

# AIR POWER

FALL 2002 - Volume 49, Number 3

# *History*



Meg Chamberlain

# AIR POWER

FALL 2002 - Volume 49, Number 3

# History

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Roger Miller began publishing his research on the military career of Lt. Gen. Lewis Brereton in the Winter 2000 issue of *Air Power History* [Vol. 47, No. 4], with his article, “A ‘Pretty Damn Able Commander’”—Part I. He then published Part II in the Spring 2001 issue [Vol. 48, No. 1]. Miller continues to entertain and inform readers, while spinning the Brereton tale in this issue with the article, “Four ‘Caterpillars’ and a Funeral.” The caterpillar refers to a pin that a parachute company awarded to those who survived jumping out of an airplane.

In the second article, “Disaster off Casablanca: Air Observation Posts in Operation Torch and the Role of Failure in Institutional Innovation,” Edgar Raines relates the World War II trials and tribulations of the U.S. Army’s Field Artillery with air observation posts—as distinguished from ground observation. Although it failed initially, he shows that after two years of combat the innovation succeeded.

The third article, “Searching for Ebro-33,” concerns the attempted rescue of two airmen in the 1995 NATO Operation Deliberate Force. Author Darrell Whitcomb also concludes that “in failure, there was success.”

Air Commodore John L. Mitchell, RAF (Ret.), adds to our knowledge of the escorts of Allied leaders to the February 1945 Yalta Conference. Mitchell, who navigated Winston Churchill’s plane, follows up on the American escort story, “My Most Secret Mission,” [Summer 2002, Vol. 49, No. 2] by H. A. Eberhardt.

Readers will enjoy Mark Clodfelter’s extensive review essay of Wayne Thompson’s highly-acclaimed book, *To Hanoi and Back: The United States Air Force and North Vietnam, 1966-1973*.

This issue also contains ten other book reviews covering the gamut of air power literature from World War II to Star Wars. We have also received more than a dozen new books that are available for review. For details, see page 56. Other departments include the ever-popular History Mystery, upcoming events, letters to the editor, news, and reunions.

Finally, we are saddened to report the passing of several members of the “greatest generation.” Among these are Gen. Benjamin O. Davis, Jr., the famous leader of the Tuskegee Airmen, see page 66. And Lt. Gen. Abbott C. Greenleaf, for many years a steadfast supporter and trustee of the Air Force Historical Foundation, see page 68.



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# FOUR "CATERPILLARS" AND A FUNERAL DOCUMENTS ON THE CRASH OF THE HUFF-DALAND XLB-5, MAY 28, 1927





Roger G. Miller



(Overleaf) The Huff-Daland XLB-5. (Photo courtesy of the U.S. Air Force Museum.)

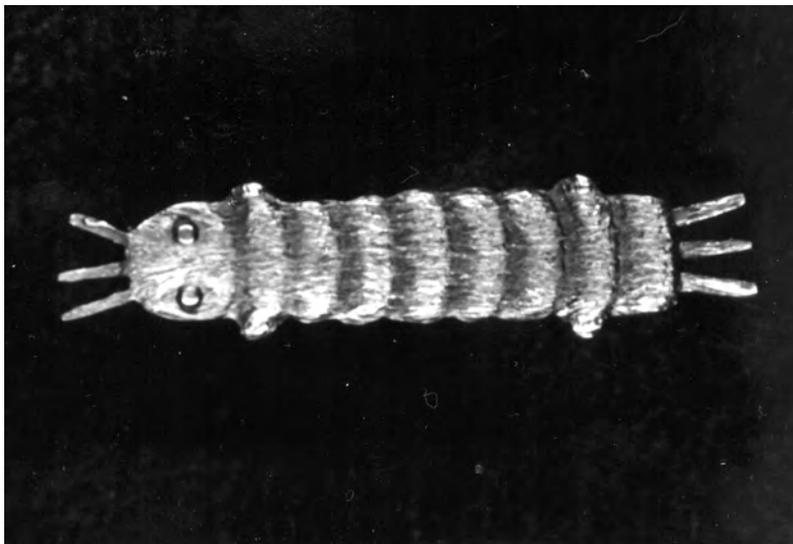
(Above) The Huff-Daland XLB-5, powered by two water-cooled 420 hp. Liberty engines was identifiable by its single vertical stabilizer. (Remaining photos courtesy of National Archives.)

(Below) The metal lapel pin presented by the Irving Air Chute Company to members of the Caterpillar Club.

Aircraft accidents were relatively common during the early days of military aviation. And while most were a flying version of “fender benders,” many resulted in the destruction of an aircraft and often a loss of life. Following World War I, the U.S. Army Air Service and its successor, the Air Corps, adopted a formal system of aircraft accident investigation and reporting to improve flying safety. As a result, today the U.S. Air Force Historical Research Agency (AFHRA) at Maxwell Air Force Base (AFB), Alabama, maintains an extensive collection of accident reports from prior to World War II. This collection

is one of the least known, most useful, and all-too-often ignored sources of information on early army aviation. Most of the reports comprise standard forms that record the basic facts of an accident, including the date, time, location, aircraft, individuals involved, and damage. Photographs, technical data, the pilot’s record, and other pertinent material may also be part of the record. When a death occurred, the report is usually more extensive and may include testimony, orders, letters, and messages.

Such is the case of the report on the crash of the Huff-Daland XLB-5 “Pirate” and death of Pvt. Daniel Leroy Yeager near Reynoldsburg, Ohio, on May 28, 1927.<sup>1</sup> This accident is intrinsically interesting for at least two reasons. First, when four members of the crew jumped from the aircraft, they became the greatest number of airmen saved by parachute during a single incident since the Air Service had mandated the use of that device in 1922. On October 20, of that year, 1st Lt. Harold R. Harris became the first Air Service pilot to use a parachute successfully. Subsequently, two Dayton newsmen, Morris Hutton and Verne Timmerman and an Engineering Division employee, M. H. St. Clair, from McCook Field, established an unofficial association, the “Caterpillar Club.” The name symbolized that parachutes were made of silk, and also that a caterpillar spins a cocoon, crawls out and flies away from certain death. Members of the club received a certificate, and several parachute manufacturers, especially the Irving Air Chute Company, also presented them with gold or silver



*Roger G. Miller is a historian with the Air Force History Support Office at Bolling AFB, Washington, D.C. He is currently writing a history of air logistics from the Mexican border to the Persian Gulf. His articles have appeared in Air Power History, The Indiana Magazine of History, Military Affairs, Prologue, and The Air Force Journal of Logistics. Dr. Miller’s book, To Save a City: The Berlin Airlift, 1949–1949, was recently published by Texas A&M University Press.*



(Above) The first production version of the XLB-5 was the Keystone LB-5. The additional “stabilizing rudders” are readily apparent.

(Below) A distinguished veteran of World War I, Maj. Lewis H. Brereton commanded the 2d Bombardment Group at Langley Field, Virginia in May 1927.



“caterpillar pins.” With the crash of the XLB-5, the roster of the Caterpillar Club expanded significantly.<sup>2</sup>

Second, one of the men who jumped from the XLB-5 was Maj. Lewis Hyde Brereton, commander of the 2d Bombardment Group (BG), based at Langley Field, Virginia. Brereton was one of the U.S. Army’s pioneer aviators, a decorated combat veteran of World War I, and an officer with consid-

erable operational and staff experience. As will be seen, the accident occurred at a critical juncture in his career, but he would survive the event and go on to become a lieutenant general during World War II, serve in most of the theaters of the war, and participate in several of the most controversial operations of that conflict. Beyond the accident itself, the report provides a good picture of some U.S. Army Air Corps practices related to inspection, maintenance, and accident evaluation in the late 1920s.

The XLB-5, Air Corps serial number 26-208, was one of a series of single- and twin-engine biplane bombers designed and built by Huff, Daland and Company, Incorporated, of Bristol, Pennsylvania, beginning with the XLB-1 in 1923. In March 1927, Huff-Daland became the Keystone Aircraft Corporation, and the U.S. Army ultimately purchased some 250 aircraft from the company through 1932. Almost all of its bombers were conventional, cloth-covered biplanes not much different in design or performance from those that had flown during World War I. A tangle of drag-inducing strut-and-wire external bracing and what appears to the modern eye to be a total disinterest in streamlining seem to have been the most prominent characteristics of the type. The Air Corps accepted the XLB-5—identifiable by its single vertical stabilizer and rudder—on November 12, 1926. Subsequently, the Air Corps bought ten, designated as the LB-5, which had two additional “stabilizing rudders” above the horizontal stabilizer in line with the slipstream of the engines, giving it the appearance of having three vertical tails. And later, the Air Corps purchased thirty-five of a variant, the LB-5A, which sported the twin vertical tails standard on army bombers of the day.<sup>3</sup> Two water-cooled 420-hp Liberty V-1650-3 engines gave the XLB-5 a top speed of 113 mph. The United States had produced over 20,000

The Air Corps bought thirty-five Keystone LB-5A bombers, which sported twin vertical tails. This formation is "leaving a Texas sunrise" on September 7, 1928.



McCook Field, Dayton, Ohio, circa 1927. The buildings at lower center feature direction markers as navigational aids for pilots. A Fokker T-2 transport flies overhead.

Liberties during World War I. Noted for its reliability, the Liberty powered a variety of larger Air Service aircraft following the war, but was coming to the end of its service life by 1927.<sup>4</sup>

The XLB-5 was one of twenty-eight bombers from the 2d BG that participated in the annual Air Corps maneuvers, held near San Antonio, Texas, in May 1927. Army aviation had begun conducting



A line of 2d Bombardment Group bombers during the U.S. Army Air Corps annual maneuvers in Texas in May 1927. The first two aircraft are Martin NBS-1s, the third is probably the Huff-Daland XLB-5. The NBS-1s formed the backbone of U.S. Army Air Corps bombardment aviation in 1927.



(Left to right) Maj. Gen. Mason Patrick, Chief of the Air Corps, Brig. Gen. James E. Fechet, Assistant Chief of the Air Corps, and Brig. Gen. Frank P. Lahm, Air Corps Training Center commander at the U.S. Army Air Corps maneuvers in Texas in May 1927.

large-scale annual maneuvers in 1925, to allow operational training and test organization, equipment, tactics, and logistics under field conditions. The maneuvers held between May 15 and 19, fea-

tured a field army under Maj. Gen. Ernest Hinds maneuvering against a simulated enemy force. The Air Corps assembled some 108 airplanes and an airship under the Deputy Commander of the



Four Martin NBS-1 bombers of the 96th Bombardment Squadron at the U.S. Army Air Corps annual maneuvers in Texas in May 1927. Note the ground crew sheltering from the sun under the wing of the aircraft nearest the camera.



Formation of Martin NBS-1 bombers on May 9, 1927 during the U.S. Army Air Corps annual maneuvers in Texas.



Air Corps, Brig. Gen. James E. Fechet. Major Brereton personally led ten of the bombers—six Martin NBS-1s, a Curtiss NBS-4, a Martin MB-2, a DeHavilland DH-4M-2P, and the XLB-5—to Texas. On May 2, the flight stopped at Wright

Field outside Dayton, Ohio,<sup>5</sup> while the XLB-5 landed at nearby McCook Field, home of the Air Corps's Materiel Division. At McCook, engineering personnel modified the blades of the XLB-5's Standard Steel Company metal propellers, thinning them toward the hub to provide a more consistent taper in place of the more radical taper of the stock propeller that the engineers considered susceptible to failure. They also scrutinized the blades for hairline cracks, finding none. The flight then proceeded to Texas.

Second Lt. Bernard A. Bridget piloted the XLB-5 on the return trip to Langley. A private in the Ambulance Service during World War I, Bridget had become involved in aviation long after the war, graduating from the Air Service Primary Flying School in 1924, and the Advanced Flying School Bombardment Course in 1926.<sup>6</sup> Despite Bridget's relative lack of time in the air, Brereton thought highly of his flying ability. In addition to Brereton, the other passengers on the ill-fated flight included two veteran Air Corps enlisted personnel, MSgt. Clyde M. Taylor and SSgt. Fred D. Miller, and a nineteen-year-old novice on his first cross-country mission, Private Yeager.<sup>7</sup>

The original orders directed the XLB-5 to return to Langley across Louisiana, Mississippi, Georgia, and the Carolinas. For reasons not in the record, however, Brereton requested a northern route that would take the aircraft to Langley by way of McCook Field and Bolling Field outside Washington, D.C. The initial leg of the journey to Ohio was uneventful. During the stop at McCook, two civilian inspectors, H. H. Barb and George Holland, examined the XLB-5's welded joints and attachment plates, inspected the control system and landing gear, and checked the crank shaft of

A formation of 2d Bombardment Group bombers passes in review at Kelly Field on May 20, 1927 during the U.S. Army Air Corps annual maneuvers.



**THEY SIGNED OFF ON THE AIRCRAFT ON THE AFTERNOON OF MAY 27, AND THE XLB-5 RESUMED ITS TRIP THE NEXT MORNING**

both engines for excessive play. They signed off on the aircraft on the afternoon of May 27, and the XLB-5 resumed its trip the next morning. Bridget occupied the pilot's position on the right side of the center cockpit; Brereton sat on his left. The two sergeants took stations in the rear gunner's position, where Miller operated the radio. Yeager sat by himself in the gunner's position in the nose.

Shortly afterward, the XLB-5 reached Norton Field, about seven miles east of Columbus, Ohio. Not to be confused with modern-day Norton AFB, California, Norton Field in 1927 was aviation headquarters for the U.S. Army's V Corps Area and a reserve aerodrome capable of servicing transient aircraft.<sup>8</sup> As he passed over the field, Bridget noticed that the right engine had suddenly lost about 300 rpm. Concerned, he turned around and landed. The suspect engine cut out after the aircraft reached the ground. While the officers and crew had lunch, Norton mechanics discovered an ignition problem: the brushes were worn out and the rotor "chewed up a bit," in Bridget's words. Following repairs, the bomber was refueled, and Bridget started the engines. While running up the right motor, he noticed that the shaft appeared to rotate slightly in what he described later as "a conical plane." This abnormality appears not to have deterred the lieutenant. He took off and, the XLB-5 soon reached an altitude of between 1,000 and 1,200 feet. Over Reynoldsburg, ten miles east of Columbus, Bridget heard a sharp explosion. A blade of the right propeller broke off—it was found later about two miles from the main crash site—and the engine literally tore itself apart, spraying the aircraft with shrapnel. One piece hit Bridget on the right leg; another may have hit Yeager. There was

little time to think. Brereton went over the left side of the fuselage. Taylor went over the right side, followed by Miller, whose radio helmet delayed his departure. The injured Bridget found that the XLB-5's controls would not respond, and when he tried to retard the throttle of the remaining engine, the aircraft seemed to fall faster. He increased power, then scrambled over the side of the fuselage. As he exited the cockpit, Bridget saw Yeager look at him. Thinking the private either stunned or afraid, Bridget yelled at him to jump, then took to his parachute.

Brereton, Taylor, and Miller landed safely. Bridget's canopy barely had time to open, however, and he hit the roof of a small church in Reynoldsburg, injuring his back. The XLB-5 crashed in a nearby field. Leaving the incapacitated pilot in the care of a local doctor, Brereton, Taylor, and Miller reached the crash site some ten to twenty minutes after the airplane hit. They found Yeager dead, lying half-out of the fuselage. Miller made some effort to extricate the body, but the wreckage was saturated with gasoline. A few minutes later, it unexpectedly exploded in a ball of fire that reduced the structure to a few charred pieces and burned Yeager's body beyond recognition.

A doctor, ambulance, and contingent of troops from nearby Fort Hayes under 2d Lt. John R. McGuinness reached the crash site about an hour after the accident. Brereton asked that a truck be sent from Fort Hayes to move the wreckage to Norton Field. He and Miller then flew to McCook Field, followed later by Taylor, who had remained behind to guard the wreck. The soldiers took Bridget to the post hospital at Fort Hayes. An accident board met at McCook Field on May 29 and

**THE ENGINE LITERALLY TORE ITSELF APART, SPRAYING THE AIRCRAFT WITH SHRAPNEL**

Norton Field outside Columbus, Ohio.

**THE BOARD MEMBERS CONCLUDED THAT THE ACCIDENT WAS CAUSED BY A CATASTROPHIC FAILURE OF THE PROPELLER OF THE RIGHT ENGINE AND THAT YEAGER HAD DIED WHEN THE AIRCRAFT CRASHED**



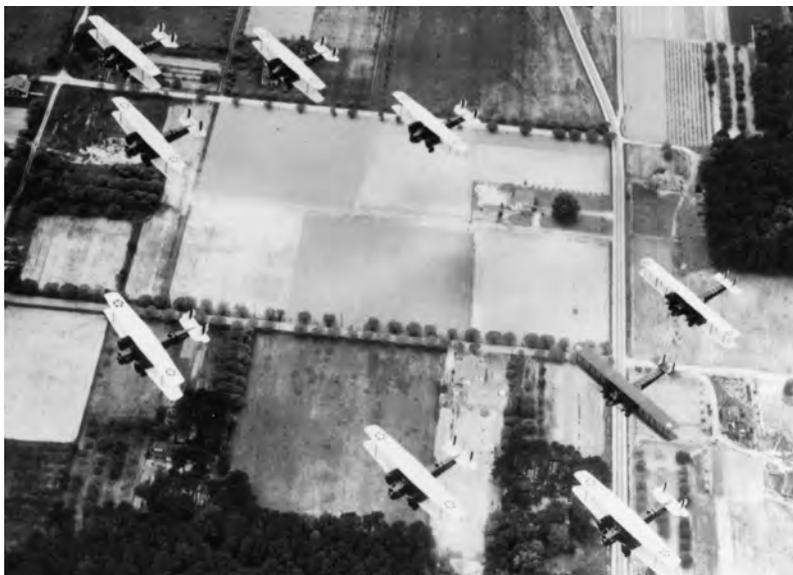
examined Brereton, Taylor, and Miller. It completed its work on May 31 by taking the testimony of the injured pilot in the Fort Hayes hospital. The board members concluded that the accident was caused by a catastrophic failure of the propeller of the right engine and that Yeager had died when the aircraft crashed. The board recommended that the propeller blade be thoroughly analyzed to determine why it had broken.

The Standard Steel Propeller Company of Pittsburgh, Pennsylvania, had begun producing forged duralumin propellers in the early 1920s and by 1927 was manufacturing all-metal, adjustable-pitch propellers for civilian and military use. Charles Lindbergh's "Spirit of St. Louis" was equipped with a Standard Steel prop. In 1929,

the Hamilton Aero Manufacturing Company and Standard Steel Propeller Company combined to form the Hamilton Standard Propeller Corporation, the largest producer of propellers in the world at that time. The company won the Collier Trophy in 1933 for a controllable-pitch propeller patented in 1927.<sup>9</sup>

Efforts to locate a report of a test of the propeller blade that failed on the XLB-5 proved unsuccessful. The National Air and Space Museum in Washington, D.C., maintains Wright Field technical data and reports from the period at its Paul E. Garber Preservation, Restoration, and Storage Facility in Silver Hill, Maryland. A thorough survey of the card catalog yielded nine index cards listing reports on tests of Standard Company propellers between 1925 and the end of 1927. None, however, concerned the Huff-Daland XLB-5 crash. Unfortunately, only two of the reports listed on the cards were actually in the archival files. One, however, is relevant. In December 1926, engineers tested a Standard Steel Propeller Company forged duralumin propeller from a Huff-Daland XLB-1 that had failed at the junction of the hub and blade after thirty-four hours flying time and ten hours on a test stand. The Material Section reported that the hardness, and chemical composition of the blade met Air Corps specifications. The engineers also found minute surface cracks near the hub, but concluded that they were superficial and probably played no role in the blade failure. They did, however, discover that the tensile strength of the longitudinal specimens was "decidedly erratic." The tensile strength of samples from the hub met Air Corps specifications; the tensile strength of samples taken from the blade, however, was below specifications.<sup>10</sup>

A year after the 1927 maneuvers, the 2d Bombardment Group's equipment had changed. This formation, on May 17, 1928, includes seven Keystone LB-5A bombers, identifiable by their tapered wings, and two Martin NBS-1s on the right.



The crash of the Huff-Daland came at a critical time in Maj. Lewis Brereton's career. By early 1927, a failing marriage and heavy drinking had affected his nerves, and in February, three months before the accident, he had requested sick leave so that he could consult with a specialist. Subsequently, on April 7, he was at the controls of a Huff-Daland LB-1 when engine failure caused it to crash land at Langley Field just after takeoff. A near collision with another airplane at Little Rock, Arkansas, the crash of the XLB-5, and a formal reprimand in June—for an incident during which he failed to follow orders—followed in quick succession. The crash of the XLB-5 was, thus, one episode in a chain of events that contributed significantly to Brereton's condition. Under severe stress—diagnosed at Langley as “beginning fear of flying”—Brereton removed himself from flight sta-

tus and spent two months undergoing treatment by one of New York City's leading psychoanalysts. Subsequently, the major recovered fully, returned to flying status, and resumed his career. At the beginning of World War II, Major General Brereton was the commander of Far East Air Force (FEAF) in the Philippines. He subsequently served as deputy air commander of the American-British Dutch-Australia Command (ABDACOM) in Java, commander of Tenth Air Force in India, commander of Ninth Air Force in North Africa and Europe, and commander of First Allied Airborne Army. He thus participated in such controversial episodes as the defeat of FEAF and ABDACOM; Operation Tidal Wave, the low-level attack on the Ploesti oil refineries; Operation Cobra, the breakout from Normandy; and Operation Market-Garden, the airborne assault in Holland.<sup>11</sup> ■

## NOTES

1. Crash of Huff-Daland XLB-5,” May 28, 1927, Aircraft Accident and Incident Reports, 200.3912-1, Air Force Historical Research Agency (AFHRA), Maxwell AFB, Alabama. “Pirate” was the company nickname for the airplane; the Air Corps never adopted it officially.
2. Maurer Maurer, *Aviation in the U.S. Army, 1919-1939* (Washington, D.C.: Office of Air Force History, 1987), pp. 163-64; Mark S. Barbour, “The Caterpillar Club's Aviation History of Central New York State,” website, [www.home.twcny.rr.com/caterpillarclub/irvin/irvin.htm](http://www.home.twcny.rr.com/caterpillarclub/irvin/irvin.htm), May 3, 2001.
3. *Janes All the World's Aircraft*, 1928, pp. 230-31; Maurer, *Aviation in the U.S. Army*, pp. 214-15; Huff-Daland XLB-5,” USAF Museum Virtual Aircraft Gallery,” U.S. Air Force Museum, Wright-Patterson AFB, Ohio, [www.wpafb.af.mil/museum/research/bombers/b1-19.htm](http://www.wpafb.af.mil/museum/research/bombers/b1-19.htm) May 3, 2001; “Huff-Daland XLB-5,” Joe Baugher's Encyclopedia of American Military Aircraft, [www.home.att.net/~jbaugher2/lb5.html](http://www.home.att.net/~jbaugher2/lb5.html) May 3, 2001. The first Huff-Daland accepted by the Army was the TA-2, a single-engine training aircraft, three of which were purchased in 1920.
4. I. B. Holley, Jr., *Ideas and Weapons*, New Imprint (Washington, D.C.: Office of Air Force History, 1983), pp. 119-22, 124; “Liberty 12-A Engine,” U.S. Air Force Museum, Wright-Patterson AFB, Ohio, [www.wpafb.af.mil/museum/engines/eng28.htm](http://www.wpafb.af.mil/museum/engines/eng28.htm) May 2, 2001.
5. “Wright Field, Ohio,” *Air Corps News Letter*, May 14, 1927, p. 155 “The Joint Maneuvers at San Antonio,” *Air*

- Corps News Letter*, June 8, 1927, pp. 156-59; Maurer, *Aviation in the U.S. Army*, p. 239.
6. *U.S. Army Register*, for appropriate years.
7. This account of the accident is based upon the official report and the account in Don Glassman, *JUMP: Tales of the Caterpillar Club* (New York: Simon and Schuster, 1930), pp. 138-48. The incident is also mentioned in “Caterpillar Club Mounting in Membership,” *Air Corps News Letter*, June 8, 1927, pp. 127-28.
8. *Airport Directory Continental United States*, 3 vols. (Washington, DC: Army Air Force's Aeronautical Chart Service, n.d.), III, p. 56; “Norton Field, Columbus, Ohio,” *Air Corps News Letter*, June 8, 1927, p. 118; Maurer, *Aviation in the U.S. Army*, pp. 242, 244.
9. *Aircraft Year Book, 1928* (New York: Aeronautical Chamber of Commerce, 1928), p. 312; Hamilton Sundstrand Division, United Technologies website, [www.hamiltonsundstrandcorp.com/About.History.htm](http://www.hamiltonsundstrandcorp.com/About.History.htm) May 9, 2001.
10. Material Section Report, “Duralumin Propeller — Drawing No. X-52352 for XLB-1 Airplane,” December 27, 1926, D52.43/730, Archives, Paul E. Garber Facility, National Air and Space Museum, Silver Springs, Maryland.
11. Roger G. Miller, “A Pretty Damn Able Commander’: Lewis Hyde Brereton, Part I,” *Air Power History* (Winter, 2000), pp. 4-27; Part II,” *Air Power History* (Spring, 2001), pp. 22-45. Brereton's personal problems in 1927 are thoroughly detailed in Part I, pp. 15-18.

## Selected Documents from the Accident Report

1 BF FO WAR 1 EX RUSH

LANGLEY FIELD VA 830PM MAY 29 28 [sic]

CHIEF AIR CORPS:  
WASH D.C.

