The Air Force Historical Foundation

Founded on May 27, 1953 by Gen Carl A. “TooeY” Spaatz and other air power pioneers, the Air Force Historical Foundation (AFHF) is a nonprofit tax exempt organization. It is dedicated to the preservation, perpetuation and appropriate publication of the history and traditions of American aviation, with emphasis on the U.S. Air Force, its predecessor organizations, and the men and women whose lives and dreams were devoted to flight. The Foundation serves all components of the United States Air Force—Active, Reserve and Air National Guard.

AFHF strives to make available to the public and today’s government planners and decision makers information that is relevant and informative about all aspects of air and space power. By doing so, the Foundation hopes to assure the nation profits from past experiences as it helps keep the U.S. Air Force the most modern and effective military force in the world.

The Foundation’s four primary activities include a quarterly journal Air Power History, a book program, a biennial symposium, and an awards program.

MEMBERSHIP BENEFITS

All members receive our exciting and informative Air Power History Journal, either electronically or on paper, covering all aspects of aerospace history:

- Chronicles the great campaigns and the great leaders
- Eyewitness accounts and historical articles
- In depth resources to museums and activities, to keep members connected to the latest and greatest events.

Preserve the legacy, stay connected:

- Membership helps preserve the legacy of current and future US air force personnel.
- Provides reliable and accurate accounts of historical events.
- Establish connections between generations.
Features

They Called Defeat “Victory”: Lam Son 719 and the Case for Airpower
William P. Head

The Air Battle for England: The Truth Behind the Failure of the
Luftwaffe’s Counter-Air Campaign in 1940
Douglas C. Dildy

A Matter of Laundry, a Schaetzchen, and an East Wind That Blew No Good
Richard K. Smith

Book Reviews

The Desperate Diplomat: Saburo Kurusu’s Memoir of the Weeks Before Pearl Harbor
By J. Garry Clifford & Masako R. Okura, eds.
Review by John F. O’Connell

Warbird Factory: North American Aviation in World War II
By John Fredrickson
Review by Leslie C. Taylor

Gloster Aircraft Company
By Derek N. James
Review by Joseph Romito

The Royal Air Force in American Skies: The Seven British Flight Schools in the U.S. during WWII
By Tom Killebrew
Review by Steve Agoratus

Bloody Paralyser: The Giant Handley Page Bombers of the First World War
By Rob Langham
Review by Carl J. Bobrow

Dragonfly: The Smallest Fighter...The Fastest Gun...A-37s Over Vietnam
By Frederick D. Long & Lon Holtz, eds.
Review by Henry Zeybel

Painting Aviation’s Legends: The Art of Mike Machat: Stories of the World’s Greatest Pilots & Aircraft
By Mike Machat
Review by Scott A. Willey

A World War II Flight Surgeon’s Story
By S. Carlisle May
Review by R. Ray Ortensie

North Flag: My Service in the Republic of Vietnam, June 1968-June 1969
By John V. Rob
Review by Larry McKinley

The Other Space Race: Eisenhower and the Quest for Aerospace Security
By Nicholas Michael Sambaluk
Review by Rick W. Sturdevant

Harnessing the Sky: Frederick “Trap” Trappell, the U.S. Navy’s Aviation Pioneer, 1923-52
By Frederick M. Trapnell, Jr. & Dana Trapnell Tibbitts
Review by Michael Hankins

No One Avoided Danger: NAS Kaneohe Bay & the Japanese Attack of 7 December 1941
By J. Michael Wenger, Robert J. Cressman & John DiVirgilio
Review by Frank Willingham

Russian Aviation Colours 1909-1922: Camouflage and Markings, Vol. 1 Early Years
By Marat Khairulin & Boris Stepanov
Review by Carl J. Bobrow

By Robert S. Pandis
Review by Carl J. Bobrow

KKEs and Fokkerstaffels: The Early German Fighter Units in 1915-1916
By Johan RyHeul
Review by Carl J. Bobrow

Empire of Fear: Inside the Islamic State
By Andrew Hoaken
Review by John Cirafici

The Air Force Way of War: U.S. Tactics and Training after Vietnam
By Brian D. Laslie
Review by Henry Zeybel

Thunder and Flames: Americans in the Crucible of Combat, 1917-1918
By Edward G. Lengel
Review by Steven D. Ellis

Departments

Books To Review
Upcoming Events and Reunions
New History Mystery

COVER: ARVN forces inside Laos during Lam Son 719 watch a B–52 strike.
In keeping with our trend toward new beginnings, this issue debuts a new look for *Air Power History*, the first major reimagining of the design in twenty-two years. The last revamp took place in 1993, after the Center for Air Force History took over production. Gus Bell was the architect of that design, and its longevity is a tribute to how well he did it. The new design is an effort to improve readability and visual appeal. We would love your feedback on how you like it. You may contact me directly at airpowerhistory@yahoo.com or send a letter or email to the Foundation offices at the addresses on page two.

In this issue, we have two longer articles than normal, resulting in just three articles overall. In the first one, William Head writes on the operations into Laos in Lam Son 719. He has wanted to write on this for some time, and we are fortunate to be able to assist.

Our second article is an expression by Douglas Dildy of what he feels caused the Nazi failure to defeat the RAF in the Battle of Britain. An excellent read.

Our third article is a posthumous article by Richard K. Smith, who died a couple of years ago, but had articles published in this journal previously. It was laboriously readied for publication by Cargill Hall and Wolfgang Samuel, among others, to continue the fine work that Smith was known for.

Of course, we have our customary lot of book reviews once again, eighteen in this issue, starting on page 48. We also continue to list upcoming events of an historical nature starting on page 61, reunion happenings on page 62, and we finish up with our New History Mystery on page 64. We hope you enjoy this fascinating issue.

Please take a moment to read and ponder the Annual Report of the Air Force Historical Foundation for 2015, which begins on page five. It’s full of information.

Our final note is more somber, as we mark, for those who might have missed the last issue, the passing of a former President of the Air Force Historical Foundation, Gen. William Y. Smith (see page 4). From 1996 to 2003, General Smith led us through an uncertain time. He will be missed.

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General William Y. Smith, USAF (Ret.) (1925-2016)

General William Y. Smith passed away on January 16, 2016, at the age of 90. General Smith led the Foundation from 1996 to 2003, and remained a staunch supporter after he left office.

General Smith was born in 1925, in Hot Springs, Ark. After graduating from high school in 1943, he spent one year at Washington and Lee University Va., then entered the U.S. Military Academy at West Point, N.Y. He graduated in 1948, among the first academy graduates commissioned directly into the newly established Air Force.

His first assignment was training recruits at Lackland Air Force Base, Texas. Subsequently he went through flight training at Randolph Air Force Base, Texas, and Williams Air Force Base, Ariz., receiving his pilot wings in September 1949. He then served as a pilot with the 30th Fighter-Bomber Group at Shaw Air Force Base, S.C.

In March 1951 General Smith was assigned to the 27th Fighter Escort Group at Itazuke Air Base, Japan, and flew combat missions over Korea in F-84 Thunderjets. He spent two months as a forward air controller with the U.S. Army's 25th Infantry Division. He next joined the 49th Fighter-Bomber Group and served as operations officer for combat crew training at Itazuke, then as assistant group operations officer at Taegu Air Base, South Korea, flying combat missions until hit by flak and wounded on his 97th mission.

After prolonged hospitalization, General Smith attended Harvard University for graduate study, receiving an M.P.A. in 1954 and a Ph.D. in political economy and government in 1961. From August 1954 to July 1958, the general taught government, economic and international relations, and attained the rank of associate professor at the U.S. Military Academy. He attended the Air Command and Staff College from August 1958 to June 1959. He spent that summer on special assignment with the president’s committee to study the U.S. Military Assistance Program, the Draper Committee, then became a planning and programming officer with the deputy director of war plans in the Office of the Deputy Chief of Staff, Plans and Programs, Headquarters U.S. Air Force, Washington, D.C.

In July 1961, he moved to the White House as Air Force staff assistant to General Maxwell D. Taylor who was then military representative to President John F. Kennedy. When General Taylor became chairman of the Joint Chiefs of Staff in 1962, General Smith worked in a dual capacity as an assistant to the chairman, Joint Chiefs of Staff, and as a staff member on the National Security Council under McGeorge Bundy.

General Smith went to the National War College in August 1964 and after graduation in June 1965, was assigned to Headquarters U.S. Air Forces in Europe, Lindsey Air Station, Germany. He worked first in the Policy and Negotiations Division and later as chief, War Plans Division, both under the deputy chief of staff for operations. In July 1967 he became commander of the 603rd Air Base Wing at Sembach Air Base, Germany.

Following his return to the United States in July 1968, he became military assistant to the secretary of the Air Force, serving first with Secretary Harold Brown and subsequently with Secretary Robert C. Seamans Jr. In this position it was General Smith’s job to advise and assist the secretary on matters of substance, particularly operational, budgetary, joint-service and system acquisition matters. In addition he carried out special projects for the secretary. He was appointed vice commander of the Oklahoma City Air Materiel Area, now the Oklahoma City Air Logistics Center in August 1971, and become commander in June 1972. The center provided logistics support for U.S. Air Force weapon systems that includes B-52s and associated missiles, A-7D’s, C-135s and its configurations ranging from tankers to airborne command posts, command control communications systems, aircraft engines for Major Air Force combat and airlift aircraft, and component parts for various Air Force equipment.

In October 1973 General Smith transferred to Air Force headquarters and served as director of doctrine, concepts and objectives in the Office of the Deputy Chief of Staff, Plans and Operations. In July 1974 he was appointed director of policy plans and National Security Council affairs, Office of the Assistant Secretary of Defense for International Security Affairs. He became assistant to the chairman, Organization of the Joint Chiefs of Staff, in September 1975.

The general returned to Europe in July 1979, as chief of staff for Supreme Headquarters Allied Powers Europe, Belgium, and became deputy commander in chief, HQ European Command in June 1981. He retired July 31, 1983.
From the President

FY 2015 Annual Report to the Membership

As many of you will recall, our Foundation’s fiscal year runs from June 1st through May 31st. This annual report is respectfully submitted to the membership in accordance with our Foundation bylaws.

Fiscal Year 2015 in Review

This past year was a turning point for our Foundation. We had just finished celebrating our 60th anniversary during the prior year; and were greeted with the largest bequest in the Foundation’s history. This largesse of one of our long-time members took the Foundation off “life support” and prompted us to take measures that not only honored this generosity, but also undertake a top-to-bottom review of our value proposition and administrative processes.

Your Board of Directors undertook a three-month process to decide how to handle the financial structure of the Foundation in light of the newly available funds. Our decision was to set aside the majority of the funds in an investment manager-run (1919ic) portfolio with the goal of long-range growth. We then partitioned the remaining money between shorter term investments and available capital for operating the organization. We believe that these resources are sufficient to sustain the Foundation for years to come, and help to ensure our permanent presence in the Air Power community.

The Board re-examined our various responsibilities and support functions to ensure that they were commensurate with our responsibility to you, the membership, and the long-term growth and well-being of the Foundation. We:

Revised the Foundation bylaws that were approved during the annual membership meeting
Recruited new Board of Director members that were elected during the annual membership meeting
Revived our strategic planning process
Contracted with a new legal partner, McDermott, Will & Emery
Enhanced our processes with incumbent auditor, Garbelman Winslow
Created a Board of Director's ethics officer
Created a Board of Director's compliance officer
Published a Board of Director handbook
Gave Air Power History a new look
Updated the Foundation website and improved our electronic communications media

On October 13th, we honored our 2015 award winners. In a beautiful ceremony at the Air Force Memorial, we presented the 2015 Doolittle Award to the 509th Bomb Wing, Whiteman AFB, Missouri, for their superlative record in World War II and as well as more recent conflicts. Later that evening at the Awards Banquet we presented the Holley Award for a lifetime of documenting air power history to Dr. Richard P. Hallion, and the prestigious General Carl A. Spaatz Award to General Ronald R. Fogleman, USAF (retired) for a lifetime of significant contributions to air power history. We also recognized several individuals who had won annual Foundation awards for outstanding historical writings and publications.

In keeping with our tradition of the past dozen years, we hosted a symposium with a theme of current interest and historical relevance. This year we co-hosted “Violent Skies: The Air War Over Vietnam” with our sister service historical foundations—marking the 50th anniversary of that conflict. We held the symposium on October 15th and 16th at the National War College, Ft. McNair. The event was critically acclaimed and very well received by both the audience and the subject matter presenters.

We re-entered the publishing business through the 2nd edition printing of Hap Arnold and the Evolution of American Air Power, which is now being used as a text at Air Command and Staff College. Authored by Dr. Dik Daso of our Board of Directors, this work describes the technology, institutions, and individuals—from the Wright Brothers to the president of Caltech—that influenced Arnold’s decisions. It shows how the peacetime experiences of World War II’s foremost military airman shaped the evolution of American military aviation as a whole. Copies can be purchased at our website, with other Foundation publications, at http://afhistory.org/resources/book_program.asp.

You might have noticed that we have been actively working various electronic and social networking means of outreach to inform our membership and to attract new members. One of the most popular of these is our daily “This Day in Air Force History” email, disseminated to approximately 450 recipients. This presents short recaps of historical events, delivered in an easy to read format, which many find useful as conversation starters or speech introductions. Usually they include appropriate images to enhance the presentation. Please advise us if you would like to be added to the list. A number of changes have been made to changes to the Foundation web page. We are now publishing the list of books that are available for review, which has stimulated great interest in this valuable Foundation service.
Like many non-profit organizations, our Foundation continues to struggle financially on an annual basis. While our newly established investment portfolio provides us the ability to survive far in the foreseeable future, it is not yet in position to defray significant portions of our operating expenses. We have done much in the past several years to reduce costs and undertaken initiatives to increase revenues. Further, the concurrent defense industry belt tightening in the current economic environment could not have come at a worse time for our sponsorship efforts. We currently run at a loss, which we have been covering our expenses by the income generated from our investment revenues and reducing the size of the principle.

Here is an average of our income and expenses over the past two years:

<table>
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<tr>
<th>Revenues</th>
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<tr>
<td>Membership Dues</td>
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</tr>
<tr>
<td>Donations</td>
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</tr>
<tr>
<td>Events (Net)</td>
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<td>Sponsorships</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>Expenses</strong></td>
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<td>Air Power History</td>
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<tr>
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<tr>
<td>Communications</td>
<td>$10,000</td>
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</tbody>
</table>
| **Net**                   | (-$64,000)

Obviously, we do not want to continue drawing from our investments to cover expenses. Hence, we must continue to enhance our appeal to potential members and sponsors; and increase services for our membership. The bottom line: we need to develop programs to increase membership, stimulate contributions from sponsors, and keep our Air Force relationship relevant for today's airmen, as well as help inspire those of the future.

Looking to the Future

Those of you who are familiar with our organization probably know that we have struggled to survive—almost since our inception. This is no longer the case. Our long-term existence is no longer in doubt—and we will remain an integral part of the air power landscape. However, our newly established solvency merely gives us the "runway" to grow into the organization as envisioned by my predecessors as leaders of this organization, which included Spaatz, Vandenberg, Foulois, and LeMay.

Our message is that AFHF will remain a strong, independent voice within our air power community, filling a special role of promoting the legacy of airmen, and educating future generations to aspire to follow in the monumental footsteps of those who "soared before." Your Board of Directors is committed that our Foundation will remain a viable, dynamic organization worthy of your investment and support.

First, we plan to offer more attractive methodologies for corporate and organizational memberships a valuable means of communicating their messages and brand. This must be done in a way commensurate with Foundation goals and objectives. Second, we've proven that we can attract sufficient support to conduct major events of interest profitably. Therefore, we plan to expand the number of these events. We also hope to expand sponsorship of our highly successful social networking and email outreach. Finally, we will continue our outreach to senior Air Force officials to stimulate their interest in exposing their personnel to the Foundation, Air Power History, and our relevancy to the Air Force mission.

We will provide many opportunities to honor or memorialize the legacies on whose shoulders we stand—those who wrote the lessons of air power through their dedication to our profession, often at great personal sacrifice. We can do this through our renowned Air Power History magazine, through published articles or dedications. We are also looking for worthy candidates, for whom we can dedicate the naming of our annual awards.

Summary

We realize that many worthy causes continually beseech each of us for support. We would hope that in light of our now-bright future, that we might find a place somewhere on your personal priority list of further support, giving, or bequeathing. With the next level of support, we intend to prove even more worthy of increased appeal by expanding our services, outreach, and value to our air power community.

As always, let me thank you for the part each of you has played in the history and legacy of air power across the decades, and for your generous contributions to the Foundation. Without your support we could not survive. We are deeply grateful—and this FY 2015 annual report is respectfully submitted for your review and feedback as you deem appropriate. Respectfully submitted.

Major General, USAF, Retired
President and Chairman of the Board
They Called Defeat “Victory”: *Lam Son 719* and the Case for Airpower

William P. Head

In late 1970, Allied intelligence discovered vast stockpiles of North Vietnamese Army (NVA) arms and supplies around Tchepone, Laos at the upper end of their infiltration routes into South Vietnam best known as the Ho Chi Minh Trail. Further investigation revealed this was the main supply hub for Communist forces headed south into the Republic of Vietnam. With President Richard M. Nixon cultivating his Vietnamization policy, this discovery seemed to provide United States (U.S.) and South Vietnamese leaders with an opportunity to verify the viability of the Southern government and the Army of the Republic of Vietnam (ARVN). With U.S. leaders also fearing this was a new NVA buildup for another Tet-style offensive in South Vietnam, they initially considered sending seven American divisions into Laos to destroy the supply center. However, with the U.S. withdrawal having cut their numbers in half and fearing international repercussions for invading a neutral nation, they proposed to eliminate the depot with ARVN ground troops supported by U.S. aircraft.

When the ARVN assault on this enemy logistics center ended on March 25, 1971, both President Nixon and South Vietnamese President Nguyen Van Thieu called the operation a great victory. By all definitions of the word victory, the incursion was neither a tactical nor strategic victory. It might have been, at least, a partial success had planners employed Allied airpower in a more consistent and relentless manner. This paper examines the 1971 invasion of Laos and asserts a case for the more robust use of airpower.

Plans called for the Laotian invasion, code named *Lam Son 719*, to commence with U.S. forces establishing a logistics base on the Laotian border near the old abandoned Khe Sanh and Vandegrift Marine bases. In turn, the Air Force was to deliver 20,000 tons of supplies and more than 12,000 ARVN soldiers. This was to be followed on February 8, 1971, with the deployment of an additional 5,000 ARVN soldiers supported by B–52s, tactical aircraft, and fixed-wing and helicopter gunships.

The Background of Operation *Lam Son 719*

Military leaders and operational planners agreed the incursion should be of a limited nature, spearheaded by the ARVN, and focused on actions in the southeastern part of “neutral” Laos. The Americans’ role was restricted to providing diversionary, logistical, aviation, and artillery support. This was due to Nixon’s desire to prove the efficacy of the ARVN forces and because U.S. ground forces were prohibited by a Congressional directive from entering Laos. As mentioned above, the main objective was the destruction of the enemy’s logistics hub and the prevention of a potential impending offensive by the North’s People’s...
The Army of Vietnam (PAVN) invasion officially lasted from February 8 to March 25, 1971. South Vietnamese and American leaders hoped that by commencing this campaign, aimed at the Communist's highly developed and extensive logistical network, they could achieve a swift victory in Laos and reinforce the self-esteem and self-reliance of the ARVN which had grown markedly since their 1970 successes in Cambodia. They also believed it might prove that government forces could defend their nation even as U.S. combat forces continued to drawdown. Lam Son 719 would be a test of the ARVN’s ability to undertake a major combat operation, alone, and justify President Nixon’s policies.

There were those who had doubts. Famed reporter Joe Galloway, who spent four tours in Vietnam on the front lines beginning in November 1965, at the Battle of Ia Drang Valley, believed the ARVN were not ready to “solo.” He was at Lam Son 719 and doubted the ARVN had enough men or skill for such a task. He alleged those who advocated the operation were totally delusional. Considering Galloway’s knowledge derived from the fact that he had spent the entire war with the troops in the field and knew many of the senior U.S. and Vietnamese officers like Lt. Col. (later Lt. Gen.) Hal Moore provided him with great credibility.2

Ultimately, Allied plans would fail in large measure due to poor and hurried planning, a failure by Allied political and military leaders to face military realities, and inept implementation in the face of a skilled and determined enemy. Thus, the campaign proved to be a bloody disaster for the ARVN, destroying many of their most skilled units and nullifying the confidence that they had developed during the preceding three years.

How did it come to this?

In 1957, South Vietnamese Communist guerrilla units supported by the North Vietnamese were established and over the last years of the decade the National Liberation Front (NLF) also came into being as the political arm of this anti-government movement in the South. The North

**Ultimately, Allied plans would fail in large measure due to poor and hurried planning**

also created the 559th Transportation Group to furnish these revolutionaries with material support from Hanoi. This was the origin of the Ho Chi Minh Trail.3

Between April and December 1964, responding to U.S. support of South Vietnam, more than 10,000 NVA, including the first tactical units, travelled south to support southern guerrillas better known as the Viet Cong (VC). Northern engineers, led by Colonel Dong Si Nguyen, also began to upgrade the infiltration network through Laos. In spite of the inhospitable terrain in the Laotian panhandle, Communist road builders, during good or bad weather, carved roads through the mountain passes from North Vietnam into Laos, across the limestone cliffs and through the mountains as high as 5,000 feet. They pushed through the jungles, bamboo forests, and forded raging rivers. As Stanley Karnow writes, “The Communist had added a new
dimension to the struggle.” But it was only the beginning. The men and supplies that came south in 1964, were, “a trickle compared to the numbers three years later, when they were pouring into South Vietnam at the rate of twenty thousand or more per month.”

By 1970, the 559th Transportation Group, now the 559th Military Region, had expanded the Ho Chi Minh Trail from “a fragile net of jungle footpaths” into thousands of miles of “well-tended motor roads.” Hanoi subdivided

Partial destruction of the enemy’s infiltration network...led Allied leaders to decide the time was right to duplicate the campaign in Laos

Southern Laos into fifteen semi-autonomous military districts, or “Binh Trams,” each with a commander responsible for all functions. Transportation battalions moved supplies through each district, engineer battalions built and repaired roads and moved supplies if needed, liaison battalions managed the infiltration of personnel along trails separate from those used for supplies, while support groups provided food, shelter, medical services, and other staff roles.

With the Trail having become the main logistical conduit for enemy resupply of their forces in the south, it became a major target for intermittent U.S. air attacks that began in 1966. Originally only small-scale covert operations, by 1968, as Operation Rolling Thunder air attacks against targets in North Vietnam came to an end, these aerial campaigns evolved into significant operations designated Commando Hunt I-VII. They were aimed at staging areas, supply centers, and ground troops inside Laos to halt the flow of enemy men and supplies into South Vietnam.

According to David Fulghum and his co-authors of the book South Vietnam of Trial, U.S. interdiction efforts began in early 1966, due to the masses of men and materiel pouring down the Ho Chi Minh Trail. They claimed that the Communists conveyed more than 630,000 men, 100,000 tons of foodstuffs, 400,000 weapons, and 50,000 tons of ammunition down a labyrinth of increasingly improved roads through Laos into South Vietnam. Some roads were paved, but most were rock-strewn or bamboo covered dirt/mud roads and jungle paths. They also took advantage of the numerous streams and rivers to create alternative transportation systems that traversed southeastern Laos and connected with additional logistical connivance systems in nearby Cambodia known as the Sihanouk Trail. Named for the supposed neutral leader of Cambodia Prince Norodom Sihanouk, this infiltration network was basically ignored by the Cambodian leader. In 1970 when he was overthrown and replaced by the pro-American Lon Nol, his government acted to forbid the Communists the use of the port of Sihanoukville as a staging area and transport hub. Leaders in Hanoi immediately recognized this as a major strategic blow to their campaign to unify Vietnam, since seventy percent of all their military supplies moved through the haven. To make matters worse for the North Vietnamese during the spring and summer of 1970, U.S. and ARVN forces had crossed into Cambodia and successfully assaulted the NVA and VC base areas in what became known as the Cambodian Campaign.

