

AIR POWER

SPRING 2012 - Volume 59, Number 1
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COVER: The cover was designed by Christine Wilkinson at www.sabredesign.com © 2012. Please be sure to note the donation opportunity on the back. Also take in Forrest Marion's Afghanistan article on page 20.



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This Spring 2012 issue is bittersweet—bad news and good news. For the bad news, please read the message from the President of the Air Force Historical Foundation on page 58. Now for some good news—we continue to receive outstanding articles on the history of air power. Our volunteers for book reviews and departments reporting are performing superbly.

In this issue, we lead off the featured articles with Darrel Whitcomb's fascinating and detailed account about "Flying the First Mission of Desert Storm." Having served in the War in Southeast Asia as a forward air controller, Colonel Whitcomb understands and speaks the *language*. A skillful writer, he has crafted a masterful story containing the elements of a novel—it's plausible, entertaining, and suspenseful; and yet, it's true.

"Imaging the Empire," recounts how the newly established 3d Photographic Reconnaissance Squadron, equipped with new F-13 aircraft, carried out its missions during World War II. The 3d PRS identified targets, notably in Japan, including the unfortunate cities on which the A-bombs were dropped. The 3d also routinely returned with invaluable bomb damage assessments. In writing this article, author William "Bill" Cahill, himself an intelligence officer, drew on documents at both the National Archives and the Air Force Historical Research Agency.

Having served as an historian in military status and as a civilian, Forrest Marion is uniquely qualified to present the remarkable account of "Afghan Rescue 705 Fight," July 28-29, 2010, in which more than 2,000 people were saved. Moreover, Marion collaborated on the article with Lt. Col. Gregory Roberts, one of the heroes in this great humanitarian achievement. The many rare photographs of the rescue included truly illustrate this "other face of air power."

When Arnold Harvey submitted his manuscript regarding a comparative perspective on the Battle of Britain, he readily admitted that he had taken on "the almost impossible task of saying something new (and important) about the most worked-over subject in aviation history." His article, appearing on pages 34-45, begs an answer from you—our readers. Please let us know your opinions: write to: Letters to the Editor, Air Power History, 11908 Gainsborough Rd., Potomac, MD 20854 or email: editor: editor@afhistoricalfoundation.org. I look forward to hearing from you.

Our book reviewers toil diligently reading their assigned books and then assessing them. Many of the volunteers, have asked if it's possible to gauge the influence of their reviews. Although we occasionally receive mail on the reviews, little is said of the reviewers themselves. That is why I want to bring your attention to a recent letter to the editor printed on page 61.

Upcoming events, compiled by George Cully, returns after a six-year hiatus. Rob Bardua, on the staff of the National Museum of the United States Air Force, lists reunions scheduled for this year and next. And Bob Dorr continues to inform and entertain with his History Mystery.

We hope to return in print for the Summer issue.



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FLYING THE FIRST MISS



SION OF DESERT STORM



Darrel Whitcomb

(Overleaf) MH-53 Pave
Lows rest on the ground
during Desert Storm.

Al Jouf Airfield, Saudi Arabia, January 16, 1991

The mission was on! Lt. Col. Rich Comer, the commander of the 20th Special Operations Squadron (SOS), notified his airmen and the soldiers of the 1st Battalion of the 101st Aviation Regiment, who were jointly organized as “Task Force Normandy,” that they would hold a final mission review at 9:30 PM. Three and one-half hours later, they would launch in their assigned MH-53J and AH-64 helicopters to destroy two Iraqi radar sites, clearing the way for United States and allied strike aircraft to initiate a sustained air campaign against Iraq. They would fire the first shots in a conflict necessitated by the belligerent actions of Iraqi President Saddam Hussein the previous summer, when he had ordered heavy mechanized and special operations forces to invade and overrun the nation of Kuwait.

“This will not stand,” declared U.S. President George H.W. Bush as he became fully aware of the magnitude of Saddam’s actions. He directed initial economic and political steps to punish Iraq, began to consider military options, and initiated efforts to create a grand coalition of nations to reverse this provocation and prevent further aggressive actions against other nations in the Persian Gulf region.

As the President was taking action on these several fronts, orders were issued to military units

across the United States to prepare for deployment. Air, naval, ground, and special forces units began to mobilize for deployment to the Persian Gulf, where they would be under the operational control of the U.S. Central Command, (USCENTCOM), led by U.S. Army General Norman Schwarzkopf. Ultimately, the U.S. would deploy more than 540,000 soldiers, sailors, airmen, and marines to the Gulf, where they would join forces from twenty-five other nations to repel the aggression.¹

The special forces units being sent were from the U.S. Special Forces Command (USSOCOM), activated just three years prior to consolidate all American special forces under a single command. Its air component was the Air Force Special Operations Command (AFSOC). AFSOC’s primary operational unit was the 1st Special Operations Wing (1st SOW), equipped with MC and AC-130s, MH-60Gs, and MH-53J Pave Low Helicopters. The Pave Lows were assigned to the 20th Special Operations Squadron (SOS). Originally, these aircraft had been delivered to the U.S. Air Force as rescue and special operations aircraft and had seen a lot of action in Southeast Asia. In the late 1980s, they were extensively modified to give them secure long-range communications radios, precise global positioning systems (GPS), terrain following/avoidance (TF/TA) radar, and forward looking infrared (FLIR) systems, which allowed them to fly over any

Brig. Gen. Richard L. Comer, shown here while serving as the AFSOC Vice Commander in 2002. (Photo courtesy of Maj. Gen. Richard L. Comer, USAF(Ret.).