THE FOLLOWING TELEGRAM RECEIVED FROM MAJOR BRERETON MAY TWENTY EIGHTH QUOTE DAYTON OHIO SEVEN PM MAY TWENTY EIGHTH XLB FIVE CRASHED AND BURNED AT REYNOLDSBURG TEN MILES FROM COLUMBUS ENROUTE TO LANGLEY STOP CAUSE OF ACCIDENT FAILURE RIGHT PROPELLER WHICH CUT OFF LOWER RIGHT WING STOP THE CREW JUMPED AT ONE THOUSAND FEET ALTITUDE WITH EXCEPTION OF PRIVATE YEAGER WHO WAS KILLED IN SHIP STOP SGT TAYLOR MILLER AND MYSELF NOT INJURED COMMA LT BRIDGET BADLY SHAKEN BY FALL OFF ROOF OF CHURCH BUT

NOT INJURED AS PREVIOUSLY REPORTED. SIGNED BRERETON UNQUOTE LT BRIDGET IS NOW AT GRANT HOSPITAL COLUMBUS OHIO STOP NEAREST RELATIVE OF LT BRIDGET AND PRIVATE YEAGER TWENTIETH BOMBARDMENT SQUADRON NOTIFIED STOP COMMANDING OFFICER WRIGHTFIELD REQUESTED TO TAKE ACTION SPECIFIED IN PARAGRAPH NINE A ARMY REGULATIONS NINE FIVE DASH ONE TWO NAUGHT STOP MAJOR BRERETON RETURNED TO WRIGHTFIELD AT FIVE PM YESTERDAY WITH PILOT FROM THAT STATION ACCORDING TO RADIO JUST RECEIVED FROM NORTONFIELD AT EIGHT AM TODAY

CULVER  
1006A

\* Lt Col. Clarence C. Culver was the commander of Langley Field.

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HEADQUARTERS, FORT HAYES      COLUMBUS, OHIO.

May 29, 1927

Subject: Report—Wreck of XLB-5, Huff-Deland [sic] Bomber, U.S.A.C.

To: Commanding General, Fifth Corps Area

1. At 1:15 p.m., May 28, 1927, these headquarters were notified by telephone that a government airplane had been wrecked nine miles east of Columbus near the town of Reynoldsburg, Ohio. An armed detachment of one non-commissioned officer and three privates under the command of 2nd Lieut. John R. McGinness, 10th Infantry, together with the post surgeon, Major Miner F. Felch, one enlisted attendant, and the post ambulance, was dispatched to the scene of the accident, arriving there at 1:40 p.m.

2. It was found that the plane had crashed in flames in a cultivated field on the farm of Mr. J. F. Ayers, Reynoldsburg, Ohio, eight hundred yards south of the village. The plane was in flames, and all clothing and records which might have been in the ship were destroyed by fire.

3. The following named officers and men were the plane's personnel:

(1) Major L. J. [sic] Brereton, A.C., U.S.A., escaped by parachute; uninjured. Proceeded to McCook Field, Dayton, Ohio, at 4:00 p.m., May 28, 1927 by airplane from Norton Field, Columbus, Ohio.

(2) 1st Lieut. Bernard A. Bridget, A.C., U.S.A., pilot, escaped by parachute; slight minor bruises caused by landing against the side of church. To be removed to post hospital, Fort Hayes, Ohio, May 30, 1927.

(3) Master Sgt. Clyde Taylor, A.C., U.S.A., escaped by parachute; uninjured. Proceeded to McCook Field, Dayton, Ohio, at 4:45 p.m., May 28, 1927.

(4) Staff Sgt. Fred P. Miller, A.C., U.S.A., escaped by parachute; uninjured. Proceeded to McCook Field, Dayton, Ohio, at 4: p.m., May 28, 1927, by plane with Maj. Brereton.

(5) Pvt. Daniel Yeager, A.C. U.S.A., dead; fell with plane; name established by identification tags on body; body burned beyond recognition. Wreckage was removed from body which was turned over to Winegarner Undertaking Co., for shipment.

4. Before Maj. Brereton left for Dayton, Ohio, he requested that a truck be sent from Fort Hayes to the scene of the accident and that the wreckage be removed to Norton Field under the supervision of a mechanic from Norton Field. This was done; and at this writing nothing remains of the wreckage at the scene of the accident except the motors which are imbedded in the ground. These motors will be removed and sent to Norton Field as soon as the field has sufficiently hardened to permit of the entrance of a Liberty truck to the field.

5. Estimated damage done to the arm of Mr. J. F. Ayers, Reynoldsburg, Ohio: Approximately one acre of cultivated field containing oats.

6. One blade of a prop believed to have fallen from the plane was found about two miles from the wreck. The blade had sheared off near the base, and is now at Norton Field, Columbus, Ohio.

C. F. JOHNSON  
Captain, 10th Inf., Comdg.

1. Proceedings of a Board of Officers convened at McCook Field, Dayton, Ohio, Pursuant to S.O. 108 - Headquarters, Materiel Division, McCook Field, Dayton, Ohio, May 29, 1927, a copy of which is attached and marked Exhibit "A".

2. Meeting of the Board: McCook Field, Dayton, Ohio. May 31, 1927.  
The Board met pursuant to the above orders at 2:00 o'clock P. M., May 29, 1927, in the Flying Branch, McCook Field, Dayton, Ohio.

PRESENT: Captain Oliver S. Person, Air Corps,  
1st Lieut. Franklin O. Carroll, Air Corps,  
1st Lieut. Donald D. Fitzgerald, Air Corps,  
ABSENT: Major Robert A. Hale, Medical Corps.

3. Investigation of the death of Private Leroy Yeager.

A. The Board proceeded to investigate the death of Private Leroy Yeager, as the result of an airplane accident, May 28, 1927.

B. The following witnesses were called and after being duly sworn according to law, testified as follows:

**Major Louis [sic] H. Brereton, Air Corps, appeared before the Board.**

Q. State your name, rank, and organization.

A. Louis [sic] H. Brereton, Major, Air Corps, Commanding Second Bombardment Group, Langley Field, Virginia.

Q. You were engaged in a flight?

A. Yes, from San Antonio, Texas to Langley Field, Virginia returning from Air Corps maneuvers.

Q. From where had you taken off?

A. From Columbus.

Q. About what time?

A. About 12:10 P. M.

Q. What was the purpose of your flight?

A. Returning to home station.

Q. Was the flight authorized by orders?

A. Authorized by orders of Chief of Air Corps.

Q. You have a copy?

A. No. I had one but it was in my suitcase which burned. I may have one on file. You will have to wait until I can send it to you.

Q. Will you do that please?

A. Yes.

Q. Will you describe in your own language the accident resulting in the crash of this airplane and the loss of the life of Private Yeager?

A. We took off from Norton Field about 12:10 heading east at an altitude of 1200 feet at the edge of Reynoldsburg. The propeller on the right motor collapsed throwing the one blade of the propeller through the right lower wing at the point where the outer strut joins the two wings. This threw the plane in a right spiral, ending in a nose dive. Although the motor were not out, the pilot, Lieutenant Bridget, managed to keep the ship in sufficient control to allow the personnel to jump. Everyone jumped and landed safely with the exception of Private Yeager who apparently made no effort to leave the ship and was killed in the crash. Sergeant Miller, Sergeant Taylor, Lieutenant Bridget, and Major Brereton all jumped and landed within four hundred or five hundred yards of each other in about the center of the village of Reynoldsburg. Lieutenant Bridget struck the roof of a small church and was broken up on landing but was not seriously hurt — no bones broken. The remainder of the personnel was uninjured.

Q. Will you insert a statement as to the result of the crash to the airplane?

A. The airplane was completely destroyed in the crash and the fire that resulted. It was about eight minutes from the time I landed until the time I reached the wreck of the plane. I was the first to reach the

plane with the exception of a very few civilians. Private Yeager was still under the wreckage and the plane caught fire before he could be removed.

Q. In your opinion was the fire the result of the crash.  
A. Yes.

Q. In your opinion was Private Yeager dead before the fire started?  
A. Yes, undoubtedly.

Q. From where had you taken off?  
A. From Columbus.

Q. You attribute the result of his death to the crash and not the fire?  
A. Yes.

Q. How long an interval between the crash of the plane and the starting of the fire?  
A. I should say about (7) minutes. After the explosion, I undid my safety belt to see what had happened. The right motor had fallen out, it had collapsed. Bridget, not having cut the lines, it probably was on fire at that time. Dr. Wilson, who saw the plane crash, thought he saw the plane on fire as it fell. Apparently there was a very slight gas leak or some flame under the wreckage which smoldered until it caught on fire. It was more like an explosion of a gas tank.

Q. Did it catch on fire at the right motor?  
A. The right side of it was on fire. I don't know whether it was on fire, though, My impression was that there was a spark or flame coming out of the right side.

Q. In your opinion, was the plane completely out of control after the propeller left it?  
A. It was not under complete control. I believe it might have been landed without a serious wreck.

Q. Did you make any effort to take control.  
A. No.

Q. Was any effort made to induce Private Yeager to jump?  
A. I looked for him and, as far as I know, no. He was in the nose of the bomber in the upper part. He couldn't have been reached. There were no means of communication. The only way for him to get out was to cut over the nose. He didn't have time to crawl back.

Q. Had he had many flights in the air?  
A. So far as I know he had none. He was not on flying status. I don't believe that anyone could have gotten out of the front cockpit without being killed.

Q. As far as you know Private Yeager made no effort to get out of the ship?  
A. So far as I know he made no effort. There is one thing, as to Lieutenant Bridget's ability as a pilot, on the two Efficiency Reports I rated him "above average" and on the last record "superior". I think he is about the best pilot we have in the Group.

Q. How soon after the propeller left did the pilot jump? You have previously stated that the pilot partially controlled the ship, giving the personnel an opportunity to jump. Was the pilot the last to jump?  
A. No, Sergeant Miller was the last, the pilot was next to last.

Q. Who was in the rear cockpit?  
A. Sergeant Taylor and Sergeant Miller. The pilot would have been the last one had not Sergeant Miller's radio set held him back. He had some little trouble getting himself free. He had just enough time to pull the ring and land.

Q. Can you approximate the time between the flying off of the propeller blade and the last man to leave the ship?  
A. The time interval — I was the first to leave the ship; I left inside of ten (10) seconds after it happened. I went over the left side. Immediately after my chute opened I saw the ship behind me and then I saw to men and two chutes open. I didn't delay at all. I dropped off the rear of the wing and pulled my cord. That was the time interval. As I was pulled upright, I saw Sergeant Taylor and pilot Bridget. I didn't see Sergeant Miller. It couldn't have been more than ten (10) seconds. Not that much probably.

The damages will be very minor, I am sure. The owner of the land will put in a claim, however.

**Staff Sergeant Fred D. Miller appeared before the Board: .....**

**Master Sergeant Clyde M. Taylor appeared before the Board: .....**

**Second Lieutenant Bernard A. Bridget, Air Corps .....**

## **FINDINGS**

1. The Board finds that on or about 12:10 P.M., May 28, 1927, Private Daniel Leroy Yeager (A.C. No. 6775517) 20<sup>th</sup> Bombardment Squadron, Langley Field, Virginia, was killed as a result of a crash in a Huff-Daland Bombardment airplane (XLB-5, A.C. No. 26-208) at Reynoldsburg, Ohio.
2. That cause of death was crushing injury to the head and body when the airplane struck the ground..
3. That the flight was being performed under competent orders from the Chief of Air Corps.
4. That Private Yeager met his death in line of duty.
5. That approximately ten (10) minutes after the take-off and at an altitude of approximately one thousand (1000) feet, the propeller on the right-hand engine failed, causing the destruction of the right-hand engine and causing a jamming of all the airplane controls.
6. That Major Brereton, Sergeants Taylor and Miller escaped injury from flying parts and jumped from the airplane, landing safely. That the pilot, Lieutenant Bridget, was struck on the right leg by some parts of the right engine causing great pain which prevented the use of his right leg. He made his exit from the airplane with great difficulty and in landing struck a church which caused painful but not serious injuries to himself.
7. That Private Yeager may have been struck by flying parts of the engine, which may have caused injuries so serious that he was unable to get out of the cockpit. He apparently made no attempt to leave the airplane.
8. That the failure of the propeller was probably due to vibration and/or repeated stresses which caused the propeller to break at the base of the blade where there is a rapid change in the cross section.
9. That this propeller and the one on the left engine had been modified in the region of the base of the blade by the Materiel Division in order to reduce the rapid change of section and thus decrease the possibility of failure at that point. This change had been made when the airplane had passed through McCook Field on its way to San Antonio Air Corps Maneuvers. Both propeller blades were inspected under a magnifying glass at that time to determine if any cracks had already developed. None were evident.
10. That the airplane as a whole was inspected at McCook Field the day prior to that upon which the accident occurred without disclosing any faults of rigging or construction, or indication of incipient failure of any parts, but that this inspection did not include a disassembly and detailed inspection of propeller blades.

## **RECOMMENDATIONS**

The Board recommends that the Materiel Division make a very thorough study of the chemical and physical characteristics of the broken propeller to determine whether the failure was due to faulty materiel or to the design.

ROBERT A. HALE,  
Major, Medical Corps,  
President.

Oliver S. Ferson,  
Captain, Air Corps,  
Member.

Franklin O. Carroll,  
1st Lt., Air Corps,  
Member.

Donald D. FitzGerald,  
1st Lt., Air Corps,  
Recorder.

Approved,

JOHN F. CURRY  
Major, Air Corps,  
Executive.

# Disaster off Casablanca: Air Observation Posts in Operation Torch and the Role of Failure in Institutional Innovation





## Edgar Frank Raines, Jr.

(Overleaf) The L-4 of 2d Lt. William H. Butler and Capt. Breton A. Devol, Jr., starts its takeoff roll down the flight deck of the USS *Ranger* on November 9, 1942. (National Archives)

**ON NOVEMBER 9, 1942 THREE L-4S TOOK OFF FROM THE USS RANGER AND HEADED FOR SHORE TO SUPPORT THE DIVISION'S DRIVE ON CASABLANCA**

**THE AMERICAN GUNNERS' GREATEST DEFICIENCY LAY IN THEIR INABILITY TO COORDINATE THEIR FIRE WITH INFANTRY IN THE ATTACK**

A new kind of military aviation made its combat debut off Casablanca, French Morocco, on the afternoon of November 9, 1942. The new organization consisted of light aircraft flown and maintained by officers and men of the U.S. Army Field Artillery. Known officially as air observation posts (as distinguished from the Artillery's familiar ground observation posts), they were organized into air sections consisting of two aircraft, two pilots, one mechanic, one driver, and one driver's assistant. Theoretically, each firing battalion of Field Artillery, each separate artillery brigade or group headquarters, and each division artillery headquarters included one air section. But the program was so new that in the American contingent of the North African invasion force, some 5 1/3 divisions, only three field artillery aircraft belonging to the 3d Infantry Division Artillery were available to support the landings. The three L-4s—civilians would have recognized them as Piper Cubs—took off from the USS *Ranger* and headed for shore to support the division's drive on Casablanca. With them they carried the hopes of a generation of Field Artillery reformers.<sup>1</sup>

The results, however, were hardly what these officers anticipated—the aircraft suffered nearly an absolute disaster. This essay examines how these aircraft came to be involved in the invasion of North Africa, Operation TORCH; what actually happened, including a detailed analysis of the conflicting and ambiguous evidence; and why the action off Casablanca did not harm the long-term prospects of the Air Observation Post Program.

The Field Artillery was still learning its trade when World War I ended. Although the U.S. Army, as early as 1905, had adopted indirect fire as its standard doctrine for combat, lack of funds for training kept mastery of technique low and restricted to a small circle of officers. The hurried, often chaotic, mobilization of 1917 produced officers only partially trained in basic techniques. American Army officers scrambled to assimilate the lessons their allies had derived from the vast siege-like conditions on the Western Front. Some individual formations achieved a high level of proficiency, but overall the American artillery was the least technically competent of the major powers at the time of the Armistice.<sup>2</sup>

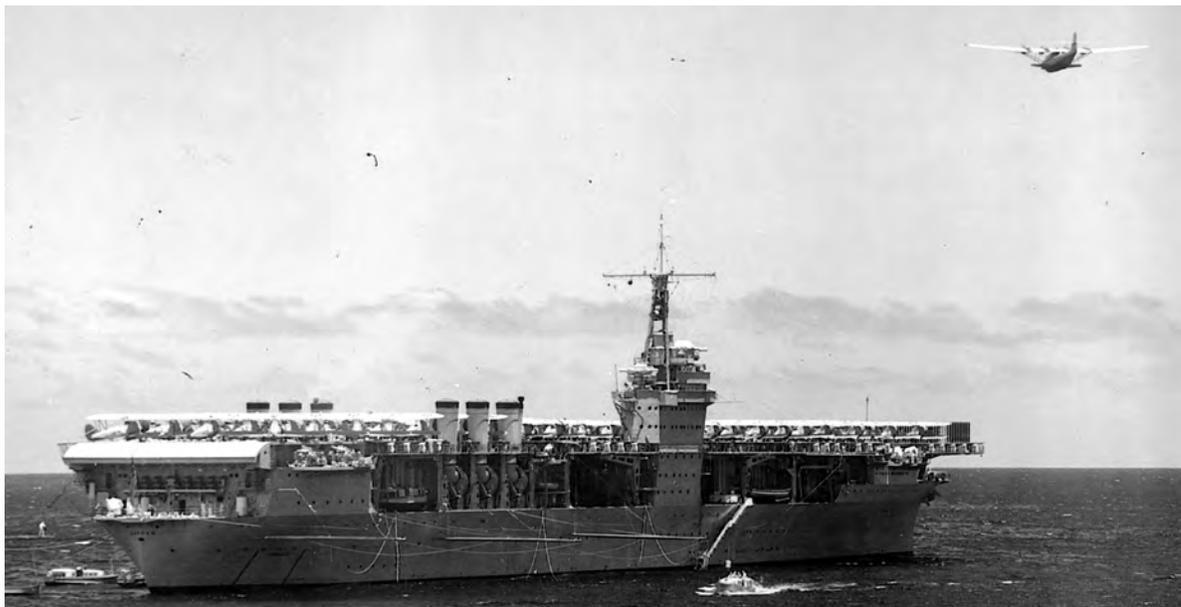
The American gunners' greatest deficiency lay in their inability to coordinate their fire with infantry in the attack. British and German

artillery led the way in pioneering techniques of map fire involving preregistration of batteries using geographic features of known location, phase lines, and creeping barrages. By 1918, the most sophisticated artillerymen could dispense with registration fire by combining knowledge of the wear on individual gun tubes, information about the manufacturing properties of shell lots, and the measurement of key meteorological factors, such as temperature, wind speed and direction, and atmospheric pressure to accurately predict the trajectory of individual rounds. Dispensing with registration conferred great advantages. Batteries did not have to reveal their location and prematurely expose themselves to counterbattery fire. Equally important, batteries could suddenly bring fire upon a target without warning. Both techniques relied upon detailed and highly accurate maps. Creation of those maps depended upon aerial photography. In the artillery system of 1918 this was the most important mission performed by observation aircraft.<sup>3</sup>

Map fire as the primary method of fire support required detailed planning. Artillery officers had to be aware of every fold of ground so that they could deliver fire upon all potential counterattack routes. Infantry could not readily communicate with its supporting artillery once an assault jumped off—so meticulous planning had to substitute for flexibility. Infantry might carry colored flares and, using a simple code, convey equally rudimentary messages to the artillery. The artillery might respond in the desired fashion if the flares could be seen through the dust and smoke created by a massive preliminary bombardment and if the artillery's ground observers were vigilant and unharmed by the enemy counterbombardment. Homing pigeons could at times succeed in carrying messages to the rear. But this conveyance worked best if the infantry was not too closely engaged, the circumstance when it would be most in need of fire support. Soldiers could lay wire as they advanced, but it was usually cut by enemy artillery fire. Forward elements could send back runners, but this was slow because the messengers had to make their way to the rear through terrain already churned by shells. They were frequently retarded by enemy and friendly defenses and often subjected to still dangerous enemy fire. Observation aircraft, almost always two-place in this war with a pilot and observer, often flew contact missions, which

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A clipper flies over the USS *Ranger* (CV-4) off Honolulu, Hawaiian Territory, on May 8, 1937. (National Archives)



**AMERICAN OBSERVATION AIRCRAFT WERE EQUIPPED, UNTIL THE END OF THE WAR, WITH ONE-WAY SPARK GAP RADIOS**

involved simply monitoring the location of friendly troops and reporting their position back to higher headquarters.<sup>4</sup>

To be effective, an aerial observer had to be able to orient himself over a blasted, shell-pocked landscape. He also had to be knowledgeable about ground operations in general and the specific attack plan so that he could understand what he was seeing. He also required a radio. American observation aircraft were equipped, until the end of the war, with one-way spark gap radios. They transmitted in Morse Code—essentially sending bursts of static against a background of static generated by the spark plugs of the imperfectly shielded internal combustion engines that powered the aircraft.<sup>5</sup>

Radio was not an option for infantry in the attack. The military radios of 1918 were large, fragile, and very heavy. The standard Army radio, when the American Expeditionary Forces arrived in France, weighed 500 pounds and was authorized at division headquarters and above. By late 1918, the U.S. Army Signal Corps had procured fifty-pound radios that were assigned down to battalion level. They were not rugged enough, however, to go forward with the troops.<sup>6</sup>

These communications problems were at the heart of the difficulties faced by the Field Artillery of all the warring powers in attempting to deliver indirect observed fire in support of infantry attacks. By 1918, a line of observation balloons paralleled the front, just out of enemy artillery range. Balloon observers provided one of the major safeguards on the operational level against surprise attack and gave some insurance at the tactical level as well. In the defense balloon observers, connected to the ground by telephone, could direct fire. In the attack, however, friendly troops quickly passed from their observation, obscured by terrain features and the dust and cordite smoke associated with artillery bombardments. Even when the attacking troops remained

in sight, the observer's oblique angle of vision to a target at long range made accurate fire difficult. Aerial observers in fixed-wing aircraft could fly directly over a target, mitigating the problems facing balloon observers. Like balloons, fixed-wing observation aircraft blanketed the front. Each flew a regular beat over a particular sector. Individual observers became so familiar with the enemy position that they could detect even minute changes in enemy trenches. These "beat" aircraft could not observe fire except in the most unusual of situations. In an emergency they might fire a flare meaning "fire on my position." The Allied armies maintained observation posts all along the front where soldiers scanned the sky waiting for such a flare to fall. Accurate fire depended upon someone seeing the flare the moment it was fired, accurately noting the position of the aircraft relative to the ground, and forwarding that information immediately to a firing battery. Given the vagaries of the human attention span, the system was hardly foolproof.<sup>7</sup>

The unit of fire in World War I was the battery. Accurate delivery of fire depended upon a battery of known location and an observer of known location. Because there were many more batteries than observation aircraft available to direct fire, battery commanders had to request the services of such an aircraft in advance of the mission—normally twenty-four hours. A battery commander, usually a captain, most frequently in or attached to a field artillery brigade organic to a division, had to contact through channels a major and squadron commander usually attached at the next higher echelon of command, the corps. The coordination was by telephone, susceptible to being interrupted by shell fire or a higher priority call—in practice a call made by anyone with more rank than a captain. Even if the shoot was arranged, the aircraft might be diverted to a higher priority mission by a higher headquarters.<sup>8</sup>

**BATTERY COMMANDERS HAD TO REQUEST THE SERVICES OF SUCH AN AIRCRAFT IN ADVANCE**



Aviation Machinist Mates on the hangar deck of the USS *Ranger* watch Capt. Ford E. Allcorn give a final check to the Continental A-65 engine of his L-4 just before taking off on November 9, 1942. (National Archives)

## THE AERIAL OBSERVER WAS CLEARLY A KEY FIGURE IN THE WARTIME SYSTEM

If the aircraft did fly the mission, the pilot first had to find the firing battery from the air, often a time consuming and not always successful task, orient himself, and then locate the target. Once successful, the observer had to radio adjustments in Morse Code back to a headquarters equipped with a radio, which would pass them by wire to the battery commander, who actually directed fire. In a successful attack, batteries often had to displace forward, forcing them to depend on telephone lines laid across the surface of the ground rather than the buried cables normally relied upon. The easily disrupted wires meant that observed fire was more likely to succeed at the opening of an offensive rather than toward its end.<sup>9</sup>

Clearly during World War I, aerial observed fire in real time was a tool available to battery commanders only under very special circumstances. The system was rigid and not readily adaptable to the shifting circumstances of ground combat. Aerial observed fire was most useful against fixed strong points in the enemy's defensive system during the initial phases of an attack or after an attack had become hung up and the command was trying to get it restarted. From the top down—and this was the Air Service point of view—it looked like a rational allocation of scarce resources for a useful but ancillary mission. From the bottom up—the Field Artillery's perspective—the system represented equal parts of bureaucratic obscurantism and blind chance that produced frustration, anger, and limited success. The best thing to say for the system was that occasionally it worked as designed.<sup>10</sup>

The American Field Artillery came out of the Great War convinced that it had to do better in the next conflict and focused on the infantry-artillery coordination problem. (The interwar term was "liaison.") The Field Artillery was the first combat arm to launch a formal "lessons learned" review of its experience after November

11, 1918. The aerial observer was clearly a key figure in the wartime system. His role had been contentious during the war, and disagreements between the Field Artillery and the Air Service continued into peacetime.<sup>11</sup>

The Field Artillery position was that the observer should be a knowledgeable Field Artillery officer, familiar with ground maneuver and thus able to better understand what he was seeing. In the Field Artillery view, the observer's normal duty station would be a firing battery. He would only fly when the tactical situation dictated an observed fire aerial mission. The Air Service wanted aerial observers to be rated Signal Corps officers, whose primary duty station would be with observation squadrons. (During World War I all officers in the Air Service actually held commissions in the Signal Corps even though the Signal Corps lost control of the U.S. military aviation program in March 1918.)<sup>12</sup>

The wartime expedient was to commission would-be aerial observers in the Field Artillery, train them as such, and then send them to aerial observer school. When they graduated, the War Department transferred them from the Field Artillery to the Signal Corps. Neither the Field Artillery nor the Air Service was satisfied with this arrangement. The Field Artillery wanted the aerial observers to remain in the Field Artillery throughout their service. The wartime observers, in the view of experienced Field Artillery officers, had only a superficial understanding of the branch and how it operated. The Air Service complained that many of the aerial observers did not want to transfer to the Signal Corps, and that many lacked "the enthusiasm" required to successfully complete combat missions. The American Expeditionary Forces Artillery Board, usually known as the Hero Board after its president, Brig. Gen. Andrew Hero, Jr., advocated the Field Artillery solution to the observer question. But both the American Expeditionary Forces Superior Board, also referred to as the Dickman Board after its president, Maj. Gen. Joseph T. Dickman, and the War Department favored the Air Service approach. The Air Service (and later the Air Corps) centralized observer training during the interwar period at Brooks Field, Texas.<sup>13</sup>