Later, this partial destruction of the enemy’s infiltration network in Cambodia led Allied leaders to decide the time was right to duplicate the campaign in Laos. American officials reasoned that if such an operation were to be executed it would best be done quickly, while U.S. military assets were still present in South Vietnam. Leadership deduced that a successful assault would cause NVA supply shortages for the next twelve to eighteen months. The timing seemed perfect since this would debilitating the NVA and VC substantially even as the last U.S. troops were leaving South Vietnam. This they believed would provide the South Vietnamese with a much needed breather from any potential Tet-style offensive for one or even two years. Of course, it all depended on the ARVN living up to U.S. expectations.

American concerns over another Communist Tet offensive stemmed from the fact that previously, their large attacks had come at the end of the Laotian dry season, between October and March. Intelligence data indicated that the PAVN logistical forces were moving supplies through their transportation network as the dry season reached its peak. One U.S. intelligence report estimated that ninety percent of the enemy’s men and supplies had already traversed the Ho Chi Minh Trail into the South’s three northernmost provinces. This seemed to be a clear indication that they were stockpiling materials in preparation for a large-scale assault. Leadership in both Washington and Saigon were concerned and believed the best defense would be a good offense. Thus, in order to disrupt future Communist plans and objectives the Allies began to plan a punitive counter attack before the enemy was ready to act.

Planning the Operation

With these issues facing them, the members of the Joint Chiefs of Staff (JCS) directed key leaders of the Military Assistance Command, Vietnam (MACV) to meet and formulate a plan. On December 8, 1970, officials met in Saigon to discuss the prospect of conducting an ARVN cross-border attack into southeastern Laos. General Creighton W. Abrams, MACV commander, later claimed On December 8, 1970, officials met in Saigon to discuss the prospect of conducting an ARVN cross-border attack that the driving force behind the offensive was Col. Alexander M. Haig, an aide to National Security Advisor, Dr. Henry Kissinger. While Abrams and his staff were concerned about the reports of a NVA logistical build-up in southeastern Laos, they were not in favor of allowing the ARVN to fight enemy forces in the area all by themselves.
They were not even sure they could muster enough troops to confront the potential numbers the NVA might be able to bring to bear against them. At the conclusion of the meetings the MACV specialists dispatched their findings back to the JCS. In mid-December, in what proved to be an important twist, President Nixon became involved in the discussions and was inclined to favor offensive actions. He began to push Abrams and the members of the cabinet to support the proposed ARVN cross-border assault not so much as means to win the war, but as a way to substantiate Vietnamization.10

General Abrams, later wrote, that throughout this period he was pressured unrelentingly by Haig and the President. From Haig’s point of view U.S. military leadership was insufficiently enthusiastic about such an operation and had to be “prodded remorselessly by Nixon and Kissinger.”11 Finally they gave up and created a plan to invade Laos. It would prove to be a haphazard plan formulated too quickly, failing to account for enemy troop strengths, and without proper use of their greatest asset—airpower. Some leaders such as U.S. Commander-in-Chief Pacific (CINCPAC) Admiral John S. McCain, Jr. touted such an offensive and pointed out to members of the JCS such as its Chair, Admiral Thomas Moorer that an offensive aimed at the Ho Chi Minh Trail might convince Laotian Prime Minister Prince Souvanna Phouma, “to abandon the guise of neutrality and enter the war openly.”12

Many around Nixon had long hoped to gain political capital from the Vietnam War and Laos and Cambodia were key pawns in the upcoming chess match. Laos, which was theoretically neutral, had for some time permitted U.S. Central Intelligence Agency (CIA) operatives and U.S. aircraft to conduct covert operations against the Communist Pathet Lao. In this bloody client civil war the Americans covertly supported the indigenous Hmong tribal people, led by Gen. Vang Pao, while the NVA supported the Pathet Lao. By 1970, the struggle that had begun in South Vietnam as a struggle between two Southern factions had grown into a conflict spread all over Southeast Asia.13

On January 7, 1971, officials in Washington directed MACV to draw up a comprehensive operational plan (O-Plan) for an attack against the NVA’s Base Areas 604 and 611. Leadership assigned this duty to Lt. Gen. James W. Sutherland, Jr., the commander of the Army’s XXIV Corps. With only nine days to submit this O-Plan to MACV, the general and his staff had to move swiftly. In Sutherland’s final plan the operation was divided into four phases all of which assumed adequate ARVN capabilities and numbers. During Phase I, American units inside South Vietnam would seize the border approaches and conduct diversionary operations. This would necessitate pinpoint timing and swift action by all units, especially the ARVN. The second phase called for ARVN armored and infantry units to push toward the Laotian town of Tchepone along Route 9 again requiring decisive action by ARVN units. The village was occupied by only a few hundred inhabitants and would cease to exist following this battle.14

Officials decided on this course of action since planners believed this was the central point of Base Area 604. In turn, the advance would be shielded by a succession of leap-frogging aerial infantry assaults to cover the northern and southern flanks of the main column. During the third phase, ARVN troops would execute search and destroy operations inside Base Area 604. Phase IV called for ARVN forces to withdraw down Route 9 and strike Base Area 611. With this completed they were to depart Laos through the A Shau Valley. Leaders expected these Southern units to stay in Laos until the rainy season began, in early May, ravaging the Communist supply hubs and cutting off their infiltration routes.15 This last phase was the most ambitious and problematic since it assumed the NVA would not be willing or able to mass enough resistance to prevent the ARVN from spending sufficient time in Laos. They were not only wrong, but intelligence operatives had told them as much.

In the aftermath of the campaign, the bitter irony was the fact that American planners had previously developed
an O-Plan for U.S. forces that called for four to six U.S. divisions or 60,000-70,000 men. The final O-Plan for the ARVN assault called for roughly a third of that number to carry out what those with knowledge of the situation believed to be a very dangerous and potentially disastrous action. One is left to wonder what superhuman skills the ARVN possessed that caused planners to believe they could execute a campaign that was designed to require so many Americans? Or was it simply a case of drawing up a plan in a hurry and not paying close attention to the circumstances and risks before them? Or was it a case of trying to please President Nixon and his political ambitions? Perhaps so, since most of Americans were already making plans to leave South Vietnam and were not really willing to object to anything their superiors were pushing for especially if they themselves did not have to go in harm’s way.

Operational Preparations

One other issue that faced planning personnel was the infamous carelessness of ARVN officers regarding security precautions and the seemingly supernatural ability of Communist agents to discover operational information. Thus, the planning phase lasted only a short time and was divided between the senior U.S. and ARVN leadership. At the lower levels, data availability was limited to the intelligence and operational staffs of General Sutherland and Lt. Gen. Hoang Xuan Lam, the ARVN’s I Corps Commander, since he was to command the operation. The Allied high command was so concerned about leaks that when Gen. Lam eventually came to a joint meeting of MACV and the South Vietnamese Joint General Staff in Saigon, his chief of operations was forbidden to attend the meeting, even though he had helped to write the very plan under discussion. In yet another bizarre twist, Gen. Lam discovered that the operational area would be restricted to a thirty-mile wide corridor comprised of fifteen miles on either side of Route 9 and that his advance would end at Tchepone. This paranoid preparation and the constricted operational scope would later add to the problems the ARVN would face.

Another issue facing planners proved to be command, control, and coordination of the raid

Another issue facing planners proved to be command, control, and coordination (C3) of the raid, since the ARVN authority configuration was acutely politicized. Among the officer corps promotions were based on the backing of key political figures. For example, the ARVN Marine commander Lt. Gen. Le Nguyen Khang, whose troops would be a part of the combat forces scheduled to participate in Lam Son 719, was a supporter of Nguyen Cao Ky, the South Vietnamese Vice President. In fact, he outranked General Lam, who was a protégé of President Nguyen Van Thieu, Ky’s main political rival. There existed a similar situation with Lt. Gen. Du Quoc Dong, the commander of the ARVN’s Airborne units who were also slated to play a role in the operation. Worse still, once the assault began, both Khang and Dong stayed in Saigon and turned over their command authority to junior officers rather than take orders from Lam. From the beginning this situation did not bode well for the success of the campaign.

Another incursion conundrum became the delay in the dispatch of orders due to officials’ fear of leaks

Soon another incursion conundrum became the delay in the dispatch of orders due to officials’ fear of leaks. Many units did not receive their instructions until January 17, and the ARVN Airborne Division which was to spearhead the attack did not obtain their plans until February 2, less than a week from the jump off date. This proved to be a basic flaw, since many of the units, particularly the Airborne and the Marines, had trained as individual battalions and brigades and had no familiarity with tactics requiring joint maneuvers or collaborating with other friendly forces. According to Brig. Gen. Sidney Berry, the 101st Airborne Division’s assistant commander, at the time, “Planning was rushed, handicapped by security restrictions, and conducted separately and in isolation by the Vietnamese and the Americans.”

American Participation: Operation Dewey Canyon II

Even though the U.S. was in the process of withdrawing its forces from Vietnam, they still had a role in the overall operation. Planners designated their aspect of the campaign Dewey Canyon II. The first Dewey Canyon had been carried out near the A Shau Valley in northwestern South Vietnam near the Laotian border between January 22 and March 18, 1969, by U.S. Marines units. In the engagement 2,200 Marines faced 5,000 NVA killing 1,617 and losing 130 killed and 932 wounded. It was generally considered a tactical American victory. Planners hoped the success of this campaign and the similarity of the designation might alarm leaders in Hanoi about the power of the attack, and bewilder them as to the real target of the proposed intrusion. The ARVN’s portion was given the title Lam Son 719, after the village of Lam Son, birthplace of the legendary Vietnamese patriot Le Loi, who had defeated an invading Chinese army in 1427. The numerical designation was derived from the year, 1971, and the main axis of the attack, Route 9.

Even as the final stages of preparation inched forward, delays at the highest levels cost the Allies precious time at this crucial moment when the ARVN were on the verge of commencing their largest, most complex, and most important operation of the war. Planners and leadership had already been pressed for time to carry out adequate planning and preparation. Worse still, no one seemed capable or willing to really question any of the tactical directives based on anything approaching military realities and/or the ability of the ARVN to execute their mission. In short, they
were being asked to affect an assault with a third of the number of troops that previous plans had stipulated Americans needed for the same attack. Still, it fulfilled the President’s dream of verifying his Vietnamization program. Thus, on January 29, Nixon gave his final approval for the operation, and the next day, Operation Dewey Canyon II began. It went forward with airpower, the Allies potential game breaker, playing only a secondary role.

It must be noted that during the planning aspect of this campaign U.S. tactical organizers had been restricted by the passage of the Cooper-Church Amendment on December 29, 1970. This forbade American ground troops and/or advisors from entering Laos. As a result, Dewey Canyon II had to be conducted inside South Vietnamese territory. This additional restriction on military units meant that in order to reopen Route 9 all the way to the old Khe Sanh Combat Base (KSCB) would be much more difficult. The KSCB which had been the focus of the desperate struggle between U.S. Marines and NVA regulars in early 1968, had been abandoned by U.S. forces no sooner than they had won a tactical victory. Plans called for the base to be reopened so it could act as a logistical hub and jump off point for the ARVN incursion. Leadership assigned American combat engineers with the task of clearing Route 9 and rehabilitating Khe Sanh while infantry and mechanized units secured a line of communications along the length of the road. Plans also called for U.S. artillery units to support the ARVN effort within Laos from the South Vietnamese side of the border while Army logistics managed the entire ARVN supply endeavor. Almost as an afterthought, the Air Force, Navy, and Marine Corps were directed to provide air support for the invading troops while U.S. Army aviation units were directed to provide comprehensive helicopter support for the operation.24

**Gen. Abrams placed a gag order on reporting troop movements in an effort to keep the ARVN attack a secret**

The American units assigned to the operation included: the 101st Airborne Division; four battalions of the 108th Artillery Group; two battalions of the 45th Engineer Group; six battalions of the 101st Aviation Group; the 1st Brigade of the 5th Mechanized Infantry Division, which was buttressed by two mechanized battalions, one cavalry battalion, one tank battalion, and one airmobile infantry battalion; and two battalions of the 11th Infantry Brigade, 23rd Infantry Division. All totaled the Americans committed 10,000 support troops to pry open the doors into Laos for the 20,000 ARVN shock troops. In addition, the Allies committed 2,600 helicopters. They also had plenty of other aviation assets available.25

As January 30, 1971 unfolded U.S. armor and engineer personnel from the 1st Brigade, 5th Infantry Division moved west on Route 9 while the brigade’s infantry elements were airlifted by helicopters directly into the Khe Sanh area. By February 5, 1971, while these units had secured Route 9 up to the Laotian border, 20,000 soldiers of the U.S. 101st Airborne Division had begun a feint into the A Shau Valley in an effort to draw NVA attention away from Khe Sanh. It was a plausible ruse but the remainder of the operation needed to proceed quickly before enemy leaders discovered the deception.26

At KSCB, poor weather; enemy obstacles, including land mines; and unexploded ordnance caused a one-week delay in the repair of the camp and its airstrip. The old landing strip was in such poor shape engineers decided to build a new one. Because of this delay, the first planes did not arrive until February 15. Early on, NVA/VC resistance was nearly nonexistent and U.S. casualties were very light. This was mostly because from the summer of 1968 to February 1971, there had been no American units present around Khe Sanh and the NVA believed they did not need to maintain a large force in the region. General Sutherland argued that the advance to Khe Sanh had been a race between U.S. and enemy forces and the Americans had won. Ironically, by April once the Lam Son 719 troops were forced out of Laos, it would once again have to be abandoned under heavy fire from NVA artillery barrages.27

When Dewey Canyon II began, Gen. Abrams placed a gag order on reporting troop movements in an effort to keep the ARVN attack a secret. It was to no avail. Soon, Communist and non-American news agencies released reports of the ARVN build-up and, even before Abrams removed the news blackout on February 4, speculation concerning the offensive was front page news in the U.S. As had been the case prior to the Cambodian campaign, the Laotian government was not alerted in advance about the assault into its territory. Prime Minister Souvanna Phouma learned about the invasion of his “neutral” nation through news reports after it began.28 The insult weakened the already tenuous pro-American government in Laos and when the ARVN and U.S. withdrew it left them to face a powerful and angry enemy on their own.

**The ARVN Invasion**

With the U.S. support efforts complete it was time for the main event.29 Early in 1971, American intelligence reports placed North Vietnamese troop strength in and
around the Base Area 604 at 22,000 men: 7,000 combat troops, 10,000 support personnel, and 5,000 Lao Pathet Lao Communist forces. They were all under the organizational umbrella of the newly formed 70th Front. American planners and leaders were divided in their opinions on how the NVA would respond to the invasion. General Abrams correctly predicted that unlike Cambodia, the Communists would fight hard for these Lao bases and their vital supplies. As early as December 11, 1970, he notified Admiral McCain:30

That strong infantry, armor, and artillery formations were in southern Laos...formidable air defenses were deployed...the mountainous, jungle-covered terrain was an added liability. Natural clearings for helicopter landing zones were scarce and likely to be heavily defended. The bulk of the enemy’s combat units were in the vicinity of Tchepone and PAVN could be expected to defend his base areas and logistics centers against any allied operation.

Concurrently, in December 1970, the CIA released a prophetic report that reiterated Abram’s concerns. In turn, on January 21, 1971, they penned a memorandum which as the esteemed historian John Prados said “was remarkably accurate with respect to the nature, pattern, and all-out intensity of [PAVN] reactions.”31

Airpower had much to offer that was apparently only marginally considered during the planning process

On the other hand, intelligence analysts at MACV were convinced that the incursion would not be heavily opposed. They argued that tactical air strikes and artillery shelling would neutralize the roughly 170 to 200 anti-aircraft artillery (AAA) guns they believed to be in or around Base Areas 604 and 611. They also believed that enemy armor posed only a minimal threat. In their reports they predicted that it would take the NVA at least 14 days to send two divisions of reinforcing units from north of the Demilitarized Zone (DMZ) and they would most likely be diverted by the 101st’s operations for the duration of the incursion.32

In retrospect, these arguments are staggering in their inaccuracy. Allied intelligence had already suggested that enemy forces were all around the area. Worse, the notion that Communist tanks or artillery would not be effective is mind-blowing. If they were not it would have been the only time in the war that they were not! Of course, airpower could and did suppress some of these enemy forces but planners and predictors alike had only considered the role of U.S. aircraft to be secondary. It must be said that airpower had much to offer that was apparently only marginally considered during the planning process.

Years later U.S. Air Force Col. Phillip S. Meilinger wrote an article that summarized basic Aerospace Doctrine following the stunning success of American air forces in the first Persian Gulf War, in which he laid down “Ten Propositions Regarding Airpower.” These were: 1. Whoever controls the air generally controls the surface; 2. Airpower is an inherently strategic force; 3. Airpower is primarily an offensive weapon; 4. In essence, airpower is targeting; targeting is intelligence; and intelligence is analyzing the effects of air operations; 5. Airpower produces physical and psychological shock by dominating the fourth dimension-time; 6. Airpower can simultaneously conduct parallel operations at all levels of war; 7. Precision air weapons have redefined the meaning of mass; 8. Airpower’s unique characteristics require centralized control by airmen; 9. Technology and airpower are integrally and synergistically related; and 10. Airpower includes not only military assets, but aerospace industry and commercial aviation. These were concepts designed to attain victory but they were seldom employed in Vietnam and certainly not at Lam Son 719.33

As it turned out, the NVA reinforcements did not arrive from the north as expected, but from Base Area 611 and the A Shau Valley to the south, where eight regiments, all supported by organic artillery units, were within two weeks marching range. The Communists were not sitting idly by twiddling their thumbs. They too had been analyzing the situation and expected an operation as early as January 26. They soon received a radio message warning that, “It has been determined that the enemy may strike into our cargo carrier system in order to cut it off. Prepare to mobilize and strike the enemy hard. Be vigilant.”34 In short, they were prepared and waiting for an Allied invasion and had acted to prevent its success.

If this were not bad enough, the tactical air strikes that were supposed to pave the way for the assault and destroy the AAA sites had to be postponed for two days prior to the incursion due to poor flying weather and aircraft with a lack of all-weather radar and sensors. Once the air attacks began they proved to be spectacular both in their pyrotechnics and their efficacy. At first there was a massive preliminary artillery bombardment and then eleven B–52 Arc Light raids pulverized the entire area. In retrospect one would question why these air raids did not take place on a larger scale, especially since they were supposed to be a
component of the American role and their impact had proven to be significant. With these preparations complete, the incursion began on 8 February 1971, when a 4,000-man ARVN armored infantry task force made up of troops from the 3rd Armored Brigade and the 1st and 8th Airborne Battalions, advanced west unopposed along Route 9. To screen the northern flank, ARVN Airborne and Ranger units deployed to the north of the main advance. Helicopters airlifted the 39th Ranger Battalion to Landing Zone (LZ) Ranger while the 21st Ranger Battalion flew into Ranger South. Plans called for these outposts to act as warning stations in case of a NVA movement into the area of the ARVN incursion. Concurrently, troops of the 2nd Airborne Battalion occupied Fire Support Base (FSB) 30 and the 3rd Airborne Brigade Headquarters and the 3rd Airborne Battalion moved into FSB 31. Men from the 1st Infantry Division took up positions at LZs Blue, Don, White, and Brown and FSBs Hotel, Delta, and Delta 1, in order to support the southern flank of the main advance. In retrospect the creation of these FSBs had a striking resemblance to the disastrous early stages of Dien Bien Phu 17 years earlier. Like the earlier battle these static placements would also prove to contribute to the ultimate defeat.

The operational design called for the main ARVN column to advance down the valley of the Se Pone River, a relatively flat area of brush interspersed with patches of jungle and dominated by heights to its north, with the river and more mountains to the south. From the outset things began to go wrong as the accompanying helicopters began to take fire from the heights. Having the high ground enemy forces could fire down on the aircraft from well-placed mortar and machine gun positions. If this was not enough, Route 9 inside Laos was in terrible shape. It was so bad that only tracked vehicles and jeeps could make any headway on the westward push. With this facing them, the only practical means of resupply and reinforcement proved to be by air. As a result helicopter assets soon became the primary means of logistical support, a job made very dangerous by low cloud cover and constant AAA fire.

**Things began to go wrong as the accompanying helicopters began to take fire from the heights**

Planners had not taken such contingencies into account. They didn’t have the time and had to rely on their assumption that the enemy would not resist in large numbers. As a result of the poor roads, the ARVN lost precious time endangering the timetable and what modicum of surprise regarding the assault that was left. In addition, one is also left to speculate as to the outcome had a single air commander been in charge allowing for a more robust and better coordinated set of air attacks to speed the pace of the assault. What little was afforded the ARVN did have an important impact on the enemy defenders ability to ini-
tially respond to the invading Southern forces. While it is a non-historical exercise, from a military standpoint many might conclude that the entire operation might well have gone better with more air cover or had airpower been the main component of the operation and the ground forces been used to draw the enemy forces into the open to be bombed into oblivion. Then again planning had been rushed and the main point had been to prove that Nixon's Vietnamization program was working.

By February 11, 1971, the ARVN's armored units had driven into Laos about ten to twelve miles and taken control of Route 9 up to the town of A Luoi (Ban Dong in Vietnamese). At this point they setup a central fire base and command center roughly half way to Tchepone. According the O-plan, the next step was for ARVN ground forces to make a rapid thrust toward Tchepone, their primary objective. However, the advance soon came to a halt, stagnated by a delay in any directive coming from General Lam. This pause quickly endangered the success of the entire operation, and so, two days later, both General Abrams and General Sutherland flew to Lam's forward command post at Dong Hai in an effort to get things back on schedule. During the ensuing meeting, Lam insisted on extending the ARVN 1st Division's line of outposts south of Route 9 westward to cover their anticipated advance. Operational paralysis had already set in. In an effort to mollify their South Vietnamese counterpart, Abrams and Sutherland reluctantly acceded to Lam's demands. This resulted in five more days of delay.

Meantime, back in Washington, Secretary of Defense Melvin Laird and the members of the Joint Chiefs attempted to calm fears that the ARVN advance had already stalled by telling reporters the operation was still on schedule. During one press conference, Laird asserted that the halt at A Loui was only a “pause” in order to allow ARVN commanders a chance to “watch and assess enemy movements.” He declared that “the operation is going according to plan.” Once more one is left to wonder why air strikes went into a lull when the ground operations slowed. Why not increase air operations in the area in order to keep the pressure on the Communist forces. Even at the risk of revealing the goal of the offensive and even upsetting the personnel asserting that by early March 1971, they had concentrated three infantry divisions including the 2nd, 304th, and 308th, as well as the 64th Regiment of the 320th Division and two independent infantry regiments, specifically the 27th and 28th, eight regiments of artillery, three engineer regiments, three tank battalions, six AAA battalions, and eight sapper battalions—for a total of 36,000 troops, in the battle area.

If the ARVN leaders were waiting to see what the enemy would do they did not have to wait very long. Initially, Communist actions proved to be cautious and measured, due another diversion executed by a U.S. naval task force off the coast of the North Vietnam. Indeed, the Americans seemed to be maneuvering for an amphibious landing only ten to fifteen miles from the coastal city of Vinh. For many years leaders in Hanoi had been very concerned about a possible U.S. invasion of the North. When General William Westmoreland had been MACV commander he had drawn up plans for just such an attack against the North. Now North Vietnamese leaders wondered if their worst fears were about to come to pass. However, this anxiety about a possible invasion did not last long. Once the NVA realized it was deception leaders directed the B-70 Corsairs comprised of the 304th, 308th, and 320th divisions to prepare to expel ARVN troops from the incursion area. Units of the NVA 2nd Division also moved north to the region around Tchepone to meet the ARVN threat. By early March, the Communists had gathered 36,000 troops in the area, thus, outnumbering ARVN forces two-to-one.

The official Communist History confirms these numbers asserting that by early March 1971, they had concentrated three infantry divisions including the 2nd, 304th, and 308th, as well as the 64th Regiment of the 320th Division and two independent infantry regiments, specifically the 27th and 28th, eight regiments of artillery, three engineer regiments, three tank battalions, six AAA battalions, and eight sapper battalions—for a total of 36,000 troops, in the battle area.