Colonel Darrel Whitcomb, USAFR (Ret.), served as a forward air controller flying the OV-10 and O-1 as a Nail and Raven FAC in Southeast Asia from 1972 to 1974. He is a prolific writer of Air Force and aviation history. His two most recent books are, Call Sign—Dustoff: A History of Army Aeromedical Evacuation from Conception to Hurricane Katrina (2011) and On a Steel Horse I Ride: A History of the MH-53 Pave Low Helicopters in War and Peace (forthcoming in 2012.)



The locations of the TF Normandy targets just north of Ar Ar. Bolded call signs show the locations of three downed USAF aircraft for which the 20th SOS and the MH-53J equipped 21st SOS initiated recovery missions. (Map provided by and used with the permission of the author.)

IT BECAME OBVIOUS TO ALL THAT FLYING OVER THE FLAT ARABIAN DESERT, ESPECIALLY AT NIGHT, WAS GOING TO BE A SERIOUS CHALLENGE

terrain—day and night, under any weather conditions—and perform extremely accurate navigation, a capability especially useful over the trackless vast expanses of the Gulf region. In fact, the Pave Low were some of the very first aircraft in the entire U.S. Air Force to receive the new GPS systems, quite an accomplishment for the 20th SOS and AFSOC.

When the mobilization directives arrived at Hurlburt Field, Florida, the 1st SOW was well into its mobilization process as airmen scrambled to prepare their equipment and personnel for deployment. Most squadrons of the Wing were tasked under various contingency plans, including OPLAN 1002-90 for the CENTCOM region. Indeed, CENTCOM had recently completed a war game titled INTERNAL LOOK, and several 1st SOW and 20th SOS personnel had participated and helped update 1002-90.

The 20th received its orders. Its commander, Lt. Col. Rich Comer, was directed to prepare eight aircraft, sixteen crews, and a maintenance support package for deployment to Saudi Arabia. He and an initial four aircraft, crews and support aircraft departed Hurlburt Field on August 11, and arrived at Dhahran, Saudi Arabia, two days later. The 20th SOS was now assigned under the operational control (OPCON) of the Special Operations Component of CENTCOM (SOCCENT) as part of Operation Desert Shield.²

Despite the harsh conditions and searing summer heat, Comer's troops had the four aircraft in flying condition within four days. Two aircraft and crews were put on alert to extract special forces teams stationed along the Saudi-Kuwaiti border in case Iraq's forces crossed that line. As the crews began orientation flights, it became obvious to all that flying over the flat Arabian desert, especially at night, was going to be a serious challenge. On moonless nights, there was little ambient light, and the sand suspended in the air generally limited both normal visibility and use of the night vision goggles. Lt. Col. Comer himself had lost ground visibility during a "brown-out" landing, as the pilots came to call it, and damaged an external tank when he did not notice the drift of the aircraft. He directed extra training for all crews and the development of modified procedures for landings in sand conditions.

On August 18, Comer met with Col. Jesse Johnson, the commander of SOCCENT. Johnson directed the 20th to move to the newly constructed King Fahd International Airport (KFIA), forty miles to the northwest. There, the 20th joined several other special operations units and squadrons from the 1st SOW. Collaterally, the U.S. Army dispatched the 3d Battalion of the 160th SOAR, with MH-47Es and MH-60Ks, also to serve under OPCON to SOCCENT. They were bedded down at the King Khalid Military City (KKMC) Airfield, about 200 miles northwest of KFIA.

The 20th received their second shipment of four aircraft and crews as well as guns, ammunition, and now had their designated complement of airmen and equipment for the deployment. Subsequently, their first formally assigned mission was to serve as the recovery forces for combat search and rescue (CSAR) for the theater. The Pave Low crews were honored to have the mission.³

To Pave Low pilot Capt. Mike Kingsley, the rescue mission made sense. He said;

*The Pave Low can do CSAR better than any other helicopter. We had radar; we had a GPS; we had forward-looking infrared; we had capabilities that no other helicopter had....It's a very, very honorable mission.*⁴

Throughout the summer and fall, the crews trained to the mission and possible special forces taskings under SOCCENT as General Schwarzkopf and his air component commander, Lt. Gen. Charles Horner, developed their campaign plan and honed their forces. One of the Pave Low pilots, Capt. Randy O'Boyle, was detailed to be the sole Pave Low representative to General Horner's strategic planning cell. He was "read in" to the overall TOP SECRET strategic air campaign plan being developed and was able to coordinate CSAR plans with the larger directive.

As the development of the strategic air campaign progressed, air planners realized that they needed to include plans to overcome the Iraqi air defenses. Over the previous ten years, the Soviet



Lt. Col. Michael J. Kingsley, commanding the 20th SOS in 2001. (Photo courtesy of Brig. Gen. Michael J. Kingsley.)

