



N an article in the September issue, I noted some of the major misconceptions and myths concerning the use of airpower and especially strategic bombing during World War II. The problem does not end there.

The Vietnam War has engendered more emotion, more loose talk, and more misunderstandings about airpower than any conflict since the 1940s.

Surprisingly, one even hears criticism of airpower's outstanding showings of the past decade—that is, in Operations Desert Shield and Storm in the Gulf, Deliberate Force in Bosnia, Allied Force in Serbia, Enduring Freedom in Afghanistan, and Southern Watch and Northern Watch over Iraq.

Charge: Airpower generally was a failure in Vietnam. It lost the war and let the Army down.

Response: Some 8.7 million Americans served in uniform during the Vietnam War. Of those, 4.4 million were in the Army; 1.8 million in the Navy; 1.7 million in the Air Force; and nearly 800,000 in the Marines. In addition, at any one time there were nearly one million South Vietnamese soldiers on duty. Thus, at the height of the war, there were well over one million allied ground troops continuously operating in South Vietnam—a country roughly the size of Washington state. Yet, all of those troops were unable to control the countryside. If the Air Force, with its 1.7 million personnel failed in Vietnam, the nine million personnel of the other services and South Vietnam failed even more completely.

It is also important to note who was in charge of formulating US political and military strategy during this war. There were seven key leadership positions occupied by 21 men from 1963 to 1973.

Of these 21 leaders, only one, Robert S. McNamara, had served in the Air Force (actually, the Army Air Forces). Ten others were or had been Army officers; nine others, including all three Presidents, were or had been Naval officers; and one, Ambassador Ellsworth Bunker, had no military experience. Moreover, during the Rolling Thunder air campaign against North Vietnam from 1965 to 1968, the strategy, targets, and even sometimes the tactics, were usually determined in Tuesday lunch meetings in the White House. No airman was ever invited to those meetings. Chairman of the Joint Chiefs of Staff Gen. Earle G. Wheeler, an infantryman, attended instead and purportedly gave "the air point of view."

Certainly, there is much blame to go around regarding how the Vietnam War was planned and fought, and I am not trying to absolve airmen from sharing responsibility for defeat. But given that airpower played only one small part of an overall strategy that was fatally flawed, and given further that airmen were permitted to play virtually no direct role in formulating that flawed strategy, one cannot place the main onus for defeat on airpower. It is also noteworthy that the most vocal senior military critic of our Vietnam War policy at the time was Air Force



Linebacker II B-52s struck targets at Hanoi and Haiphong, forcing North Vietnam back toward peace talks.

Chief of Staff Gen. Curtis E. LeMay. For his pains he was forced into early retirement.

Charge: Because Rolling Thunder did not break the will of North Vietnamese leader Ho Chi Minh and his cohorts to continue the war in the south, strategic bombing failed in Vietnam.

Response: Rolling Thunder was not strategic bombing it was an interdiction campaign and a halfhearted one at that. Approximately 90 percent of all targets struck during Rolling Thunder were transportation targets, and most of those were located south of the 20th parallel—well below Hanoi and Haiphong. The latter, North Vietnam's major port through which it received 85 percent of all supplies, was not closed by mining until 1972. Supplies could not, therefore, be halted near their source. Indeed, both cities were usually off-limits to bombing during Rolling Thunder, and restricted zones were placed around them—up to 30 miles for Hanoi and 10 miles for Haiphong. There were also 16 bombing halts between 1965 and 1968. Finally, it is a principle of air war that achieving air superiority is a top priority: Without it, air operations become far more difficult. Yet, the Administration would not allow North Vietnamese airfields to be struck until April 1967—more than two years after the start of Rolling Thunder. Similarly, surface-to-air missile sites were often placed off-limits to American air strikes—unless and until they took hostile actions against our aircraft.

In mid- to late 1964 the Joint Chiefs of Staff proposed various plans to the Administration that included air strikes against 94 key targets in North Vietnam that would be conducted over a period of 16 days; the strike aircraft would include B-52s. In addition, the JCS—and note these were joint plans, not USAF plans-also proposed the blockade of North Vietnam and the mining of Haiphong harbor, as well as the introduction of US ground troops into South Vietnam to combat the insurgency. These plans were rejected by the Administration. Eventually, most of the 94 targets were hit, but over a period of three years, not the 16 days called for by the JCS. It was and still is a tenet of airpower doctrine that force should be used quickly and overwhelmingly to have the desired effect. A campaign of gradual escalation robs airpower of both its physical and psychological impact. Indeed, piecemeal attacks are generally counterproductive. This tenet, however, was ignored. This does not mean that the JCS plans would have been successful if they had been approved and implemented. It is simply to say that the plans submitted by the country's top military experts were rejected. Certainly, President Johnson had cogent political reasons for doing so—his fear of Chinese intervention, for example. The result, nonetheless, was to make it extremely difficult to devise options that could navigate political shoals while also providing military success. The options that were implemented were failures.

