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FALL 2015 - Volume 62, Number 3
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History



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In this issue, we are completing the story of the conflict in Southeast Asia, which we began in the last issue. It is designed to complement the sessions that will be underway in October with the “Violent Skies: Air War over Vietnam” symposium, jointly sponsored by all of the services. The National Defense University is hosting this symposium on October 15th and 16th. Complete registration details are located at www.violentskies.org.

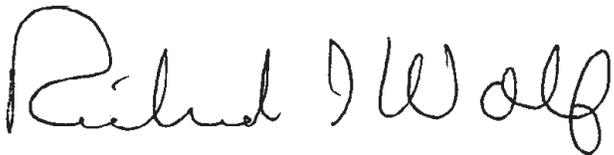
As a result of the impending event, our lead article is Part II of *A War Too Long*, by Col. John S. Schlicht, USAF (Ret.), which carries the story from 1965 to the end of the conflict. We also have an article by Darrell Whitcomb about the introduction of the A-7 aircraft into the “Sandy” role in Vietnam. It is the result of extensive research undertaken by the author at the Air Force Historical Research Agency at Maxwell AFB, Alabama.

The third article departs from the theme, and is contributed by Daniel Haulman, one of the eminent crew of archivists and historians at Maxwell, who has written extensively on the experience of the Tuskegee Airmen through the years. In this article, Dan has covered some new ground in greater detail as he discusses who helped, and who hindered, the Airmen during World War II. An interesting read.

As usual, we have an extensive collection of book reviews, some twenty in all, beginning on page 50. Our Book Review Editor, Scott Willey has noted that it is becoming harder to get people to review items for this publication. If you are at all interested in air power readings, take a look at page 61 and see if you have something to add.

Please take a minute to catch up with the state of the Foundation by turning to page 5 and our President’s Message. It has all the latest news and information on Foundation happenings.

We conclude the issue with our normal lists of air power events and reunions, as well as a very nice, laudatory letter about our discontinued “History Mystery” and its author, Bob Dorr. But we also have a new version of the “Mystery” on the final page, page 64. Be sure to take a look. Please don’t forget to take a look at the details for the October 15-16 symposium.



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15-16 Oct. 2015

SAVE THE DATE

Symposium Site:
National Defense University
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Join us for a reflective examination and discussion about the role of aircraft in the Vietnam War and the service and sacrifice of the airmen who fought. Scholars and veterans from around the country will discuss the role of air combat operations in Southeast Asia from 1964 to 1975.

Conference registration, sponsorship/display opportunities, lodging and transportation information available about 15 JUNE 2015. For more info, go to www.violentskies.org.

For program information, contact Dr. David Winkler at dwickler@navyhistory.org or email info@violentskies.org for general event information.



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From the President

Dear Foundation Members and Friends:

As always, let me thank you for the part that each of you has played in the history and legacy of *air power*, and for your generous support of our Foundation.

In our last message to you we shared the news of our great fortune, receipt of a very generous bequest from one our longtime members. As we noted, this gracious gift will go a long way towards ensuring a sound financial future for your Foundation. In the months since the receipt we have spent a good deal of time in securing and investing the funds: Selecting legal counsel, choosing a highly reputed and successful investment advisory firm, and upgrading our financial auditing program. While this comes at some expense to the Foundation, we believe it is entirely prudent and necessary to protect this precious asset. As we noted in our last message, these funds solidify our position as an independent advocate within the *air power* community. We now have the latitude to review our programs and member services with the vision to grow our Foundation in a way that furthers our mission to “Know the past...Shape the Future.” However, we must continue to: operate on a tight budget; annually raise funds through sponsorships and donations; use our new, viable status for the betterment of our Foundation; and prove worthy of future bequests and support.



We again ask that you mark your calendars for the second week of this coming October. On Tuesday, October 13th we will host our annual Awards Banquet. As in past years, we will recognize two individuals who have made a lifetime of contribution to the making and documenting of Air Force history and two who authored the best historical writings of the past year. The Banquet will be held at the Army Navy Country Club in Arlington, VA. This year's winners are:

Spatz Award Winner: General (Ret) Ronald Fogleman

Holley Award Winner: Dr. Richard P. Hallion

Air Power History Best Book Reviewed Winner: Dr. Dennis Okerstrom

Air Power History Best Article Award: Dr. John T. Farquhar

The Banquet will be preceded by the presentation of the **Doolittle Award** in a 4:00 PM ceremony at the Air Force Memorial. This award recognizes an Air Force unit whose history exemplifies the *air power* contribution to national security, valor, esprit-de-corps, and superior mission execution exemplified by then-Lt Col Jimmy Doolittle, his 79 fellow airmen and their 1942 bombing of Tokyo, Japan. This year's selectee is the **509th Bomb Wing, Whiteman AFB, MO.**

Additionally, on October 15th and 16th, with our sister service historical foundations, we will co-host a joint symposium entitled “Violent Skies: The Air War over Viet Nam.” The venue for this event will be the National Defense University at Ft. Leslie J. McNair in Washington DC. A distinguished group of panelists and speakers have been assembled to address the many facets of this conflict. . We invite your suggestions and recommendations to enhance the currency and relevancy of the discussion. Of course, we would greatly appreciate your attendance at this much anticipated event, as well as our award festivities on the 13th.

A handwritten signature in black ink that reads "Dale W. Meyerrose". The signature is written in a cursive style and is underlined with a long horizontal stroke.

Dale W. Meyerrose, Maj Gen, USAF (Ret.)
President and Chairman of the Board



A War Too Long: Part II



John S. Schlight

(Overleaf) A group of F-105s are refueled by a KC-135 over Vietnam in 1965.

THE CHANGE IN THE CONDUCT OF THE AIR WAR WAS NOT SUFFICIENT TO SATISFY LEMAY AND LIKE-MINDED MEMBERS OF THE MILITARY LEADERSHIP

Secretary of Defense Robert S. McNamara defends the bombing of Hanoi and Haiphong, which were designed to deprive the North Vietnamese military of essential supplies.

The second air war took place in the skies over North Vietnam. Between March 1965 and the end of October 1968, Air Force and Navy aircraft conducted Operation Rolling Thunder, a bombing campaign designed to force Ho Chi Minh to abandon his ambition to take over South Vietnam. Over the objections of many Air Force leaders, the operation began primarily as a diplomatic signal to impress Hanoi with America's determination, essentially a warning that the violence would escalate until Ho Chi Minh blinked, and secondarily as a means to bolster the sagging morale of the South Vietnamese. In the view of the Air Force, the campaign had no clear-cut military objective nor its authors any real estimate of the cost in lives and aircraft. General LeMay and others argued that military targets, rather than the enemy's resolve, should be attacked and that the blows should be rapid and sharp, with the impact felt immediately by the North Vietnamese Army on the battlefield as well as by the political leadership at Hanoi. Secretary McNamara favored the measured application of force and was convinced that the war could be won in the South. He initially emphasized strikes against the extended battlefield, which consisted of South Vietnam and the areas immediately beyond its borders, instead of proceeding directly against the targets many deep within North Vietnam advocated by LeMay. When Rolling Thunder failed to weaken the enemy's will after the first several weeks, the purpose, though not the pace, of the campaign began to change. By the end of 1965, the Johnson administration still used air power in an

attempt to change North Vietnamese policy, but the bombing tended to be directed against the flow of men and supplies from the North, thus damaging the enemy militarily while warning him of the danger of greater destruction if he maintained the present aggressive course.

Although the bombing campaign was taking on more of a military coloration, forcing Ho Chi Minh to give up his goal of absorbing South Vietnam into a unified communist state remained the underlying purpose. The change in the conduct of the air war was not sufficient to satisfy LeMay and like-minded members of the military leadership, who believed that the United States could not end aggression with these strategies. The ill-conceived attempt to bomb Ho Chi Minh into being a good neighbor, in part the product of a cultural bias that perceived a militarily backward North Vietnam as succumbing to the use (if not the mere threat) of American might, had failed. McNamara's persisting in such an effort, even in the form of aerial interdiction, served mainly to estrange LeMay and other uniformed leaders from the civilian officials of the Department of Defense. In essence, the senior officers argued that military considerations should determine the use of force, whereas the civilians, typified by Secretary McNamara, insisted that selective pressure, controlled by them and combined with diplomatic overtures, would prevail and compel North Vietnam to call off its aggression in the South.

Within Congress, doubts about the McNamara policy mounted as the bombing dragged on without an appreciable effect on the leadership at Hanoi. At last in August 1967, after more than two years of Rolling Thunder, the Preparedness Investigating Subcommittee of the Senate Armed Services Committee began to probe the conduct of the air war. Under the leadership of John C. Stennis, a Democrat from Mississippi, the subcommittee provided a sympathetic forum where the admirals and generals presented their case for stronger action. In the words of Democratic Senator W. Stuart Symington of Missouri, a member of the subcommittee and the first Secretary of the Air Force, Rolling Thunder resembled an attack on an octopus; he, along with the other members of the subcommittee and the uniformed witnesses, believed in going for the head, which would mean an escalation of the bombing in terms of targets and tonnage. In contrast, Secretary McNamara argued unsuccessfully that attacking the head of the octopus was not necessary if all the tentacles were pounded to a pulp, as he maintained the limited bombing was doing. The consensus of the subcommittee was that the policy represented by Secretary McNamara had



Col. John S. Schligh, USAF (Ret.) graduated from St. Vincent's College in 1950, and earned MA and Ph.D. degrees in History from Princeton. After serving for five years as a navigator, Col. Schligh spent the rest of his career until 1976 in academic military positions, nine years at the U.S. Air Force Academy and three years at the National War College. His final position was as the Deputy Chief of the Office of Air Force History, where he retired in 1983. After that tenure, he moved on to the U.S. Army's Center of Military History until his civilian retirement.



**BESIDES
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failed and that purely military considerations should prevail in selecting and attacking targets. Nevertheless, the hearings resulted in little more than an expansion of the target list, for the President undertook no dramatic escalation. The secret sessions did, however, destroy what remained of McNamara's credibility with Congress, contributing to his disenchantment with the war and edging him toward resigning, which he did early in 1968.

Besides opening divisions within the Department of Defense, the bombing contributed in some measure to the increasing opposition to the war and to the way it was being fought. Those among the populace who believed that the United States was doing too little could point to Rolling Thunder as an example of how American servicemen were risking their lives in operations that could not bring victory. At the opposite pole were those who felt that Rolling Thunder was unworthy of the United States, a form of war that unleashed the latest technology of violence against the civilian populace of North Vietnam. As the then-secret tes-

timony before the Stennis subcommittee made clear, the nation's uniformed leaders did not advocate warfare against the population of the North, but attacks on undeniably military targets in crowded cities could not help but maim and kill non-combatants. Complicating any dispassionate judgment of the air war was the enduring myth that aerial bombardment was capable of unerring accuracy. Tracing its roots to the bombs-in-a-pickle-barrel legend of World War II, this myth had been reinforced by recent references to the surgical precision of aerial attack and by President Johnson's ill-advised remark that, whereas Viet Cong steel was plunged into flesh and blood, American bombs were directed only at steel and concrete. When an American reporter permitted to travel in North Vietnam sent back dispatches describing civilian casualties and the destruction of homes, the abiding belief of the American people in the precision of aerial bombing reinforced the enemy's propaganda.

When Rolling Thunder began in March 1965, strikes were limited to specific targets south of 20 degrees North latitude, but the area of operations rapidly expanded and the nature of the attacks changed. Within a few weeks Air Force fighter-bombers were flying armed reconnaissance in that same area, hitting targets of opportunity. The first target north of the 20th parallel was bombed in May, and by November a few strikes had been authorized north of Hanoi against the rail lines entering the country from China. Because it represented a use of military force for diplomatic purposes, Rolling Thunder was controlled directly from Washington. Targets were chosen in the White House, at times when the President was having lunch with a few key advisers. At first, squadrons in South Vietnam and Thailand carried out the strikes approved for the Air Force, but after the construction of new airfields in Thailand, all the raids against the North originated there. The fleet of aircraft the Air Force operated from Thailand grew from 83 to 600. At first, the main burden of carrying the air war to North Vietnam fell to the F-105, but the F-4C joined it in mid-1965 and the F-4D somewhat later; the F-111, the operational version of the TFX, served briefly in 1968. The first of the few B-52 strikes directed against the North during this period took place in April 1966 and pounded the infiltration routes exiting into Laos; the Air Force Chief of Staff, General McConnell, did not want to send these bombers against the Hanoi-Haiphong region where the defenses were strongest.

Until November 1965, Air Force and Navy aircraft alternated in attacking Rolling Thunder targets throughout the North, but beginning that month, six armed reconnaissance areas, called route packages, were created, with each the responsibility of one of the two services. During April 1966, when infiltration into the South increased through the demilitarized zone, responsibility for strikes in the route package abutting the zone was turned over to General Westmoreland as part of South Vietnam's extended battlefield. Meanwhile, attacks continued, with certain exclusions, in the rest of North



A fully loaded F-105D.

ROLLING THUNDER WAS FOUGHT IN FLURRIES, WITH PERIODS OF ESCALATION

... SEPARATED BY PAUSES IN THE BOMBING

BY THE SUMMER OF 1966, THE NORTH VIETNAMESE WERE DEFENDING THEIR TERRITORY WITH A RADAR-DIRECTED SYSTEM OF AERIAL DEFENSE

Vietnam. At various times, aircraft could not strike the potential targets within a thirty-mile radius of Hanoi, those within ten miles of Haiphong or thirty miles of the Chinese border, the MiG bases, and, until they demonstrated that they were actual weapons and not mere tokens of Soviet support, the surface-to-air missile sites.

The lists of authorized targets and excepted areas changed throughout the bombing campaign. In June 1966, for instance, fighter-bombers flew a series of powerful attacks against seven major petroleum storage areas, destroying some seventy percent of North Vietnam's tankage. The air war escalated further in February 1967 when aircraft hit power plants, military airfields, and railway yards within the buffer zones around Hanoi and targets along the Chinese border. Nevertheless, Rolling Thunder was fought in flurries, with periods of escalation or intensified activity separated by pauses in the bombing designed to facilitate a North Vietnamese response through diplomatic channels. In actuality, the pauses allowed the enemy time to bind up his wounds.

During Rolling Thunder, Air Force and Navy aircraft frequently attacked the highway bridge at Thanh Hoa, but the raids proved futile. Workmen swarmed over the bridge by night or in weather too bad for follow-up bombing and repaired the damage, with traffic rerouted across a nearby underwater bridge whenever the steel structure could not be used. A captured naval aviator, whose aircraft was one of sixteen shot down during the attacks on the Thanh Hoa bridge was blindfolded and in the dark of night placed in the back of an open truck. After a short drive, the truck stopped, his captors removed the blindfold, and he found himself in the middle of the river at Thanh Hoa, the truck parked on the underwater bridge that American intelligence had not yet detected. The Paul Doumer bridge, which carried the railroad and a highway over the Red River at Hanoi, came under attack during the enlargement of the target list that resulted from the hearings of the Stennis subcommittee. Air Force fighter-bombers succeeded in dropping three of the spans, but North Vietnamese laborers immediately set to work on an underwater replacement bridge.

Besides struggling successfully to repair bomb damage, whether to bridges or to power plants, North Vietnam responded to Rolling Thunder by building a modern radar-controlled air defense system, perhaps the most formidable ever devised. Shortly after the bombing began, the number of North Vietnamese anti-aircraft guns of all calibers doubled to 2,000. The proliferation of these weapons forced the fighter-bombers after the first few weeks to change their tactics from low-level, high-speed bomb runs to higher altitude penetrations. The defenders, however, acquired a weapon, the surface-to-air missile, that could engage higher flying aircraft. Reconnaissance craft detected Soviet-supplied surface-to-air missiles for the first time in March 1965 and had identified fifty-six sites by the end of the year. Complementing the guns and missiles, the North Vietnamese Air Force had about 100 MiG-17s and MiG-21s, as well as a few MiG-19s, a collection of interceptors that began, during the following year, to pose a threat to the American fighter-bombers.

By the summer of 1966, the North Vietnamese were defending their territory with a radar-directed system of aerial defense that included interceptors, surface-to-air missiles, and anti-aircraft guns. In general, the enemy used his interceptors to harry the approaching fighter-bombers, forcing them to drop their bombs earlier than planned to rid their aircraft of the drag that impeded them in dogfights against the MiGs. To avoid the surface-to-air missiles, which were deadly at high altitude but could not change direction readily, the F-105s and F-4s dived sharply, a maneuver that placed them in the killing zone of the anti-aircraft guns. The weakest link in the enemy's defenses proved to be the radar that controlled the surface-to-air missiles and the largest of the guns. The Air Force exploited this weakness with a Navy-developed missile, the *Shrike*, that destroyed the transmitter by homing on the radar signals. Later, an improved missile of this kind, the Standard Antiradiation Missile, replaced the *Shrike* as the normal means of forcing hostile radar to shut down. In addition, the Air Force used jamming transmitters, mounted in orbiting aircraft or enclosed in pods hung from the fighter-bombers, to conceal the genuine radar returns and confuse the North Vietnamese operators. Using antiradiation missiles and the electronic countermeasures, pilots neutralized the surface-to-air missiles, enabling the attackers to remain beyond the reach of anti-aircraft fire.

Along with the formidable defenses, the restrictions on targets helped determine the tactics employed by American air power during Rolling Thunder, for the pilots had to avoid trespassing in Chinese air space or damaging non-North Vietnamese shipping at Haiphong or some other port as they carried out the contradictory mission of persuading Ho Chi Minh that North Vietnam could be destroyed, without actually destroying it. The Air Force at times compensated with unusual tactics or techniques for the defenses and the prohibition, but not for the basic contradiction. Since airfields in

The AGM-45 *Shrike* anti-radiation missile.



PRESIDENT JOHNSON CONCEDED THAT ROLLING THUNDER HAD FAILED TO MAKE HO CHI MINH RELENT

THE AIR WAR ALONG THE TRAILS OF SOUTHERN LAOS COMPLEMENTED BOTH ROLLING THUNDER AND THE AIR WAR IN SOUTH VIETNAM

North Vietnam were at times exempt from attack and those in China always so, the attackers could not destroy the MiGs on the ground, and aerial combat was inevitable. To improve the odds, radar-equipped EC-121s, military versions of the Lockheed Constellation transport, orbited over the Gulf of Tonkin and warned American pilots of the approach of hostile jets. A favorite maneuver of the North Vietnamese fighter pilots was to climb sharply, forcing the F-105s to jettison their bombs in expectation of a dogfight. Radar in the EC-121s detected these tactics, and a screen of F-4s, armed with heat-seeking missiles and flying at an altitude lower than the F-105s, could intercept the approaching enemy.

Perhaps the most spectacular tactical innovation occurred in January 1967, when fourteen flights of F-4s posed as bomb-laden F-105s by using the appropriate radio call signs, approach route, altitude, and speed. Anticipating easy kills, the North Vietnamese attacked, and the Phantoms, primed for battle and unencumbered by bombs, destroyed seven of the MiGs in twelve minutes. Four days afterward, this time masquerading as weather reconnaissance craft, the F-4s again lured the MiGs into attacking and destroyed two more. Having learned the danger of overconfidence, the North Vietnamese began to rely on hit-and-run attacks, firing heat-seeking missiles from behind their intended victims, then bolting for safety.

For air-to-air combat, the Air Force normally used the multibarrel 20-mm cannon and three kinds of air intercept missiles the AIM-9 *Sidewinder*, AIM-7 *Sparrow*, and AIM-4 *Falcon*—all supersonic and accurate at ranges varying from two to ten miles. The *Sidewinder*, first used in combat by Chinese Nationalist pilots over the Taiwan Strait in 1958, was a heat-seeking missile developed by the Naval Ordnance Test Station at China Lake, California. The *Sparrow*, developed by the Raytheon Company for the Navy, relied on radar for guidance. The Hughes Aircraft *Falcon* came in several models, some with radar in the nose to track the victim, whereas others homed on the heat generated by engines. To enhance the accuracy of the

Sparrow and the radar-guided versions of the *Falcon*, McDonnell Douglas fitted fire control radar in the F-4 to help highlight the target. Since the air intercept missiles were ill-suited for close-in fighting, some F-4Cs and all subsequent models of the Phantom carried a 20-mm gun either installed in a pod attached to the airframe or built into the aircraft.

After the Wise Men recommended against further escalation of the war, President Johnson conceded that Rolling Thunder had failed to make Ho Chi Minh relent. Hoping that a reduction of the bombing would succeed where intensification had failed and entice Hanoi into negotiating a settlement of the war, the President on April 1, 1968, ended the bombing north of the 19th parallel and halted it altogether on November 1. Col. Ray Bowers, who had studied the campaign while assigned to the Office of Air Force History, summed up the accomplishments of Rolling Thunder between the spring of 1965 and the fall of 1968 when he told an audience at the Air Force Academy, "Measured by its unsatisfactory outcome and by the...planes lost in North Vietnam, the controlled application of air power that was Rolling Thunder stands as a sad failure."

During the air war against the North, Air Force tactical fighters flew 166,000 sorties and the Navy's carrier aircraft 144,500. The B-52s, which strictly speaking were not a part of Rolling Thunder, saw limited action, flying just 2,330 sorties. The enemy downed 526 Air Force aircraft; fifty-four fell victim to surface-to-air missiles, forty-two were destroyed by MiGs, and the remainder succumbed to anti-aircraft fire. Of the 745 Air Force crew members shot down on missions against the North, 145 were rescued, 255 were known to have died, 222 were taken prisoner, and the fate of 123 others was unknown when the operation ended.

The air war along the trails of southern Laos complemented both Rolling Thunder and the air war in South Vietnam. The objective of this third air campaign was to impede the flow of men and equipment from North into South Vietnam; in 1965 this traffic was estimated at 4,500 men and 300 tons of

THE INTERDICTION OF THE HO CHI MINH TRAIL IN SOUTHERN LAOS WAS SUBJECT TO POLITICAL CONSTRAINTS

cargo each month. The Air Force, the Navy, and the Marine Corps all participated in this air war; the Air Force with F-100s, F-4s, F-105s, and B-57s from both South Vietnam and Thailand. The weight of the aerial effort varied with the weather, which cleared over southern Laos during a dry season that normally lasted from November through April and facilitated both road traffic and air operations. Although the campaign in this region came to be conducted year-around, initially the activity all but stopped with the onset of the monsoon rains, as the focus of aerial interdiction shifted to the demilitarized zone where the tempo of infiltration increased with the beginning of dry weather.

Like Rolling Thunder, the interdiction of the Ho Chi Minh Trail in southern Laos was subject to political constraints. The settlement negotiated between the communist and noncommunist factions in 1962 banned a military headquarters in Laos, and the United States used its embassy at Vientiane for that purpose, with the ambassador functioning as the military authority in the kingdom and the military attaches as his staff. Decisions as to the number of sorties, targets, and ordnance reflected the need to preserve the nominal neutrality of the Laotian prime minister, Souvanna Phouma, who did not object to the air war as long as his loyal subjects were not endangered and his government not involved to the extent that might invite North Vietnamese retaliation. The Joint Chiefs of Staff approved each of the recurring interdiction campaigns, the Seventh Air Force provided the aircraft and nominated the targets, and the ambassador vetoed any target that in his judgment might jeopardize noncombatants, captured Americans, or the appearance of neutrality on the part of Souvanna's government.

The original Barrel Roll campaign, begun in December 1964, gave way during the following April to a more extensive interdiction program called Steel Tiger. As the rains abated, infiltration increased and the number of air strikes multiplied, concentrating on the part of Steel Tiger closest to the South Vietnamese border, a region called Tiger Hound. Aircraft hit trucks, storage and bivouac areas, bridges, buildings, and antiaircraft sites. In December 1965 B-52s dropped their first bombs on the Ho Chi Minh Trail.

Although American aircraft had by the end of 1965 claimed the destruction of more than 1,000 trucks, along with structures of every sort, including bridges, few results could be verified and the number of the enemy killed could not be determined. Infiltration continued not only through Laos, but also by way of Cambodia and the demilitarized zone and by sea. As time passed, the carefully camouflaged network of roads and trails, waterways and pipelines, depots and bivouac areas steadily expanded in southern Laos, and the enemy established a logistics complex in Cambodia.

Because of the troops and cargo that traveled the infiltration and supply routes, the tempo of the fighting in South Vietnam continued to increase despite an enemy death toll that rose from an esti-

mated 35,000 in 1965 to as many as 181,000 in 1968. Realizing the importance of the Ho Chi Minh Trail through southern Laos in sustaining the war in South Vietnam, the United States early in 1966 intensified the air campaign against this route and experimented with a number of new interdiction techniques. Until the rains arrived in May, Air Force, Navy, and Marine Corps aircraft flew more than 6,000 sorties, cratering roads and destroying 1,000 trucks, along with buildings, antiaircraft sites, and boats. World War II vintage A-26s began hunting and attacking trucks; the Combat Skyspot radar, which had proved effective in South Vietnam, began directing strikes in southern Laos at night and in bad weather; and AC-130 gunships equipped with special detection devices to locate and attack trucks moving by night saw their first action early in 1967. At times, South Vietnamese ground reconnaissance teams were flown by helicopter to the vicinity of the trail to locate targets and call for air strikes.

Meanwhile, the B-52s began making a greater contribution to the interdiction effort, flying some 400 sorties against portions of the trail opposite the five northernmost provinces of South Vietnam between April and June 1966. Westmoreland sought to expand still further the use of the bombers by inaugurating a systematic campaign against the mountain passes leading from North Vietnam into Laos. The ambassador, however, vetoed the proposal, doubting both the effectiveness of the bombing and his ability to sell such a program to Souvanna Phouma.

The North Vietnamese reacted to the interdiction campaign by strengthening the antiaircraft defenses and by assigning troops and laborers to repair damage and build new routes, some of which would remain undetected for months, even years, under the jungle canopy. By mid-1966, Air Force reconnaissance craft had identified about 300 anti-aircraft sites bristling with guns, mostly 37-mm types; the labor force by this time totaled an estimated thirty-eight North Vietnamese engineer battalions and 16,000 civilian laborers, many recruited locally. A North Vietnamese transportation division controlled the entire operation, which included way stations, guides and food, and communications all along the roads and rivers.

This transportation division attempted to make the Ho Chi Minh Trail secure, and devised many techniques for avoiding detection from the air. As much as possible, trucks moved by night; in daylight they were camouflaged with green paint, tarpaulins, and tree branches. Whenever aircraft approached, moving trucks darted onto side roads and waited for at least an hour after the intruders had disappeared before resuming the journey. Bicycles, oxcarts, boats, and human porters supplemented the trucks in carrying supplies. Troops destined for the battlefields of South Vietnam also used the Ho Chi Minh Trail, usually traveling on foot in small groups. The soldiers were warned not to discuss their travel, make any unnecessary noise while en route, or leave litter on the road in short, to avoid any action that might

THE NORTH VIETNAMESE REACTED TO THE INTERDICTION CAMPAIGN BY STRENGTHENING THE ANTI-AIRCRAFT DEFENSES



An EC-121 Constellation.

EARLY IN 1967,...THE AIR FORCE STEPPED UP ITS BOMBING ATTACKS

AIRCRAFT ESPECIALLY EQUIPPED FOR THE OPERATIONS OF TASK FORCE ALPHA BEGAN ARRIVING AT NAKHON PHANOM LATE IN 1967

reveal their schedule or betray their presence. If aircraft did appear, the individual infiltrators either froze in their tracks, threw themselves down, or moved off the trail into the rain forest. The jungle proved a valuable ally of the North Vietnamese, for by binding together the tops of trees, the enemy created an extensive trellis to hide his movements and his installations from searching aircraft. Trucks and infiltrating troops crossed rivers and streams without being detected on pontoon bridges, hidden by day, or on underwater spans made of sandbags. Telephone lines were strung along five-foot poles that were too short to cast the telltale shadows that might alert photo interpreters to the course of the trail. This sustained effort, requiring the full-time activity of tens of thousands of soldiers who might otherwise have been fighting in South Vietnam, seemed proof that the bombing of the Ho Chi Minh Trail had disrupted the North Vietnamese war effort.

In the summer of 1966, when the seasons changed and the infiltration shifted northward to the demilitarized zone, the aircraft assigned to operations in Tiger Hound followed suit and began bombing in the Tally Ho area just north of the zone. Early in 1967, when the dry weather returned to southern Laos, the Air Force stepped up its bombing attacks, its efforts at night interdiction, and its support of ground probes of the Ho Chi Minh Trail. These operations, and the attempt to turn the roads and trails to mud by seeding the clouds to cause rain, failed to significantly reduce enemy infiltration. The Air Force attributed this failure to the need to consult the ambassador at Vientiane, which made the bombing in southern Laos, like the air war against North Vietnam, a tentative, stop-and-go undertaking.

In the meantime, Secretary McNamara, losing confidence in Rolling Thunder as a means of forcing the enemy to end the aggression in the South and negotiate an end to the war, began seeking a substitute for the bombing of North Vietnam less costly in lives and aircraft. He proposed, instead of intensified attacks on the heavily defended North, that air power join in a systematic effort to choke off the flow

of men and equipment across the demilitarized zone and through southern Laos into South Vietnam. He ordered the establishment of what sometimes was described as McNamara's Wall—a barrier of barbed wire and defensive strongpoints sealing the routes across the demilitarized zone and a field of electronic sensors detecting infiltration west of the zone through southern Laos. Work on the barrier along the demilitarized zone began during the second half of 1967 but was never completed; beset by shortages of transportation and materials and by poor roads, the project soon collapsed in the face of determined enemy resistance. Meanwhile, the electronic portion of the wall began to take shape. Under the guidance of the Air Force, Task Force Alpha came into being, its brain an electronic surveillance center built at Nakhon Phanom, Thailand, on the border with Laos. To monitor the movement of trucks and men along suspected segments of the Ho Chi Minh Trail, aircraft dropped acoustic and seismic sensors, along with thousands of tiny button bombs to help activate them. Orbiting EC-121s relayed signals from activated sensors to Nakhon Phanom, where computers matched the information with previously stored data, and controllers requested strikes by elements of General Momyer's Seventh Air Force.

Aircraft especially equipped for the operations of Task Force Alpha began arriving at Nakhon Phanom late in 1967. The Navy contributed a squadron of Lockheed OP-2E patrol bombers, which joined Air Force CH-3C helicopters in planting the sensor fields. Besides the helicopters, the Air Force supplied a squadron of F-4s to drop sensors in areas too heavily defended for the helicopters or the OP-2Es and eighteen A-1Es to dispense the tiny bombs that, when driven over or stepped on, emitted a noise that activated the sensors. A detachment of forward air controllers in O-1s arrived to direct both the placement of the mines and sensors and the strikes launched in response to the electronic data. Despite successful tests of the system on the trail in December, the full-scale inauguration of the program had to be postponed when the assigned aircraft were diverted in January to the defense of Khe Sanh. The marines manning the base benefited, however, from the sensors in pinpointing hostile movements and acquiring targets for air strikes or artillery.

Between December 1964 and the end of 1967, American aircraft flew 185,000 sorties of all kinds against the Ho Chi Minh Trail. Of this total, 80 percent were the work of the Air Force, which lost 107 of the 132 aircraft shot down over southern Laos during this period. As a result of the reduction and then the termination of Rolling Thunder, resources became available to transform the air campaign in southern Laos from essentially a dry-weather attempt at interdiction into a succession of sensor-assisted air campaigns, called Commando Hunt, that tried throughout the year to impede the infiltration of men and supplies.

The air war fought over northern Laos had a lower priority than operations over South Vietnam, North Vietnam, or southern Laos. Neither the com-

THE FIGHTING IN NORTHERN LAOS REMAINED LARGELY A WAR OF PROXIES

munist Pathet Lao nor their opposition could recruit the forces or obtain the outside aid that would bring victory. North Vietnam used the Pathet Lao to protect the western flank of the Ho Chi Minh Trail; the United States hoped to safeguard the radar sites in Laos that directed the bombing of North Vietnam and, at the same time, tie down North Vietnamese resources that might be used to greater effect in South Vietnam or in southern Laos. The main antagonists, therefore, were more interested in keeping their Laotian factions in the field and fighting than in winning. Victory, after all, might require the diversion of men and materiel needed for more important operations elsewhere.