The Field Artillery received very little research and development funding between 1919 and the late 1930s. It focused upon improving infantry-artillery liaison with the materials at hand. At first this simply meant perfecting mastery of the most advanced wartime artillery techniques and then spreading this level of training throughout the force. Only in the late 1920s did the Field Artillery begin to go beyond the World War I system. Successive chiefs of Field Artillery encouraged experimentation by junior officers at Fort Sill, Oklahoma, that stretched over a decade and beyond. They replaced the battery with the battalion as the standard unit of fire. A fire direction center superseded the overworked battery commander as the mechanism for orchestrating

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and concentrating fire. Whereas in World War I a single battery could concentrate its guns on a target using observed fire, by the early 1940s the Field Artillery School had developed a procedure for quickly massing the fire of an entire division (and later corps) of artillery upon a single target. In a demonstration of divisional artillery at Fort Sill in September 1941, gunners achieved this concentration in a few minutes. In contrast during the invasion of Syria in July 1941 the Royal Artillery had required an hour and fifteen minutes to concentrate the fire of a comparable number of guns.<sup>14</sup>

The new artillery system was designed for a much faster tempo of operations than World War I, but it rested on the assumption that observed fire would be the primary mode of delivery and that American artillery would bring its guns to bear in real time, not the elapsed time of map fire. The new approach required that observers always be available to direct fire at any targets in range of the guns. While ground observers would usually suffice, there were certain situations in which an aerial observer would be a necessity—as when enemy artillery was in defilade. But the aerial observer would have to be immediately available to the artillery battalion commander.<sup>15</sup>

Advances in radio had revolutionized the role that aerial observers could now play in combat. Radio technology was one of the few areas of the military art where the U.S. had actually led its Allies during World War I. The Chief Signal Officer, Maj. Gen. George O. Squier, had a personal interest in both aviation and radio and had pushed the development of two-way voice radio for aircraft. He had demonstrated the new technology outside Paris shortly before the Armistice. Voice radio represented a vast improvement over the spark gap apparatus, but it was an immature technology in 1918 and featured significant drawbacks. The first generation of voice radios were amplitude modulated (AM), which meant that, like the spark gap radios, they picked up the electrical discharges from the spark plugs of the aircraft engines as static. Deciphering incoming messages out of a sea of static sometimes required all the attention an observer could muster. The radios were tuned by a dial and required constant adjustment to keep them on the assigned frequency. This meant that a substantial portion of the aerial observer's attention had to be focused inside the cockpit. With the spark gap radio he could focus outside the cockpit—looking for enemy pursuits and ground targets. Finally, voiceradio had only a very limited effective range.<sup>16</sup>

Unlike the Field Artillery, the Signal Corps received fairly substantial funding for research and development during the interwar period. By the late 1930s, it was in the process of introducing frequency modulated (FM) radios as standard. They were unaffected by the electrical impulses generated by aircraft engines. Push button tuning became standard for aircraft radios

about the same time. Not only were they easier to use than the earlier generation of AM radios—and consequently the observer could redirect his attention outside the cockpit—but they had more power as well. The new generation of Signal Corps radios gave the aerial observer a flexibility that could only be dreamed of by his World War I counterparts. These advances immediately made the questions of what branch insignia the aerial observer would wear and the type of craft in which he would fly more contentious than at any time since 1918.<sup>17</sup>

Alone among the Army's combat arms, the Air Corps (the name for the Air Service after 1926) had received sufficient funds to progressively modernize after 1926. By the late 1930s it was completing its conversion to modern aircraft—monoplanes with internal bracing, stressed aluminum skin, cantilevered wings, retractable landing gear, and completely enclosed cockpits. Although after 1919 the Air Service/Air Corps concentrated first on the development and employment of pursuits and then bombers, observation aircraft benefitted from this design revolution as well. Air Corps officers, drawing upon experiences over the Western Front, consistently emphasized speed as the key factor to survivability in combat. The result was a generation of observation aircraft that were approximately 100 miles per hour faster than their World War I counterparts—and consequently almost too fast for effective visual observation. Unfortunately, because observation aircraft had to carry two crew members and heavy cameras, they were large, sluggish to maneuver, and slow compared to the latest pursuits—some 100 miles per hour slower. The Chief of the Air Corps in the late 1930s, Maj. Gen. Henry H. Arnold, feared that this performance differential would make observation aircraft peculiarly vulnerable to hostile aviation. At the same time the complexity and weight of the observation aircraft meant that they had to be based at well developed airfields far behind the lines, making them less attuned to the ground battle than their World War I counterparts.<sup>18</sup>

Early in 1939, the Chief of Field Artillery, Maj. Gen. Robert M. Danford, approached General Arnold about attaching observation aircraft directly to Field Artillery brigades. Arnold was not impressed with Danford's arguments and proposed to retain observation squadrons at corps level and above. He believed that the only solution to the vulnerability problem was a fast, twin-engine light bomber, a craft admirably suited for photo reconnaissance but not for visual observation. Danford had wanted the Air Corps to supply aircraft, pilots, and ground crew, but with Arnold's rebuff he decided to propose a solution entirely separate from the Air Corps. The Field Artillery would own, man, and maintain the craft. Bureaucratic conflict ensued. Not until December 10, 1941, did Danford receive approval to organize a flight detachment to test his con-

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cept, and not until June 6, 1942, did the War Department formally approve the Air-Observation-Post Program. This meant that the Americans lagged considerably behind the British. The Royal Artillery and Royal Air Force had already organized a similar program in the Home Army. It had not yet spread to the forces deployed in the active theaters. Danford had used the British experiment to justify his own proposal and had also borrowed the British terminology. Like the British he chose light aircraft to equip his air sections. They were two-place aircraft with metal frames, fabric covering, and fixed landing gear with the performance characteristics comparable to World War I observation aircraft (the Piper L-4 had a maximum speed of 80 miles per hour), greater reliability, short landing and take-off runs, and sufficient ruggedness to operate out of forward air strips.<sup>19</sup>

The late start for the American program played havoc with hopes that air sections could support the early deployment of troops overseas. The Field Artillery Pilot Course, based largely upon the instruction the test detachment had received in January 1942, was initially designed to last seven weeks. It sought to take a competent light aircraft pilot and give him the skills he would need to fly tactically in combat. Only after the pilot joined his parent unit would he have the opportunity to gain more than a cursory experience in working with ground units. Conversely the artillery battalions would have to await the arrival of the aircraft, pilots, and ground crew before most battalion commanders realized that they had aircraft sections assigned. The rapid expansion of the Army had produced a blizzard of directives from Headquarters, Army Ground Forces, to say nothing of subordinate headquarters. Most commanders had adopted the old staff officer's rule of "feeding the alligators nearest them." They had received notice of the new air sections, but this was a problem they could safely ignore until the men and materiel actually arrived.<sup>20</sup>

One of the key staff officers at Headquarters, Army Ground Forces, in the fight for the Air Observation Post Program, Col. Thomas E. Lewis, made arrangements for mechanics and pilots from II Corps to receive training prior to the formal opening of pilot and mechanics courses on August 4. The II Corps was scheduled for early deployment to Great Britain as part of the buildup for a cross Channel attack, Operation BOLERO. The Director of the Department of Air Training, Col. William W. Ford, had calculated on the basis of his experience in the 1940 maneuvers that there were ample numbers of light plane pilots in the ground forces to fill the first four pilot classes. Thereafter, he expected to use the graduates of the Civilian Pilot Training Program—a pre-Pearl Harbor Civil Aviation Authority project to give basic flight training to college students and thereby increase the pool of men with aeronautical training. Unfortunately,

since Ford had served with troops, the Army Air Forces (now a coordinate command with the Army Ground Forces) had siphoned off most aircraft pilots in the ground forces to serve as ferry pilots. The request for volunteers from II Corps consequently produced only three would-be pilots, and one, Capt. Ford E. Allcorn, did not complete the course. He was sent back to one of the regular courses. In contrast, a more than ample number of would-be aircraft mechanics volunteered.<sup>21</sup>

The difficulties extended into the regular courses. So few experienced pilots arrived for the first four classes that the Commandant of the Field Artillery School consolidated the first two classes into Class P-1 while the other two planned classes became P-2. Ford had anticipated that 30 pilots would report for each class and that 25 would graduate. By October 2, when P-2 students graduated, he had anticipated that the regular courses would have produced 100 pilots. He had 32. Not until December did the program reach the earlier goal. The graduates of the Civilian Pilot Training Program proved to be too poorly trained to show to good advantage in the tactical training in the Department of Air Training.<sup>22</sup>

In August, just as Ford was becoming aware of the full dimensions of the pilot matriculation problem, the G-3 of the Army, Maj. Gen. Idwal H. Edwards, an Air Corps officer who had formerly commanded Air Training Command, arrived at Fort Sill and accused Ford and the commandant of the School of deliberately contravening War Department directives and infringing upon Army Air Forces prerogatives in pilot training. This dispute was eventually resolved to everyone's satisfaction in December, but not before the commanding general of Army Ground Forces, Lt. Gen. Lesley J. McNair, and the assistant secretary of war, John J. McCloy, became involved. Thereafter, the Field Artillery supplied officers who volunteered to fly to the Army Air Forces for primary flight training. Graduates reported to Fort Sill for advanced flight training. The quantity—except for a brief period in 1944—and quality of air-observation-post student pilots caused little concern for the remainder of the war. But at the time of the landings in North Africa, Field Artillery pilot training at Fort Sill was still in flux and the number of graduates was much lower than anticipated.<sup>23</sup>

During the summer of 1942, as Ford and his associates struggled to get the Department of Air Training operating, American and British planners contended over the strategy to follow in the war against Germany in ways that had major ramifications for the fledgling program. Not until July 30 did President Franklin Delano Roosevelt unequivocally side with the British preference for landings in northwest Africa. The month of August was given over to debating various outline plans. Only on September 5 were three major landing sites agreed upon—Casablanca on the



An L-4 is brought up to the flight deck of the USS *Ranger* on an elevator on November 9, 1942. (National Archives)

**MOST OF THE PILOTS LACKED THE OPPORTUNITY EVEN TO EXAMINE THEIR AIRCRAFT...THE AIR SECTIONS COULD NOT TRAIN WITH THEIR BATTALIONS**

Atlantic coast and Oran and Algiers on the Mediterranean shore. This left the Western Task Force, commanded by Maj. Gen. George S. Patton, Jr., using the headquarters staff of the I Armored Corps, with approximately one-and-one half months to plan and train for the Moroccan operations—a task that subsequent wartime experience revealed took at least five months. The situation confronting the II Corps headquarters which planned the Oran landings as Central Task Force was similar, further complicated by the fact that the corps commander, Maj. Gen. Mark W. Clark, was elevated to deputy Allied Force commander and was succeeded by Maj. Gen. Lloyd R. Fredendall just thirteen days before the first convoys left port. The Eastern Task Force's landings at Algiers, originally an all-British operation led by Lt. Gen. Kenneth A. N. Anderson, commander of the British First Army, became more complex when planners for political reasons inserted an American first wave, the Eastern Assault Force, headed by Maj. Gen. Charles W. Ryer. The War Department made Operation TORCH its top priority for men and materiel among its worldwide commitments.<sup>24</sup>

The Operations Division of the War Department General Staff claimed all graduates of the Department of Air Training for assignment to units deploying to Great Britain or units in the United States designated to participate in the invasion of North Africa. After Ford had culled potential instructors from P-1, the remainder of the class, eight pilots, and eight graduates of the mechanics course plus one pilot and one mechanic from the original test group moved as casualties to the Port of New York in late September 1942, and sailed for Great Britain in charge of the senior officer, Capt. Joseph M. Watson, Jr. There, administrative confusion at the reception depot resulted in them being sent to the 34th Infantry Division in Northern Ireland as infantry replace-

ments. Ford had sent his adjutant, the pilot member of the original test detachment—1st Lt. Delbert L. Bristol—to accompany the detachment. Wise in the ways of the Army, Ford had told Bristol that if anything untoward happened he should contact an old friend of his, Brig. Gen. Alfred M. Gruenther, who was the chief of staff of II Corps.<sup>25</sup>

After no little difficulty, Bristol obtained permission to go to London and saw not only Gruenther but also the corps commander, General Clark. Both Clark and his chief of corps artillery, Colonel Lewis, were very familiar with the Air Observation Post Program. The II Corps staff had, in fact, been searching for the aviators without success. Clark also knew that the Department of Air Training had fallen behind its scheduled production of pilots. With the II Corps facing imminent commitment to combat, he had decided to establish a local school to train Field Artillery pilots. This, of course, would handle the long range problem of securing pilots but not the short range difficulty of providing observed fire to support either the Central Task Force or the Eastern Assault Force. When Clark became deputy commander of the North African invasion force, his successor, General Fredendall, activated the school at Perilham Downs, Wilts, on November 21, 1942, two weeks after the landings. The pilots and mechanics from Fort Sill thus became the instant cadre for the II Corps Air Observation Post School, much to Bristol's dismay because he had hoped to fly in combat.<sup>26</sup>

While some graduates of P-2 reported to the II Corps, others joined units in the United States designated for the Western Task Force. The orders to join the 3d and 9th Infantry Divisions and the 2d Armored Division were much delayed, and these units had moved to their staging areas when the pilots and mechanics reported for duty. Consequently, most of the pilots lacked the opportunity even to examine their aircraft, that were packed in overseas crates for shipping, let alone demonstrate their technique or get to know the ground officers with whom they would be closely associated. The air sections could not train with their battalions, which also meant that the other members of those units had no appreciation of their capabilities or even that the sections were an integral part of the Field Artillery team.<sup>27</sup>

Lack of effective higher level command and staff oversight compounded the difficulties. The task force commander, General Patton, was familiar in general with the capabilities of light aircraft. He had used his own light plane extensively while commanding the 2d Armored Division during the 1941 Tennessee and Louisiana maneuvers. One member of the Field Artillery section in Patton's headquarters, Lt. Col. John W. Hansborough, was specifically detailed to handle light aircraft, but his role apparently focused on getting the aircraft and pilots aboard ship and ready to fly. Their mission would be to provide aerial observation for field artillery landed in the initial



A Navy Aviation Machinist's Mate aboard the USS *Ranger* cranks the engine of the L-4 flown by 2d. Lt. William H. Butler with Capt. Breton A. Devol, Jr., as an observer preparatory to takeoff on November 9, 1942. (National Archives)

**DISTRIBUTION OF L-4 SILHOUETTES WAS ONE OF THOSE MATTERS THAT PATTON'S STAFF HAD OVERLOOKED**

**THE THREE PLANES SEPARATED AND DOVE FOR THE OCEAN SURFACE, ... TO AVOID A CURTAIN OF 20-MM. ROUNDS**

stages of the operation. Not much thought, however, appears to have gone into what would happen once the aircraft were actually in the air.<sup>28</sup>

While the orders for the pilots were en route, Hansborough secured three early model L-4s, unfortunately in bad repair, and arranged for them to be transferred to the aircraft carrier USS *Ranger*. By the time four pilots assigned to the 3d Infantry Division—Capt. Ford E. Allcorn, Capt. Breton A. Devol, Jr., 1st Lt. John R. Shell, and 2d Lt. William H. Butler—arrived at Norfolk, Virginia, on October 19, the *Ranger* had already sailed. Hansborough secured passage for them aboard a destroyer, the USS *Dallas*, which sailed the next day. Four days later the pilots and 800 pounds of equipment transferred at sea to the *Ranger*. Assisted by naval personnel the four pilots spent virtually the entire voyage replacing and doping the fabric, tuning the engines, and installing standard Signal Corps radios.<sup>29</sup>

Force BRUSHWOOD, commanded by Maj. Gen. Jonathan W. Anderson and consisting of the 3d Infantry Division reinforced by elements of the 67th Armored Regiment, made the main ground attack against Casablanca. The division began landing at the small port of Fedala, located on a partially sheltered bay eighteen miles northeast of Casablanca, before dawn on November 8. Elements of the French Navy, a light cruiser and several destroyers, sortied with the intent of destroying the transports in Fedala Bay. This brought on an old fashioned gun battle with Task Group 34.1, built around the battleship USS *Massachusetts*, and the Fire Support Group of Task Group 34.9, the cruisers directly supporting the landing at Fedala. While the gun battle raged inshore, Task Group 34.2, the Air Group consisting of the *Ranger* and the escort carrier U.S.S. *Suwanee* plus a destroyer screen, launched sorties from well offshore to attack French air fields. The Navy pilots succeeded in establishing air

superiority, but they could not provide perfect protection to either the transports or the troops ashore. French fighters strafed the transport area and landing beaches at least five times on November 8. The following day French bombers made several high level attacks against both shipping and the troops ashore.<sup>30</sup>

The initial landings at Fedala succeeded, but a high surf slowed the buildup. Artillery, vehicles of all kinds, and supplies were most seriously affected. General Anderson consequently halted his attack well short of his of his D-Day objective. He planned to attack southwest with two regiments abreast the next day with the mission of gaining terrain needed for an all-out drive on Casablanca, now scheduled for November 10.<sup>31</sup>

Anderson's attack jumped off at 0700 on November 9. By midday the 3d Infantry Division had landed three battalions of artillery and had identified the Fedala racetrack within American lines as a suitable field for light plane operations, the prerequisites for sending the Field Artillery aircraft ashore. At 1354 some sixty miles off Casablanca the USS *Ranger* headed into a thirty-five knot wind and launched the three L-4s, festooned with invasion markings. Allcorn, Butler, and Shell flew as pilots; Devol accompanied Butler as an observer. Half an hour later, as they flew along their prescribed course for Fedala, they passed over some of the transports from the invasion fleet.<sup>32</sup>

The light cruiser USS *Brooklyn*, a member of the Central Bombardment Group, was patrolling the northern side of the transport area. Enemy aircraft had attacked the *Brooklyn* that morning on four separate occasions. The ship had its narrowest escape at 0737 when a French bomber dropped three or four bombs in her vicinity, two of which landed within 100 feet of the ship. Adding injury to insult the airmen then strafed the ship. Three marines manning the number three 20-mm. gun were slightly wounded. As a consequence no one aboard was inclined to run any risks as far as unidentified aircraft were concerned. At 1425 the *Brooklyn's* radar detected the three planes at 10,000 yards range. The ship's gunnery control officer hastily consulted the book of Allied aircraft silhouettes and found nothing that resembled these aircraft. (Distribution of L-4 silhouettes was one of those matters that Patton's staff had overlooked during the planning.) Capt. F. C. Denebrink ordered his anti-aircraft batteries to open fire. A five-inch round exploded directly behind Shell's aircraft.<sup>33</sup>

The three planes separated and dove for the ocean surface, weaving at an altitude of twenty feet to avoid a curtain of 20-mm. rounds as all the ships in the transport area also opened fire. In short order Allcorn lost his windshield and door to machine gun fire. Several rounds then passed between his body and where his windshield used to be. His engine was only "smoking slightly" when he passed over the shore line, but then the ground forces opened fire. A tank machine gunner put five



Contact! The Continental engine of 2d. Lt. Butler's and Capt. Devol's L-4 starts aboard the USS Ranger on November 9, 1942. (National Archives)

**HE LOST CONTROL AND THE L-4 CRASHED... THE FIRST AMERICAN ATTEMPT TO USE AIR OBSERVATION POSTS IN COMBAT HAD ENDED IN A BLOODY SHAMBLES**

slugs in one of Allcorn's legs. He lost control and the L-4 crashed. He was just able to crawl from the wreckage before the plane caught fire and then exploded. The other two aircraft veered off to the north. Butler and Devol succeeded in crash landing—but behind the Vichy French lines. Captured, they rejoined their unit after the French surrender. Shell landed on the race track that was their objective, but when he attempted to take off again to try to fulfill the mission of directing artillery fire, he encountered such concentrated friendly small arms fire that he landed immediately. The first American attempt to use air observation posts in combat had ended in a bloody shambles redeemed only by the heroism of the men who made the attempt. No Field Artillery pilot flew an observed fire mission prior to the French surrender on November 11.<sup>34</sup>

The preceding account appears to be a reasonable interpretation of the existing evidence, but what happened may not ever be known with certainty because that evidence is conflicting and ambiguous. The account in the text is based upon a combination of the Field Artillery annex to the report of the 3d Infantry Division; two letters written by then Capt. (in 1942) Ford E. Allcorn, one dated December 11, 1942, the other April 9, 1957; an interview with Colonel Allcorn by Richard Tierney in March 1962; a letter from Lt. Col. John W. Hansborough to Col. Joseph Rockis, chief of the Historical Division in the Office of the Chief of Army Field Forces, dated June 15, 1948, and an interview conducted by the author with then 1st Lt. (subsequently Col.) John W. Oswald on January 13, 1982.

The Field Artillery annex to the final report of the Western Task Force has caused most of the confusion. The only reference to the air observation posts in the annex (there are none in the main body of the report) reads as follows:<sup>35</sup>

*Three Field Artillery observation airplanes, assigned to the 3rd Division Artillery, were transferred to the theater of operations aboard the US Navy Carrier Ranger. These airplanes took off from the carrier which was well out to sea in mid afternoon, 9 November, having been ordered to land at the Fedala race track. They flew low and by dead reckoning. As they approached the transports, they were fired on by transport AA guns and especially by the AA armament of the cruiser Brooklyn, but miraculously reached shore safely. Turning down the beach, they were fired on heavily by our ground troops. One plane was shot down, badly injuring the pilot who already had received three bullet wounds from our small arms fire. The other planes were grounded for the remainder of the action.*

Both the report and the annex are undated, but give every indication of having been prepared immediately after the French surrender. (The cover letter of the report of sub task force BRUSHWOOD responsible for the direct attack on Casablanca is dated December 8, 1942). George F. Howe, the historian at the Office of the Chief of Military History assigned to write the North African volume in the United States Army in World War II series, located this passage and not unreasonably concluded that the other two aircraft "landed safely."<sup>36</sup>

Captain Allcorn's aircraft was shot down first. He was severely wounded and evacuated to the United States. His December 11, letter to Col. William W. Ford concentrates solely upon his own traumatic personal experiences. Given the sequence of events, there was no reason to expect him to know what happened to the other two aircraft after he was shot down. He certainly says nothing about them. The 1962 interview with Mr. Tierney covers this same ground. The second letter of April 9, 1957, in response to a prior letter from William E. Vance of the *U.S. Army Aviation Digest* staff, provides a complete account of the action. (This was part of the preliminary research that led to the publication of the Richard J. Tierney and Fred W. Montgomery volume, *The Army Aviation Story*). Naturally, Allcorn had a special interest in what happened and over the years had made inquiries. His letter represents second-hand evidence, but he had access to sources no longer available. In 1957 he had no motive to magnify the degree of the disaster that overtook the first three artillery aircraft to venture into combat. He was still on active duty and a strong advocate of expanding Army aviation. He told Vance that the other two aircraft flew north along the beach and were forced to land near a French fort.<sup>37</sup>

After loading Allcorn and his fellow pilots aboard the *Dallas* at Norfolk, Colonel Hansborough was ordered to report to Headquarters, XII Air Support Command as liaison officer from Headquarters, Western Task Force. On November 9, he was acting in this capacity on the beach at

The three Army L-4s are spotted on the USS *Ranger's* flight deck preparatory to takeoff on November 9, 1942. (National Archives)



## THE AIR OBSERVATION POSTS WERE VERY MUCH ON TRIAL IN LATE 1942 AND EARLY 1943

Fedala when he saw the three Cubs desperately trying to reach shore.

*Due to the lack of knowledge that American units were equipped with these planes, all weapons within range opened fire. Two planes made forced landings inland and later moved to the rendezvous at the race track. One plane, piloted by Captain Alcorn [sic] was shot down and burned. Captain Alcorn was severely wounded and evacuated to the United States where he recovered, was an instructor at Fort Sill, and later went overseas with a division artillery.*

Hansborough was an eyewitness to Allcorn's fiery crash, but once the other two aircraft passed out of his line of vision he was dependent upon hearsay evidence, just like Allcorn. His account is relatively nonspecific about the fate of the other two, other than that they were forced to land (presumably inside friendly lines) but eventually made it to the racetrack. He might well have seen them there after the French surrender. Hansborough was generally correct about Allcorn's subsequent record. At the Department of Air Training he was called "Ace," because for a long time he was the only member of the staff with air combat experience. He returned to the Mediterranean Theater of Operations as the artillery air officer of the IV Corps and finished the war in the same position at Sixth Army Group.<sup>38</sup>

Lieutenant Oswald was one of six pilots aboard the transports in the invasion fleet and consequently was a spectator for part of the action. He landed on November 13, and, after assembling his aircraft in Casablanca, flew out of a field at Aine Saba, just north of the city. He thus had ample opportunities to see Lieutenant Shell, Captain Devol, and Lieutenant Butler after the latter two were released by the French. His

sources of information would have been considerably more voluminous than Allcorn's and Hansborough's and fresher than Allcorn's. Oswald provides the only detailed account of what happened to Shell. Consequently, I accepted Oswald's account that Shell succeeded in landing within friendly lines but was forced to abort his first, and only, fire direction mission due to intense friendly small arms fire. This is entirely consistent with the absence of any prior training by the air sections with the ground units engaged in the operation. Oswald subsequently succeeded Shell as the artillery air officer of the 1st Armored Division after the latter was killed in action in Tunisia.<sup>39</sup>

By the rules of "best evidence," the artillery annex should take precedence over these other sources, all other things being equal. It was written by the 3d Infantry Division Artillery staff shortly after the events described, based on reports that are no longer available. The contrary evidence was recorded six, fifteen, and forty years after the action, and in the last case was oral rather than written. Certainly, the Western Task Force artillery commander, Col. J. B. B. Williams and his staff had the best opportunity to render a full and accurate account, but my conclusion is that they did not. The air observation posts were very much on trial in late 1942 and early 1943 and the outcome of the innovation in combat was still debatable and would remain so until at least the latter stages of the Tunisian campaign.<sup>40</sup>

These scattered light aircraft in North Africa, had not yet entered into combat—other than the disastrous fly-off from the *Ranger*—when Williams signed the artillery annex. They represented the culmination of a long campaign by the Field Artillery to obtain its own aircraft to provide the reliable aerial observation that so many artillerymen considered indispensable for their

## SCATTERED LIGHT AIRCRAFT IN NORTH AFRICA, HAD NOT YET ENTERED INTO COMBAT

ARMY AIR FORCES, HAD LONG CONTEMPLATED REVERSING THE WAR DEPARTMENT DECISION ESTABLISHING THE AIR-OBSERVATION-POST PROGRAM

THE WAR DEPARTMENT GENERAL STAFF ... SIMPLY DECIDED TO CONTINUE THE STATUS QUO

new methods of fire control. Now the accidents of war threatened to deprive the Field Artillery of its long-sought-after observation platforms before they had even trained with the troops they would support. Williams' account is very straightforward until he reports the loss of Allcorn's aircraft, but the last sentence, "The other planes were grounded for the remainder of the action," is ambiguous enough that it would imply the Howe interpretation but not contradict the accounts by Hansborough, Allcorn and Oswalt. I suspect that ambiguity was deliberate. Colonel Williams and his staff did not lie but neither did they hand the enemies of organic aviation any "brickbats" to throw at the program. The account of this incident given earlier is, I believe, the best rendering of the contradictions. If additional evidence surfaces, of course, the narrative is subject to change.

