ed., *Judgment at the Smithsonian* (New York: Marlowe and Company, 1995), 127-256; also see Robert P. Newman "Ending the War With Japan: Paul Nitze's Early Surrender Counterfactual," 175-178; and my "Advocacy or Assessment: The United States Strategic Bombing Survey of Germany and Japan."

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⁸³ Richard P. Hallion, *Storm over Iraq: Air Power in the Gulf War*, (Washington, D.C.: Smithsonian Institution Press, 1992), p. 253 (*italics mine*).

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⁸⁶ GWAPS, *Command and Control, Volume I, part 2*, pp., 337.

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