The only time strategic bombing was attempted against North Vietnam was during the 11-day Linebacker II offensive of December 1972, when B-52s struck targets in and around Hanoi and Haiphong in a series of massive strikes. Linebacker II did not "win the war" for the US and South Vietnam, but it did force the North Vietnamese government to return to the negotiating table and sign an agreement that had been agreed to "in principle" but not signed two months before. At the same time, Linebacker II reassured the South Vietnamese government-erroneously as it turned out-that we remained committed to its survival.

It has long been debated whether or not Linebacker II actually coerced North Vietnamese leaders into signing an agreement. Although the December settlement was similar to the one negotiated two months earlier, Hanoi's leaders did not sign that accord. It is impossible to know if they would have done so without the Christmas bombing. It is interesting to note the words of two expert observers who expressed their opinions on the significance of the air attacks:

- "One look at any Vietnamese officer's face told the whole story. It telegraphed hopelessness, accommodation, remorse, fear. The shock was there; our enemy's will was broken."—Vice Adm. James B. Stockdale, POW and Medal of Honor recipient
- "I am convinced that Linebacker II served as a catalyst for the negotiations which resulted in the ceasefire. Airpower, given its day in court after almost a decade of frustration, confirmed its effectiveness as an instrument of national power—in just nine-and-a-half flying days."—Adm. Thomas H. Moorer, Chairman, Joint Chiefs of Staff, 1973

Charge: Airpower was an indiscriminate weapon that killed excessive numbers of Vietnamese civilians.

Response: Guenter Lewy has provided the most authoritative statistics on casualties in the Vietnam Waralthough he himself admits these numbers are estimates. He states that 250,000 South Vietnamese civilians were killed in the fighting, with another 39,000 assassinated by the Viet Cong. Breaking down the casualties by cause is difficult, but based on those civilians admitted to hospitals between 1967 and 1970, Lewy estimates that 67 percent of all injuries resulted from mines, mortars, guns, and grenades. The other 33 percent were injured by shelling or bombing. If these percentages are used for the entire war, and if we assume that the number of those injured by shelling or bombing are equal (Lewy doesn't break this category down), and if we assume that those killed met their fates in the same percentages as did those

who were wounded—and all of those are big ifs—then of the 587,000 Vietnamese civilians, both north and south, that Lewy states were killed during the war, around 147,000 (25 percent) died from air attacks. The other 75 percent, more than 440,000 people, were killed by ground or naval action.

Also note that ground commanders declared certain areas in South Vietnam "free-fire zones" where there was unrestricted use of artillery and mortar fire: "Anything that moved could be killed and anything that stood could be leveled." While Air Force, Navy, Marine, and South Vietnamese aircraft dropped five million tons of ordnance on South Vietnam, the Army shot eight million tons of artillery rounds there. For example, it was the policy of Maj. Gen. Ellis W. Williamson, commander of the 25th Infantry Division, to shoot 1,000 rounds of artillery for every one received by the enemy. Of interest, the Viet Cong used the 27,000 tons of dud artillery rounds fired by the Army and Marines to build booby traps that caused 6,000 US casualties. A great deal of fire and steel was rained down on South Vietnam, but the majority of it was not dropped by aircraft.

Charge: The US Air Force was insufficiently responsive to Army needs in South Vietnam.

Response: USAF flew 3.9 million combat sorties in South Vietnam in support of the Army; of those, 633,180 were "attack" sorties, including 67,477 B-52 strikes, each delivering up to 30 tons of bombs. It is crucial to understand that Gen. William C. Westmoreland, commander, US Military Assistance Command, Vietnam, 1964-68, determined the targets in South Vietnam for USAF aircraft—including the tens of thousands of B-52 strikes usually directed against "suspected enemy locations." Westmoreland also chose the targets in Route Package 1—the area just north of the demilitarized zone. There was only token USAF representation on the MACV staff, despite the fact that a full general, the commander of 7th Air Force, had his headquarters collocated with that of Westmoreland and was his "air deputy." When 7th Air Force aircraft went north of Route Pack 1, the targets came from US Pacific Command headquarters in Hawaii (after they were approved in Washington, D.C.). The deputy for air also had no



An A-1 Skyraider performs a near-vertical dive on enemy positions in North Vietnam.

control over Navy, Army, Marine, or South Vietnamese aircraft and helicopters operating in South Vietnam. During the siege of Khe Sanh in 1968, the 7th Air Force commander, Gen. William W. Momyer, pushed for control of all air assets in South Vietnam so as to protect the beleaguered Marine post most effectively. Such control was initially denied, and only a decision by the Secretary of Defense to consolidate airpower under a single air commander, temporarily, allowed a system that put the lives of the troops under fire above parochial service interests.