Williams' report might gloss over the incident off Casablanca, but there were too many witnesses, some of them unfriendly, for anyone to attempt a genuine coverup. Some officers in Headquarters, Army Air Forces, had long contemplated reversing the War Department decision establishing the Air-Observation-Post Program. It was probably not coincidental that General Arnold's staff forwarded such a proposal to the Chief of Staff exactly ten days after Allcorn's plane burned on the beach at Fedala. The Army Air Forces paper did not mention Casablanca by name, but then none of the official reports had yet arrived. Headquarters, Army Ground Forces, anticipated Arnold's staff by proposing that all other "interested" branches receive their own organic aircraft. The War Department General Staff after holding the papers for several months without action simply decided to continue the status quo.<sup>41</sup>

Allcorn, evacuated to Walter Reed Army Hospital in Silver Spring, Maryland, soon found a member of General McNair's personal staff at his bedside anxiously inquiring as to the captain's opinion on whether the Moroccan experience invalidated the air observation post concept. The captain thought not and soon said as much in a vivid letter to Ford describing his experiences. Ford forwarded the letter to McNair, at the same time observing that the real problem was lack of opportunity to train with the Navy and the ground forces. McNair agreed and circulated Allcorn's account to key people in the War Department, especially the chief of staff of the Army, General George C. Marshall, Jr. Since approving the test of the air observation post concept in December 1941, Marshall had done nothing overt—simply monitoring the situation, content to allow his subordinates to handle the issue. Having read Allcorn's letter, he continued to do the same—in itself the best evidence that the action around Casablanca would not change War Department policies.<sup>42</sup>

The result requires some explanation. The Air-Observation-Post Program was very controversial and aroused strong emotions both among

Field Artillery and Air Corps officers. A public failure—really a total failure in front of an invading army—the first time light planes entered combat was not, to say the least, the outcome best calculated to ensure the long term prosperity of the Field Artillery's aviation program. One of General Arnold's most convincing arguments was that Piper Cub-like aircraft could not survive modern combat. Superficially, after TORCH the situation appeared very promising for Headquarters, Army Air Forces, to throttle this innovation before it went any further. Yet, efforts to that effect produced only bureaucratic stalemate. Three factors were involved: the tactical problem the Field Artillery faced; the institutional context, including the personalities of the decision-makers involved; and the nature of the failure off Casablanca.

The Field Artillery occupied a much weaker position in the Army hierarchy in November 1942 than it had one year earlier. Most significantly, the March 1942 reorganization of the War Department General Staff had abolished the Office of the Chief of Field Artillery. (General Danford had already retired for age in February.) Gone with the office were all the links, formal and informal, that connected it with the higher leadership of the Army. Equally important, no one individual could represent himself as speaking exclusively for the Field Artillery position. The Commanding General of Army Ground Forces, General McNair, assumed all the functions performed by the Chief of Field Artillery (and by the chiefs of the other ground combat branches). McNair had long doubted the wisdom of the Air-Observation-Post Program, but he was now forced by circumstance to become its chief proponent. At the same time the reorganization increased the power of the Army Air Forces, which was clearly in a coordinate position with the ground Army. These organizational changes, at best, only make the persistence of light aircraft in the Field Artillery even more difficult to understand.<sup>43</sup>

The fundamental explanation of the endurance of the innovation was that it was intended to solve a genuine problem and that there were no alternative solutions readily available. And it was not just any problem that Field Artillery aviation addressed but a significant aspect of "the" problem that had faced army officers of all the major powers since the mid-nineteenth century: How did ground forces achieve decisive victory without prohibitive losses on the industrial age battlefield? One of the issues that pointed toward a solution, one yet to be solved by the U.S. Army at the end of World War I, was the question of artillery-infantry liaison. A whole generation of American Field Artillery officers had devoted themselves to solving this riddle in a careful, systematic, step-by-step fashion. The air observation post was the final piece in this quest. The reformers were not about to give up the substance of reform because of one setback. But, of course, the

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TRAINING...  
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AIRCRAFT**

**ARNOLD SAW  
CASA-  
BLANCA AS  
AN OPPOR-  
TUNITY  
TO KILL  
ORGANIC AIR  
IN THE FIELD  
ARTILLERY**

number of Field Artillerymen who understood where organic light planes fit into the new artillery system was still a minority among members of their own branch in November 1942.

The Field Artillery did not grapple with this problem in isolation. The primary consumers of artillery fire, the infantry, knew that American artillery on the 1918 model was not flexible, not responsive, and all too often not helpful. A solution to the artillery-infantry liaison problem promised at the very least to reduce infantry casualties. The Field Artillery thus had built-in support for its reform agenda in the largest and most powerful combat branch in the service in terms of internal institutional politics.

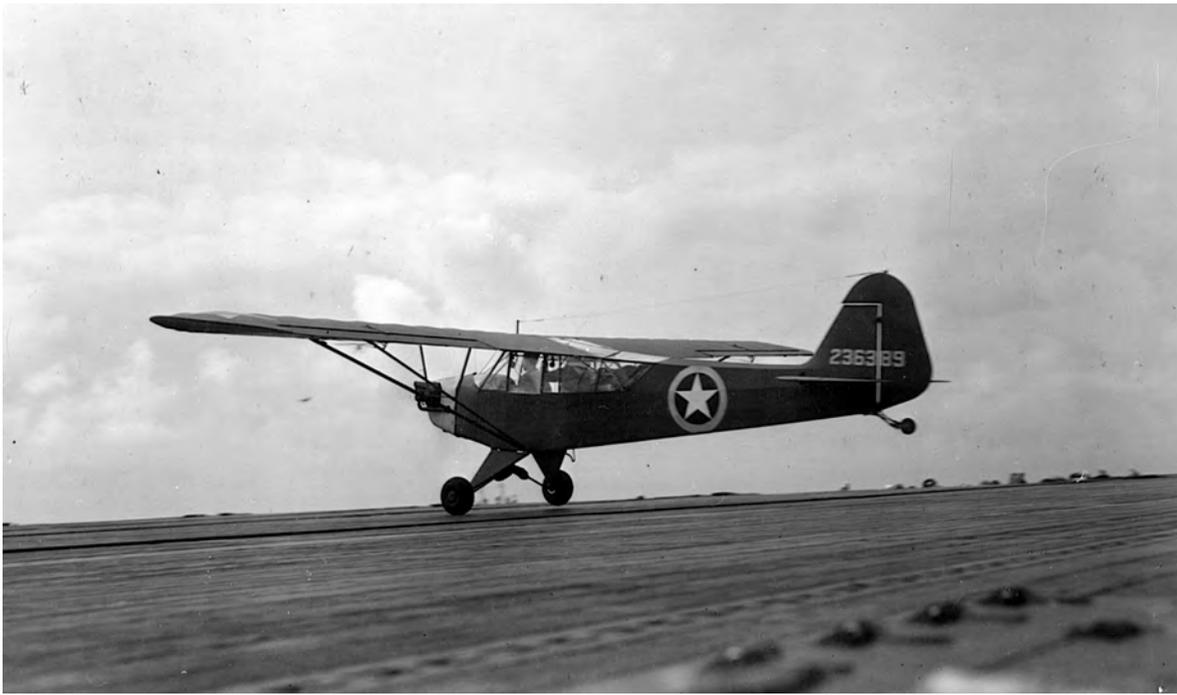
Nor were individual members of this constituency simply passive recipients of the benefits of reform. Between 1938 and 1942 the Chief of Field Artillery had to maneuver against intense and mainly effective opposition from the Air Corps and later the Army Air Forces to obtain War Department sanction for a test of the concept. To succeed General Danford had to obtain support from outside the Field Artillery—and he did. Assistant Secretary of War McCloy, Brig. Gen. Dwight D. Eisenhower, Brig. Gen. Mark W. Clark, Maj. Gen. Lloyd Fredendall, and Lt. Gen. Walter Krueger were among those who publicly supported the Field Artillery's aspirations. Others, like General Patton and Lt. Gen. Jacob L. Devers supported the utility of light aircraft in combat. As Silvan S. Tompkins pointed out over thirty-five years ago concerning the abolitionists, every set back that the reformers and their allies suffered became an opportunity for the individuals involved to reevaluate the issues in their own minds. Did the question of organic light aircraft in the Field Artillery warrant their continued investment of time, energy, and effort required to agitate the question and (when the Air Corps once again prevailed) the levels of frustration they experienced? Those officers who persisted through these setbacks of necessity increased their psychological sense of personal identification with air observation posts. Paradoxically, the Air Corps' very bureaucratic skill had created an informal band of brothers dedicated to pressing this reform agenda through to success.<sup>44</sup>

General McNair joined that band of brothers in 1942. In his views of military subordination, McNair was very much an officer of the old school. When superior authority decided against an officer's own personal preference, he was honor-bound to go all out to make the new policy work. McNair was in this mood regarding the Field Artillery aviation program during the summer of 1942. Then air-ground training for the troops who would soon be earmarked for TORCH collapsed due to the Army Air Forces failure to provide adequate types and numbers of aircraft for the maneuver season. This denouement led McNair's staff to conclude that the Army Air Forces simply did not consider the training of ground troops a priority. At this juncture General

Edwards descended on the Department of Air Training at Fort Sill. In the process he jumped several levels in the chain of command and outraged McNair. By his actions Edwards seemed to imply that either McNair did not know or understand what his subordinates were doing or that he was conniving with them to contravene War Department policy. Thereafter McNair's advocacy of air observation posts had a passion heretofore absent. It was if he intended to demonstrate to General Arnold just who had the better understanding of the demands of combat and possibilities of technology in modern war. Whereas Arnold saw Casablanca as an opportunity to kill organic air in the Field Artillery, McCloy and McNair used it as an occasion to expand the concept to the other combat arms. In the process, McNair became so identified with the program—as McCloy and Clark had done earlier—that his reputation became bound up with its success, giving him yet another powerful motive to continue as an advocate.<sup>45</sup>

The nature of the failure off Casablanca contributed to the willingness of McNair and the other advocates to recommit to the ultimate success of the Air Observation Post Program. In essence it was a very large, very public friendly fire incident. Ford's diagnosis that it was a problem that could be solved by training (and possibly training aids such as aircraft recognition handbooks) resonated with ground officers. Since they had entered the service they had the importance of "sweating the details" of any problem involving combined arms drilled into them. A modern division had so much and so many different kinds of firepower that officers had to carefully prepare any training exercise in peacetime to avoid accidents. Preparation and training were even more important in war. Patton's headquarters, emboldened by the decided advantage that light aircraft would give the invading force, rushed Allcorn and his compatriots into combat before they had an opportunity to train with their parent units. The ground troops did not recognize the light planes as friendly. External factors, thus, rather than ones internal to the program, produced the disappointing results at Casablanca. And these external causes were easy to diagnose and guard against in the future. Air observation posts trained hard with their units in French Morocco and Algeria in the winter of 1942-43.

Casablanca thus became yet another setback, one that led advocates of organic air to simply redouble their efforts. And it was by no means the last failure. Not until the spring of 1943 in the campaign in Northern Tunisia did light planes begin to redeem the high promise that the Field Artillery reformers envisioned for them. And not until the spring of 1944 did the system reach its full sophistication along the Winter Line in Italy and at the Anzio beachhead. By then the U.S. Army Field Artillery was arguably the best in the world, and the air observation posts were a key component in this success.<sup>46</sup> ■



## NOTES

1. The author is a historian with the U.S. Army Center of Military History in Washington, D.C. He originally presented this paper at the Society for Military History Conference at Calgary, Canada, in May 2001. He has benefitted from comments by Rebecca R. Raines, Harold R. Winton, Edward M. Coffman, David W. Hogan, James J. Carafano, members of the audience in Calgary, an anonymous reviewer for this journal, and the editor. All statements of fact and interpretation remain the sole responsibility of the author and in no way represent the official position of the U.S. Army or the Department of Defense. War Department (hereafter WD), Table of Organization (hereafter TO) 6-176, Change 1, Oct 29, 42, sub: HQ and HQ Service Battery (hereafter Btry), Field Artillery (hereafter FA) Battalion (hereafter Bn), 75-mm. Pack Howitzer, Truck-Drawn; Memo, Day for TAG, Sep 26, 42, sub: Changes in FA TO with Incl MFR, [Sep 26, 42], Headquarters (hereafter HQ), Army Ground Forces (hereafter AGF), General (hereafter Gen.) Correspondence (hereafter Corresp.), 1942-48, 320.3 (FA)/60, Record Group (hereafter RG) 337, National Archives and Records Administration (hereafter NARA), Washington, D.C.; Capt. J. W. Oswalt, "The Air OP Is Here To Stay," *Field Artillery Journal* (hereafter *FAJ*), 34 (August 1944): 568-72; Intervs, author with Col J. W. Oswalt, U.S. Army, Ret., Jan 13-14, 82, and with Lt Col Jack R. Forbes, Jr., Jun 5, 93, both at U.S. Army Center of Military History (hereafter CMH), Washington, D.C.
2. Counterbattery fire used sound and flash ranging in addition to ground and aerial observers. These techniques will not be discussed in this paper. Boyd L. Dastrup, *King of Battle: A Branch History of the U.S. Army's Field Artillery*, TRADOC Branch History Series (Ft. Monroe, Va., and Washington, D.C.: Office of the Command Historian, U.S. Army Training and Doctrine Command, and U.S. Army Center of Military History, 1993), pp. 160-76. Mark E. Grotelueschen, *Doctrine Under Trial: American Artillery Employment in World War I* (Westport, Conn.: Greenwood Press, 2001), focused on the artillery of one of the most successful divisions in the American Expeditionary Forces, the 2d Division.
3. For developments in the German Army, see David T.

- Zabecki, *Steel Wind: Colonel Georg Bruchmuller and the Birth of Modern Artillery* (Westport, Conn.: Praeger, 1994). The British Army is covered by Shelford Bidwell and Dominick Graham, *Fire-Power: British Army Weapons and Theories of War, 1904-1945* (Boston: Allen and Unwin, 1982), pp. 7-146, and David Frasier, *Alanbrooke* (New York: Atheneum, 1982), pp. 63-81. U.S., General Headquarters (hereafter GHQ) American Expeditionary Force (hereafter AEF), *Instructions for the Employment of Aerial Observation in Liaison with the Artillery* (Paris: Imprimerie Nationale, 1917), 19-26; U.S., War Department, Division (hereafter Div.) of Military Aeronautics, *Work of the Observer* (Washington: Division of Military Aeronautics, 1918); Charles DeF. Chandler, "Observation Balloons Serving with Infantry," *Infantry Journal*, 16 (January 1920): 564-65.
4. U.S., AEF, GHQ, *Instructions for the Employment of Aerial Observation*, pp. 27-34; Rpt, Maj Gen George O. Squier, Chief Signal Officer (hereafter CSO), to The Adjutant General (hereafter TAG), Oct 15, 19, *Report of the Chief Signal Officer to the Secretary of War, 1919* (Washington, D.C.: GPO, 1919), pp. 303-09. For a virtual case study of infantry-air cooperation on the Western Front, see Thomas M. Johnson and Fletcher Pratt, *The Lost Battalion* (Indianapolis, Ind.: Bobbs-Merrill Company, 1938).
  5. Rpt, Squier to TAG, Oct 15, 19, *Report of CSO*, pp. 303-09; Harold E. Porter, *Aerial Observation: The Airplane Observer, the Balloon Observer, and the Army Corps Pilot* (New York: Harper and Brothers, 1921), pp. 59-67. For an overview of the air war, see Lee B. Kennett, *The First Air War, 1914-1918* (New York: Free Press, 1991) and John H. Morrow, *The Great War in the Air: Military Aviation from 1909 to 1921* (Washington, D.C.: Smithsonian Institution, 1993). The latter is particularly good on European developments. These can be supplemented with James J. Cooke, *The U.S. Air Service in the Great War, 1917-1918* (Westport, Conn.: Praeger, 1996).
  6. Richard L. Pierce, "A Maximum of Support: The Development of U.S. Field Artillery Doctrine in World War I" (M.A. thesis, Ohio State University, 1983), p. 48; U.S., War Department, *America's Munitions, 1917-1918:*

- Report of Benedict Crowell, Assistant Secretary of War, Director of Munitions* (Washington, D.C.: Government Printing Office, 1919), pp. 572-74.
7. War Department, *America's Munitions*, pp. 323-30. On the American balloon service, see Eileen F. Lebrow, *A Grandstand Seat: The American Balloon Service in World War I* (Westport, Conn.: Praeger, 1998). Porter, *Aerial Observation*, pp. 101-56.
  8. Pierce, "A Maximum of Support," pp. 52-54; Steven A. Stebbins, "Indirect Fire: The Challenge and Response in the U.S. Army, 1907-1917" (M.A. thesis, University of North Carolina—Chapel Hill, 1993); Porter, *Aerial Observation*, pp. 133-57; Col Conrad H. Lanza, "Counterbattery in the AEF," *FAJ* 26 (Sept-Oct 36): 464. Lanza had been the S-3 on the staff of the chief of artillery, AEF.
  9. Porter, *Aerial Observation*, pp. 157-210.
  10. In Ltr, John J. McCloy, Assistant Secretary of War (hereafter ASW), to Lt Gen Lesley J. McNair, Mar 3, 42, HQ, AGF, Gen. Corresp., 1942-48, 353/2 (Restricted [hereafter R]), RG 337, NARA, McCloy recalled conditions on the Western Front. See also, Rpt, Brig Gen A. Hero, sub: Report of Field Artillery Board, AEF, on Organization and Tactics, Morris Swett Technical (hereafter Tech.) Library (hereafter Lib.), Field Artillery School (hereafter FAS), Ft. Sill, Okla.
  11. P. T. Quinn, "The Flying Battery Commander," *FAJ* 17 (Jul-Aug 27): 391-93, discusses instruction techniques at Fort Sill. Maj C. M. Busbee, "Liaison between Infantry and Field Artillery within a Division—Methods in Use to Date and Developments Pending," *FAJ* 18 (Jan-Feb 28): 25-35; Maj John S. Wood, "The Liaison Problem," *FAJ* 20 (Jul-Aug 30): 293-303. Memo, Office of the Chief of Field Artillery, (hereafter OCFA), [Jun 7, 32], sub: Air Observation for Ground Troops, in OCFA, *Air Observation for Ground Troops* (Bound Ms., Morris Swett Tech. Lib., FAS, 1932). The most searching analysis of the observation problem during these years is Rpt, Lt Col W. P. Ennis, Assistant Commandant, FAS, to Commandant, FAS, Jun 4, 29, sub: Annual Report of School Year 1928-29, Ms., Morris Swett Tech. Lib., FAS. Maj Gen H. W. Blakeley, "We Must See with Our Own Eyes," *Army* 10 (Mar 61): 62-63, reprints his 1939 article, but see General Blakeley's introduction which comments on how it first came to be published.
  12. William J. Snow, *Signposts of Experience* (Washington, D.C.: U.S. Field Artillery Association, 1941), pp. 158-59; Memo, OCFA, [Jun 7, 32]; Rpt, Maj Gen Mason M. Patrick, n.d., sub: Final Rpt of Chief of Air Service, AEF, in Maurer Maurer, ed., *The U.S. Air Service in World War I*, 4 Vols., (Maxwell AFB, Ala. and Washington, D.C.: Albert F. Simpson Historical Center and Office of Air Force History, 1978) 1: 104-60.
  13. Memo Order, Office of the Chief of Artillery, American Expeditionary Forces, Dec 8, 18, in Rpt, Brig Gen A. Hero, sub: Report of Field Artillery Board, AEF, on Organization and Tactics, Morris Swett Tech. Lib., FAS; Rpt, Maj Gen J. T. Dickman et al., Jul 1, 19, sub: Report of the Superior Board, AEF, on Organization and Tactics, U.S., Congress, House, *Department of Defense and the Unification of the Air Service: Hearings before the Committee on Military Affairs, House of Representatives...*, 69th Cong, 1st sess (Washington: GPO, 1926), pp. 671-76, 917-94. For commentary, see Robert F. Futrell, *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964*, AU-19 (Maxwell Air Force Base, Ala.: Air University, 1974), p. 16. Rpt, Col A. McIntyre, Commandant, FAS, to TAG, Jul 20, 39, sub: Rpt of Operations (hereafter Opns) of the FAS for the School Year 1938-1939, FAS Archives, Morris Swett Tech. Lib.; Speech, Brig Gen R. E. Chandler, U.S. Army, Ret., Nov 10, 58, sub: Talk Delivered at the Graduation Exercise, U.S. Army Aviation (Avn) Training Detachment (Fixed Wing), Gary Army Air Field, Camp Gary, San Marcos, Tex., Rex E. Chandler Mss., U.S. Army Military History Institute (hereafter MHI), Carlisle Barracks, Pa.
  14. *Field Artillery Intelligence Digest* No. 18, Sep 29, 41, sub: The "Air O.P." in the British Army, Office of the Chief of Cavalry, Gen. Corr., 1920-42, 452.1, RG 177, NARA; Dastrup, *King of Battle*, pp. 196-200.
  15. Dastrup, *King of Battle*, pp. 199-200, 206-08; Janice E. McKenney, "Field Artillery" (Unpub. Ms., CMH, 1992), pp. 249-57.
  16. Paul W. Clark, "Major General George Owen Squier: Military Scientist" (Ph.D. diss., Case Western University, 1974), pp. 343-85. U.S., Saumur Artillery School, [AEF], *Artillery Lines of Information: Means of Liaison, Duties of Specialists, Standard Codes*, vol. 3 in Manual of Artillery (Paris: GHQ, AEF, G-5, 1918), pp. 102-08; Rpt, Capt H. Hardinge, Radio Div., CSO, Services of Supply (SOS), AEF, in Maurer, *Air Service in World War I*, 4:251-2; Mason M. Patrick, *The United States in the Air* (Garden City, N.Y.: Doubleday, Doran, and Co., 1928), p. 33; Pierce, "A Maximum of Support," p. 48.
  17. Dulany Terrett, *The Signal Corps: The Emergency (To December 1941), U.S. Army in World War II* (Washington, D.C.: Office of the Chief of Military History, 1956), pp. 178-85.
  18. Robert Perry, "The Interaction of Technology and Doctrine in the USAF," in *Air Power and Warfare: Proceedings of the Eighth Military History Symposium, United States Air Force Academy, 18-20 October 1978*, Alfred F. Hurley and Ronald C. Ehrhart, eds. (Washington, D.C., and Colorado Springs, Colo.: Office of Air Force History and U.S. Air Force Academy, 1979), pp. 386-401; Benjamin S. Kelsey, *The Dragon's Teeth: The Creation of the United States Air Force for World War II* (Washington, D.C.: Smithsonian Institution Press, 1982); Irving B. Holley, Jr., *Evolution of the Liaison-Type Airplane, 1917-1944*, Army Air Forces (hereafter AAF) Historical Studies, 44 ([Washington, D.C.: HQ, AAF, 1945]), pp. 23-26, 36-39, 45-49, 60.
  19. For a detailed account of the efforts to attain Field Artillery aviation, see Edgar F. Raines, Jr., *Eyes of Artillery: The Origins of Modern U.S. Army Aviation in World War II*, Army Historical Series (Washington, D.C.: U.S. Army Center of Military History, 2000), pp. 31-78.
  20. Thomas W. McCaw, *The Courses: Field Artillery School, World War II* (Bound Ms., FAS, 1944-45), p. 182; Intervs, author with Col Michael J. Strok, U.S. Army, Ret., Jun 30, 82; with Col William R. Matthews, U.S. Army, Ret., Feb 24, 92; both at CMH.
  21. Memo, Lt Col Thomas E. Lewis, Training Div., AGF, for CS, AGF, Jun 17, 42, sub: School for FA Puddle Jumper Pilots; Memo, Moran, Training Div., AGF, Jun 23, 42, sub: Plan for Furnishing Pilots (FA) to II Army Corps; Ltr, Col C. H. Day, Assistant Adjutant General (hereafter AAG), AGF, to CG, R&SC, Jun 29, 42; Ltr, Maj H. L. Whiteside, Secretary (hereafter Sec), FAS, to CG, AGF, sub: Detail of Student Pilots and Observers; all in HQ, AGF, Gen. Corresp., 1942-48, 353/1 (FA Air Observation [hereafter Obsn]) (Confidential [hereafter (C)]), AGF Gen. Corresp., 1942-48, NARA; Memo, Lt Gen Lesley J. McNair for ASW, 17 Aug 42, sub: Organic Airplanes for the FA, HQ, AGF, Gen. Corresp., 1942-48, 353/69 (FA Air Obsn), RG 337, NARA.
  22. McCaw, *The Courses*, pp. 182-84.
  23. Ltr, Brig Gen Jesmond D. Balmer, Commandant FAS, to CG, AGF, Aug 7, 42, sub: Training Programs for Organic FA Air Obsn Courses at FAS, HQ AGF, Gen. Corresp., 1942-48, 353/58 (FA Air Obsn), RG 337, NARA; Ltr, Bull to CG, AGF, Sep 10, 42, sub: Organic Air Obsn for FA, HQ AGF, Gen. Corresp., 1942-48, 353/79 (FA Air Obsn), RG 337, NARA. For a full account of this controversy and its resolution, see Raines, *Eyes of Artillery*, pp. 98-101, and pp. 120-26, 282-84, for the subsequent evolution of pilot training at Fort Sill.
  24. Maurice Matloff and Edwin M. Snell, *Strategic*