Disagreements arose over how air power could best sustain the forces loyal to the government and opposing the Pathet Lao. The American ambassador at Vientiane wanted to control the air support needed by the government forces and the irregulars recruited by General Vang Pao from the Meo tribe in the mountains of Laos. He tried repeatedly to persuade the Air Force to set aside aircraft for his exclusive use in providing close air support for the troops in northern Laos, but General Momyer resisted attempts to assign fighter-bombers to the ambassador or to the Laotian generals. Momyer's responsibilities extended from the Mekong delta to the demilitarized zone, including the roads and trails of southern Laos, and embraced every kind of air support from battlefield strikes to long-range interdiction. He was determined to retain the freedom to use his aircraft wherever and however he deemed best. Instead of continuing to maintain a few jet fighter-bombers on alert for operations in northern Laos, as his predecessor had done, Momyer preferred to allocate sorties from his overall force in response to requests from Vientiane. Although the Air Force increased the number of B-26s and A-1s assigned to Southeast Asia, types of aircraft well suited to the kind of war being fought in northern Laos, the ambassador did not become his own air commander.

The fighting in northern Laos remained largely a war of proxies, with few Americans (or North Vietnamese, for that matter) serving there. The North Vietnamese provided supplies and a small core of disciplined soldiers for the Pathet Lao. An even smaller contingent of American airmen acted as forward air controllers for Vang Pao's army or operated the scattered radar sites that directed strikes in southern Laos and North Vietnam. Udorn in Thailand functioned as a pilot training center and maintenance depot for the fledgling Royal Laotian Air Force, and a C-130 flying out of there served as an airborne command post for operations over northern Laos.

American aerial activity in northern Laos varied in intensity over the years. As an immediate consequence of the peace accord of 1962, the United States shifted its attention to South Vietnam and limited its activity in northern Laos to providing military aid, conducting the occasional show of force, and carrying out clandestine operations. These circumstances contributed to the creation of

a loosely structured operating organization for which the embassy, the Central Intelligence Agency, and the military shared responsibility. Two years later, when civil war erupted despite the settlement of 1962, the United States sided with the Royal Laotian government against the communist Pathet Lao. After 1964 the fighting intensified, but by 1968 it had more or less settled into an annual pattern in which the Pathet Lao advanced onto the Plain of Jars in northern Laos during the dry season (winter), exposing its forces to air attacks that inflicted casualties and hacked away at the supply and communication lines extending from North Vietnam. By the coming of the summer rains, the drive had spent itself, and the initiative passed to the government troops as the communists fell back to restock and regroup. In this annual cycle of combat, the Laotian government came to rely more and more on air power, both American and its own, and on the guerrilla army of Vang Pao.

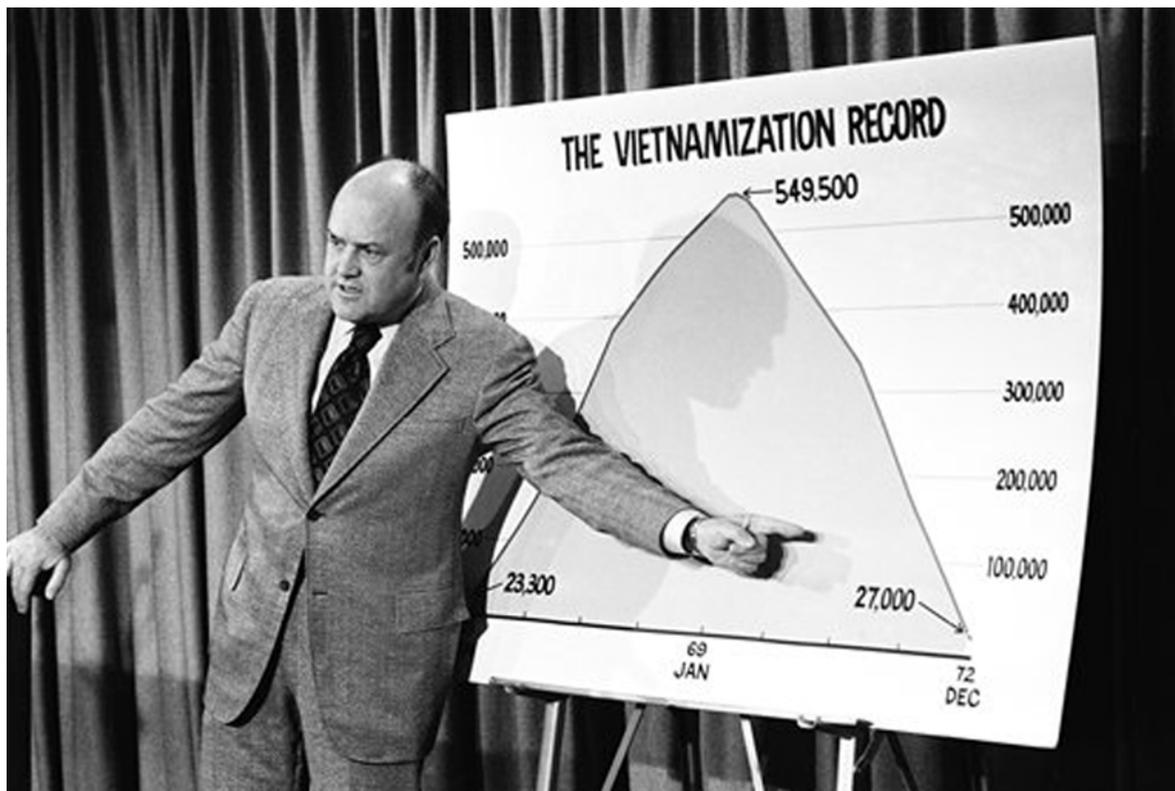
Air Force pilots became proficient in the kind of close air support on which the Meo tribesmen depended. The first such strikes, delivered during a dry-season offensive by the Pathet Lao in 1965, demonstrated that Air Force units could work directly with the Laotian forces, whether regulars or Vang Pao's guerrillas. Laotian reliance on American air power increased during 1966, after the commander of the Laotian air arm launched an unsuccessful coup that undermined the morale and effectiveness of his organization as well as the government's confidence in its air force. The Americans had no choice but to supply the needed sorties until the Laotians could again fly them.

The reduction and later the cessation of the bombing of North Vietnam in 1968 changed all four of the air wars in Southeast Asia. The greatest change was in the North, where for more than three years American aircraft were authorized to go only to fly reconnaissance missions or to retaliate for some action by the enemy, usually an attack on reconnaissance craft. In the South, air power became a shield for the American disengagement and withdrawal. In Laos, the purpose of air operations remained interdiction in the south, preventing the enemy from building up for a final onslaught as American strength in South Vietnam declined, and tying down resources in the north that the North Vietnamese might otherwise use to turn the American withdrawal into a rout. As a result, air power no longer used against North Vietnam found ready application in South Vietnam and in the two wars being fought in Laos.

By imposing a limit on American participation in the war—the effect of the decisions made following the Tet offensive of early 1968—the administration of President Lyndon B. Johnson began modifying the partnership between the United States and South Vietnam. The ultimate objective remained a free and independent South Vietnam, but the United States no longer pursued that goal by means of a bombing campaign in the North and by a war of attrition in the South fought largely by American troops. Instead, the United States began to train

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and equip the South Vietnamese to take over the war, while at the same time engaging in negotiations with the enemy to end the fighting and acknowledge the right of South Vietnam to exist. North Vietnam proved willing enough to talk; in May 1968, after Rolling Thunder diminished in scale, the Hanoi government entered into preliminary discussions at Paris that involved the United States, South Vietnam, and, after much haggling, the political leaders of the Viet Cong. Not until January 1969, after Rolling Thunder had ended and when Richard M. Nixon, a Republican, was about to take the oath of office as President, did the preliminaries end so that the negotiators could begin addressing issues of substance. The discussions soon revealed that North Vietnam, although willing to participate, would make no major concessions that might jeopardize the ultimate conquest of the South; fight and talk became the national policy, which persisted after the death of Ho Chi Minh in September 1969.

The Nixon administration took over the basic strategy adopted by President Johnson and named it Vietnamization, a label proposed by Secretary of Defense Melvin R. Laird. The original choice, de-Americanization, had seemed not only less euphonious but also hurtful to South Vietnamese pride since its use acknowledged that the United States had indeed taken over the war. Ideally, as Vietnamization progressed, freshly equipped and newly trained South Vietnamese would in an orderly fashion assume full responsibility for fighting the war. The Americans in the ground forces, which contained the greatest share of draftees and suffered the most casualties, would be the first to depart as the South Vietnamese took over. In this

way, the toll of Americans killed and wounded would decline sharply; and this benefit of Vietnamization would affect a large segment of the nation's populace, the families of the draftees, thus encouraging widespread support, if not of the war itself, at least of the manner in which it was being liquidated. However, the reduction of American casualties, and the resulting political effects, soon took precedence over the difficult job of fitting out and training the armed forces of South Vietnam. Henry A. Kissinger, the national security adviser to President Nixon (and after August 1973 the Secretary of State), warned early in the process of Vietnamization that troop withdrawals would become "salted peanuts" for the American people, with each one whetting the public's appetite for another. Kissinger was correct. He acknowledged years afterward that by late summer of 1969, "We were clearly on the way out of Vietnam by negotiation if possible, by unilateral withdrawal if necessary."

The emphasis on bringing the men home represented an attempt to placate the antiwar movement in the United States, which since 1965 had mounted several large public demonstrations against American policy in Southeast Asia. The motives of the demonstrators varied from a sincere belief that the war was morally wrong to a fear of being drafted and possibly serving in South Vietnam. By embarking on a well-publicized course of disengagement and withdrawal (and later by easing the impact of the draft preparatory to abolishing it altogether), the Nixon administration bought time for negotiation but at the same time relaxed the pressure on North Vietnam to respond. The United States clearly was leaving South Vietnam,

**VIETNAM-
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but North Vietnam had no intention of doing so. The American withdrawals thus represented a concession by the Nixon administration to the antiwar faction rather than a reaction to concessions by the communist side in the peace negotiations. Not even a series of secret discussions between Kissinger and representatives of North Vietnam could persuade the communists to accept a program of mutual troop withdrawals.

Vietnamization in all its aspects—disengagement, withdrawal, and the strengthening of South Vietnamese forces—permeated American efforts in Southeast Asia, affecting all four of the wars in which the Air Force was engaged: the fighting over North Vietnam, South Vietnam, northern Laos, and southern Laos (which came to include Cambodia). From late 1968 until the spring of 1972, when a North Vietnamese invasion of the South caused a reorientation of air operations, every undertaking by the Air Force overt or secret, authorized or unauthorized, inside South Vietnam or outside the country was designed to facilitate in some way the withdrawal of American combat forces, their replacement by South Vietnamese, and the negotiation of an end to the war. During 1965 air power had protected the build-up of American ground forces in South Vietnam; now it formed a shield for their withdrawal.

In South Vietnam, throughout the years of Vietnamization and withdrawal, air power, ranging from strikes by fighter-bombers to the battering delivered by B-52s, helped defeat the enemy or hold him in check in a number of battles. The fighting often erupted at fire support bases or other outposts, but the most significant action of this period took place at Ap Bia mountain in the spring of 1969 during a raid on the supply depots within the A Shau Valley. An initial probe revealed that the mountain was an enemy stronghold; air power and additional troops had to be employed for its capture. The soldiers fighting there began calling the objective “Hamburger Hill,” as troops were fed into what seemed to them like the military equivalent of a meat grinder. The mountain was finally conquered at the cost of fifty-six Americans killed, with more than ten times that number of North Vietnamese dying in its defense, but the victors promptly withdrew. Lt. Gen. Phillip B. Davidson of the Army, at the time a staff officer with the military assistance command, declares in his book, *Vietnam at War*, that the battle “catapulted the doves into shrill flight,” but what troubled opponents of the war like Senator Edward M. Kennedy, a Democrat from Massachusetts, was not so much that fifty-six soldiers had died capturing an important mountaintop as that the objective had been abandoned once it was overrun. In Kennedy’s opinion, this latest search and destroy operation had given away what Americans had sacrificed their lives to capture, an objective that might well have to be taken again at further cost. Apparently the Nixon administration shared the senator’s concern that lives were being squandered, for the Chief Executive in the aftermath of the Hamburger Hill fighting instructed

Gen. Creighton W. Abrams, who had succeeded Gen. William C. Westmoreland as Commander, U.S. Military Assistance Command, Vietnam, to limit American casualties.

Davidson argues in his volume that the battle for Ap Bia mountain and the resulting Presidential decision to hold down casualties marked another turning point in the war, since it deprived the American forces of a sense of purpose by acknowledging that this was indeed a “no-win” conflict. Beginning in 1969 and accelerating in subsequent years, morale and discipline did decline, in part because the war was being liquidated. Put as starkly as possible, no one wanted to be the last American killed in Southeast Asia. Other factors, however, affected the armed forces during the period of Vietnamization and withdrawal. Some, like racial strife and the abuse of alcohol and drugs, were embedded in contemporary American society; others, like opposition to the war, had shallower roots. Although the opponents of the Vietnam conflict remained a small, if articulate, minority, the American public was undeniably becoming indifferent toward the war, and servicemen felt that their sacrifices were barely acknowledged, let alone appreciated. Conditions in Southeast Asia put a unique stamp on these behavioral problems and on the growing sense of alienation. For example, members of the different races, who had cooperated in combat to survive, might be at each other’s throats when not in danger from the common enemy; but racial animosity was not the only problem to surface in the rear areas. Boredom punctuated by fear of rocket or mortar attack, isolation from what was familiar and pressure from peers, and ready access to alcohol and drugs created a subculture of dependency. Addiction to drugs represented a problem that the services had not encountered previously; when punishment did not work, treatment programs had to be established.

During this turbulent time, the armed forces fell woefully short of their standards for disciplined behavior. Orders were disobeyed; and in the ground forces, unpopular officers and noncommissioned officers were attacked, even killed. At My Lai in 1968, scores of unarmed villagers believed to have aided the enemy were shot to death. Scandals erupted involving kickbacks and thefts at military clubs, and an Air Force transport assigned to the embassy at Saigon was used to smuggle drugs. Bad as these times were, the armed forces survived as institutions, in part because the war ended with it the strains that had contributed to alienation and demoralization but also because of the positive effects from the efforts made to improve race relations, treat drug addiction and alcoholism, and root out crime and punish the criminals.

However much it may have contributed to the decline in morale and the breakdown of discipline, the struggle for Hamburger Hill clearly signaled the end of the massive American search and destroy operations that symbolized the war of attrition fought in South Vietnam. For the soldier or marine hacking through the undergrowth or the airman

**FOR THE U.S.
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bombing North Vietnamese troops within yards of some embattled outpost, the result may well have seemed a distinction without a difference, but the fact remained that husbanding American lives now took precedence over killing the enemy. The statisticians continued their arcane work long after the resignation of Secretary of Defense Robert McNamara, who had relied so heavily on statistics. They turned from the standard yardstick of attrition, the kill-ratio of Americans to enemy soldiers, to charts and graphs depicting progress in equipping and training the expanded armed forces of the Republic of Vietnam. The war in South Vietnam became a race against time, an effort to prepare the South Vietnamese to take over the war before the American withdrawal thrust it upon them.

In terms of aircraft for the South Vietnamese Air Force, Vietnamization began (and ended, for that matter) as a matter of quantity more than quality. The number of operating squadrons doubled by 1972 from twenty to forty, but the additional aircraft tended to be Northrop F-5s, which were not standard fighter-bombers in the U.S. Air Force; A-37s, Cessna T-37 trainers modified for use as attack aircraft; helicopters provided mainly by the Army; and old C-123 transports. Both the F-5 and the A-37 were short-range aircraft suitable mainly for operations within South Vietnam. The only Air Force gunships made available to the South Vietnamese, derived from the slow and vulnerable C-47 and C-119 transports, were useful mainly for defending outposts against infantry attack, especially at night. The modernization and expansion programs that produced the forty squadrons excluded aerial tankers, the more modern of the gunships, F-4s, and B-52s. Even the C-130 transport was a late addition to the South Vietnamese inventory of aircraft. The usual justification for withholding aircraft was that the particular model was either not needed for self-defense or too complicated for the South Vietnamese to fly and maintain.

The American concern that South Vietnam's air arm might be unable to absorb the most modern equipment was founded in fact, at least when Vietnamization began. Whether a more intensive program of training might have made a difference is arguable at best, for instruction remained geared to the equipment the South Vietnamese were receiving and this effort encountered serious obstacles. When the Vietnamization of the air arm began in earnest in 1969, that service was an estimated two years behind the army, which had expanded in 1967. Even as their instructors tried to make up for lost time, South Vietnamese training to be pilots or mechanics rapidly had to master highly technical subjects, a truly discouraging task since few of the trainees had either the fluency in English or the technical background to absorb the instruction easily. Training posed the most difficult obstacle to expanding and equipping the South Vietnamese Air Force.

Whatever the problems that lay ahead, some 65,000 American troops, including slightly more than 2,500 airmen, left the country in 1969, as the

actual American strength in South Vietnam declined from a peak of almost 550,000 early in the year to 484,000 by the end of December. Tactically, the proportion between air and ground reflected the fact that air power had to compensate for the diminishing size of the ground force, but other considerations were involved. The Air Force not only suffered fewer casualties than the combat arms of the Army and Marine Corps but also relied on volunteers rather than draftees, although some of those who donned its uniform had no doubt been motivated by fear of the draft and possible combat service in the infantry. The death or wounding of a comparatively few volunteers—a proportion of them pilots, who were long-term or career officers—seemed likely to have less impact on the public than more numerous casualties among draftees.

For the U.S. Air Force, Vietnamization got underway in 1969 when the air arm of South Vietnam grew from 17,500 officers and airmen and 400 aircraft to a total strength of 36,000 with 450 aircraft. The disparity in growth between manpower and aircraft resulted from the time needed to train men to service and operate the new airplanes. The process of learning took many forms. For example, the Air Force arranged for South Vietnamese and American airmen to serve side by side in the air support centers of each corps preparatory to a transfer of responsibility for the entire tactical air control system. At the same time, South Vietnamese forward air controllers and air liaison specialists assumed a greater role in directing air strikes, including those flown by American aircraft. The number of sorties by South Vietnamese forward air controllers increased during the year from 505 in January to 1,083 in December, expanding from ten to twenty-five percent of the total flown. A similarly encouraging increase took place in the aggregate sorties flown by the South Vietnamese; from 55,000 in the first quarter of 1969 the number rose to 74,000 during the last three months of the year, a tribute to improving maintenance as well as to flying skill. Meanwhile, the infrastructure of bases changed to support South Vietnam's increased share of aerial operations. By October 1969 the U.S. Air Force had virtually turned over to the South Vietnamese the air base at Nha Trang, and by early the following year airmen of the two nations worked together at Da Nang, Pleiku, Bien Hoa, Binh Tuy, Soc Trang, and Tan Son Nhut.

Growth continued throughout 1970. By year's end, the South Vietnamese Air Force had thirty squadrons organized into five air divisions, ten tactical wings, five maintenance wings, and seven air base wings. The greatest increase in aircraft had come in helicopters, with transfers from the U.S. Army raising the total from 112 to 310. More important than numbers of aircraft, the South Vietnamese flew half of all the strike sorties in their nation. The greater participation by South Vietnam's air arm was necessary because more was being demanded of air power and fewer U.S. Air Force units were available to respond; during 1970, 150,000 Americans departed, including more than

**GROWTH
CONTINUED
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THE WITHDRAWAL OF AMERICAN FORCES CONTINUED INTO 1971

DESPITE THE GREATER BURDEN BEING ASSUMED BY SOUTH VIETNAMESE AIRMEN, THE UNITED STATES PERSISTED IN ITS REFUSAL TO EQUIP THEM WITH THE LATEST AIRCRAFT

10,000 airmen and eleven of the twenty fighter squadrons based in the South, reducing the total American strength in the country to 334,000.

The withdrawal of American forces continued into 1971, with an additional 50,000 leaving in the spring, en route to a year-end objective of only 184,000 Americans still serving in South Vietnam. Since the need of an aerial shield for the dwindling ground force continued, so too did the expansion of the South Vietnamese Air Force. The air arm ended the year with 1,222 aircraft, including 500 helicopters, a second squadron of AC-119 gunships, and three squadrons of C-123s added to the two on hand when the year began. Although the number of fighter squadrons remained at nine throughout the year, pilots gained experience as they flew sixty-three percent of all strike sorties in South Vietnam and thirty-nine percent of those in Cambodia, where the fighting had spread in 1970.

Despite the greater burden being assumed by South Vietnamese airmen, the United States persisted in its refusal to equip them with the latest aircraft, particularly for air defense and interdiction. A surge in MiG activity over Laos during late 1971 persuaded the Department of Defense to accelerate South Vietnam's acquisition of fifty-seven F-5Es fitted out for air defense. The South Vietnamese had not received the means to interdict the Ho Chi Minh Trail because of the tacit assumption that the Commando Hunt series of attacks in southern Laos would continue, but Secretary of Defense Laird insisted in 1971 that South Vietnam's air arm be given an interdiction force that, although not the equal of the American operation centered at Nakhon Phanom, could to some extent disturb the flow of men and supplies from North Vietnam. The Americans proposed that ground patrols sow modest-sized sensor fields to find targets for a five-squadron fleet of single-engine mini-gunships. Testing began in Florida of a short-takeoff-and-landing airplane, the Fairchild Peacemaker, which was to serve as the gunship. Neither the Air Force, the Military Assistance Command, nor the Pacific Command displayed much enthusiasm for the project; the addition of a multibarrel machinegun made the aircraft overweight and dangerously unstable; and by the time the idea was ready for a combat test, the enemy had overrun the area from which the gunships were to have operated. Consequently, South Vietnam never acquired the means for aerial interdiction.

The South Vietnamese, besides lacking a satisfactory weapon for aerial interdiction, did not receive the training or equipment necessary to conduct the kind of search and rescue operations that in the course of the war saved 3,883 persons from death or capture. Excluded from Vietnamization were the HH-3 and HH-53 helicopters and the HC-130P, a combination airborne command post and aerial tanker. Although all three served the Americans well, the Air Force did not transfer these aircraft to the South Vietnamese. Even so, Vietnamization interfered with the American rescue forces, which were displaced by an expanding

South Vietnamese Air Force from their normal operating bases close to the likely scenes of aerial action.

Although the South Vietnamese air arm could not interdict traffic on the Ho Chi Minh Trail or rescue downed airmen, it continued to progress in other fields. By early 1972, for instance, it had assumed virtually full responsibility for the tactical air control system within the country. Officers and enlisted men trained by the Americans ran the control centers and also served as air liaison specialists with ground units. The Air Force forward air controllers turned most of the country over to their South Vietnamese counterparts and continued to operate only in the vicinity of Bien Hoa and Da Nang.

Until the spring of 1972, when North Vietnam invaded the South, the Commando Hunt series continued in dry season and wet, as the Air Force fought its war in southern Laos. Over the years, marauding aircraft, often responding to sensor signals, claimed to have damaged or destroyed a vast number of cargo-laden trucks, as many as 25,000 in a single dry season, and to have touched off tens of thousands of secondary explosions, which served as proof of successful attacks on supply caches. Yet, these claims and the impact on the enemy defied verification. Cameras and most other airborne sensors could not penetrate the jungle canopy; and with the passage of time, stronger defenses on the ground made it increasingly difficult for intelligence patrols to move into the maze of roads, trails, waterways, pipelines, supply storage areas, and troop bivouacs of the Ho Chi Minh Trail in southern Laos. Improved aerial sensors like infrared detectors, radar, and low-light-level television proved effective over the more exposed portions of the trail; and ever more devastating firepower that included laser-guided bombs, 40-mm cannon instead of 20-mm, and a 105-mm howitzer installed in some gunships increased the likelihood of destructive hits. Despite the greater potential for detection and destruction, comparatively few truck carcasses were seen and the level of enemy activity in South Vietnam remained essentially constant. In an attempt to determine the effectiveness of the Commando Hunt campaigns, analysts carefully studied the patterns of sensor activation, listed as destroyed only those trucks seen to explode or burn, subtracted only that number from the estimated North Vietnamese inventory, and assigned an arbitrary weight of cargo, depending largely on the direction of travel, to each truck that air power eliminated. Unfortunately, even this analysis proved a better measure of effort than of results.

Since an aura of uncertainty surrounded the calculations of trucks and cargo destroyed, officials in the Department of Defense proposed a new target, manpower, that was judged more likely to affect the resolve of the North Vietnamese and their leadership. However, American intelligence had to locate the bivouac areas that the People's Army of North Vietnam used during the march southward before the B-52s that normally attacked truck parks and supply depots could be directed against

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infiltrating troops. American officials believed that the impact of aerial interdiction could be multiplied if these areas were located and the bombing proved accurate. Other communist states, these analysts reasoned, would replace trucks and their cargo, with no real cost to North Vietnam, but the killing and wounding of infiltrating soldiers would exact a direct penalty, forcing the North Vietnamese and their leaders to reconsider the wisdom of continued aggression. During the testing period for the new concept of targeting, the bivouac sites proved as hard to find as other components of the trail network; results were at best inconclusive when the aerial interdiction campaign ended.

Whether paying in lives or materiel, the North Vietnamese did not shrink from the cost of keeping the Ho Chi Minh Trail operating. Part of that price entailed the deployment of more and deadlier anti-aircraft weapons, along with their crews, to protect the logistics complex. During the spring of 1972, the proliferation of anti-aircraft guns, the appearance of surface-to-air missiles within Laos, and the more aggressive use of MiGs changed the nature of the air war over southern Laos. Air Force fighters had to escort missions against the trail, not only to suppress anti-aircraft fire but also to deter the North Vietnamese interceptors, and gunships had to be fitted with jamming equipment to blind the radar directing the surface-to-air missiles. Despite such measures, the enemy succeeded for a time in driving the gunships, certainly the deadliest of truck killers, away from portions of the Ho Chi Minh Trail.

The main purpose of the air war in southern Laos was to disrupt the enemy's efforts to mass troops and stockpile supplies for an assault timed to catch the Americans as their withdrawal from South Vietnam neared its completion. The campaign of interdiction the Air Force conducted in southern Laos was extended secretly and on a lesser scale into Cambodia in the spring of 1969. The Cambodian ruler, Prince Norodom Sihanouk, in the hope of appearing neutral and thus preserving the independence of his nation, attempted to accommodate both the United States and North Vietnam. Taking advantage of Sihanouk's ambivalence, the Hanoi government established a supply line extending inland from the port of Sihanoukville to a complex of military bases and storage areas on Cambodian soil along the border with South Vietnam. When a North Vietnamese defector pinpointed the location of the headquarters in Cambodia that directed operations along the border and inside South Vietnam, General Abrams requested permission for an air attack. President Nixon approved a secret strike by B-52s, delivered on March 18, which, judging from the violent reaction when a reconnaissance patrol arrived at the scene by helicopter, may well have hit the intended target. This raid served as the precedent for a series of secret bombing attacks against the six North Vietnamese bases within Cambodia, a campaign that lasted fourteen months and totaled 3,875 sorties.

In keeping with his policy of appeasing both sides, Prince Sihanouk did not object to the bombing

of a region dominated by the communists and no longer under the control of his government, but he raised to the status of an embassy the Viet Cong diplomatic mission to Phnom Penh, his capital city, and made no move against the North Vietnamese supply line passing through Cambodia. A group of dissident Cambodian generals, headed by Lon Nol, took advantage of Sihanouk's absence from the country and tried to put an end to the policy of accommodation by expelling the North Vietnamese from their bases. On March 18, 1970, the anniversary of the first of the secret strikes by B-52s, Lon Nol declared the absent leader deposed and moved against the enemy. Resources failed to match determination, however; not only was Lon Nol's army unable to defeat the North Vietnamese and their Cambodian communist allies, his aggressiveness seemed likely to prod them into a counterattack that might well overrun the entire country. Since the bases located along the South Vietnamese border, besides threatening the American policy of Vietnamization and withdrawal, sustained operations against Lon Nol, President Nixon approved an invasion of this part of Cambodia. The American incursion, as the President preferred to call it, began on May 1, and lasted until the end of June; South Vietnamese troops then took over, but American air operations continued.

The American attack into Cambodia had both immediate and long-term military effects. The operation resulted in the destruction of a huge quantity of food and munitions stockpiled mainly for operations in South Vietnam, including 7,000 tons of rice and weapons—enough to equip seventy-four battalions with rifles and twenty-five battalions with mortars and machineguns. Estimates of the short-term impact on the enemy varied, but Kissinger concluded that the loss of food, ammunition, and weapons represented a fifteen-month setback for North Vietnamese plans. The cost in American lives totaled 338, with 1,525 wounded. Yet, even as it reaped these benefits for the near future, the United States assumed an abiding responsibility for the survival of the Lon Nol regime. The fate of the Khmer Republic, which Lon Nol proclaimed at Phnom Penh, depended in large measure on the success of the South Vietnamese in preventing the reestablishment of the destroyed bases. Unfortunately the Army of the Republic of Vietnam, in spite of American air support, proved unequal to the task. Supplied by the North Vietnamese, local communist forces advanced steadily, eventually isolating Lon Nol's capital except for airlift and the convoys, escorted by aircraft and makeshift gunboats, that forced their way up the Mekong River. The Cambodian army, hurriedly expanded, armed, and trained, never outgrew its dependence on American air power to hold the enemy at bay, and the air war in Cambodia, undertaken to complement the campaign of aerial interdiction in southern Laos, continued after the United States and the two Vietnams had agreed to a cease-fire.

In the United States, the political impact of the invasion was sudden and violent, but also subtle

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and long lasting. Lulled by the American withdrawals just ten days before the attack, the President had promised that another 150,000 troops would leave South Vietnam within 12 months the antiwar movement erupted in outrage at this extension of the war. Not only did demonstrations disrupt college campuses throughout the nation, a number of government officials, ordinarily expected to support the administration, declared their opposition and resigned or, like Secretary of the Interior Walter J. Hickel, were dismissed. During an antiwar demonstration at Kent State University, a contingent of the Ohio National Guard, which the governor had mobilized to maintain order, fired into a crowd, killing four and wounding nine.

The invasion of Cambodia and the shootings at Kent State further split an already deeply divided nation. An estimated 500,000 opponents of the war assembled in Washington, and, on the same day, 150,000 marched in San Francisco. The administration denounced those who demonstrated against the war, especially the students; the President's supporters rallied to his cause and, in the case of construction workers in New York City, clashed with the antiwar faction. The period of comparative harmony that followed the announcement of Vietnamization and the first troop withdrawals vanished, although temporarily. Further reductions in American forces assigned to South Vietnam and the first steps toward an all-volunteer army restored the calm, but the sudden outburst of opposition triggered by the invasion of Cambodia cast a long shadow. Throughout the remainder of the war, President Nixon remained concerned about a resurgence of antiwar sentiment and its possible effect on Congress. His worries, moreover, were grounded in fact, for the political aftermath of the invasion of Cambodia included the repeal of the Tonkin Gulf Resolution of 1964, at most a symbolic protest of the way in which the war had metastasized, and enactment of the Cooper-Church amendment and the War Powers Act.

The Cooper-Church amendment began as an immediate response to the Cambodian incursion. Senators John Sherman Cooper, a Republican from Kentucky, and Frank Church, a Democrat representing Idaho, offered an amendment to military assistance legislation prohibiting the further use of American forces in Cambodia without the express consent of Congress. The Senate adopted the rider, but the House of Representatives refused. By year's end, after months of debate, a defense appropriations act emerged containing a revised version of the amendment that ignored Cambodia, from which the American troops had withdrawn, and in effect forbade the introduction of ground forces into Thailand or Laos.