Despite successes in Desert Storm and thereafter, some unjustified criticisms of airpower continue.

Charge: In the 1991 Gulf War, the Air Force was too focused on strategic attack; support of ground forces was inadequate.

Response: Strategic attack made up only a small part of the coalition air campaign. In fact, the air tasking order that codes all air missions by type does not even have a "strategic attack" category. Thus, missions that struck chemical weapons bunkers in northern Iraq or an electrical power plant in Baghdad were coded as "air interdiction." Such a classification system seems incongruous if airmen really wished to emphasize strategic attack as their primary mission.

Even so, some targets were unofficially considered as being of a strategic nature: leadership (especially telecommunications), key production facilities (electricity and oil), transportation infrastructure (railroads and bridges), and NBC—Nuclear, Biological, and Chemical research, production, and storage facilities. Using these categories, of the 41,039 strike sorties flown by coalition aircraft, only 5,692 (13.7 percent) would be classified as "strategic." Moreover, because heavy bombers like the B-52 dropped a disproportionate share of the bomb tonnage during the war (32 percent), and most of those strikes were flown against the Iraqi army, it is apparent that the vast amount of all bombs delivered fell on enemy ground forces and their equipment.

Consider also the weight of ordnance actually falling on Baghdad—the epitome of a strategic center of gravity. In 43 days a mere 330 weapons (244 laser-guided bombs and 86 Tomahawk cruise missiles) were delivered against Baghdad targets. Those 330 weapons represent three percent of all the precision weapons used during the war, which in turn amounted to only nine percent of all the air weapons expended. As a consequence, the total tonnage falling on Baghdad during the war was a mere 287 tons—a minute fraction of the total tonnage of 84,200 tons dropped by the Air Force.

The effect of this massive air campaign directed against the Iraqi ground forces in Kuwait was enormous. US Central Command estimated that prior to the start of coalition ground operations on Feb. 24, 1991, all front-line Iraqi divisions had lost more than 50 percent of their strength; rear divisions had been reduced by 25 percent. More detailed examinations by US intelligence agencies after the war confirmed these percentages. When it is realized that a military unit is considered "combat ineffective" when it has lost 40 percent of its strength, it is small wonder that more than 80,000 Iraqi soldiers de-



In Allied Force, precision munitions dropped from medium altitude destroyed targets such as tanks.

serted during the aerial pounding and another 86,000 surrendered virtually without a fight.

Charge: Air attacks such as were conducted in Operation Allied Force constitute nothing more than "recreational bombing." Pilots remain at such an altitude that they can't possibly hit their targets accurately.

Response: In operations such as Allied Force, the war over Serbia to free Kosovo in 1999, political leaders deemed it fundamental that NATO casualties be kept to an absolute minimum. The alliance was shaky from the start, but it would undoubtedly split apart if heavy casualties were sustained. Hence, early on President Clinton and NATO leaders declared that a ground invasion was out of the question. The number of personnel involved— Gen. Henry H. Shelton, JCS Chairman, stated that at least 200,000 troops would be necessary—combined with the memories of the vicious fighting in the Serbian mountains during World War II, warned that an invasion would mean heavy losses for NATO, as well as massive casualties and collateral damage for the Serbs. Instead, airpower would be used as the weapon of first resort. Yet, the need to limit casualties, on both sides, remained a primary consideration for NATO leaders.

As a consequence, allied aircraft were directed to remain at medium altitude, usually above 15,000 feet, so as to stay above the range of most enemy ground fire. Some have argued that this policy induced inaccurate bombing, thus increasing collateral damage and civilian casualties.

In the vast majority of cases this was not true. A Precision Guided Munition is most accurate when it is dropped in the midaltitude range—from 15,000 to 23,000 feet—allowing enough time for the weapon to correct itself in flight. If dropped from a lower altitude, the weapon will have less kinetic energy, and its steering fins will have less opportunity to correct the aim; the weapon will usually land short of the target. From the pilot's perspective, medium altitude is also advisable because it allows time to identify the target at sufficient

distance, "designate it" (if laser guided), and launch the weapon. In short, for PGMs against a fixed target whose position is already established—which was the case in most of the targets struck in Serbia—the optimum altitude to ensure accuracy is at or above 15,000 feet.

To ensure accuracy, the optimum drop altitude for nonguided munitions is lower than for a PGM. Even so, acquisition remains a limiting factor: Coming in too low at 575 mph makes it nearly impossible to acquire the target, line up, and place the bomb accurately. As a result, the compromise altitude for the delivery of unguided bombs is around 5,000 feet. However, this places the delivery aircraft right in the thick of fire from ground defenses. Allied Force commanders resolved this dilemma by keeping aircraft at medium altitudes but restricting the use of non–PGMs to areas where there was little or no chance there would be civilian casualties or collateral damage.