- Planning for Coalition Warfare, 1941-1942*, U.S. Army in World War II (Washington, D.C.: Office of the Chief of Military History, 1953), pp. 266-93; George F. Howe, *Northwest Africa: Seizing the Initiative in the West*, U.S. Army in World War II (Washington, D.C.: Office of the Chief of Military History, 1957), pp. 32-54.
25. Intervs, Laurence B. Epstein with Col. Delbert L. Bristol, Jul 1, 75, CMH; with Lt. Col. Joseph M. Watson, Sep 14-15, 76, both at CMH. Draft, Lt Col Delbert L. Bristol, May 6, 57, sub: Insert for History of Army Aviation; Special Orders (hereafter S.O.) 231, FAS, Sep 28, 42 [Extract]; both in Delbert L. Bristol Mss., Mrs. Vivian Bristol, Florissant, Mo.
26. Chester G. Starr et al., *Fifth Army History*, 8 vols (Headquarters [hereafter HQ], Fifth Army, 1944-1945), 1:11; Brig Gen Charles E. Hart, "Artillery Representation on High Level Before and During Combat," *FAJ* 38 (Sep-Oct 48): 208-13; Questionnaire, Col T. E. Lewis, Artillery Officer, Fifth Army, [Jul 43], sub: Air-OP Planes, in Rpt, Extracts from Army Ground Forces Questionnaire, in U.S., AGF, *Report of Observer to North African Theater* (Bound Ms., Morris Swett Tech. Lib., FAS, 1943); S.O. 114, 13th FA Brigade, Oct 29, 42; Draft, Lt Col Delbert L. Bristol, May 6, 57, sub: Insert for History of Army Aviation, Bristol Mss.; Interv, Epstein with Bristol; Interv, Epstein with Watson. Hart was the deputy corps artillery officer at this time. The earliest expression of Clark's concern about obtaining enough pilots for II Corps is Ind, Maj Gen Mark Clark to CG, AGF, Jun 17, 42, HQ, AGF, Gen. Corresp., 1942-48, 353/1 (FA Air Obsn) (C), RG 337, NARA.
27. Interv, author with Oswalt; Annex, Col Williams. Even air sections assigned to reinforcing units received virtually no opportunity to train with their battalions before departing the continental United States. Interv, author with Strok, Jun 30, 82.
28. Ltr, Lt Col John W. Hansborough, Army Div., Air Command and Staff School, Maxwell Air Force Base, to Col Joseph Rockis, Historical Section, Army Field Forces, Jun 15, 48, Office of the Chief of Army Field Forces (hereafter OCAFF), Special Staff, Historical Section, Manuscript File, "History of AGF" Backup File, Study No. 35, RG 337, Entry 84B, NARA. On Patton's experiences, see Ltrs, Maj Gen George S. Patton, Jr., CG, 2d Armored Div., to Lt Col W. C. Crane, GHQ, Apr 25, 41; Patton to Air Assoc., Inc., Oct 28, 41; both in Gen. Corresp., George S. Patton, Jr., Mss., LC.
29. Ltr, Hansborough to Rockis, Jun 15, 48; Ltr, Lt Col Ford E. Allcorn to W. E. Vance, Apr 9, 57, *U.S. Army Aviation Digest* (hereafter USAAD) Files, Ft Rucker, Ala.
30. Howe, *Northwest Africa*, pp. 40-41, 116-34; Samuel Eliot Morison, *Operations in North African Waters*, vol. 2 in *History of United States Naval Operations in World War II*, 15 vols. (Boston: Little, Brown, 1962), pp. 34-42, 88-114.
31. Howe, *Northwest Africa*, pp. 134-37.
32. *Ibid.*, pp. 137-40; War Diary, U.S.S. *Ranger*, CV-4, Nov 9, 42, 1354, World War II Ships Diaries, RG 38, NARA; Annex, Williams.
33. War Diary, U.S.S. *Brooklyn*, CL-40, Nov 9, 42, World War II Ships Diaries; Rpt, U.S.S. *Brooklyn*, CL 40, Nov 16, 42, sub: Action Report Covering "TORCH" Operations in Fedala-Casablanca Area on November 8th and 9th 1942, World War II Action and Operational Reports; both in RG 38, NARA; Ltr, Capt Ford E. Allcorn to Col William W. Ford, Dec 11, 42, Personal Corresp of Lt Gen Lesley J. McNair, 1940-1944, "F," RG 337, NARA; Interv, author with Lt Gen Robert R. Williams, U.S. Army, Ret., Feb 20, 91, CMH.
34. Ltr, Allcorn to Ford, Dec 11, 42; Interv, author with Oswalt; Ltr, Hansborough to Rockis, 15 Jun 48; Ltr, Allcorn to Vance, 9 Apr 57; Howe, *Northwest Africa*, pp. 171-74.
35. None of the ships' names are underlined in the original. Annex, Williams.
36. Ltr, Maj B. C. Price, Adjutant General (hereafter AG), 3d Infantry (hereafter Inf.) Div., to Commanding General (hereafter CG), Western TF, Dec 8, 42, sub: Operations Report, Sub-Task Force BRUSHWOOD, in Western Task Force—Annexes to Final Report—Operation TORCH, 95-TF3-0.3, Annex 2, World War II Operations Reports, 1940-48, North African-Mediterranean Theater of Operations, RG 407, NARA; Howe, *Northwest Africa*, p. 139.
37. Ltrs, Allcorn to Ford, Dec 11, 42; Ltr, Allcorn, to Vance, Apr 9, 57; Interv, Richard J. Tierney and Fred Montgomery with Col Ford E. Allcorn, Mar 62, USAAD Files, U.S. Army Aviation Museum Library, Ft. Rucker, Ala. Richard J. Tierney and Fred W. Montgomery, *The Army Aviation Story* (Northport, Ala.: Colonial Press, 1963).
38. Ltr, Hansborough to Rockis, Jun 15, 48; Interv, author with Oswalt, Jan 13, 83.
39. Interv, author with Oswalt, Jan 13, 83; Ltr, Col John W. Oswalt, U.S. Army, Ret., to Richard [Tierney], May 27, 74, USAAD 20 (May 74): 12-13. Memo, undated, sub: Army Aviation Fact Sheet—1942-49 Period, Col John W. Oswalt, U.S. Army, Ret., CMH. For a description of air operations at Fedala in December 1942, see Alfred W. Schultz, *Janey: A Little Plane in a Big War* (Middletown, Conn.: Southfarm Press, 1998), pp. 14-18; MFR, author, Jul 8, 01, sub: Conversation with "Dutch" Schultz, author's files. Schultz knew that happened to Devol but not Shell.
40. Ltrs, Allcorn to Ford, Dec 11, 42; Price to CG, Western TF, Dec 8, 42.
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Searching  
for Ebro-33





Darrel Whitcomb

(Overleaf) Three Mirage-2000 aircraft such as the one lost as Ebro-33 arrive at the Farnborough Air Show.

**ON AUGUST 30, 1995, SERBIAN FORCES SHOT DOWN A FRENCH MIRAGE 2000K AIRCRAFT...THE TWO MEN HAD BEEN CAPTURED BY SERBIAN CIVILIANS**

**THREE SEPARATE EFFORTS WERE LAUNCHED TO RECOVER THEM**

**O**n August 30, 1995, Serbian forces shot down a French Mirage 2000K aircraft, as it was attacking an arms storage area twenty miles southeast of Pale, Bosnia-Herzegovina. The Serbs immediately captured the two crewmembers. This mission was part of NATO Operation Deliberate Force. Unaware of the crewmembers' fate, NATO commanders initiated efforts to recover the downed airmen. These efforts were unsuccessful.

The status of the pilots was finally determined on September 28, when French authorities learned, through diplomatic sources, that the two men had been captured by Serbian civilians and passed to Serbian ground forces.<sup>1</sup>

In a briefing for the press on September 22, then Commander-in-Chief Allied Forces Southern Europe, U.S. Navy Adm. Leighton Smith, explained this mission in detail to a packed press audience. He detailed the totality of the Allied reconnaissance and rescue efforts put forth by NATO forces to recover the two men. In doing so, he revealed that three separate efforts were launched to recover them.

These efforts failed because the two men could not be positively located and identified.<sup>2</sup> The recovery missions were flown primarily by U.S. special operations aircraft and crews, with the support of conventional forces from several other NATO members. From a historical viewpoint, the efforts teach a rich lesson concerning the efficacy and necessity of combat search and rescue (CSAR) operations in coalition campaigns.

Operation Deliberate Force was a NATO air campaign. It was triggered by a mortar attack launched by Bosnian Serb forces on the central marketplace in Sarajevo, on August 28. The campaign aimed to reduce the military capability of those Serbian forces to either threaten or attack designated safe areas and United Nations forces. Its target list included fielded forces, heavy weapons, and command and control facilities.

Deliberate Force would be conducted simultaneously with Operation Deadeye, a NATO attack plan designed to disrupt the integrated air defense system (IADS) that the Serbs had created in Bosnia, thus reducing the risk to NATO aircraft involved in these missions. Specific Deadeye targets included: key air defense communication nodes, defense command and control facilities, early warning radar sites, known surface-to-air missile sites (SAMS), and support facilities.<sup>3</sup>

The Serbian air defenses were considerable. Based upon primarily Soviet equipment procured during the Cold War, they included vast numbers

of anti-aircraft guns, infrared homing missiles, and late model sophisticated radar guided SAMS. In previous operations, they had challenged NATO aircraft and scored some successes. On April 15, a French Entendard IVP had been hit and damaged by an SA-7 infrared missile. However, the plane managed to return safely to its aircraft carrier. The next day, a British Sea Harrier was also hit by an SA-7 missile. The aircraft was downed and the pilot rescued by friendly Bosnian forces and held until a French Puma helicopter recovered him.<sup>4</sup>

On June 2, a Serbian SA-6 in western Bosnia shot down a USAF F-16. The pilot, Capt. Scott O'Grady, evaded enemy forces for six days before being recovered by a USMC recovery team launched from the USS *Kearsarge* and supported by a large package of NATO aircraft.<sup>5</sup>

The Deliberate Force campaign began on August 30, with initial waves of aircraft attacking IADS targets in southeast Bosnia. This was followed by five strike packages hitting targets in the vicinity of Sarajevo. One of the packages consisted of British Harriers, USAF F-15s and F-16s, and French Mirage 2000Ks. This target was familiar to the French. On July 23 they had attacked it in a unilateral action in response to the killing of some French peacekeepers by Serbian troops.<sup>6</sup> The attack was led by British Squadron Leader Stuart Atha, who coordinated the strike through a series of telephone conversations with various crews, located at scattered bases in Italy.<sup>7</sup> Their specific target was a munitions storage area near the town of Pale.

Arriving in the target area, the British delivered their bombs with no apparent enemy reaction. Then, the French aircraft attacked and each released its four bombs. As the third aircraft in the flight, Ebro-33, was recovering from its bomb pass, it was hit by a Serbian SAM. The missile severely crippled the aircraft, and the crew of Capt. Frederic Chiffot and Lt. Jose Souvignet ejected. Their aircraft was captured on video tape crashing into the side of a hill. The video also showed the two pilots descending in their parachutes.<sup>8</sup>

As the two pilots floated to the ground, they heard shots being fired at them. Upon landing, they were immediately captured by an armed civilian, who was soon joined by military personnel. Both pilots were wounded by the ejection, and further hurt by kicks and blows from the enraged enemy troops.<sup>9</sup>

The pilots were taken to a hospital in Pale, where they were met by Gen. Ratko Mladic, the leader of Serbian forces in Bosnia. His words were

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The MH-53J Pave Low III is often used for low level penetration of hostile territory.



**NONE OF THE CREWMEMBERS IN THE OTHER AIRCRAFT IN THE PACKAGE OBSERVED THE TWO FRENCHMEN ON THE GROUND OR HEARD ANY SIGNALS**

**ADMIRAL SMITH ORDERED THE USS ROOSEVELT TO EXECUTE THE SEARCH/RESCUE MISSION**

chilling: "You are my prisoners. You will be treated as criminals."<sup>10</sup>

None of the crewmembers in the other aircraft in the package observed the two Frenchmen on the ground or heard any signals or calls from their emergency radios. Consequently, the two men were reported as missing. However, NATO aircraft continued to operate in the area, and collected snippets of "convincing evidence" that the pilots could be alive and evading. Some were signals from the emergency radios that each pilot carried.<sup>11</sup> Intelligence sources were also able to procure copies of the video tape of the crashing aircraft and pilots in their parachutes. A few days later, a German Tornado photographed a man in a field near where the two pilots went down. He was pointing towards a sign that displayed the number three, a delta shape (the Mirage 200K is delta shaped), another number three, and the letters E and B. All of this information was reported to Admiral Smith. He decided that it was reasonable to assume that this was possibly an evasion signal from one or both pilots, and reported that information to Gen. George Joulwan, Supreme Allied Commander Europe.<sup>12</sup>

General Joulwan quickly reviewed the data and concurred, authorizing a rescue effort. Admiral Smith then ordered his staff to develop detailed reconnaissance of the area and possible recovery options of the two men. He worked closely on the details with USAF Lt. Gen. Michael Ryan, COMAIRSOUTH.

Admiral Smith had a CSAR recovery force aboard the aircraft carrier USS *Roosevelt*, in the Adriatic Sea. It consisted of HH-60 helicopters from Helicopter Squadron 3 (HS-3) and U.S. Navy SEALs from Delta Platoon, SEAL Team-8, on board for just such emergencies. The commander of HS-3, U.S. Navy Cmdr. Robert McGee, had been monitoring the developments in the status of the crew of Ebro-33, and had worked up a plan to recover them, if ordered. But he was concerned because voice contact had not been established with the two crewmen and all guesses of their location were approximate. The best that they had

been able to do was review the video tape and try to determine a probable location based on the winds at the time of shootdown, and the drift down time of the two men. But, if ordered, they were determined to go. The reason was obvious: "with a fellow pilot down, you've got to go in there and give it your best shot," Commander McGee stated.<sup>13</sup>

Early on the morning of September 6, as NATO strikes against bridges across the Drina River east of Sarajevo continued, Admiral Smith ordered the USS *Roosevelt* to execute the search/rescue mission. At 3:46 am, Commander McGee lifted off in the lead HH-60, followed by a second squadron aircraft. They climbed into a moonless sky and were soon joined by support aircraft from numerous units for the run into the Pale area. But as they crossed the coastline, McGee grew concerned about the weather. He noticed thickening ground fog in the valleys below and threatening thunderstorms ahead. Approaching the storms, he and his crews searched vainly for a way through. But the line of storms was solid and reached down to 3,000 feet above the ground. Normally, they could have flown below the storms, but the mountains in the area reached up to 7,000 feet. There was just no way to get through safely. While orbiting over land and trying to find a way through the weather, one of the helicopters was struck by enemy ground fire, taking slight damage in one fuel cell. As the fuel in the helicopters slowly decreased, Commander McGee realized that he could not find a way around the weather. Reluctantly, he aborted the mission and ordered his aircraft back to the USS *Roosevelt*.<sup>14</sup>

Admiral Smith reviewed the situation and determined that the collected intelligence warranted another attempt. This time, he assigned the mission to the Joint Special Operations Task Force (JSOTF) at Brindisi, Italy. Early on the morning of the 7th, it launched a package consisting of two MH-53 "Pave Low" helicopters, AC-130 gunships, A-10s, and other supporting aircraft. Onboard the two helicopters were both U.S. and French personnel trained to search for and recover the mission airmen.<sup>15</sup>

**ADMIRAL SMITH ORDERED THE JSOTF TO LAUNCH A THIRD ATTEMPT ON THE EVENING OF THE 7TH**

As the force entered the area of the survivors, however, a dense ground fog began to form. This hampered visual search, even for the crews equipped with night-vision goggles. The French personnel on board made radio calls to the two downed airmen in their native language. But there was no response. As the aircraft departed the area, they were fired upon by Serbian forces. One of the MH-53 helicopters was hit by enemy fire.<sup>16</sup>

Frustrated by the weather, but still convinced by the available intelligence that there was a reasonable chance the two French airmen were evading, Admiral Smith ordered the JSOTF to launch a third attempt on the evening of the 7th. This time the weather was perfect for the mission. AC-130 aircraft entered the area and began the search, while two more MH-53s launched as the recovery aircraft. Using the call signs of Knife 44 and Knife 47, they again had a contingent of U.S. and French personnel on board to both search and make a ground recovery if the two airmen were found.

Intelligence personnel had done a thorough study of the area and determined the most likely hiding positions for the two Frenchmen. The two helicopters and the AC-130s each performed a detailed search of its designated areas using night-vision goggles, while again the French Commandos called for their countrymen on the radios.

The search proved fruitless, but it did catch the attention of Bosnian Serb forces in the area. An estimated eight antiaircraft guns of varying calibers began firing at them. Both the AC-130 and helicopters returned fire. Additionally, supporting A-10s and F-18s attacked the enemy guns. As the helicopters turned to depart the area, both were hit numerous times. Onboard, two personnel, SSgt. Randy Rutledge and SSgt. Dennis Turner, were wounded seriously.

As the aircraft egressed the area enroute back to Brindisi, the supporting A-10s, F-18s, and also some USN A-6s struck numerous enemy positions and guns.<sup>17</sup>

Reviewing the negative results of the three efforts, Admiral Smith decided against any further missions, unless new information turned up indicating the status of the two French airmen. Subsequently, it was revealed that some of the signals received and objects observed by the rescue forces had been fakes purposely created by the Bosnia Serb forces.<sup>18</sup>

In October, the French government determined, through other sources, that the two men had been captured by the Bosnians and were being held at an undisclosed location. The pilots were eventually released to French authorities as an initial step in the Paris Peace agreement and the Dayton Accords, that ended the conflict.<sup>19</sup>

In retrospect, the search efforts for the crew seemed to have had little chance of success. Historical research on CSAR operations indicates that five factors have a significant bearing on success.<sup>20</sup>

1. Locating the survivor/s.
2. Communications among the participants.

3. Need for a recovery vehicle.
4. Smart survivor/s.
5. Ability to obtain and maintain situational superiority around the survivor/s.

Using this matrix, the Ebro-33 mission can be analyzed operationally. Clearly, the survivors were never located. But there were numerous indications, collected through intelligence services, that seemed to indicate possible locations. This dictated, at a minimum, the reconnaissance and search efforts.

Communications were excellent between the various forces involved in the rescue task force. But communications were never established with the downed crewmen, even though they had been equipped with survival radios.

The dispatched HH-60 and MH-53s were all sufficient recovery vehicles. And all had, onboard, the precise personnel needed to facilitate the recovery.

As fully trained fighter aircraft crewmembers, both pilots were fully trained for combat duty.

Finally, the task force and supporting aircraft were sufficient to achieve enough situational superiority for the rescue helicopters to operate extensively in the recovery area. This was clear in the battles that ensued with the Bosnian gunners.

However, without positive location of and contact with the survivors, the rescue had a less than realistic chance of success. The capability and intent to rescue was there. But, without the critical first two items, the missions flown for Ebro-33 were futile.

Also, why pursue the efforts when it had been determined that some of the signals and sightings had been decoys set out by the Serbian forces?

Perhaps Admiral Smith had another motive for this effort, one not clearly stated but fundamental nonetheless. Admiral Smith pointed out repeatedly in his briefing, that this was an allied operation, with missions flown by participants from several nations, all under the NATO banner.

But alliances and coalitions can be fickle. As the great theorist Carl von Clausewitz noted almost 200 years ago, in any alliance, the relationship between allies can be a center of gravity. His words on this subject were crystal clear: "Among alliances, it [the center of gravity] lies in the community of interest."<sup>21</sup> In other words, it was the old saw that a valid strategy against an alliance was to "divide and conquer." Germany certainly tried to do this against the Allies in World War II.<sup>22</sup>

North Vietnam was aware of this phenomenon, and certainly worked to weaken the relationship between South Vietnam and its ally, the United States, in the long and bitter conflict in Southeast Asia.<sup>23</sup>

As a counter strategy, NATO leaders had to take steps to insure that Serbia could not exploit the differences that can naturally divide allies and were certainly alive within the framework of NATO. One way to protect the "community of

**REVIEWING THE NEGATIVE RESULTS OF THE THREE EFFORTS, ADMIRAL SMITH DECIDED AGAINST ANY FURTHER MISSIONS**

**IN THE END,  
THE  
AIRCREW OF  
EBRO-33 WAS  
NOT  
RESCUED**

interest” was to insure that all shared the burdens and risks in the common effort.

Since air power was the weapon of choice, it also made sense to insure that the aircrews—of whatever nationality—knew that if they went down, the forces of the alliance would try to come for them. And since the preponderance of specially trained, equipped and capable rescue forces belonged to the United States, it was one capability that our nation could uniquely contribute to the alliance effort and for the benefit of all.

Did it work? British Flight Leader Stuart Atha, who headed the strike package that day said it clearly:

*They [the CSAR forces] were a particularly impressive bunch, so we felt confident especially since Scott O’Grady had been rescued 2-3 months earlier. As to the level of effort, we thought that every coalition effort would be made to get us out.<sup>24</sup>*

A few weeks after the French government conclusively determined that the pilots had been captured, French Gen. Jean Phillippe Douin, writing on behalf of French Defense Minister Charles Millon, sent the following letter of thanks to Admiral Smith:

*As our minister has expressed in his communiqué, we have acquired the certitude that our pilots were in the hands of Bosnian-Serbs. All search missions are, therefore, without utility.*

*I take this occasion to address to you my warm thanks for the numerous efforts undertaken by forces under your command, that a chance,*

*although it may be minimum, existed to be able to recover [the crew]. Your determination constitutes evidence of a guarantee for all pilots who execute the dangerous and demanding missions.<sup>25</sup>*

This realization surfaced again a few years later in Operation Allied Force, the air campaign against Serbia. As a rescue operation was being mounted for a downed F-117 pilot, the NATO air component commander, Lt. Gen. Michael Short recalled:

*I remember a senior officer from another nation who sat with us that night when it was over, saying to me “I can’t tell you how impressed I was with what you were willing to do to get that pilot back, and the clear message being sent that this happened to be an American pilot, but if it had been a Spanish or a Canadian, or Italian, or German, or a Frenchman, or a Brit, it wouldn’t have mattered, that you were going to spend everything you had to go and get him. And me as a member of another NATO air force, I am impressed by that.<sup>26</sup>*

Our ability and willingness to prosecute CSAR was a boon to the coalition and a palpable bond among the airmen who had to fly the missions. In the end, the aircrew of Ebro-33 was not rescued. But the principle that directed the effort was etched in stone for all members of the alliance to see.

And in failure, there was success, for the efforts put forth for the crew of Ebro-33 and by all the crews during Deliberate Force led to the ultimate peace accord for Bosnia signed at Dayton, Ohio, a few months later. ■

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# FOR THE RECORD

## The Yalta Conference Escort: The British Mission

*Air Commodore John L. Mitchell, RAF (Ret.),*

I was extremely interested in H. A. Eberhardt's article entitled "Most Secret Mission," in the Summer issue of *Air Power History* [Vol. 49, No. 2] for I was the navigator on Prime Minister Churchill's Skymaster, which features in this piece. When a personal aircraft dedicated for his use had become available in the Spring of 1943, an Avro York, I was fortunate to be selected as the navigator in the crew and am now the only survivor of that flight deck crew. The York was an adaptation of the famous Lancaster wartime bomber as a passenger-freighter and his was fitted out to a high standard of luxury for those

President Franklin Delano Roosevelt's plane, the *Sacred Cow* is in the background, Prime Minister Winston Churchill's plane is in the foreground. Three national flags on the pole were indicative of the conference participants. (Photo courtesy of the author.)

days. We could sleep up to nine people in comfortable, if noisy, surroundings, including a small galley. In this aircraft we flew him to North Africa and Italy, to the Middle East, and to Moscow for various conferences and his visits to the battlefields.

It soon became apparent that with his appetite for travel and a journalist's instinct to be in on the action, we needed an aircraft with much greater range. The first C-54 delivered to the RAF under Lend-Lease (a C-54B and number 100 off the Santa Monica production line) was fitted out in great luxury, on the layout of the York by Armstrong-Whitworth at Coventry. Mr. Churchill liked to say it was a present from Mr. Roosevelt. We could sleep ten passengers in comfort with a suite for "The Owner," a proper galley with refrigerator, and by then we had an RAF chef in the crew, along with a steward. So we could cater for most of his requirements. He first used the aircraft to visit Athens at Christmas 1944, at the time of the Communist insurrection.

If I remember correctly the President's aircraft, named the "Sacred Cow," was a C-54D, with wing-root tanks and uprated engines, which gave the same range without sacrificing cabin space, and a slight edge on us in speed. We still had the two 500-gallon inboard ferry tanks, in sealed compartments, so that smoking could be permitted—a necessity, needless to say! The "Sacred Cow" was fitted with that picture window (which you can see in the picture) on the port side of the President's cabin.

The Yalta Conference had been a long time in gestation—much discussion over location as Stalin still would not leave Russian soil, and we



Allied ground crews at Saki, plus local glamor girl. (Photo courtesy of the author.)

WE HAD FLOWN OUT THE PRIME MINISTER AND HIS INTIMATE PARTY TO MALTA ON JANUARY 29, 1945

WE FOUND THE "SACRED COW," ALREADY AT LUQA



had plenty of time to be brought to readiness. We had flown out the Prime Minister and his intimate party (the "Circus" we called it) from RAF Northolt, our base west of London, situated on the road from No. 10 Downing St., and his home at Chequers, to Malta on January 29, 1945. There to rendezvous with the President, who was expected to arrive in the cruiser, the USS *Quincey*. We found the "Sacred Cow," flown by Col. Otis Bryant (ex-TWA chief pilot) already at Luqa.

A snowstorm moving across the south of England forced us to leave Northolt three hours ahead of the scheduled plan and although the ADC [aide de camp] had taken particular care to warn the Governor of Malta and the top military brass that the Prime Minister did not wish a formal reception and would remain on the aircraft in his very comfortable bed until a respectable hour, we found a guard of honor and band, plus Tom Cobbley and all drawn up in shivering early morning cold. The tarmac was said to have been "laced with gold braid." He would disembark later

and drive direct to the dockyard and stay on HMS *Orion* until the President arrived.