Union had helped Iraq develop a fully integrated air defense system equipped with hundreds of surface-to-air missile sites and more than 8,000 fixed and mobile antiaircraft guns. Studying the overall system carefully, Capt. O'Boyle made a novel suggestion. Intelligence showed that the Iraqis had placed three early warning radars as close as one mile to the Saudi border. He suggested using SOCCENT assigned Army SOF teams from the 5th Special Forces Group to attack and destroy the sites. This would create a critical gap in the Iraqi radar coverage through which flights of allied strike aircraft could safely enter Iraqi airspace and then proceed to their individual targets.

To reach the radar sites, the 5th Group teams would infiltrate on foot and be extracted by MH-60s from the 3d Battalion of the 160th SOAR after they had destroyed the sites. SOCCENT worked up a plan to accomplish that. To be successful, though, the teams needed seventy-two hours to infiltrate to the three radar facilities. However, General Schwarzkopf had already told President Bush that

he could initiate combat with just sixty hours of preparation and, in a rather heated meeting with Col. Johnson, disapproved the plans.

A few weeks later, the Iraqis moved the three radar sites 20, 27, and 40 miles, respectively, back into Iraq and hardened the sites. Capt. O'Boyle suggested that MH-53s with their enhanced navigation capability attack the sites with their 50-caliber machine guns. Col. Johnson briefed this idea to Lt. Gen. Horner and Gen. Schwarzkopf, who approved the concept for further planning. When Lt. Col. Comer was briefed on the plan, he designated Capt. Corby Martin to be the planner and flight leader for the mission with Maj. Ben Pulsifer, Maj. Bob Leonik, and Capt. Mike Kingsley serving as the other aircraft commanders. However, Comer was skeptical of the initial plan, believing that the machineguns would not be powerful enough to destroy the sites.⁵

Comer discussed the mission with Col. Benny Orrell, (USAF), serving at SOCCENT, who suggested that they bring along some U.S. Army AH-64 Apaches with Hellfire missiles, Hydra-70 rockets, and their 30 mm machineguns to do the job. The 1st SOW wing commander, Col. George Gray, was briefed on the new suggestion and received permission from Col. Johnson to talk to Army Lt. Col. Dick Cody, the commander of 1st Battalion of the 101st Aviation Regiment, an Apache battalion assigned to the 101st Air Assault Division, also located at the King Fahd Airport.

EAGER ANVIL

The mission would be called EAGER ANVIL. Its concept was relatively simple. The MH-53s would utilize their excellent navigation systems to lead the Apaches over the almost featureless desert to the correct firing positions because they were much more accurate and reliable for longer range navigation than the older Doppler systems on the Army helicopters. One of the Pave Low gunners suggested to Captain Martin that they guide the Apaches to a pre-designated position and then mark it with chemical night lights. The AH-64 pilots could then fly over that point and update their Doppler systems for the final run in to the actual firing positions for their targets. Simple and logical, Martin wrote the procedure into the plan.

Captain Kingsley was also concerned that one or more of the Apaches might get lost in the possible mayhem and run out of fuel. One of his flight engineers, TSgt. Jeff Morrison, developed a procedure so that, if necessary, a Pave Low could ground transfer fuel from its tanks to the affected Apache, and make sure that the necessary equipment was aboard each Pave Low.⁶

As the aircrews conducted their planning and unit training, Intelligence sources reported that the three sites had again been moved—this time about ten miles closer to the border—and consolidated into just two sites with several Soviet-style search and acquisition radars each. Accordingly, the 20th pilots modified the plan, and then took it to Col.



Task Force Normandy crew; L-R: standing, Sgt. Phil Carroll, Capt. Corby Martin, Capt. Bill LeMenager, MSgt. Mike Lael, kneeling, SSgt. Mike Harte, Sgt. Barrett Harrison. (Photo courtesy of Col. Corby Martin, USAF (Ret.)

WHEN GRAY ASSURED HIM THAT THE MISSION WOULD BE 100 PERCENT SUCCESSFUL, SCHWARZKOPF REPLIED, "OKAY, COLONEL, THEN YOU GET TO START THE WAR."

Johnson at SOCCENT. He approved it and briefed it to General Schwarzkopf, who approved the use of Apaches from the 101st Division and cleared them to begin joint training. Comer met with Lt. Col. Cody to plan the mission in detail.

The force would be called "Task Force Normandy." Two flights of two MH-53s each would lead four Apaches to each site and provide combat recovery support. The two units trained for the mission through the fall. They also received permission to live-fire six Hellfire missiles in the Saudi desert.

In December, Col. Gray personally briefed General Schwarzkopf that the joint team was ready to execute its mission. When Gray assured him that the mission would be 100 percent successful, Schwarzkopf replied, "Okay, colonel, then you get to start the war." The joint team held a final rehearsal in January and it went perfectly. "We were eager for the mission to fly," said Lt. Col. Comer, and noted in his personal journal that, "Not since Desert One in Iran had special operations helicopters been given a better chance for a good mission."⁷

As 1990 was waning, President Bush continued efforts to solve the crisis diplomatically. Concurrently, General Schwarzkopf and his commanders focused upon finalizing their campaign plans and building up their forces for possible offensive operations to forcibly extract Iraqi forces from Kuwait. In support of those efforts, on January 11, SOCCENT activated a forward operating location at Al Jouf in western Saudi Arabia, and Lt. Col. Comer was ordered to move the 20th SOS there. Three days later he and his airmen had completed the move. Lt. Col. Cody and his Apaches also deployed forward to Al Jouf.