Unlike the Cooper-Church amendment, the War Powers Act, from its inception, addressed basic political questions rather than a transitory crisis like the invasion of Cambodia. Due to concern over the involvement of the nation in the Vietnam War and the expansion of that conflict, largely by execu-

tive action, Congress tried to assert greater control over the military aspects of the nation's foreign policy. In October 1973, both the Senate and the House of Representatives passed legislation that required the President to report within forty-eight hours if he should commit American troops overseas or if he substantially enlarged an existing commitment. The military involvement would have to be terminated after sixty days, plus an additional thirty days for withdrawing the force, unless Congress decided otherwise. After warning that such a law would impose unconstitutional and dangerous restrictions on Presidential authority and seriously undermine this nation's ability to act decisively and convincingly in times of international crisis, President Nixon vetoed the legislation. Congress voted to override, however, and the War Powers Act became law.

Less than a year after the invasion of Cambodia, South Vietnamese forces, with the encouragement of General Abrams, attacked Laos. From Khe Sanh, which American forces had reoccupied to serve as a supply base, the assault troops advanced toward the site of Tchepone, a village astride the Ho Chi Minh Trail that had long ago been abandoned and bombed to rubble. After reaching Tchepone and destroying the materiel stockpiled in the vicinity, the South Vietnamese planned to withdraw by way of the A Shau Valley, rooting out supply caches and disrupting the passage of men and cargo through that conduit for infiltration. The Cooper-Church amendment limited the degree of assistance that American forces could provide to air support and, as a result, the South Vietnamese divisions had to attack without their American advisers and air liaison parties.

The attack, launched on February 8, 1971, was poorly planned and badly executed. Despite precautions designed to preserve secrecy, the North Vietnamese became aware, at least in general terms, of the operation and redeployed their forces accordingly. Moreover, planners at the headquarters of the Military Assistance Command, Vietnam, overestimated the ability of low-flying helicopters to survive on their own in the face of hostile anti-aircraft fire, which proved far more intense than anticipated, and had to call for help from Air Force fighter-bombers and B-52s. The contribution of the Air Force varied from flak suppression so that helicopters could disembark their troops, to strikes against North Vietnamese infantry closing in on the outposts thus established, and ultimately to attacks on tanks bearing down on the retreating South Vietnamese. Bad weather hampered close air support by the fighter-bombers, which on one occasion broke off their support of a beleaguered South Vietnamese strongpoint to participate in the attempted rescue of the crew of a downed F-4. Throughout the invasion, President Nguyen Van Thieu of South Vietnam sought to avoid the kind of casualties that might undermine his nation's support of the war, behaving much as his American counterpart had in the aftermath of Hamburger Hill. When the South Vietnamese leader judged

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that the losses were becoming unacceptable, he called a halt to the operation, a decision that left the invasion force scattered and vulnerable to the devastating North Vietnamese counterattack. Although a raiding party did land by helicopter near Tchepone to create an illusion of victory, the withdrawal became a rout as the enemy attacked, driving the South Vietnamese back across the border in headlong flight. The operation had attracted a North Vietnamese force of perhaps 40,000, with as many as 20,000 killed or wounded, mostly victims of air attacks, thus easing the pressure on the Americans who had not yet left South Vietnam. However, the number of South Vietnamese killed and wounded equaled from a third to a half of the North Vietnamese total, and the action only disrupted traffic on the Ho Chi Minh Trail temporarily. According to the reckoning of General Davidson, an intelligence officer for Generals Westmoreland and Abrams, after no more than a few weeks the enemy again channeled men and cargo through the area around Tchepone. This latest operation in the campaign against the enemy's supply lines in southern Laos had proved inconclusive at best.

The air war the Air Force waged in northern Laos resembled the fighting in Cambodia, as a hard-pressed ally came to rely more and more on American air power. The combat in northern Laos flared sporadically on two fronts—the Plain of Jars and along the Ho Chi Minh Trail. On the Plain of Jars, the Meo tribesmen commanded by Vang Pao depended on aerial bombing to stop the annual dry season offensive launched by the communist forces, which over the years included an increasingly larger proportion of North Vietnamese. Once this attack had lost momentum, Vang Pao advanced, trying to take advantage of the mobility of his irregulars to isolate the strongpoints opposing him and force a withdrawal by an enemy shaken by bombing and, because of air strikes against his supply lines, desperately short of food and ammunition. To the south, nearer the border with South Vietnam, other troops loyal to the government of Prime Minister Souvanna Phouma mounted an occasional threat to the western fringes of the Ho Chi Minh Trail but were unable to interfere with the traffic it carried.

The fortunes of war fluctuated with the season. At the onset of dry weather, usually in November or December, the Pathet Lao, spearheaded by North Vietnamese soldiers, pushed boldly onto the Plain of Jars. The government at Hanoi, unwilling to ignore the real prize, South Vietnam, did not divert enough men and material to crush the Meo; and by the time the rains began falling in May or June, the communists were bloodied, exhausted, and eager to fall back to their supply bases nearer North Vietnam. Vang Pao's irregulars materialized around the enemy's outposts at the beginning of the rainy season when the annual retreat was about to begin. The subsequent pursuit produced varying results in 1970: the Meo reoccupied almost the entire Plain of Jars and continued until Vang Pao's tribesmen were utterly spent, the communists had replenished themselves, the skies had cleared, and the cycle was

about to begin again. Over the years this process worked against the Meo general; since he obtained his soldiers exclusively from among his mountain people, the recruiting base was limited and subject to steady attrition, forcing him to turn increasingly to boys and old men. Reinforcements might come from elsewhere in Laos, but the royal army had thus far shown little aggressiveness in its forays toward the Ho Chi Minh Trail.

The situation seemed so bleak early in the dry season of 1968–1969 that Souvanna in June 1969 decided to make public both the presence of North Vietnamese troops in his country and the American bombing along the Ho Chi Minh Trail and in northern Laos. The Laotian premier was careful, however, to point out that American air power was the only weapon that could hold the North Vietnamese in check. In commenting on Souvanna's statement, which aroused no public controversy in the United States where the Nixon administration had just taken office, the Department of State drew a distinction between the two air wars being fought in Laos: operations against the trail were an extension of the war in South Vietnam and would continue as long as there was fighting in that country; those in the northern part of the kingdom were directed against the North Vietnamese intruders and might end in the unlikely event the Hanoi government withdrew its forces. Souvanna failed in his attempt to dramatize his nation's plight and gain international support, but the immediate military crisis abated and the annual pattern of warfare reasserted itself.

Because air power was an effective means of checking the North Vietnamese and economical in terms of the loss of American life, the Air Force undertook various measures to improve its own operations and those of the Laotians. During 1969, the Royal Laotian Air Force, recovered from the effects of the mutiny of three years earlier, received new equipment like the AC-47 gunship and underwent a housecleaning as the American air attaché, at Vientiane tried to suppress smuggling. The misuse of aircraft for this purpose could not be ended, but it was made more difficult by circulating a schedule of all administrative flights among the senior officers in the hope that those who were honest would take action against the obvious abuses, such as apparently purposeless flights to areas dealing in gold or drugs, while those who were not honest would join in demanding greater control because the profits were not being divided equally. In addition, Air Force instructors began training Meos to fly T-28s in support of Vang Pao's troops, and these pilots demonstrated a willingness to run almost any risk to help their fellow tribesmen on the ground.

In general, the weapons and tactical refinements employed by the Air Force reflected the gravity of the military situation and the dependence of the ground forces on air power. The use of laser-guided bombs increased and would increase even more as the years passed. The number of forward air controllers flying in Laos grew, and some began using jets instead of O-1s. To facilitate the diversion

The focus of American efforts as the conflict wound down was the return of POWs like these.



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of fighter-bombers to meet emergencies in northern Laos, the Seventh/Thirteenth Air Force distributed lists of standby targets with enough information on each so that a pilot arriving on the scene would have a clear idea of the target and its defenses. In February 1970, with a communist dry-season offensive gathering momentum, B-52s flew their first bombing mission in northern Laos, a disappointing strike that produced 130 secondary explosions but, according to a reconnaissance team that examined the target, only 20 enemy dead. In May of that year, F-4s again began standing alert at Udorn in Thailand, the revival of a practice abandoned by Gen. William W. Momyer, when he commanded the Seventh Air Force. Other aircraft that saw action in northern Laos included the AC-119K and AC-130 gunships; the OV-10, a twin-turboprop aircraft designed by North American Rockwell for observation and armed reconnaissance in counterinsurgency operations; and for a time in 1972, the F-111.

Neither the arsenal of aerial weapons nor the use of Combat Skyspot and other bombing aids to improve accuracy could do more than buy time, and even this delaying action became more difficult. As the American withdrawals from South Vietnam continued, fewer sorties were available for attacks in northern Laos. The North Vietnamese, moreover, began sending MiGs against American aircraft operating in the region. The first intervention of this kind, on December 17, 1971, resulted in the downing of three F-4s, victims of surprise and the inexperience of their crews. Afterward, when the Soviet-built interceptors approached, propeller-driven aircraft like the gunships or OV-10s retreated westward and F-4s jettisoned their bombs to engage the enemy. During February and March of the following year, Air Force fighter pilots shot down three MiGs.

By the time the MiGs appeared, American air power had once again halted the annual communist advance, but the invasion of South Vietnam absorbed the sorties that would otherwise have sup-

ported Vang Pao's advance and harried the North Vietnamese retreat. By the spring of 1972, air support had become even more important to the Meo general, whose army was on the verge of collapse after years of unceasing attrition. Vang Pao tried to rally his exhausted force and inspire it to further action, but the physical and emotional price exacted from the Meo over the years proved too great. The subsequent battles had to be fought mainly by an improved royal army, which performed well against the Pathet Lao and, when sufficient aircraft could be spared from higher priority operations in South Vietnam and North Vietnam, could hold its own even against the North Vietnamese. Victory remained elusive, however; like the fighting across the border in the two Vietnams, the struggle in northern Laos ended in a cease-fire.

Throughout the period of Vietnamization and withdrawal, the air war continued over North Vietnam, though on a lesser scale than the Rolling Thunder campaign, which ended in 1968. Easily the most daring operation of this period was the Son Tay raid of November 1970, designed to liberate some of the Americans who were prisoners of the North Vietnamese. The treatment and ultimate freedom of these captives, mostly airmen shot down over the North, had become the object of public and governmental concern within the United States. Like the North Koreans before them, the North Vietnamese sought to use their prisoners for purposes of propaganda, in the case of the Hanoi government both to reinforce the national sense of purpose and to gain sympathy throughout the world. They paraded captured pilots through the streets of recently bombed towns to demonstrate that the Americans, in fact, paid a price for the damage they inflicted and to channel popular emotion that might otherwise have been directed against the communist authorities, who demanded a seemingly endless sacrifice of time, wealth, labor, and life itself. Again as in Korea, torture and mistreatment produced



American POWs in a North Vietnamese detention center.

filmed “confessions” of war crimes, usually delivered with expressions or gestures which made it clear that the statement had been made under duress.

As the number of prisoners increased, they began to communicate secretly. One of the methods of secret communication was suggested by Capt. Carlyle “Smitty” Harris, who remembered a lesson he had been taught in Air Force survival school. An instructor there had told him that by tapping on walls Americans imprisoned during the Korean War had been able to exchange information. Harris introduced to the prisons of North Vietnam this tap code, which was based on the image of a square grid containing twenty-five letters of the alphabet (K was excluded), beginning at the upper left corner. A series of taps directed the listener down the grid to a particular row; then came a pause and other taps that led to the right and a specific letter. In this way, and through improvised sign language and carefully passed notes, the American captives overcame isolation and organized themselves, searching out the highest ranking officer in each compound so that he could take command. Anyone who did assume command could expect to be severely tortured if the prison authorities discovered his role, as they did from time to time, and those caught communicating might also be punished. Despite the risks, the constant effort to communicate and organize helped the prisoners maintain their sanity through years of captivity in what proved to be America’s longest war.

At the end of that conflict, the number of captured and missing Americans totaled 3,000; of these, twenty-three members of the Air Force were known to have died while in confinement. Capt. Lance P. Sijan was one of those who perished. Shot down over North Vietnam on November 9, 1967, he avoided capture for six weeks. After falling into the enemy’s hands, the emaciated and injured pilot escaped into the jungle while being taken to prison, only to be recaptured in a matter of hours and tortured. He endured weeks of mistreatment before dying in Hanoi’s Hoa Lo prison, which the Americans held there called the “Hanoi Hilton.” Sijan was the first graduate of the Air Force Academy to be awarded the Medal of Honor.

Other attempts to escape from captivity in North Vietnam were no more successful than

Sijan’s. It was possible to break out of confinement, but, as had been true during the Korean War, a towering American simply could not lose himself among much smaller Orientals and vanish into an essentially hostile society. Only an American rescue team from outside North Vietnam seemed to have a chance of freeing the prisoners, and during the summer of 1970 a joint task group was formed in the United States to attempt just such a rescue. The likeliest prospects for liberation were the fifty-five Americans held at Son Tay, some twenty-five miles from Hanoi, for their prison compound nestled beside a bend in a river that facilitated identification from the air and interfered with access by the troops garrisoned nearby. In command of the rescue effort was Brig. Gen. Leroy J. Manor, an Air Force veteran of some 275 fighter missions in Southeast Asia who trained air commandos at Eglin Air Force Base, Florida; Col. Arthur “Bull” Simons, an Army officer experienced in special operations, led the actual assault.

Aerial photographs of Son Tay enabled the force to construct not only a detailed tabletop model of the objective, but also a full-scale reproduction made of wood and canvas that was disassembled whenever an orbiting Soviet intelligence satellite came within range. Using an airfield where the Doolittle raiders had prepared for their 1942 attack on Japan, a force of volunteers trained to penetrate deep into North Vietnam, land one helicopter in the prison yard and two others outside the walls, free the prisoners, and fly them to safety in Thailand. On the night of November 20, when the assault force arrived at Son Tay, one helicopter deposited its troops at the wrong building and triggered a fire-fight with the troops quartered there. One of the other helicopters crash-landed in the compound and the other set down safely outside the walls; both disgorged their troops, who breached the wall, but found no prisoners. The assault force regrouped and withdrew in the two undamaged helicopters, returning to Thailand with one man slightly wounded and another hobbled by a broken ankle. One of the F-105s protecting the raiders from surface-to-air missiles was shot down by that very type of weapon, but the two-man crew survived and was rescued. There were no losses among the one hundred or more carrier aircraft that staged a demonstration off the coast, dropping flares and feinting toward shore to divert attention from the aircraft approaching Son Tay from an inland direction.

The compound at Son Tay had been empty since July, when the North Vietnamese transferred the captives as flood waters lapped at the base of the prison’s walls. Enemy fire and mechanical failures had frustrated low-altitude aerial reconnaissance during the intervening four months, but two important and contradictory pieces of information had surfaced. High-altitude photographs revealed signs that the prison might be occupied, but a list of prisoner-of-war compounds smuggled out of Hanoi had not included Son Tay. Unfortunately, there was no time for further low-altitude photography from drones; while visiting Hanoi, an American citizen opposed to

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the war had received a list of five captives who had died recently, prompting concern that the health of all the prisoners was deteriorating, making prompt action seem all the more important. The raid therefore went ahead to take advantage of a combination of good flying weather and a suitable phase of the moon, conditions that would not occur again for at least a month. Doubts about the presence of the prisoners at Ton Say remained within the organization of the Joint Chiefs of Staff; when Manor dispatched Simons and the raiding party, everyone on the operation was certain that fifty-five Americans lay confined in the darkness at the bend in the river.

American reaction to the raid ranged from tributes to the obvious heroism of the assault force and expressions of concern for the prisoners to condemnations of American intelligence for not realizing that the compound had been abandoned. Even the administration seemed divided. Whereas President Nixon saluted the participants as heroes and hailed the operation as a success because it reached the objective and returned without loss of life, his vice president, Spiro T. Agnew, complained of the faulty intelligence that had allowed the raid to go ahead. Dr. Kissinger, who later would characterize the operation as an egregious failure of intelligence, suggested sarcastically that the force should have brought back something, perhaps a baby water buffalo. The person to whom he spoke apparently missed the edge to these words, assumed that an animal of this kind had been brought back, and launched a futile investigation to locate it.

Meanwhile, the North Vietnamese reacted to the raid by consolidating in larger prisons the captives from isolated sites like Son Tay, but this worked to the long-term advantage of the prisoners by strengthening the organizational structure among them and making it easier to communicate with and to sustain one another. Among the more encouraging items of news circulating from cell to cell was the story of the small group that had penetrated the heavily defended heartland of North Vietnam and attacked the compound at Son Tay.

After Rolling Thunder ended, American officials expected that unopposed aerial reconnaissance, rather than daring raids like the descent on Son Tay, would be the usual purpose of missions over the North. Unfortunately, aerial reconnaissance proved far from routine. In November and December 1968, two Air Force RF-4Cs and an escorting F-4 were shot down over the North, along with two Navy aircraft. The missile batteries afterward fell silent, lending substance to the Nixon administration's belief that North Vietnamese negotiators at Paris had at least tacitly guaranteed the safe passage of unarmed reconnaissance craft over their country. The government at Hanoi not only denied that any such agreement existed but reinforced the denial by again firing at the American jets, shooting down one in 1969 and another early the following year. In February 1970, after the second downing, the President directed that fighter-bombers escort the reconnaissance flights, as had been done during the last two months of 1968, with

the accompanying F-4s authorized to retaliate instantly against any gun battery or missile site that opened fire. A duel ensued between the escorts, whose work of retaliation came to be reinforced by strikes launched especially for the purpose, and the hostile gunners, as Air Force and Navy aircraft carried out sixty so-called "protective reaction" attacks during the balance of 1970, twice that number in 1971, and ninety during the first three months of 1972. Usually the protective reaction strikes hit gun or missile batteries that had tried to down reconnaissance craft over the North, but beginning in 1971 they also were directed against those that fired on American aircraft attacking targets on the Ho Chi Minh Trail within range of weapons on North Vietnamese soil.

As 1971 drew to an end, aerial reconnaissance produced mounting evidence that North Vietnam was preparing for a major offensive. President Nixon applied the principle of protective reaction to this situation by authorizing a series of attacks on a variety of targets in southern North Vietnam. Beginning on the day after Christmas, American aircraft launched five days of strikes, totaling more than 1,000 sorties, against airfields, oil storage areas, surface-to-air missile sites, supply dumps, and truck parks associated with the buildup. Again in February, when North Vietnamese artillery began firing at South Vietnamese outposts across the demilitarized zone, Nixon invoked protective reaction and approved two days of strikes against those batteries.

Despite the changing definition of protective reaction, Gen. John D. Lavelle, commander of the Seventh Air Force, went too far in applying the concept. Confident that he was carrying out the implied, if not openly expressed, wishes of his superiors, Lavelle interpreted the policy of protective reaction to include attacks on potential threats to American aircraft like the airfields that MiGs might use, the radars that might control their interceptions, and not only surface-to-air missile sites but also the dumps where missiles were stored and the trucks that carried them to the launch sites. Lavelle believed not only that the North Vietnamese air defenses formed a unified threat, but also that the radar which transmitted or the guns which fired during one mission remained a danger for all subsequent sorties, even though the hostile site might remain silent on a particular day. Consequently, he directed his pilots to assume, in effect, that the radar-controlled defenses were always functioning and never to report an absence of enemy activity. Some of Lavelle's subordinates pushed this reasoning to the limit and falsely reported enemy opposition to justify the need to retaliate. Instances of false reporting caught the conscience of a young sergeant in the Air Force, Lonnie D. Franks, who thought that falsification of the record was wrong, whatever the circumstances, and wrote a letter to Senator Harold Hughes, a Democrat from Iowa, describing what was going on. Hughes turned the information over to the Air Force, the Inspector General investigated, and Gen. John D. Ryan, at the time the Air

THE SUCCESSION OF PROTECTIVE REACTION STRIKES THAT BEGAN IN DECEMBER 1971... APPEARED TO HAVE SERVED THEIR PURPOSE

WHEN NORTH VIETNAM INVADED, THE UNITED STATES TRIED TO SUPPORT THE DEFENDERS

Force Chief of Staff, accepted Lavelle's immediate retirement for personal and health reasons. Ironically, Lavelle's successor, Gen. John W. Vogt, received a pep talk from President Nixon, who urged him to be more aggressive than the officer he was replacing.

In the autumn of 1972, the Armed Services Committees of the House and Senate conducted separate inquiries into the unauthorized bombing. The Senate committee found, in effect, that the punishment the Air Force meted out to Lavelle—retirement in the grade of lieutenant general rather than as a four-star general—was insufficient. As a result, he assumed the retired rank of major general, but this demotion did not affect his retirement pay, which was based on the highest grade that he had achieved while on active duty, that of general. In contrast, the House committee decided that the bombing missions dispatched by Lavelle had been not only proper but essential.

Lavelle's involvement in the unauthorized air strikes became public at a time when the prestige of the American military was declining. The My Lai massacre, in which American soldiers had mistreated and murdered unarmed South Vietnamese villagers, had been revealed and the atrocity, as well as attempts to conceal it, had been investigated. The so-called *Pentagon Papers*, a collection of official documents relating to American involvement in the conflict and a narrative of decision-making by the Kennedy and Johnson administrations, had appeared and cast doubt on the wisdom and motives of civilian officials and military leaders. New reports of racial strife, drug abuse, and fraud within the services came to light with sickening frequency. Yet another blow would fall in July 1973, when a former officer in the Strategic Air Command, Hal M. Knight, revealed the secret bombing of Cambodia, begun in 1969 on order from the White House, and the system of false reporting that had thus far concealed fourteen months of B-52 strikes. No wonder that the American public lost enthusiasm for a war that seemed to corrupt even those who fought it.

The succession of protective reaction strikes that began in December 1971, including the unauthorized attacks for which General Lavelle was blamed, appeared to have served their purpose. As the winter of 1971–1972 gave way to spring, the Nixon administration was confident that its use of air power had forestalled a North Vietnamese offensive. Such was not the case, however, for on March 30, 1972, Gen. Vo Nguyen Giap, the victor at Dien Bien Phu in 1954 and North Vietnam's most prominent military leader, sent almost his entire army—initially 125,000 troops supported by tanks and artillery—knifing into South Vietnam. After striking first in northernmost South Vietnam and advancing toward Quang Tri City and Hue, the enemy attacked from the triborder region, where the territories of South Vietnam, Laos, and Cambodia converged, toward the town of Kontum and from the bases he had reestablished in Cambodia toward An Loc and ultimately Saigon.

Seen from Hanoi, the situation was never more promising; supplies were in place, Giap's soldiers were ready, the remaining American ground forces were largely support and advisory units, and the South Vietnamese had given way to panic in the last stages of their retreat from Laos a year earlier. Moreover, the United States would hold a Presidential election in November 1972, and a communist victory in the spring might have the same effect as the Tet offensive of 1968, and drive the Chief Executive from office. Indeed, the antiwar demonstrations ignited by the invasion of Cambodia in 1970 may have made Nixon appear even more vulnerable than Johnson had been. Whether the offensive represented an attempt to crush South Vietnam or merely to advance a good distance along the road to ultimate victory (and the actual objective has for years remained the subject of debate among Americans), the prospects for success seemed excellent.

The leaders at Hanoi had a distorted view, however. Although Nixon continued to worry about the antiwar movement and its possible impact on Congress, he had survived the agitation that followed the invasion of Cambodia and the shootings at Kent State University and seemed increasingly likely to win reelection. Similarly, Thieu remained in control in South Vietnam despite the manifestations of discontent that had surfaced as a consequence of the previous year's severe casualties in Laos. The Army of the Republic of Vietnam had suffered a defeat there, but it remained intact, was absorbing more American equipment and learning to use it, and when fighting on South Vietnamese soil would benefit from the presence of the American advisers on whom so many of the commanders had come to depend. Moreover, Giap turned his back on the very tactics that had enabled the Tet offensive of 1968 to demoralize the American people and the Johnson administration. By launching a series of conventional attacks tied to roads and dependent on artillery support, the North Vietnamese general ignored the fact that his People's Army and the Viet Cong, who played almost no role in this latest offensive, were most mobile before the battle and least so after the fighting began. Giap's forces had an uncanny ability to mass men and supplies for a surprise attack, but once the battle was joined, they lacked the communications to shift forces and take advantage of unexpected changes in the tactical situation. Indeed, if the North Vietnamese could not overwhelm a stoutly defended position at the outset, they tended to attack again and again rather than probe for weaknesses elsewhere in order to bypass and neutralize the bastion. This habit immobilized them and made them especially vulnerable to air strikes.

When North Vietnam invaded, the United States tried to support the defenders with the aerial strength already in the theater, including about 300 Air Force aircraft of all types, some deploying across the Pacific in response to the enemy buildup that triggered the recent protective reaction strikes. As the Army of the Republic of Vietnam struggled to



The Combat Spyspot radar site at Pleiku.

PRESIDENT NIXON APPROVED THE INCREASE OF AMERICAN AERIAL STRENGTH IN SOUTHEAST ASIA

contain the offensive and the South Vietnamese Air Force quickly demonstrated that it could not cope with the emergency, Air Force flight and ground crews intensified their efforts and succeeded in launching more than 500 combat sorties per day.

For a time in early April, the defense of the northern provinces was subordinated to the attempted rescue of an Air Force officer, Lt. Col. Iceal E. Hambleton, the sole survivor of the six-man crew of an EB-66 electronic warfare aircraft shot down over the battlefield. Disregarding the perilous situation of the South Vietnamese forces, Seventh Air Force headquarters arranged to suspend artillery fire into the region where he had parachuted and diverted to the task of finding and retrieving him aircraft that otherwise would have been attacking in support of the hard-pressed South Vietnamese. Surviving on whatever berries and vegetables he was able to find (on one foraging expedition, he stabbed to death a North Vietnamese who attacked him), Hambleton followed the instructions he received on the hand-held radio that was a part of his survival equipment, avoided capture, and made his way down a stream to meet a patrol of South Vietnamese marines who brought him to safety.

The eleven-day rescue effort cost the lives of nine Americans whose aircraft were shot down while searching for Hambleton or trying to pick him up and deprived a desperate South Vietnamese division of air and artillery support at a critical time. The American adviser attached to this unit warned that the division's officers resented the obvious fact that the Seventh Air Force would risk the lives of thousands of South Vietnamese soldiers to rescue one of its own officers. Nevertheless, the division survived the immediate threat, if only to collapse shortly thereafter, and however demoralizing the rescue may have been for the South Vietnamese, the concern the Air Force showed for members of its aircrews helped sustain their morale.

When the combined efforts of the American squadrons in Southeast Asia and the air and ground forces of the Republic of Vietnam could not stop the three-pronged offensive, President Nixon approved the increase of American aerial strength in Southeast Asia without reinserting ground

forces. From the beginning of the invasion until the end of June, the total number of Air Force aircraft in the region increased from 1,153 to 1,426 as the equivalent of fifteen squadrons deployed there, including the B-52 force that expanded from eighty-three aircraft to 202 and, by the time the war ended, flew almost 3,000 sorties in a single month. To sustain the B-52s and the tactical fighters, the Air Force during the spring of 1972 deployed another 110 KC-135 aerial tankers, raising the total number to 187. The Navy dispatched four additional aircraft carriers to the Gulf of Tonkin, bringing the number there to six, the largest concentration since the Vietnam War began. The Marine Corps, which had withdrawn all its air and ground forces except for a small number of advisers, sent a total of four squadrons from airfields in Japan to Da Nang and Bien Hoa. Concerned over the need to coordinate his operations with the ambassador in Laos, Vogt had earlier sought exclusive control over air operations, not only over the two Vietnams, but throughout Southeast Asia. President Nixon seemed agreeable but never sent the necessary instructions, and the old system prevailed. Since no marines were fighting on the ground in 1972, the newly arrived Marine Corps squadrons encountered no conflicting priorities in carrying out the assignments that the Air Force general gave them.

As the fighting on the ground intensified, all the American aerial might be focused on saving South Vietnam. The air war in southern Laos ended and operations in Cambodia and northern Laos received only the surplus sorties from the systematic campaign that extended from battlefields like An Loc, Kontum City, and Quang Tri City to the railroads, ports, and bridges of North Vietnam. The general strategy was to bomb the offensive to a standstill by killing as many as possible of the advancing enemy soldiers, while at the same time disrupting the forward movement of the supplies and reinforcements needed to sustain the operation.

Unlike President Johnson, who preferred close personal control over individual targets, President Nixon tended, with some exceptions, to authorize strikes against areas or classes of targets and leave the details to his military commanders. Blows against targets in Hanoi and Haiphong required clearance from the White House, as they had during Rolling Thunder, and the network of irrigation dikes in North Vietnam remained exempt from attack, although the occasional stray bomb that missed an antiaircraft site or other target and exploded near a dike emboldened North Vietnamese propagandists to level charges that the United States was waging war on the civilian populace by trying to drain the rice paddies. Nixon approved not only attacks on the rail line leading from China but also the mining of North Vietnamese harbors, an action that he felt he could take with little or no risk of a Soviet or Chinese reaction. Because of the rivalry between the two communist states, which had resulted in border clashes as recently as 1969, each was wary of openly aiding North Vietnam or anything else that might encourage the United States to improve its

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relations with the other, even though inaction might delay what both saw as the inevitable triumph of communism in Southeast Asia.

The aerial interdiction campaign against North Vietnam began April 6, with attacks in the southern part of the country and rapidly expanded. On April 16, B-52s, escorted by fighters and aircraft specializing in electronic countermeasures and suppression of surface-to-air missiles, bombed the fuel storage tanks at Haiphong, setting fires that, reflected from cloud and smoke, were visible from the bridge of an aircraft carrier 110 miles away. Shortly afterward, carrier aircraft joined Air Force fighter-bombers in battering a tank farm and a warehouse complex on the outskirts of Hanoi. When these attacks failed to slow the offensive, naval aircraft began mining the harbors on May 8, and two days later the administration extended the aerial interdiction campaign, formerly Freedom Train but now designated Linebacker, throughout all of North Vietnam.

The President approved this double-edged escalation even though he intended to visit the Soviet Union, North Vietnam's principal supplier, later in May for a major conference, assuming correctly that General Secretary Leonid Brezhnev would not cancel the meeting at a time immediately following Nixon's visit to Peiping, when the United States and China were drawing closer. President Nixon chose to lay mines and intensify the bombing to deprive the Soviet Union of any propaganda advantage that might accrue if South Vietnam collapsed during his trip to Moscow. This did not happen, for he also correctly judged that air power could save the day, for the mining and other forms of interdiction, combined with aerial intervention on the battlefields of South Vietnam, brought the North Vietnamese offensive to a halt.

In terms of tactics employed and results obtained, Linebacker was a vast improvement over Rolling Thunder. During Linebacker, American aircraft attacked targets like airfields, power plants, and radio stations that did not fall into the category of interdiction, but the main objective remained the disruption of the flow of supplies and reinforcements to the units fighting in the South. Laser-guided bombs proved effective, especially against bridges, severing the bridge at Thanh Hoa, which had survived Rolling Thunder, and the highway and railroad bridges over the Red River at Hanoi, dropped in the earlier aerial campaign, but repaired. At both places, however, the enemy again made use of alternate means of crossing the streams, usually traveling at night on ferries or movable pontoon bridges. Electronic jamming and clouds of reflecting chaff, as in Rolling Thunder, confused the radars controlling the surface-to-air missiles and the antiaircraft guns. North Vietnamese MiGs, as they had during Rolling Thunder, gave battle throughout Linebacker but failed to gain control of the sky, in part because American radar, whether airborne, at sea, or in Thailand, detected the interceptors rising from the runways, enabling controllers to direct Air Force F-4s and Navy fight-

ers against them. During the war in Southeast Asia, both the pilot and the weapon systems officer received full credit for each aerial victory. As a result of changes in these pairings, two backseaters, Capt. Charles B. DeBellevue and Jeffrey S. Feinstein, but only one pilot, Capt. Richard S. "Steve" Ritchie, became Air Force aces; all three of these officers made their fifth kill during Linebacker, which lasted until October 1972, when the President, encouraged by progress in the truce negotiations, restricted the bombing to southern North Vietnam.