To add insult to injury, we had passed our ETA [estimated time of arrival] in GMT [Greenwich Mean Time] on the RAF network and someone had forgotten to adjust for local time, so that the notified time of 0430 hours had become 0330 hours. We taxied in very gently and the ADC had to tiptoe down the steps and with some embarrassment tell the governor and other very cold VIPs to go away and the guard commander to pack up his troops with the minimum of noise and decamp. Considerable irritation ensued.

After three days of conferences in Malta, the great caravan got under way for the Crimea. Some 700 passengers of various ranks (colonels were ten-a-penny) were dispatched to Saki, a Soviet naval air force base on the west coast of the Crimea near Eupatoria, a Czarist health resort, in twenty-five assorted four-engined aircraft. There was a fleet of C-54s. The RAF had the Yorks in service, plus a number of C-87s, passenger Liberators.

President Franklin Delano Roosevelt's jeep (center) is flanked by the guard of honor. (Photo courtesy of the author.)

**WE TOOK OFF AHEAD OF THE PRESIDENT'S "SACRED COW"**

**WE DULY PICKED UP OUR P-38 ESCORT AT DAWN**



We took off ahead of the President's "Sacred Cow" for its greater speed would allow it to catch up with us at Saki for one big reception. We duly picked up our P-38 escort at dawn, between Cape Kithera and Andros. Little did we know what an enormous logistic exercise it had been to position Colonel Harris's squadron on the various Mediterranean bases to provide all the necessary escorts, which Eberhardt's article so clearly explains. We reached the Crimea over the same low cloud cover reported by the "Sacred Cow" and our escort was also unable to pick up the MF beacon. They, too, asked for our help to break cloud and so they tucked into us for the descent through the thin overcast and we gave them a bearing and distance from overhead Saki to Sarabuz, their destination near Simferopol.

Before the VIPs departed in their motorcades for the eight hour drive to Yalta, Col. Otis Bryant, the President's captain, told us he was not stopping in this miserable dump, cold just above freezing, mud everywhere and wet damp. He had secured permission to fly directly across Turkey (without the nicety of diplomatic clear-

ance for this route) and remain in the warmth at Payne Field, Cairo, until required to position for the President's departure. We quickly caught Churchill's ADC before the cavalcade departed and secured the same permission, leaving for RAF Cairo West (LG224) soon afterwards.

Thereafter follows a little tale of an accidental decoy operation, unpremeditated and, therefore, more likely to come off than a planned job. We had been asked to take three passengers of the British Embassy, Moscow, who had been involved in setting up the Conference down to Cairo. One was a Brig. Gen. "Pop" Hill, our liaison man on the precious-little intelligence exchange with the Russians. (He had served with the RFC in Russia in 1917-1918, spoke Russian and German fluently). Short in stature, like Churchill, he was wearing a British "warm" greatcoat when he disembarked in Cairo and a Russian fur hat. In the poor lighting of the tarmac he looked very like the real thing. As we had often operated through Cairo on various conferences with the Prime Minister, two and two were quickly put together to make three, and the Axis press, which had



**WE REACHED  
THE CRIMEA  
OVER THE  
SAME LOW  
CLOUD  
COVER  
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BY THE  
"SACRED  
COW"**

been speculating about a Big Three Meeting (there was enough evidence scattered around the Mediterranean) came out next morning that the meeting would be in Cairo. "Mr. Churchill had been seen arriving!"

This was not the first time we had enjoyed an escort of P-38s. On May 23, 1943, our maiden voyage with the PM in his Avro York aircraft, between Gibraltar and Algiers, we picked up an escort of P-38s near La Senia (Oran) to fly on to Algiers, the RAF Spitfires having escorted us

from Gibraltar. The P-38s stayed with us for the next four days while we visited Chateaudun du Rhummel (a B-17 Wing) near Bone and on to El Aouina (Tunis). On the return flight our escort leader was somewhat mystified by the strange gyrations of the York. Our captain later explained to him that "The Owner" was trying his hands at the controls! The P-38s left us over Oran on June 4, when RAF Spitfires escorted us back to Gibraltar. I wonder if it was the 94th Fighter Wing on that earlier occasion? ■

# REVIEW ESSAY

by Mark Clodfelter

*To Hanoi and Back: The United States Air Force and North Vietnam, 1966–1973.* By Wayne Thompson. Washington, D.C.: Air Force History and Museums Program, 2000.

In *To Hanoi and Back*, Wayne Thompson mentions Gen. George Brown, shortly after Brown was named Seventh Air Force commander in Saigon in the Summer of 1968. The author notes that the transition from the former commander of Seventh Air Force, Gen. William “Spike” Momyer, was “dramatic.” Momyer was an authority on tactical air warfare who constantly involved himself in the details of operations and rarely used his staff. Brown, on the other hand, was a bomber pilot who had led a bomb group on the famous raid against the Ploesti oil refineries in World War II, and he had no special expertise in fighter operations. He delegated authority frequently, and told his subordinates not to bother him with their problems unless they wanted him to make a decision they could not make. One evening a wing commander called Brown in the middle of the night to report an enemy rocket attack. Brown said if there were something that he could do about it, to call back. Brown then hung up the phone.

Such episodes abound in Thompson’s book, which is a marvelous account of all aspects of the Air Force’s war against North Vietnam from the Autumn of 1966 to the end of America’s involvement in the war in January 1973. Thompson does an excellent job of evaluating how Presidents Lyndon Johnson and Richard Nixon tried to use air power to achieve their political goals in Vietnam. He also shows the impact that their directions, and those of their subordinates, had on the air war. Moreover, the book includes wonderful portrayals of Air Force leaders, such as, Generals Brown, Momyer, McConnell, Ryan, Lavelle, Meyer, and Vogt, and their efforts to translate political goals into military objectives. It also provides great insights into the command relationships that developed during the war. It is further a fine account of the combat commanders, like Colonels

Robin Olds, “Boots” Blesse, Jack Broughton, and Charles Gabriel, and of the men who did the real dirty work—the pilots and navigators who flew the missions, risking death or capture. *To Hanoi and Back* is also a story of technology and tactics and their impact on the war—of the types of aircraft, missiles, and radar used by both sides, as well as of how Air Force technology and tactics compared to that used by the Navy. Finally, the book is an excellent account of how frictional factors, such as secret negotiating efforts and monsoon weather, could play havoc with the success of an air campaign.

Let me say, right off the bat, that I liked the book—and I liked it a lot. The main reason that I am so enthusiastic about it is because it covers so much, and yet it does so with enough depth—and enough explanation—to provide the reader with a thorough understanding of what transpired and why. Thompson’s chronological organization is logical and his writing flows easily—he has a true knack for explaining the technical aspects of air war succinctly, so that the reader understands the essential points without getting lost in the details. Yet, perhaps the book’s greatest strength is that it never neglects the human element. It is not merely an account of high tech machinery trying to overcome oppressive conditions and political restrictions to defeat a tenacious third world enemy. Rather, it shows in graphic terms that at every level of the air war—from the decision by the President to intensify the air war to the pickling of bombs on target by an aircrew—involved an enormous amount of anguish, frustration, discipline, and courage. Thompson constantly emphasizes that the air war had personal ramifications and that its key components were men, *not* machines. Descriptions of the harrowing attacks on the Paul Doumer bridge, Bob Pardo’s push of Earl Aman’s crippled F-4 into Laotian air space, and Robinson Risner’s ordeal as a prisoner of war keep the human element uppermost in the mind of the reader.

Another key aspect of the book is its *accuracy*. As perhaps would be expected in an official history, Thompson has meticulously documented his

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source material, but the scope of his research is the broadest that I have ever seen on the subject. Not only has he thoroughly combed thousands of Air Force documents, but he has ploughed through eighty-five “CHECO” reports—which were extensive current evaluations of on-going operations, innumerable amounts of Senate and House testimony, the personal papers of Presidents Johnson and his staff, translated Chinese and Vietnamese sources, hundreds of transcripts of oral history interviews, plus he has conducted hundreds of his own interviews—many in obscure locations. Thompson even went so far as to interview “Maharajah” Amarjit Singh Vasir in Thailand. Some readers may not know who the Maharajah was, but after you read this book you will know that his clothing firm employed more than eighty seamstresses who made the first “party suits” for aircrews stationed in Thailand. These special flight suits, in bright squadron colors, were made for the River Rats—those aircrew members who had flown across the Red River in North Vietnam. The suits were worn during off-duty “gatherings” outside the gates of Thai air bases. *To Hanoi and Back* goes on to describe the origins of such River Rat games as “dead bug” and “MiG sweeps”—which are just a couple of examples of the depth of his research. In sum, the book contains a wealth of information on all aspects of the Air Force’s war against North Vietnam. The statistical tables in the index on various types of flying activity are superb. Readers will not find a better bibliography on the air war against the North.

To highlight some of the features of *To Hanoi and Back*, let’s begin with the masterful portrayal of Presidents Johnson and Nixon, and their civilian subordinates, and how their personalities and beliefs translated into the conduct of the respective air campaigns Rolling Thunder and Linebacker. Thompson notes that while Lyndon Johnson was the Senate majority leader, he invited Air Force Gen. John P. McConnell to the LBJ ranch so that Johnson could learn about Strategic Air Command—and Johnson even ended up serving McConnell breakfast in bed! Once Johnson became President, he picked McConnell to replace Gen. Curtis E. LeMay as Air Force Chief of Staff—and then tried to co-opt the general with promises of unlimited bombing if his bombing halts against North Vietnam proved unsuccessful in ending the war. By February 1968, after the start of the Tet Offensive, McConnell revealed the agony that three years of bombing halts, innumerable restrictions, and unfulfilled promises had caused. When asked by a Senate Committee what would he do in North Vietnam if he had a free hand, McConnell replied: “If I had a free hand to do everything I wanted to do in North Vietnam, I don’t have the slightest idea of what I would do, Senator, because that would be a responsibility which I have never considered having thrust upon me.”

*To Hanoi and Back* reveals that such frustrations for air leaders were not only part of the Johnson administration’s conduct of the air war

against North Vietnam. During Nixon’s Linebacker offensive in 1972, Secretary of Defense Melvin Laird proved to be a major impediment to the “free reign” supposedly provided air commanders by Nixon’s leadership. Laird thought that North Vietnam’s March 1972 “Easter Offensive” was a good test for Vietnamization and that nothing special should be done to help out the South Vietnamese Army, and he opposed Nixon’s renewed bombing of North Vietnam. He was supported in his views by Air Force Secretary Robert Seamans. As a result, Laird was sometimes able to restrict the bombing, which caused Nixon to try to cut Laird out of the decisionmaking process by going directly to the Chairman of the Joint Chiefs, Admiral Thomas H. Moorer. National Security Advisor Henry Kissinger was on Nixon’s side as well, and, as might be imagined with Nixon, the situation got ugly. Heated telephone conversations ensued between Kissinger’s military assistant, Army Maj. Gen. Alexander M. Haig, Jr., and Laird’s military assistant, Air Force Maj. Gen. Robert E. Pursley. Haig had graduated from West Point two years ahead of Pursley, and their relationship had deteriorated since the North Koreans had shot down an American EC-121 reconnaissance aircraft in April 1969. Nixon had wanted to respond forcefully to the incident, while Laird had not, and as a result Nixon sent orders directly to the Navy for a task force to move into Korean waters. In the meantime, the White House had tapped Pursley’s telephone. In the midst of the 1972 attempt to step up the air campaign against North Vietnam, Haig revealed the wiretap to Pursley, which resulted in Pursley’s request to retire. Such nuggets abound throughout the book.

In keeping with the emphasis on the human dimension, the reader comes away with a profound appreciation for a key aspect of what Clausewitz called the “genius of command”—personalities count. The reader learns that General Brown’s direction of Seventh Air Force headquarters in Saigon was indeed different from that of his predecessor, “Spike” Momyer—whose intellect and austerity led to a ban on smoking in staff meetings, and an emphasis on proper uniforms, clean quarters, and well-maintained flower beds. Five years and two air campaigns later, Seventh Air Force Commander Gen. John Vogt found that his ability to control the Linebacker II air war was not only limited by Secretary Laird’s efforts to restrict it and the emphasis that President Nixon placed on using B-52s, but also, perhaps, by his pedigree as a fighter pilot. Thompson notes that Gen. John C. Meyer, the CINCSAC and Lt. Gen. Gerald Johnson, the Eighth Air Force Commander on Guam, whose B-52s formed the primary component of Linebacker II, were, like Vogt, both fighter pilots from World War II’s European theater. Meyer had shot down twenty-four German airplanes in that conflict, plus two more enemy aircraft in Korea, while Johnson had shot down seventeen German aircraft. Vogt had shot down only eight German

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planes. As a result, Thompson writes that "Vogt found himself in Linebacker II relegated to third place in a pecking order established three decades earlier in the skies over Germany." Vogt usually learned of Meyer's plans during Linebacker II with barely enough time to throw together fighter support packages for Meyer's bombers.

While *To Hanoi and Back* is filled with similar insights throughout, perhaps the most intriguing chapter is that provided on the Lavelle controversy. Thompson meticulously details the controversial raids, secretly ordered against targets in North Vietnam by Seventh Air Force commander Lt. Gen. John D. Lavelle in late 1971 and early 1972. During that portion of the war, raids against North Vietnam were prohibited unless American reconnaissance aircraft were fired upon—or SAM or AAA radars were activated against them. Because of the interlocking nature of the North Vietnamese air defense radar system, Lavelle liberally interpreted the provision for radar activation, and ordered about thirty missions (roughly 150 sorties) against targets in North Vietnam on his own initiative. He would later contend that he received encouragement from higher authorities to conduct the raids, though those in the chain of command who were later questioned, including JCS chairman Admiral Moorer, denied that they had provided the impetus. Air Force Sgt. Lonnie D. Franks brought the incidents to light by revealing the false reporting of the missions in a letter to Iowa Senator Harold E. Hughes. Hughes notified Air Force Chief of Staff Gen. John D. Ryan, who dispatched the Air Force Inspector General to Saigon to investigate. Once Ryan determined that Franks's accusations had merit, he relieved Lavelle from command.

Thompson notes that Nixon's secret bombing of Cambodia in 1969-1970, with its false reporting system for recording those raids, perhaps contributed to the dual reporting system established at Seventh Air Force headquarters under Lavelle's tenure. Lavelle was the only person in the Seventh to receive punishment for the secret bombing. Ryan claimed that Lavelle's subordinates had no way of knowing how high was the source of orders that they received from Lavelle. Three of those subordinates would go on to achieve four-star rank—Alton D. Slay, Charles A. Gabriel, and Jerome F. O'Malley, and Gabriel would ultimately become Air Force Chief of Staff. Thompson concludes his account of the episode by remarking that "General Lavelle's greatest strength as a commander was his concern for the welfare of his men. But in Vietnam his concern got him into trouble, got them into trouble, got the Air Force into trouble—all for the sake of bombing too slight to make a difference. A less generous man might have risked the lives of his men trolling to bend the rules in a more acceptable way. A wiser man would have avoided the risks to his and their integrity for so little benefit to the war effort."

The book's final chapter, titled "Reverberations," also provides considerable food for thought.

In that chapter, Thompson examines how the air war against the North subsequently affected Air Force thought, doctrine, and combat operations. He observes that the emphasis on avoiding civilian casualties—that highlighted Rolling Thunder as well as the two Linebackers—has continued to shape American applications of air power. He points to the Gulf War, Bosnia, and Kosovo as proof that the focus on avoiding casualties is not likely to fade soon—Afghanistan adds further support to that contention. Thompson insists that this "self-imposed constraint" has not crippled air power because technology has come to the rescue in the form of precision-guided munitions. He observes that an extensive number of PGMs were dropped during Vietnam—28,000, of which 4,000 were used against the Easter Offensive in North Vietnam alone. The majority of those bombs hit bridges, whereas in Desert Storm, Deliberate Force, and Allied Force, the smart bombs first struck command centers and communication nodes. Yet, while Thompson notes that the accuracy of precision munitions has improved greatly since Vietnam, he shrewdly remarks that "the precision of bombs [has] often exceeded the precision of intelligence about enemy activity"—another assertion that seems to fit the current conflict.

In conclusion, *To Hanoi and Back* is a marvelous book, a book that will not only provide the reader with a wealth of information, but one that will also make that reader think hard about what it takes to apply air power successfully against a tenacious enemy who excels at what we would today call "fighting asymmetrically." This book is indeed a fitting tribute to the thousands of Air Force personnel who participated in the air war against the North and, most especially, to the 439 aircrew members who did not return from that endeavor.

*Mark Clodfelter, National War College, is the author of The Limits of Airpower: The American Bombing of North Vietnam (New York: Free Press, 1989).*

*Reviewer's Note:* I have known Wayne Thompson for several years and am very grateful for his knowledge, expertise, and friendship when I was doing my research on the air war against North Vietnam. He patiently answered many questions and told me where to find good sources, and his leads were always true. Thus, I have looked forward to his account of the air war against the North.

*Editor's note:* This essay was adapted from the presentation to the Military Classics Seminar, at Fort Myer, Arlington, Virginia, April 16, 2002.

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**Jungle Ace: Col. Gerald R. Johnson, the USAAF's Top Fighter Leader of the Pacific War.** By John R. Bruning, Jr. Washington, D.C.: Brassey's, Inc., 2001. Maps. Photographs. Notes. Glossary. Index. Pp. xxxii, 259. \$26.95 ISBN: 1-57488-357-7

This is Bruning's second volume on combat aviation history; his first covered aerial operations in the Korean War. This book presents the life story of one of the most outstanding combat pilots and commanders of the Southwest Pacific's Fifth Air Force. In his short but eventful life, Jerry Johnson flew 262 combat missions and racked up 24 aerial victories—fourth among Army aces in the Pacific. Seven months before his tragic death on October 7, 1945, Johnson had assumed command of the 49th Fighter Group—at 24, one of the youngest full colonels in the Pacific. Johnson was Bruning's childhood hero and, when he discovered Johnson had preceded him as a student at the University of Oregon, Bruning researched Johnson's life and wrote his MA thesis on his hero.

The author has thoroughly covered both the personal and military sides of Johnson's life through access to wartime letters home and recollections of many who served with him in the Pacific as well as family and friends. What results is a moving account of a young man of strong character, high principles, and devotion to duty. Despite his hero status, Johnson avoided the limelight (unlike many other high-scoring aces). He is, indeed, a fine example of Tom Brokaw's "greatest generation."

Bruning's story begins with Johnson's Oregon childhood and decision to enter the Air Corps. It follows him through flight training, combat squadron assignment, initial combat in Alaska in September 1942, and the rigors of flying in New Guinea in 1943-1944 and the Philippines in 1944-1945. He focuses on the personal experiences of Johnson and his 49th Group, 9th Squadron mates, with scant reference to the Fifth Air Force brass. Tragic events are relieved by comical, often hilarious anecdotes.

The author's strong suit is his ability to describe combat situations in which Johnson and his squadron mates found themselves. He manages to avoid repetitive language in vividly presenting how it was to be flying in life-or-death circumstances against skilled adversaries. To be as accurate as possible in describing combat incidents, Bruning has weighed sometimes-conflicting accounts, derived from 50-year old recollections of those involved in the events and often necessarily presents different versions of what happened. Regrettably, he was not able to comb Japanese records and accounts for the other side of the events described, but he did benefit from aviation historian Henry Sakaida's research on experiences of IJAAF fighter pilots in the New Guinea and Philippines campaigns.

Until now, Jerry Johnson's story had been a notable omission in the literature on SWPA fighter aces. Top-scoring ace Dick Bong's story was earlier told by his brother in *Dear Mom, So We Have a War*; while Charles Martin recently wrote a biography of the second leading ace, *The Last Great Ace: the Life of Thomas B. McGuire*. Surviving ace Jim Morehead of Johnson's sister 8th Fighter Squadron has described his own experiences in *In My Sights*. While not an ace, Ted Park in 1997 provided the engaging non-fiction version of his experiences in the 35th Group in *Angels 20*.

As with these other books, Bruning's contribution to our knowledge of Fifth Air Force fighter operations in 1942-1945 is at the level of individual combat experience. However, where appropriate, he frequently references the bigger picture. For treatment of questions of strategy and command in Fifth Air Force, he wisely refers to Griffith's *MacArthur's Airman: General George Kenney and the War in the Southwest Pacific*.

Fifty-two photographs, mostly from private collections, illustrate family and military events of Johnson's life. The two maps included amply cover the geographic spread of the story.

Aviation historians owe Bruning a debt of gratitude for relating the story of this extraordinary young man's unfortunately abbreviated life. His fast-paced, smoothly flowing account is a pleasure to read.

*Dr. William H. Bartsch, Reston, Virginia*



**The Phantom Defense: America's Pursuit of the Star Wars Illusion.** By Craig Eisendrath, Melvin A. Goodman, and Gerald E. Marsh. (Westport, Ct: Praeger Publishers, 2001).

During his presidency, Ronald Reagan made the old Russian adage "trust but verify" the basic tenet of his arms control philosophy. This is good advice whether one is negotiating an arms agreement or reviewing a book like *Phantom Defense*.

The authors of this work have impressive credentials. Craig Eisendrath, a senior fellow of the Center for International Policy, served earlier as a foreign service officer and claims expertise in nuclear and outer space matters. Among other things, the second author, Melvin Goodman, is a professor of national security at the National War College. Rounding out the triumvirate is Gerald Marsh, a physicist at Argonne National Laboratory. Regrettably, *Phantom Defense* does not live up to the promise of these credentials. That the book is a polemic is not surprising, given the title the authors chose for their book. That their book exaggerates the accomplishments of arms con-

trol and grossly distorts the history of missile defense is inexcusable.

The *Weltanschauung* that informs this book is Polyannaish. EDM (my shorthand for the authors) summons us to a new age nirvana of global cooperation where international relations would be based on a regime of interlocking treaties. These agreements would essentially ban unilateral actions and end the legitimacy of national interests. Foremost among these agreements is the ABM Treaty, most sacred icon of the arms control priesthood.

Underlying EDM's worldview are four basic assumptions about the world's strategic environment. First, the authors assert that arms control agreements kept the peace during the Cold War, with the ABM Treaty serving as the cornerstone of deterrence. Second, they claim that the missile threat is currently being exaggerated. Third, they contend that missile defense technology will not work—indeed, cannot work—because of the physics of sensors and the nature of the phenomena the sensors must parse to discriminate between warheads and decoys. And finally, they claim that deployment of a national missile defense system would destroy the ABM Treaty and spawn an arms race that will undermine world security.

The basic inconsistency between the third and fourth points apparently escaped EDM. How can the deployment of a missile defense system that cannot possibly work lead to an arms race that will decrease national security? Assuming that it is obvious to the Union of Concerned Scientists that missile defenses cannot work, should it not be equally obvious to Russian and Chinese physicists? If so, why on earth would these countries spend billions to expand their strategic rocket forces unnecessarily?

The disconnect between a renewed arms race and today's economic realities seems also to have eluded EDM. What they apparently cannot grasp has certainly not been lost on more realistic analysts such as Pavel Podvig, a research associate at the Moscow Institute of Physics and Technology. In a recent edition of *Bulletin of the Atomic Scientists*, Podvig wrote: "At the same time, artificial inflation of the risks associated with missile defense development is wrong if not outright dangerous. It neither provides compelling arguments against missile defenses nor helps decrease those risks."

The "arms race" argument is the best example. This argument against missile defense is still being made quite regularly, despite the fact that nothing in the current Russian policy suggests that a reaction to abrogation of the ABM Treaty will be strongly negative, let alone spark a new arms race. Technical and economical problems alone make a new arms race very unlikely. But an even more important factor that will eventually shape Russia's response is the position

of its leadership. On the one hand, Russia's leaders argue that the ABM Treaty must be preserved and that there is no threat to justify missile defense development. On the other hand, Russian leaders have clearly shown that they see the issue not as a matter of principle, but rather as a tool in efforts to assert Russian influence in international relations and achieve the status of one of the world's leading powers.\*

In addition to their apparent oblivion to today's strategic realities, EDM are poorly informed on the history they would use to bolster their arguments against missile defense. For example, the authors apparently do not understand the operational concept behind the Safeguard missile defense system of the mid-1970s. They also repeat specious stories of test rigging, even though investigations by DOD and the General Accounting Office found no merit in these pernicious charges. They lavish attention on allegations of fraud from an MIT missile defense critic, even though the FBI investigated his claims and found them baseless. They charge that the engineering of effective missile defenses is virtually impossible, while suggesting that a Third World country like North Korea, with no test range to speak of, could easily develop complex countermeasures that would assure penetration of U.S. missile defenses. Never mind that it took more than a decade for a U.S.-U.K. team to develop the countermeasures deployed on the U.K.'s Chevaline missile. Never mind that this team had at its disposal America's test ranges, which were, and are, the most advanced in the world.

The flaws mentioned above, plus others, mean that *Phantom Defense* is unreliable. If you must read it, trust nothing and verify everything.

Donald R. Baucom, *Missile Defense Agency, Department of Defense*

\* Pavel Podvig, "Missile Defense: For Russia, Little Loss, Little Gain," *Bulletin of the Atomic Scientists*, November-December 2001, pp. 24-25. A slightly different version of this paper can be found at the web site for the Center for Arms Control, Energy, and Environmental Studies, [www.armscontrol.ru/start/publications/pp111901.htm](http://www.armscontrol.ru/start/publications/pp111901.htm).



**Conducting Post-World War II National Security Research in Executive Branch Records: A Comprehensive Guide.** By James E. David. Westport, Ct.: The Greenwood Press, 2001. Notes. Index. Pp. 266. \$79.00. ISBN 0-313-31986-3.

A popular conception of research is of the scholar hunched over old documents in a darkened room, trying to discern their meaning and import. But before a scholar

can reach that stage, there has to be a lot of preparatory work to ascertain what records were created and where they are. This can be thought of as bibliographical research, since much of what a scholar wants to do is to get some kind of bibliographic citation to an item of information. Correctly identifying something is at least 40 percent of the research process. Many bibliographical reference books for official government publications exist; it is harder to pin down the multitude of internal documents that bureaucracies produce, especially national security records. One cannot totally depend on the footnotes or bibliographies of books and articles. This book is a specialized tool to use in that process.