On January 16, it was obvious that all non-military efforts to resolve the Kuwaiti occupation had failed, and President Bush directed that military operations begin. SOCCENT notified all of its units that the war would start the next morning at 3:00 AM. Comer notified all of his personnel that EAGER ANVIL would commence that night. Other unit aircraft and crews would be on alert for CSAR tasking at several locations. Additionally, when the EAGER ANVIL MH-53s returned from

the mission, they would be reassigned to CSAR duties.⁸

At 9:30 PM, Comer held a final flight briefing for the Pave Low and Apache crews. There really was nothing more to say. All recognized that they were about to take part in a very significant event and, while nervous, were extremely confident that they were the right force at the right time and place. All used the short time available before proceeding to their aircraft for private moments, actions, and prayers. Captain Kingsley felt the gravity of the moment, noting: "I immediately had butterflies in my stomach. Oh my gosh, the weight of the world is on this mission. A lot of people could die if we fail." He grabbed Corby Martin and went over the details of the mission for the "hundredth" time before heading out to the aircraft.⁹

The crews coordinated their engine starts so that the entire formation lifted off from Al Jouf at 1:00 AM. The "Red Team" Pave Lows, flown by Capt. Martin and Maj. Ben Pulsifer and crews were joined by their four Apaches and set course for the western target now designated "Nevada." Capt. Newman Shufflebarger led the Apaches. The second section of "White Team" Pave Lows, commanded by Capt. Kingsley and Maj. Robert Leonik and crews did likewise and proceeded to the eastern target, now designated "California." Lt. Col. Comer flew as Leonik's copilot and maintained communications contact with the SOCCENT command center where Colonels Gray and Johnson were closely monitoring the mission. The White Team Apaches were led by Lt. Col. Dick Cody.

At 2:12 AM, the Task Force Normandy helicopters crossed into Iraq and Comer radioed the proper code word to SOCCENT. The pilots varied their flight paths as necessary to avoid known or suspected enemy observation posts or Bedouin locations. The western target was thirteen miles farther; the eastern target, twenty-three miles. The Pave Lows used their TF/TA radar and FLIR to stay less than fifty feet above the ground and exploited whatever variations in terrain were available in an attempt to mask their flight paths from the search radars at the sites. At one point, the navigational system on Leonik's Pave Low failed, and the crew had to scramble to reset it. All crews observed some small arms tracers, but they were inaccurate and of no consequence.

The Pave Lows flew to the pre-briefed drop-off points, where their gunners and flight engineers threw out the bunches of green chemical sticks. The Pave Low pilots then turned south. As they departed, the Apaches slowly passed over the chemical lights and updated their Doppler navigational systems for the final ten-mile run to their individual targets. Slipping through the clear, dark night, they pulled into firing position exactly ninety seconds early. The gunners could see the facilities at the sites; they matched the Intelligence pictures that they had been shown. The Apache crews could also see enemy troops around the structures.

Suddenly, the lights began to go off. One of the pilots mused, "I think they know we are here."

Capt. Randy O'Boyle, Pave Low pilot, who served as the SOCCENT liaison to the CENTAF staff during DESERT SHIELD/STORM.



THE PAVE
LOWS FLEW
TO THE PRE-
BRIEFED
DROP-OFF
POINTS...
[AND]...THE
APACHES...
UPDATED
THEIR
DOPPLER
NAVIGA-
TIONAL
SYSTEMS
FOR THE
FINAL TEN-
MILE RUN TO
THEIR
INDIVIDUAL
TARGETS

Thirty seconds prior, the Apache crews turned on their ranging lasers. At exactly 2:37:50 AM, White Team Apache pilot 2d Lt. Tom Drew keyed his radio and broadcast, "Party in ten." Precisely ten seconds later all crews began firing their Hellfire missiles. Twenty seconds later, the deadly weapons began to detonate against the structures. The generators were hit first, then the command bunkers, and finally, the radar dishes themselves. Several Iraqi enemy soldiers died in the barrage.

Once all the Hellfires had been expended, the helicopters flew toward the sites and ripple-fired their rockets. Two thousand meters from the sites, they opened up with their 30 mm chain guns and riddled what remained of the compounds with every bullet they had. Four minutes after it started, it was over. The Apaches had expended twenty-seven Hellfire missiles, 100 Hydra-70 rockets, and 4,000 rounds of 30 mm cannon fire. They turned south, rejoined with the Pave Lows, and headed home. En route, Captain Martin's crew observed what appeared to be the launch of two SA-7 missiles. They utilized their on-board defensive systems and some aggressive maneuvering to escape the missiles.

Outbound, Comer radioed a code word message to SOCCENT headquarters reporting their complete success. "SOF targets destroyed." Colonel Johnson personally reported the results to General

Schwarzkopf's command center. "Thank God," he responded.¹⁰

The combination of the Pave Lows and Apaches had worked as hoped. All of the planning, calculating, and training had paid off. As Capt. Martin was leading his formation back to the south, he could see in the clear night air above the massive formations of allied aircraft heading for the radar gap. He remembered:

*You could look off to the south and there were blinkers lined up. You could see a long way on goggles. And it's also desert, so it's clear. There were anti-collision lights lined up; it looked like an LA freeway. . . . And they were all chasing these big blinkers...[the]tankers. Then all of a sudden, there was a point where there were no more lights. So they would get gas, drop off, turn lights off, and head north.*¹¹

One F-15E fighter pilot who was in that massive gaggle of firepower wrote a thank you letter to the men of Task Force Normandy which said, "During our [flight intelligence] brief, we noticed our route of flight took us right over an active [radar] site. . . . We were told not to worry about it! We saw the explosions and your helicopters in our FLIR as we flew over you. There was immense relief!"¹²

A Pave Low in classic desert colors. (Photo courtesy of the 58th SOW History Office.)