Despite the damage inflicted in North Vietnam by Linebacker air operations, interdiction tended to be more effective closer to the battlefield. Within North Vietnam, the road net was more extensive, labor more readily available for repair and construction, and alternate routes were already well established. Nearer the advancing troops, supply lines narrowed, as though entering a funnel that ended at the front-line unit, alternate routes had to be built from scratch, and few civilians were at hand to supplement the work of the military engineers. The defenses remained dangerous, however, especially when the SA-7 heat-seeking missile, a weapon carried and fired by an individual soldier, joined crew-served guns and missiles in protecting the invasion forces.

The other purpose of the air war—inflicting casualties on the advancing enemy—was pursued on all three fronts. The deadliest aerial weapons were B-52s, gunships, and fighter-bombers using laser-guided weapons, the last especially effective against artillery in the northern provinces of South Vietnam. On that front, the invaders drove the South Vietnamese from Quang Tri City on May 1; its capture delineated the high-water mark for the North Vietnamese. The attacking North Vietnamese trapped several American advisers and senior South Vietnamese officers in the city, but four Air Force HH-53 helicopters and their escort of A-1s succeeded in snatching them from the very hands of the enemy. Despite heavy losses in the area between Quang Tri City and Hue, where the North Vietnamese had concentrated their antiaircraft defenses, Air Force fighter-bombers used laser-guided bombs to attack bridges and artillery positions, slowing the enemy's advance and reducing the severity of his artillery barrages, so that the South Vietnamese could regroup. On May 18, when amphibious tanks and infantry crossed the last river barrier before Hue and moved against the city, fighter-bombers destroyed eighteen of the vehicles with laser-guided bombs and killed some 300 soldiers. The North Vietnamese drive bogged down, only to be renewed five days later, but air power again intervened, enabling the defenders to force the enemy back across the river.

Success in defending Hue inspired a counterattack, launched on June 28, to recapture Quang Tri City. Although B-52s and fighter-bombers cleared the way for the advancing South Vietnamese, President Thieu tried to avoid using aircraft against the North Vietnamese entrenched in the city itself,

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hoping to minimize the damage to the houses there so that displaced families could return to their own dwellings instead of becoming dependent on the government for shelter. Unfortunately, an infantry attack floundered in the streets of the town, and B-52s had to join in the sort of destructive pounding that South Vietnam's president had hoped to avoid. By mid-September, the ruins of Quang Tri City were under South Vietnamese control, and the threat to the northern provinces had ended.

In the meantime, B-52s helped blunt the other two attacks. At Kontum City in the highlands, John Paul Vann, an officer retired from the U.S. Army and now a civilian adviser to the South Vietnamese, informally assumed command of the defenses, manipulating air strikes and pulling back from indefensible ground to shorten the lines and make the most efficient use of the troops available to him. As the North Vietnamese advanced on Kontum City, they encountered strong resistance at Ploi Kleng and attacked by night but came under attack when an Air Force AC-130 gunship responded to the call for help. The aircraft mounted a 105-mm howitzer, which went into action after the sensor operators located the sources of the heaviest North Vietnamese fire. The deadly aerial barrage broke up the attack, and saved Ploi Kleng, if only temporarily. At Kontum City, B-52s did what the gunship had done at Ploi Kleng, although fighter-bombers and South Vietnamese A-37s added their firepower and American and South Vietnamese transports delivered supplies to the troops on the ground. Early in the battle for the town, a gamble paid off when the defenders fell back so that a carefully timed deluge of high explosives from B-52s, invisible in the stratosphere, could catch the enemy as he moved forward. The North Vietnamese succeeded, however, in cutting the roads leading into Kontum City. As long as the airfield could be used, South Vietnamese C-123s landed cargo, but when the attackers began raking the runway with direct fire, American C-130s had to supply the defenders by parachute. When the battle approached a climax, South Vietnamese A-37s joined Air Force fighter-bombers and Army helicopter gunships in destroying Soviet-built tanks, but the battering by the B-52s weakened the enemy, so that South Vietnamese forces could check his advance and by the end of May begin expelling him from the captured portions of the town.

The defense of An Loc, considered the gateway to Saigon, closely resembled the battle for Kontum City. At both places the People's Army tried stubbornly to seize a stronghold that could easily have been neutralized and bypassed, while Americans orchestrated the defenses—Vann at Kontum City and Army Maj. Gen. James F. Hollingsworth, the senior adviser to the local corps commander, at An Loc. Hollingsworth realized, as did Vann, that he had devastating aerial firepower at his disposal, provided the South Vietnamese could hold on long enough to force the enemy to mass and present worthwhile targets. "You hold, and I'll do the killing," the general reportedly told the South

Vietnamese, and largely because of the B-52s, air power killed North Vietnamese on a scale that disheartened them and disrupted their plans. Airlift proved critical in enabling the defenders to cling to the ruins of An Loc, since they could be supplied only by parachute. The available drop zones were small, however, and the antiaircraft weapons were dangerous, none more so than the SA-7 heat-seeking missiles. Until radar became available in May to direct the parachute deliveries, as much as two-thirds of the cargo dropped from Air Force C-130s came down in enemy territory. At the time when the danger to An Loc was greatest, aircraft swarmed in the skies overhead; unexpected fighter-bombers arrived, causing controllers to reschedule strikes, but every bomb helped. Despite confusion and savage antiaircraft defenses, air power prevailed. By late May the enemy offensive had stalled, and within two weeks the North Vietnamese were pulling back, ending the threat to Saigon.

Nixon's use of air power to disrupt supply lines and kill the enemy on the battlefield stopped the offensive, helped drive the enemy back a short distance, and did so without the reintroduction of the ground forces he had withdrawn from South Vietnam. In fact, the last combat troops of the U.S. Army departed in August 1972, while the South Vietnamese were counterattacking, leaving behind only 43,000 American airmen and support personnel. Yet, the very success of American aerial activities might have caused misgivings at Saigon, where the dependence of his armed forces on the Americans troubled President Thieu. When his commanders had failed during the recent offensive, the advisers took over, bringing to bear a volume of firepower that South Vietnamese forces could not by themselves generate. Thieu realized that the American's unilateral departure would leave South Vietnam at the mercy of the North Vietnamese forces still in the country. Since the Americans would certainly leave, his only hope lay in the mutual withdrawal of all foreign troops. The South Vietnamese chief executive therefore opposed any settlement that left elements of the People's Army in place within South Vietnam.

In contrast, the United States was now willing to accept a cease-fire that gave the North Vietnamese the fruits of their recent offensive, during which they had captured or consolidated their control over large areas south of the old demilitarized zone, in the western highlands, and along the Cambodian border. After such a settlement, the enemy would occupy a position from which he could, at least detach the northern third of the nation, if not cut South Vietnam in half—as had been feared when the American ground forces intervened in 1965. To offset the geographic advantage thus conferred, the United States continued to supply the Republic of Vietnam with military equipment, speeding deliveries in anticipation of a truce that would impose restrictions on future military aid. Consequently, the South Vietnamese Air Force expanded to an actual strength of sixty-five squadrons, with more than 61,000 officers and men.

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A USAF SAM Hunter killer group of the 388th Tactical Fighter Wing takes fuel on the way to North Vietnam for a strike during "Operation Linebacker" in October 1972.



BY THE END OF OCTOBER 1972... KISSINGER DECLARED THAT PEACE WAS AT HAND AND A SETTLEMENT IN SIGHT

Except for the A-37s and C-123s, few of the 2,000-odd aircraft of twenty-five different types had proved effective during the offensive that just ended. Moreover, the tactical inventory still did not include heavy bombers, howitzer-equipped gunships, and high-performance fighter-bombers with the laser-guided weapons that had done so well at An Loc and elsewhere; nor were there any aircraft for long-range interdiction, rescue, or electronic countermeasures against, for example, radar-controlled surface-to-air missile complexes. Impressive as the influx of materiel was in numerical terms—South Vietnam was credited with having the fourth largest air force in the world—Thieu feared that his country could not defend itself against an established enemy and continued to insist that the North Vietnamese be forced to pull back from the territory of South Vietnam.

By the end of October 1972, with the Presidential election fast approaching in the United States, Kissinger declared that peace was at hand and a settlement in sight. His optimism proved unfounded. Not only was Thieu rebelling at what had come to be called a cease-fire in place, but the North Vietnamese also seemed disinterested in even so favorable a settlement. Once his hand had been strengthened by an overwhelming victory over his Democratic opponent, George McGovern, President Nixon sought to remove first one and then the other of the obstacles to peace. He obtained Thieu's reluctant assent to an in-place arrangement by offering "absolute assurance" that he intended to take "swift and severe retaliatory action" if North Vietnam should violate the terms of the agreement. Put simply, the President gave his personal pledge that he would respond to any future invasion as he had to the offensive of 1972, an assurance that implicitly bound the government of the United States to that course of action. He then sought to remove the other roadblock, the stubborn attitude of the government in Hanoi, by ordering a resumption of the bombing of the heartland of North Vietnam.

"This is your chance to win this war," the President told Adm. Thomas H. Moorer, the

Chairman of the Joint Chiefs of Staff. "And if you don't, I'll consider you responsible." The opportunity presented to the admiral in this melodramatic fashion represented a consensus on the part of three men—the President; his adviser on national security, Dr. Kissinger; and Army Maj. Gen. Alexander M. Haig, Jr., Kissinger's principal military assistant—that B-52s should hit targets at Hanoi and Haiphong and thus force North Vietnam to accept a settlement. President Nixon thus unleashed an air campaign, called Linebacker II, that began on December 18, and ended on the 29th, with a thirty-six-hour pause for the Christmas holiday. The B-52s again flew from Guam and Thailand, refueling as necessary from KC-135 tankers. Air Force and Navy fighter-bombers and attack aircraft struck by day, often using radar or other bombing aids because of cloud cover, and the B-52s and their escorts by night. The heavy bombers followed F-111s, which used their speed and their ability to hug the ground to attack from treetop height the airfields used by MiGs and, later in the operation, the most dangerous of the surface-to-air missile sites. Fighter-bombers patrolled in the event MiGs should challenge the B-52s; they carried radar-homing missiles to suppress surface-to-air missile batteries and scattered chaff to confuse hostile radar. Air Force EB-66s and Grumman EA-6Bs of the Navy and Marine Corps orbited nearby, broadcasting jamming signals to reinforce the effects of the chaff. Plans initially called for the B-52s to rely more on chaff than on their own jamming transmitters in penetrating the radar-controlled defenses of Hanoi and Haiphong. Approaching in a single stream of three-aircraft cells to reduce the likelihood of midair collisions, the B-52s followed a corridor of chaff to the target, dropped their bombs, turned sharply, and headed back toward their bases. For a number of reasons, what looked good on paper did not succeed in practice. The initial corridor alerted the defenders to the direction of the attack and enabled them to launch their missiles in salvos without radar guidance, relying on proximity fuzes set for the altitude reported by MiGs shadow-

USAF B-52F from the 320th Bomb Wing dropping Mk 117 750-pound bombs over Vietnam.



FOR THE AMERICANS HELD PRISONER AT HANOI, THE B-52 RAIDS SEEMED A SIGN THAT FREEDOM WAS NEAR

THE UNITED STATES PAID A PRICE FOR THE ACCOMPLISHMENTS OF LINE - BACKER II

ing the column of B-52s. In addition, the chaff tended to drift during the approach of the bomber stream, some seventy miles in length, and leave gaps in the coverage despite periodic replenishment from F-4s. Finally, the sharp turn after they released the bombs caused the jamming signal radiating from beneath the bomber to point outward, more nearly parallel to the ground, instead of downward, increasing the vulnerability of the B-52s to radar-guided missiles. Taking advantage of these weaknesses, the surface-to-air missile crews downed eleven of the high-flying B-52s by the time operations were suspended for Christmas, six on the night of December 20–21.

The losses, which to the aircrews seemed to result from rigid adherence to flawed tactics, dealt a numbing, though not crippling, blow to morale, but a change in plans restored spirits when the attacks resumed. Besides employing only B-52s with modernized jamming equipment against the most heavily defended targets, tactics, beginning with the mission on the night of December 26, called for clouds rather than corridors of chaff, for more compact bomber streams approaching from different directions, and for the avoidance of sharp turns that neutralized jamming signals. During the final three days of the bombing, surface-to-air missiles claimed only four B-52s. The new tactics helped reduce the losses, as did attacks on the missile sites by F-4s in daylight and F-111s at night and the decreasing number of missiles fired. The North Vietnamese had fired almost all of their surface-to-air missiles; and because of the mining of the harbors, damage to the rail system, and the unwillingness of either China or the Soviet Union to risk upsetting the delicate diplomatic balance with the United States, they could not easily replenish their stocks. At this point, after more than 700 nighttime sorties by B-52s and some 650 daylight strikes by fighter-bombers and attack aircraft, the Hanoi government agreed to enter into purposeful negotiations.

For the Americans held prisoner at Hanoi, the B-52 raids seemed a sign that freedom was near. Morale soared as the guards stopped taunting their captives or threatening retaliation and scrambled

for cover whenever the bombers drew near. Most of the other prisoners would surely have agreed with Air Force Col. Jon A. Reynolds that the B-52s had forced the enemy to negotiate, even though neither Nixon nor Kissinger, perhaps to avoid antagonizing the North Vietnamese so near the resumption of talks, claimed at the time that they had bombed the enemy to the conference table. In addition, the Linebacker II campaign served to reinforce the pledge given Thieu that in case of a future invasion American air power would come to his aid. The battering of North Vietnam also gave the South a respite in which to absorb recently arrive American military equipment and recover from the effects of the past year's invasion, but neither Linebacker II nor the talks that followed forced Hanoi to agree to withdraw its troops from South Vietnam.

The United States paid a price for the accomplishments of Linebacker II. Besides the fifteen B-52s that fell victim to surface-to-air missiles, ten other aircraft, four from the Air Force and the others from the Navy or Marine Corps, were shot down over the North or so badly damaged that the crews either crash landed or took to their parachutes. Of the one hundred Air Force crewmen shot down, thirty-five were killed; twenty-six were rescued; and thirty-nine parachuted, were captured, and were later released. The air war was not one-sided, however. Air Force fighters destroyed four MiGs, and tail gunners in B-52s shot down two others.

Despite headlines in American newspapers decrying the carpet bombing of a densely populated city, an interpretation based principally on the reports of a French journalist at Hanoi, later investigations revealed that, except for the destruction of part of the Bach Mai hospital by bombs intended for the airport nearby, the damage was limited almost exclusively to targets that were military in nature, like air bases and storage areas for oil and other supplies, or related to the war effort, like rail yards and power plants. Indeed, the Hanoi government stated that exactly 1,624 civilians had been killed at Hanoi and Haiphong during the entire Linebacker II campaign, a far cry from the tens of thousands killed during World War II at places like Hamburg,

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PHANOM IN
THAILAND

Dresden, and Tokyo. Several factors no doubt contributed to the comparatively modest death toll: the B-52 strikes had been carefully planned to minimize the bombs falling into residential areas, fighter-bombers used laser-guided weapons where accuracy was essential, and the North Vietnamese had built shelters and possibly evacuated a large number of noncombatants. In the United States, the wildly exaggerated stories of saturation bombing triggered no great outcry of opposition. The news may well have been believed, but the bombing, however savage, seemed to mark the end of a long and burdensome involvement in Southeast Asia. Moreover, the college campuses, which had nurtured opposition to the war, were closed for the holidays.

Occasional flights over North Vietnam, including patrols to prevent MiGs from interfering with American air operations in northern Laos, continued after Linebacker II had ended. On January 8, 1973, the crew of an F-4D—Capt. Paul D. Howman, the pilot, and 1st Lt. Lawrence W. Kullman, the weapon systems officer—shot down a MiG southwest of Hanoi with a radar-guided AIM-7 missile. This was the last aerial victory before the signing of the cease-fire, which went into effect on January 29. The agreement froze the current battle lines in South Vietnam, reestablished a coalition government of communists and anticommunists in Laos, permitted the withdrawal of the last American combat forces, and resulted in the release of the 591 Americans held prisoner in North Vietnam.

After the cease-fire became operative, the Military Assistance Command, Vietnam, became the much smaller Defense Attaché Office, which dispensed military advice to the armed forces of the republic and supervised the work of the civilians hired to perform maintenance and conduct technical training. To enforce the truce with air power, as President Nixon had promised, the Air Force established a new headquarters at Nakhon Phanom in Thailand, the United States Support Activities Group/Seventh Air Force, under General Vogt, who had come there from his headquarters in South Vietnam. The new command exercised operational control over the eighteen Air Force fighter-bomber squadrons and one reconnaissance squadron in Thailand and over a detachment of Marine Corps attack aircraft based there. General Vogt and his staff also maintained coordination with the Navy's carrier task force in waters nearby and with the Strategic Air Command, which had 200-odd B-52s at hand in the western Pacific to resume the bombing of North Vietnam. Various factors, such as cuts in congressional funding now that the war had ended and the need on the part of the Air Force to redistribute resources that had been tied down in Southeast Asia, contributed to a decline in American strength as the months passed. When 1974 drew to a close, only twenty-five B-52s and twelve tactical fighter squadrons in Thailand remained to provide an immediate striking force if North Vietnam should violate the cease-fire.

American airmen continued to fight over

Cambodia, where the cease-fire in Laos and the two Vietnams had no effect on the struggle between the communist Khmer Rouge and the government. President Nixon sought to use air power to hold the enemy at bay in Cambodia, but congressional and public acceptance of such a course of action was at best unenthusiastic after more than a decade of involvement in the recently concluded Vietnam War. Moreover, the past was overtaking the Chief Executive and further eroding support of the policies he advocated for Southeast Asia. In 1969, when the secret bombing of Cambodia began, a reporter had written a story that mentioned the closely held operation. Although the account passed unnoticed by other journalists and the general public, the President became obsessed with stopping leaks of classified information, and the administration illegally began tapping the telephone lines of a number of citizens, including reporters and government officials. The fear of disclosures intensified after Daniel Ellsberg, a former marine and at various times an analyst for the Rand corporation and a special assistant to the Assistant Secretary of Defense (International Security Affairs), became disillusioned with the war and turned over to the New York Times the classified collection of documents and explanatory text that was published as *The Pentagon Papers*. To obtain evidence against Ellsberg, who was accused of theft and espionage, operatives acting on behalf of the administration broke into the office of the psychiatrist he had consulted, an illegal act that ultimately resulted in the dropping of the charges against him. During the election campaign of 1972, another team of burglars with ties to the White House entered the headquarters of the Democratic National Committee at the Watergate office and apartment complex in Washington, D.C., in search of information that would further diminish the party's already slim chance of gaining the Presidency. Even as President Nixon and Dr. Kissinger were seeking funds from Congress to pursue the bombing in Cambodia, suspicion was mounting that the administration, perhaps the Chief Executive himself, had been involved in two burglaries, an attempt to conceal them, and the illegal surveillance.

In a climate of war weariness and growing mistrust of the President, a number of senators and representatives believed he had overstepped his constitutional authority. Congress asserted the power of the legislative branch and authorized continuation of the bombing only until July 15, 1973. At 11:30 local time on that day an A-7D of the 354th Tactical Reconnaissance Wing landed at its base in Thailand after flying the last combat mission of the war over Southeast Asia. All told, the Air Force had flown 5.25 million sorties over South Vietnam, North Vietnam, northern and southern Laos, and Cambodia, losing 2,251 aircraft, 1,737 because of hostile action and 514 for operational reasons. A ratio of roughly 0.4 losses per 1,000 sorties compared favorably with a 2.0 rate in Korea and the 9.7 figure during World War II. Beginning with the deaths of Capt. Fergus C. Groves, II, Capt. Robert D.

DESPITE THE OIL SHORT-AGE AND THE COLLAPSE OF THE NIXON ADMINISTRATION, SOUTH VIETNAM SEEMED FOR A WHILE TO BE HOLDING ITS OWN

HE NORTH VIETNAMESE ON MARCH 10 LAUNCHED AN OFFENSIVE THAT RAPIDLY GATHERED MOMENTUM AND OVERWHELMED SOUTH VIETNAMESE RESISTANCE

Larson, and SSgt. Milo B. Coghill in 1962, 1,738 officers and enlisted men of the Air Force were killed in action in Southeast Asia and another 766 died in accidents or from illness.

Legend has it that at the time the bombing ended in Cambodia, someone played over the radio channel used by strike aircraft a tape recording of a toilet flushing, a crude symbol of the fate many predicted for Southeast Asia. By the end of 1975, communist governments controlled South Vietnam, Cambodia, and Laos, but when this came to pass, the Nixon administration, swept into office by a huge margin in 1972, no longer existed. The secret bombing of Cambodia and the falsification of official records that preserved its secrecy surfaced in the summer of 1973, further undercutting the President. A select committee of the Senate developed evidence that linked the President to the concealment of illegal activities by members of his staff, and the House Judiciary Committee found even stronger proof while drafting articles of impeachment. (One of the articles considered but rejected by the House committee accused the Chief Executive of abusing his constitutional powers by secretly bombing Cambodia.) Rather than face the near certainty of impeachment by the House of Representatives and a trial in the Senate, the President resigned on August 8, 1974. His successor, Gerald R. Ford, a long-time Republican congressman from Michigan and minority leader of the House of Representatives, had replaced Agnew when the former Vice President, caught in a web of corruption stretching back to his days as a county official in Maryland, had resigned after pleading *nolo contendere* to a single charge of income tax evasion, thus accepting a conviction without formally acknowledging guilt.

Even as the power and prestige of the executive branch of government declined, the American public experienced an abrupt increase in the cost of living. At the root of the economic woes were restrictions by Arab oil producers on the export of petroleum to the United States and the other nations that supported Israel, the victor in yet another war in the Middle East. The resulting scarcity drove up prices and made it difficult for South Vietnam to fuel the war machine that the United States had given it. Meanwhile, long lines and escalating prices at gasoline stations diverted the attention of the American public from Southeast Asia and diminished the likelihood that President Ford, in the event of another North Vietnamese invasion, could muster support to intervene even with air power.

Despite the oil shortage and the collapse of the Nixon administration, South Vietnam seemed for a while to be holding its own. Sometimes Thieu's army actually lashed out to improve the tactical position imposed on it by the cease-fire, but at other times the North Vietnamese were able to carve out gains of their own. Despite the apparent stalemate, portents for South Vietnam's future grew increasingly ominous. Stocks of fuel and ammunition could not sustain the air strikes and artillery barrages to which the South Vietnamese had become accus-

tomed, vast amounts of equipment lay unused for lack of maintenance specialists, and the air arm, even if all its officers and men were fully proficient and all its airplanes functioned perfectly, could not survive against the kind of antiaircraft defenses the enemy had used during the 1972 offensive. Further, North Vietnam lost no time moving that defense into the territory overrun in 1972 and converting the Ho Chi Minh Trail into an expressway for supplies and reinforcements.

In Cambodia the situation was much worse. After the bombing stopped in the summer of 1973, the United States continued to deliver weapons, perhaps in greater quantities than the government could absorb, but North Vietnam could supply the communist insurgents more easily, and the Khmer Rouge tended to make better use of what they received. Kissinger, by this time Secretary of State, hoped to negotiate an end to the fighting, but the communists saw no need to talk when they were closing in on the capital, undeterred by an occasional local setback. On April 12, 1975, nine days after an Air Force HH-53 had flown a Marine Corps command element to the embassy at Phnom Penh, Marine helicopters landed and, while a crowd of Cambodians watched passively, flew the ambassador and his staff to safety. Two Air Force helicopters then landed to pick up the marines in the command and security detachments, completing the evacuation.

Even as the Khmer Rouge tightened the vise gripping Phnom Penh, the North Vietnamese on March 10 launched an offensive that rapidly gathered momentum and overwhelmed South Vietnamese resistance. Within the Ford administration, discussion focused on military aid at a time when only armed intervention could have made a difference, although even massive bombing might have failed to ensure the survival of South Vietnam, so desperate were the circumstances. Evacuation rather than intervention became the watchword, as Air Force transports and others chartered from private firms attempted to fly out as many people as possible. The early evacuees included hundreds of infants being cared for at orphanages in Saigon. During this "Baby Lift," tragedy struck when the rear cargo door of a C-5A burst open in an explosive decompression of the cabin, and the transport crashed as the crew tried to land, killing 172, mostly infants, of the 300 persons on board. Despite this disaster, more than 50,000 Americans, South Vietnamese, and citizens of other nations escaped by land or sea before the advancing enemy reached the outskirts of Saigon.

As at Phnom Penh earlier, helicopters offered the final means of escape, but the evacuation from Saigon was complicated by hordes of panic-stricken South Vietnamese fighting for a place on the rescue craft. Amid confusion and open hostility from local residents, the last American fled from Saigon on April 29. Air Force and Navy fighter-bombers and Marine Corps helicopter gunships provided escort, along with AC-130s by night, as Air Force and Marine helicopters rescued more than 6,000 persons from the Defense Attaché Office and from the

DURING DECEMBER 1975, THE COMMUNIST FACTION TOOK OVER IN LAOS, AND THE FOLLOWING YEAR SAW A REVOLUTION IN THAILAND

THE UNITED STATES COULD NO LONGER MAINTAIN A MILITARY PRESENCE IN SOUTHEAST ASIA

American Embassy. Radar at air defense sites tracked the rescue helicopters, but only once did the escort have to act; an Air Force F-4 silenced a radar with an antiradiation missile, and an accompanying fighter bombed the 57-mm battery the radar directed. The final evacuation from Saigon was successful, though only in a narrow sense, for it signified hopes destroyed and dreams betrayed. As George C. Herring writes in *America's Longest War: The United States and Vietnam, 1950-1975*, "The spectacle of U.S. Marines using rifle butts to keep desperate Vietnamese from blocking escape routes and of angry ARVN [Army of the Republic of Vietnam] soldiers firing on the departing Americans provided a tragic epitaph for twenty-five years of American involvement in Vietnam."

The military involvement in Southeast Asia had not quite ended, however. On May 12, 1975, Cambodian naval forces seized the American containership *Mayaguez*, although it was in international waters, and President Ford decided to use force to recover the vessel and its crew of thirty-nine. While aircraft maintained surveillance of the ship, Pacific Air Forces ordered sixteen CH-3 and HH-53 helicopters to gather in Thailand for the operation. En route, one of the HH-53s crashed, killing all twenty-three airmen on board. On the 13th, the surveillance aircraft observed a small fishing boat moving away from the island where the *Mayaguez* rode at anchor. Air Force A-7s promptly fired across the bow and dropped tear gas canisters in the hope of disabling the guards so that the Americans, if they were on board, could seize the craft and escape. The Americans were indeed on board, but the chemical agent affected both captives and captors; a Cambodian retained control by holding his gun against the skipper of the vessel, while the unarmed sailors from the *Mayaguez*, blinded by the gas, could not rush the guards.

Intelligence indicated that the fishing boat had taken the prisoners to Koh Tang, an island midway between the one where the captured ship was anchored and the mainland. To prevent the Cambodians from interfering as a boarding party seized the *Mayaguez*, the rescue force attacked patrol boats and shore installations along the Cambodian coast while some 230 marines landed from Air Force helicopters to capture Koh Tang and free the ship's crew. The *Mayaguez* was abandoned, but infantry armed with a variety of automatic weapons defended Koh Tang. On the morning of May 15, eight of the helicopters landed their troops, and the defenders opened fire, damaging two of the craft and shooting down three others. Meanwhile, a fishing boat carried the crew of the *Mayaguez*, released by their captors, to an American destroyer. Since no Americans were held on Koh Tang, fighter-bombers, attack aircraft, and gunships battered the island's defenders. Aerial firepower, however, could not save the 100 or more marines clinging to a part of the objective; reinforcements had to land and help hold off the enemy to permit an orderly withdrawal. By the time another 100 marines entered the fight, all but one of the nine helicopters that brought in

troops during the day had been shot down or damaged.

By early afternoon, even though the marines had been unable to form a unified defensive perimeter, the withdrawal began, and it continued into evening. In a daring nighttime rescue, Capt. Donald R. Backlund could hear bullets tearing into his machine as he held it a few feet above the beach while an isolated group of marines, under cover of fire from the multibarrel gun in the helicopter, made their way up its lowered ramp. A C-130 transport appeared overhead and dropped a 15,000-pound bomb of the type used to clear landing zones for helicopters during the fighting in South Vietnam. The resulting blast, plus sensor-directed barrages from AC-130s and strafing by OV-10s, suppressed the hostile fire to such an extent that the three helicopters still capable of flight could carry away the last of the marines. American casualties totaled forty-one killed, including the twenty-three members of an Air Force security detachment who died in the earlier helicopter crash, and forty-nine wounded. The casualties also included a copilot and a flight mechanic killed on helicopters shot down during the morning attack and six wounded helicopter crewmen. Of the fifteen helicopters exposed to hostile fire, four were brought down and nine damaged.

Hailed as a demonstration that American resolve had not been undermined by the communist victories in Cambodia and South Vietnam, the rescue operation had nevertheless been marred by hurried planning and based on faulty intelligence that sent a hastily assembled force against a far stronger enemy. True, the *Mayaguez* was safely in the hands of its crew, but that fact had no impact on the course of subsequent events in Southeast Asia. During December 1975, the communist faction took over in Laos, and the following year saw a revolution in Thailand and the emergence of a government, as anticommunist as its predecessor, that nonetheless sought to distance itself from the United States and set a deadline for the withdrawal of the American forces based there. After the North Vietnamese conquest of the South, the communist triumph in Laos, the emergence of a hostile regime in Cambodia (which became the People's Republic of Kampuchea), and the shift of policy in Thailand, the United States could no longer maintain a military presence in Southeast Asia. The American perimeter in the western Pacific now extended from South Korea and Japan to the Philippines.

Within Southeast Asia, one of the announced purposes of the American involvement had come to pass, even though the main goal, the survival of a noncommunist South Vietnam, had not. China did not come to dominate the region, but this outcome, however temporary it might be, resulted from the interplay of rivalries between China and the Soviet Union, between China and Soviet-supported Vietnam, and between Vietnam and the Chinese-aided Khmer Rouge in Cambodia. While these tensions persisted among the communist states, the independence of western-oriented nations like Thailand and Malaysia seemed reasonably secure. ■

New Sandys in Town: A-7s and Rescue Operations in Southeast Asia





Darrel Whitcomb

(Overleaf) A flight of three A-7Ds from the 355th Tactical Fighter Squadron in 1972.