The ARVN delay now began to have the worst possible effect on the overall operation and left the Allies facing a
potential disaster. On the February 25, 1971, 24,000 enemy storm troopers initiated a counterattack. This larger-than-anticipated force was supported by 120 tanks and dozens of artillery pieces. This initial NVA push probed the ARVN positions to find weak points to exploit. Since the ARVN offensive was mired in the quicksand of indecision and poor leadership most of their units were stationary targets and thus, the Communists quickly located ideal attack locations. During the second week of March, the PAVN counterstroke intensified leaving Gen. Lam to consider a withdrawal. The only thing preventing a complete rout were U.S. helicopters airlifting in supplies and removing the wounded and B–52 strikes covering potential withdrawal routes.44 Why, if leaders could send B–52s for this kind of mission, could they not have sent a few more on dedicated and constant sorties against the attacking NVA units in the area? They were easier to spot and destroy.

Notably, the U.S. had the ability to suppress the enemy AAA. Vietnam had seen the development of a process called Suppression of Enemy Air Defenses (SEAD). Air operations planners called it Wild Weasel and/or Iron Hand operations. During these sorties specialized aircraft suppressed enemy surface-based air defenses such as surface-to-air missiles (SAMs) and AAA sites as well as their interrelated systems like early-warning radar and command, control, and communications (C3). These aircraft did this by either destroying the systems or by disrupting and deceiving them using electronic warfare (EW) systems. As U.S. Rolling Thunder missions against North Vietnam evolved ten to thirty percent of the aircraft sorted were SEAD.46

**Most of their units were stationary targets and thus, the Communists quickly located ideal attack locations**

Initially, in 1965 and 1966, Air Force and Navy attacking aircraft in Rolling Thunder dealt with enemy integrated air defense systems (IADS) individually using modified F–100 Super Sabre fighter aircraft. However, with the increasing sophistication of the North’s IADs their AAA downed the F–100s at an alarming rate accounting for roughly eighty-five percent of all U.S. aircraft losses during Rolling Thunder. To deal with this issue, the Air Force developed new SEAD platforms specifically the EF–105F and F–105G Thunderchefs, while the Navy employed the A–6B Intruder. Employing AGM-45 Shrike and AGM-78 anti-radiation missiles (ARMs) they became...
highly effective in destroying ground-based air defense, so much so that eventually many SAM operators would choose to turn off their radars when SEAD aircraft were overhead. New EW aircraft such as the EB–66 Destroyer and, later, the EA–6B Prowler were also used to deceive and jam air defense around the target. These aircraft proved very effective and by the end of *Rolling Thunder* only 1 SAM out of every 48 fired resulted in a hit.47

By the 1970s, even more modern variations were in service. This included the EF–4C Phantom Wild Weasel IV built on the F–4C Phantom II airframe. The first thirty-six had been sent to Southeast Asia in 1969, and were available when *Lam Son 719* began. While they proved to be very effective during later operations like Linebacker I and II military leaders never seemed to understand what they had and never truly committed to using SEAD capabilities as much as they should have. This was certainly the case during *Lam Son 719* and the *Commando Hunt* sorties being flown at the same time.48 This is not to say that air power did not strike at AAA sites during *Lam Son 719*, they did. In fact, the official Contemporary Historical Examination of Current Operations (CHECO) report by Col. J.F. Loye, Jr. et. al. claims that the Allies destroyed 109 AAA sites and damaged eighteen others.49 Even so, the enemy was able to replace a considerable number and keep the pressure on the aircraft flying support.

**With the fire bases under heavy attack, the NVA intensified their counteroffensive**

The Communist troops having massed near Tchepone, initiated their first full-scale attacks on February 18, 1971. These original assaults were aimed at FSB Ranger North and South. The main shock troops came from the NVA’s 102nd Regiment, 308th Division supported by Russian-supplied PT-76 and T-54 tanks. Throughout this onslaught the ARVN held on tenaciously. As it turned out President Thieu, oblivious to these attacks, was visiting I Corps headquarters. Believing *Lam Son 719* was progressing as scheduled, he instructed General Lam to delay the advance on Tchepone and shift the operation to the southwest. By February 20, the 39th ARVN Ranger Battalion at FSB Ranger North had lost 172 of their 502 men. To salvage the situation, their commander ordered a retreat to FSB Ranger South. By nightfall, only 109 soldiers reached Ranger South. Even though they had killed more than 600 North Vietnamese, ARVN casualties for the three-day skirmish reached 75 percent of the battalion.50

With only 400 ARVN at Ranger South, including the 109 survivors of Ranger North, the NVA swiftly shifted its attention to overrunning this outpost. Following two days of fighting Gen. Lam ordered the remnant to fight their way three miles southeast to FSB 30. Ironically, it was at this point that President Thieu ordered General Do Cao Tri, commander of III Corps, and the hero of the Cambodian campaign, to proceed to Laos and take over for Lam. Even before he could carry out this order, Tri, on his way to assume command, was killed in a helicopter crash on February 23, 1971. Thus, was infused another “what-if” into operation *Lam Son 719*.51

With the fire bases under heavy attack, the NVA intensified their counteroffensive by implementing a concentrated infantry strike supported by tanks and artillery south of Route 9. Soon, FSB 31 fell. To explain why it fell, Gen. Dong declared that because his elite Airborne Division paratroopers had been placed in stationary defensive positions it had stifled their usual aggressiveness. In spite of their heroic defense the enemy’s effective AAA fire made resupply and reinforcement efforts very dangerous. What was needed was a SEAD led air attack. Leadership seemed unwilling to initiate such an action. With the fate of his men hanging in the balance Dong ordered elements of the 17th Armored Squadron to move north from A Loui to reinforce the base. They never arrived! Gen. Lam had countered these orders stopping the relief column only a few miles from FSB 31. American leaders made one last ditch effort to save FSB 31 by directing U.S. tactical aircraft into the area. Unfortunately, the smoke, dust and haze from the enemy attack made it impossible for the U.S. forward air control (FAC) aircraft to see what was going on as they flew above 4,000 feet to avoid AAA fire.52

To make matters worse an Air Force F–4 Phantom was shot down nearby. Command and control vectored the FAC to support the rescue effort for the downed aircraft crew. This sealed the fate of the fire base. Soon, NVA forces overran the position and captured the ARVN brigade com-
mander. The result of the battle had been significant. The Communists lost 250 killed and 11 PT-76 and T-54 tanks destroyed. The ARVN suffered 155 killed and more than 100 captured. In spite of the massive search and rescue effort the two F-4 crew members could not be rescued that same day. It took two more days before they could be extracted.53

Not long after, in Dong Ha, General Dong met with Gen. Sutherland. Dong went into a tirade over what he believed was Lam incompetence. He also criticized the Americans for not providing adequate air support and supplies. Throughout the meeting, Col. Arthur Pence, senior U.S. adviser to the Airborne Division, openly supported Dong. Sutherland was furious. Afterwards he fired Pence. This confirmed in Dong’s mind that the U.S. was no longer serious in their support of the ARVN even though they had adequate assets to do so.54

As for FSB 30, it held out for another week, helped by the severe height of the hill it was on preventing the use of NVA armor. Even so, Communist artillery remained very effective. By March 3 the NVA gunners had silenced the base’s six 105mm and six 155mm howitzers. In an attempt to salvage the situation at FSB 30, ARVN armor and infantry forces from the 17th Cavalry set out to save their comrades. During the next several days, the NVA and ARVN tank units fought three major battles along Route 9. These were the first armored encounters of the Vietnam War. With the support of air strikes, ARVN units destroyed seventeen PT-76 and six T-54 tanks at a loss of three of its five M41 tanks and twenty-five armored personnel carriers (APCs).55

As if to demonstrate the efficacy of airpower, on March 3, 1971, the advancing ARVN units ran into a battalion of NVA regulars. With their supporting armor to the rear of the queue the commanding officer called in an air strike, this time by B-52 “BUFFs.” The results were devastating for the enemy. After the raid, the ARVN counted more than 400 NVA bodies.56

**During this period, the two sides fought desperately to hold their positions**

During this period, the two sides fought desperately to hold their positions. In each of the Communist assaults on the ARVN firebases and relief columns, NVA forces experienced dreadful losses resulting from Air Force, Navy, and Marine air attacks which included tactical aircraft, heavy bombers, and fixed-wing gunships. The Army also deployed its attack helicopters and used its highly effective artillery fire. On many occasions NVA attacks were just short of suicide forays reminiscent of Japanese Banzai attacks in World War II. Even so, enemy forces behaved with courage and pressed home each charge with a professional skill and resolve that both impressed and horrified American observers.57 John Prados, in his masterpiece, *The Blood Road*, quotes William D. Morrow, Jr., an American advisor with the ARVN Airborne Division during *Lam Son 719*, who was so impressed by the NVA troops’ dedication to their cause that he remarked afterward, “They would have defeated any army that tried the invasion.”58
The ARVN Press on to Tchepone

Even with the main ARVN advance stalled for three weeks at A Loui and the Ranger and Airborne units in a struggle for their lives, Gen. Lam convinced President Thieu to launch an airborne attack on Tchepone in an effort to save face. This actually seemed to make sense because Western news reporters and U.S. leaders had placed so much emphasis on the capture of Tchepone as the main objective of Lam Son 719. Besides, a quick look at the intelligence data and area maps showed that the enemy’s logistical network skirted the derelict town to the west. Lam and Thieu reasoned that if their forces could at least occupy Tchepone, they would have a political excuse for declaring “victory” and pulling their troops back into South Vietnam.59

Many American leaders...later speculated on what Thieu’s motives for agreeing to the operation were

Many American leaders and analysts later speculated on what Thieu’s motives for agreeing to the operation were in the first place. There are those who have suggested that he originally ordered his commanders to stop the operation as soon as ARVN casualties reached 3,000 and to pull out at the moment of “victory.” In many ways this makes sense because it is clear that taking Tchepone was designed to enlarge Thieu’s political capital for the upcoming fall elections. Whatever the case, South Vietnamese leaders surprisingly decided to make the attack not with the armored task force or with sufficient air cover, but almost exclusively with elements of the 1st Division. This meant that they needed to reinforce the firebases south of Route 9 which had to be reinforced by ARVN Marine Corps units. As this tedious and dangerous action unfolded the ARVN lost more and more precious time.60

ARVN units began the action on March 3, 1971, when helicopters airlifted 1st Division troops into firebases Lolo and Sophia, as well as LZ Liz just south of Route 9. The enemy air defenses were particular intense, shooting down eleven helicopters and damaging forty-four. These new FSBs were named for famous actresses with whom the U.S. air crews were familiar. They were Gina Lollobrigida, Sophia Loren, Elizabeth Taylor, and Hope Lange.61

Three days later, on March 6, in what was the largest helicopter operation of the Vietnam War, 276 UH-1 Huey helicopters shielded by Cobra gunships and American fighter aircraft, airlifted the 2nd and 3rd Battalions of the 2nd Regiment from Khe Sanh to Tchepone. The presence of so much firepower prevented enemy air defenses from being as effective as they had been previously. Only one helicopter was shot down as ARVN combat troops came into LZ Hope, about two miles northeast of Tchepone. During the following two days the two battalions searched Tchepone and the immediate vicinity. All they found were dozens of dead Communist soldiers who had been killed by air strikes. In an effort to dislodge the ARVN forces, NVA artillery shelled FSBs Lolo and Hope. Additional air strikes reduced NVA artillery efficacy.62

The ARVN Withdrawal

On March 9, 1971, even though they had achieved nothing of real value, President Thieu declared they had achieved their goal in Laos and ordered General Lam to extricate his forces as soon as possible. It would take almost the remainder of the month to finally exit Laos and as they departed they were to complete the destruction of Base Area 604 and any other supply caches they might find along the way. General Abrams immediately spotted the risk in this departure and he begged Thieu to bolster his troops in Laos and maintain some modicum of the operation until the beginning of the rainy season. This request was made based on sound military principles of pulling out of a pitched battle. However, at that moment, the ARVN had only one Marine brigade in its national reserve. So, Thieu asked Abrams to dispatch U.S. troops to Laos. Thieu knew this was impossible for Abrams to do but he did it anyway in order to save face. Thus, it was up to U.S. airpower, or what was available, to cover the ARVN departure.63

As the withdrawal began the Communists closed in around the fleeing ARVN tighter and tighter and the battle now shifted in favor of the NVA. The NVA resupply and reinforcement systems kept them supplied with an abundance of men and materiel. Part of the reason for this was the fact that Commando Hunt V was ending and Commando Hunt VI, a diminished campaign, would not start until mid-May. Now, the enemy rushed to kill as many ARVN troopers before they could reach the safety of South Vietnam. In turn, AAA crews increased their rate of fire to slow helicopter resupply and evacuation efforts for the undermanned firebases since U.S. leaders did not seem inclined to do anything to suppress them. Most of the Southern units had to run a gauntlet of ambushes along
Route 9 in a desperate effort to escape. Many experts have, in the interim, contended that only a well-disciplined and organized army could have executed an orderly withdrawal in the face of such a determined enemy. The ARVN, at this point, were neither and the planned retreat became a rout. One by one the isolated firebases were abandoned or overrun by the NVA and each withdrawal was costly in terms of men and material.64

On March 21, ARVN Marines at FSB Delta, just south of Route 9, faced an intense NVA ground and artillery attack. During the subsequent extraction of the force, seven helicopters were shot down and another fifty were damaged. Those left behind finally broke out of the encirclement and marched to the safety at FSB Hotel. Soon it had to be abandoned and as the 2nd ARVN Regiment was withdrawn, twenty-eight of the forty helicopters were severely damaged.65

Those ARVN troops in the armored task force lost dozens of vehicles to ambushes and breakdowns. By the end of their retreat, they had lost sixty percent of their tanks and half of their APCs. They abandoned fifty-four 105mm and twenty-eight 155mm howitzers. To keep all this equipment out of the hands of the enemy it had to be destroyed by U.S. aircraft. It was certainly a bitter mission for the aircrews that would much rather have been bombing enemy troop formations! The ARVN 1st Armored Brigade protected the general retreat by the Airborne Division down Route 9. When informed by one captured enemy soldier that two NVA regiments waited in ambush ahead, the commander of the brigade, Colonel Nguyen Trong Luat, notified General Dong. Dong had his forces airlifted in and cleared the road. However, he never told Colonel Luat. 66

In order to avoid the trap on Route 9, Luat ordered his men to leave the road only five miles from the border and march along a jungle trail looking for an unguarded way back. Soon the motley crew came to the end of the trail which was blocked by the steep banks of the Se Pone River. They were trapped! As the NVA closed in to finish them off, the survivors put up a determined resistance. Eventually, helicopters brought in two bulldozers which ploughed a breach up to the river’s edge and on March 23 the remainder of the ARVN troopers crossed the river supported by air cover. By March 25, 1971, exactly forty-five days since the operation began, the surviving ARVN forces had left Laos. For nearly two weeks the new forward base at Khe Sanh held out under increasing artillery fire and sapper attacks. Finally, on April 6, the ARVN at Khe Sanh also abandoned their base and Operation Lam Son 719 was over.67
war, it seemed this might very well have been true since Lam Son 719 had put a sizeable dent in enemy logistical operations in southeastern Laos and their casualty numbers had been staggering. However, in only a few days enemy truck traffic on the network of infiltration roads and trails increased. Aerial reconnaissance indicated that the number of trucks using Route 9 had reached 2,500 per month by the summer of 1971.68

In only a few days enemy truck traffic on the network of infiltration roads and trails increased

The man closest to the war and negotiations to end it was Foreign Policy Adviser, Dr. Henry Kissinger. He was deeply concerned by both President Nixon’s withdrawal of U.S. forces by fifty percent to roughly 245,000 and the proposal to reduce this number more due to what he said was the success of Vietnamization. In April, following the official conclusion of Lam Son 719, while the President declared that the operation “assured” the next round of U.S. troop withdrawals, Kissinger privately worried that Lam Son 719 had revealed “lingering deficiencies” and poignant doubts about South Vietnam’s capacity to shoulder the entire burden of the unending war. Dr. Kissinger believed this mad dash to bring the troops home was undermining not only the war effort but also the peace negotiations.69

The declarations of success by U.S. military leaders in Vietnam were more limited. Officials at MACV reported that eighty-eight Communists tanks had been destroyed, fifty-nine by air power. They also recognized that the operation had exposed shortcomings in South Vietnamese “planning, organization, leadership, motivation, and operational expertise.”70 While the ARVN soldiers fought bravely and with resolve their leaders like Gen. Lam not only made cataclysmic mistakes, but left his men hung out to dry.

Leaders in Hanoi viewed the operation as a great victory. Begun in 1970, by the late spring of 1971, they had expanded the Ho Chi Minh Trail to the west enlarging their sixty mile wide logistical artery to ninety miles. One ancillary effect of the engagement was the decision by the Politburo to launch a major conventional invasion of South Vietnam in early 1972. In short, this paved the way for the Nguyen Hue or Easter Offensive of 1972.71

One impediment to victory during Lam Son 719 proved to be the misconception by U.S. planners that the NVA forces that opposed the invasion would be caught in the open and destroyed by a limited use of U.S. airpower. They believed that tactical air attacks and air mobility would afford ARVN troops with superior maneuver ability. It could have but building static outposts thwarted maneuver capabilities and split the ARVN units into small groups which enemy eliminated piecemeal at a time of their choosing. According to airpower expert Earl Tilford, “firepower went in favor of the enemy... Airpower played an important, but not decisive role, in that it prevented a defeat from becoming a disaster that might have been so complete as to encourage the North Vietnamese army to keep moving right into Quang Tri Province.”72

While this is all too true other factors prevented American aircraft from being used to the maximum effect. First, by this time the U.S. was already drawing down its forces with plans to leave before the next U.S. presidential elections. Secondly, those planes left were also being diverted to other missions such as Arc Light raids in South Vietnam and Commando Hunt attacks along the Ho Chi Minh Trail. This left the Air Force, in particular, to fly several missions all at once. Besides, there was not sufficient coordination between all the American air units. The successes in later conflicts, like the Persian Gulf, can be traced, at least in part, to the fact that there was a single air commander who coordinated planning and directed air assets to where they would do the most good. As Tilford notes, fortunately the Army had plenty of helicopters that played a key role in saving the ARVN from disaster. Even so, the cost for these chopper units was high in terms of men and aircraft.73

The price for this “political” victory had been prohibitive in many ways. The U.S. lost 107 helicopters and had 600 damaged. They lost 176 killed and 1,042 wounded. Official numbers indicated that the enemy had 14,000 killed and 4,800 wounded. The ARVN lost 1,519 killed, 5,423 wounded, 651 missing, as well as 75 tanks, dozens of personnel carriers, 198 crew-served weapons and 3,000 individual weapons destroyed. The U.S. claimed to have destroyed or captured 20,000 tons offood and ammunition, 156,000 gallons of fuel, 1,500 trucks, 74 tanks, and 6,000 individual weapons—mostly due to air strikes not ground operations.74

Airpower played an important, but not decisive role, in that it prevented a defeat from becoming a disaster

In the aftermath the helicopter numbers stunned the advocates of U.S. Army aviation and prompted a reevaluation of basic airmobile doctrine. The 101st Airborne Division alone, for example, had 84 of its aircraft destroyed and another 430 damaged. Combined U.S./ARVN helicopter losses totaled 168 destroyed and 618 damaged. All totaled during the operation U.S. helicopters had flown more than 160,000 sorties and 19 U.S. Army aviators had been killed, 59 were wounded, and 11 were missing. ARVN helicopters had flown an additional 5,500 missions. U.S. Air Force tactical aircraft had flown more than 8,000 sorties during the incursion and had dropped 20,000 tons of bombs and napalm. B–52s had flown another 1,358 sorties and dropped 32,000 tons of ordinance. The Communists brought down seven U.S. fixed-wing aircraft over Laos with six being Air Force and one Navy. Two of the Air Force crew members died and one U.S. Navy aviator.75 While the resulting destruction of troops and supplies was also significant the strategic effects were temporary at best. In retrospect, it should be clear that leaders in Hanoi were willing to expend as many lives of their own people as necessary and knew they could always count on resupplies from the So...
viet Union and the People’s Republic of China in order to continue to fight the war. They also knew to win the only needed to get the U.S. to leave in order to face the South alone.

**Some Final Thoughts**

Before leaving the issue of results I must commit what to many historians is heresy and speculate on what might have been. If there is to be any value in this study then there must be lessons to learn. Fighting a war should be something Americans do as a last resort. Once engaged the battles that are fought should have a concept or theory of victory. If there is no clear cut purpose for the combat or the lives sacrificed then the struggle is a waste of lives and resources. So let us ask ourselves what the purpose of fighting *Lam Son 719* was. How would leaders know when they had attained a definable victory that would help bring the South Vietnamese and Americans closer to a strategic victory? Indeed, what elements were present to support the notion that success was even possible?

In the end, what President Thieu called a “victory” and President Nixon described as a successful step toward Vietnamization ultimately proved to be the first step in the final defeat of the ARVN and the government of South Vietnam. Thieu’s notion it would help him win the fall elections was correct, however, it weakened his military and continued a pattern of ineptitude, corruption, and politicization of his military leadership. His interference in *Lam Son 719* would foreshadow a similar problem that nearly cost him his nation during the Easter Offensive of 1972 and did during the final campaigns of 1974 and 1975.

**Thieu’s notion it would help him win the fall elections was correct, however, it weakened his military**

As for the elements present for potential victory those included airpower and the ability to draw the enemy into the open in order to destroy major components of their military and logistics network. In 1944, during the World War II Italian Campaign and, during the Korean War between May and December 1951, the iconic Air Force General Hoyt Vandenberg had his forces initiate aerial interdiction operations known as Operation *Strangle*. In Korea Opera-
tions Strangle I and II incorporated all kinds of aircraft and ordnance designed to destroy, vehicular roads, bridges, logistics networks, and massed troops. One of the main components of these operations was to use Allied ground troops to engage the enemy and draw them into the open to make aerial attacks more effective by exposing their supply lines and unit formations. While these air campaigns enjoyed great success, at first, the lack of the number of air assets and the fact that the largest bombers available in Korea were B–29s whose payloads could not match the B–52s in Vietnam meant that as the operations died down the rate of destruction did too.76

In the aftermath, Vandenberg, one of the great students of airpower, argued that the reason the operations did not completely devastate the enemy was that none had been dedicated efforts. Instead of blowing up a few roads and bridges he argued that the air operations should have been relentless and constant never allowing the enemy a respite they could exploit to repair the damage. This same problem existed throughout bombing campaigns in Vietnam. Rolling Thunder was continuously being interrupted to calculate the political impact it was having while Commando Hunt had difficulties locating targets and not

enough aircraft with bad weather equipment to keep up pressure on the Communists. Nor did they have the ground force component to draw the enemy out from under the three-canopy jungles of Southeast Asia.77

**Instead of blowing up a few roads and bridges he argued that the air operations should have been relentless**

Ironically, one ancillary component planners of the Lam Son 719 incursion included was for the ARVN to draw the enemy into the open to be cut down by American aircraft. However, this was an “oh, by the way” aspect that was not considered carefully or in detail. It should have been the primary aspect of the entire campaign. Of course, this would not have proved Nixon’s Vietnamization policy was working. In addition, instead of allowing the undersized ARVN force maneuver room plans called for the creation of static defensive positions reminiscent of the French tactics, especially at Dien Bien Phu. One has to wonder what might have happened had the ARVN been able to draw the gathering enemy troops toward the South Vietnamese bor-
der and American airpower, supported by SEAD aircraft, had the capacity and directive to pound them around the clock for days or even weeks on end.78

Students of airpower need only look at the incredible success of the first Persian Gulf War in which highly organized airstrikes skillfully directed by a single air commander employing a well-conceived plan executed by a dedicated and knowledgeable group of air planners, like then Lt. Col. (later Lt. Gen.) Dave Deptula, and professional air crews can accomplish. Similar results were eventually realized during Operation Allied Force.79

**Many of the kill numbers were exaggerated or drawn from dubious counting methods**

Of course, many will argue that the U.S. was already downsizing its force and were not allowed to cross into neutral Laos. As a result, they would never have enough aircraft to carry out such an intense operation without curtailing *Commando Hunt* and other air attacks. If this is true and America was not willing to send enough air assets to assure success then the entire operation was a futile act doomed to fail, which it most certainly did. Worse, if American and South Vietnamese political leaders had even an inkling this was the case then one must question their moral courage in sending so many young men to their deaths.