A difficulty arises in identifying and attacking mobile targets. On April 14, 1999, near Korisa, Kosovo, NATO pilots attacked what intelligence sources had identifiedand which indeed appeared to be—a military column. It is now known the column also contained refugees: Several dozen civilians were killed in the air strikes. This is the only instance in the 78-day air campaign when NATO intelligence sources and aircraft at medium altitude combined to misidentify a target, thereby causing civilian casualties. Could this accident have been avoided if the aircraft had flown at a lower altitude? Probably. Indeed, NATO changed the rules after this, allowing aircraft in certain circumstances to fly lower to ensure target identification. There is, however, a trade-off in such instances: If flying lower increases the risk to aircrews due to enemy ground fire, at what point does the risk of misidentifying a target override the risk of losing an airplane and its crew? If friendly losses meant the shattering of the alliance, were they preferable to allowing Slobodan Milosevic to continue his atrocities unchecked?

Charge: Despite all the talk by airmen, airpower remains an indiscriminate use of military force that deliberately targets civilians.

Response: Various books and articles continue to perpetuate this myth. Although one must recall the caution of Mark Twain regarding lies, damned lies, and statistics, the following statistics are fairly unambiguous.

Gil Elliot in Twentieth Century Book of the Dead estimates that 110 million people, military and civilian, died in wars during the first seven decades of the 20th century. More than half of those died due to genocide and forced starvation. Of the 46 million who died due to "technology," Elliot lists the causes of death as small arms, which accounted for 24 million; "big guns," 18 million; "mixed," three million; and aerial bombing, one million. He notes that the figure of one million dead due to air attack may be higher but certainly less than two million. Thus, even if we add the numbers of those who have died since Elliot wrote in 1972, the number of those

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dying due to air attacks during the entire 20th century would not exceed two million.

Other researchers have listed as many as 170 million dead in both internal and external wars during the 20th century. Those who advance higher casualty figures usually attribute the additional deaths to even more vicious dictators than those assumed by Elliot. Gerhard Weinberg, for example, states that 60 million people died in World War II (10 million more than most estimates), and those extra deaths occurred largely as a result of more civilians massacred and starved on the Eastern Front and in China than was originally thought.

If we are to accept these staggering figures, it means that of the 170 million people who died in wars during the 20th century, the overwhelming majority died as a result of military operations by armies, navies, and paramilitary "police" forces. Two million people, or about 1.2 percent of the total, were the victims of air attack. Below are some more statistics relative to warfare since World War II:

- According to Greenpeace, 3,000 civilians died in the six-week Desert Storm air campaign; later studies lower that figure to 1,000.
- UNICEF and the World Health Organization maintain that more than one million Iraqi civilians have died due to UN sanctions since 1990—55 percent of whom are children under the age of five.
- Milosevic told US Ambassador Richard C. Holbrooke that perhaps 25 Serbs died in the 1995 air campaign over Bosnia; NATO lost one aircraft, and the two crewmembers were captured and later released.
- Human Rights Watch states that approximately 500 civilians died in the 78-day NATO air campaign over Serbia/Kosovo; there were no allied casualties.
- 18 US Army Rangers died in Mogadishu, Somalia, with another 70 or so wounded, but at least 500 Somali civilians were killed and another 500 wounded during the 24-hour firefight of October 1993.
- The American Red Cross states that 200 people worldwide are killed each week by land mines, with another 100 or so wounded. The US is not a signatory of the Land Mine Ban Treaty.

Certainly, it is most regrettable that any civilians are



An airman prepares a 2,000-pound bomb for a B-1B sortie during Operation Enduring Freedom.

killed or injured by air attack, but we must be realistic. Innocent people always die in war—tens of millions of them over the past century. Given that less than two percent of them were victims of air attack, it is peculiar to charge that airpower is an indiscriminate or inhumane weapon. Unfortunately, there are those who still do. Yet, the arithmetic and facts are clear. The biggest killers of the 20th century were small-arms fire, blockades, sanctions, sieges, artillery fire, land mines, and worst of all, despotic leaders who inflicted genocide and starvation on friend and foe alike.

War is indeed hell and always has been, but there are ways to mitigate its effects on the innocent. Airmen have maintained since the advent of flight that this invention offered a form of war that was less deadly, to both sides, than traditional means of war on land and sea. History has proved these prophets were correct. Moreover, the ability of aircraft to project force in a discriminate manner so as to minimize civilian casualties and collateral damage has continued to increase over the past two decades. It is not the answer to all problems and can still inflict most grievous harm. Yet, recent conflicts have made it clear that the centuries-old desire to wage war with humanity and discrimination has finally become possible.

A Note on Sources

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