THE JOINT AND COMBINED CAMPAIGN WOULD LAST SIX WEEKS BEFORE THE IRAQI FORCES WERE ROUTED AND FORCED FROM KUWAIT

Captain Kingsley noted their contribution to the operation when he said, “We were the logical choice because we have an advanced navigational system....They had the confidence in us to lead them in so that when it was time to destroy these radar sites they were fresh and ready to go.”¹³

Approaching the airfield near Ar Ar, just twenty-five miles south of the border, the four Pave Lows of Red Team and White Team assumed CSAR alert duties as their Apaches proceeded back to Al Jouf. The joint force was dissolved, and the two units joined their larger elements and prepared for other missions.

“Pave Low leads,” noted Comer in his after-action report. The task force of Air Force and Army airmen had blown open the door for their fellow combat aviators to begin the air campaign against Iraq. They were the right force at the right place at the right time and enabled allied aircraft to swarm over Iraq and Kuwait. The joint and combined campaign would last six weeks before the Iraqi forces were routed and forced from Kuwait. The airmen and soldiers of Task Force Normandy had accomplished their mission, necessitated eight months prior by Saddam Hussein and his invading forces. It was one for the history books.¹⁴ ■

NOTES

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Imaging the Empire: The 3d Photographic Reconnaissance Squadron in World War II





William M. Cahill

(Overleaf) General view of the 3d PRS flight line area on Guam in June 1945. Visible in the background among trees are six to seven of the squadron's F-13 aircraft. (Map at right and all photos courtesy of the author. Photos obtained from the National Archives and AFHRA, Maxwell AFB, Ala.)

DUE TO THE DELAY IN F-13 DEVELOPMENT, THE 3D PRS'S INITIAL FLIGHT TRAINING IN KANSAS INVOLVED PHOTOGRAPHIC MISSIONS FLOWN IN RECONNAISSANCE VERSIONS OF THE B-17 AND TYPE CONVERSION FLOWN ON HAND-ME-DOWN B-29s

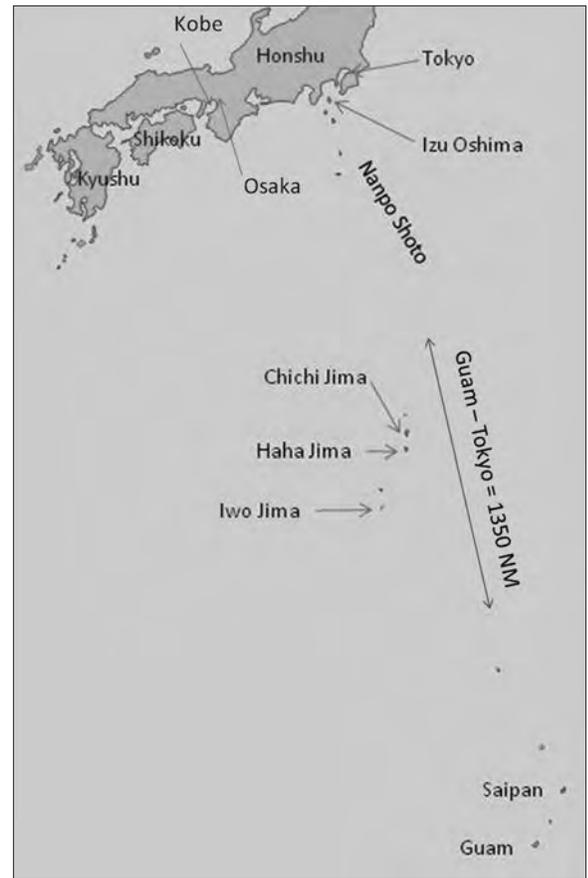
The strategic bombardment of Japan by the Twentieth Air Force, combined with the Allied naval and land offensives, paved the way for victory over the Japanese Empire in 1945. To accomplish this feat, the XXth's bomber commands dropped more than 147,000 tons of bombs and supported the 509th Composite Group's two atomic strikes. The success of this aerial onslaught belonged in no small part to the efforts of one overworked and under-appreciated unit—the 3d Photographic Reconnaissance Squadron (3d PRS).