THE A-7s OF THE 354TH TACTICAL FIGHTER WING... BEGAN PLANNING THEIR FIRST RECOVERY MISSION

In response to North Vietnam's massive invasion of South Vietnam in the spring of 1972, U.S. President Richard Nixon ordered a retaliatory interdiction campaign against the North. Designated Operation LINEBACKER, this effort unleashed U.S. Air Force, Navy and Marine airstrikes against the southern half of North Vietnam. Daily, strike packages of fighter aircraft out of Thailand and South Vietnam, and from the U.S. Navy aircraft carriers in the Gulf of Tonkin, pummeled the transportation structure, transshipment points, supply depots and vehicles holding and carrying enemy materiel to the battlefields in the South. Specific presidential authorization extended these operations into November and even authorized B-52 operations into North Vietnam as far north as the 20th parallel above the city of Thanh Hoa.¹

On November 16, at about 2200 (all times local), two flights of B-52s attacked a supply area and transshipment point thirty miles northwest of Vinh. Because of the massed anti-aircraft guns and SA-2 missiles concentrated in the area, the bombers were escorted by several flights of F-4s, some dispensing chaff and others protecting against MiGs, and a flight of two F-105Gs, nicknamed "Wild Weasels" and designed and equipped to suppress the SA-2 sites. As the gaggle of aircraft approached the target, the crew of the lead F-105G, Bobbin 05, detected the signal of one of the SA-2 sites which had begun tracking the aircraft. When they also received a launch signal from the site, they fired an AGM-78 missile to destroy it. However, the target area was obscured by layered clouds. Almost immediately, they observed an SA-2 missile streaking out of the clouds. They began an evasive hard left turn. The missile exploded, mortally wounding the aircraft. Pilot, Capt. Ken Thaete, and Electronic Warfare Officer, Maj. Norbert Maier, Bobbin 05 Alpha and Bravo respectively, ejected from the aircraft and quickly descended into the clouds below.²

The crew of another F-105G working with them immediately reported to the rescue coordination cell (call sign JACK) at Nakhon Phanom Air Base (NKP AB), Thailand, that Bobbin 05 had gone down. There, search and rescue (SAR) controllers duly notified the Joint Rescue Coordination Center (JRCC) in Saigon, alerted the helicopter rescue crews of the HH-53 equipped 40th Aerospace Rescue and Recovery Squadron (ARRS), and began coordinating with the intelligence capabilities at Task Force Alpha, both, also located at NKP.³

Normally, they would also notify the A-1 equipped 1st Special Operations Squadron (SOS), since they were the experts at SAR escort, and over the course of the war, had performed this function hundreds of times. When they flew these missions they used the call sign "Sandy," a moniker deeply

revered by combat pilots throughout the theater. However, that unit had been ordered to cease operations and transfer its remaining aircraft to the South Vietnamese Air Force. Instead, for the very first time, the A-7s of the 354th Tactical Fighter Wing (TFW) would perform this role. They had arrived at Korat AB, Thailand, one month prior, and were already flying strike missions throughout the theater. As the best available strike aircraft, they were also assigned the Sandy mission. To help them prepare for the mission, several pilots from the 1st SOS had worked with the pilots to familiarize them with the SAR tasking, and the 354th TFW had assumed SAR alert just that morning.⁴ The SAR controllers at NKP alerted the 354th TFW, and their pilots and intelligence personnel began planning for their first recovery mission.

Later that night, other aircraft in the SAR area reported voice contact with both survivors and provided a general location for both. However, an HC-130, King 22, serving as the airborne mission commander (AMC), and orbiting to the west was not able to contact either downed aviator. The 40th ARRS had several HH-53 helicopters which had been modified with a Night Recovery System (NRS), which gave them a limited ability to perform night recoveries, a capability which was much needed in the war. However, intelligence personnel indicated that the SAR area was infested with dozens of anti-aircraft artillery (AAA) guns, some radar controlled, and the SA-2 sites, one of which had just downed Bobbin 05. Therefore, a night effort was ruled out and plans were made for a first-light recovery the next morning.⁵

At 0500, a Fast-FAC (forward air controller), Wolf 13, entered the survivors' area and assumed duties as the on-scene-commander (OSC). He made radio contact with both survivors and more precisely fixed their locations. They were on the east side of a north-south running ridgeline. To the east, the area was open flatland all the way to the coast. To the west, the area was mountainous, with valleys in which the Jolly Greens could hide, if the visibility was good enough. At 0845, the 354th TFW was directed to launch Sandy 01, 02, and 03. Sandy 01 was Capt Dwight Wilson. The aircraft were airborne within 15 minutes. They then proceeded east, across Laos and South Vietnam, and joined up with a KC-135 over the Gulf of Tonkin to refuel. En route, they checked in with Wolf 13 who told them that the weather in the area was very bad, with clouds from 1,000 to 10,000 feet, limited visibility and rain. This precluded rendezvous with the Jolly Greens and navigation through the valleys. An approach from the east, over the flatlands along the coast was ruled out because of the enemy threat. Consequently, rescue operations were suspended for that day, and the Sandys returned to Korat. Wolf 13

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An HC-130 refuels an HH-53 over North Vietnam.



directed the survivors to move higher up on the ridge to better facilitate their recovery.⁶

SAR planners at JACK and the JRCC developed another plan for a first-light recovery attempt on the 18th. The weather forecast called for more clouds and rain showers, but good visibility below the clouds. The plan was more complex than the effort on the 17th and involved forty-seven aircraft. This included the HH-53s and HC-130s of the 40th and 56th ARRS, respectively, several flights of F-4 MiGCAP, strike aircraft and Fast-FACs, F-105Gs to suppress enemy defenses, EB-66s, and KC-135 tankers. The 354th TFW would provide eighteen A-7s as both Sandy and support strike aircraft. Sandy 01 for this mission was Maj Colin Clarke. He was well qualified to lead this effort because he had flown three previous SEA tours as an F-100 pilot and had ejected and been rescued twice from Laos and South Vietnam.⁷ Each unit conducted mission briefs for all participants and coordinated with the other units. They jointly developed an inbound track to the survivors' area with numerous designated points for common reference. These points could be loaded into the navigational computers and integrated with the inertial navigations systems (INS) on the A-7s and were obvious rally points for the SAR forces.⁸

The next morning at 0200, the A-7 pilots at Korat received their updated mission brief. They began launching at 0400, and by 0600, all A-7s were airborne.⁹ At 0330, four Jolly Greens took off from NKP and rendezvoused with King 22, the AMC. The two flights of two each staggered their refuelings so that at any time, one two-ship was full of fuel and ready to commit to a rescue attempt.¹⁰

As sunrise approached at 0631, all elements were now in place to attempt a recovery. Wolf 01, an

F-4 Fast-FAC from Ubon was the OSC with his wing man. Sandy 01 rendezvoused with him at point K. After a quick briefing, Wolf 01 and 02 took Sandy 01 back out over the Gulf of Tonkin. Wolf 02 remained above the clouds as Wolf 01 and Sandy 01 then descended over the water. When they were below the clouds, Wolf 01 showed Sandy 01 the survivors' locations. They drew quite a bit of AAA from the enemy gunners in the area. They also determined that the weather was much worse than forecast with a ragged ceiling at 1,000 to 1,500 feet and some ground-level fog which did seem to suppress the enemy gunners somewhat. They made radio contact with Bobbin 05A and B. "We were all pretty happy about that," Clarke later recalled.¹¹

Sandy 01 authenticated Thaete and Maier, determined their locations, and "marked" them in his navigational computer. This allowed him to fly back to their location by selecting either location as his designated navigational point. Each was hidden in a relatively open area of tall elephant grass, both very good landing zones. Wolf 01 then departed to refuel and rejoin his wingman. With full gas, he returned to the recovery area and remained as the OSC, putting in airstrikes on enemy guns and positions. There was no lack of targets.¹²

Clarke began searching for a valley to the west of the survivors through which he could ingress the Jolly Greens for the pickups. The forward looking radar (FLR) on his aircraft was inoperative, but his radar altimeter still worked. Instead, using his projected map display system, he tried several routes. At the same time, the Jolly Green crews were also trying to find a way in and kept descending into the clouds hoping to break out into the clear. However, they had no navigational gear which could help them determine their position accurately, and had

SAR PLANNERS AT JACK AND THE JRCC DEVELOPED ANOTHER PLAN FOR A FIRST-LIGHT RECOVERY ATTEMPT ON THE 18TH

An HH-53 and A-1Es in support of rescue operations.



AS THE A-7S WERE WORKING OVER THE RECOVERY AREA, THE JOLLY GREENS WERE MAKING REPEATED ATTEMPTS TO DESCEND THROUGH THE WEATHER

to be very careful that they did not fly into a mountain or descend into an area loaded with AAA guns or which made them vulnerable to the SA-2 sites. After an hour of such futile activity, the Jolly Greens had to return to the HC-130 for fuel. The Sandys also had to refuel off of the KC-135s. However, nobody had calculated how so many A-7s would rapidly deplete the tanker aircraft, and several "spare" tankers had to be scrambled to support the rescue armada.¹³

After refueling, Sandy 01 led Sandy 04 and 05 down into the survivor area to get them oriented and then dispatched them to backtrack to the west to find an ingress route and bring in the Jolly Greens. As they were working, he proceeded back to point K, picked up Sandy 02 and 03 who were waiting there, led them into the recovery area, and oriented them on the tactical situation. He identified AAA gun positions that would need to be attacked and showed them the locations of both survivors. Actually, the AAA positions were easy to identify because the gunners were constantly firing at the A-7s. This just reinforced to Maj. Clarke the reality that he had to bring the Jollys in from the west so that they could use the terrain to hide from the guns. As the A-7s were working over the recovery area, the Jolly Greens were making repeated attempts to descend through the weather into workable visual conditions. All of this maneuvering, once again, required all of the aircraft to recycle through the HC-130s and KC-135s. More tankers had to be launched to support the extended effort, and four A-7s were directed to return to base.¹⁴

After all had refueled, Sandy 01, accompanied by 04 and 05, proceeded to point Y where two of the Jolly Greens were holding. Sensing that the weather was breaking up somewhat, he led one of

the Jollys down through and around the weather into one of the valleys which was relatively clear. He used his radar altimeter to avoid terrain and UHF radio automatic direction finder (ADF), to vector the Jolly green through a low overcast into visual conditions in the valley. The Jolly Green aircraft commander, Capt John Gillespie, noted, "Circling in the valley with a 1,000 foot or less ceiling, Maj Clarke used his [ADF] to vector my aircraft into the valley. The two aircraft, A-7D and HH-53, then began the long run inbound to the survivors." Clarke maneuvered him along the ingress route, avoiding villages and areas of suspected AAA concentrations to the ridgeline where the survivors were located.¹⁵

At the same time, Sandy 04 and 05 proceeded above the clouds out of the Gulf, let down into visual conditions and attempted to reenter the recovery area. Heavy fusillades of AAA fire drove them back out over the water. They noted the locations and picked a new ingress route. Concurrently, Sandy 01 directed Sandy 02 and 03 to lead Sandys 11-16 out over the water and then down into the recovery area to be ready to provide firepower support when needed and to lay a smoke screen if necessary to hide the Jolly Green while he was in his recovery hover. All of the aircraft converged in the recovery area, below the clouds and with good visibility. Sandy 04 and 05 took up escort of the Jolly Green. Sandy 01 told the Jolly Green to proceed to point Z and hold while Sandy 01 orbited over the survivors and prepped them for pickup. As he passed over the survivors, Clarke was hosed by a AAA gun which was just 300 hundred yards from Bobbin 05B. He decided to directly attack the gun with his rockets and 20 mm cannon and called for Sandy 04 and 05 to assist him. As Clarke rolled in to engage the gun, he saw in the bottom of his gunsight, the Jolly

AT THE SAME TIME, SANDY 04 AND 05 PROCEEDED ABOVE THE CLOUDS... AND ATTEMPTED TO REENTER THE RECOVERY AREA



THE CREWS OF BOBBIN 05 HAD BEEN RECOVERED FROM DEEP IN NORTH VIETNAM, AND NO OTHER AIRCRAFT OR PERSONNEL WERE LOST

Green moving along the ridge to the survivors. Gillespie and crew had not heard the directive to proceed to point Z, they were moving in for the pickups.

At the same time, Sandys 11-13, and Sandys 14-16 laid down their smoke screens southwest and east of the two survivors, effectively hiding the lumbering Jolly Green from the enemy guns. The A-7s delivered their smoke amidst continuous enemy groundfire. Noted the after-action-report, "The timing and overlap was ideal and resulted in an unbroken two to three mile smoke screen from the surface to 800 feet which shielded the helicopter from the guns." In their runs, all pilots observed heavy AAA. Sandy 12 sustained damage to his aircraft from 23 or 37 mm fire.¹⁶

Sandy 01, 02, 04, and 05 orbited overhead as the Jolly picked up Capt. Thaete and Maj. Maier. While doing so, the Jolly gunners were busily and aggressively firing on targets as they appeared. Sandy 01 continued to engage enemy forces as he spotted them, and as the Jolly Green was departing the area, his aircraft was hit and damaged by enemy fire. He began an egress to the east over the water, as Sandy 02, 04, and 05 escorted the Jolly Green back up the valley to the west. The egressing formation began to run into weather and climbed up through it until they were clear on top. There, F-4s joined with them for the flight to NKP as the Sandys then proceeded to Korat.¹⁷

Clarke had his own challenges. His aircraft had been seriously damaged by some kind of AAA shell which had exploded his right drop tank and peppered the right side of the aircraft with shards of metal. His avionics system, flight instruments, navigational gear, etc., were all knocked out. He was quickly joined by several other A-7s who escorted him to a safe landing at Da Nang AB, South Vietnam. But the crews of Bobbin 05 had been recovered from deep in North Vietnam, and no other aircraft or personnel were lost in the effort.

Once launched the entire rescue operation took almost nine hours. Sandy 01, Maj Colin Clarke, was airborne almost the entire time. For his effort that

day, he was awarded the Air Force Cross. During 1972, twenty Air Force personnel were awarded that prestigious medal. In that group, Clarke was the seventh person to receive that award for a rescue mission. Four of those recipients flew their award mission as Sandy 01.¹⁸

The post-mortem analysis was long and extensive and pointed out several factors to be considered.

The crews complained about the use of call signs.

There were so many Sandys, that precise verbal communication became a challenge. Several recommended that the Sandys should be few in number, and support flights should have individual call signs.

More tankers had to be available for SAR ops. The A-1s did not use tankers. But, to give the A-7s the loiter time that may be required, more KC-135s had to be planned for in SAR missions. There was another complicating factor. The A-7s could not carry as much ordnance as the A-1s. Therefore, they operated as three-ship elements vice the two-ship elements common to the A-1s, and generating more need for tanker support. This also reflected the fact that there were now, many more A-7s available for SAR duty, vice the disappearing A-1s.¹⁹ The King aircraft could be given responsibility for coordinating the increased need for tankers for the Sandys, as they did the refueling of the HH-53s.

SAR planning required better weather forecasting and dispersal to the aircrews.

The standard SAR communications plan had to be modified to the capabilities of the A-7. It only had UHF and VHF-FM radios. HH-53s also had VHF-AM radios and used them frequently with the A-1s and other support elements such as FACs in O-2s and OV-10s operating over much of Laos, Cambodia, and South Vietnam, or U.S. Army aviation units which frequently supported SARs in South Vietnam. VHF-AM radios could be inserted into the A-7s, but that

A-7D Corsair IIs of the 354th Tactical Fighter Wing over the skies of Southeast Asia.



BEYOND THE ANALYSIS, THOUGH, THE RESCUE COMMUNITY COULD NOT HELP BUT COMPARE THE A-7 TO THE SORELY MISSED A-1

would take time. Until such changes were made, the communications plan had to be rewritten.

The A-7 pilots were puzzled by the apparent lack of response from the known SA-2 sites in the area. In the debriefings, they discovered that several flights of F-105Gs had been very active above them and had attacked and possibly destroyed at least three sites. Analysts speculated perhaps the enemy was waiting for the “slow moving aircraft” to arrive (A-1s) that they were so used to seeing, and confused the A-7s for Wild Weasels. Possibly, the aggressive tactics of the A-7s surprised them and caused them to hesitate in their response.

While the A-7 was sufficiently equipped to support SAR operations, the installation of an electronic location finder (ELF) recently installed on some HH-53s, would be useful for the quicker and more accurate location of survivors.²⁰

After the mission, the accolades rolled in. Gen. John Vogt, commander of Seventh Air Force cabled, “Your energetic response, commendable airmanship, and steadfastness under the most hazardous conditions was in the finest traditions of the USAF. My sincerest thanks for a job well done.” The commander, United States Military Assistance Command Vietnam, Gen. Fred Weyand, wrote, “The successful rescue of the Bobbin 05 crew... was the zenith of true dedication by many. We ... are proud to salute the men who risked their lives for their fellow countrymen.”²¹

Beyond the analysis, though, the rescue community could not help but compare the A-7 to the sorely missed A-1. Beyond the equipment differences, there were other concerns which were voiced,

especially by the HH-53 crews. They had operated for years with the A-1s providing close support for them when they were ingressing, hovering over the survivors, and exiting the battle area. They liked the feel of the A-1s in close and were hesitant, initially at least, with the A-7s with their higher speeds and larger turn radius, which prevented them from maintaining that close contact. It made the Jolly crews feel “naked” in the face of the enemy gunners. They also noticed that the pilots were different. The A-1 guys were “low and slow” pilots, trained as close in attack specialists and flying aircraft straight out of World War II. When not on SAR duty, they flew missions providing tight close air support for primarily indigenous coalition forces in Laos and had a real feel for ground battle. They did interdiction too, but as a secondary mission. They had a fundamental feel for air to ground battle, and many SARs ended up as air-to-ground battles.

The Jollys also really appreciated having the A-1 squadron right there at NKP with them and the Nail OV-10 FACs of the 23d TASS. These disparate groups of young airmen developed a close bond through their combined efforts in the rescues. And there at NKP they also had collocated with them JACK and the intelligence capabilities provided by Task Force Alpha. It was a cohesive and fortuitous grouping of all the key SAR elements and it provided for a robust synergy among the various groups.²²

But the A-7s were located at Korat. They kept liaison officers at NKP, but that was not the same as having the actual Sandy pilots themselves right there with the other SAR experts and having opportunity to mix with them on a daily basis and swap the inevitable “bar talk” which in many cases, created the unique tactics and techniques which enabled the

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SAR forces to perform so many incredible rescues. That was a loss to the rescue community.

In comparison to the A-1 pilots, the A-7 drivers were a different breed. They were jet guys, flying higher and faster. They were focused on flying quickly to a target, bombing it, and returning home. Yes, they did close air support, but they were not down low and in the fight like the A-1 guys were. They were really more designed and optimized for interdiction or preplanned targets designated in a campaign plan. Their aircraft were optimized for it, with improved bombing avionics, in-flight refueling capability, FLR with radar altimeter interface, projected map display system, and navigation/weapons delivery computer integrated with the INS, all reflective of how aviation was modernizing. With their higher speeds, the A-7s could get to the rescue location quicker, and history had shown that reduced reaction time was a key determinant in recovery success.²³

After the Bobbin 05 mission was complete, one A-1 pilot speculated that the uniqueness of the A-7 with its advanced capabilities, enabled this rescue when it is probable that the A-1 pilots would have had a much more difficult time completing the mission so far from home base and in such a dangerous area. Starkly stated, the A-1 was the proud past - the A-7 was the exciting future. Regardless, the A-1s were gone and for operational reasons, the A-7s were the new Sandys in town. And they were

flexible, as Bobbin 05 showed. The A-7 pilots would adapt their aircraft and themselves for the mission and re-shape the mission to exploit the new technologies and ideas. In that, they would replicate the earlier efforts of the helicopter crews when they incorporated in-flight refueling and the Night Recovery System into their tactics and techniques, and the OV-10 FACs of the 23d TASS who adapted the new Pave Spot LASER / LORAN system which provided highly accurate position designation and navigation. The A-7 airmen would also evolve as necessary to do the mission. (See "Bar Napkin Tactics," *Air Power History*, Winter 2014).

Recognizing that, perhaps the best commendation for the Bobbin 05 effort came from the commander of the 3d Aerospace Rescue and Recovery Group, Col. Cy Muirhead. He had been at the helm of our theater rescue forces for all of 1972, and knew better than most the reality of rescue in Southeast Asia. He wrote to the airmen of the new Sandy force, "Your extraordinary display of calmness and heroism under pressure are in the highest traditions of the [Aerospace Rescue and Recovery Service] and the USAF. For the Sandys of the 354th: Welcome to the rescue family. You couldn't have upheld the highly respected tradition of the Sandys in a finer manner. It's great having you with us."²⁴

It was a timely but almost bittersweet thought because some of the greatest challenges for rescue were looming just beyond the horizon. ■

NOTES

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2. Evasion Debrief of Maj Norbert Maier, in "Report of Search and Rescue Operations for Bobbin 05," History of the 354th TFW, Oct - Dec, 1972, Vol 4. , USAF Historical Research Agency, Maxwell AFB, Ala. (AFHRA)
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7. Hobson, *Vietnam Air Losses*, pp. 10, 173, 240; Also, John Frisbee, "Sandy Superb," *Air Force Magazine*, May, 1988, n.p.
8. Jolly Green Summary of SAR actions; Nov 18, 1972, Document File K318.3912-5 part 3, 1 Jan - 31 Dec 1972, AFHRA, Bobbin 05; Also, "Report of Rescue Operations for Bobbin 05," History of the 354th TFW, Oct - Dec, 1972, Vol 4, AFHRA; pp. 6-8.
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11. "Report of Rescue Operations for Bobbin 05," History of the 354th TFW, Oct - Dec, 1972, Vol 4, AFHRA, p. 12.
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13. "Report of Rescue Operations for Bobbin 05," History of the 354th TFW, Oct - Dec 1972, Vol 4, AFHRA; pp. 13-14.
14. *Ibid.*, p. 15.
15. *Ibid.*, p. 17.
16. *Ibid.*, pp. 20-21.
17. *Ibid.*, p. 22.
18. www.homeofheroes.com/valor/02_awards/02_afc.html; accessed April 18, 2015.
19. Col Cecil Muirhead, 3rd ARRGp Commander, End of Tour Report, n.d.; AFHRA, 8.
20. "Report of Rescue Operations for Bobbin 05," History of the 354th TFW, Oct - Dec, 1972, Vol 4, AFHRA, pp. 23-32.
21. *Ibid.*, p. 33.
22. Lt Col Lachlan Macleay, 23d TASS Commander, End of Tour Report, Sep 18, 1972, AFHRA, p. 19
23. Col Cecil Muirhead, 3rd ARRGp Commander, End of Tour Report, n.d.; AFHRA, p. 8.
24. "Report of Rescue Operations for Bobbin 05," History of the 354th TFW, Oct - Dec, 1972, Vol 4, AFHRA; p. 33.

Ivory and Ebony: White Officer Foes and Friends of the Tuskegee Airmen





Daniel L. Haulman

(Overleaf) The Tuskegee Airmen in Statuary Hall of the U.S. Capitol on the occasion of the President of the United States presenting the Congressional Gold Medal to the Tuskegee Airmen. (Photo courtesy of the White House.)

The racism that challenged the Tuskegee Airmen during World War II pervaded the United States, including the War Department. Many Air Corps white officers resisted the training of black pilots in a service that had never had them before, or demanded that even their base facilities be strictly segregated, or opposed black pilots entering overseas combat, or attempted to take them out of combat. Yet, there were always other white officers who supported the Tuskegee Airmen, not only encouraging them but also contributing to their success. This article focuses on twelve white Army Air Forces officers, six of whom resisted the success of the black airmen, and six who supported them.

The first half considers six of the white Army Air Forces officers who opposed or at least hindered the success of the first black military pilots in American military history. Among them are Col. Frederick von Kimble, who increased racial segregation at Tuskegee Army Air Field; Col. William Momyer, who recommended that the 99th Fighter Squadron, the first black flying unit and the first one in combat, be removed from attachment to his 33d Fighter Group; Maj. Gen. Edwin J. House, commander of the XII Air Support Command, who recommended that the 99th Fighter Squadron be transferred away from the front lines and taken out of combat because “the negro type has not the proper reflexes to make a first-class fighter pilot”; Col. William Boyd, base commander of Selfridge Field, who enforced segregation there, despite the fact that it was in Michigan; Col. Robert Selway, who attempted to set up racially separate officer clubs at Freeman Field for black officers in the 477th Bombardment Group; and Gen. Frank O’Driscoll Hunter, who supported the segregationist policies of both Boyd and Selway.

The second half focuses on six other white Army Air Forces officers who defied convention and contributed to the success of the Tuskegee Airmen: Col. Noel F. Parrish, commander of Tuskegee Army Air Field, which provided the basic and advanced flying training for the black pilots; Maj. Robert M. Long, Director of Advanced Flying Training at Tuskegee Army Air Field, who personally conducted

many of the advanced training flights; Maj. Philip Cochran, a member of the 33d Fighter Group, who helped train the 99th Fighter Squadron in P-40 combat tactics and navigation after the squadron first deployed to North Africa; Col. Leonard C. Lydon, commander of the 324th Fighter Group, to which the 99th Fighter Squadron was attached when it earned its first two Distinguished Unit Citations in June 1943 and May 1944; Col. Earl E. Bates, who commanded the 79th Fighter Group, to which the 99th Fighter Squadron was attached from October 16, 1943 to April 1, 1944, and with which it flew P-40s on successful combat missions for the Twelfth Air Force; and Lt. Gen. Ira C. Eaker, commander of the Mediterranean Allied Air Forces, who authorized the transfer of the black 332d Fighter Group to the Fifteenth Air Force and its equipment with the best fighters to escort B-17 and B-24 bombers on long-range strategic bombardment missions against enemy targets in Germany and occupied central Europe.

Colonel Frederick von Kimble

Col. Frederick von Kimble assumed command of Tuskegee Army Air Field at the beginning of 1942. A graduate of the United States Military Academy at West Point (class of 1918), he replaced Maj. James A. Ellison as post commander. Kimble inherited a base that was already largely segregated by race, but he was determined to not only enforce it but extend it as well. Not only quarters and dining facilities were marked off as for whites or colored personnel, but toilets as well.¹

Colonel von Kimble also opposed fraternization between blacks and whites at Tuskegee Army Air Field, preferring that contacts be strictly between white trainers and black trainees. Although the new black pilots who would graduate during his tenure would be officers, they would never command any whites. The commander remained aloof from the black cadets and the black support personnel, and few Tuskegee Airmen ever knew him personally. He resisted the promotion of black officers. During his tenure as commander of the field, only one black officer was appointed beyond the rank of captain,

THERE WERE ALWAYS ...WHITE OFFICERS WHO SUPPORTED THE TUSKEGEE AIRMEN

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and that officer served in the medical corps. When von Kimble was commander, no white officers belonged to the officers' club, or attended the base theater, because blacks were there. The white officers, most of whom lived off base, took advantage of entertainment opportunities beyond Tuskegee Army Air Field.²

Colonel von Kimble knew that segregation was the rule of the day in the neighboring town of Tuskegee, and in the state of Alabama, and he was determined to keep peace between the black personnel under his command and the local authorities. He did not allow black military policemen from Tuskegee Army Air Field to leave the base while carrying firearms, even if they were needed to go into town to corral wayward or unruly cadets. Kimble enforced curfews and preferred that the black cadets remain on base rather than to go into town, where they might arouse opposition in the white part of the town of Tuskegee. Some of the black cadets at Tuskegee Army Air Field even felt as if they were in a hell hole or a prison, because of their isolation, especially if they had come from areas of the country with less segregation. When Noel Parrish replaced Frederick von Kimble as commander at Tuskegee Army Air Field, the black personnel breathed a sigh of relief.³

Colonel William W. Momyer

Col. William W. Momyer commanded the all-white 33d Fighter Group and its three P-40s squadrons in North Africa when the black 99th Fighter Squadron was attached to his group between May 29 and the end of June 1943, and again between July 19 and October 16, 1943. The 99th Fighter Squadron was the first black flying unit, and when it deployed to Africa in April 1943, it was unlike any other fighter squadron, not only because it was the only black one in a combat theater, but because it did not belong, like all the other P-40 squadrons, to a set of three fighter squadrons assigned to a group. The 99th Fighter Squadron in the theater did not have a black group to be assigned to, so it was attached instead to Momyer's group, which already had three white P-40 squadrons assigned to it.⁴

Colonel Momyer did not welcome the black squadron to his group, but treated it like an unwanted stepchild. In Momyer's mind, the 99th was clearly inferior to the others, if not because blacks were inferior to whites, because the new squadron lacked combat experience. Momyer's belief that the 99th was inferior did not change during the time he commanded the group to which the squadron was attached. When Momyer became aware of some of the problems as the inexperienced black squadron first entered combat in early June 1943, and later in the year, he seized the opportunity to attempt to remove the squadron from attachment to his group. When the rest of his group moved from Sicily to the Italian mainland in mid-September 1943, he left the 99th Fighter Squadron behind. At the same time, he sent a note up the

chain of command noting that the black pilots failed to perform well, and should be taken out of combat.⁵

Major General Edwin J. House

When Major General Edwin J. House, commander of the XII Air Support Command in Italy, received Momyer's negative report about the performance of the 99th Fighter Squadron in combat, he prepared a memorandum recommending that the black squadron be taken out of combat and be reassigned to coastal patrol duties far behind enemy lines. The same memorandum also suggested that the plans to deploy the black 332d Fighter Group, that was preparing in the United States to deploy to Italy with three additional black fighter squadrons, be dropped. The "House Memorandum," as it was called, went up the chain to Maj. Gen. John K. Cannon, Deputy Commander of the Northwest African Tactical Air Force, who endorsed it. General Cannon, in turn, forwarded the memorandum to Lt. Gen. Carl Spaatz, commander of the Northwest African Air Forces and the Twelfth Air Force, who added his own endorsement, and noted that the 99th Fighter Squadron had been given every opportunity to succeed. The memorandum went all the way up to Gen. Henry "Hap" Arnold, commander of the Army Air Forces, in Washington, D.C. In response, the War Department launched a study to compare the performance of the all-black 99th Fighter Squadron with the performance of the all-white P-40 squadrons in the Mediterranean Theater of Operations. By endorsing Momyer's negative report, adding to it his own negative comments regarding the use of black pilots in combat, and forwarding it up the chain of command, House facilitated a move to take the only deployed black fighter squadron out of combat, and to prevent other black fighter squadrons from ever entering combat.⁶

Colonel William Boyd

The 332d Fighter Group, the only black fighter group in World War II, was stationed in Selfridge Field, Michigan from March 29 to April 12 and from July 9 to December 22, 1943. It was also the station of the first black bombardment group, the 477th Bombardment Group, from January 15 to May 6, 1944. As such, Selfridge was one of the most important bases for black Army Air Forces officers during World War II. Selfridge was only twenty-five miles from Detroit, where a major race riot had broken out in the summer of 1943. Racial tensions seethed in the area. In fact, a Selfridge Field base commander got drunk one day and shot his black chauffeur. Col. William Boyd replaced that commander, and served as commander of Selfridge Field even though he did not command the black 332d Fighter Group or the 477th Bombardment Group that were based there. Those groups were commanded by other white officers.⁷

Colonel Boyd did nothing to reduce the racial tension at Selfridge. He attempted to enforce racial segregation on the base, hoping to prevent violence,

LIKE MANY OTHER WHITE OFFICERS WHO HAD DEALINGS WITH THE TUSKEGEE AIRMEN, HE WAS NOT ALL BAD OR GOOD

AT TIMES GEN. GEORGE MARSHALL, CHIEF OF STAFF OF THE ARMY, INTERVENED IN FAVOR OF THE BLACK AIRMEN

and in the process, refused to allow the black officers to use the Officers' Club. Such a policy violated Army Regulation 210-10. Boyd's refusal almost led to violence, as black officers repeatedly tried to enter an all-white facility and were repeatedly turned away. Boyd was forced to close the club.⁸

Colonel Robert R. Selway

Col. Robert R. Selway was the second commander of the 332d Fighter Group and the first commander of the 477th Bombardment Group after it was activated as a predominantly black organization. Like many other white officers who had dealings with the Tuskegee Airmen, he was not all bad or good. In fact, at Selfridge Field, he led the 332d Fighter Group as it prepared to go overseas into combat, and he contributed to its success by the strict training he administered. If he had somehow died in early 1944, after the 332d Fighter Group deployed to Italy, he might have been fondly remembered only as one who helped prepare the black pilots for success in combat. Unfortunately, his story had a later darker side.⁹

While at Selfridge, Selway was influenced by the segregationist policies of Colonel Boyd, who had served as base commander. When the 477th Bombardment Group moved to Godman Field, Kentucky, in early May 1944, black officers might have been encouraged by the fact that the single Officers' Club at Godman was open to them, until they realized that no white officers attended it. The white officers of the group went to the Officers' Club at Fort Knox, instead, since Fort Knox was right next to Godman Field. When the 477th moved again, this time to Freeman Field, Indiana, the officers might have been encouraged again, because the base was larger, and able to accommodate more personnel and aircraft. Unfortunately, Freeman Field was also large enough to have two officers' clubs. Black officers at Freeman Field could attend an officers' club there, but there was also another club designated for the white officers. Selway attempted to hide the fact that the clubs were set up so that black and white officers would be separate during periods of entertainment by claiming that the white club was for trainers and the black club was for trainees, but the black officers of the 477th Bombardment Group did not buy it. They knew that other similar bases did not have separate clubs for trainers and trainees, and they knew that not all the supervisory personnel were allowed into the white club, because some of them were black and were denied admission.¹⁰

On April 5 and 6, 1944, a total of sixty-one black officers at Freeman Field attempted to enter the officers' club reserved for whites, and were arrested. Selway wanted to build his case, so he agreed to release the officers and then have all of them sign a statement acknowledging the separate officers' club policy. That way the arrested officers could not claim they did not know what the policy was, if there was litigation later. One hundred and one of the black officers, including most of those who had earlier tried to enter the club but had been arrested,

refused to obey an order to sign the document. Those 101 black officers were then arrested, by Selway's authority. They were flown on several transport aircraft back to Godman Field, Kentucky, the old base where the 477th Bombardment Group had been stationed before. The case became very controversial, and eventually all of the arrested officers were released except for three, who were court-martialed. In fact, only one of those three officers was convicted. Still, the Freeman Field "mutiny," as it was called, became an important chapter in Tuskegee Airmen history, and the black officers remembered Robert Selway as one of the villains in the story.¹¹

General Frank O'Driscoll Hunter

One of the other villains in the "Freeman Field Mutiny" story was Gen. Frank O'Driscoll Hunter, the commander of the First Air Force, under whom Selway commanded Freeman Field. Hunter had also been the commander under whom Col. William Boyd commanded Selfridge Field, Michigan, when segregation erupted as a major issue at that base, too. Apparently both Boyd and Selway were enforcing racial segregation at Selfridge and at Freeman Fields because that was the policy favored by the First Air Force commander. When segregation became scandalous at Selfridge Field, Boyd became the scapegoat, although General Hunter was just as much involved. The general claimed that the black officers at Selfridge should be patient until their own club was constructed. Hunter encouraged Selway to hold his ground when black officers challenged his separate officers' clubs policy at Freeman Field. The lesson Hunter took from the previous incident at Selfridge Field was not that blacks should be allowed to use the officers' club, but that they should have their own. Since they did have their own officers' club at Freeman Field, Hunter did not see what the issue was. As in so many cases, white officers enforcing segregation at Tuskegee Airmen bases were egged on by higher officers who encouraged them to retain the policy. General Hunter was definitely such a man. Just as Colonel Momyer's actions against the 99th Fighter Squadron were supported by General House, the segregationist policies of Colonel Boyd at Selfridge and Colonel Selway at Freeman Field were supported by General Hunter. Racism had a hierarchy in the Army Air Forces during World War II.¹²

The institutional racism within the War Department had its limits, however. At times Gen. George Marshall, Chief of Staff of the Army, intervened in favor of the black airmen. It was General Marshall himself who authorized the release of all but three of the 101 who had been arrested at Freeman Field in April 1945.¹³

In the first half, I considered six white Army Air Force officers who opposed the success of the Tuskegee Airmen. The second half focuses on six other white Army Air Force officers who helped the Tuskegee Airmen, and whom they remember as essential contributors to their success.