One important fact that supports the notion that constant airpower attacks might have been effective is the numbers that AC–130 fixed-wing gunships racked up along the Trail during *Commando Hunt V*. According to Lt. Col. Henry Zeybel, a sensor operator on a Spectre,80

> Twenty-five trucks was a good night’s work during the first half of the 1970-71 season. Few crews attained that figure. When American and South Vietnamese soldiers drove into Laos during Lam Son 719 in February and March, a total of 25 became a joke. Each night at least one gunship destroyed that many or more. The incursion into Laos interdicted the Trail’s eastern roadways and forced traffic to the fewer roads along the less complex western part of the Trail. Because the NVA did not reduce its volume of traffic, jams resulted, and convoys backed up. From Spectre’s viewpoint, the same number of targets had been compressed into an area half as great. Searching was eliminated. The Trail was a shooting gallery. This was the only time that NVA maintenance teams could not keep the roads cleared. Hulks sat untouched for days, and bottlenecks developed where convoys piled up in ruin. Moving vehicles were forced to weave around scattered wreckage. In the eyes of the Spectre sensor operators, it was lovely chaos.

While even the gunship crews later admitted many of the kill numbers were exaggerated or drawn from dubious counting methods, they did destroy a lot of NVA assets. Edward Mark points out that complete destruction of trucks was difficult and yet recent research indicates that no matter how many were actually destroyed the numbers were particularly significant during Lam Son 719 and could have been even higher. With the significant resupply of trucks from the Soviet Union and China, to truly stop truck traffic required a more robust and continuous attack strategy one that should have been considered.81 As Col. Zeybel concludes,82

> The wealth of vehicles influenced the sensor operators’ attitude regarding damage assessment. When targets were scarcer, they hit a vehicle with several 40-mm rounds in hopes of making it burn. They succeeded just about half the time. Nearly as decisively, those trucks that did not burn, nevertheless, did sustain multiple hits. The large number of truck sightings during Lam Son 719 caused a shift in tactics. Crews spent less time on each truck in order to strike more trucks. The single-hit criterion was liberally applied. As a result, crews burned or blew only one out of four targets. Spectre’s March figures were 3361 destroyed and 819 damaged, a third of the season’s total.

Ultimately, the inability to employ enough constant U.S. airpower and the poor and shortsighted operational planning brought on by pressures from Washington to act swiftly in order to verify Nixon’s Vietnamization policy led to this defeat. By diverting aerial assets still in theater meant that the constant attacks necessary to fend off NVA offensive action proved decisive against the ARVN since they were outnumbered two to one. In this regard it is important to remember that many planners and officials believed that had the Americans taken on such an effort earlier in the war they would have needed a minimum of 60,000 troops. Add to this the slow pace of operations brought on by the tentative ARVN leaders, allowed the NVA to mass 36,000 troops in the area and push the ARVN out. Only Allied air assets and Army helicopters saved as many as they did and kept the South Vietnamese from utter defeat!

**The inability to employ enough constant U.S. airpower... led to this defeat**

Following the operation, Gloria Emerson of the *New York Times* interviewed ARVN survivors concluding their morale was shattered. “What has dramatically demoralized many of the South Vietnamese troops is the large number of their own wounded who were left behind, begging for their friends to shoot them or to leave hand grenades so they could commit suicide before the North Vietnamese or the B–52s killed them.”83 In the end, *Lam Son 719* was a strategic defeat but not a mortal one—yet! What would come during the next four years would cause the injured patient to die of his wounds.


15. See Note 12; Loye, et. al. CHIECO Report, pp. 36-52.


17. Palmer, Summons of the Trumpet, pp. 304-305; Nalty, The War Against Trucks, pp. 252; Prados, The Blood Road, pp. 320-325.


24. Nolan, Into Laos, p. 31; Willbanks, A Raid Too Far, pp. 52-60.


29. For an eyewitness account of the ARVN incursion itself, see Hinh, Lam Son 719, pp. 58-97.

30. Fulghum, et. al., South Vietnam on Trial, pp. 66-68; Sorley, A Better War, pp. 233-236. For more details, see Sander, Laos 1971, chapter 7; Willbanks, A Raid Too Far, 70-86.


34. Sorley, A Better War, p. 241.


42. Willbanks, A Raid Too Far, pp. 91-110; Prados, The Blood Road, p. 338; Fulghum, et. al., South Vietnam on Trial, pp. 76-77.


44. Head, War From Above the Clouds, pp. 48-50.

45. Nalty, Air War, p. 262.


47. Brungess, Setting the Context, pp. 4-8.


49. Loye, et. al., CHECO Report, pp. 89-110.


51. Hinh, Lam Son 719, p. 64; Fulghum, et. al., South Vietnam of Trial, p. 82.

52. Nalty, Into Laos, pp. 143-145.

53. Ibid., p. 150.

54. Ibid., pp. 145-150.


56. Fulghum, et. al. South Vietnam on Trial, p. 85. The term BUFF was coined by B-52 aircrews and meant “Big Ugly Fat Fellow in polite company. Another colorful name for the B-52 was “Aluminum Overcast.”


58. Prados, The Blood Road, p. 361.


62. Sorley, A Better War, p. 253. Also see, Head, War From Above the Clouds, pp. 48-49. In his recent book Night Hunters: The AC-130s and their Role in U.S. Airpower, (College Station, Texas: Texas A&M University Press, 2014), p. 61, [hereafter Night Hunters], Dr. Head explores the role of Air Force fixed-wing gunships in the War and in operations such as Lam Son 719.


64. Head, Night Hunters, p. 61; Karnow, Vietnam, p. 630.


69. Willbanks, A Raid Too Far, pp. 175-201. For Dr. Kissinger’s views on Lam Son 719, its effects on the larger war and peace talks see Kissinger, White House Years, pp. 991-1111.

70. Nalty, Air War, p. 273.


75. Nalty, Air War, pp. 270-273. For detailed casualty numbers and weapons destroyed, see Loye, et. al., CHECO Study, pp. 172-174.


78. For more on air operations, see Tilford, Setup; Head, “Playing Hide and Seek with the Trill.”

79. For more on Dien Bien Phu, see Bernard Fall, Hell in a Very Small Place; the siege of Dien Bien Phu, (Philadelphia: Lippincott, 1966, also New York: Da Capo Press, 1967); Head, Dien Bien Phu,” pp. 18-43.


82. Zeybel, “Truck Count.”

83. Emerson, “Saigon’s Army Shaken.”
The Air Battle for England: The Truth Behind the Failure of the Luftwaffe’s Counter-Air Campaign in 1940

The “Battle of Britain” is frequently referred to as history’s first strategic air campaign – and a failure at that. The most oft quoted reason for its failure is that the Luftwaffe’s leadership lacked any real interest in strategic air power and failed to invest in a large, four-engine heavy bomber in the years preceding World War Two (WWII). Additional reasons are sometimes cited, but it most commonly comes down to this brief, succinct, simplistic, “sound bite” conclusion that, in the larger perspective of air campaigning, lacks a fundamental understanding of air power, its necessary synchronous elements, and the ability to employ them simultaneously and synergistically.

The Luftwaffe: The Doctrine of Offensive Air Power

When Hitler officially unveiled the Luftwaffe on February 26, 1935, it came complete with an air power doctrine that had been formulated almost ten years earlier, in the secrecy of the Reichswehr’s Truppenamt Luftschutzreferat (“Troop Bureau, Air Defense Desk”). Entitled Richtlinien für die Führungs des operative Luftkrieges (“Directives for the Conduct of the Operational Air War”) and published in May 1926, this document became the guidance for organization, targeting strategy, and operational parameters for the nascent Luftwaffe and its wartime roles. Two primary missions were envisioned: those flown by a “tactical air force” oriented towards supporting the army and navy and those conducted by a “strategic air force” organized for the destruction of targets in the enemy homeland.

Authored by Lieutenant Colonel Helmuth Wilberg and his three-man “air staff”, the “Directives” postulated that the “strategic air force” might have a decisive effect in demoralizing the enemy population (a notion popularized by Italian air power theorist Giulio Douhet) and by damaging the enemy’s armaments industries, electricity generating systems, transportation networks, and port facilities. The “strategic bomber divisions” would be equipped with long-range heavy bombers – able to reach the USSR’s Ural Mountains, or the UK’s northern Scottish Coast (read “Scapa Flow”) from bases within Germany – strategic reconnaissance aircraft, and long-range, heavily armed, two-seat escort fighters to enable the bomber formations to penetrate enemy air defences. Because of their inherent range capability, these units were seen as the only force capable of attacking the enemy homeland from the very outset of hostilities, yet they could also support a ground or maritime offensive by bombing enemy transportation nets, seaports and naval bases.1

In 1934 Wilberg, now a major general, was appointed by the Luftwaffe chief of staff (COS), Generalleutnant Walter Wever, to codify the service’s operational air doctrine, which was published the following year as Luftwaffe Dienstvorschrift 16: Luftkriegführung (“Luftwaffe Service Regulation 16: Air War Guidance”, or LDv 16). The eight-year evolution of the
Luftwaffe’s offensive doctrine had eschewed its earlier Douhetian notions saying, “Attacks against cities made for the purpose of inducing terror in the civilian populace are to be avoided on principle.” Instead, the published guidance identified the primary mission of the Luftwaffe as “the attack on the sources of enemy power.” These included armaments industries, food production, import facilities, power stations, railway networks, military installations, and government administrative centers.

During this secret, formative period, the development of German military aviation closely paralleled the Luftwaffe’s doctrinal guidance. The same year the Luftwaffe was revealed and LDv 16 was published, the embryotic air arm had six squadrons of awkward and inadequate Dornier Do 11/23 twin-engine bombers and seven equipped with Junkers Ju 52/3m trimotor bomber/transport, all soon to be replaced with two modern, twin-engine bomber designs.

Additionally, the year two prototype four-engine, long-range, heavy bombers, the Do 19 and Ju 88, were received for testing. Intended to carry 1,600kg (3,527lb) of bombs for 2,000km (1,243 miles), the so-called “Ural Bombers” proved to be chronically underpowered and could not achieve their required performance specifications.

Wever was disappointed in both designs and, even before their first flights – just prior to his death in a crash in June 1936 – he ordered a new study called “Bomber A”. This project eventually resulted in the problem-plagued Heinkel He 177 heavy bomber. It was planned to be operational by mid-1942, with a force of 500 bombers (of 703 ordered) available by April 1 the following year.

The primary mission of the Luftwaffe [w]as “the attack on the sources of enemy power”

In February 1937, the first squadrons of the new, purpose-designed, twin-engine He 111B medium bomber and the Do 17E twin-engine mailplane-cum-light bomber joined the Luftwaffe’s bomber force. While the latter, carrying only 500kg (1,102lb) of bombs, was to be used almost exclusively for relatively short-ranged airfield attacks and battlefield interdiction, the Heinkel, with three-times the bombload, was intended for much deeper interdiction (rail-ways, seaports, other logistics choke points) and strategic bombardment with a bombload almost identical to the “Ural Bomber’s”.

With the arrival of the 661-mile (1,065km) range He 111, on April 29, 1937 Generalleutnant Albert Kesselring (Wever’s replacement) decided that Germany could not afford to spend twice the resources – twice as many engines, double the fuel consumption, and 2.5 times the aluminum – for roughly the same bombload, so he accepted the shorter range medium bomber, which he concluded could perform both strategic and tactical bombing, to a maximum of 500km (300 miles) beyond Germany’s borders or the battlefront.

Kesselring had the full agreement of Generaloberst Hermann Göring, the corpulent, vainglorious leader of the Luftwaffe. Although a Fokker D.VII fighter pilot and ace during WWI, Göring came into his own as a Nazi politician and, once Hitler came to power, he oversaw the development and expansion of the Luftwaffe as a basis for his power and influence. Prior to Hitler beginning WWII, he only exerted his command authority over personnel moves and aircraft production. Göring was no air power expert: he had not flown an aircraft since 1922, had no knowledge of, or experience in, air campaigning, and left doctrine, technological development and combat operations to the professionals, at least until the wartime employment of “his air force” put his prestige at risk. Regarding four-engine bombers, he is quoted to have said, “Der Führer will never ask me how big our bombers are, but how many we have.”

Whether their bombers were powered by two engines or two, Luftwaffe’s leadership accepted as fundamental the need for fighter escort to get the bombers to their targets. This requirement resulted in the long-range Messerschmitt Bf 110 Kampfzerstörer (“battle destroyer”) “heavy fighter”, which first flew on May 12, 1936. A slim, fast, twin-engine two-seater, the Zerstörer mounted a nose battery of two 20mm cannon and four 7.92mm machine guns, and was intended to range ahead of the bombers and sweep away enemy interceptors before them, as well as
provide close escort for the He 111s and Do 17s. What was not appreciated was that the “destroyer’s” adversaries, being primarily small, light interceptors, would have a decisive maneuvering advantage once combat was joined.10

**Luftwaffe leadership accepted as fundamental the need for fighter escort to get the bombers to their targets**

The Zerstörer’s likely adversaries were not unlike the Luftwaffe’s own defensive “light fighter”, the Messerschmitt Bf 109, first flown May 28, 1935. A sleek, fast, single-seater, the Bf 109 was designed as a quick-climbing bomber interceptor, mounting three (later four) 7.92mm MG 17 machine guns. Sacrificing, to a degree, some of the maneuverability traditional to fighters, the Bf 109’s high performance meant that it could attack swiftly and disengage easily, at its pilot’s discretion, obviating the need to out-maneuver an opponent in a dogfight. Planned as a frontal defensive fighter – assuming the mantle of the Fokker D.VII during the last year of WWI – and point defense interceptor, doctrinally it was intended to provide air superiority ("Luftüberlegenheit") over the frontlines, to a depth of approximately 50km (30 miles) beyond, as well as defending vital industrial and political centers within Germany11. Consequently, the thought of extending the type’s limited range/endurance through the use of jettisonable external fuel tanks never occurred to the Luftwaffe’s leadership... until it was too late.

The doctrinal requirement for fighter escorts was so well accepted that the Luftwaffe’s initial procurement and force structure plans intended for half of the Jagdwaffe (“fighter force”) to be “heavy fighters”.12 However, the Bf 110’s development lagged while the Bf 109 was improved quickly through four iterations, resulting in the superb Bf 109E “Emil” and, when Hitler began WWII by invading Poland, seven of ten Zerstörergruppen (“destroyer groups”) in the Luftwaffe’s order of battle were actually equipped with the Bf 109D as interim equipment.13

**The Luftwaffe’s Air Campaign Plan: Studie Blau (“Study Blue”)**

The Luftwaffe’s first deliberate planning for a bombing campaign against Great Britain was undertaken in Au-
gust-September 1938. As Hitler made the first bellicose moves to subjugate Czechoslovakia, Göring feared a strong British reaction – by the Royal Air Force (RAF) Bomber Command – and directed General der Flieger Hellmuth Felmy, commander of what would soon become Luftflotte (“Air Fleet”) 2, to provide an assessment of his command’s counter-offensive potential.

Felmy’s “plan study” determined: “A war of annihilation against England appears to be out of the question with the resources thus far available,” because most industrial targets lay beyond the range of his medium bombers, the meager size of his bomber force was limited by the lack of modern airfields, and there were no escort fighters yet available. Felmy’s conclusion – that the “only solution... was to seize bases in the Low Countries [Holland and Belgium] before undertaking an air offensive against the British” – became the basis for the Wehrmacht headquarters’ (OKW – Oberkommando Wehrmacht) planning for the Western Campaign two years later. Additionally, he recommended that new four-engine airliners, such as the FW 200 “Condor” and Ju 90 (a development of the cancelled Ju 89 “Ural Bomber”), be modified as interim bombers, awaiting the introduction of the He 177.

Real planning at Oberkommando der Luftwaffe (ObdL; Luftwaffe headquarters or HQ) began the next year with an intelligence report by Major Josef Schmid. An ambitious non-flying officer, Schmid was a close associate of Göring’s who made his mark on the ObdL leadership by producing three glowingly optimistic intelligence assessments in early 1939. Using information from the Luftwaffe’s air attaché in London, the Abwehr espionage network, Generalmajor Wolfgang Martini’s signals intercept service, and photographs from Colonel Theodor Rowehl’s clandestine photo-reconnaissance unit using camera-equipped He 111C “mailplanes” flying Lufthansa “route proving trials”, Schmid assembled a collection of data into a coherent – but not completely accurate – intelligent assessment code-named Studie Blau (“Study Blue”).

A preliminary report was published on May 2, 1939 and sent to Göring and three Luftflotte commanders. Schmid warned that RAF fighter strength was projected to match the Jagdwaffe by 1941 but that current “British defences were inadequate to defend anything more than the general areas around London. This would leave the rest of England open to attack.” Through Martini’s service, Schmid and the Luftwaffe leadership were aware of the

The superb Messerschmitt Bf 109B single-seat “frontal fighter”, designed to achieve aerial superiority over the front, to a depth of 30 miles beyond, and provide air defense for the Third Reich’s vital industrial centers. (NMUSAF)
RAF’s new radar (called “radio direction finding”, or RDF, as a security/deception measure) network, but no one recognized its capabilities or potential, and Schmid did not mention it in his report.21

Felmy disagreed with Schmid’s assessment and on May 13 countered by issuing Luftflotte 2’s Studieplan 39 which, resulting from a five-day staff exercise witnessed by the Luftwaffe’s new COS, Generalmajor Hans Jeschonnek, and the COSs from the other two air fleets, reiterated that a successful long-range strategic air campaign against British industries was doubtful, even using projected 1942 equipment/force structure.22

Jeschonnek returned to ObdL headquarters and, once his operations staff had reviewed both studies, published a final appraisal on May 22, deciding that a strategic air campaign was not possible because “the [British] western and southern ports lay beyond the range of Luftflotte 2,” and added “furthermore, terror attacks on London as the stronghold of the enemy defense would hardly have a catastrophic effect or contribute significantly to a war decision.”23 With this guidance and the target list provided by Studie Blau, on July 9, 1939 ObdL issued instructions to begin developing an air attack plan against British war industries and supply centers once closer bases, or longer-range bombers, were acquired.24

The Prequel: “Case Yellow”, the Invasion of France and the Low Countries

The purpose of [the Case Yellow] offensive will be... to win as much territory as possible in Holland, Belgium, and Northern France, to serve as a base for the successful prosecution of the air and sea war against England. Hitler’s Directive No. 6 for the Conduct of the War, October 9, 193925

The initial German air attacks destroyed half the Dutch air force and two-thirds of the Belgian

By the time the Wehrmacht unleashed its mechanized whirlwind upon the Western Democracies, the Luftwaffe had gathered 26 Bf 109 and nine Bf 110 gruppen to support the 40 bomber groups used in the onslaught.26 The initial German air attacks destroyed half the Dutch air force and two-thirds of the Belgian, the Jagdwaffe establishing aerial supremacy over the Low Countries that, in turn, resulted in massacres of RAF and Armée de l’Air light bombers when they attempted to stem the dramatic panzer penetrations of Belgian frontier defences on May 11-12. Tragically, the scene was repeated over the next two days when the panzers forced their way across the Meuse River at Sedan, France.27

During the following week, the rampaging panzers drove headlong to the Channel Coast, forcing the British Expeditionary Force (BEF) Air Component – after suffering heavy losses – to evacuate to England. Once that happened, the RAF’s Fighter Command, commanded by Air Chief Marshal (ACM) Hugh Dowding, became responsible...
for providing fighter protection for the BEF and covering “Operation Dynamo”, its evacuation from Dunkirk.

When the Royal Navy (RN) initiated “Dynamo” five days later, Fighter Command’s No. 11 Group – the component covering southeast England and closest to Dunkirk – had 21 squadrons available, with a serviceable strength of 114 Supermarine Spitfires, 137 Hawker Hurricanes, and 18 Boulton Paul Defiants. Five Spitfire squadrons were retained for home defence, leaving 16 units – about 200 fighters – to provide air cover over the beaches on an intermittent, rotational basis. Almost completely inexperienced, saddled with outmoded and disadvantageous three-plane tactics, and flying beyond the effective range of the new Chain Home radar system, the British pilots operated under severe handicaps against their battle-hardened adversaries.28

In eight days of combat, the RAF lost 36 Spitfires, 45 Hurricanes, and eight Defiants while shooting down 36 Messerschmitts and 42 bombers, generating a “kill ratio” of 2:1 in favor of the Jagdwaffe, the rest being lost to bombers’ defensive fire.29 These losses, plus the “wastage” of 386 Hurricanes in France (from May 10 to June 18) left Dowding’s command with 367 Spitfires and Hurricanes, 36 of them unserviceable.30 While these losses would soon be “made good” – in April, Hurricane and Spitfire production surpassed Messerschmitt’s monthly average of 140 Bf 109Es and by July exceeded 500 fighters per month – far more problematic was the loss of 186 pilots (150 KIA and 36 POW) since the beginning of the German offensive.31

Operation “Fall Gelb” had achieved its intended purpose, completely occupying Holland, Belgium, and Northern France, providing the Luftwaffe’s requisite “base for the successful prosecution of the air and sea war against England.” From the airfields along the south coast of the English Channel, Generalfeldmarschall Albert Kesselring’s Luftflotte 232 began a harassment campaign (Störangriffe). Nothing more ambitious was attempted because, after moving to bases within range of England, the Kampfgeschwadern (bomber wings) needed time to recuperate and regroup.33 During the intense six-week Western Campaign, the two Luftflotten had lost 438 of their 1,120 twin-engine bombers. By July 20 the front-line bomber force was back up to 1,131 aircraft, with another 129 in Norway.34

This initial phase of operations, called the Kanalkampf (“Channel Battle”), began on July 19 with attacks on Dover harbor. Almost daily, six Fliegerkorps (“Flying Corps”, three in each Luftflotte) attacked ships in the Channel, sinking 18 small steamers and four destroyers, prompting the British Admiralty to suspend merchant shipping through the Straits of Dover during daylight. Fliegerkorps I raided Dover repeatedly, culminating in an attack that caused the RN to withdraw its destroyer flotilla.35

The Reason: “Unternehmen Seelöwe”

The aim of [Operation Sea Lion] will be to eliminate the English homeland as a base for the prosecution of the war

The RAF’s first modern fighter was the Hawker Hurricane Mk I. A relatively heavy, mixed-construction monoplane, the Hurricane was inferior to the Bf 109E in performance and maneuverability. (Private Collection)
against Germany and, if necessary, to occupy it completely. Hitler’s Directive No.16, “On preparations for a landing operation against England”, July 16, 194036

Euphoric over the surprisingly fast and relatively easy conquest of France, on July 2 Hitler – despite the fact that Wehrmacht pre-war planning never considered a cross-Channel invasion of England – began toying with just such a notion and ordered the three services to provide assessments for this contingency. The services submitted independent studies on July 16. The Luftwaffe’s offering was a revision of Schmid’s November 22, 1939 “Proposal for the Conduct of Air Warfare Against Britain”, a rather sketchy strategic targeting plan developed from Studie Blau.37 Two weeks later, in a meeting at Hitler’s Berchtesgaden HQ, the three divergent approaches were hammered into a provisional concept of operations (CONOPS), issued on August 1† as Directive No. 17:

In order to establish the necessary conditions for the final conquest of England... I therefore order the Luftwaffe to overpower the English air force with all the forces at its command, in the short time possible. The attacks are to be directed primarily against flying units, their ground installations, and their supply organisations, but also against the aircraft industry.29

The primary task of the Luftwaffe ... was to mount an offensive counter-air campaign

Commonly and erroneously called an “invasion plan”, this instruction was never more a than compilation of requirements that each service had to fulfil to make an operations plan viable, as well as providing an outline of the CONOPS for planning such an undertaking. It established tasks for each service, set logistics and communications arrangements, and required the preparations to be completed by September 15.40

The primary task of the Luftwaffe – pared back considerably from its quixotic strategic bombing proposal – was to mount an offensive counter-air (OCA) campaign to eliminate the RAF as a threat to any cross-Channel operation. Meanwhile, the Kriegsmarine gathered the “invasion barges” and the Heer (army) trained for the new and untried task of amphibious assaults.41 In this order, the Luftwaffe was directed that “the English air force must be so reduced morally and physically that it is unable to deliver any significant attack against the German crossing.” 42

Following suit, the next day Reichsmarschall Göring’s HQ issued its “Preparations and Directives for ‘Unternehmen Adler’ (‘Operation Eagle’).” Normally reticent to involve himself in the actual operations of “his Luftwaffe”, Göring’s personal prestige was now “on the line”, so he suddenly took an uncharacteristically intrusive interest in directing the Luftwaffe’s showcase campaign. ObdL’s 13-day attack plan was designed to “roll back” the RAF, bombarding airfields and aviation industries in three phases, each advancing progressively closer to London. For daylight attacks London was considered the geographical extent of daylight bomber operations, dictated by the 125-mile operational range limitation of escorting Bf 109Es.43

The single-engine Messerschmitt was marginally superior to both the Hurricane and Spitfire when engaged above 20,000 ft, with a higher combat ceiling, faster top speed, heavier armament, and better diving capabilities. Flown by veteran, combat-experienced pilots using superior tactics, the “Emil” proved its ascendancy during Kanalkampf by shooting down 128 Hurricanes and Spitfires, while losing 85 of their own to RAF day fighters, thus establishing a 1.5:1 victory-to-loss ratio (or “kill ratio”) that would prove consistent throughout the campaign.44

On the day Directive No. 17 was issued, the two Luftflotten possessed 702 serviceable Bf 109Es (of 813 total), in 23-Jagdgruppen. Under the proposed CONOPS, one fighter wing (Jagdgeschwader) would accompany each Kampfgeschwader during its entire mission – flown at 190mph at 13-15,000 ft – while another took off later, and – flying at the more tactically appropriate 300mph above 20,000 ft – would sweep ahead, attacking any interceptors rising to meet them.45 Close escort, a restrictive mission that tied the escorts to the bombers and put them at a serious tactical disadvantage, was known as Jagdschutz (“fighter protection”) and the free-ranging and far more effective fighter sweeps were called freie Jagd (“free hunt”).