The 3d PRS was activated on June 10, 1941, as the Army Air Corps expanded in the run up to World War II. Initially, the 3d PRS was used to chart the Western Hemisphere, but moved on to map the China-Burma-India Theater in December 1943. The unit was disestablished overseas and re-established at Smoky Hill Army Airfield, Kansas, in April 1944, for conversion to the Boeing F-13.¹

On April 7, 1944, requirements were established for a B-29 modified to perform photo reconnaissance missions, with the first production F-13 to be delivered on September 19. Production B-29s were sent to the Denver Modification Center, where the bomb bay was sealed and extra fuel tanks added. A camera section was built in the aft pressurized section of the fuselage behind the central fire control station. A single vertical camera, a split-vertical two camera assembly, and a tri-metrogon camera assembly made up the mission payload of the F-13. In addition, a camera was added to image the scope of the AN/APQ-13 radar to provide radar images for blind bombing and navigation.²

Due to the delay in F-13 development, the 3d PRS's initial flight training in Kansas involved photographic missions flown in reconnaissance versions of the B-17 and type conversion flown on hand-me-down B-29s.³ The squadron, commanded by ex-test pilot, Lt. Col. Patrick McCarthy since July 1943, worked through these delays and put the ground echelon aboard a troop train on August 3 for the trip to California and embarkation to Saipan. The air echelon stayed and trained with whatever was available. While a "training" F-13 arrived on August 24, the first operational F-13 for overseas use did not arrive in Kansas until October 4. As more operational aircraft arrived, crews were put through their paces and sent off to the fight, with the first F-13 departing on October 19.⁴

Just as the 3d PRS was reformed specifically to operate the F-13, the Twentieth Air Force was created for the sole purpose of using the B-29 to bomb Japan. Originally composed of the XXth Bomber Command, based in India, it started a desultory bombing campaign against Japan in mid-1944. But it was not until early 1945, after the creation of the



XXIst Bomber Command, on Saipan and Guam, had the campaign accelerated. Possessing scant data on Japan's war industry and home defenses, a long-range photographic squadron was critical to the success of this plan.⁵

The ground echelon of the 3d PRS, contained in the holds of six ships, pulled into Saipan's harbor on September 18. Twenty-five Quonset huts were erected within the squadron operations area, as a ground echelon, under Major Yost, rushed to get ready for flight operations that would commence as soon as their aircraft arrived. The first two F-13As winged into Saipan via Oahu and Kwajalein on October 30, and were immediately prepared for a mission. Two days later, Capt. Ralph Steakley, rested from the ferry flight, flew the first combat sortie with F-13A S/N 42-93852, "Tokyo Rose," imaging industrial installations and aircraft plants around Tokyo. Nineteen Japanese fighters rose to try and intercept the lone B-29 type aircraft—as well as to engage the F-13 with flak—to no avail. Steakley earned the Distinguished Flying Cross for this mission and would be awarded the Bronze Star four weeks later for saving aircraft during a Japanese raid on the base.

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3d PRS photographer T/Sgt. Walter Marvin removes a K-18 camera and film packs from "Tokyo Rose" after the first photo reconnaissance mission over Japan on November 1, 1944.



MANY MISSIONS EXPANDED THE KNOWLEDGE OF THE TWENTIETH'S STAFF BY MAPPING LARGE SWATHS OF JAPAN AND SURVEYING AIR DEFENSES

Images from this mission provided the Twentieth's planners their first good look at targets around Tokyo; the images were quickly utilized on XXIst Bomb Command missions later that month. While the first mission was a stunning success, five of the next seven sorties ran into bad weather, causing the subsequent eight missions to be devoted to weather observation to help the meteorologists better understand Japan's weather. By the end of the month, nine F-13s were on strength and twenty-seven sorties were flown; twelve more F-13s would arrive over the next three months, making up for three combat losses and an unlucky aircraft destroyed during a Japanese air raid on December 7, 1944.⁶

By the turn of the year, the squadron still under the steady hand of Lieutenant Colonel McCarthy, averaged thirty sorties per month and flew myriad imagery-related missions. Many missions expanded the knowledge of the Twentieth's staff by mapping large swaths of Japan and surveying air defenses to obtain accurate airfield and anti-aircraft artillery orders of battle. In addition, the squadron's F-13s would range across Japan, imaging industrial sections of Nagoya, Osaka, Tokyo, and other large cities to plot future targets or winging over a target area following a raid to provide battle damage assessment. The 3d PRS was also tasked to support the upcoming invasion of Okinawa, fighting bad weather on seventeen missions over a three-month

period, before finding a clear day and mapping the entire island on February 28. The squadron also experimented with flying bomber support missions to aid in the survivability of their B-29 brethren. Between November 24 and December 13, five missions tasked F-13s with dropping "rope" (300-foot foil strips held vertical by a small parachute) out of flare chutes. Dispensing of this "chaff" would commence with the aircraft's climb to altitude and would continue for approximately 100 miles, stopping before the aircraft crossed the Japanese coast and flew on to its tasked targets. Their intent was to confuse Japanese defenders into believing the single F-13 was an inbound Twentieth Air Force bomber raid and drawing some Japanese interceptors away from the main bomber effort of the day. It appears the mission was not performed after December 1944, but by March the 3d PRS was preparing to fly additional bomber support missions with modified B-24 aircraft.⁷

A flight of the 3d PRS was assigned four modified B-24J/M aircraft for the purpose of electronically mapping the Japanese air defense system. The flight was essentially a self-contained unit within the 3d PRS and operated unique B-24 aircraft that were hand-built at the Fairfield Air Depot in Ohio. The bomb bay was sealed over, with the forward bomb bay housing additional fuel tanks and the aft bay housing a compartment for two electronic warfare officers and their equipment. At mid-fuselage,

3d PRS photographer TSgt. Walter Marvin loads film and K-18 camera onto a truck to rush them off to the lab for processing after Tokyo Rose's November 1, 1944, mission over Tokyo.