Colonel Noel Parrish

The best known of these was Col. Noel Parrish. Although Colonel Parrish was from the South, he did not share the same racial sentiments of many of those with whom he grew up. Parrish joined the Army and became a pilot before World War II. When Civilian Pilot Training commenced, he moved to Chicago to help train new pilots there, who might eventually become military pilots in the Air Corps. He moved to Tuskegee in 1941, first to command the primary flying school at Moton Field, a facility of Tuskegee Institute that operated under contract with the Air Corps. Before long, Parrish moved on the much larger Tuskegee Army Air Field to command the basic and advanced flight training offered there.¹⁴ Those more advanced phases of pilot training were not conducted under contract with Tuskegee Institute, but directly by the Army Air Forces, which provided military flight instructors. At first all of these instructors were white.

When Colonel Parrish first became commander at Tuskegee Army Air Field, the black cadets were not sure of where he stood on the question of their success. He gradually convinced them that he was more a friend than an enemy, establishing a reputation for fairness among the black officers with whom he came into contact. When black officers entered a base dining facility formerly reserved for whites, Parrish agreed to their right to be there, and desegregated the facility.¹⁵ Although the other white officers refused to remain members of the officer's club after it admitted blacks, Colonel Parrish remained a member. He supported black personnel who entered the white-controlled town of Tuskegee. He encouraged the progress of the black pilot cadets, as long as they showed ability and effort, as they moved from basic flying training to advanced flying training and then from advanced flying training to membership in the combat units that were also stationed at Tuskegee Army Air Field at first. Still, Parrish enforced strict flight training standards, insuring that only those black pilots who were likely to succeed in combat would also succeed in flight training. He supported rejection of cadets who failed to measure up to the exacting standards he and the Army Air Forces set, not lowering standards for anyone on the basis of their race. Colonel Parrish worked with black combat pilot veterans who returned from overseas to become flight instructors at Tuskegee Army Air Field. He remained a friend of Col. Benjamin O. Davis, Jr., who became the most famous Tuskegee Airman of all, by leading the 99th Fighter Squadron and later the 332d Fighter Group in combat, and still later the 477th Composite Group, all of whose pilots had trained under Parrish at Tuskegee. The Tuskegee Airmen remembered Parrish as a "good guy" even after their deployment to combat and after the war was over. In August 1945, Parrish invited Davis to return to Tuskegee Army Air Field to speak at the fourth anniversary of the opening of training there, and Davis consented. It was the first time Davis had returned to

Tuskegee since the 99th Fighter Squadron deployed in April 1943.¹⁶

After World War II, Noel Parrish continued to support black aviation within the Army Air Forces, and when he was a student at the Air Command and Staff College at Air University in 1947, he wrote a thesis advocating the total racial integration of the newly emerging Air Force.¹⁷ The Tuskegee Airmen Incorporated, at first composed primarily of Tuskegee Airmen veterans, established an annual individual award named in honor of Colonel Parrish.¹⁸

Major Robert Long

Another white Army Air Forces officer of World War II of whom the Tuskegee Airmen later spoke fondly was Maj. Robert M. Long, the Director of Advanced Flying Training at Tuskegee Army Air Field. They called him "Mother Long" because of the way he "mothered" the cadets, encouraging their progress. Major Long was related to the famous or infamous Huey Long, former governor of Louisiana and U.S. Senator, who had been assassinated in the 1930s. Many of the black cadets who flew in AT-6 advanced trainers flew with Major Long, and recalled his help in their success. There are many photographs of Tuskegee Airmen flying cadets training with Capt. Long. He became more their mentor than their mother, and they saw him not as an enemy to oppose them but as a friend from whom they learned many lessons they would later use in combat overseas. Lee Archer, who became one of the most famous of the Tuskegee Airmen, who shot down four enemy airplanes, remembered both Parrish and Long as "crackers and rednecks, but they were fair."¹⁹

Major Philip Cochran

After the 99th Fighter Squadron finally deployed to North Africa for combat overseas, it was attached to the 33d Fighter Group, which already had three assigned white P-40 squadrons full of pilots experienced in combat. Since the newly arrived black pilots lacked combat experience, the Twelfth Air Force commander ordered Major Philip Cochran, one of the experienced P-40 white pilots of the 33d Fighter Group, to work with them. Cochran helped provide additional training to the 99th Fighter Squadron, especially in combat flying tactics that differed from those used in training, and in the difficult navigation of the desert. The Tuskegee Airmen remembered Cochran as a friend. Others came to know him as "Flip Corkin" from the popular World War II Milton Caniff comic strip "Terry and the Pirates." Caniff, who later composed the Steve Canyon comic strip series, modeled Flip Corkin on Philip Cochran, whom he had met at Ohio State University. Cochran did not stay as an advisor with the 99th Fighter Squadron long, and eventually was sent to fly with commandos in Burma, but he was one of the white officers who served more as an ally than an opponent in the story of the 99th Fighter

HE GRADUALLY CONVINCED THEM THAT HE WAS MORE A FRIEND THAN AN ENEMY, ESTABLISHING A REPUTATION FOR FAIRNESS

Squadron, and he was remembered fondly by many of the Tuskegee Airmen.²⁰

Colonel Leonard C. Lydon

The 99th Fighter Squadron was attached to a total of four white fighter groups in 1943 and 1944, before it was eventually assigned to the black 332d Fighter Group. The unit faced opposition from the leader of only one of those groups, Momyer's 33d Fighter Group. The 99th Fighter Squadron had much more success when it was attached to the other three groups. One of these was the 324th Fighter Group, commanded by Col. Leonard C. Lydon. The 99th Fighter Squadron served under Lydon's group from the end of June to July 19, 1943, and then again from April 1 through June 6, 1944. There is no evidence that Lydon tried to remove the black squadron from attachment to his group. In fact, the 99th Fighter Squadron earned its first two Distinguished Unit Citations as a result of being attached to the 324th Fighter Group when the group earned the same two honors. The first was for action over Sicily in June and July 1943, during the first period of attachment of the 99th Fighter Squadron to the 324th Fighter Group. The second was for action over Cassino, Italy, between May 12-14, 1944. While there is little information about Colonel Lydon and his leadership of the 324th Fighter Group when the 99th Fighter Squadron was attached to it, Lydon must have encouraged the black squadron to share in the missions of his group, and with it the 99th Fighter Squadron gained much combat experience in addition to two of the three Distinguished Unit Citations it earned during World War II. Lydon was like many other white officers who quietly supported the Tuskegee Airmen and contributed to their success.²¹

Colonel Earl E. Bates

Col. William Momyer, commander of the 33d Fighter Group, convinced his commander that the 99th Fighter Squadron should be removed from attachment to his group, and also that the black pilots should be taken out of combat for poor performance. The recommendation went up the chain of command all the way to Army Air Forces headquarters. The War Department delayed a decision, instead launching a study to the 99th Fighter Squadron's performance with that of the other P-40 squadrons in the Mediterranean Theater of Operations. That study showed that the 99th Fighter Squadron was flying just as well as the white squadrons, and the squadron was never taken out of combat. It was, however, removed from attachment to Momyer's 33d Fighter Group and attached instead to the 79th Fighter Group on October 16, 1943, and remained attached to that group until April 1944.

Col. Earl E. Bates served as the 79th Fighter Group commander when the 99th Fighter Squadron was attached to it. Bates supported the black pilots and encouraged the success of the 99th

Fighter Squadron. While serving with Bates' group, the 99th Fighter Squadron finally demonstrated the ability of the black pilots to succeed against the enemy. For example, on January 27 and 28, 1944, over Anzio, pilots of the 332d Fighter Group shot down a total of thirteen enemy airplanes. The history of the 79th Fighter Group covering the period January 15 through February 15, 1944, describes the performance of the 99th Fighter Squadron in detail, noting the names of each of the black pilots who claimed to have shot down an enemy airplane, as if the white group was proud of the black squadron attached to it.²²

Bates treated the 99th Fighter Squadron not as an "orphan" but rather as a squadron equal to the other three P-40 squadrons assigned to the 79th Fighter group, all of which were white. He sent the four squadrons out together, and the black and white pilots got used to flying together as equals. They shared in the success of their Twelfth Air Force missions, supporting Allied ground forces in Italy and attacking enemy ground targets. Tuskegee Airmen such as Lt. George S. Roberts, the 99th Fighter Squadron commander, and Lt. Willie H. Fuller, another pilot in the squadron, remembered Col. Earl E. Bates as a friend, who, unlike the previous group commander, desired that they succeed.²³ Their success contributed to the success of his group, and his leadership of that group, with the 99th Fighter Squadron as an integral part, contributed to the success of the black pilots.

Lieutenant General Ira Eaker

Lt. Gen. Ira Eaker, who had commanded the Eighth Air Force in England, was serving as the commander of the Mediterranean Allied Air Force by the time the 332d Fighter Group deployed to Italy in early 1944. At first the only black combat group was relegated to coastal patrol missions, and the group flew P-39 airplanes that were not suited for shooting down enemy aircraft. In early March, General Eaker called Colonel Benjamin O. Davis, Jr. to meet him at his headquarters in Caserta and told him he wanted to change the function of the 332d Fighter Group to bomber escort. Eaker decided to include the 332d Fighter Group among the seven fighter escort groups of the Fifteenth Air Force, where they would have the opportunity to escort B-17 and B-24 heavy bombers to targets deep in enemy territory. Equipped with the best of the Allied fighters, with greater speed and longer range, the Tuskegee Airmen would have the opportunity to shoot down large numbers of enemy aircraft even as they stuck with the bombers they were assigned to protect. In April, General Eaker visited the 99th Fighter Squadron and hinted that the first black fighter unit in American military history, and the first one in combat, would be joining the 332d Fighter Group on the new mission of escorting heavy bombers over enemy targets.²⁴

Although Eaker had revealed his plan to Davis in early March, and to the 99th Fighter Squadron in April, the 332d Fighter Group had to wait until June

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before it began its heavy bomber escort missions for the Fifteenth Air Force, and until July before it acquired P-51 Mustangs, the best of the Allied fighter aircraft. July 1944 was also the month that the 99th Fighter Squadron physically joined the 332d Fighter Group at the same base, and began flying with the other three squadrons of the group.²⁵

Eaker's decision not only gave the black pilots a chance to succeed in combat, flying the best fighter planes available, but also allowed the 332d Fighter Group, unlike the white fighter groups, to have an extra squadron. With four fighter squadrons instead of the usual three, the 332d Fighter Group was able to put up more fighters per mission than the other groups, and the group was better able to protect the bombers it was assigned to guard. With that advantage, the 332d Fighter Group lost significantly fewer bombers than the average of the white fighter escort groups.

Summary

The twelve white Army Air Forces officers

described in this paper reflect the variety of attitudes toward black combat pilots that existed during World War II. Some of those officers, such as Colonels von Kimble, Momyer, Boyd, and Selway and Generals House and Hunter believed that blacks were inferior and should be kept separate from white officers, or even be denied the opportunity to fly advanced aircraft in combat overseas, but there were other white officers, such as Colonels Parrish, Lydon, and Bates, Majors Long and Cochran, and Lt. Gen. Ira C. Eaker, who believed that black men had the same rights as white men, and should be given equal opportunities to succeed, including the chance to fly the most advanced fighter aircraft in combat. The Tuskegee Airmen succeeded in spite of their enemies and partly because of the support of their friends, some of whom were white. It would be a mistake to think that the leadership of the Army Air Forces in World War II unanimously supported the success of the Tuskegee Airmen, but it would be just as much a mistake to think that all of the leaders were opposed to them. ■

NOTES

1. J. Todd Moyer, *Freedom Flyers* (Oxford University Press, 2010), pp. 85-88.
2. Robert J. Jakeman, *The Divided Skies* (Tuscaloosa, Ala.: The University of Alabama Press, 1992), p. 277; Lynn M. Homan and Thomas Reilly, *Black Knights* (Gretna, Louisiana: Pelican Publishing Company, 2006), pp. 71, 76; Benjamin O. Davis, Jr., *Benjamin O. Davis, Jr., American* (Washington, D.C.: Smithsonian Institution Press, 1991), pp. 75-77, 81-82; Lawrence P. Scott and William M. Womack, Jr. *Double V: The Civil Rights Struggle of the Tuskegee Airmen* (East Lansing, MI: Michigan State University Press, 1992), p. 169.
3. Benjamin O. Davis, Jr., *Benjamin O. Davis, Jr., American* (Washington, D.C.: Smithsonian Institution Press, 1991), pp. 75-77, 81-82.
4. Lineage and honors histories of the 99th Fighter Squadron and the 33rd Fighter Group, at the Air Force Historical Research Agency.
5. *Ibid.*; Davis, *Benjamin O. Davis, Jr., American*, pp. 98, 105.
6. Davis, *Benjamin O. Davis, Jr., American*, p. 105; Ulysses Lee, *The Employment of Negro Troops* (Washington, DC: Office of the Chief of Military History, United States Army, 1966), p. 157.
7. Lineage and honors histories of the 332nd Fighter Group and the 477th Bombardment Group, at the Air Force Historical Research Agency; J. Todd Moyer, *Freedom Flyers* (Oxford University Press, 2010), pp. 106-107.
8. Davis, *Benjamin O. Davis, Jr., American*, p. 110; J. Todd Moyer, *Freedom Flyers* (Oxford University Press, 2010), p. 109.
9. Lineage and honors histories of the 332nd Fighter Group and the 477th Bombardment Group at the Air Force Historical Research Agency.
10. Davis, *Benjamin O. Davis, Jr., American*, pp. 141-144.
11. Le Roy Gillead, *The Tuskegee Aviation Experiment and Tuskegee Airmen, 1939-1949* (San Francisco, CA: Gillead, 1994), pp. 52-57; Alan L. Gropman, *The Air Force Integrates, 1945-1964* (Washington, D.C.: Office of Air Force History, 1985), pp. 20-27.
12. Gropman, *The Air Force Integrates*, pp. 17-26; Davis, *Benjamin O. Davis, Jr., American*, pp. 110, 114, 142-143.
13. Gropman, *The Air Force Integrates*, p. 26.
14. Interview of Noel F. Parrish by Dr. James C. Hasdorff, conducted in San Antonio in 1974, call number K239.0512-744 at the Air Force Historical Research Agency.
15. Davis, *Benjamin O. Davis, Jr., American*, p. 129.
16. *Ibid.*, p. 146.
17. Interview of Noel Parrish; Gropman, *The Air Force Integrates*, p. 129.
18. The author attended six of the Tuskegee Airmen Incorporated national conventions in a row, in 2007, 2008, 2009, 2010, 2011, and 2012, and witnessed the awarding of the Noel Parrish Award at each of those conventions.
19. J. Todd Moyer, *Freedom Flyers: The Tuskegee Airmen in World War II* (Oxford University Press, 2010), p. 90.
20. Interview of Col. Philip Cochran by Dr. James C. Hasdorff, conducted in 1975, call number K239.0512-876 at the Air Force Historical Research Agency.
21. Lineage and honors histories of the 99th Fighter Squadron and the 324th Fighter Group during World War II, on file at the Air Force Historical Research Agency.
22. History of the 79th Fighter Squadron, Jan 15-Feb 15, 1944, at the Air Force Historical Research Agency, under call number GP-79-HI (15 Jan-15 Feb 1944).
23. John Holway, *Red Tails, Black Wings* (Las Cruces, New Mexico: Yucca Tree Press, 1997), p. 104.
24. Davis, *Benjamin O. Davis, Jr., American*, pp. 118-119.
25. Lineage and honors histories of the 332nd Fighter Group and its four fighter squadrons, the 99th, 100th, 301st, and 302nd, stored at the Air Force Historical Research Agency.

Dragons on Bird Wings: The Combat History of the 812th Fighter Air Regiment. By Vlad Antipov and Igor Utkin. Kitchener Ontario: Aviaeology, 2004. Maps. Tables. Diagrams. Illustrations. Photographs. Notes. Appendices. Glossary. Bibliography. Index. Pp. x, 150. \$39.99 ISBN: 0-9780696-0-9

Books on World War II in Russia from the Russian perspective are becoming more numerous but are still not that common. That is why it is so delightful to find one that is informative; exceptionally well put together; and, even when translated from the original Russian, still very readable. This book looks like a typical coffee table book that promises lots of pictures and not a lot of text. At the expense of my eyes (pretty small typeface) this book delivers both. Antipov and Utkin have put together a unit history of a single Soviet fighter regiment (the Soviets used army terminology for air force units unlike western air forces). This volume focuses on the period from unit activation in the Far East through its contribution to the successful defeat of German forces on the Crimean peninsula. Subsequent volumes will discuss the drive across Eastern Europe culminating in Germany's surrender in 1945.

Dragons is a straightforward history focusing on the training, employment, tactics, and equipment of the 812th. The writers rely heavily on first person accounts but seem to balance the emotions and memory issues inherent in such sources with a large collection of official documents and other secondary sources. The Canadian publisher provides a very useful introductory note which addresses the translation, tone, and certain technical aspects that differ between the former Soviet Union and the West to provide context and clarity. Specifically addressed is the issue of language and what might seem like a harsh tone regarding the enemy when veterans recall their experiences. I appreciated these comments but actually found them unnecessary. The veterans themselves very often accorded their opponents respect for their fighting ability even while deploring their leader's actions and never resorted to blatant bashing. The authors, while very proud of their countrymen's achievements, do not hide flaws in tactics and performance and in several instances demonstrate the shortcomings of the Soviet Commissar system and its detrimental effect on the fighting troops.

The book delivers a tremendous amount of information through the narrative; excellent color plates of various aircraft of both sides; and extensive maps, photographs, and appendices. The maps and illustrations are especially noteworthy

both for their quality and comprehensiveness. Although I don't believe this book was written specifically with a western audience in mind, Antipov and Utkin take time to explain the Soviet organizational structure. This greatly enhances the reader's understanding of the levels of command. The tactical discussions show the authors' solid grasp of aerial combat tactics, although neither appears to have a military background.

The only real drawbacks are a slightly off-kilter chronology and a somewhat choppy narrative. There is a great deal of information, but sometimes the flow leaves something to be desired. These are minor when compared to what the book offers. The price is the only other drawback; for a paperback, \$39.95 is a bit high. However, for anyone interested in the Soviet air forces in World War II, the information delivered and the overall quality make this a good choice.

Lt. Col. Golda Eldridge, USAF (Ret.), EdD



Richthofen: The Red Baron in Old Photographs. By Louis Archard. Gloucestershire, UK: Amberley Publishing, 2014. Photographs. Pp. 128. \$20.00 paperback ISBN 978-1-44583-348-0

Richthofen chronicles through photographs the short life of World War I's top ace, German pilot Manfred von Richthofen. To portray the life of von Richthofen from his early years as a military cadet to the spring of 1917, Archard primarily used photographs from the Library of Congress and the J&C McCutcheon Collection, supplementing these with images from several other collections.

To add context to the photographs, Archard used excerpts from Richthofen's diary, *Der Rote Kampfflieger (The Red Battle Flyer)*. Richthofen wrote this in 1917 while recovering from a head wound. The work was essentially a propaganda piece for the German public. Archard's text is not the complete diary; he used only excerpts from J. Ellis Barker's 1918 English translation, *The Red Battle Flyer*. So, this book is not a complete autobiography nor biography of Richthofen's life; but Archard never intended it to be.

Richthofen contains about 120 photographs to illustrate Richthofen's life. The photographs make up approximately half of the book. The photographs are a combination of images of Richthofen and period photographs that relate to passages from the diary. In addition to providing a glimpse into the life of the Red Baron, the

images also provide a glimpse of World War I in the air.

The photographs are well captioned with either text from the diary or Archard's own descriptive text. It is clear Archard took great time and effort to select what he viewed to be the very best and most interesting photographs. All are high-quality images; the only blurry ones are from actual aerial combat. This is to be expected from World War I photography. There are no more than three photographs per page, thus providing the reader the detail and resolution to study the photographs. An important feature is that the book is printed on high-quality paper that helps preserve the quality of each image.

Unfortunately, Archer stops the story in the spring of 1917—roughly a year before Richthofen's death in April 1918. His book would have benefitted from continuing the story through Richthofen's death. While the diary stops in the spring of 1917 as well, Archer could have provided the supporting text and included photographs involving Richthofen's final combat sortie, crashed aircraft, funeral, and final resting place.

The book is a quick read that will certainly appeal to a considerable reading audience. Readers interested in the Red Baron will find the images interesting, while readers interested in World War I in the air will appreciate the images that are not specifically of von Richthofen. Additionally, Richthofen's descriptions of dog-fighting are often vivid and engaging and worth the time.

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The Ardennes 1944-1945: Hitler's Winter Offensive. By Christer Bergström. Havertown, Pa.: Casemate Publishers, 2014. Glossary and Abbreviations, Charts, Maps, Appendices, Color Plates. Bibliography. Endnotes. Index. Pp. 503. \$69.95. ISBN 978-1-61200-227-4.

On December 16, 1944, over 200,000 German infantry accompanied by over 300 tanks and other tracked vehicles attacked a thinly held section of the Allied lines through a heavily forested, ravine-and-ridge-crossed region along the Belgium-Luxembourg-France border. The area, well known to the Germans, was largely discounted by the Allies because, in their view, it was unsuitable for large-scale mobile warfare. Bergström took on the daunting task of tracing this last-ditch effort by Hitler to punch a wedge between the Allied armies and create the conditions

for a separate peace with the western allies allowing him to focus on the Eastern Front and, hopefully, have the western allies join him against the communists.

Bergström took on a task comparable in many ways to the audacity of the German offensive and came out a winner. He tracks the participants at every level, from headquarters to individual squads. Virtually every picture names the subjects and their status. Biographies of major players on both sides provide context to the battles. Individual units are tracked throughout the battle. The explanations of the equipment and tactics illustrate a level of research that must be applauded. Discussions of the methods of employment of armor on both sides provide a solid basis for appreciating the difficulties the Allies had in dealing with the offensive. Also highlighted are the relative experience levels of the opposing forces and the German practice of replacing units as a unit as opposed to the Allied practice of filling depleted units with individual soldiers. Another strong point is the comparison of the leadership on both sides.

It takes Bergström almost 70 pages to actually start the offensive, because he details the German's meticulous planning and ability to hide their intentions from the Allies. Indeed, neither allied aerial reconnaissance nor tactical intelligence picked up indications of the German preparations. Bergström also explains both Hitler's insistence on not starting the offensive until a period of bad weather (to keep Allied air power on the ground) and the army's reluctance to accept the idea of the offensive at all. This detailed introduction is balanced by the final chapter, that discusses Hitler's realization of the finality of the offensive and the decision to withdraw significant elements from the west to face the Soviets.

Bergström details the topography, noting that most of the Ardennes' main roads run more or less north-south; the few running east and west are frequently narrow, have sharp switchbacks, and are subject to the impacts of ice and snow, making for very slow going. It was not so much a lack of fuel and logistics that limited the German advance. Rather, supply lines became bogged down in traffic and were targeted—when the weather did clear—by Allied air power.

The final chapter presenting conclusions and results is excellently done. The Ardennes Offensive did not end with the relief of Bastogne, nor was Patton's much vaunted dash to save Bastogne a dash or without its mistakes. Bergström notes the withdrawals on Hitler's orders of several key units to the Eastern Front, thus allowing the Allies maneuver space. He also dis-

cusses the use of strategic air power and its effect on the overall battle. In the final days, what was left of the *Wehrmacht* was forced to retreat and leave behind vast quantities of equipment they could ill afford to lose. But, without fuel and spare parts, it could not be moved.

The seventy pages of appendices could be books or monographs alone: unit structures; color plates of military vehicles, equipment, and aircraft involved; and orders of battle are covered. The list of sources is a rich guide for further research.

I enjoyed the book immensely, but found it difficult to read. The level of detail is such that I frequently found it necessary to go back pages or chapters to refresh myself on units and locations. But Bergström does help matters by moving methodically from one point of action to another, tracking the action to a conclusion before moving on. If one is deeply interested in military tactics, employment of personnel and equipment, and small unit tactics, this should be on your bookshelf.

MSgt. Al Mongeon, USAF (Ret.)



The Medal of Honor: A History of Service—Above and Beyond. The Editors of Boston Publishing Company. Minneapolis: Zenith Press, 2014. Maps. Illustrations. Photographs. Appendix . Bibliography. Index. Pp 304. \$40 ISBN: 978-0-7603-4624-2

Since the Medal of Honor Society commissioned Boston Publishing Company to first publish this work in 1985, the United States government has sent hundreds of thousands of its service men and women into harm's way. This effort, the 2014 edition, updates the original work.

In the intervening twenty-nine years, the Medal of Honor has been awarded sixteen times—two from Somalia in 1993, nine from Afghanistan, and five from Iraq (conflicts from 2001 to 2014). Others continue to be awarded the medal from much earlier conflicts; as with many reference books, this one can become quickly dated.

Nevertheless, this is a solid effort with a look reminiscent of the Time-Life series of the late 1970s and early 1980s. Not surprisingly, Boston Publishing was very much involved in the production of the *Epic of Flight* and *World War II* series. For a few years, Time-Life owned Boston Publishing.

The format makes for easy reading with lots of sidebars and excellent photographs, illustrations, and maps. Beginning with the creation of the award for

bravery by the U.S. Congress during the Civil War, the book discusses almost every U.S. military action from then through 2014. Among the forgotten is a reference to America's attempt at gunboat diplomacy resulting in an incursion at Inchon, Korea, in 1871. The work effectively provides a reasonable overview of U.S. military history (excluding before the Civil War) that might be suitable for teaching secondary-school students.

Certainly one of the challenges confronted by the staff editors and writers (presumably in consultation with the Society) was which medal recipients deserved special mention. Coinciding with the United States' involvement in World War I, Congress dramatically raised the standards for the Medal of Honor while establishing other awards for heroism and bravery.

A two-page sidebar, *Aces over the Pacific*, discusses the exploits of Marine flyers Gregory "Pappy" Boyington, Robert Galer, and John Smith; Navy pilots Edward "Butch" O'Hare and David McCampbell; and Army Air Force aviators Neel Kearby and Richard Bong.

Navy flyer Tom Hudner, who received the Medal of Honor during the Korean War attempting to rescue a fellow pilot, Jesse Brown, reminisces in a sidebar in this edition about his visit to the crash site in North Korea. A sidebar devoted to another recipient, Navy helicopter pilot John Koelsch, discusses how his inspiring behavior as a prisoner of war would later result in the establishment of the Code of Conduct.

This is an excellent book but for readers interested primarily in flying personnel awarded the Medal of Honor, Barrett Tillman's *Above and Beyond* (Smithsonian Institution Press, 2002) is tough to beat.

Lt. Col. Steven D. Ellis, USAFR (Ret.), docent, Museum of Flight, Seattle



American Military Aircraft 1908-1919. By Robert B. Casari. Marceline MO: Walsworth Publishing Company, 2014. Tables. Illustrations. Photographs. Appendices. Bibliography. Index. Pp. 752. \$99.95. ISBN: 978-1-935881-13-1

A quick glance at the title suggests that this is a book about US-designed or US-built aircraft used by American units in the early days of military aviation. But Casari's scope is much broader than that. In this massive work, he sets out to tell the history of every aircraft type placed on order by the U.S. Army and U.S. Navy dur-

ing that period, whether or not the aircraft were actually acquired or even actually flown. Thus, he addresses nearly 300 models and variants, and for each he gives us a history of its technical development, delivery, operational employment, and, in many cases, eventual disposition. This is the content that occupies most of the book, and it is impressive in both the breadth and depth of its coverage. Relatively minor aircraft, many of which might be unfamiliar to most readers, are addressed in a few concise paragraphs. But for more significant types—such as the U.S.-built de Havilland DH-4 and aircraft from Curtiss, Nieuport, SPAD, and the Royal Aircraft Factory—the coverage is extensive.

Leading into the plane-by-plane histories, Casari provides two well-structured sections—one each for the Army and Navy—that provide essential context and background information to help the reader understand the stories of the individual aircraft types. For each service he discusses aircraft development programs before America's entry into the war in April 1917, production programs in the U.S., and how combat aircraft were acquired and deployed. These sections establish the two themes that run throughout the book. The first and most important is that the entry of Army and Navy aviation into the war was so challenging that although the U.S. was officially engaged in the war for 19 months, U.S. aviation units didn't make significant contributions until the last few months of the conflict. The second is that poorly documented and misunderstood history has led to misconceptions of the situation as it truly existed.