Mr. David works at the National Air and Space Museum (<http://www.sil.si.edu/Branches/nasm-hp.htm>). He understands the organizational mess involving government information and that researchers have to navigate a confusing maze of agencies and regulations without many guideposts along the way. So, he compiled this reference book. It covers official government record repositories and mentions agency historical offices. (For a listing of these official programs, see the *Directory of Federal Historical Programs* by The Society for History in the Federal Government, 1998, <http://shfg.org/>). It does not, however, bother much with records that might be located at libraries or other institutions. These are fewer and more widely scattered, but may be easier to find due to the cataloging efforts of the staff at these locations, longer hours of operation, greater public accessibility, and fewer secrecy restrictions. One can always consult with a reference librarian about how to find materials outside of government agencies.

The big difference between government archival record collections and public/academic libraries is that the latter collections are usually arranged by subject, with identifying call numbers. Archival repositories, on the other hand, are arranged by the issuing agency, and records sometimes are not labeled in a seemingly logical manner. Therefore, complete bibliographic control of the material is important—but not always certain. Most of these records are still in print format or on microfilm, so the convenience of online texts is frequently unavailable to the researcher.

While the book's first chapter is just a two-page introduction, those new to conducting research in government archives will especially want to read the second chapter. It discusses how official records are made or received, and how they are supposed to be retained or disposed of, as detailed in the official records schedules—the key to understanding some of the intellectual framework of the records that might be available for research. Unfortunately, not every agency has developed good records schedules that provide for proper organization and maintenance of

official papers, and sometimes these schedules are even ignored.

Declassification of government information has been a contentious issue for over half a century, and the third chapter discusses important rules and regulations and how they have affected declassification programs. Given White House orders in the last couple of years, previous advances in declassification efforts are not likely to be continued and will negatively affect the quality of research done in this area. (The best source for recent declassified documents is the private National Security Archive at George Washington University, <http://www.gwu.edu/nsarchive/>.)

The fourth chapter is the meat of the book and starts with an explanation of the three categories of agency records: unclassified publications frequently found in government-document collections of research libraries; technical research and development reports; and everything else (office memoranda, minutes, etc.). Then comes information about each agency (in alphabetical order), locations of records, their subject nature and how they are arranged, and public accessibility. For those researching the USAF, one should contact the National Archives in Washington, D.C. (<http://www.nara.gov>), the National Archives branch at College Park, Md., the USAF Historical Research Agency (AFHRA) at Maxwell AFB, Ala. (<http://www.au.af.mil/au/afhra>), and the USAF History Support Office at Bolling AFB, D.C. (<http://www.airforcehistory.hq.af.mil>).

The last chapter discusses White House records both in Washington and the Presidential libraries. In addition, one can also consult *Records of the Presidency: Presidential Papers and Libraries from Washington to Reagan*, by Schnick, Schnick, and Carroll.

A chapter at the end about using other finding aids (e.g., books, articles, websites) to supplement this book, such as Haines' and Langbart's 1993 *Unlocking the Files of the FBI: A Guide to its Records and Classification System* would have been useful. Scholarly Resources (<http://www.scholarly.com>), University Publications of America (<http://www.lexisnexis.com/academic/UPAPubs/>), and the Congressional Information Service (<http://www.lexisnexis.com/academic/CISPubs/>) have all produced microform collections of government records that are available at many research libraries around the country. In addition to the chapter endnotes, inclusion of a bibliography, list of acronyms and abbreviations, and a website and address directory for the various agency record repositories and historical offices would also have been helpful. But the absence of these features does not seriously detract from the book's value.

One hopes that similar guides for the records of legislative and judicial branches will be forthcoming. Selected state govern-

ments (e.g., California, Alaska, Nevada and Florida because of their location, military bases, and armament manufacturers), might also be fruitful places for research on this topic and could benefit from finding aids. Finally, one should remember that the best reference aid at these repositories is the trained and experienced professional archivist or librarian—someone who understands the structure and organization of the materials and who can intellectually connect what the scholar wants with what might be available. I recommend this guide to anyone doing archival research in this field and for government documents and/or reference collections of all interested special and research libraries.

Daniel K. Blewett, Reference Librarian, The College of DuPage Library



**War Machines: Transforming Technologies in the U.S. Military, 1920-1940.** By Timothy Moy. College Station: Texas A&M University Press, 2001. Diagrams. Photographs. Notes. Bibliography. Index. Pp. xiv, 218. \$39.95 ISBN 1-58544-104-X.

This book's topic is particularly timely given the debate ongoing in the U.S. military about force "transformation." Moy's principal goal is to show how military institutional cultures can drive very specific technological choices, and how those technologies can then serve to define a service's organization and mission. The book explores two case studies from the period between the world wars: how the U.S. Army Air Corps came to identify with long range precision bombing, and how the U.S. Marine Corps redefined itself as an amphibious assault force. It is clear from Moy's evidence that the primary motivation for both Air Corps and Marine activists in the interwar period was a desire to carve out a unique mission for their organizations both independent of U.S. Army ground forces and seen by Congress as vital to the national security. He contends that both organizations had alternative options to their ultimate choice of missions, but selected those requiring technologies that respectively fit their "high tech" and "low tech" cultures.

One cannot argue with Moy's conclusion that technological development is seldom deterministic and that technologies themselves did not drive the organizational character of the Air Corps or Marines. But his

contention, that "none of the technologies developed by the Air Corps or Marine Corps during this period were in any way natural, necessary, or inevitable," is highly debatable. The institutional imperatives for both organizations would seem to have constrained them to perhaps a single option for their service missions, and a small set of technologies that met those mission requirements.

It is not evident from Moy's first case study that any alternative mission to long range strategic bombing would have offered the Air Corps true independence from the Army's ground-centric command. Moy points to the choice by bomber proponents of precision bombing over area bombing as being culturally driven. But his evidence supports a better case that area bombing was neither politically palatable, nor consistent with the coastal defense rationale that was used to justify the development of long range precision bombing systems.

Moy's case study of amphibious warfare also fails to provide evidence of other major alternative missions available to the Marines in their efforts to carve out a unique and vital role. He points to their "choice" of the water-borne landing craft over helicopters and hydrofoils for assault-



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ing defended beaches as being driven by a “low tech” Marine culture. However he offers no evidence that these or any other “high tech” options were considered by the Marine Corps, or would have been feasible alternatives to the Higgins boat for delivering men and equipment from the sea in the 1930s. Moy’s claim, that the Marines and the Army Air Corps created “whole new forms of warfare,” tends to ignore quite significant foreign developments in both precision bombing and amphibious assault during the same period. Indeed, a comparison of specific U.S. and foreign choices in these warfare areas would probably offer some valuable insights about the impact of culture on institutional behavior.

Analysis of military innovation between the world wars is particularly relevant today, given the ever-widening range of our technological options. Understanding how and why specific choices were made in the 1920s and 1930s—and the ultimate consequences of those choices—should offer important insights for those charged with similar decisions today. Although Moy does not make a compelling case that technological self-image was the key driver behind Air Corps and Marine Corps choices in the interwar period, he, nevertheless, shows how

political constraints and service cultures played critical roles in shaping the ultimate structure of those organizations. In this respect, *War Machines* offers insights about how institutional behavior molds technology selection that should be of value to today’s strategists and force planners.

*Capt. James R. FitzSimonds, USN (Ret.),  
EMC Corporation Chair of Information  
Technology, Naval War College*



**The Ethics of Destruction: Norms and Force in International Relations.** By Ward Thomas. Ithaca, NY: Cornell Press, 2001. Notes. References. Bibliography. Index. Pp. 222. \$16.95. ISBN: 0-8014-8741-2.

This book is a timely look at the role of morality in the conduct of international affairs and is a must read for all serious students of international relations and foreign policy.

The premise is that the role of ethical norms in restraining the use of force in

international relations has not been given its due. The author takes the position that moral principles are fundamentally important to understanding norms governing the use of force. He traces the history of international norms against assassinations and aerial bombing of noncombatants to illustrate his thesis. In his analysis, he shows how norms governing the use of force can serve as meaningful constraints upon states in the international system without negating the role of state power and selfish interests.

Ethical norms are based on more abstract principles of morality which are often stated in altruistic and selfless terms and based on *a priori* imperatives. While moral principles may be held individually, ethical norms involve an inter-subjective level of understanding, i.e., they are “collective understandings.” Norms are derived from moral principles but are given their specific character through interaction and shared perspectives about what is acceptable behavior. Therefore, international norms may involve compromise and represent a consensus of what is right and wrong behavior.

The author rejects the “realist” theory of international relations that nations act only

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in consideration of their interests and power, not for moral principles and legal obligations. According to this view, morality has little or no role in international relations. Likewise, he rejects the "idealistic" notion that states should always act in an altruistic and unselfish way implied by Kantian imperatives. He considers these two extremes of either/or to be oversimplified and unnecessarily restrictive as a model for analysis. States need not adopt an altruistic policy, nor need they adopt a selfish stance; the two are not incompatible. While myopic interests may call for a realist policy that ignores ethical norms, enlightened self-interest suggests compliance with international ethical norms unless vital interests dictate otherwise.

Why would compliance with international norms be in a state's self-interest? Because all actors in the international system have a stake in a system that is reasonably predictable and orderly. Such a system cannot be achieved through power alone; rather, it requires a society of states with common interests, institutions, and a shared normative framework. These institutions provide a certain degree of stability in an otherwise anarchical system. This notion of an international system recog-

nizes that states have vital interests that may conflict with those of other states or of international society as a whole, but pursuit of these selfish interests must be balanced against the need to maintain the integrity of the international system. The powerful states determine international norms, so it is in their interests to maintain compliance. Short-term self-interest may need to be, in certain instances, subordinated to those long-term interests.

For most of history, assassination was widespread among all institutions—religious, domestic, and international. The current proscription against assassination evolved from a shared realization that the practice was destabilizing to the international system; moreover, it gives an asymmetrical advantage to weaker states and non-state actors. Although the U.S. has contemplated use of this form of violence, it has been reluctant to use it blatantly. Since 1977, an Executive order has prohibited it. Thomas cites the attempts to kill Qadaffi and Saddam Hussein, but under the guise of unintentional side effects of bombing military targets. However, the U.S. sanctioned the assassination of Viet Cong leaders.

The norm against aerial bombing of noncombatants evolved from a shared inter-

national understanding in the '20s and '30s that all would benefit from such a proscription. According to Thomas, the norm was largely respected up to mid-1940 (he argues that the Rotterdam and Warsaw bombings were related to military objectives). Once the norm was violated, however, the use of unrestricted bombing escalated to the point that the primary purpose of many raids was to terrorize the population and break morale. Hamburg, Dresden, Coventry, London, Tokyo, Hiroshima, and Nagasaki were victims of this policy.

Thomas believes the atomic blasts shocked the world into renewing the norm against bombing noncombatants. Although the norm was initially ignored in the Korean conflict, international reaction to bombing civilian targets led to restraints. From the beginning, bombing in Vietnam was curtailed to minimize noncombatant casualties even though the military often objected to these restraints, e.g., Rolling Thunder restrictions. The principal reason for the restraint was opinion in the international community. Even more care was taken in the Gulf War. Potential targets were carefully screened to avoid schools, hospitals, mosques, and other civilian targets. Both civilian and military leaders rec-

## Lancaster Index to Defence & International Security Literature

*Air Power History* (along with its predecessor *Aerospace Historian*) is one of nearly 350 publications indexed and abstracted in the bibliographic database *Lancaster Index to Defence & International Security Literature*. This information is produced by Military Policy Research Ltd., of Oxford, England, and can be found at [www.mpr.co.uk](http://www.mpr.co.uk). It contained over 90,000 citations and abstracts as of the end of May 2002, and is increasing at the rate of around 10,000 per year.

The *Lancaster Index* database is primarily designed for information professionals in the defense and security sector, and can appear somewhat daunting to the casual visitor. A look at the User Guide, downloadable from the site, is recommended. Free access, using the global index, scans the whole database, but returns literature citations that exclude the volume, issue, and page references. Researchers who need these references for serious research purposes will need to take out a paid subscription. Individual rates range from \$9.95 for a 24-hour pass to \$99.95 for a 365-day pass.

Military Policy Research Ltd.



Zentner admits his cases are not "complete historical recounts" but seems to believe his summaries are adequate for a discussion of morale. Readers can make their own decision. Another disappointing aspect of the study is the limited analysis of the leader's impact on morale. As an experienced combat flyer, Zentner has made an important contribution, but there is room for more investigation.

The book ends by recommending that USAF develop doctrine for morale and command (coincidentally, the Canadian Forces are in the process of doing just this) and at the same time promote study of these issues in staff and war colleges as well as in group and wing commanders' courses. One must applaud the wisdom of his argument. The human dimension of combat will always be the central factor in victory; air forces that fail to recognize this will be doomed to mediocrity or worse.

*Col Randall Wakelam, CF; Director of Professional Development, Canadian Defence Academy*



**Pogue's War: Diaries of a WW II Combat Historian.** By Forrest C. Pogue. Lexington: The University of Kentucky Press, 2001. Notes. Glossary. Index. Pp. xv, 411. \$35.00. ISBN 0-8131-2216-3.

Historian Forrest Pogue is best known for his superb four-volume biography of George C. Marshall. But his new book, *Pogue's War*, extracted from his-difficult-to-decipher penciled notebooks is also significant. It might be argued that the U.S. Army could not have had a better trained person on a team of historians to interview hundreds of soldiers of all ranks whose recorded voices would help complement the celebrated U.S. Army's World War II Green Book series. At eighteen Pogue earned a B.A. in history at Murray State in Kentucky, at twenty an M.A. in European history at the University of Kentucky; and two years later a Ph.D. in European history from Clark University in Worcester, Massachusetts. Before teaching at his *alma mater* he studied at the University of Paris, becoming fluent in French, a skill that would serve him well when he returned to France in 1944.

Pogue, who died in October 1996, had always intended to work his diaries into a text, but when the opportunity arose, his diminishing eyesight hampered his ability to write. His nephew by marriage and a long time educator, Frank D. Anderson, picked up the torch and began the nearly two-year arduous task of transcribing—if not decoding—Pogue's notebooks.

Duly modest, Pogue credits his jeep driver, Topete, and his jeep, "La Cucaracha," with more than once having saved his life both on and off the road. Topete quickly

learned how to extricate himself from some difficult situations. This was the Army, and the author was not adverse to letting readers know how it functioned. His own historical office was often nicknamed the "hysterical office" by some Army wags. But as Pogue points out historians with impeccable and highly respectable civilian credentials staffed it. Indeed, even Topete possessed a Master's degree in Spanish and was working towards a doctorate before duty called.

The Normandy invasion is Pogue's first stop, and he provides the reader a bird's-eye view of the tremendous cost in lives and the sacrifices the Allied troops made in securing the beachhead. He takes us through the monotonous and torturous hedgerow country that had to be conquered row by row, again at a tremendous cost in GI lives. In Cherbourg, two former French navy petty officers, who donned their uniforms only after the Americans had secured their town, stated that they hid their service identity because they feared that the Germans might have impressed them into their navy. The pair was glad to be freed by the Americans instead of the British, but in the same breath gave all the credit to the Russians, who had suffered the brunt of the German army for two years. The French petty officers claimed that there had been 500,000 Germans in France two years before, but that the Soviets had forced most of them to the eastern front.

While this may be true, the reader is struck by the audacity of these French "heroes in hiding" who after being freed, had the gall to question the credentials of their liberators. This is vintage Pogue.

As a military historian, Pogue often wandered along the front lines seeking to interview personnel involved in recent battles. He would then return to a rear area to write his historical reports. Throughout his diary, Pogue commented about the contrasts between the living conditions of the forward and rear echelon troops. He was indignant when he heard about a Red Cross club that had opened in Cherbourg, but was "off limits" to all personnel except the Services of Supply (SOS) men stationed in the city. (p. 169)

Pogue's diary describes the torments of war endured by the enemy as well as by the American GIs. He transcribed an unsent letter taken from a dead German soldier who wrote about enduring the deadly Allied artillery fire. After thinking he was safe the letter stated, "We were just lying in an open area. Every moment I expected deadly shrapnel. At that moment I lost my nerve. I chewed up a cigarette, bit into the ground, and acted almost like a madman. The others acted just like me. When one hears for hours the whining, whistling, and bursting of shells and the moaning and groaning of the wounded, one does not feel too well. Altogether it was hell." (p. 174)

Pogue notes how quickly the war changed. Back at the front after a ten-day

return to the beach, he marveled that the nature of the war had changed radically. "We had gone from inch-by-inch battles in the hedgerows to a great battle of maneuver with the whole of Normandy and Brittany for the battleground." (p. 184)

Pogue also contrasts the Paris of 1937-1938 that he knew as a student with the Paris of September 1944. He comments that the City of Light was dead. The streets were crowded with grimy GIs in soiled clothes. Yet, he traveled throughout the city, contacting his former professors and observing the city's people, theater, restaurants, politics, and newspapers. Pogue remarks that the most influential newspaper, *L'Humanite*, professed the "strongest feeling of any French paper against giving too much credit to the United States and Great Britain for liberating France." It played up the Soviet Union and followed the Moscow line.

In his interviews and in his reports he discussed the Malmédy Massacre, the Hurtgen Forest, and the Battle of the Bulge with utmost candor and perceptive commentary. Noteworthy was his crediting the units of the north flank for blunting the first drives of the last German offensive in the north, but he further notes that their accomplishments had been diminished over time by the great defense of Bastogne.

Pogue provides the reader with a realistic view of the difficulties inherent in establishing facts during interviews. Places and times became vague to GIs who were uncertain of the big picture and of the local terrain. "We found that in the periods when war moved the fastest the information was the most meager in the journals." (p. 220) It is a credit to Pogue's genius and Anderson's steadfastness that they have led the reader through this quagmire of fast-moving battlefronts and continuously shifting headquarters. Pogue and Anderson's historical achievement in completing this work will serve future generations as a most valuable resource.

*George M. Watson, Jr., Chevy Chase, Maryland*



**Secret Squadrons of the Eighth.** By Pat Carty. London: Ian Allen, 1990 [Reprinted 2000]. Illustrations. Appendices. Pp. 112. £19.99. ISBN: 0-7110-1881-2

This wasn't quite what I thought it was going to be—a book that covered the more offbeat operations of the Eighth Air Force, such as the Carpetbagger missions, carried out in support of resistance forces. These are not even mentioned. It seems that the author's primary aim was to cover units based at RAF Cheddington. Despite the title, I doubt that the missions of the two independent squadrons based at Cheddington were any more secret than those of

other Eighth Air Force units. Carty also includes a lot of interesting material that is somewhat irrelevant to the story of these two squadrons. Despite these problems, however, he eventually provides a fascinating story of two units that have received little coverage elsewhere.

The first of these—and the primary focus of the book—is the Night Leaflet Squadron. The British had started psychological warfare leaflet drops in 1939, and the Americans picked up on the idea quickly. Initially, leaflet bundles were mixed in with bomb loads during regular missions, but Gen. Ira Eaker decided to designate one squadron to perform these drops as its sole mission. The 422d BS (later redesignated the 858th and, for most of the war, the 406th) had been chosen for night bombing training in September 1943, and was the obvious unit for the psy-war mission. Early drops often resulted in leaflets scattering over vast territory or falling to the ground as a large bundle. Capt. James Monroe, 305th BG, developed a new leaflet bomb using laminated paper containers used to transport M-17 incendiaries. From early 1944, Monroe T-1 leaflet bombs were highly successful at delivering propaganda to German troops and news to both civilians in occupied countries (and later Germany as well) and Allied troops. The majority of surrendering German troops carried Safe Conduct Passes dropped by the 406th. Another interesting psy-war tool was forged ration cards that disrupted local economies, when bearers flooded stores for scarce food goods. Numerous examples of the types of leaflets dropped are illustrated.

The second independent squadron was the 36th BS, specializing in radio countermeasures. The 36th started with a detachment of U.S. personnel assigned to No. 100 Group (RAF)—the earliest RCM flying unit—and grew into a full squadron before D-Day. For the last year of the war, the squadron's specially equipped B-17s and B-24s flew missions to jam enemy early warning radars and telecommunications, screen assembly and inbound flights of allied bombers, spoof the enemy into thinking that other formations (nonexistent) were assembling, and detect and characterize enemy RF signals. "Old Crows" will enjoy this part of the book; much of it will sound familiar with more recent operations—albeit with cruder equipment and techniques.

This book is not an easy read, but the 200 plus photographs, wealth of interesting detail concerning training and equipment, and the information and charts on a number of airfields in the UK add a great deal. Without question, this is the book to read on Eighth Air Force psy-war and electronic operations.

*Col. Scott A. Willey, USAF (Ret), Docent, NASM's Garber Facility*

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Cooke, James J. *Billy Mitchell*. Boulder, Colo. and London: Lynne Rienner Publishers, 2002. Photographs. Notes. Bibliography. Index. Pp. xii, 305. \$49.95 ISBN: 1-58826-082-8

Crosby, Alfred W. *Throwing Fire: Projectile Technology through History*. Cambridge, UK: Cambridge University Press, 2002. Tables. Diagrams. Illustrations. Photographs. Notes. Index. Pp. xii, 206. \$26.00 ISBN: 0-521-79158-8

Dommen, Arthur J. *The Indochinese Experience of the French and the Americans: Nationalism and Communism in Cambodia, Laos, and Vietnam*. Bloomington and Indianapolis: Indiana University Press, 2002. Notes. Glossary. Index. Pp. xiii, 1172. \$49.95 ISBN: 0-253-33854-9

Doyle, Jeff, Jeffrey Grey, and Peter Pierce. *Australia's Vietnam War*. College Station: Texas A&M University Press, 2002. Maps. Notes. Appendix. Bibliography. Index. Pp. xxiii, 218. \$39.95 ISBN: 1-58544-137-6

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Knox, MacGregor and Williamson Murray, eds. Cambridge and New York: Cambridge University Press, 2001, *The Dynamics of Military Revolution, 1300-2050*. Tables. Notes. Index. Pp. xiv, 203. \$27.95 ISBN: 0-521-80079-X

Locher, James R. III. *Victory on the Potomac: The Goldwater-Nichols Act Unifies the Pentagon*. Illustrations. Photographs. Notes. Index. Pp. xv, 524. \$34.95 ISBN: 1-58544-187-2

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Rose, Lisle A. *The Ship That Held the Line: The USS Hornet and the First Year of the Pacific War.* [Bluejacket Books] Annapolis, Md.: Naval Institute Press, 1995. Photographs. Notes. Bibliography. Index. Pp. ix, 309. \$18.95 Paperback ISBN: 1-55750-008-8

Schoneberger, William A. *Damn If They Ain't Flew: Aviation/Aerospace Anecdotes, People, Places, and Events.* Virginia Beach, Va.: The Donning Co., 2002. [Aero Club of Southern California]. Illustrations. Photographs. Index. Pp. 96. ISBN: 1-57864-163-2

Spires, David N. *Air Power for Patton's Army: The XIX Tactical Air Command in the Second World War.* Washington, D.C.: Air Force History and

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Compiled by George Cully

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(858) 689-9223/(800) 322-4665  
e-mail: thookassn@aol.com  
website: <http://www.tailhook.org>

## September 13-15

The U.S. Branch of the **Western Front Association** will hold its annual National Seminar at the Liberty Memorial Museum in Kansas City, Missouri. Contact:

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e-mail: lshurtleff@aol.com  
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The **Air Force Association** will hold its annual National Convention & Aerospace Technology Exposition at the Marriott Wardman Park Hotel in Washington, D.C. Contact:

Air Force Association.  
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## October 4-5

The **Hagley Center for the History of Business, Technology, and Society** will host a conference on "The Technological Fix" at the Hagley Museum and Library in Wilmington, Delaware. Contact:

Dr. Roger Horowitz, Associate Director  
Center for the History of Business,  
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Hagley Museum and Library  
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The **Fina-Commemorative Air Force AIRSHO 2002**, featuring one of the world's largest gathering of warbirds, will be held at the Midland International Airport, Texas. Also, the American Airpower Heritage Museum will hold its "Remembrance of War" seminar series. Contact:

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## October 10-19

The **World Space Congress 2002** will be held, with the theme "The New Face of Space." Events include meetings of the Committee on Space Research, the International Astronautical Federation, and the International Institute of Space Law. Contact:

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The **Society for the History of Technology** will hold its annual meeting at the Delta Chelsea Hotel in Toronto, Canada. Contact:

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website: <http://shot.press.jhu.edu/associations/shot>

#### October 21-23

The **Association of the United States Army** will hold its annual meeting and convention at the Marriott Wardman Park/Omni Shoreham Hotels in Washington, D.C. Contact:

Association of the United States Army  
2425 Wilson Blvd  
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e-mail: [ausa-info@ausa.org](mailto:ausa-info@ausa.org)  
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#### October 27-30

The **Association of Old Crows** will hold its 39th Annual International Symposium and Convention at the Renaissance Hotel in Nashville, Tennessee. Contact:

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#### November 7-10

The **History of Science Society** will hold its annual meeting in Milwaukee, Wisconsin. This year's theme is "Crossing the Borders." Contact:

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(206) 543-9366, Fax 685-9544  
e-mail: [meeting@hssonline.org](mailto:meeting@hssonline.org)  
website: <http://www.hssonline.org/>

#### November 19-21

The **American Astronautical Society** will hold its National Conference and 49th Annual Meeting at the Four Points Sheraton in Sunnyvale, California. Contact:

The American Astronautical Society  
6352 Rolling Mill Place, Ste. 102  
Springfield, VA 22152-2354  
(703) 866-0020, Fax 3526  
e-mail: [info@astronautical.org](mailto:info@astronautical.org)  
website: <http://www.astronautical.org>

#### November 22

The **Air Force Association** will hold its annual National Symposium and Ball at the Beverly Hilton Hotel in Beverly Hills, California. Contact:

Air Force Association.  
1501 Lee Highway  
Arlington, VA 22209  
website: <http://www.afa.org>

## 2003

### May

**Air Power 2003.** Kickoff event for Air Force celebration of the 100th anniversary of powered flight. Many USAF aircraft will be on display at Wright-Patterson AFB, Ohio. Other activities at the Aeronautical Systems Center, Air Force Research Laboratory, and the Air Force Museum. Contact:

Tana R. Hamilton  
ASC Public Affairs  
(937) 255-1729  
e-mail: [Tana.Hamilton@wpafb.af.mil](mailto:Tana.Hamilton@wpafb.af.mil)

#### If you wish to have your event listed, contact:

George W. Cully  
230 Sycamore Creek Drive  
Spingboro, OH 45066-1342  
(513) 748-4737  
e-mail: [71022.1100@compuserve.com](mailto:71022.1100@compuserve.com)

# THE AIR FORCE

Published by:

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General James P. McCarthy, USAF(Ret)

Editor-in-Chief

Colonel Drue L. DeBerry, USAF(Ret)

Editor

While the Army Air Forces was established in June 1941, and the U.S. Air Force in September 1947, the indomitable spirit and courage to be America's flyers goes back to the first Wright brothers flights in 1903. Since this first flight, airmen including—Billy Mitchell, Jimmy Doolittle, Chuck Yeager—have answered America's call to defend the nation and its allies by dominating its enemies in the sky.