THE JAPANESE LINGUISTS LISTENED IN ON JAPANESE FIGHTER CONTROLLERS AND ENABLED THE TWENTIETH'S INTELLIGENCE STAFF TO BETTER UNDERSTAND JAPANESE FIGHTER TACTICS

Two 3d PRS photo interpreters evaluate aerial photographs taken by one of their F-13s during November 1944.



the radar operator worked with the navigator to accurately plot the aircraft location, while in the nose two Japanese linguists operated communications intercept gear. The aircraft carried sensitive electronic receivers that allowed the crew to intercept and plot Japanese radars, noting their electronic characteristics to aid in setting radar jammers used by the B-29 force.⁸

The Japanese linguists listened in on Japanese fighter controllers and enabled the Twentieth's intelligence staff to better understand Japanese fighter tactics.⁹ The flight started flying opera-

tionally on May 18, 1945 and logged forty-two combat missions by the end of the war. These missions—many ranging up to twenty hours and including en route refueling stops—were flown in conjunction with bomber strikes and over time helped increase the survivability of not only the B-29s, but also the F-13s operated by their squadron mates.¹⁰

By late 1944, the 3d PRS crews settled into a routine that would last for the remainder of the war. A typical mission would start with mission planning the evening prior to the sortie. Crews were awakened two and one half hours prior to takeoff, allowing time for breakfast, a briefing and a truck ride to their assigned F-13. The aircraft was usually in the air before 4:00 AM, with a long over-water flight to Japan accomplished below 2,000 feet to decrease radar detection. LORAN assisted in getting the F-13 to its climb point 250 miles from the coast, a distance that allowed the aircraft to be over 30,000 feet by the time it crossed the target. This altitude helped decrease the effects of anti-aircraft fire and the chance of interception by Japanese fighters. Most missions met little opposition, Kawasaki Ki-61 and Ki-45 fighters along with Nakajima Ki-44 and J1N aircraft were all noted in 3d PRS combat debriefs as making single runs at the well-armed F-13s. A few missions reported simultaneous attacks by four to five fighters but the results were normally in favor of the 3d PRS crews due to the poor high altitude performance of the Japanese fighter aircraft. Flak was usually light as well, though some major cities would throw 50 to 100 rounds of ammunition at the single reconnaissance aircraft passing overhead.¹¹



(Above) One of the many bomb damage assessment photos shot by the 3rd PRS in April 1945; this one depicts the Nakajima aircraft plant outside Tokyo, Japan.

(Below) June 1945 photo of one of the 3rd PRS' many Quonset huts located in the squadron operations area. This particular building housed the squadron intelligence section, used to brief aircrew before they stepped to their planes.



Though the 30,000 foot altitude protected the F-13s from the Japanese defenses, it could also hinder the crews from completing their primary mission. Many times in the winter and spring, the crews would find their targets cloud covered, leaving the pilots the option of searching for clear skies to shoot targets of opportunity or taking radar scope images of their tasked targets. Often the pilots would push their aircraft into a dive to seek out the base of the clouds, popping into the clear at 10,000 feet or lower and commencing their photo run at this riskier altitude.¹²

An hour or so would be spent making photo-

graphic runs before the aircraft turned for home, recovering up to fourteen hours after takeoff. The film was rushed to the squadron photo labs for processing immediately after landing, with high priority targets printed out and distributed to Twentieth Air Force leaders by 8:00 AM the next day. All useful photographs were interpreted and the results summarized in Damage Assessment Reports, Survey Reports, Photo Interpretation Reports and others were distributed throughout the Pacific. The Twentieth Air Force staff was an avid consumer of the Damage Assessment Reports, using the imagery assessments to judge the effectiveness of raids and call for re-attacks on targets if necessary.¹³

Like their bomber squadron brethren, the 3d PRS crews also had to contend with the mechanical challenges of operating the B-29-type airframe. Many missions were aborted due to mechanical problems, while others worked through engine problems to accomplish their assignments. Mission 272, flown by Lt. Robert Hickethier on June 8, 1945, was typical. F-13 [SN 42-93865] departed North field, on Guam, at 1501 Zulu on June 7, with the intent of imaging Kobe and Osaka. The flight to Japan was uneventful, though it was noted that engine No. 1 tended to backfire occasionally. Once landfall was made, engine No. 1 backfired repeatedly and in an intense manner. After directing the flight engineer to reduce power on that engine, Lieutenant Hickethier, a 3d PRS veteran who had been at Guam since November, decided to press on with the mission. He encountered light, but accurate flak and bad weather. Nonetheless, flying through gaps in the clouds over Osaka, the crew succeeded in taking some photographs. After checking the rest of the targets and finding them socked in, Hickethier turned home toward Guam, landing on North Field almost exactly fourteen hours after departing.¹⁴

The squadron continued to base out of Saipan, though the balance of the squadron personnel transferred to Guam on January 11, 1945. Starting in mid-January, longer duration missions would launch from the more northern base of Saipan and recover at Guam, a trend that continued until April, when all missions were originating and ending out of Guam. Saipan continued to be a *divert* field for weather or low fuel, though it was replaced by Iwo Jima in late March after this island was secure. In April, the squadron stood up a maintenance detachment at Iwo for this purpose, servicing sixteen returning aircraft in July alone.¹⁵