There were many reasons for America's initial ineffectiveness, and Casari discusses them bluntly and at length. These included insufficient numbers of pilots and airplanes in the Signal Corps' Aviation Section; lack of an organizational structure to plan for and execute the growth and deployment of American aviation elements; almost total ineffectiveness of the U.S. aircraft manufacturing industry in producing aircraft suitable for combat; poor performance of European allies in providing design documents and sample airplanes, once it was decided that the U.S. would attempt to rely on American-built versions of British, French, and Italian airframes; shortage of suitable engines; inability to make timely deliveries of U.S.-built aircraft to Europe because ground combat forces were given a higher deployment priority; and ineffective aircrew training programs in the U.S., coupled with a slow start in developing alternative training programs in Europe.

There were also a few key factors that enabled the U.S. to overcome these chal-

lenges and eventually contribute to the air war. Perhaps the most significant was America's establishment, in France, of a depot and an air service production center, which functioned effectively as central facilities responsible for inspecting aircraft subassemblies that arrived from the United States, building these into complete aircraft, and performing extensive rework and modifications to make the airplanes combat-ready.

Over a period of many years, Casari conducted extensive research into the history of each aircraft type and the overall U.S. aviation program, and he uses the results of that research to make his points strongly and convincingly. He also cites instances in which the lack of authoritative data sources has led other historians to draw incorrect conclusions about the performance of American aviation in World War I. While he acknowledges the difficulties in reconstructing history from incomplete records, Casari nonetheless seems to treat the work of previous authors with a degree of disdain and disrespect. If there is a criticism of the book, this is it.

The work concludes with a few dozen excellent drawings of representative aircraft, along with appendices that cover aircraft serial numbers, budget data, lists of aircraft assigned to each Army squadron and Navy patrol station during the war, and a slew of other information to please the detail-oriented reader.

The above criticism notwithstanding, Casari's work deserves exceptionally high marks as a rich, robust history of the first eleven years of American military aviation. Anyone with an interest in this topic will want to read the book in its entirety and then refer to it often when questions arise regarding specific aircraft types.

Lt. Col. Joseph Romito, USA (Ret.), docent, National Air and Space Museum's Udvar-Hazy Center and National Mall Facility



Believers in the Battlespace: Religion, Ideology and War. By Peter H. Denton, ed. Kingston: Canadian Defense Academy Press, 2011. Notes. Index. Pp. xxiii, 231. Paperback ISBN 978-1-100-16168-6

In this edited work, Peter Denton attempts to take a look at the role religious beliefs and traditions played in modern conflicts. Five sections to look at various differences and similarities between the battlespace and religion.

In the first section, Denton deals with religion, narrative, and identity. He brings together articles that look at the religious

conflict in Scotland, the relationship between religion and national identity in the Russo-Turkish wars, coexistence in conflicts such as the Maronites and Druze in 19th-century Lebanon, and issues surrounding sacred spaces.

Levon Bond discusses the fall of Constantinople in 1453 and Russia's rise to replace Byzantium as the Orthodox religious power. As the Russian and Ottoman empires skirmished against each other, they expanded into other ethnic and religious lands. But each had to practice a degree of toleration and acceptance of these ethnic and religious minorities in order to maintain internal peace and to adhere to the precepts of their religions. Religion provided the emotive forces for nationalist movements. It was through these nationalist movements, or religious nationalism, that Russia persuaded Orthodox Christians and ethnic Slavic's to break away from the Ottoman Empire. But in the end, it led to ethnic cleansing and violent displacement of minority groups.

Becky Weisbloom shows how religion and geography have political consequences. The Temple Mount in the Old City of Jerusalem is a complex symbol in the Israeli-Palestinian conflict because of its central role in the development of national identity. Since one must control one's holy sites in order to control access to God and God's blessings, it is very difficult for one to "extract religion from what would appear to be a political struggle about land and nationalism."

The second section revolves around managing religious differences and how religious differences were negotiated once social or political characteristics were established. Denton presents articles revolving around the civil war in Sierra Leone and religious tolerance, the creation of political and ethnic tensions via religious traditions in Bosnia, and the attempted suppression and/or control of Christianity in China after the 1949 Revolution.

Sharlene Harding looks at how Sierra Leone erupted into an eleven-year civil war when it immersed into a national reconstruction effort. Religion never was a factor despite Sierra Leone's diversity of religion and ethnicity. Harding points to the country's history of colonization and repopulation by a diverse mixture as well as its strategic location on the west coast of Africa, making it an ideal stop and economic hub for European explorers. However, despite the war not being religiously or ethnically based, religious tolerance was not enough to keep a country at peace. "No amount of religious harmony can save a nation from social instability,

economic decline and increased security infractions.”

The third section looks at ideology and identity. While religion may be part of both, it does not necessarily determine a specific resolution of any individual conflict. Two articles look at how both Buddhism in Sri Lanka and Hinduism in India were used as political tools to advance resentment and political violence against another ethnic or religious group.

The fourth section analyzes how political leaders’ personal religious views shape both social and political ends. Two articles look at the roles of Ayatollah Khomeini and George W. Bush and how they shaped their public communications. David Hodson discusses the language of good-versus-evil in the media and how sound bites can inflame public opinion in support of a cause. Specifically examined are President Bush’s remarks following September 11. Despite the constitutional separation between church and state, there are no restrictions placed upon how an American President’s religious beliefs might affect decisions by his administration. President Bush attempted to persuade the American public by noting divine favor and the divine sanction of our military actions in the world and associating American foreign policy with Christian concepts and ideas—nothing new in America. These same sentiments were expressed by presidents during World Wars I and II. Even Abraham Lincoln and Jefferson Davis repeatedly asserted to their public audiences that God was on their side during the American Civil War.

Believers finishes with two essays which look at the public conversation on the realization that religion, peace, and security are a necessity in this day and age. Four points—affirming beliefs, sorting through threatening values, refocusing education/research institutions to our true beliefs, and placing personal religious beliefs back into the community where they belong—are necessary in bringing technology, religion, and human security to the forefront in the 21st Century.

This book is an interesting read, as it points out how religious beliefs have long been used as tools to manipulate and motivate people toward destructive ends. Denton concludes that certain beliefs and the battlespace both need to be identified and understood to better learn the moral lessons that are required to survive in the new civilization of the 21st century.

R. Ray Ortensie, Command Curator, HQ Air Force Materiel Command

British Airship Bases of the Twentieth Century. By Malcolm Fife. Stroud, England: Fonthill Media, 2015. Photographs. Illustrations. Appendices. Notes. Bibliography. Pp. 320. \$47.00 ISBN: 1-78155281-9

Are airships still relevant in the 21st-century? In short the answer is yes. A quick internet search shows that both commercial and military ventures are still active in this arena. The grand size of an airship easily overwhelms the senses. The slow elegance of its movement across the sky is like nothing else. We still stop and gawk at the blimps which are ubiquitous sights at large outdoor events. They provide, even in the age of drones, a wonderful platform from which to observe and record events from on high.

A number of books have been written on airships before, during, and after World War I. Many of them concern the German-built Zeppelins, and there are even a few on British-built rigid and non-rigid craft. This book adds much to that short list. The British airships, which were operated by the Royal Naval Air Service, were used to patrol the coasts against German U-boats and to reconnoiter for raiders. Some even made their way to the Mediterranean.

Well over 200 of these magnificent machines played their part during the war and in the peace that followed. This important and interesting book details the supporting infrastructure and bases, the linchpin to safe and efficient operations. Airships are neither dainty nor inconspicuous, and to handle or supply and maintain them requires sizable support facilities. Trees and concentrations of buildings were problematic for safe landing and takeoff, though I was surprised to learn from this book that forested areas were at times used to moor some airships. They also needed to be near their area of operation along the coastal region. The large quantity of highly combustible hydrogen required for buoyancy necessitated special works that had to be manned and maintained. Access to rail lines for supplies often obliged the military to build spurs. The sheer volume of space required to house these craft required sophisticated sheds to be built, often in remote areas, for safe operation.

Fife’s important work in one sweep covers all of this and more. He is no stranger to obscure locations, as he previously wrote the definitive account of Scottish aerodromes from the Great War.

The book is well organized and profusely illustrated with photographs, drawings, and maps. The appendices, endnotes, and bibliography all make it a useful reference work. It covers the period from the

early pioneers through to the modern era and it provides a good clear examination of the airship bases and the airships that flew from these locations in the British Isles as well as British-operated bases overseas, thus making it a valuable contribution to the subject matter.

Carl J. Bobrow, Museum Specialist, National Air and Space Museum



The Phantom in Focus; A Navigator’s Eye on Britain’s Cold War Warrior. By David Gledhill. United Kingdom: Fonthill Media, 2014. Illustrations. Photographs. Pp. 287. \$29.95. ISBN: 978-1-78155-421-0

The Phantom II attained icon status in service with the Royal Air Force (RAF). Gledhill, a retired navigator, offers a nostalgic look at his flying experiences in the uniquely British FGR.2 (F-4M). The other British model was the FG.1 that flew in the Royal Navy. While several recent books have detailed the development and employment of the Phantom in British service, few are from the perspective of an individual crewmember.

Gledhill starts with a straightforward introduction to the Phantom’s entry into RAF service. Although similar in appearance to the U.S. Navy F-4J, the British Phantoms were unique in using the Rolls-Royce Spey afterburning engine (instead of the General Electric J79) that required a reengineered and enlarged fuselage and intakes to accommodate this unique powerplant.

Operationally, navigators (who flew in the FGR.2 back seat) operated the powerful Westinghouse AN/AWG-11/12 pulse-doppler radar. This unit allowed the navigator to identify targets for one of the most essential weapons carried by the Phantoms, the AIM-7G Sparrow air-to-air missile. The navigator locked onto a target for the AIM-7G in the beyond-visual-range mode. While the Phantom’s aft cockpit was often cramped and difficult to work in, Gledhill obviously loved every minute of his time there. For what the Phantom may have lacked, a well-trained aircrew and good tactics made the Phantom a worthy adversary in the air.

Gledhill discusses his initial navigator training and 1976 posting to the Phantom Operational Conversion Unit at RAF Coningsby. There he learned the Phantom’s basic operation prior to assignment to an operational unit. By the 1970s, the RAF Phantom’s mission had changed from fighter/ground attack/reconnaissance to British Isles air defense. The BAC Lightning had been the backbone of



Britain's air defense, but it lacked the needed firepower to intercept Soviet bombers carrying long range missiles. Gledhill was assigned to 56 Squadron, RAF Wattisham. He offers an intriguing glimpse into 24-hour Quick Reaction Alert (QRA) in fully-armed FGR.2s (four Sparrow and four Sidewinder missiles and a SUU-23 gun pod) to intercept unidentified aircraft intruding into British airspace.

Next, at RAF Wildenrath near the Dutch-German border, Gledhill's training missions mostly involved low-level flying that was essential to avoid the many surface-to-air missiles and anti-aircraft guns the RAF would have been encountered in a shooting war with Warsaw Pact forces. NATO held frequent exercises that offered great opportunities to fly missions against a variety of different aircraft simulating many different threats. Gledhill tells many interesting stories of his time flying in Germany, some humorous and others unfortunately tragic.

The Phantom did not take part in the 1982 Falklands War. However, it did deploy shortly after in case Argentina initiated additional hostilities. The Hawker-Siddeley Harrier GR.3 with AIM-9 missiles lacked an effective radar and had limited range to mount an effective defense. Consequently, the RAF deployed a small brace of Phantoms to Stanley airfield. Conditions were less than optimal, but flying in the Falklands offered almost unlimited unrestricted flying opportunities for Phantom aircrews.

Sadly, there comes a time when one has to say goodbye to an old friend. The Cold War's end signaled the end of the Phantom's RAF service in 1992. Gledhill's eleven-year association with the Phantom is well told in this book and is complemented with a wealth of photographs (many by the author) that add value. Gledhill is to be commended for writing an effective and readable work that is a welcome addition to aviation literature. I highly recommend it.

MSgt. Mike R. Semrau, PaANG (Ret.), Annaville Pa.



Lords of the Sky. By Lt. Col. Dan Hampton, USAF (Ret.). New York: Harper Collins, 2014. Photographs. Maps. Glossary. Bibliography. Notes. Index. Pp. x, 623. \$29.99 ISBN: 978-0-06-226201-1

Recently, I picked up this large tome and almost put it back without opening it thinking it was too big and that it probably had small print. Luckily, I discovered that

it didn't have that off-putting small type and it was one great read! The reader rides along on daring missions from the early trailblazing aviators of World War I to today's pilots flying supersonic jets.

Hampton knows of what he writes. He flew 151 combat missions during his twenty years in the USAF (1986-2006) in the Gulf, Iraq, and Kosovo. He is a graduate of the USAF Fighter Weapons School, the Navy's Top Gun School, and USAF Special Operations School. His 2013 autobiography, *Viper Pilot*, was a *New York Times* best seller.

It's been said that books of such a comprehensive nature usually suffer from one of two defects: either the author assumes the reader has an understanding of the circumstances that led up to certain events and leaves the reader to fill in his or her knowledge gaps or, at the opposite end of the spectrum, the author writes such minutiae that all the fun is taken out of reading. That is not the case with Hampton. He pulls off the impressive feat of not overwhelming his readers with information, while giving them enough so they have a good grasp as to what led to a particular decision, skirmish, or war. Readers are taken from the early days of World War I to the first days of the Iraq War in 2003. With his military flying experience and skillful prose, he's able to weave the accomplishments of the planes and the pilots in such a way that his book makes for a compelling read.

Here you'll find the stories behind history's most iconic aircraft: from the Fokker D-VII and Sopwith Camel, to the Zero, Spitfire, German Bf 109, P-51 Mustang, Hellcat, F-4 Phantom, F-105 Thunderchief, F-16 Falcon, F/A-18 Super Hornet, and many others.

Hampton writes of the Lafayette Escadrille in the Great War and brings to life such icons as Manfred von Richthofen, Eddie Rickenbacker, Roland Garros, and Albert Ball, and others.

He takes us from the epic efforts of the RAF during the Battle for Britain early in World War II to the Japanese attack on Pearl Harbor to nail-biting dog-fights between American flyboys and German Messerschmitts in the European theater and Japanese Zeroes in the Pacific and finally to Allied victory.

Eloquently, Hampton covers the Cold War conflicts in Korea and Vietnam where the jet age dawned for American pilots. He finishes the book drawing on his own experience as an F-16 pilot who fought in the 1991 and 2003 wars against Iraq to highlight the dangers and demands of today's modern fighter pilot.

Hampton draws not only on first-hand knowledge, but also on first-rate aviation

research. He lists more than 300 sources in his bibliography. His chapter notes section was a fascinating read in and of itself. He also interviewed little-known heroes, especially veterans of World War II, Korea, and Vietnam. All told, this is one of the best reference books on military aviation.

Hampton's been described as "America's most experienced" F-16 pilot, but he'll be the first to tell you there are other pilots from other wars whom he considers having done more impressive things than he has. This book will not disappoint those interested in the extraordinary stories behind the most famous fighter planes and the daring young men who flew them. *Viper Pilot* is my next read!

Janet Tudal Baltas, retired United Airlines flight attendant; docent, NASM's Udvar-Hazy Center



An American Pilot with the Luftwaffe. A Novella and Stories of World War II. By Robert Huddleston. College Station Tex.: Virtualbookworm.com Publishing, 2014. Notes. Sources. Pp. 94. \$9.50 ISBN: 978-1-62137-499-2

This is a collection of tales told about the World War II air war and its aftermath. Robert Huddleston is an accomplished writer and raconteur with many articles, plays, and books to his credit, among them the play *Exploitation—Dawn of the Cold War: A History*, a treatment of the Project LUSTY (Luftwaffe Secret Technology) teams that retrieved German technology. Indeed, the common threads running through much of his work stem from World War II ETO combat in P-47s with the 404th FG, and postwar work with Nazi V2 scientists on ballistic missile technology. His is the voice of an old warrior: accomplished, earthy, and eloquent.

The title novella is historical fiction about a man born in Chicago to immigrant parents from Germany. The family soon returned and the subject came of age there, eventually joining the Luftwaffe and becoming an ace. Along the way he acquired a French girlfriend, questioned Nazi ideology, and met rocket scientist Wernher Von Braun. Bailing out over England when his engine failed on a reconnaissance mission, he evaded capture, his fluent English easing the way. He flew combat against his former comrades under an assumed identity as a U.S. fighter pilot. Remaining in Europe after the war, he married and became involved in business and politics. World War II veterans in particular will recognize in this work the themes of wartime separation,

sense of danger, urgency and shared purpose, reunion at war's end, and building a postwar life.

The rest of the book consists of anecdotal stories and reminiscences of World War II and the postwar experience. "Dancing at the Del" concerns a chance encounter of an old veteran with his first post-war love. Both had married, raised families, and now, coincidentally and tragically, were to see the same medical specialist for the same terminal condition. The story of an American soldier who found and made off with artworks stolen by the Nazis, only to perish years later with his plunder in an accidental explosion, "Harry" is Huddleston's sly suggestion on the fate of Nazi-looted art. A classic whodunit on the mysterious death of a Nazi V-2 engineer, implicated in war crimes, who nonetheless worked on U.S. ballistic missile projects post-war, "Interrupted Journey" exposes the depth to which Huddleston's putative co-workers' pasts troubled him. Written in the wake of the September 11, 2001 attacks, "Terrorism American Style" explores what it means to terrorize or to feel terror through its character's discussions on race relations and the World War II Allied strategic bombing campaign over Europe.

A couple of vignettes are tales Huddleston tells on himself. Arriving as a replacement pilot on the Continent, he could not find a hotel room for any price. After an uncomfortable night, he finally discovered that cigarettes, not money, opened doors in wartime Europe. As Officer of the Day, he experienced various misadventures in the course of escorting two stray (and drunken) airmen to the MP lockup one dark, foggy night at the enormous St. Trond airfield. "The Army Air Corps College Training Program 1943-44" is straightforward reporting, drawn mostly from the USAF monograph (Preflight Training, no. 90) on the topic. "An Unforgettable Old Man" is an appreciation of an elegant dinner-dance for pilots about to ship overseas, given by a commanding officer of a replacement depot whose son had been killed in combat. "The End is Only the Beginning" is a meditation, stripped of the fictionalization of "Interrupted Journey," on the ethics of employing, rather than holding accountable, Nazi rocket scientists connected with wartime atrocities.

Although Huddleston's descriptions and situations ring true, his characters convey ideas too efficiently, with none of the pauses, interruptions, or grasping for a thought that typify normal conversation. This does not overly detract from the effect, although in places it is a bit humorous. The historical fiction format allows for

some eccentricities of spelling and fact, but numerous other errors should have been caught; the Luftwaffe night-fighter general's name certainly was Josef, not Jose Kammhuber. A last-minute Errata sheet fluttered out of my copy; one error was even stickered over.

Those who have been to war will recognize Huddleston's perspective on the postwar experience—reuniting with family, readjusting to civilian life, and establishing one's place in society. I recommend this book for its unfettered voicing of the thoughts, feelings, and life experiences of a member of the Greatest Generation.

Steve Agoratus, Hamilton, New Jersey



The Astronaut Wives Club. By Lily Koppel. New York: Grand Central Publishing, 2013. Photographs. Pp. xvi, 272. \$28.00 ISBN: 978-1-4555-0325-4

For those who have wondered over the years what it was really like to be an astronaut in the early days of America's space program, Lily Koppel's riveting book tells almost all!

The book opens with the world's introduction to the Mercury Seven astronauts. It then focuses not only on the wives of Project Mercury, but also those of Gemini and Apollo.

Mercury wives were ordinary military spouses who lived in drab Navy and Air Force base housing. When their husbands, some of America's best test pilots, were chosen for America's bold adventure to put a man into space, the wives suddenly found themselves thrust into the public eye and in stiff competition with one another.

Koppel delves into the backgrounds of each of the Mercury wives and does an admirable job telling of their triumphs and travails. Closely monitored by NASA, they were expected to be perfect, right down to their beehive hairdos. Annie Glenn had the picture-perfect marriage and was the envy of the other wives. Rene Carpenter, a platinum blonde, was JFK's favorite. Trudy Cooper, a pilot in her own right, arrived with a secret needed to be kept from NASA—that she had left her cheating husband. But with NASA promoting the Mercury Seven, not as Boy Scouts, but as overachieving Eagle Scouts, Gordo Cooper had to fly to San Diego and beg her to come back to him.

It didn't take long for these wives to figure out they needed a support group, so the Astronaut Wives Club came into being in 1966. Over the years, they provided each other with support, friendship, coffee, and cocktails, sometimes while sitting around a

Mercury-capsule-shaped swimming pool—many times with one too many cocktails. And who could blame them?

After the first American in space, Alan Shepard, safely returned, the astronauts and their wives met President Kennedy at the White House. Shepard's wife became the envy of all the wives as Jackie tucked her arm into Louise's and led her on a private tour of the White House. America's second space traveler, Gus Grissom, lost his capsule after splash-down. We feel Betty Grissom's despair when Gus told her there would be no White House invitation, and NASA sent them to a VIP beach house at Patrick AFB for a weekend where there was no TV for the kids and the beach was across the highway. John Glenn, the first American to orbit the Earth, got a ticket-tape parade that rivaled Charles Lindbergh's.

Many of the wives just couldn't take the lying and the cheating and felt their husbands had been given the OK with a "wink and a nod" from NASA to keep a "cookie" on the side as long as the seedier side of their private lives and their pristine public lives never met. Astronaut Gene Cernan admitted, "The wives stayed in Texas, and Florida was an off-limits playground filled with Cape Cookies," the term used for girlfriends and groupies.

The first "space divorce" of Donn and Harriet Eisele opened the floodgates. By the time it was over, of the 30 couples from Mercury, Gemini, and Apollo, only seven stayed together. Years later when astronaut Wally Schirra lamented to his wife how few were still married, she shot back, "Our marriage stayed together because you were away half the time."

For me, the saddest account was of Patricia White whose husband, Ed, was killed in the Apollo 1 fire. She never got over it. She continued to infrequently meet with the club over the years and later married a Houston oil tycoon. The weekend before a much-anticipated Astronaut Wives Club reunion in 1991, Pat committed suicide. Most of the wives believed her to be the final victim of the Apollo 1 fire.

If you thought the only NASA heroes were its astronauts, think again. *The Astronaut Wives Club* tells the real stories of the women who stood beside some of the biggest heroes in aerospace history. Readers won't be disappointed with this superbly detailed book. One wife said it best: "If you think going to the moon is hard, try staying at home."

Janet Tudal Baltas, retired United Airlines flight attendant; docent, NASM's Udvar-Hazy Center



Malloch's Spitfire: The Story and Restoration of PK 350. By Nick Meikle. Havertown Pa.: Casemate, 2014. Photographs. Maps. Glossary. Appendices. Notes. Index. Tables. Diagrams. Bibliography. Pp. 243. \$24.95 ISBN: 978-1-61200-252-1

This is a history of a Griffon-engined Spitfire Mk 22, British Royal Air Force (RAF) serial PK 350. Replaced by jets in the RAF, it served with the Southern Rhodesian Air Force (SRAF, later Rhodesian (RhAF) and now Air Force of Zimbabwe) in the early 1950s. Subsequently mounted "on a pole," it was restored to flying status in the late 1970s. PK 350 ultimately crashed in bad weather, tragically killing its pilot, Jack Malloch, the SRAF veteran who funded its restoration. *Malloch's Spitfire* is set in the context of Africa's turbulent post WWII history, when modern sovereign nations were rising from the ashes of colonialism. In Rhodesia this culminated, after a fifteen-year armed struggle, in the peaceful transition to Zimbabwe. Nick Meikle served with the Rhodesian and later Zimbabwe air forces and wrote this book from first-hand experience.

Jack Malloch flew Spitfires during World War II. Postwar he founded Air Trans Africa (ATA). Malloch's career and ATA became embroiled in the complex events marking the end of colonial rule. "His" airplane was built just after the war and served in the RAF until 1948. Purchased by the SRAF in late 1950, it was flown mostly in the NATO-assigned role of pilot training. The aircraft later reposed as a gate guard outside the New Sarum (now Harare International Airport) air base. In 1977, the then-RhAF, perhaps in a burst of sentiment, retrieved and disassembled PK 350 for restoration. Pressing war needs soon caused it to contract with ATA for completion. Malloch had the honor of the first flight on March 29, 1980. Even as the Spitfire, a symbol of the past, took to the air, the winds of change were stirring. Nineteen days later, Rhodesia became Zimbabwe in an agreement negotiated by Malloch's wartime squadron comrade, Prime Minister Ian Wilson.

Briefly the only flying Mk 22 in the world, PK 350 was thoroughly documented in a film, *Spitfire: The Pursuit of a Dream*. This project proved to be aircraft's—and Malloch's—undoing. The Spitfire and Vampire photo ship flew into a violent thunderstorm on March 26, 1982. Battered by hail, the photo ship emerged from the cloud, damaged but still flying. Malloch and PK 350 did not, crashing so violently that the Rolls-Royce Griffon

engine block was torn apart. If the Spitfire reminded its sponsors of earlier times, so its demise, and that of Malloch, fittingly marked the end of that era.

Meikle does a great job of synthesizing Spitfire history from the usual sources, although I missed citations from Peter Caygill's *Spitfire Mks VI – F.24* and *Ultimate Spitfires*. As a biography of the penultimate Spitfire (the Mk 24 had minor differences), *Malloch's Spitfire* nicely book-ends Andy Saunders' *Spitfire Mk 1 P9374: The Extraordinary Story of Recovery, Restoration and Flight*. Dug from the sands of the Calais beach where she came down during the Battle of Britain, P9374 was restored in 1980 and subsequently took her place in the Battle of Britain Memorial Flight. Challenges of Spitfire restoration detailed in Graham Moss and Barry McKee, *Spitfires and Polished Metal: Restoring the Classic Fighter*, enable the reader to realize just how much Malloch's engineers achieved.

Clearly intended to serve as a permanent record of PK 350, this meticulously detailed book relies extensively on interviews with people closely associated with ATA, Malloch, and the restoration. It is heavily illustrated with photos, many sourced from personalities associated with the SRAF Spitfire era and those involved with her restoration. The extensive appendices include a line drawing, Mk 22 specifications, the service records and fates of SRAF Spitfires, all SRAF Spitfire pilots, the ATA restoration staff, notable PK 350 flights, and PK 350's flight log. The glossary facilitates understanding of this story of a bygone era.

Meikle often mentions political events in passing. A few pages outlining Rhodesia/Zimbabwe's recent history would have been welcome. Even so, this book is highly recommended not only for Spitfire buffs but also for anyone desiring to learn more about one of the more unusual postwar uses of aircraft that made their mark in World War II.

Steve Agoratus, Hamilton, New Jersey



U.S. Marine Corps Aviation Since 1912: Fourth Edition. By Peter B. Mersky. Annapolis, Maryland: Naval Institute Press, 2009. Maps. Photographs. Notes. Appendices. Index. Pp. xvi, 405. \$49.95 ISBN: 978-1-59114-516-5

This is a book about Marine Aviation with a forward by John Glenn—and it lives up to its billing. Peter Mersky was commissioned through Aviation Officer Candidate School and retired as a

Commander in the Naval Reserve. He was assistant editor and then editor of *Approach* magazine, a publication of the Naval Safety Center and the absolute centerpiece promoting safety in Naval Aviation. He has written over a dozen books and reviewed nearly six hundred aviators. His knowledge of his subject is impeccable. We are fortunate to welcome this fourth edition which brings us from 1997 through the important Middle East conflicts until 2009. Mersky fully captures the spirit of Marine Aviation as it has continually had to justify its existence and its importance as a vital part of the Marine Air Ground team. He clearly relates the long history and interactions of Marine Aviation and its roots and relationships within the larger umbrella of Naval Aviation.

The book is fittingly dedicated to the late Lt. Gen. Thomas Miller, USMC, a former squadron mate and close friend of Senator Glenn, who was a three-war Marine, an accomplished test pilot, and a pillar of Marine Aviation. He was also largely responsible for the Marine pursuit of vectored-thrust and tilt-rotor powered-lift developments. He was the first Marine to fly the Harrier-series aircraft and finished his career directing all Marine Aviation.

As early as the second page, Mersky weaves a great story of the first Marine Aviator, 1st. Lt. Alfred A. Cunningham: "... and after only two and one-half hours of instruction, Cunningham soloed on August 20, 1912. He cited the reason for the brevity of his instructional period: 'There being so few civilian flyers, the factory had to pay them a huge salary to teach us, and they were anxious to make it short and snappy.'"

Having been a Marine Aviator for 32 years, I am familiar with many of the people and events that Mersky documents. In particular, I lived at the "Rose Garden" that he describes on page 245; he has totally captured the facts and essence of what took place there. In every case cited in this book where I have personal knowledge, the story is told completely and accurately. What I found striking was that this book was not just a wonderful history compilation, but also that it was as readable as any novel one might encounter. Mersky also generously provides wonderful photo coverage in each chapter.

My bottom line is that it is great history and a most entertaining read.

Maj. Gen. Joseph T. Anderson, USMC (Ret.), Fairfax, Virginia



Flight Badges of the Allied Nations, 1914-1918: Volume I—The French, Russian, and Romanian Air Services. By CDR Robert S. Pandis USNR (Ret). Photographs. Bibliography. Pp. 320. \$128.00 ISBN: 1-49510999-2

Robert Pandis's new book is far more than a collection of unique images. It is an historical romp and a testament to the men who fought and flew a hundred years ago over the skies of Europe. While the photographs of the objects presented are exceptional, the book is also well-researched. Further, the historic context presented makes it far more interesting than a work that was merely focused on flight badges would be.

Pandis is no stranger to the subject matter or how best to present it. He has published similar works on German flight badges and American aviator wings. It is obvious he knows the particulars and idiosyncrasies associated with these objects as well as how to distinguish the real item from the forgeries that have become all too common. As with his other works, this book provides good guidelines to distinguish the authentic from the counterfeits. From the large variety of objects covered, it is obvious that Pandis had special access to some very unique collections. It is to his efforts that we owe this almost encyclopedic review of the flight badges of the French, Russian, and Romanian air services.

The section on French aviation begins with the pre-war period. Remarkably, this extends back to the late 1800s. This section provides some important insights into early military aeronautics in France up to 1914. Pandis's coverage of the wartime period 1914-1918 also includes the vaunted Lafayette Flying Corps, the French Airship section, naval aviation, and other units. It is, therefore, a complete sweep of all French military services involved in the war in the air.

The section dealing with the Imperial Russian Air Fleet is nothing less than remarkable. It is the first comprehensive English language work that deals with the design, variations, manufacture, and history of flight badges for the Russian military and civilian organizations. Pandis's attention to detail and historical relationships make this section an invaluable examination of aviation in Imperial Russia.

Looking through the existent literature, I could not find an equal in breadth of topic or quality of research to this book. The sections on either the French or Russian air services could stand on their own as separate works. Adding to all this, his review of Romanian air service badges

with the other two subjects in one volume makes this a very important research tool for anyone interested in aviation during the First World War.

*Carl J. Bobrow, Museum Specialist,
National Air and Space Museum*



Pogie 105: Story of MIA Vietnam Jet Pilot Colonel Dean "Pogie" Pogreba.

By Maxine A. Pogreba. Self, 2014. Photographs. Pp. about 100 (not numbered). \$9.95 paperback (Amazon) ISBN: 978-150548259-3

This is a very short book that is printed in large print to aid those who are visually impaired. It is the brief biography of a veteran of World War II, Korea, and Vietnam who disappeared over North Vietnam a year short of retirement from the Air Force. The author is his widow.

Dean Pogreba grew up in Three Forks, Montana, and dreamed of flying. Maxine was eight, and Dean was ten when they met; they were married the day after he got his wings in April 1944. He pictured himself as a fighter pilot but did his overseas service in the China-Burma-India theater flying C-46s to supply the British Fourteenth Army. He logged over 100 combat missions.

When he returned to the U.S. in January 1946, he left the service but helped establish the Montana Air National Guard with its P-51 Mustangs. The Montana Guard was one of the first called up after the outbreak of the Korean War. Pogreba wanted, and got, an F-86. He spent fourteen months in Korea flying over 100 missions and ending up with three official air-to-air victories.