The Battle: “Unternehmen Adler”

For the Germans, the “Battle of Britain” began on August 12 with preliminary bombardment of six radar stations and three coastal fighter airfields, intended to “open the door” for the major assaults the next day. “Adlertag” (“Eagle-day”) saw Luftflotten 2 and 3 mounting 1,485 bomber and fighter sorties, Fighter Command counteracting with 727 sorties.46

Anticipating that the opening attacks had prompted Dowding to reinforce 11 Group from his northern groups, the next operation (August 15) included Luftflotte 5, launching 63 He 111s and 27 Ju 88As from Norway and Denmark, escorted by 34 twin-engine Bf 110 and Ju 88C Zerstörern. Nos. 12 and 13 Groups responded with five squadrons/42 fighters, shooting down 16 bombers and 7 Messerschmitts, for the loss of one Hurricane.47 This sharp defeat deterred Luftflotte 5 from participating in any further daylight bombing missions in the campaign and proved beyond doubt that the bombers needed escort by Bf 109Es.48

Adlerangriff’s (“Eagle attack’s”) first phase, which operated across a broad, 280-mile wide front, attempting to neutralize Coastal and Bomber Command bases9 as well as fighter airfields, culminated in heavy attacks on nine RAF airfields and one radar site on August 18. Fighter Command responded with 766 sorties, but was unable to blunt any of the attacks except the one on the Poling RDF station, during which two squadrons shot down 12 Junkers Ju 87B “Stukas”.50
The Bf 109E continued to assert its superiority, shooting down 114 RAF day fighters (20 per cent of initial strength) during this period for the loss of 60 “Emils” (seven per cent of the force), a 1.9:1 “kill ratio”. However, 67 Bf 110s (27 per cent of initial strength) were lost during the same six-day period, the Zerstörer proving itself incapable of performing its mission and forcing reliance on the short-ranged Bf 109E “frontal fighter” for bomber escort.51

We have reached the decisive period in the air war against England. The vital task is to turn all means at our disposal to the defeat of the enemy air force. Our first aim is the destruction of enemy fighters.

Hermann Göring, Meeting with Luftwaffe commanders and staff officers, Karinhall, August 19, 194052

In the meeting to determine and disseminate the Reichsmarschall’s guidance for Phase II, Schmid’s faulty intelligence assessments convinced Luftwaffe leaders that Phase I was successfully completed, with “eight major air bases... virtually destroyed” and estimated 574 British fighters shot down. This gave the Bf 109E a perceived 5:1 “kill ratio”, encouraging further fighter-vs-fighter combat.53

However, adjustments were needed for the second phase. The apparently ineffective attacks on the coastal radar stations were discontinued and the obsolescent, fixed-gear Stuka dive-bombers were withdrawn (after losing 40 aircraft/12 per cent of the force) to preserve them for the proposed invasion. More critically, the loss of 127 twin-engine bombers (ten per cent of total force) dictated increased close escort by Bf 109s. Consequently, most of Luftflotte 3’s fighter units were transferred to Luftflotte 2, whose area of responsibility included London. From this point on, Generalfeldmarschall Hugo Sperre’s Luftflotte 3 would primarily conduct night attacks against industrial targets while Kesselring’s Luftflotte 2 “took the war to the enemy” by bombing No. 11 Group airfields closer to London.54

The bombing of at least one sector station each day repeatedly disrupted communications

While attacks against radar stations were abandoned as ineffective, Martini’s signals intercept service soon discovered another vulnerable link in Dowding’s air defense network: No. 11 Group’s “sector stations” that vectored the British fighters to intercept the incoming bombers.55 Six of these seven airfields became priority targets for Adlerangriff Phase II, attempting to disrupt ground control of No. 11 Group’s 21 fighter squadrons, placing airborne formations at a disadvantage.56

The movement of six Jagdgruppen required several days, postponing renewed operations until August 24, Kesselring beginning Phase II with 1,030 sorties, launching major attacks against two sector stations and damaging a coastal airfield so badly it had to be abandoned. The tempo and intensity steadily increased, with 1,450 sorties being flown a week later that included heavy attacks on three sec-
By the end of the first week of September, Fighter Command was in desperate straits

Within a week the concentrated attacks heavily damaged six sector stations, with Biggin Hill – bombed six times in three days – reduced to operating only one squadron. Sector stations Kenley and Debden and two other fighter bases were also battered into degraded operations. Moreover, the bombing of at least one sector station each day repeatedly disrupted communications with Fighter Command’s Operations Room at Bentley Priory – the sole source of raid location information – frequently placing some of Park’s Spitfire and Hurricane squadrons at untimely disadvantage. At this point Dowding came to the conclusion that, should the beating continue, he “had no alternative but to withdraw 11 Group from southeast England altogether”, thus giving Göring the victory.58

By the end of the first week of September, Fighter Command was in desperate straits. During Phase II, Dowding lost 273 day fighters in combat, 208 of them to Bf 109Es (which lost 146). Despite the “Emils” continued favorable “kill ratio” (now 1.4:1), Fighter Command’s operational strength remained steady with 358 operational day fighters due to the timely arrivals of replacements. However, Dowding’s reserves (aircraft in maintenance, repair, and storage) dwindled from 518 (on July 6) to 254 (September 14) despite deliveries of new aircraft.59

Far more critical for Britain was the loss of virtually irreplaceable fighter pilots, with 390 killed, severely injured/wounded, and missing in action between August 8 and September 1. By the latter date, average squadron manning was reduced from 26 to 16, with only half (500 of 1,023 total) being combat experienced – the remainder having less than 20 hours on fighters. Dowding wrote, “The incidence of casualties became so serious that a fresh squadron would become depleted and exhausted before any of the resting and reforming squadrons were ready to take its place.”60

An Untimely Change in Strategy/Targets

We have no chance of destroying the English fighters on the ground. We must force their last reserves… into combat in the air.
Hermann Göring, Meeting with Luftflotte commanders, The Hague, September 3, 194061

Despite Schmid’s claim that, since August 8, 18 RAF airfields had been knocked out and 1,115 RAF aircraft had been destroyed, Göring was frustrated by the fact that Dowding’s Fighter Command continued to consistently mount a determined and effective defense, shooting down 107 bombers during Phase II. Encouraged by the Bf 109Es’ inflated “kill ratio”, Göring decided to switch the focus of the offensive from the destruction of RAF fighters at their bases to “luring the RAF into battle” by attacking London.62 To the Luftwaffe leadership this had the perceived advantage of returning to the doctrinally sound “strategic attack” by striking the British Empire’s vital economic center – especially the London docks – and, to Hitler, it retaliated for the RAF’s attempted night bombing of Berlin on August 25/26. Göring, sensing his reputation and future were now at stake, assumed direct control of air operations.63

On September 7, the first attack – 348 bombers covered by 617 fighters approaching in a massive 20-mile wide formation – surprised Park’s controllers by initially feint-
An obsolescent fixed-gear design with minimum defensive armament, the much feared Junkers Ju 87B “Stuka” was shot down in droves by the RAF’s eight-gun fighters, resulting in it being withdrawn to preserve the dive-bomber forces for the actual invasion. (IWM C 2418)
Although only six bombers were lost to RAF fighters (four more to AA fire), two days later Göring made his final, fateful decision: double the awkward and unworkable close escorts of the bombers, thus reducing the fighters available for the free-ranging and effective freie Jagd fighter sweeps. From this point on three fighter wings (Jagdgeschwadern) were required to protect each Kampfgeschwader, thus limiting bomber operations to less than 300 sorties daily.65

The anticipated climax to the campaign was on September 15 with 277 bombers, escorted by 650 fighters, arrowing straight for London – no feints this time – in a 10-mile wide stream of warplanes approaching in two large waves. The Germans expected much of this attack – ObdL predicted it to be “the decisive blow”.66

Unwilling to admit defeat...the Luftwaffe’s air campaign lapsed into sporadic raids

It was decisive – but in the reverse of that anticipated. Nos. 11 and 12 Groups responded with 336 defensive sorties. While they only shot down 16 German bombers and five escorts,67 after a month of attacks, it was clear that Fighter Command still was not beaten and air superiority over southeast England was no closer to attainment. Despite destroying 26 Hurricanes and Spitfires, it was now obvious to the Nazi leadership that there was no hope of a successful cross-Channel invasion of England – the Luftwaffe had lost the “Battle of Britain”.68

The enemy air force is still by no means defeated; on the contrary, it shows increasing activity. The weather situation as a whole does not permit us to expect a period of calm. The Führer, therefore, decided to postpone Unternehmen Seelöwe indefinitely.

Kriegsmarine Seekriegsleitung (Navy War Staff) Diary, September 17, 194069

Unwilling to admit defeat – but defeated nonetheless – the Luftwaffe’s air campaign lapsed into sporadic raids for the rest of the month, culminating in the last major daylight attack on London (173 bomber and 1,000 fighter sorties) on September 30. For the first and only time in the whole Battle, the RAF fighters significantly outperformed their adversaries, shooting down 16 bombers and 27 Bf 109s for the loss of 16 Spitfires and Hurricanes. Following this heavy loss, massed formations virtually disappeared and daylight bombing raids steadily decreased, the Luftwaffe’s final daylight bombing mission occurring on October 29 when a dozen Junkers Ju 88A medium bombers attacked Portland.70

Operational Assessment

The lessons from the Luftwaffe’s experience in this, the prototypical independent air campaign, have generally been lost in the cheering, preening aggrandisement foisted upon the English-speaking world by British authors. To the Germans, the defeat quite naturally “is no great source of pride,” wrote American historian Telford Taylor, “and their works on the subject are superficial, or too narrow and personal.”71 Consequently, the biased British view of “a heavily outnumbered RAF, by sheer gallantry and skill, achieved a well-nigh miraculous victory”72 prevails as the common understanding of “The Battle”. And with it attends several myths, misconceptions and misunderstandings.

First, it must be realized that the German Luftschlacht um England (“Air battle for England”) was not a strategic air campaign. Unlike the later USAAF/RAF Combined Bomber Offensive (CBO), which sought victory – or at least the hastening of it – through air power, “Operation Eagle” had the limited objective of achieving local air superiority in order to facilitate a cross-Channel invasion of Great Britain. Therefore, it was an operational-level component of a proposed strategic combined arms offensive, not a strategic campaign in and of itself.

Secondly, the outcome of the campaign had nothing
whatsoever to do with the lack of “four-engine heavy bombers” as so many misinformed pundits have parroted. Because the Luftwaffe’s daylight strikes required fighter escorts, their attacks were limited in range to that of the Messerschmitt Bf 109E. Having longer-ranged bombers mattered not. In fact, for the same four engines, two He 111s or Ju 88s could carry almost twice the bombload of the cancelled Do 19 and Ju 89 on these short-ranged missions – so having four-engine bombers would not have “put more bombs on target” either.

In fact, the “Battle of Britain” was not so much about bombers as it was about fighters. The Luftwaffe’s bombing missions were restricted by the limitations of their escorting fighters. First, the planned escort – the twin-engine Bf 110 – proved patently inadequate, resulting in sole reliance on the short-ranged Bf 109E “frontal fighter”. Then, when the campaign shifted into a direct attack on Fighter Command’s No. 11 Group (Phase II) and almost all Bf 109E units were transferred to Kesselring’s Luftflotte 2, Sperre’s Luftflotte 3 had to be “re-roled” into night bombardment, reducing the number of daylight bombing sorties to half. Finally, increasing the required fighter to bomber ratio from two-to-one to three-to-one (Phase III) limited the number of bomber sorties to one-third the number that the Bf 109E units could launch, further reducing the weight of the Luftwaffe’s attacks.

Just as with the USAAF’s “Operation Pointblank” four years later, the success of the campaign hinged on the effectiveness of escort fighters against the enemy’s interceptors. “Operation Eagle” devolved into a fighter-versus-fighter battle, one that the Jagdwaffe won only marginally. With an overall “kill ratio” (from August 12 through September 15) of 1.77:1, the Luftwaffe was destroying slightly more than three RAF fighters for every two Bf 109Es lost. However, with British factories producing three times more replacements than Messerschmitt
each month, this marginal superiority was insufficient to destroy Fighter Command. The resulting math reveals that, as a “fighter battle”, the “Battle of Britain” was never a winnable contest.

To actually win “The Battle”, what the Luftwaffe needed was not four-engine heavy bombers but a much more robust and effective reconnaissance campaign during the weeks between the surrender of France and “Adlertag” to better identify Fighter Command targets and more accurately estimate the strength of that command; much more realistic intelligence estimates of RAF losses, aircraft production, and effective strength; and much more persistence in its attacks. In the last instance, hastily abandoning attacks on the coastal radar stations and the subsequent premature switch from attacking No. 11 Group’s “sector stations” stand out as prime examples.

“The Battle” could have indeed been won – and gone into the books as history’s first successful independent air campaign – but, spurred by the increasing angst associated with the approaching deadline for launching “Operation Sea Lion”, an egocentric and power-hungry politician with the veneer credibility of a military aviator’s war record – but with no concept of modern combat or air campaigning – made a fateful decision that cost the Luftwaffe its potential for victory. In giving the victory to RAF Fighter Command, Göring assured the survival of Great Britain and the eventual destruction of Nazi Germany. In that sense, as Taylor rightly asserts, the “Battle of Britain” was really the turning point in World War II.

NOTES

2. Ibid., pp. 140, 143, 144.
4. First flown October 28, 1936, the Do 19 V1 was powered by four 715hp Bramo 322 H-2 radials but could only manage a top speed of 197mph (315km/hr) empty and without its defensive armament. The Ju 89 V1 was powered by four 1,075hp Jumo 211 inline engines and, first flown in December 1936, could attain a top speed of 242mph (390km/hr). Both bombers carried a crew of nine and had identical defensive arrangements: two 7.92mm MG 15s in the nose and tail and two 20mm cannon mounted in dorsal and ventral turrets. Smith and Creek, pp. 13, 17.
7. Cooper, pp. 46, 47; Hooten, Phoenix, pp. 107, 108; and Smith and Creek, pp. 9, 10.
8. Ibid., p. 256. See also Cooper, p. 68; and Hooten, Phoenix, p. 156.
10. Ibid., p. 53.
11. Ibid., p. 52; and Hooten, Phoenix, pp. 86, 110.
13. Ibid., p. 176.
14. Cooper, p. 88; and Corum, pp. 256, 257. See also Lt Col Earle


17. Hooten, Phoenix, p. 171; and Lund, p. 10. These were Studie Blau (blue: Britain), Studie Grün (green: Poland) and Studie Rot (red: France).

18. The Abwehr was the OKW’s intelligence bureau: Amt Ausland/Abwehr im OKW, or “Foreign Affairs/Defence Bureau of the Armed Forces High Command.”


20. Lund, p. 32.


24. Cooper, p. 121.


32. General Felmy was relieved of command on January 12, 1940 after a co-axial aircraft carrying the paratrooper plans for “Fall Gelb” mistakenly landed in Belgium, thus compromising the operation. Hooten, Phoenix, p. 195.


35. Hooten, Eagle, pp. 15, 42-44; Mason, pp. 153, 156; Taylor, pp. 125, 126; and Wood and Dempster, pp. 183-185.

36. Trevor-Roper, pp. 75.

37. Wood and Dempster, p. 65.

38. Taylor, pp. 52, 54, 57, 62-64.

39. Trevor-Roper, p. 79.

40. Taylor, p. 71.

41. Hooten, Eagle, p. 18.

42. Trevor-Roper, p. 75.

43. Cooper, p. 131; Hooten, Eagle, pp. 19, 21; Taylor, pp. 71, 132, 133, 340n65; and Wood and Dempster, p. 163.

44. Cooper, pp. 129, 134.

45. Ibid., pp. 132, 133; and Hooten, Eagle, p. 21. To oppose them, on August 1, Fighter Command mustered 570 Spitfires and Hurricanes (367 serviceable), with another 138 unsuitable Blenheims and Defiants, and 1,434 pilots. To the 570 day fighters on strength can be added the 289 newly built Hurricanes and Spitfires at the depots awaiting unit assignment as of August 11. Ibid., p. 134; and Wood and Dempster, p. 196.

46. Taylor, pp. 136, 137.

47. Cooper, p. 141; Hooten, Eagle, p. 21; and Wood and Dempster, pp. 199, 201, 205, 206. For actual losses on both sides on August 15, see Peter D. Cornell, The Battle of Britain Then and Now, (Old Harrow, UK: Battle of Britain International Ltd., 2006), pp. 357-360, 571-573.

48. Taylor, pp. 142, 143. Overall Luftwaffe effort was 1,786 sorties with losses of 75 aircraft. Taylor, p. 140.

49. While attacking Bomber and Coastal Command bases is frequently regarded as a major mistake by the Germans, it must be remembered that Directive 17 required the Luftwaffe to eliminate the RAF’s ability “to deliver any significant attack against the German [Channel] crossing” which meant attacking bomber and maritime patrol-bomber bases as well as fighter airfields.

50. Taylor, p. 145; and Wood and Dempster, pp. 212-215, 217. “Stuka” is the German abbreviation for “Sturzkampfflugzeug”, meaning “dive bomber”.

51. Cornell, Britain, pp. 352-372, 561-581; and Cooper, pp. 139, 143.

52. Taylor, p. 145.

53. Ibid., pp. 22, 24; Taylor, p. 138; and Cooper, p. 140. The actual number of Hurricanes and Spitfires lost in combat during from July 1 to August 16 was 214. Cooper, p. 142.

54. Cooper, pp. 132, 133, 142, 143, 150; and Wood and Dempster, p. 226.

55. Hooten, Eagle, p. 20. No. 11 Group “Sector Stations” were Biggin Hill, Debden, Hornchurch, Kenley, Northolt, and Tangmere.

56. Cooper, p. 140.


58. Cooper, pp. 144, 145-147; Taylor, p. 149; and Wood and Dempster, pp. 256, 257.

59. Cooper, pp. 145, 146, 149.

60. Ibid., pp. 146, 147.

61. Cooper, p. 151.


63. Cooper, pp. 149, 151-153; Taylor, p. 158; and Wood and Dempster, pp. 256, 257.


67. Cornell, pp. 646, 647. Overall, during the nine-day Phase III the RAF lost 131 fighters in battle while the Luftwaffe lost 74 Bf 109Es in combat. Cooper, pp. 151-153.

68. Taylor, p. 165, 166.


70. Ibid., pp. 157, 158; and Mason, p. 378. Officially, for the RAF the Battle of Britain ended on October 31, 1940, although the Luftwaffe’s “night blitz” campaign against British cities continued until May 21, 1941 when the Luftwaffe transferred its remaining bomber units eastwards for “Operation Barbarossa”, the Nazi invasion of the Soviet Union.

71. Taylor, p. 79.

72. Ibid.

73. As stated, the critical component for RAF Fighter Command was the attrition of fighter pilots, not the supply of aircraft. Fortunately for Britain, assuming the 1.5:1 ratio continued, the imminent onset of winter weather precluding daytime bombing missions would have ended the pilot attrition before Dowding’s command was reduced to ineffectiveness.

74. Taylor, p. 15.
By January 1940 the new war in Europe was four months old and not yet universally perceived as a World War II. In America, most called it “The European War.” The British and French had declared war with Germany in an effort to save Poland and then did practically nothing to help the Poles; the subsequent lack of activity on Germany’s Western Front prompted other Americans to declare it a “Phony War.” In France it was often called the drole de guerre—an “odd war.” Humorists familiar with the German language referred to it as a Sitzkrieg. A few neutral analysts suspected that the British and French would eventually accept Germany’s control of Poland as an accomplished fact and there would be a negotiated peace.

Adolf Hitler, however, had other ideas. As early as September 25, 1939, before Poland’s defeat, he remarked on the necessity of an offensive in the West. Two days later he told his generals he wanted to attack as soon as possible, before the French and British became fully prepared, and he set a deadline of November 12. Meanwhile, on October 9 he presented his generals with Fuehrer Directive No. 6, “Plans for Offensive in the West,” that ordered the attack. A few days later on October 18 he issued Directive No. 7, which specified “Preparations for Attack in the West.”

The No. 6 planning directive expressed fears that Belgium, so far neutral, would soon drift into the Allied camp, and that the long term neutrality of the Netherlands seemed doubtful, so Germany had to act quickly to terminate their neutrality on terms most favorable to the Reich. It described a modest variation of the Schlieffen Plan that the Kaiser's Germany had used to invade France in 1914, violating Belgian neutrality en route. Schlieffen planned a grandiose battle of annihilation that required a swift march through Belgium and an ambitious sweep into France, encircling Paris from the west and smashing the French armies from the rear. Although a classic textbook operation, as executed in 1914 it miscarried.

Except for including the Dutch, Hitler's plans were far more modest. He expected only to put Belgium and the Netherlands in the German bag and seize as much territory as possible in northern France. This in effect would re-establish the territorial lines where the German offensive of 1914 had bogged down and where World War I ended in 1918.

Hitler thought that the occupation of the Netherlands, Belgium and northern France necessary to establish a geographic buffer in which an “early warning” alert system could be created to protect Germany’s heavy industries in the Ruhr from Allied air attacks. Concurrently, this same territory would provide bases on the edge of the English Channel from which German bombers could easily attack Britain.

But many German generals were unhappy with Directive No. 6. The short campaign in Poland had revealed numerous shortcomings in the Wehrmacht and Luftwaffe, especially with logistics. These shortcomings needed to be corrected. They
also did not like the prospect of again violating Belgian neutrality; and including the Netherlands seemed wholly unnecessary. It was no secret that the French had no stomach for the war. Anyone could read about the tenuous state of French morale in *The New York Times*. Given time, a negotiated peace seemed likely and the German generals found this prospect most satisfactory. Any offensive in the West would eliminate this political prospect. Finally, the whole plan proved militarily distasteful because it promised only a trifle more than a restoration of the Western Front of 1914-1918 with its static positional warfare and a probability of another war of attrition.