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E-mail: [afhf@earthlink.net](mailto:afhf@earthlink.net)



The “What is it?” aircraft in our last issue was a Douglas B-7 bomber of the early 1930s.

This series of twin-engined aircraft, powered by 600-hp. Curtiss V-1570 Conqueror engines, began as an observation plane and became a bomber only belatedly. *Air Power History* is grateful to Robert Taylor of the Antique Airplane Association, who remembers the B-7 and provided details.

The Army Air Corps ordered two aircraft in this series on March 26, 1930—an XO-35 (30-227) and an XO-36 (30-228). They had variations of the V-1570 engines, with differing nacelles and propellers.

Because of the high performance of these gull-winged planes, the Army decided to employ the type as a light bomber. One of the prototypes was redesignated the XB-7.

In August 1931, the Air Corps ordered seven Y1B-7 bombers (32-308/314) and five Y1O-35

observation craft (32-315/319). The “Y” prefix signified a service test role. The photo in our last issue, taken by Boardman C. Reed in about 1937, showed a Y1B-7 in a temporary camouflage scheme at pastoral Mines Field, California, site of today’s Los Angeles International Airport.

The seven Y1B-7s served briefly with the 11th and 31st Bombardment Squadrons at March Field, California. It was the Army’s first monoplane bomber to enter service. The five O-35s served at Crissy Field in the Presidio of San Francisco, California and at Mitchel Field, N.Y. Some of them hauled air mail during the brief period in 1934 when the Army got the job, and several crashed. The B-7 was a relatively advanced aircraft for its day, but could not compete as changes in technology came swiftly. Among them was the Martin B-10 all-metal bomber that was faster than most fighters of its era.

Our follow-up photo depicts the third Y1B-7 bomber (32-310) in September 1933, at the site of the present-day Boeing Field in Seattle, and was taken by Gordon S. Williams.

Of the thirty-one readers who submitted entries in our latest “History Mystery,” only one failed to correctly identify the B-7/O-35. It is necessary to wave the caution flag again, though: two readers were disqualified for not following the history mystery rules, which require a response on a postcard that includes a telephone number.

Our history mystery winner is Philip Ginsell of Cincinnati, Ohio. Congratulations.

## This Issue’s Mystery Plane

Again, we challenge our ever-astute readers. See if you can identify this month’s “mystery” aircraft. But remember please, postcards only. The rules, once more:

1. Submit your entry on a postcard. Mail the postcard to Robert F. Dorr, 3411 Valewood Drive, Oakton VA 22124.

2. Correctly name the aircraft shown here. Also include your address and telephone number, including area code. If you have access to e-mail, include your electronic screen name.

3. A winner will be chosen at random from the postcards with the correct answer. The winner will receive an aviation book by this journal’s technical editor.

This feature needs your help. In that attic or basement, you have a photo of a rare or little-known aircraft. Does anyone have color slides? Send your pictures or slides for possible use as

“History Mystery” puzzlers. We will return them.



## Kudos for Korea

I always look forward to each issue of Air Power History. It is an excellent publication; the articles are consistently well written and researched and I enjoy the book reviews. I am a pharmacist and a drug store owner in a small town in southwest, Oklahoma. My hobby is giving programs—actually, history lessons—to high school history classes, junior ROTC classes, civic clubs, etc. on "The Air War over Korea, 1950–1953." William T. Y'Blood's Korean War Commemorative (Summer 2000 issue) has been a constant reference and the Spring 2002 edition's "Sabre Pilot pickup," by Forrest L. Marion and "USAF Logistics in the Korean War," by William W. Suit, were

superb articles covering subjects that are usually neglected.

Truett Guthrie, D.Ph., Hobart, Oklahoma

## News

### Lt. Gen. Marion Boswell (1924-2002)

Lt. Gen. Marion L. "Boz" Boswell, USAF (Ret.), seventy-eight, died of congestive heart failure on June 9, 2002. Born in 1924 in Louisville, Kentucky, he was a graduate of William Jewell College, Liberty, Missouri; the National War College; and earned an MA in Inter-

national Relations from George Washington University.

He began his military career with the Army Air Forces in 1943, and flew the B-17 on thirty-five combat missions in World War II. During the Korean War, he served in Alaska and was director of military studies at the USAF Academy. General Boswell flew 190 missions in F-4D fighters during the Vietnam War. He was vice commander of the 366th Tactical Fighter Wing at Da Nang AB. Other assignments included command of the 4th Tactical Fighter Wing, Seymour Johnson, AFB, North Carolina; deputy director of Legislative Liaison on the Air Staff; commander Alaskan Air Command; chief of staff, Pacific Command; and Assistant Vice Chief of Staff, USAF headquarters. After his retirement from the Air Force in 1981, he was chief executive officer and president of Italian Aerospace Industries until 1992.

General Boswell's military honors include three Distinguished Service Medals, two Legions of Merit, and two Distinguished Flying Crosses. He is survived by his wife, Sally Austin Boswell, and a sister.

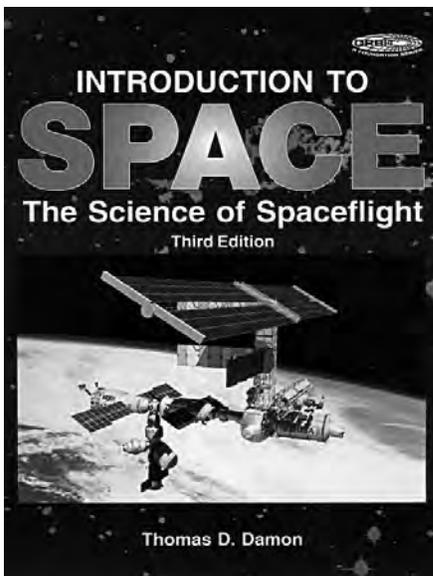
### David O. "Doc" Cooke (1921-2002) Mayor of the Pentagon

David O. Cooke, the Director of Administration and Management, and Director of Washington Headquarters Services, Office of the Secretary of Defense—but better known as "the mayor of the Pentagon"—died on June 22, 2002, two weeks after being injured in an automobile accident. Mr. Cooke was eighty-one.

He earned a BA degree from New York State Teachers College at Buffalo; a master's from SUNY at Albany; and a law degree from George Washington University.

Cooke served under a dozen Secretaries of Defense, beginning in 1958, as a member of Secretary Neil McElroy's reorganization task force. Subsequently, he directed sweeping organizational changes during the Robert S. McNamara term. He was long active in executive development at both public and private institutions, like the National Defense University and Harvard's John F. Kennedy School. He served on the curriculum committee of the Federal Executive Institute and frequently spoke there.

He was awarded the DoD Medal for Distinguished Civilian Service seven times. Twice he also received the Outstanding Public Service medal and



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Edward G. Gibson, Astronaut, Skylab 4

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Distinguished Public Service medal; the NAACP 1994 Benjamin L. Hooks Distinguished Service Award; 1995 Government Executive Leadership Award; 1995 Presidential Distinguished Rank Award; 1997 National Public Service Award; 1998 President's Award for Distinguished Federal Civilian Service; and 2002 John O. Marsh Public Service Award.

Since the 1980s, he championed the renovation and rehabilitation of the Pentagon. This work helped save many lives during the September 11th, 2002, terrorist attack on the building.

His wife, Marion McDonald Cooke, died in 1999. Mr. Cooke is survived by his children Michelle C. Sutton, David Cooke, and Lot Cooke.

### Elizabeth Hartsook

Dr. Elizabeth Hartsook, a retired Air Force historian, died on July 22, 2002, in Alexandria, Virginia; she was ninety-two. A long-time member of the Office of Air Force History (AFCHO), she wrote several historical monographs related to planning for the Vietnam War. Prior to joining the USAF headquarters history program, she had taught at the University of Illinois, was a staff member at the Maryland State Archives, served in postwar Europe as a historian, was on the staff of the National Security Agency, and worked as an Air Force planner and analyst.

## Notices

### Call for Papers

Siena College is sponsoring its eighteenth annual international, multidisciplinary conference on the "60th Anniversary of World War II" on June 5-6, 2003. The focus for 2003 will be on 1943. Papers dealing with other issues of the war years will also be welcome. Topics include, but are by no means limited to fascism and Nazism, New Guinea and the South West Pacific Theater, Central Pacific campaigns, the air war, Sicily and Italy, the North Atlantic, literature, art, film, diplomatic, political and military history, popular culture, minority affairs and wo-

men's and Jewish studies dealing with the era. Asian, African, Latin American, and Near Eastern topics are also solicited. Obviously, collaboration and collaborationist regimes, the events on the home front, religion, conscription and dissent will also be of significance. Inquiries from those wishing to chair and/or comment are also invited. Replies and inquiries to:

Professor Thomas O. Kelley, II  
Department of History  
Siena College  
515 Loudon Road  
Loudonville, NY 12211-1462  
(518) 783-2512  
fax: (518) 786-5052  
e-mail: legendziewicz@siena.edu

Deadline for submissions: November 15, 2002.

Send: one- to three-page outline or abstract of the proposal with some sense of sources, archival materials, etc., consulted and a recent c.v. or brief current biographical sketch.

Final Papers Due: March 15, 2003

## Reunions

The **6147th Troop Carrier Group (Korea)** reunion will be held September 9-15, 2002, in Charleston, South Carolina. Contact:

Dick Souza  
79 Bradstreet Ave.  
Lowell, MA 01851-4120  
(978) 453-3887  
e-mail: skeeterloc@aol.com

The **509th Bomb Wing** reunion will be held September 11-15, 2002, in St. Louis, Missouri. Contact:

Ron Henderson  
(407) 963-1147  
e-mail: ronald.f.henderson@boeing.com

The **27th Air Transport Group** (310, 311, 312 Ferrying Sqdns; 86, 87, 320, 321 Transport Sqdns; 519, 520 Service Sqdns) reunion will be held September 12-15, 2002, in Kansas City, Missouri. Contact:

Fred Garcia  
6533 W. Altadena Ave.  
Glendale, AZ 85304  
(623) 878-7007

The **Air War College Class of 1977** reunion will be held September 12-15, 2002, in Lake Tahoe, Nevada. Contact:

Tom Lawell  
PO Box 11020  
Zephyr Cove, NV 89448  
e-mail: JTLawell@aol.com

The **U.S. Navy VP-14/VB-102/VPB-102** reunion will be held September 12-16, 2002, in Boston, Massachusetts. Contact:

Kenneth Thoman  
86 Driftwood Lane  
Trumbull, CT 06611  
(203) 268-2393

The **100th Air Refueling Squadron** reunion will be held September 13-15, 2002, in Peterson AFB, Colorado. Contact:

Stanley Klepper  
202 Snead Lane  
Westminster, SC 29693  
e-mail: jwseigal@earthlink.net

The **93d Troop Carrier Squadron (439th Troop Carrier Group)** reunion will be held September 17-22, 2002, in Kansas City, Missouri. Contact:

Tom Morris  
456 St. George's Ct.  
Satellite Beach, FL 32937-3840  
(321) 773-6960  
e-mail: tom.ruth3@aol.com

The **416th and 531st Tactical Fighter Squadrons** (Japan, 1958-64) reunion will be held September 17-23, 2002, in Albuquerque, New Mexico. Contact:

Dave Mosby  
(435) 674-4768  
e-mail: dgmosby@aol.com

The **780th and 782d Bomb Squadrons (of the 465th Bomb Group)** reunion will be held September 18-22, 2002, at the Holiday Inn, Civic Center, Peoria, Illinois. Reservations: (800) 474-2501. Contacts:

Joe Theena  
17340 San Carlos Blvd. #360  
Fort Myers, FL 33931  
(972) 466-6667

Robert Schertz  
810 Eastmoor Drive  
Metamora, IL 61548  
(309) 367-4469

Bob Bleier  
1288 Rio Hondo Drive  
San Jose, CA 95120  
(408) 268-2310  
e-mail: bobbler@aol.com or

Dean Ottaway  
9171 Bayberry Bend #104  
Fort Myers, FL 33908  
(941) 466-9920  
e-mail: dottawa@stny.rr.com

The **CBI Hump Pilots Association** reunion will be held September 18-24, 2002, at the Albuquerque Marriott Hotel, Albuquerque, New Mexico. Contact:  
Mrs. Jan Thies  
808 Lester Street  
Poplar Bluff, MO 63901  
(573) 785-2420  
e-mail: jancbi@imsl.com

The **43d Bomb Group Association (Fifth Air Force)** reunion will be held September 22-26, 2002, in the Golden Nugget Hotel, Las Vegas, Nevada. Contact:  
Roger G. Kettleson  
109 Huntley Road  
Las Vegas, NV 89145-5115  
(702) 363-2824  
e-mail: rgask@juno.com

The **Air Force Photo Mapping Association** reunion will be held September 25-28, 2002, at Wright-Patterson AFB, Ohio. Contact:  
AFPMA  
225 Southside Ave.  
Webster Groves, MO 63119  
(314) 961-0519; FAX (314) 961-3177  
e-mail: photomapper@aol.com

The **306th Bomb Group Association** will hold a reunion September 25-29, 2002, at the Radisson Hotel Riverfront, in Covington, Kentucky. Contact:  
John K. Hickey  
3340 Nantuckett Rd.  
Lexington, KY 40502

The **394th Bomb Group (World War II)** will hold a reunion September 26-28, 2002, in Dayton, Ohio. Contact:  
Elden Shook  
(937) 864-2983  
e-mail: shook585@aol.com

The **USS Antietam CV/CVA/CVS-36 and CG-54** reunion will be held September 26-29, 2002, at Branson, Missouri. Contact:  
Bill Hiebert  
7901 Candlewood Dr.  
Alexandria, VA 22306  
(703) 768-6419  
e-mail:  
william.hiebert@worldnet.att.net

The **303d Air Refueling Squadron** reunion will be held October 1-3, 2002, in Bossier City, Louisiana. Contact:  
Bill Young  
(318) 746-3637  
e-mail: byoung@shreve.net

The **USMC/Vietnam Helicopter Association** reunion will be held October 3-6, 2002, at Pensacola, Florida. Contact:  
USMC/Vietnam Helicopter Assc.  
5918 Free State Rd.  
Marshall, VA 20115-2521  
(540) 364-9424  
e-mail: papasmoke@erols.com

The **459th Bomb Group Association** reunion will be held October 3-6, 2002, at the Hilton St. Louis Frontenac, St. Louis, Missouri. Contacts:  
Delbert R. Wofford  
624 Suffolk Drive  
Owensboro, KY 42303  
(270) 683-4613 or  
John Devney  
90 Kimbark Road  
Rochester, NY 14610  
(716) 381-6174.

The **801st/492nd Bombardment Group Association (Carpetbaggers)** reunion will be held October 6-10, 2002, at the Crockett Hotel, San Antonio, Texas. Contacts:  
Sebastian Corriere  
(414) 464-8264 or  
Bill Becker  
(619) 466-5004.

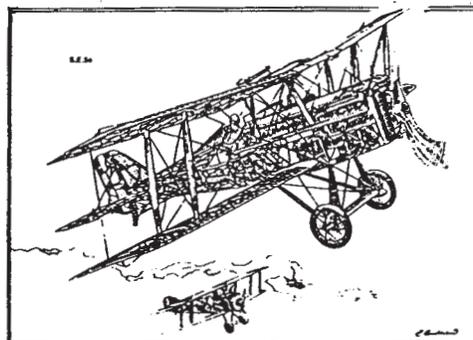
The **Bad 2 Association (Warton, England 1942-1945)** reunion will be held October 8-10, 2002, in New London, Connecticut. Contact:  
Dick McClure  
527 Quarterfield Road  
Newport News, Va 23602-6140  
(757) 877-3826

The **450th Bomb Group Association (Cottontails)** reunion will be held October 9-14, 2002, at the Double Tree Hotel (Crystal City), Washington, D.C. Contact:  
Al Goodman  
2 Portside Court  
Grayslake, IL 60030  
(847) 543- 8381  
e-mail: gobaral@aol.com

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The **USS Rudyerd Bay CVE-81/VC-77/VC-96** reunion will be held October 10-13, 2002, at New Orleans, Louisiana. Contact:

William Flanagan  
1316 El Dorado Drive  
Billings, MT 59101  
(406) 259-0697  
e-mail: DinaMLRS@aol.com

The **USS Saratoga CV-3/CVA/CV-60** reunion will be held October 10-13, 2002, at Branson, Missouri. Contact:

John D. Brandman  
(877) 360-7272  
e-mail: cva360@aol.com  
website: www.usssaratoga.org

The **486th Bombardment Group, (Eighth Air Force)**, will hold its reunion

October 23-26, 2002, at the Holiday Inn-Airport, in Richmond, Virginia. Contact:

Bob Bee  
(614) 272-5289  
e-mail: gocart92@earthlink.net

The **Association of Air Force Missiles** will hold its reunion October 23-27, 2002, at Santa Maria, California. Contact:

AAFAM  
P. O. Box 5693  
Breckenridge, CO 80424  
(970) 453-0500  
e-mail: AAFM@afmissileers.org  
website: www.afmissileers.org

The **81st Fighter Wing Association** will hold its reunion October 24-26, 2002, in Ft. Walton Beach, Florida. Contact:

Joe Williams  
(850) 863-8008  
e-mail: jmw@emcst.com

The **A-3 Skywarrior Association** reunion will be held October 25-28, 2002, at Van Nuys, California. Contact:

Airtel Plaza Hotel  
7277 Valjean Ave.  
Van Nuys, CA  
(818) 997-7676  
website: www.a3skywarrior.com

## 2003

The **USS Atule (SS 403)** reunion will be held May 18-21, 2003. Contact:

John R. Rupertus  
(410) 360-2852  
Cbcruires@aol.com



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## Support Air Force History—Designate #2138

The Foundation sincerely appreciates our CFC contributors. *Every* gift makes a difference.

## **General Benjamin O. Davis 1912-2002**



Gen. Benjamin O. Davis, Jr. was born in Washington, D.C. on December 18, 1912, the son of a United States Army regular officer and a devoted Army wife. He died on July 4, 2002, in Washington. General Davis entered the United States Military Academy at West Point in 1932. Although he was shunned and harassed by the white students at West Point to force him to resign, he persevered and graduated in 1936, 35th in a class of 276, the fourth black American to graduate from West Point, and the first in the 20th century.

His classmates grew to admire his determination and wrote in their yearbook: "[His] courage, tenacity, and intelligence...won for him the sincere admiration of his classmates, and his single-minded determination to continue in his chosen career cannot fail to inspire respect." Soon after graduation, General Davis married the vivacious and beautiful Agatha Scott, his lifelong friend, partner, and love who died four months before he did.

Shunning did not stop with commissioning, however. When Lieutenant Davis arrived at Fort Benning, Georgia, he found white officers still ignored him, except when duty demanded he be spoken to—the same custom as at West Point. After graduation from the Infantry School at Fort Benning, he became a professor of military science and tactics at Tuskegee Institute, Alabama, and moved from there to Fort Riley, Kansas, to serve as his father's Aide. During that assignment, President Franklin D. Roosevelt fulfilled his campaign promise to create a black flying organization, and Captain Davis was selected to be its commander. The rest of his career is written in glory.

Tenacity, courage, and intelligence were the characteristics of General Davis's life. He demonstrated tenacity in the face of bigotry at the U.S. Military Academy, at Fort Benning, and during a thousand other slights throughout his career. He had a mission: to graduate from West Point and to serve his country, and he persisted tenaciously when many wanted him to fail.

His courage was confirmed in combat in the skies over North Africa, the Mediterranean Sea, Sicily, Italy, Austria, and Germany. He was the first commander of the 99th Pursuit (later Fighter) Squadron, the world's first black flying organization. He courageously led that unit and also the 332d Fighter Group in Combat, accumulating sixty combat missions in World War II. The award of the Distinguished Flying Cross and the Silver Star signify his courage.

His intelligence was demonstrated by graduation among the top 15 percent of his class, despite the pressures put on him. More significant, however, was his tactical and operational acumen, and his plan to integrate the United States military. Lieutenant Colonel Davis believed he could break the barriers of racial segregation by proving that the Tuskegee Airmen, the black men of the 99th and later the 332d Fighter Group, could perform as well as white fighter units. The tactics he designed, the leadership he demonstrated, and the discipline he displayed resulted in the unequalled success of the 332d Fighter Group. On 200 missions, the Tuskegee Airmen, under General Davis's command, never lost a bomber to an enemy fighter.

It was that unique achievement, along with the other accomplishments of the Tuskegee Airmen in the 332d, under Colonel Davis's leadership, that convinced several Air Corps leaders that segregation was unnecessary and, therefore, an unconscionable waste. What other achievements? Downing 111 enemy aircraft in air- to-air combat, shooting down the second, third, and fourth jet fighters during the war, destroying more than 150 Luftwaffe aircraft on German air bases, destroying many German locomotives and rolling stock, sinking a German destroyer and numerous river barges, all with an in-commission rate equal to other fighter units.

When the Air Force became independent in 1947, its Chief of Personnel, who had noted the success of the Tuskegee Airmen during World War II, studied the disutility of racial segregation. He found no basis for segregation and cited the record of the Tuskegee Airmen and the leadership of General Davis to document the case for racial integration. Segregation was costly and provoked racial disturbances, and the Air Force—helped by General Davis—proved there was no basis for it in biology or sociology. The simple fact that the 332d Fighter Group as well as those organizations commanded by Colonel Davis after World War II could be used like any other Army Air Forces or United States Air Force organization prompted the Air Force to announce that it would integrate racially in April 1948, and to integrate officially in May 1949, several years before the other armed services. General Davis and the Tuskegee Airmen were the reasons why the United States Air Force was the first service to integrate.

That reform caused the other services to pay attention. Because it was racially integrated, the Air Force became overwhelmingly the service of choice for talented blacks. Air Force racial integration, moreover, worked smoothly and improved Air Force operations, setting the example for other services. Soon, with the Air Force in front, the other services, faced with the demands of the Korean War, also integrated.

All the United States Armed Forces completed integration decades before the first black managed a major league baseball team or coached a National Basketball Association team. The Armed Forces set the example for American society.

General Davis, after racial integration, commanded or supervised in the Pentagon, Korea, Japan, the Republic of China, Germany, and the Republic of Philippines. He retired in 1970 as a lieutenant general, as Deputy Commander of United States Strike Command. After retirement he served as Director of Public Safety for Cleveland, Ohio, before joining the Department of Transportation, with responsibility for solving the airplane-hijacking problem. He drove the number of skyjackings to zero in short order. He retired as an Assistant Secretary of Transportation five years later. In 1998 President Bill Clinton promoted him to the rank of four-star general.

For all of his significant achievements, however, none provided General Davis greater satisfaction than the singular role he played in the racial integration of the United States Air Force.

*By Dr. Alan Gropman, chairman of the Department of Grand Strategy and Mobilization at the Industrial College of the Armed Forces, National Defense University*

## Lt. Gen. Abbott C. Greenleaf 1927-2002



Lt. Gen. Abbott Congleton Greenleaf, USAF (Ret.), died of respiratory failure on June 22, 2002, at Virginia Hospital Center, in Arlington; he was seventy-five.

Born in Pittsburgh, Pennsylvania, General Greenleaf grew up in Cayuga, New York. He began his military career during World War II as an enlisted man in the U.S. Navy. Then, he attended and was graduated from the U.S. Military Academy at West Point in 1949. The following year, he earned his pilot wings at Reese Air Force Base, Texas. Next, he completed flight-instructor school at Craig Air Force Base, Alabama.

General Greenleaf was a command pilot, flying more than fifty types of military aircraft and logged some 5,000 flying hours, including more than 600 in combat. He participated in combat during the Korean War as a flight commander, squadron operations officer, and bombardment group operations officer. Following the Korean War, he received master's degrees in politics and public affairs from Princeton University. Then, he taught government, history, geography and economics at West Point. He studied national security affairs at Dartmouth College.

In the 1960s, General Greenleaf served in various capacities in the Office of the Secretary of Defense. He attended the National War College in Washington, D.C. During the Vietnam War, from 1969 to 1971, he was vice commander and commander of a tactical airlift wing.

After returning to the United States, he was posted to Air Force Systems Command headquarters, at Andrews AFB, Maryland, as deputy chief of staff for operations. In 1977, he became deputy chief of staff for programs and resources (later programs and evaluation) at Air Force headquarters in the Pentagon.

Gen. Greenleaf's decorations included a Legion of Merit with three oak leaf clusters, a Distinguished Flying Cross, a Bronze Star, an Air Medal with five oak leaf clusters, and an Air Force Commendation Medal with one oak leaf cluster.

After retiring in 1980, General Greenleaf settled in the Washington, D.C. area and became an active member and was a trustee of the Air Force Historical Foundation. He chaired the Foundation's last two biennial history symposiums, including the latest one—on coalition air warfare during the Korean War—which was held this past May at Andrews AFB.

General Greenleaf belonged to the Episcopal Falls Church and the Masons. His wife, Jean D. Greenleaf, died in 1993. He is survived by four children: Abbott John Greenleaf, Gail Stuhlmiller, Jennifer Greenleaf, and Daniel Greenleaf; brother Emmett Greenleaf; and three grandchildren.

## Guidelines for Contributors

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

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

If an article is typed on a computer, the disk should be in IBM-PC compatible format and should accompany the manuscript. Preferred disk size is a 3 1/2-inch floppy, but any disk size can be utilized. Disks should be labelled with the name of the author, title of the article, and the software used. WordPerfect, in any version number, is preferred. Other word processors that can be accommodated are WordStar, Microsoft Word, Word for Windows, and AmiPro. As a last resort, an ASCII text file can be used.

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

Manuscripts and editorial correspondence should be sent to Jacob Neufeld, Editor, c/o *Air Power History*, P.O. Box 10328, Rockville, MD 20849-0328, e-mail: neufeldj@starpower.net.