After that war, Pogreba decided to stay in the Air Force and served at Randolph and Nellis AFBs before heading to England as an exchange pilot flying Hawker Hunters out of RAF Chivenor. The Pogrebas were next assigned in West Germany.

By 1963, he was back in the U.S. and assigned to F-105s at McConnell AFB. He moved to Takhli RTAFB in 1965. On October 5, he led a five-ship formation to bomb a bridge in Lang Son province north of Hanoi/Haiphong not far from the Chinese border. He had been having some navigation difficulties enroute to the area but dropped his bombs squarely on the target. He called out his egress heading and was never heard from or seen again. He'd been downed and rescued almost immediately several months prior to his fatal mission. The family hoped that once again he would be picked up, but days

turned to weeks and then to years. He was officially declared missing in action. During the Carter administration, his status was changed to killed in action.

His fate remains a mystery. He may have strayed into China because of his navigation equipment problems. He may have been taken prisoner—his ID card turned up in a Vietnamese museum years later but had not been entered in the POW records. One crazy report said he had been seen in prison in the late 1980s (later discredited). He probably was killed when his aircraft crashed into the mountainous terrain. No one knows.

The local hero will not be forgotten, however. The Gallatin County Airport in Three Forks was renamed Pogreba Field on May 22, 1971. A fitting tribute to a small-town boy who gallantly served his country through three of its toughest wars. His is a story worth the short time it takes to read this book.

Col. Scott A. Willey, USAF (Ret.), Book Review Editor, and Docent, NASM's Udvar-Hazy Center



The Curtis Papers: Canadian Aerospace and Joint Studies, v. 1, Books 1 and 2 (Select Masters in Defence Studies Papers, 2009/2010). By Canadian Forces Aerospace Warfare Centre. Trenton, Canada: Canadian Forces College of the Canadian Department of National Defence, 2014. Tables, Notes. Pp. 184 (Book 1), 207 (Book 2). Available from <http://www.rcfarc.forces.gc.ca/en/cf-aerospace-warfare-centre/elibrary/publications.page>

The Curtis Papers honor the memory of former RCAF Chief of Air Staff Air Marshal Wilfred Austin "Wilf" Curtis, who was instrumental in giving the service a strong analytical and academic focus. They are intended, as the introduction notes, to "increase aerospace awareness amongst broader civilian and military communities, while at the same time emphasizing the need for a joint perspective within aerospace forces."

This collection of ten papers, published as chapters in two books is, necessarily, an eclectic one, reflecting the individual interests and professional backgrounds of the papers' authors. Book One's topics are "Line Operational Simulation: Towards Optimizing Human Performance in the Canadian Air Force," "Canadian Special Operations Aviation: A Strategically Relevant Force," "Protection of Canadian Space-Based Assets: A Policy Void," "Motion: Is There a Requirement in

Large Fixed-Wing Aviation Simulators?,” and “Canada’s Air Force Kinetic Capability for the 21st Century: What is Needed?”

Book Two covers “Systemic Operational Design: A Viable Alternative to the Canadian Forces Operational Planning Process,” “The Impact of New Media on Military Operations,” “Hauling Down the Jolly Roger: Canada’s Stake, Obligation and Participation in Countering Maritime Piracy,” “Command, Control and Coordination of the Third Dimension: The Evolution of Army Airspace after the Cold War,” and “The Future of Command and Control in the Canadian Forces.”

All of these papers are (as one would expect) very well done, cogently argued, and well-sourced. I found several of particular interest.

“Canadian Special Operations Aviation” presents two case studies on Operation *Eagle Claw* (the failed Iranian hostage rescue attempt) and Britain’s Operation *Barras* (a successful hostage rescue in Sierra Leone) that show how some surprisingly basic failures in integrating special operations aviation (SOA) into special operations forces (SOF) made the difference between success and failure. It then springboards to a convincing argument that Canada must more effectively integrate SOA-SOF via changes in organization, strategic thinking, and appropriate equipment choices.

“Protection of Canadian Space-Based Assets” highlights how space, so ubiquitous in its influence on both civil and military affairs, poses special hazards to nations that are space consumers and users but who are not able to assert any form of control or protection over their space investment and assets. The author argues that Canada’s deficiencies in this area reflect the lack of any “central government policy on how to protect these systems.” While conceding that much of what Canada needs to do may be influenced (and perhaps constrained) by international agreements, he warns that the public mindset needs to change. The conclusion is that “Space is no longer a pristine sanctuary but is a finite resource and environment in need of protection.”

“Canada’s Air Force Kinetic Capability for the 21st Century” concludes that “the Canadian Air Force of the future is on the cusp of being able to replace retiring equipment with platforms that are ideally suited to provide precision kinetic support to counter-land operations.” The author argues that this is consistent both with CAF history and the larger history of air power in general, specifically the experience of the U.S. Air Force. Doing so will enable the Canadian Air Force “to capital-

ize on the lessons and trends from the conflicts of the last ten years.” But Canada requires “a balanced force of fixed-wing, rotary-wing and unmanned vehicles capable of delivering accurate firepower in both pre-planned and reactive counter-land missions.”

“Hauling Down the Jolly Roger” offers an excellent perspective on the challenge of confronting the resurgent piracy threat (in my opinion at least, likely made more dangerous still by the destabilization of the Mediterranean basin brought about by the much-hyped and largely disastrous “Arab Spring”). The author points out how the traditional challenge of piracy has forced nations to spend enormous sums in maintaining a naval presence in pirate-contested waters, to confront what are, typically, sporadic attacks, offering how changes in maritime doctrine, technology, and weapons capability can, when combined with international partnerships, address this continuing scourge.

In conclusion, all of the papers in this compilation are worthwhile. For that matter, a visit to the Canadian Forces Aerospace Warfare Centre website offers the visitor an opportunity to peruse many other works reflecting a vibrant intellectual and professional culture that would undoubtedly have pleased the late Air Marshal Curtis. Certainly he would consider these particular studies most worthy, and one looks forward to future compilations of such papers.

Dr. Richard P. Hallion, Research Associate in Aeronautics, National Air and Space Museum



Shot Down: The True Story of Pilot Howard Snyder and the Crew of the B-17 Susan Ruth. By Steve Snyder. Seal Beach Calif.: Sea Breeze Publishing, 2015. Photographs. Maps. Illustrations. Diagrams. Bibliography. Index. Pp. 360. \$27.95 ISBN: 978-0-9860760-0-8

This is a gripping biography of Captain Howard Snyder, 306th BG, who was shot down over the French-Belgian border on the February 8, 1944, mission to Frankfurt by Lt. Hans Berger. Bailing out, Snyder evaded capture with the help of courageous Belgian citizens, who at the risk of their lives hid and fed him and other surviving crew. Finding it too risky to try for England, Snyder subsequently joined the Maquis, ambushing convoys and sabotaging the enemy until Allied forces liberated the area.

The author is Howard Snyder’s son.

He researched original sources such as correspondence, unit records, mission plans, websites, and published and unpublished secondary sources, and spoke with Eighth Air Force veterans, families of his father’s crew, former Belgian underground members, and even Berger to learn about and understand his father’s wartime experiences. Snyder traveled to Belgium and toured the safe houses that hid his father and crew, uncovering new information on their fates. He attended veteran’s association meetings. In the process he has become a member of the World War II aviation community, speaking on the experiences of Mighty Eighth veterans at museums, airshows, and reunions.

Snyder and his crew arrived as replacements in October 1943 following the Eighth’s substantial late-summer losses. Although the usual wartime operations and experiences are described as expected, this book relates the lives of Snyder, his crew, and their families from childhood through enlistment, flight school, and deployment. Amply quoted correspondence draws in the reader to know and care about these warriors and their families as people. Even others who appear only in passing are diligently named, thus tying Snyder’s story and those of his crew to the rest of the Eighth and, indeed, to the generation that fought World War II. This helps the reader understand the war’s impact on those who fought and lived through it.

Shot Down is one of the better recent World War II air war biographies, doing for the B-17 and the Eighth Air Force what Dennis Okerstrom’s *Bottoms Up* did for the B-24 and the Fifteenth Air Force. It can be regarded as a personalized version of Donald Miller’s *Masters of the Air*. Although not exhaustive, the bibliography lists much of the recent European air war scholarship. I missed Freeman’s *The Mighty Eighth*, although the *War Manual* is cited, and Reanne Hemingway-Douglass’s *The Shelburne Escape Line*, which contains a fuller account of the escape to England through the French Underground of B-17 crewman Ralph Patton, with whom Snyder trained. The very helpful list of Eighth Air Force-related websites demonstrates the changes to research methods in the 21st century. No original sources (MACR, mission report, etc.) are listed, but their images are on Snyder’s website.

There are a few typos and factual errors. The V-1, rather than the V-2, is the forerunner of modern cruise missiles. The B-24 Liberator—a significant portion of the heavy bomber effort—is mentioned but once. The P-51 is credited for air superiority over Europe in 1944, although the

P-47 outnumbered it and scored more kills during the first crucial months of 1944. The lack of missions after Second Schweinfurt is cited as a sign of the failure of unescorted bombers, even though many histories emphasize the role of weather during those weeks. Only the advanced reader will notice these points, however, and they do not greatly detract.

The book is heavily illustrated throughout with carefully selected contemporary and modern photos, maps, drawings and diagrams, all tied closely to the text.

I highly recommend this book. It is especially important to record the experiences, thoughts, and raw emotions of the war as the Greatest Generation lived them now that these fine men and women are passing from the scene. It is a terrific volume for museum shops and, especially, airshow tables for younger visitors who want to know the significance of that big green plane they just walked through.

Steve Agoratus, Hamilton, New Jersey



Hell in the Heavens: The Saga of a World War II Bomber Pilot. By Lt Col David E. Tavel and Morton E. Tavel, M.D. Chandler, Ariz.: Brighton Publishing, 2013. Photographs. Pp. 176. \$12.95 ISBN: 978-1-62183-107-5

This is a memoir of a former B-24 pilot (Lt. Col. David Tavel). To tell his story, cousin Dr. Morton Tavel took the colonel's notes and expanded them into a short book to share the wartime experiences with a larger audience.

Despite having his board certification to be an optometrist, Tavel applied for cadet training prior to the start of the war and was accepted into the program. The narrative describes his experiences from initial pilot training through his time as an instructor pilot and subsequent service as a B-24 pilot in the European theater. Tavel was assigned to the 746th Bomb Squadron of the 456th Bombardment Group (Heavy). After completing its preparatory training, the 456th deployed to Italy by way of Brazil and North Africa and then operated against Nazi targets across southern Europe. Tavel provides a front-row-seat, firsthand account of his service as a lead pilot and, ultimately, deputy group operations officer.

One common theme among memoirs of airmen from the European theater is the description of the mission brief where the unit's leaders would reveal the day's mission by pulling back a curtain revealing a map with long colored strings show-

ing the route to the target. In this book, Tavel describes what it was like to brief the mission to the group of airmen in the audience—looking over their heads trying not to make contact, because he knew some of them might not return.

As with many other memoirs from the Greatest Generation, the sharing of individual experiences helps fill in the small details that are often missing from the larger official or formal histories of the European air war. Details, such as meeting a Tuskegee airman who had just protected your bomber formation, or describing the difficulties of flying through adverse weather, provide readers a better understanding of World War II's air war.

Short chapters make the text a quick and easy read. Most of the book's text is Lt. Col. Tavel's "notes." Dr. Tavel supplemented the text with background information to fill in any missing pieces. Dr. Tavel also included an epilogue, in which he sums up the accomplishments of the 746th Bomb Squadron, and endnotes to better explain the text. The printing quality is not exceptional, and photographs are often separated from where they are referenced in the text. But frankly, the photos and supplemental text are not the primary reasons for reading *Hell in the Heavens*. While they add to the story, Lt. Col. Tavel's text carries the day.

This is an excellent book for those readers looking for a humble there-I-was memoir of a Fifteenth Air Force B-24 pilot. The text flows in a chronological story that is easily read. It provides a snapshot within the larger context of the European air war. The book also serves as an excellent example of how a relative helped preserve a memory from that Greatest Generation. While not perfect, *Hell in the Heavens* is spot on with its intended goal of sharing a pilot's memories with all of us. It is certainly worth reading and, hopefully, will serve as a means to encourage others to publish their memoirs or the memoirs of their loved ones.

Lt. Col. Daniel J. Simonsen, USAF (Ret.), Bossier City, Louisiana



Army of the Sky: Russian Military Aviation Before the Great War, 1904-1914. By Gregory Vitarbo. New York: Peter Lang Publishing, 2012. Notes. Bibliography. Index. Pp. 256. \$50.00 ISBN: 978-1-4331-1490-8

This book is a textual juggernaut, one that brings the reader through a convoluted and relatively unfamiliar period of

Russian history—at least here in the West. It is by far the singularly most important English-language work on the origins of Russian military aviation in print. The timeframe covered is the period from the inception in 1904 of what would become the *Rossíyskiy imperátorskiy voyénno-vozdúshnyy flot* (Imperial Russian Air Service) to just prior to World War I. Vitarbo answers many of the questions that have arisen in the West about the genesis of Russian airpower. He describes, with remarkable clarity, the key individuals who would help formulate Russian air doctrine as well as its integration into the Russian military.

This book also covers the ascendance of the aeronautical community within the Imperial Russia military from its establishment and how this organization would form the nexus of the Imperial Russian Air Service. This Service ultimately was required to fly against the combined forces of Germany, Austro-Hungary, and the Ottoman Empires during the Great War. Vitarbo eloquently and systematically puts into context the technological, social, and cultural elements of the period with the appearance of the airplane and the effect it would have on the Russian armed forces.

The airplane's impact on Russian society was similar to that of the rest of Europe in that it portended the beginning of a new age. Though the various military high commands, in general, did not at first appreciate or perceive these early machines as potential assets, they were not reluctant to accede to the recommendations of experimentation. In Russia, the integration of airplanes into the military came at a time of great societal unrest. The humiliating defeat in the Russo-Japanese war and the ensuing 1905 revolution would in many ways open the door for new ideas. One of these, undoubtedly, was military aviation. Some officers viewed it as a possible means to modernize the Imperial Russian officer corps and to bring the country from its anachronistic policies to one that was more in line with the new century.

This work clearly outlines the development of military aviation in Imperial Russia. It describes the machinations within the Russian military leadership concerning the creation of the air service and the nature of the pilot and observer corps. One of the most striking elements covered is the heartfelt attention by the citizenry as their hero pilots died tragically in their efforts to conquer the sky. Overall this is a fascinating story and one not previously told.

A brief look at the notes and bibliography confirms that Vitarbo relied on pri-

mary and contemporary material. *Army of the Sky* is also an excellent foundation for a more extensive work on Russian military aviation during the Great War, 1914-1918.

Carl J. Bobrow, Museum Specialist,
National Air and Space Museum



The Dakota Hunter: In Search of the Legendary DC-3 on the Last Frontiers. By Hans Wiesman. Havertown Pa.: Casemate, 2015. Photographs. Maps. Illustrations. Pp. 320. \$37.95 ISBN: 978-1-61200-258-3

A Netherlands-based entrepreneur and adventurer who treks the world in search of DC-3 parts, Wiesman vividly describes his pursuit of this still-widely used, classic 1930's airliner and World War II transport. Over seventy-five years on, the DC-3's durability, simplicity, ease of maintenance, and performance characteristics continue to make it the transport of choice in remote, underdeveloped areas of the world. The DC-3 is the lifeline in these places.

Finding himself in rugged locations such as the Andes, Alaska, and Madagascar, Wiesman's skills, wiliness, and just plain good luck enabled him to ramble desolate jungles, swamps, deserts, and outback in freezing, baking, torrid, and occasionally oxygen-deprived habitats. As even

a derelict DC-3 remains a valuable commodity to many would-be possessors, Wiesman often found his quarry zealously defended by soldiers, government officials, warlords, criminals, and assorted other shady characters.

Not content to simply retell stories that appear in other warbird books, Wiesman colorfully narrates his own global Dakota hunting. As he movingly shares, his warbird quests fill a much deeper need—the longing to recapture exhilarating childhood sensations of freedom and limitless possibilities. Raised just after World War II in a small oil-drilling community in Borneo, Wiesman had the run of the jungle and local settlements. The only way in or out of that relatively undeveloped area was by DC-3. Wiesman came to associate the plane with the feelings of boundless potential and adventure that he felt whenever he flew in one. Among the book's most eloquent passages are those on his fascination with and affection for the DC-3.

The book is written for the aviation reader and is replete with DC-3 facts, figures, and anecdotes. Stories of particular episodes in the plane's history are interspersed: D-Day, Arnhem, Bastogne. True to the warbird enthusiast community, Wiesman often traces the history of a particular DC-3 tail number back to the production line.

Dakota Hunter is one of the latest entries in the lengthy stable of books devoted to the DC-3. The focus on the hunt distinguishes Wiesman as a prime

example of the "wreck chaser" Nick Veronica described in *Hidden Warbirds I and II*. Wiesman's exploits in South America parallel the experiences of W. W. Martin, *So I Bought an Air Force*. Such works as David Hayes' *The Lost Squadron*, recounting the recovery of the P-38F *Glacier Girl*, relate particular expeditions, but *Dakota Hunter* ranges the world. The latest surveys by Henry Holden, *The Legacy of the DC-3*, and Geoff Jones, *The Douglas DC-3: 80 Glorious Years* cover some of the same ground from a higher level, but Wiesman's is a far more vivid, first-hand perspective.

The book is heavily illustrated with high-quality photos taken by Wiesman and associates who willingly suffered the perils and exhilarations of his expeditions.

There is no separate list of sources or index, although Wiesman mentions websites and sources throughout, leaving readers to locate references and statistics on their own. No photo credits are given, although the text often relates their origin. Wiesman's own websites, online newsletters and Facebook page enable the reader to keep up with his latest feats.

Printed in hardcover on heavy museum-quality stock, this is definitely a book to read if you are thinking about a warbird hunt beyond the confines of AMARC's tour, or even just an armchair enthusiast.

Steve Agoratus, Hamilton, New Jersey



Guidelines for Contributors

We seek quality articles—based on sound scholarship, perceptive analysis, and/or firsthand experience—which are well-written and attractively illustrated. The primary criterion is that the manuscript contributes to knowledge. Articles submitted to *Air Power History* must be original contributions and not be under consideration by any other publication at the same time. If a manuscript is under consideration by another publication, the author should clearly indicate this at the time of submission. Each submission must include an abstract—a statement of the article's theme, its historical context, major subsidiary issues, and research sources. Abstracts should not be longer than one page.

Manuscripts should be double-spaced throughout, and prepared according to the *Chicago Manual of Style* (University of Chicago Press). Use civilian dates and endnotes. Because submissions are evaluated anonymously, the author's name should appear only on the title page. Authors should provide on a separate page brief biographical details, to include institutional or professional affiliation and recent publications, for inclusion in the printed article. Pages, including those containing illustrations, diagrams or tables, should be numbered consecutively. Any figures and tables must be clearly produced ready for photographic reproduction. The source should be given below the table. Endnotes should be numbered consecutively through the article with a raised numeral corresponding to the list of notes placed at the end.

Electronic submissions are preferred. Articles should be submitted via e-mail as an attachment, in Microsoft Word. Electronic photographs and graphics should be copied to a CD and mailed if they exceed 5-8 megabytes.

There is no standard length for articles, but 4,500-5,500 words is a general guide.

Manuscripts and editorial correspondence should be sent to Richard Wolf, Editor, *c/o Air Power History*, 6022 Cromwell PL. Alexandria, VA 22315, e-mail: airpowerhistory@yahoo.com.

Books to Review

- Dorr—365 Aircraft You Must Fly: The Most Sublime, Weird, and Outrageous Aircraft from the Past 100+ Years. 320 p.
Dye—The Bridge to Airpower: Logistics Support for Royal Flying Corps Operations on the Western Front, 1914-18. 268 p.
Lieback—History of Rocketry and Astronautics, Vol 42. 382 p.
March—Wings of the Fleet: 50 Years of the Canadian Sea King. 147 p.
Martin—So I Bought an Air Force: The True Story of a Gritty Midwesterner in Somoza's Nicaragua. 259 p.
May—A World War II Flight Surgeon's Story. 256 p.
Prodger—Trending Collectibles 2015 Military Aviation Review WWI-WWII. 143 p.
Reinke—History of Rocketry and Astronautics, Vol 43. 434 p.
Trapnell—Harnessing the Sky: Frederick "Trap" Trapnell, the U.S. Navy's Aviation Pioneer, 1923-52. 238 p.
Winter—Pioneering American Rocketry: The Reaction Motors, Inc. (RMI) Story, 1941-1972. 462 p.

PROSPECTIVE REVIEWERS

Anyone who believes he or she is qualified to substantively assess one of the new books listed above is invited to apply for a gratis copy of the book. The prospective reviewer should contact:

Col. Scott A. Willey, USAF (Ret.)
3704 Brices Ford Ct.
Fairfax, VA 22033
Tel. (703) 620-4139
e-mail: scottlin.willey@gmail.com

History Mystery Answer

On September 28th, 1924, two of the four original United States Army Air Service Douglas World Cruisers landed at Sand Point, Seattle Washington, to complete their 175-day (nearly 27,533-mile) circumnavigation of the planet. The four aircraft were numbered and called; #1 *Seattle*: Maj. Frederick Martin (pilot and flight commander) and SSgt. Alva Harvey (flight mechanic), #2, *Chicago*: Lt. Lowell H. Smith (pilot, subsequent flight commander) and 1st Lt. Leslie P. Arnold (co-pilot); #3 *Boston/Boston II* (prototype): 1st Lt. Leigh P. Wade (pilot) and SSgt. Henry H. Ogden (flight mechanic) and #4 *New Orleans*: Lt. Erik Nelson (pilot) and Lt. Jack Harding (co-pilot). Only the *New Orleans* and the *Chicago* completed the trip. Both the *Seattle* and *Boston* crashed (the *Boston* was replaced late in the voyage by the *Boston II* (the prototype aircraft used for designing the DWCs). The four names of the aircraft within the United States represent the four points on the compass

The two survivors are now on display. The *Chicago* is on display at the National Air & Space Museum, while the *New Orleans* is on display at the Museum of Flying in Santa Monica, California.

To learn more about this ground breaking trip, visit the National Museum of the Air Force's website at: www.nationalmuseum.af.mil/factsheets/factsheet.asp?id=751.



Coming Up



Compiled by
George W. Cully

September 23-26, 2015

The **Society of Experimental Test Pilots** will host its 59th Annual Symposium & Banquet at the Grand Californian Hotel in Anaheim, California. For more information, visit the Society's website at www.setp.org/.

October 2, 2015

The **National Aviation Hall of Fame** will induct its 2015 honorees at a ceremony to be held in the Hall at the National Museum of the United States Air Force in Dayton, Ohio. This year's honorees include retired USAF Brig Gen Robert Cardenas, Robert Hartzell, Gene Krantz, and Abe Silverstein. For more details of the event, visit the Hall's website at www.nationalaviation.org/.

October 2-3, 2015

The **League of World War One Aviation Historians** and the **World War One Historical Association** will co-host a symposium at the Hilton Lisle/Naperville Hotel in Lisle, Illinois. The theme of the gathering is "1915: Warfare Evolution; New Strategies and Tactics." For further information, go to the Association's website at ww1ha.org/2015-annual-conference/.

October 8-11, 2015

The **Society for the History of Technology** will hold its annual conference in Albuquerque, New Mexico. For more details as they become available, check the Society's website at www.historyoftechnology.org/.

October 12-14, 2015

The **Association of the United States Army** will host its annual meeting and exhibition at the Walter E. Washington Convention Center in Washington, DC. For more information, check the Association's website at <http://ausameetings.org/2015-annualmeeting/>.

October 13-16, 2015

The **Aviation Engine Historical Society** and the **Society of Air Racing Historians** will co-host AEHS' 12th annual convention at the New England Air Museum in Windsor Locks, Connecticut. For details, see the AEHS website at www.enginehistory.org/Convention/Convention2015.shtml.

October 14, 2015

The **U.S. Naval Institute** will host its annual Naval History Conference on the grounds of the U.S. Naval Academy in Annapolis, Maryland. This year's theme is "Marine Corps Actions Shaping History." For additional details, see the Institute's website at www.usni.org/events/2015-naval-history-conference.

October 14-18, 2015

The **Oral History Association** will host its annual meeting in Tampa, Florida. The theme of this year's gathering is "Stories of Social Change and Social Justice." For more information, see the Association's website at www.oralhistory.org/.

October 22-23, 2015

The **Center for Cryptologic History** will host its biennial Symposium on Cryptologic History at the Johns Hopkins Applied Physics Laboratory's Kossiakoff Center in Laurel, Maryland. Following the Symposium, on Saturday, October 24, participants will be given an opportunity to tour the National Cryptologic Museum and to participate in a workshop on sources for research in cryptologic history. For more information, visit the Center's website at www.afio.com/05_events.htm.

October 28-29, 2015

The **American Astronautical Society** will host its 8th annual Wernher von Braun Memorial Symposium in Huntsville, Alabama. For more details, visit the Society's website at <http://astronautical.org/vonbraun>.

November 19-21, 2015

The **National WWII Museum** in New Orleans, Louisiana will be the site for the 2015 International Conference on WWII. Presented by the Tawani Foundation in association with the Pritzker Military Museum and Library, this year's theme will be "1945: To The Bitter End." For more information, visit the conference website at www.ww2conference.com.

November 19-22, 2015

The **History of Science Society** will hold its annual meeting in San Francisco, California. For details as they become available, check the Society's website at <http://hssonline.org/meetings/annual-meeting-archive/>.

December 1-3, 2015

The **Association of Old Crows** will hold its 52nd Annual AOC International Symposium and Convention at the Marriott Marquis and DC Convention Center in Washington, DC. This year's theme is "Synchronizing EW and Cyber to Achieve Spectrum Dominance." For additional information, ping a Crow at www.crows.org/conventions/2015.html.

January 4-8, 2016

The **American Institute of Aeronautics and Astronautics** will host its premier annual event, Sci-Tech 2016, at the Manchester Hyatt Hotel in San Diego, California. For details, see the Institute's website at www.aiaa.org/Forums/.

March 8-10, 2016

The **American Astronautical Society** will host its 54th annual Robert H. Goddard Memorial Symposium in Greenbelt, Maryland. For more specifics, see their website at <http://astronautical.org/>.

March 10-12, 2016

The **Vietnam Center and Archive** at Texas Tech University and the Uniformed Services University of the Health Sciences Army Medical Department Center of History and Heritage will sponsor a conference entitled "A Medical History of the Vietnam War." The event will be held at the Doubletree Hotel in San Antonio, Texas. For further details, see the Center's website at www.vietnam.ttu.edu/news/?p=2555.

Readers are invited to submit listings of upcoming events. Please include the name of the organization, title of the event, dates and location of where it will be held, as well as contact information. Send listings to:

George W. Cully
3300 Evergreen Hill
Montgomery, AL 36106
(334) 277-2165
E-mail: warty@knology.net

Reunions

12th TFW (MacDill AFB & Vietnam),
12th FEW/SFW (Bergstrom AFB &
Korea) Apr 20-24, 2016, Charleston,
South Carolina. Contact:

E. J. Sherwood
480-396-4681
EJ12TFW@cox.net

20th Fighter Wing Assn—all ranks,
1930s to present **20th FW (20th FG,
FBW, TFW)** Oct 14-18, 2015, New
Orleans, Louisiana. Contact:

Lt Col (Ret) David Skilling
1605 Cheatham Hill Rd SW,
Marietta, GA 30064
770-429-9955
abbyndavid@aol.com
www.20fwa.org

**47th Armament & Electronics Squa-
dron** Oct 8-12, 2015, Fairborn, Ohio. Contact:

Alex Sallustino
379 Hanging Rock Rd,
Flora, IL 62839-3610
618-919-1792
Alex3315@bspeedy.com

86th Fighter-Bomber Grp Assn, WWII
Sep 30-Oct 4, 2015, Fort Walton Beach,
Florida. Contact:

Dallas Lowe
P.O. Box 313,
Shalimar, FL 32579-0313
850-319-3047
fighterbomberpilot@yahoo.com

91st Tactical Fighter Squadron. Sep
24-27, 2015, Fairborn, Ohio. Contact:

Dion Makris
7152 Hartcrest Ln,
Centerville, OH 45459

937-938-7767
phantombcde@gmail.com

95th Bomb Group. May 6-7, 2016,
Dayton, Ohio. Contact:

Meg Brackney
261 Northwood Dr,
Yellow Springs, OH 45387
937-767-2682
meggyjb@yahoo.com

316th Tactical Airlift Wing Sep 21-26,
2015, Fairborn, Ohio. Contact:

Jerry Haines
2411 South Tecumseh Rd,
Springfield, OH 45502
937-325-9306
gerald_haines@yahoo.com

463rd Airlifters Assn Sep 21-26, 2015,
Fairborn, OH. Contact:

Jerry Haines
2411 South Tecumseh Rd,
Springfield, OH 45502
937-325-9306
gerald_haines@yahoo.com

4950th Test Wing/Aria 328 Memorial
May 6, 2016, Fairborn, OH. Contact:

Bob Beach
1616 Ridgeway Dr,
Springfield, OH 45506-4023
937-325-6697
ariabob@woh.rr.com

Air Force Officer Candidate School.
Oct 8-12, 2015. All classes (1943-1963).
Montgomery, AL. Contact:

Dave Mason
757-820-3740
blokemason@verizon.net

AC-119 Gunship Assn. Sep 28-Oct 1,
2017, Fairborn, Ohio. Contact:

Ron Julian
4919 Appaloosa Trail,
Fairborn, OH 45324
937-546-3219
ac.119.2017@gmail.com

AeroMed Evac Assn. Apr 13-16, 2016,
Fairborn, Ohio. Contact:

John Killian
723 Placer Dr,
Woodland, CA 95695
530-662-2285
Johnjan1571@sbcglobal.net

**Vietnam/Thailand Air Force “Sky
Cops”.** Apr 28 - May 1, 2016, Fairborn,
Ohio.

540 West Livingston St,
Celina, OH 45822
419-586-3076
pathouseworth@gmail.com

F-15 Gathering of Eagles 44. Jul 28-
31, 2016, Fairborn, Ohio. Contact:

Donna Friedman
2508 Cedronella Dr,
Chapel Hill, NC 27514
919-382-7271
donnafriedman@nc.rr.com

List provided by:

Rob Bardua
National Museum of the U.S. Air Force
Public Affairs Division
1100 Spaatz Street
WPAFB, OH 45433-7102
(937) 255-1386

Letter

Dear Sir,

I'm writing with appreciation for the many years of pleasure I've had in reading Mr. Dorr's work, especially the "History Mystery" column in *Air Power History*. Mr. Dorr is, of course, an accomplished historian and author and I've read and enjoyed several of his many books and admired his professional and human touch.

I'm also writing with sadness at the end of "History Mystery," even while admitting that he is well and truly entitled to a life of ease. I've looked forward to this piece of your excellent magazine over the many years that I've been a subscriber.



With thanks and deep gratitude for publishing such a superb writer, I remain

Respectfully,

Curt Weil
Palo Alto

(Editor's Note: Bob Dorr [at left] provided a valuable resource for aircraft and combat inquiries over the years, and a very well-regarded feature in the History Mystery. We at Air Power History miss his contributions and interest, but understand his desire to move onto other endeavors. We wish him well.)



Test your knowledge of air power history by trying to answer this quarter's history quiz. Since the goal is to educate and not merely stump readers, you should find the multipart question, challenging but not impossible. Good luck

In the early 1920s, the race was on to be the first country to fly around the world. This feat was accom-

plished eighty-nine years ago this quarter. What country accomplished the first around the world flight? What airplanes did they fly? How many and what were their names? For the real history hounds, name the pilots?

Go to page 61 to learn the answers.





Air Force *Historical* Foundation
P.O. Box 790
Clinton, MD 20735-0790



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