Planning went forward nevertheless. The operation was designated “Fall Gelb,” literally “Case Yellow”; in American lexicon it would be termed “Operation Yellow.” The Schwerpunkt, i.e., the concentrated mass of the attack, aimed at the Belgian city of Liege, from here it would divide, one arm sweeping north to encircle Antwerp and the Netherlands, the other driving west to roll up the Channel ports as far as Calais. Airborne troops simultaneously would seize strategic points in the Netherlands. The *Wehrmacht* generals, however, did not like this division of forces, and for them the Netherlands had always been an unnecessary complication of peripheral interest. So Gelb was revised, eliminating the Netherlands except for the Maastricht Appendix, a small tail of Dutch territory that lay in the path of the *Wehrmacht*‘s advance. But the *Luftwaffe* protested this change; its generals wanted all of the Netherlands for air bases. Hitler intervened and the hapless Dutch were restored to Gelb.

November 12 might be fixed as Angriffstag (Attack Day), but by the first week of November Europe had slipped into one of its most bitter winters on record, and German meteorologists could produce nothing but unfavorable weather forecasts. During November and December the date for Angriffstag was fixed, cancelled, and fixed again—fourteen times. All the while the anxiety, aggravation, and a sense of futility generated within the German military by these repetitious alerts and stand-downs grew considerably. Among those in the middle and lower ranks who have to do most of the running in circles, such repeated false alarms inevitably leads to a state of mind in which the operation is deprived of all immediacy and takes on aspects of the surreal.

In the first week of 1940 Angriffstag remained meteorologically elusive, although nominally set for January 17. But if any Feldwebel in the Panzerkorps were asked his opinion of its probability, he likely would have replied: “Only the Russians would be foolish enough to start an offensive in a January like this one!”

And so it came to pass on Tuesday evening January 9, 1940, two *Luftwaffe* officers were sipping lager and massaging each other’s ego in the Officer’s Kasino at Loddenheide airfield near the city of Muenster in northwestern Germany. Muenster is about 35 miles from the Dutch frontier. Major Helmuth Reinberger had a problem, and Major Erich Hoenmann, the 52-year-old airfield commander, had nothing else to do but listen. Reinberger, a senior staff member of Luftflotte II responsible for organizing Flieger-
Division VII’s supply, the elite paratroop unit scheduled to land behind the Belgian lines at Namur on Angriffstag, had to report to its headquarters in Cologne the next day. It was only 80 miles to Cologne, a 90-minute drive. But he could not obtain a staff car and had to take a train. He would be leaving in just over an hour, much to his distress.

In Münster Major Reinberger had made a comfortable connection with a lovely young lady of versatile charms, a real Schaetzchen. But instead of spending the evening with her this night, he would be on board a train for Cologne. There were morning trains, to be sure, but they arrived in Cologne too late for his meeting. Too bad that staff cars were only for the Herr Obersts and not for mere Majors. So he would be spending the rest of the night on a train and in a hotel in Cologne alone, when he might otherwise be with his Schaetzchen. Thoughts of the cold, empty hours ahead were dispiriting, to say the least.

Major Hoenmann had a solution to Major Reinberger’s problem. He was scheduled for some flying time, his wife lived in Cologne, and he had soiled laundry that needed washing. His wife attended to small but necessary things like this. Hoenmann had already filed for a cross-country flight next day and a landing at Cologne was in the flight plan. Reinberger was welcome to come along. They could leave early, be in Cologne within the hour, and Reinberger would have ample time to reach headquarters.

Reinberger thought this a marvelous proposal. But a regulation prohibited staff officers carrying important papers from traveling in airplanes close to Germany’s frontiers. It risked being shot down by enemy fighters making a sweep into German airspace, and of the wreck falling on the wrong side of the frontier. Or a pilot might become lost and accidentally land in enemy or neutral territory. Reinberger knew he would be carrying a copy of the Luftwaffe’s war plan for the Attack in the West. It included the latest revisions for the assault by airborne troops on the airfields in what the Dutch liked to call “Fortress Holland.” This weighty responsibility prompted Reinberger to have second thoughts about the proposal, though he chose not to inform Hoenmann that he would be carrying highly classified records.

But reassurances flowed from Major Hoenmann. There was nothing to the flight. He’d flown between Münster and Cologne so many times he could do it in his sleep. Whereas other officers jumped on a trolley car to the local Waschfrau; he flew his soiled linen to Cologne. Moreover, from an altitude of only 10,000 feet above Münster you could practically see Cologne, a sprawling city sited conspicuously on the west bank of the Rhine. And the Rhine is the largest river in Western Europe. You can’t miss it! You pick up the river at Duisburg and then follow it right into Cologne. The flight was so short that you barely had the landing gear and flaps up after takeoff than you were putting them down again to land in Cologne—more like calisthenics than flying.

Reinberger knew he would be carrying a copy of the Luftwaffe’s war plan for the Attack in the West

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Reinberger had to have second thoughts about the proposal, though he chose not to inform Hoenmann

Reinberger’s second thoughts of risk dissolved; there was nothing to it, and the flight ensured another night under the eiderdown with his Schaetzchen. He told Hoenmann that he would meet him on the flight line early next morning, and went out into the night in quest of a taxi. Hoenmann returned to his quarters and the familiar drill of assembling and packing dirty clothes.

The half-light of the hesitant wintry dawn of January 10 revealed a low ceiling and leaden sky. Given the weather, Reinberger’s second thoughts returned, but it was too late for a train; the flight was the only way to his meeting in Cologne. Hoenmann and Reinberger soared off the runway into the low ceiling for their checkpoint at Duisburg where they would turn at the Rhine for Cologne. Their airplane, a Messerschmitt Bf 108 Taifun, was a small, single-engine, four-seat courier and communications vehicle of 2,990 pounds. The Bf 108 was not only an excellent airplane, it possessed some unique characteristics and pound-for-pound had no performance peers in the world. Its 240 horsepower engine yielded a top speed of 180 mph and it cruised comfortably at 150 mph. With full tanks its range at cruising speed was 620 miles, enough to fly four nonstop circuits between Münster and Cologne.

The weather wasn’t good, but neither was it bad; it involved the stuff of a typical North European winter charged with damp, bone-chilling cold and lots of heavy
clouds. But this day found stiff winds aloft blowing in from the Baltic, east to west across Northern Germany toward the Atlantic. On this point it seems unlikely that Hoenmann checked weather reports before preflighting his airplane. In flying over his too familiar “calisthenics route” there seemed no need. It is the old story of familiarity, contempt, and of most accidents occurring nearby to home. This day, however, there was no way anyone at even 20,000 feet could see Cologne from Münster. Indeed, even Duisburg 50 miles away was obscured from view. Hoenmann climbed above the cloud cover and turned to a compass heading of 200 degrees for Duisburg and their interception with the Rhine. Cruising at 150 mph they would be over the city in 20 minutes.

What the two majors discussed during their flight is not a matter of record. Perhaps it was of Schaetzchen they had known, or maybe they talked about the problem of button attrition in Waschfraus. In the event, however, they should have been talking about the intensity of the winds aloft because they had a wild one on their tail that almost doubled their ground speed.

At the appointed time Hoenmann spiraled down through the cloud cover and turned to a compass heading of 200 degrees for Duisburg and their interception with the Rhine. Cruising at 150 mph they would be over the city in 20 minutes.

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At the appointed time Hoenmann spiraled down through the cloud cover in quest of Duisburg: the city was nowhere in sight. Nor was the Rhine! Now sweating profusely, they found a river but it flowed northeast whereas the Rhine flowed northwest. It was the Meuse, but by the time they had that figured out, the subject had long since become academic. They were lost and everything had gone terribly wrong. Although lost in a small area, in this part of Europe a few miles can make a world of difference. Were they still over Germany? Or had they wandered into Dutch airspace?

At the appointed time Hoenmann spiraled down through the cloud cover in quest of Duisburg

Had he turned to a compass heading of 90-degrees and held it for 15 minutes, Hoenmann would have regained German airspace. Before he could make a decision, however, his engine began losing power, most likely owed to carburetor icing. Whatever the cause, it dictated a forced landing.

Hoenmann brought his little airplane to a deadstick landing in a pasture. One pasture looks like another and they still had no idea where they were. Then some soldiers on bicycles appeared, and they were not wearing German uniforms. Worse, the soldiers hailed the German airmen in French! Reinberger hastily opened his briefcase, pulled out the thick sheaves of Gelb papers and, with his cigarette lighter, made a futile attempt to burn them. The soldiers

Hitler and his staff look over battle maps.
The Bf 108 Taifun.

disarmed the two German airmen, made Reinberger surrender his documents, and confiscated the lighter.

By this time the German majors recognized the soldiers as Belgian. Not as bad as if they had been French, but altogether bad enough. But how had they ever flown to Belgium? They had landed near the village of Mechelen-sur-Meuse, which is 110 miles from Muenster and 55 miles west of Cologne. The undetected tail wind had caused them to overfly their checkpoint at Duisburg by more than seventy miles. En route, they had also violated Dutch airspace overflying the Maastricht Appendix. That, however, was now among the very least of their worries.

The Belgian soldiers escorted the Germans to a local headquarters presided over by a Major Arthur Rodriques. All of the chilled participants were glad to get inside where a large, iron pot-bellied stove radiated welcome heat. Rodriques interrogated the Germans in a polite way as best he could, simply to establish basic information; meanwhile, his staff notified authorities in Brussels of the Germans’ unexpected visit.

The soldiers gave Major Rodriques the bundle of fate-ful military materials related to Gelb, which he placed on his desktop. In the course of their interrogation, Reinberger suddenly lunged forward and seized the Gelb documents. Rushing to the stove, he opened its door, threw the documents into the fire, slammed the door shut, and turned to defend his incinerator against interference.

Major Rodriques jumped to his feet and rushed to the stove while soldiers wrestled Reinberger out of the way. The major opened the stove’s door, reached into the fire with his bare hand, snatched out the documents and beat away the fire. The Gelb materials and Major Rodrique’s hand were somewhat the worse for the experience, but he had saved the documents. Although heavily charred on their edges, their substance on most of the pages remained quite legible.

Next day the German officers and Gelb documents were delivered to Brussels where the former were put in touch with their embassy and its military attaché, while the Belgian high command received the latter. Belgian officials at first suspected the materials to be a plant. To what purpose they could not explain. A German attempt to plant such an overt threat by way of misinformation simply defied logic. Instead of reinforcing Belgian neutrality, the Gelb documents seemed more likely to drive the Belgians into the arms of the French and British.

What about Reinberger’s attempt to destroy them. If the materials were supposed to be “accepted” by the Belgians, why would he do this? And what if Major Rodriques had been possessed of less audacity and failed to retrieve them from the fire? Then the German effort to plant misinformation would have been for naught. What is more, after the Belgians brought Reinberger and the attaché together at military headquarters they had the wit to conceal microphones in the room used by the Germans and heard an overwrought Reinberger repeatedly assure the attaché that the documents had been burned badly enough to make them unreadable. By means of a telephone tap the Belgians heard the attaché subsequently inform his superiors in Berlin to that effect. The Belgians knew this was not true. There was no reason for Reinberger to lie except to conceal his personal, disastrous blunder.

News of the Hoenmann-Reinberger Gleb fiasco hit Berlin like a bomb. Reichsmarshall Herman Goring, the sybaritic chief of the Luftwaffe, flew into a rage and sacked Generalmajor Hellmuth Felm and his chief of staff Colonel Josef Kammlhuber of Luftflotte II, to whose staff Major Reinberger had been attached—as if these two senior officers could have anything to do with the major’s private foibles. Most of the Wehrmacht’s High Command of the Armed Forces Oberkommando der Wehrmacht, or OKW) was thrown into a quandary, but a few elements that did
not like the plan were relieved to have Gelb compromised. Withal, the Brussels attaché’s claim that the Gelb documents had been successfully destroyed was received with mixed feelings. As an elementary precaution, everything related to the operation was put on “Hold.”

If any doubts remained about the attack in the West being compromised, the Belgian Foreign Minister dispelled them on January 17—the Angriffstag date now cancelled—when he summoned the German ambassador to his office and read him the riot act about “unfriendly” German war plans directed toward Belgium, quoting chapter and verse from Fall Gelb. Clearly, Fall Gelb of Fuehrer directives Nos. 6 and 7 had been “blown” and German plans for an attack on the West had to be changed. Fortuitously, an alternative plan existed.

General der Infanterie Erich von Manstein had always regarded the original Gelb as a dreadful package of half-measures that promised inadequate results. Moreover, he suspected that the Anglo-French military were preparing to defend themselves against something like Gelb. Put in their place, it was just what he would anticipate. On this point his instincts were absolutely correct. But Manstein’s critique found few listeners that agreed.

Back in October 1939, Manstein thought he had found a weak spot in the French defenses where they faced the German region of the Ardennes. Heavily forested and possessed of few good roads, the French had left it lightly fortified and had placed its defenses in the hands of second rate troops. Manstein believed a massive armored spearhead followed by mechanized infantry could break out of this forested region onto the plain of northern France where it could roll up the Anglo-French forces poised along the frontier with Belgium. Or, if the Anglo-French armies left their positions and moved north to reinforce the Belgians against a German attack similar to that described in the original Gelb, then the German armor could sweep in behind them, drive to the English Channel, cut off the Allied armies from their logistics in France and leave them trapped in Belgium.

It took three months and a couple of war games for Manstein to complete this plan. The German OKW, however, found it too radical and risky. But after the Hoenmann-Reinberger Affair in January it slowly began to be received as an increasingly practicable alternative. On February 18, 1940, Manstein managed to sell it to Hitler himself, which resulted in Fuehrer Directive No. 10 for a radically revised Gelb: “Concentration of Forces for ‘Undertaking Yellow.’”

In the predawn of May 10 German Panzer division stormed out of the Ardennes onto the northern plain of France, reaching the English Channel with success that exceeded Manstein’s most optimistic estimates. The Anglo-French armies were trapped in Belgium, although most of the British forces managed to escape by sea via Dunkerque. On June 17 France sued for an armistice, and on June 22 Hitler’s Germany held sway over Europe from the River Bug in Poland to the Pyrenees on Spain’s frontier.

It is doubtful whether events would have unfolded in this manner had there been a quarrel between Major Reinberger and his Schaetzchen earlier on January 9; or had Frau Hoenmann refused to wash her husband’s laundry.
and told him to find a Waschfrau in Muenster; or had
Major Hoenmann really known of the sharp winds aloft
blowing across Europe from the Baltic on the morning of
January 10, 1940.

Afterword

The Third Reich tried Erich Hoenmann and Helmuth
Reinberger in absentia and condemned them to death for
violating the regulation that prohibited transporting clas-
sified documents by plane without explicit authorization.
The verdicts would not be executed. The Allies evacuated
both men in 1940, first to Britain and then to Canada.
Hoenmann’s wife did not survive interrogation by the
Gestapo; his two sons, allowed to serve in the army, were
killed in action during the war. On returning to Germany
afterward, Reinberger and Hoenmann received pardons.

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This is a fascinating look at the intense negotiations in Washington, D.C., just prior to the Japanese attack Pearl Harbor on December 7, 1941. It is the view seen by a special Japanese envoy, Saburo Kurusu, who was hurriedly dispatched to Washington in November 1941 to assist Japanese ambassador Kichisaburo Nomura. U.S. and Japanese policies were at loggerheads over the issue of Japanese aggression in China and what appeared to be impending Japanese moves into Southeast Asia. Talks in Washington between Ambassador Nomura and U.S. Secretary of State Cordell Hull were attempting to reconcile the two nations’ positions in a vain attempt to prevent eruption of a war.

Kurusu was an experienced diplomat who had earlier served in the U.S.; he was a fluent English speaker and was married to an American woman he had met in New York while serving a six-year assignment as a consular official in Chicago. However, to American eyes the diplomat was somewhat suspect since he had signed the Tripartite Pact—the Axis Treaty between German, Italy and Japan—as the Japanese ambassador to Germany on September 27, 1940.

The thrust of the book (which is based largely on Kurusu’s diaries) is that he had no idea of the surprise attack on Pearl Harbor being prepared by the Japanese government, and that he and Ambassador Nomura negotiated in good faith. Immediately following the attack he was accused of being a dupe, sent to extend the ongoing negotiations while Japanese forces gathered for the surprise strike.

Kurusu met with Premier Tojo before leaving for the United States and claims that Tojo gave no sign of an impending attack. Rather, Tojo merely pointed out the difficulty of the negotiations in progress.

The book is well worth reading for those interested in the beginning of the Pacific War.

John F. O’Connell, Captain, USN (Ret), Docent, National Air & Space Museum


This book was written by a retired senior manager at Boeing (the successor company to North American Aviation—NAA). It contains very good illustrations and well-reproduced photographs (many in color).

The narrative starts with the Fokker and Berliner-joyce beginnings of NAA and its transition from a holding company to a manufacturing enterprise. It then follows the company through World War II and into the postwar era. It might have been better if the book had stopped at the end of the war.

Fredrickson structured the narrative with many excellent sidebars, some of which range in size up to a full page. They are nearly always informative and interesting. However, early on the book shows its uneven quality. The aircraft photo in one full-page sidebar is not a Ford Trimotor but a Fokker trimotor. The man in front of it is correctly identified as Anthony Fokker—not likely to be posing in front of a Ford!

The discussion of the early years of NAA and its predecessors is very informative, though the digression into William Boeing’s harassment in a congressional hearing that led to the Air Mail Act of 1934 is a little farfetched. Otherwise the discussion of the people who actually created NAA—Kindleberger, Atwood, et al.—and their relations with other early aviation industry personalities is very interesting. There are excellent descriptions of the innovative manufacturing methods that allowed NAA to expand its output tremendously to meet the massively increased war need. The book shows how NAA selected and trained previously unskilled workers that had to be used. Much to Fredrickson’s credit, he does not sidestep or ignore the effects of racial and gender prejudice in the workplace. The description of other factors that large industries had to address at that time was fascinating (e.g., providing child care so that women were available to work, and organizing car pools).

The photos of manufacturing processes are interesting. They show an utter absence of protective equipment other than gloves. One realizes what an unpleasant job installing aircraft tires on rims day after day must have been! The strike in June 1941 and subsequent seizure of the Inglewood plant by the Federal government are well covered. Fredrickson covers and well illustrates development of the B–25 Mitchell. Some of the stories were particularly interesting: development of the “B–25 on steroids” and its demise, the importance of the XB–28 Dragon to development of the B–29, and modification of a B–25 to serve as Eisenhower’s personal transport.

The chapter on development of the Mustang is unfortunately something of a botch. Some statements about the NA–35 trainer are simply wrong (basic technical engine and airfoil errors). There are incorrect identifications of various models of the Mustang. In one place, Fredrickson says: “Given the magnitude of the damage visible in the photographs, NA–73X was repaired surprisingly quickly. The engine was ready for a test run on December 31, 1940, and the aircraft next flew on January 11, 1941. Test flights of 7.5 hour duration were undertaken in California before the Mustang was consigned to European bomber-escort combat operations.”

The last two statements are both true but have nothing
to do with each other. The former applies to the Allison-engined NA–73X and the latter to Packard-engined P–51Bs and beyond. For a good story of Mustang development, readers would be far better served by O'Leary's Building the P–51 Mustang.

Overall, this is a curious book: The discussion of NAA as a growing, and later shrinking, industrial concern is very good. How NAA and Kindleberger dealt with the end of the war is particularly interesting. But discussions of engineering issues and military history are not to be trusted. Nevertheless, the book is useful for the industrial history of NAA up to and through World War II and for its photographs.

Leslie C. Taylor, Docent, NASM's Udvar-Hazy Center


From its birth in 1917 to its demise in 1963, the Gloster Aircraft Company designed and built more than 30 aircraft types for the Royal Air Force and other customers. This book is a well-researched history of the company, its products, and the people who played key roles in its 46-year lifespan.

The firm came into being in 1917 when George Holt Thomas and his partners founded the Gloucestershire Aircraft Company (because potential foreign customers found the name difficult to pronounce and spell, the firm simplified its name to Gloster in 1926). Its initial work was as a sub-contractor or licensee to other companies, most notably De Havilland, Bristol, and the Nieuport & General Aircraft Company. The latter was a British firm established during World War I to produce French-designed Nieuport fighters.

Its association with Nieuport & General had a major impact on Gloster's history. When Nieuport & General went out of business in 1920, Gloster acquired the rights to its most promising designs and, more significantly, hired Nieuport & General designer Henry Folland. As Gloster's lead designer for more than 15 years, Folland was responsible for the company's most important designs prior to World War II, to include the Gloster Gladiator. The Gladiator was Britain's first operational jet fighter, the Meteor. The Meteor made its first flight in March 1943 and entered operational service in July 1944. It was the only Allied jet-powered aircraft to see service during the war. Interestingly, because the Brits were concerned about risk of having a Meteor shot down and recovered by the Germans, the airplane was prohibited from flying over German-held portions of Europe. Its most notable wartime accomplishment was thedowning of several German V-1 rockets over southern England. With more than 3900 Meteors produced in many variants, the aircraft remained in use until 1955 with the Royal Air Force and the forces of 15 other nations.

Following the Meteor, the next design to carry the Gloster name was the Javelin, a twin-engine, delta-wing interceptor. It also turned out to be the final Gloster airplane. In 1961, the company merged with Sir W G Armstrong Whitworth and Company to form Whitworth Gloster Aircraft Limited. In 1963 the firm became part of the Avro Whitworth Division of Hawker Siddeley Aviation. At this point the Gloster name disappeared, as Hawker Siddeley rebranded its product line under its own name.

As stated at the outset, James has done an excellent job of researching Gloster history. He explains the RAF specification that led to each Gloster model and variant, discusses Gloster's successes and failures in striving to meet the specifications, and flavors the history with some of the more interesting individuals involved in the development and testing of Gloster airplanes. If you're looking for a detailed history of Gloster and its aircraft, this book should provide all the facts you need.

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


A portion of American aid to Britain during the early days of World War II was the training of British pilots in the U.S. Essentially lending official sanction to a trend that
had been evolving in an ad hoc manner, the passage of the Lend-Lease Act in March 1941, cleared the way for establishment of a half-dozen flight schools run by private operators. These British Flying Training Schools (BFTS) were located in Florida, Texas, Arizona, Oklahoma, and California.

The British trained pilots on a worldwide basis (e.g., Canada and Rhodesia) in a program known as the Empire Training Scheme. This book is about the schools in America. They essentially built on Hap Arnold’s long-standing idea of contracting with civilian flight schools to train pilots. Before official U.S. involvement in the war, unofficial discussions between RAF and US Army Air Corps (AAC) staff resulted in assignment of British pilot candidates to regular AAC flight training in a program known as the Arnold Scheme (a similar program existed in the U.S. Navy). Differences soon surfaced between British and American training methods, however, such as more night and instrument training for the RAF. Soon the RAF requested separate training using RAF methods. The Lend Lease Act provided resources for AAC aircraft, bases, and logistical support for such schools.

Training started in June 1941. Each 28-week course was divided between elementary and advanced training, provided no less than 200 hours of flying time, and contained about 300 pilot candidates. Through September 1945, each school graduated 25 courses.

This book covers its subject thoroughly, featuring individual chapters on each school; its origins, construction, layout, and staffing; the training experience; interactions with Americans in towns that hosted the schools; and the background and wartime and post-war experiences of the pilots themselves. This volume clearly is intended to be a permanent, exhaustive record and point of reference for future scholars.

This is the first in-depth survey of the BFTS. Guinn thoroughly covers the BFTS’ immediate predecessor in The Arnold Scheme; British Pilots, the American South and the Allies’ Daring Plan (2007). Morgan covers the overall Empire Training Plan in By the Seat of Your Pants, A Consideration of the Basic Training of RAF Pilots in Southern Rhodesia, Canada and the USA during World War II (1990). Golley more specifically covers British pilot training in Canada in Aircrew Unlimited: The Commonwealth Air Training Plan during World War II (1993). And of course the redoubtable Images of America series, whose topic focus brings us photos that might otherwise be lost to time, supplies what amount to photo appendices in de Quesada’s The Royal Air Force over Florida (1998) and Mallett’s Falcon Field (2009).


There is much fresh evidence here, culled from interviews and little-known archives. As is often the case with wartime records, Killebrew notes that some contemporary documents, composed under wartime pressures, are incomplete. He overcomes this through skillful use of multiple sources. The schools were well-publicized locally, and newspaper morgues fill in otherwise undocumented gaps. The style is easy to read, light, and flows along well. Killebrew’s subjects are featured in quotations, excerpts, and interviews. The appendix lists the students killed during training. Illustrations consist of rarely-seen photos and diagrams sourced from official records, local sources, and the pilots themselves, and are closely tied to the text. The book is printed on high-quality paper in a cloth binding.

Only positive impressions and interactions among the British pilot candidates and locals are reported, with townspeople inviting them to dinner, picnics and parties. Did any of those involved encounter situations incompatible with their values? It may be that this wartime arrangement disposed everyone to favorable opinions, but a little context would fill out the portrayal. A few tables of key statistics on the schools, pupils, and accomplishments would have made it easier to find information. A summary chapter analyzing the broader context of the BFTS would have magnified the impact of their overall place in history. But these are minor quibbles. Up until now there has been no comprehensive account of these schools. Killebrew has created a unique, original contribution to the historical record—a highly recommended book that should be on everyone’s shelf.

Steve Agoratus, Hamilton, New Jersey


Just how did the term “Bloody Paralyser” come to be associated with the O-series Handley Page Bombers? There are two origin stories laid out in the beginning of Langham’s informative and comprehensive book. Regardless of which one a reader accepts as the genuine account, they both have legitimate claims. What does matter is that the phrase puts into historic context the aircraft’s role and purpose.

In early 1915 the British Admiralty, with Winston Churchill as First Sea Lord, sanctioned and financed the development of a large biplane bomber that would a) fit in a 75 x 75-ft. shed (thereby necessitating folding wings, b) be powered by two 150-hp engines, and c) have the capability to carry six 100-lb. bombs. The range desired would en-
able the machine to reach the German-occupied channel ports, railway targets, and aerodromes far behind the lines. The aircraft that quickly evolved from these original requirements was far superior to what had been anticipated. With a 600-mile range and capability to carry 2,000 lbs of bombs, it would become the heavy lifter in the British Independent Bombing Force.

Langham details the evolution of Handley Page itself as well as the company's initial foray into building the prototype of the O/100. It is a fascinating story that tracks how a relatively unknown aircraft “firm” (I use this term very loosely) was handed the task and succeeded in creating this noteworthy machine.

Large multi-engine aircraft designs were certainly an unfamiliar territory in 1914. There were only a handful of designers who crossed that boundary successfully: Sikorsky, Curtiss, and Caproni come to mind. The 1914 German giant designed by Villehad Forssman for Siemens-Schuckert Werke (SSW) was a horrible failure. Little was known in the west of Sikorsky’s work on the Il’ya Muromets although Harry Woodman found tantalizing material indicating that the British Admiralty had requested plans of the Il’ya Muromets from her Russian ally. Much can be said for the other two designs, and it would not be long before the Curtiss design was assimilated and reengineered by the RNAS to produce the epic Felixstowe flying-boat series.

Much to his credit, Langham covers the technical details of development, logistics, field implementation, armament, bomb development, and deployment of the O series. Equally importantly, he brings to the narrative the words and deeds of not only the men who flew these ships into combat, but also those who maintained them (no mean task given the size of the aircraft). Primarily the HPs were used in the European theater of war. However, unexpectedly, a few found their way to the Mid-East. One even operated with T.E. Lawrence.

The long shadow of strategic bombing began in World War I; Handley Page’s O series would be the progenitor of British and American long-range aircraft. That alone makes the details and reference material found in the book valuable assets for the aviation enthusiast and historian alike.

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


Dragonfly presents a comprehensive collection of attention-grabbing history lessons about combat air operations. History can be related in many ways, but the best stories come from firsthand accounts. Dragonfly fills that bill and then some. Long and Holtz collected the reminiscences of more than 100 pilots who flew the A–37 in the Vietnam War. The jocks talk about their combat experiences from 1967 to 1972. Reading their accounts is like sorting a stack of lottery tickets and finding every one is a winner.

I initially opened the book to “Sir, I’m on Fire” and was amazed and delighted by how in the heat of the moment pilots perform illogical actions and survive. From there, the stories got even better. Tales such as “I’ll Never Do That Again,” “Hanging By A Thread,” and “Enter the Gates of Hell” describe the good, the bad, and the ugly of combat, recalling dangerous and heroic deeds as well as explaining utterly stupid ones. Honesty prevails, along with the ability to laugh at oneself in the direst situations.

The flying events parallel the course of the war. The A–37 took out missile sites, artillery and supply sites, bunkers, trucks, sampans, buildings, and support ground troops while under attack. They flew day and night, dropped napalm and bombs, and fired rockets and the minigun under every conceivable condition. They went on FAC missions, dodged antiaircraft fire, and performed escort operations. A successful mission was the rule, not the exception.

Long’s introduction records the transformation of the T–37 from a trainer into an attack aircraft. The reconfiguration began in 1962 but was on-and-off until 1966. But the A–37’s low cost (roughly $161,000 each, or a tenth the price of one F–4) made it the best plane available for close air support. Holtz (who flew the Dragonfly in Nam in 1968–1969 and is currently president of the A–37 Association) adds historical perspective with “Prologue 1945-1966: The Beginning of an Unpopular War.”

The book explains the development and deployment of all USAF A–37 squadrons up to the time when the fleet was turned over to the Vietnamese Air Force. Some of the USAF record-breakers stand out from the crowd. Captain “Ollie” Maier flew 502 combat missions during a 12-month tour. Captain Pat “Boy Wonder” McAdoo (nicknamed by a senior officer) flew three tours in the Dragonfly, racking up 300 missions on his first rotation. And there was Major “Billy” Turner who is mentioned in many stories told by other fliers.

Dragonfly pilots exude a strong sense of camaraderie. They treasure the status they acquired by flying a special type of aircraft. Their mission dedication reminds me of the AC–130 Spectre crewmen I flew with during Vietnam. For the men of both groups, every flight provided a new adventure. The book includes a section that honors 13 pilots killed during the war.

Books of this type fill voids in military history. Combat is a highly personalized and relatively spectatorless endeavor. Rarely are people standing around to watch and report it. Mainly, the people that see it are the people engaged in it. Consequently, readers rely on guys from the arena to
tell it like it was. This book performs that duty through the voices of a specialized group of warriors. Dragonfly opened my eyes to a weapon system unfamiliar to me.

Lt. Col. Henry Zeybel, USAF (Ret), Austin, Texas


When one looks at the main title, most people will think this is another of the big coffee-table books filled with great (or not so great) paintings, each with a short description of what is depicted. This is anything but. The subtitle tells the real story. This is a book of stories about some of the most famous people who have flown and some of the very famous aircraft that they flew. It is also the story of how one of the prolific aviation artists of the day researches his subjects and how he arrives at the final product.

I don’t profess to be an art critic, so I won’t comment on the quality of the works. Art appreciation is a matter of one’s own tastes. Personally, I like most of what Machat has included in his book. But what I really like is that he uses his paintings as part of the story of the famous aviators and aircraft. But he also uses photographs, maps, illustrations, and even other artists’ works to round out the particular story.

Machat divides the book into eight chapters covering rather broad topics: World War II, the beginning of the Jet Age, test pilots, airliner classics, end of the Cold War, mixing generations, wall-size aviation, and art today. Each has from four to eleven subjects (painting titles)—there are 50 in all. Some details on several of the subjects should serve to better illustrate what Machat has accomplished.

Gold Cup Roll is the painting of test pilot Tex Johnston’s famous roll over Seattle’s Lake Washington to demonstrate the new Dash 80 jetliner prototype. The plane is displayed at the Udvar-Hazy Center, and the painting hangs in its administration area. Machat describes not only the event in some detail but also how he researched and laid out the painting. This is a particular favorite of mine, since I show the aircraft on every tour.

Knighthood at Mach 6.7 recreates then-Maj Pete Knight’s 1967 X–15A–2 flight to that great experimental aircraft’s highest achieved speed. Having worked with Pete in the early F–15 program and built a model of this craft for him, this is another personal favorite. The plane is in the National Museum of the USAF.

Tiger With a Tale depicts then-Col Robert F. Scott of God Is My Copilot fame in his P–40 over China. Accompanying photos show Scott during the war and long after.

40th Anniversary of the Fifteenth Air Force shows a KC–10 and B–24 flying in formation over March AFB celebrating the 1983 event. As a KC–10 guy, I found another favorite here.

Even semi-fictional events are depicted. Toward the Unknown shows Lincoln Bond (William Holden) taking off in the Gilbert XF–120 (the disguised Martin XB–51) in the 1956 movie of the same title. This was one of my favorite movies as a kid.

The point of the personal notes is that most readers of Air Power History will find one, a few, or many of Machat’s paintings that will bring back events or memories of personal importance. I thoroughly enjoyed the paintings and their stories, the stories of how Machat developed his style over the years, and the story behind the making of each painting. This book is a keeper.

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


The United States’ involvement in World War II has been well documented in many works with new studies coming out each year. Recent studies have focused on some of the least viewed areas such as training, little-known operations, and biographies of non-fliers. May attempts to look at her uncle’s service as a flight surgeon in the Ninth Air Force’s Troop Carrier Command.

Dr. Lamb Myhr was the flight surgeon of the 50th Troop Carrier Squadron (TCS) in North Africa, Sicily, England, and France. Until their deployment to North Africa in 1943, the 50th TCS trained at Bowman Field in Louisville, Kentucky, with their Douglas C–47 Skytrains and gliders. Bowman Field was also used as the Army Air Forces’ school for flight surgeons and as a cadet medical evaluation base. May includes an example of a physical examination form used by the flight surgeons to examine men for flying. However, instead of using a form from Bowman Field, she used one from Tuskegee Army Airfield, Alabama.

While the book shows promise as an aid in the study of World War II, numerous historical inaccuracies outweigh any promise it may have had. Examples include the 9-9-9 training program, William Randolph Hearst flying C–47 to North Africa, unit lineage discussions, actual missions performed at various times by the 50 TCS, and general World War II events. In May’s discussions on the unit’s lineage and its arrival in North Africa, she mentions that it was under Ninth Air Force bomber command. However, the 50 TCS then reported to Twelfth Air Force. She also discusses Myhr’s typical day as the 50 TCS’s flight surgeon and then proceeds to directly quote Craven’s and Crate’s The Army
Air Forces in World War II, Vol. VII: Services Around the World, which was composited from various sources for the “complex duties of a flight surgeon assigned to a heavy-bomber squadron” to illustrate a “typical bad day.”

When discussing the 9-9-9 training plan, the book confuses the plan altogether when May states that Myhr entered into this 9-9-9 training at Vanderbilt medical school in the fall of 1936. She states that the medical students spent two nine-month periods in premedical training, another four nine-month periods in medical training, and then completed a nine-month internship. But this is not how the Surgeon General initiated the medical 9-9-9 program in the summer of 1943. There had been a continual shortage of doctors available for service in the Army, and students graduating from medical school were gaining deferments for one-year internships. After this, they would extend that deferment in service with a junior residency followed by a senior residency. In total, a potential Army doctor would have deferred his service by a total of 36 months. In 1943, the Directing Board proposed the 9-9-9 program—each internship shortened to nine months—as well as the Surgeon General suggesting that civilian hospitals fulfill the internships and residencies with only women and overage, or physically disqualified, men.

Other examples include discussion of various activities preparing for the D-Day invasion, simply stating “Germans seemed to fear Patton” with no further discussion, and stating that in 1936 there was a ramp up due to the war in Europe (Germany invades Poland on 1 September 1939). There are historical inaccuracies with the unit’s activities such as noting the unit towed Horsa gliders (they were Waco CG-4As) during the 1045 airborne launch across the Rhine.

This book is a quick read that adds one family’s story of their participation in World War II. But May’s historical inaccuracies and use of primary sources unrelated to her uncle’s unit question the authenticity of a troop carrier squadron flight surgeon’s story.

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


This book is about a year spent as a helicopter pilot in the 1st Cavalry’s 229th Assault Helicopter Battalion—call sign North Flag. It is a series of personal stories about real action in one of the most dangerous areas and periods of the Vietnam conflict. Rob takes the reader on multiple missions that show how air cavalry helicopters and their crews helped change the way infantry and mechanized infantry fight war. His well-written stories are riveting at times. He finds humor in most situations, and demonstrates how and why the “Huey” changed the way we fight. Multiple descriptions of resupply, medevac, troop insertion, flank support, and mechanized infantry support actually place the reader in the fight.

Through the nearly 80 short stories, I actually began reliving medevac missions I carried out in IV Corps of Vietnam. The missions described are not exaggerated at all. Rob relates these experiences so well, it makes one admire the teamwork it took to complete these different missions. It was a real fight, and the air-assault mission was critical to saving infantry lives. In addition to feeling they are with Rob and his unit, readers will experience what it was like living each day with these guys—the good and the not-so-proud moments. All events are related with the right touch of humor that really defines everyday living in a combat zone.

Other features that makes this book so compelling are references to everyday occurrences and mundane life: buying a rare, cold Coke in the “boonies” from a Vietnamese child; landing at night to the light from a Zippo lighter (the official helicopter landing light, since JP4 fuel kept it burning even under the rotor wash); flying in bad weather with just enough instruments to get you out of trouble—or just enough to get you killed—was certainly an experience that emphasized the importance of the various missions. Peoples’ lives depended on the success of resupply, extraction, and medevac, regardless of what Mother Nature threw in.

Rob’s unit even had bouts with snakes. He describes how one dove into a bunker to avoid rockets from the bad guys only to find that the local snakes beat him there. It was a matter of finding common ground so both humans and snakes were protected from rockets and the chill of night. Snakes were willing to share as long as one didn’t step or fall on them—souls fair!

I have to applaud Rob’s description of a time when he and his crew were shot down by a single bullet from an AK-47. Their lives were saved by their crew chief who used good old American ingenuity by diagnosing the problem after landing in the middle of the jungle, walking a couple of miles each way through enemy terrain to get a short shaft from the “Home Depot” (friendly helicopter unit), and replacing the part with a crescent wrench and a pair of pliers. The amazing story of how they got back was all due to the backbone of any aviation unit—the crew chief. This is just another example of a beautifully described experience which makes this book a great read.

The book has a list of acronyms and detailed, labeled drawings of a Huey helicopter gunship in addition to personal photos of Rob and members of his unit. These illustrations and photos make the book quite personal.

Rob certainly proved the value of air assault in Vietnam that made a difference in an infantryman’s life, and he well described the value that helicopters added to the way we fight war. Readers will not want to put this book aside for
very long once they start reading it.

Larry McKinley, Docent, National Air and Space Museum, and a medevac (DUSTOFF) pilot in Vietnam.


Most readers (particularly those not very familiar with space history) probably would identify the space race as occurring between the United States and Soviet Union during the 1960s—a race that culminated with U.S. astronauts landing on the Moon in July 1969. Historian Sambaluk’s book introduces them to a different, earlier space competition—one between U.S. President Eisenhower and senior officers in the U.S. Air Force, notably General Thomas D. White, during 1954–1961. As president, Eisenhower had responsibility for defining and directing implementation of national security policy, which included activities in outer space. As Chief of Staff, General White helped coin and popularize the concept of aerospace, a continuous air-space domain for which, he asserted, his service had defense-related responsibility.

Sambaluk has selected especially valuable gems from a substantial body of primary documentation at the Eisenhower Presidential Library, the Library of Congress, the Air Force Historical Research Agency, and other repositories. He has arranged those jewels in a wonderfully attractive setting previously hammered out and polished over several decades by skilled craftsmen such as Paul Dickson, Robert Divine, Fred Greenstein, Roger Launius and Howard McCurdy, John Logsdon, Walter McDougall, and Yanek Mieczkowski. To Sambaluk’s credit, the product represents a multi-faceted contribution to our appreciation of space history.

Readers discover how the Air Force campaign to acquire Dyna-Soar, a weapon-carrying space glider, contradicted the president’s notion of freedom of space—a peaceful commons from which Americans could conduct reconnaissance surreptitiously over the Soviet Union. Sambaluk argues convincingly that even before Sputnik launched, “White House and Air Force space planning had proceeded on a quiet collision course.” When it came to reconnaissance satellites, institutional responsibilities drove a perceptual gap between the President and the Air Force. By the fall of 1957, two incompatible concepts of U.S. space policy existed. Both might “represent a coherent and contextualized national security policy for space,” but only one could prevail.

Although secrecy and poorly defined issues precluded detailed discussion within his administration at the time, Eisenhower sought to prevent an extension of the arms race into outer space. He feared such a race could upset the economic stability that he believed was as essential as military strength to U.S. security. Rejecting the technological determinism that drove Air Force leaders to promote aerospace terminology and to seek Dyna-Soar, the president wanted nothing more than sufficient military strategic capability to deter a Soviet attack. He envisioned that sufficiency as residing in civilian-controlled reconnaissance satellites. Consequently, Eisenhower found it necessary to have his subordinates purposefully impede the progress of aerospace ideas and systems, such as Dyna-Soar. The need for secrecy, and his own “hidden-hand” approach to leadership, prevented Eisenhower from openly confronting Air Force leaders and their media supporters. Furthermore, it stymied open debate of national space policy, and that had ramifications for both him and his successor, President John Kennedy.

Today, as we face the possibility of Russia, China, or other nations aggressively “weaponizing” space, Air Force leaders and White House policymakers alike would be well advised to study carefully Sambaluk’s analytical narrative. His book offers more than captivating historical drama. It exposes the complexities of national security decision making with regard to outer space and highlights how the need for secrecy can strain the democratic process. The Other Space Race belongs on the CSAF Reading List for 2016!

Dr. Rick W. Sturdevant, Deputy Director of History, HQ Air Force Space Command


Test pilots have earned a special place in the American cultural landscape. They have been compared to heroes of Greco-Roman myth in Tom Wolfe’s The Right Stuff and inspired comic book superheroes such as DC Comics’ Green Lantern. Many aviation enthusiasts are aware of iconic pilots such as Chuck Yeager or the Mercury seven, but fewer people are familiar with Frederick “Trap” Trapnell, a man whom Vice Admiral Donald Engen, former head of the Federal Aviation Administration, once called “the godfather of current naval aviation.” Harnessing the Sky is an entertaining biography written by Trapnell’s son and granddaughter, advocating that “Trap” should be considered alongside more familiar names as one of aviation’s greatest pioneers and heroes.

Trapnell’s contributions were important. His test flights during the interwar period contributed to the Navy’s purchase of the F4U Corsair and F6F Hellcat—two of the service’s most effective fighters. He was the head of the
Naval Air Test Center from 1946-1950 and helped found the Naval Test Pilot School. The authors emphasize that his greatest contribution was his ability to foster communication between pilots and engineers, two communities that often seemed to speak different languages. Skilled pilots, who valued aircraft performance, were often unaware of testing procedures and struggled to communicate with engineers, who cared about structures, aerodynamics, and technical specifications. Trapnell facilitated cooperation between these groups by training his pilots in engineering principles and methodology. The authors argue that this practice increased the speed of the testing process, allowing the Navy to acquire effective aircraft much sooner than it would have otherwise.

The emphasis on Trapnell's exploits is engaging, yet at times the text approaches a hagiographic tone. For example, the authors explain how Trapnell's co-workers “recognized] that they were under the tutelage of a master,” and describe how bystanders who witnessed Trapnell make a particularly dangerous landing “erupted into ebullient chatter . . . .They had just got a lesson from the master.” The authors conclude that Trapnell was “the foremost test pilot in a century of naval aviation.” Although much of this praise is earned, the work seems unbalanced; Trapnell's potential shortcomings are not discussed. He appears as a legendary hero rather than a human being. Also, the authors have relied on what they admit is a “thin” record. Much of their work is pulled from a single box of log books and letters in addition to oral histories and recollections in personal conversations. Beyond these primary sources, little archival material is used; the gaps are filled mostly by secondary and tertiary sources. As a result, the book occasionally takes on a somewhat encyclopedic tone. This does not diminish its usefulness, however, especially for enthusiast readers.

Overall, the book is an exciting and possibly inspiring read for aviation devotees and a popular audience. Because of the book's tone and limited sources, scholars and graduate students may be unsatisfied and might prefer reading it alongside other more thorough monographs, such as Richard Hallion's Test Pilots: The Frontiersmen of Flight. Although Harnessing the Sky possesses some flaws, it provides new depth to a previously overlooked key figure in the history of flight.

Michael Hankins, Kansas State University

J. Michael Wenger is a military historian who has conducted research since the 1970s in repositories the world over. He received the 2012 U.S. Naval Institute Author of the Year Award. Wenger is the coauthor of ten books. Naval historian Robert J. Cressman was the recipient of the John Lyman Book Award in 1999 and the Admiral Arthur W. Radford Award in 2008. John Di Virgilio is the author of two groundbreaking articles related to Pearl Harbor and is recognized for his extensive research on Japanese naval ordnance and for his illustrated Pearl Harbor battle damage profiles.

All of the authors are editors of the Pearl Harbor Tactical Studies Series. Until recently, no comprehensive, tactical history has existed for the Japanese attacks on the island of Oahu. In the last two decades much material and documentary evidence relating to the attacks has become generally available. This series seeks to convey the chaos and magnitude of the disaster at Oahu as experienced at an individual level. This has been made possible by a careful survey of records from repositories in the United States and Japan that document the intensely human tragedy of that day. The authors have researched official military personnel files extracting service photographs and details of the military careers, backgrounds, and personalities of American and Japanese servicemen involved in the conflict. Eighteen US sailors and one Japanese pilot lost their lives at Kaneohe Bay.

The book is divided into four chapters (1 - It Was Like the Time of Your Life, 2 - This is the First Time I've Ever Seen the Army Working on Sunday, 3 – I Would Have Hit the Targets without Any Misses from This Altitude, and 4 – No One Shirked, No One Avoided Danger). These cover the American side of the chronology of events from complacency and disbelief, through realization, confusion and disorganization, and finally to the ultimate resolve to defend the station from attack. The authors note that “Although the [NAS Kaneohe complement] did its best to act upon the conflicting and contradictory information received...the inevitable confusion made it almost impossible to effectively respond.” The tactical assault plans, individual actions, and thoughts of the Japanese attackers are also described. Each chapter is made up of many short vignettes describing the thoughts and actions of people involved on both sides of the conflict. For example, “[The Aviation Ordinanceman] arrived during a brief lull in the strafing attacks and charged into one of the hangar’s ordnance shacks…and broke out weapons and ammunition. Just then, another section of Japanese fighters attacked the hangar.”

This book is a quick read! It has many photographs (each carefully described) of American and Japanese military personnel and civilians involved; NAS facilities, before and after the raid; and PBY aircraft (27 destroyed, six damaged). There are excellent maps of bombing attempts. The book has extensive notes on the research done. It will be of particular value to families and friends of those involved...
and to historians interested in the tactical details of “The Day of Infamy.”

Frank Willingham, Docent, NASM’s Udvar-Hazy Center


This book is the first in a series of four that will cover Russian Aviation from 1909 until 1922. The content of this volume deals with the period from 1909-1917. Marat Khairulin and Boris Stepanov, the authors of the original Russian language book from which this translated volume is derived, should be applauded for their collective efforts—not just for the quality of their original research but also for the extraordinary efforts in providing the particulars in what is a clear, concise, and logical manner.

The foundation of the work is from archival documents and original photographic images. From these sources, the authors were able to depict the various markings, signets, and emblems that appeared on aircraft and dirigibles during the Czarist period in Russia. This distinctive work contains an abundance of color drawings along with a vast collection of photographs, many previously unpublished.

Most importantly, the book provides a solid foundation for and insight into the development of aviation in Russia. It begins with aero clubs, which were first established in 1909. The book then moves into the origins and organization of the military air fleet unit by unit, thereby providing a look at the structure and nature of the Imperial Russian Air Force prior to the Great War. It becomes obvious that the Russians were relying mainly on French machines, while their own domestic designs were all but ignored. The only real exceptions were the Ilyu Muromets designed by Igor I. Sikorsky and the series of flying boats designed by Dmitry Grigorovich.

The second half of the book covers the entry into World War I, the conflict that ranged from the Baltic in the north to the Black Sea in the south, a nearly 1000-mile front. The book contains the information as to who, how and why the national emblems evolved as well as the individual markings that appeared on the various aircraft.

Russian Aviation Colours provides a great deal of visual information and is an excellent resource for historians, researchers, and anyone interested in early aviation.

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


Robert Pandis has produced a variety of excellent works on early flight badges ranging from his first book covering the United States Army Air Service Aviator Wings to the more recent work, Flight Badges of the Allied Nations. This updated edition of Flight Badges of the Central Powers, Volume I is, as are his previous works, the go-to source for information and details on the particular nature of those insignia worn in the early years of combat aviation.

Excellent examples of the select group of manufacturers who produced the German Army pilot, observer, and gunner tunic badges that were awarded during the war are covered in depth. Additionally, the commemorative metal airship badges are quite well covered as well. These commemorative badges were available only after the war to those who rated them, as none were produced during the conflict. Pandis also provides a good selection of the shoulder boards worn by both army and naval personnel.

The book is heavily illustrated with 310 photographs, many of these being excellent close-ups of the various items recto and verso. Such details help to identify and to distinguish the genuine article from the forgeries. There is no doubt after reading this book that there are far more fakes available now than ever most likely due to the increased popularity and the number of unwitting buyers.

The book is divided into eight sections, with the majority covering the various badge manufacturers. Overall it is a comprehensive look at the badges, as well as a historical view of those men who battled a century ago in the skies over Europe. Indeed the images of the pieces are excellent; for those alone, this is a worthwhile book to own. It is a well-researched book providing a clear concise understanding of the particular nature of these badges, making it a distinctive work for those interested in this rather specialized facet of World War I combat aviation.

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


When this book was first announced, I was eager to obtain a copy as I found the topic to be an intriguing one. It promised to examine who, what, where, and how the “war in the air” commenced. I was not disappointed. Granted,
that statement covers a fair amount of territory, as combat over the front had already transpired in the first months of the war.

When on April 1, 1915, French aviator Eugène Adrien Roland Georges Garros fired a Hotchkiss machine gun through the propeller arc of his Morane Saulnier type L bringing down a German Albatros two seater, little did he realize he was setting the stage for a far-reaching German response. When it came, it was significant, as it produced the first organized and purposeful use of armed fighters to interdict the enemies’ reconnaissance aircraft and to further protect their own machines as they flew over the lines on recce missions. The Germans were able to draw upon the technological breakthrough of synchronizing the machine gun to fire through the propeller arc, something that would put the Allies on the defensive until they were able to reach parity.

This work looks into the histories of Kampfeinsitzer Kommandos (also known as KEKs) and the Fokkerstaffels (the first of these fighter units), which appeared in 1915-1916. Ryheul presents each of these units, their notable pilots, the aerodrome locations, and the actions that took place over the front. Familiar names such as Boelcke, Immelmann, Buddecke, Frankl, Wintgens, von Althaus, Loerzer, and their contemporaries fill the pages along with their “first” actions. The accounting of these early combats is the heart of this work, details of which proffer a foretaste of what was yet to come.

Ryheul put a great deal of effort into locating where the aerodromes were and provides the reader with a view of their locality using modern maps. It would have been even more valuable had the geographic coordinates been included, though he does give a descriptive caption of their locations. Reading this work has shown just how widely dispersed these 26 units were. With bases ranging from the Vosges to Flanders there is good reason for the term “Fokker Scourge” having entered the wartime vocabulary.

With over 250 images, there is a good visual representation accompanying the text. Ryheul makes clever use of digital imaging technology with a variety of “then and now” composite images. This technique works by combining a 100-year-old photograph with a recent color image of the same view of the locality, thereby creating a sense of connection to the past. The bibliography is useful though the details of the archival research material are not provided and only the institutional name is listed.

This book is a good example of the level of study that is being undertaken by a growing group of dedicated researchers and historians. It is a valuable work and one that warrants attention from those interested in the first major war in the air.

_Carl J. Bobrow, Museum Specialist, National Air and Space Museum_

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Islamic State (IS), previously known as ISIS and ISIL, is now commanding the full attention of people everywhere who are otherwise unfamiliar with the inner workings of the group, the basis for its successes, and its philosophy. This book, written by a highly experienced BBC correspondent, makes it all clear in easy-to-read journalistic-styled prose. This is, however, not a scholarly work with weighty philosophical arguments or comprehensive discussions of radical Islam and the Salafist movement. Having said that, it is to the point and captures all the relevant information for anyone who wishes to read a primer on the extremist and ultraviolent IS.

Hosken covers in some detail the key background information explaining the how and why of IS. He reaches back to the genesis of the organization, examines its philosophical foundation, its key personalities, its antecedents, and its seven-step “national” security plan. His connecting of the dots makes clear the relationship and influence of important ideologues central to the emergence of the ruthlessly violent and intolerant IS.

The chapters devoted to the rise of Abu Musab al-Zarqawi, the brutal extremist and leader of Al Qaida in Iraq (AQI)—subsequently called Islamic State of Iraq (ISI) and the progenitor of IS—are illuminating in that they explain how a Jordanian street thug became the evil genius behind AQI’s strategy for victory. During the U.S. occupation of Iraq, it was Zarqawi who orchestrated the most successful attacks against the coalition and the Shi’ites. His car bombers killed the head of the United Nations mission in Iraq and most of his staff. In turn he had the Ayatollah al-Hakim, a very important Shia leader and intended conduit between the U.S. occupation and the Shi’ites, assassinated. His two goals were to provoke the Shia into a civil war with the Sunnis—a war he would exploit to AQI’s advantage—and to drive the U.S. out. The book revisits the ill-conceived policies of U.S. leadership in Iraq that practically hand delivered successes to AQI and paved the way for the emergence of IS. Even the death of Zarqawi, at the hands of U.S. forces, proved to be a temporary and hollow victory.

Hosken is not reluctant to express criticism of those whom he believes made a viable AQI possible with irrational policies or inexcusable ignorance. Paul Bremer, President Bush’s man in charge in Iraq during the early phase of the occupation, implemented poorly developed edicts that fueled the insurgency against the US-led occupation. With his de-Ba’athification program and the dismantling of the Iraqi army, he managed to alienate the technocrats, who were vital to running the country, and turned thousands of ex-soldiers into ready-to-fight insurgents. Saddam Hussein’s former vice president, Field Marshal al-Douri, found his new niche as a leading figure in the insurgency and
The book contrasts the efforts of two leaders: one who nearly destroyed the Islamist terrorists and the other who is most responsible, through his anti-Sunni, Shia-centric, and pro-Iranian policies, for unwittingly bringing them back from the brink. The two are General David Petraeus and Iraqi Prime Minister Nouri al-Maliki, respectively.

Hosken’s work is also valuable in providing an understanding of jihadist terminology, an explanation of the formal titles used by its membership, and the significance of noms de guerre. It is this kind of detail that should be important for anyone interested in truly “knowing” the enemy.

One minor criticism relates to the occasional repetition of information. I suspect this is a consequence of the apparent haste to get this timely book into print. Otherwise, Empire of Fear should be read by all at the earliest opportunity.

Col. John Cirafici, USAF (Ret.), Milford Delaware


When President Nixon ordered B–52s to bomb North Vietnam in 1972, I was working out of Tan Son Nhu AB. I attended high-level meetings every day and watched American generals gloat over photographs of the massive damage inflicted by the B–52s. Conjecture suggests that if President Johnson had used B–52s in that role seven years earlier, the war might have ended sooner and bomber-oriented thinkers might still be running the USAF. But Johnson and SecDef McNamara chose fighters to strike North Vietnam targets, and that decision changed the philosophy regarding how to build an air force.

In the 1950s and early ’60s, Strategic Air Command (SAC) bombers ruled the world. As keeper of the Single Integrated Operations Plan, SAC controlled 95 percent of the Free World striking power. Its city-busting thermonuclear war plans held top priority, and its funding was virtually unlimited; consequently, tactical fighter pilots hated SAC’s dominance. Then came the Vietnam War; and, along the way, America’s aggressive thermonuclear assured- destruction philosophy devolved to merely a sentiment with deterrence.

More realistically, fighter jocks had been performing the bombers’ job—deep-penetrations attacks of strategic targets in North Vietnam. The jocks paid a heavy and disproportionate toll in losses but gained heroic superiority. Meanwhile, B–52s spent year after year obliterating tactical targets such as remote outposts in Laos with few tangible results beyond terrorizing people in the jungle. B–52 strikes against strategic targets in North Vietnam came too late. The years of reversal of roles had allowed tactical air force thinkers to gain equality in air-war planning.

Working from this background, Air Force historian Laslie examines the evolution of a new USAF structure. His primary affirmation is that operations in Vietnam ended the separation between strategic and tactical uses of air power. To prove the point, he reviews lessons learned from the Vietnam war, the most important being that over North Vietnam, the first ten actual combat missions took the greatest toll on pilots: inadequate training was the primary cause of combat losses in Vietnam. Consequently, the Air Force revised pilot training and made it as realistic as the first ten actual combat missions.

Laslie details revisions to training: creation of designed operational capability, agreement on thirty-one initiatives with the Army, evolution of Red Flag war games, and development of new aircraft. Basically, under the new system, technology influenced training, which influenced tactics, which influenced doctrine. These factors led to a change in the overall USAF structure.

Laslie holds fighter pilots in high esteem (rightfully so, especially those who flew over North Vietnam) and, therefore, strongly supports their views. As an old B–47, B–52, and Spectre gunship crewdog, I found his arguments credible but occasionally slanted. At the same time, I admired his honesty. He names generals who accepted mediocrity based on their inability to recognize a necessity for change. And he lauds leaders that championed crew survivability. He should have said more about inadequate pre-strike intelligence and poor staff planning, but perhaps he considered those weaknesses as givens.

B–52 crewmen at U-Tapao AB, Thailand, had complained about having to use uncoordinated tactics over the North that neutralized their electronic countermeasures. Their discontent paralleled that of fighter pilots who had followed identical and unimaginative entry and exit routes to Northern targets at the same time day after day.

The book’s first five chapters trace the origins and early growth of Red Flag, the first of eighteen different training exercises that bore the “Flag” name. Laslie extends his argument for more realistic training to the last wars of the twentieth century. He devotes two of nine total chapters to Desert Storm and another two to the 1990s, including Bosnia and Kosovo.

The book’s final chapters describe the impact of improved training on combat operations starting with the 1986 attack on Libya. Swept up in the fighter pilots’ quest for control, Laslie makes the following pronouncements: “Many have dubbed the air war over Iraq and Kuwait as a ‘strategic air war.’ In the purest use of the term, this is a misnomer. The air war over Iraq and Kuwait was actually a tactical air war that caused strategic level effects. Everything about air power in the way it was traditionally conceived was overturned during Desert Storm.”

He continues: “Perhaps the most damning statement
in the [GAO] report was that the B–52’s contribution to the overall war effort was minimal and did not ‘stand out’ over that of the far more numerous tactical fighters.” Basically, the report said that SAC had no role “outside the nuclear realm.”

Clearly, fighter pilots wanted to run the Air Force without compromise. Laslie best captures the mood of the time in his account of planning for Desert Shield. Personality clashes created scenes of drama equal to the most intense found on a good television miniseries.

Along with winning Desert Storm, fighter pilots also finally won control of the Air Force. What emerged was “theater air war.”

As a wrap-up, Laslie explains the 1992 restructuring of the entire USAF. He clarifies the merger of TAC and SAC into the Air Combat Command: “The former members of SAC moved into ACC seamlessly as they reorganized the bomber doctrine and made it fit with what the tactical community had been doing for years.”

Laslie offers a postscript by analyzing USAF participation under NATO in the Balkan Campaigns. He finds faults in NATO’s lack of planning and clear objectives. But he credits Red Flag training for the good things that happened such as USAF’s ability to conduct day-and-night operations. He does not delve into air operations in Afghanistan and the 2003 invasion of Iraq.

Overall, Laslie sticks to the party line in explaining the current state of USAF strategy, tactics, and leadership; it sounds like an advertisement to justify why the service is satisfied with its present configuration. Is the “air force way of war” adequate today? USAF faces new challenges such as limited targeting assignments for manned aircraft, the universal employment of drones, and questionable airframe performance. Laslie only fleetingly approaches such problems by mentioning the “fickle element” of technology. As I see it, the book is merely a middle chapter in a long argument.

Henry Zeybel, Austin, Texas


This is Lengel’s second study of the U.S. military in France. It follows his previous work on the American Army in the Meuse-Argonne offensive, To Conquer Hell: The Meuse-Argonne, 1918 (2008). In Thunder and Flames, he investigates the effectiveness of American troops prior to Meuse-Argonne while serving under French command. As a professor at the University of Virginia, he has delivered an exceptional level of scholarship. The publisher is to be commended as well for continuing the Modern War Series.

Starting with the introduction of American forces into France, the book focuses on the battles of the spring and summer of 1918, when the Allies withstood the final German offensives on the Western Front before mounting their own war-ending offensives in the fall. Lengel breaks down the fighting into a series of engagements. All are discussed in detail with references to German, French, and American sources. He occasionally interjects the individual’s point of view, but the emphasis is on decision-making at the battalion level and above.

While most of us familiar with U.S. operations in France have heard of Chateau Thierry, Belleau Wood, and the defense of the Marne, Lengel also covers lesser-known actions—the first bloodletting at Cantigny in May, the limited offensive at Soissons, the Aisne-Marne campaign, and the frustration and failure at Fismette. Nearly a third of the book is devoted to the long effort to drive the Germans out of Belleau Wood.

The detailed accounts provide repeated examples of incompetent leaders and the inability to learn from past mistakes. The popular American perspective of the better-known battles emphasizes how the Yanks saved the French. Lengel argues American success depended far more on the French than high-level commanders were willing to acknowledge. Inexperience and uneven leadership at the company level resulted in unnecessarily high casualties. For example, assaulting troops frequently maneuvered in large groups rather than practicing proper dispersal. In their naïve desire to impress the French, they frequently rushed their pace of advance, unnecessarily exposing their flanks. Finally, they seemed to fail time and again to master the basics of gas protection.

At higher levels, American leaders frequently blamed French counterparts for their own failures. The challenges of cooperating in coalition warfare are reinforced in these accounts. Only a very few Americans seemed to work well with the French. Of course, there were instances when French commanders misused American troops, but not to the degree claimed by their Yankee counterparts.

Maps, an absolute necessity for understanding the challenges faced by those in combat, are woefully inadequate. Lengel practically apologizes in advance for this deficiency. Generalists unfamiliar with basic military organization and unit designations may struggle with the level of detail, as Lengel understandably relies on such “shorthand” for the sake of simplicity. As for the air war, there are a couple of references to German aircraft strafing and bombing American troops and criticism of the First Pursuit Group’s inability to protect them. Despite these shortcomings, the exceptional detail and analysis make this a must read for any student of World War I.

Lt. Col. Steven D. Ellis, USAF (Ret.), docent, Museum of Flight, Seattle
The North American Aviation B–21 was called the "Dragon." (Yes, the Douglas B–23 was also called the Dragon.) The B–21 Dragon was an all-metal twin-engine tail-dragger. With a crew of six, the XB–21 had a top speed of 220 mph and could carry a bomb load of 2,200 pounds a distance of 1,900 miles. The Dragon first flew on December 22, 1936. While no further B–21 aircraft orders came after North American Aviation delivered the first test aircraft (XB–21), North American Aviation would learn from the experience and incorporate what they learned into their design of the B–25 Mitchell. The U.S. Army Air Corps would procure the more affordable but less capable Douglas B–18 Bolo (above). The B–18 would prove to be ineffective compared to the much more capable B–17.

To learn more about pre-World War II bomber development you can read US Air Force Historical Study No. 6: The Development of the Heavy Bomber 1918-1944 which can be found at: http://www.afhra.af.mil/shared/media/document/AFD-090602-028.pdf

To learn more about the XB–21 and see a video of it landing: http://www.boeingimages.com/archive/The-NA-21-Dragon-(B-21)-Experimental-Bomber-2JRSXLBG2ZR.html
July 22-26, 2016
The International Committee for the History of Technology will hold its 43rd annual meeting in Porto, Portugal. This year’s theme will be “Technology, Innovation, and Sustainability: Historical and Contemporary Narratives.” For further information, visit the Committee’s website at www.icohtec.org/annual-meeting-2016.html.

September 7-8, 2016
The Armed Forces Communications and Electronics Association and the National Security Alliance will host the third Intelligence & National Security Summit 2016 at the Walter E. Washington Convention Center in Washington, D.C. For more info, see the Association’s website at http://events.jspargo.com/nss16/public/enter.aspx.

September 8-10, 2016
The Tailhook Association will hold its annual symposium and reunion at the Nugget Hotel in Sparks, Nevada. For details, see the Association’s website at www.tailhook.net/A_Reunion_Page.html.

September 13-16, 2016
The American Institute of Aeronautics and Astronautics will host its annual premier event, Space 2016, at the Long Beach Convention Center in Long Beach, California. For additional information, visit the Institute’s website at www.aiaa-space.org/?_ga=1.250442310.1576745014.1445537679.

September 19-21, 2016
The Air Force Association will hold its 2016 Convention and Air & Space Conference and Technology Exposition at the Gaylord National Hotel in National Har-

bor, Maryland. For more information, see the Association’s website at www.afa.org/afa/home.

September 21-24, 2016
The Society of Experimental Test Pilots will hold its 60th annual Symposium and Banquet at the Grand Californian Hotel in Anaheim, California. For more details as they become available, see the Society’s website at www.setp.org/annual-symposium-banquet/60th-annual-symposium-banquet-info.html. October 3-5, 2016

September 27-30, 2016
The Aircraft Engine Historical Society will hold its annual meeting in Dayton, Ohio. For more details, see the Society’s website at www.enginehistory.org.

October 1, 2016
The National Aviation Hall of Fame will induct its 54th group of honorees—astronaut Captain Robert Crippen, USN; fighter ace and Vietnam War POW Colonel George “Bud” Day, USAF; NASA Mission Control Center director Christopher “Chris” Kraft; and aircraft and aerobatic champion Tom Poberezny—at the Hall’s Learning Center co-located with the National Museum of the United States Air Force in Dayton, Ohio. For additional information, see the Hall’s website at www.nationalaviation.org/.

October 1-2, 2016
The National Museum of the United States Air Force will host its WWI Dawn Patrol Rendezvous to commemorate the 100th anniversary of WWI in Europe. For details, see the Museum’s website at www.nationalmuseum.af.mil/Upcoming/WWI-DawnPatrol.aspx.

October 3-5, 2016
The Association of the United States Army will hold its annual meeting and exhibition at the Walter E. Washington Convention Center in Washington, D.C. Over 600 exhibitors are expected to attend. For more information, see the Association’s website at http://ausmeetings.org/2016annualmeeting/.

October 12-16, 2016
The Oral History Association will hold its annual meeting at the Renaissance Hotel Long Beach in Long Beach, California. The theme this year is “OHA@50: Traditions, Transitions and Technologies from the Field.” For further details, see the Association’s website at www.oralhistory.org/annual-meeting/.

November 17-19, 2016
The National World War II Museum will host its latest International Conference on WWII at the Museum in New Orleans, Louisiana. This year’s theme is “1946: Year Zero, Triumph and Tragedy.” For more details, see the Museum’s website at www.ww2conference.com/splash/.

November 29-December 1, 2016
The Association of Old Crows will hold its annual meeting at the Marriott Marquis DC and Convention Center in Washington, DC. For additional info, ping a Crow at www.crows.org/conventions/conventions.html.

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:

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

Compiled by
George W. Cully

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
(703) 620-4139
e-mail: scottlin.willey@gmail.com

PROSPECTIVE REVIEWERS

The Association of the United States Army will hold its annual meeting and exhibition at the Walter E. Washington Convention Center in Washington, D.C. Over 600 exhibitors are expected to attend. For more information, see the Association’s website at http://ausmeetings.org/2016annualmeeting/.

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Reunions

1st Fighter Assn Sep 7-10, 2017, Dayton, Ohio. Contact: Bob Baltzer 1470 Foxtale Ct, Xenia, OH 45385 937-427-0728 robertbaltzer@sbcglobal.net

20th SOS Sep 15 2016, Dayton, OH Continued Sep 16-18, 2016, Kokomo IN Contact: Jim Woodbury 2210 West Judson Rd, Kokomo, IN 46901 765-432-1577 jswoodbury@comcast.net

60th Aerial Delivery Sep 20-22, 2016, Marion, OH Contact: Peggy Schoen 3930 Dunbar Rd, Prospect, OH 43342 740-360-4767 pdschoen2@yahoo.com

60th Aerial Delivery Sep 20-22, 2016, Marion, OH Contact: Peggy Schoen 3930 Dunbar Rd, Prospect, OH 43342 740-360-4767 pdschoen2@yahoo.com

339th Fighter Group Sep 7-11, 2016, Fairborn, OH. Contact: William Clark Jr. 200 River Ridge Dr, Waco, TX 76705 254-799-7163 jclark14@hot rr.com

366th Fighter Assn Sep 19-24, 2017, Fairborn, Ohio. Contact: Paul Jacobs 8853 Amarantha Ct, Reynoldsburg, OH 43068 614-866-9791 paul@jacob.net

433rd Fighter Interceptor Squadron Oct 13-16, 2016, Fairborn, OH. Contact: Charles Bobosky 661 Beech Ave, Youngstown, OH 44512 330-758-4275 ck661@zoominternet.net

446th Bomb Group Jun 2-6, 2016, Fairborn, Ohio. Contact: Linda Anderson 2267 Palm Dr, Colorado Springs, CO 80918 719-574-9197 bieberl1@earthlink.net

510th Fighter Squadron Assn Aug 11-14, 2016, Fairborn, OH. Contact: David Nichols 6510 Cottage Dr, Bellerai, MA 49615 davelaurieni@yahoo.com

623rd Airborne Control & Warning Sep 18-22, 2016, Dayton, Ohio. Contact: Sherry Mills 5088 Cameron Ridge Rd, Cameron, WV 26033 304-280-5903 thatpurpleeagle@gmail.com

664th Airborne Control & Warning Squadron Veterans Reunion for USAF Radar Station Veterans Worldwide. Jun. 24-26, 2016, Bellefontaine, Ohio. Contact: Billy Stafford P.O. Box 12, Bellefontaine, OH 43311 937-287-9240 wildhill@columbus.rr.com

821st Security Police - Ellsworth AFB, SD Sep 30 - Oct 2, 2016, Dayton, OH Contact: Al Seguin 2021 Renford Pointe, Marietta, GA 30062 770-578-6881 aaseguin@yahoo.com


447th Test & Evaluation Squadron Sep. 8-11, 2016, Fairborn, Ohio. Contact: Ted Drake 1212 Westmont Dr, Southlake, TX 76092 1817-251-8614 teddrake@aol.com


AeroMed Evac Assn Apr 13-16, 2016, Fairborn, Ohio. Contact: John Killian 530-662-2285 Johnjan1571@sbcglobal.net

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

Sampson AFB Veterans Assn. May 12-14, 2016, Fairborn, Ohio. Contact: Hal Fulton 2833 Mara Loma Cr, Wooster, OH 44691 330-264-5200 fasu@aol.com

Classes

PTC-56M. Oct 19-22, 2016, Fairborn, Ohio. Contact: John Mitchell 11713 Decade Ct, Reston, VA 20191 703-264-9609 mitchelli6@yahoo.com

PTC-65C. Sep 27-30, 2016, Dayton/Fairborn, Ohio. Contact: Jim Folsom 447 Navajo West, Lake Quivira, KS 66217 913-268-6104 folsom447@att.net

UPT Class 67C (Webb AFB). Oct 20-23, 2016, Fairborn, Ohio. Contact: Mike Trahan 1014 Lansing St, West Orange, TX 77630 409-920-5680 mtrahan33@gmail.com

UPT Class 72-01 (Laughlin AFB) Sep 29 - Oct 2, 2016, Fairborn, OH Contact: Tim Bellury 120 Sandy Lake Circle, Fayetteville, GA 30214 678-817-1966 bellury@earthlink.net
Recently the Air Force announced that its newest bomber will be the B–21. As part of the unveiling, USAF Secretary James announced that the Air Force is having a naming competition for the new B–21. This B–21 will not be the first B–21. In the 1930's, the NA-21, later XB–21 was one of the aircraft considered to replace the Martin B–10. What was the original B–21's name? What bomber did the Army Air Corps procure instead of the B–21?
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