The squadron charged hard through the spring of 1945, building upon the experience gained from the past five months of combat operations. Squadron F-13s ranged across Japan, splitting their time between bomb damage assessment, search and survey work, and target development imaging. Many target areas were re-tasked as Japan dispersed critical war industries throughout the countryside. For the rest of the war the 3d averaged fifty-five sorties per month, many accomplished in surges of four to five missions in a single day, followed by two or three down days, likely dri-



F-13 "Quan Cha Yin Ara" with crew gear piled around the nose gear after recovering from another long mission over Japan. Visible in the background is a B-24, likely one of the squadron's highly modified ferret aircraft.

ven by maintenance, weather, and Twentieth Air Force operational tempo. These missions were flown by the twenty-five 3d PRS crews in the fifteen to eighteen aircraft carried on the unit roster.¹⁶

In April 1945, the 3d PRS dispatched a detachment of three aircraft and requisite personnel to Morotai Island to map the Netherlands East Indies for the Thirteenth Air Force. The F-13As ranged

across Java, mapping the island and towns of Batavia and Soerabaja for a month before returning to Guam. The 3d PRS also expanded their repertoire over Japan, trying out different missions besides the standard daylight imagery profile they flew daily in and out. Six missions were flown in May and June to take films of Twentieth Air Force B-29 strikes over Japan, detailing bomber formations and damage from the attacks. Four night missions were also flown in April and May, shooting photos under the glare of photo flash bombs. Neither mission type appears to have caught on with the unit.¹⁷ At the end of June, the squadron bid farewell to its commander of two years, Colonel McCarthy, who was succeeded by Maj. Robert Hutton, an experienced reconnaissance pilot.

Hutton "did not miss a beat," expanding squadron operations in July, the squadron winged further north and started to image the Korean peninsula. At the end of the month, three aircraft deployed to Iwo Jima and performed a ten-day, in-depth survey of Japanese merchant and naval vessels. By late July, aircraft started to use Okinawa as an alternate landing field, three F-13s landing at the newly-liberated island for maintenance or refueling. As the war entered its final month, the squadron gave two missions to the shadowy 509th Composite Group. The atomic bombers planned the routes for the post-strike survey flights flown by the F-13s and processed all the film, keeping all information on the atomic attacks in-house.¹⁸

It was fitting that the 3d PRS helped the 509th

A squadron intelligence officer briefs an F-13 crew prior to a June 1945 mission. Target area details are posted on the larger map and air-sea rescue areas are highlighted in the small map at left.



Composite Group knock Japan out of the war. In the ten months the squadron was part of the Twentieth Air Force, it flew 450 imagery and forty-two signals intelligence missions. Reconnaissance photos turned out to be a critical factor in the strategic bombing campaign against Japan, not only for locating Japan's industry for the first time, but also in providing timely damage assessment that allowed planners to adjust future bomber strikes. Indeed, the 3d was crucial in providing Maj. Gen. Curtis E. LeMay feedback in bomber effectiveness as he adjusted B-29 tactics in the spring of 1945. After hostilities ceased, the squadron continued its survey missions throughout the western Pacific, updating maps for postwar use until the call came to case its colors in March 1947. With little fanfare, the squadron that had helped direct the strategic bombing of Japan faded into oblivion.¹⁹

The 3d PRS helped set the stage for postwar

Strategic Air Command's reconnaissance efforts. As opposed to Eighth Air Force operations in Europe, that utilized Royal Air Force imagery and electronic reconnaissance efforts, the Twentieth Air Force was a completely American show. Airmen were able to see the criticality of strategic reconnaissance for a bombing campaign, and for the need to have this information available at the start of the campaign, not mid-way through it. Strategic Air Command's whole-hearted embrace of the reconnaissance mission for the next forty years was due in no small part to a solitary squadron and its odd collection of modified B-24 and B-29 aircraft. The ripple effects of these missions are felt even today, as daily 55th and 9th Reconnaissance Wings' sensitive reconnaissance operations probe the fringes of future hot spots, and preparing the battle space for possible follow on operations. Never again should we go into a bombing campaign unprepared. ■

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*The Other Face of Air Power:
"Afghan Rescue 705 Flight,"
July 28-29, 2010*





Forrest L. Marion, with
Gregory A. Roberts

(Overleaf) Mid-day on the second day on the Konar Valley floor. The picture is taken east and the top of the ridgeline marks the Pakistan border.

In March 2010, the 438th Air Expeditionary Wing (AEW) commander, Brig. Gen. Michael R. Boera, offered his perspective on non-traditional roles of air power—“non-kinetic” in current military parlance—in the ongoing counterinsurgency in Afghanistan where he was then serving:

This other face of airpower carries balloting materials to outlying areas of Afghanistan, granting elections a chance to have broad credibility throughout the country. It affords battlefield mobility to indigenous groups, allowing confrontation with and defeat of insurgents. This kind of airpower provides mobility to Afghan citizens, filling logistical gaps that the budding commercial market struggles to meet. It welcomes young people into the service of their nation, giving them a reason to strive for excellence in working for government organizations that have awakened to new, promising days after three bleak decades of uninterrupted armed struggle.¹

The excellent examples above notwithstanding, one aspect of this “other face of air power” that went unmentioned, and that Boera’s own force had demonstrated several months later, was that of humanitarian rescue in a combat zone. At the end of July 2010, four U.S. Air Force airmen, all of them advisors to the Afghan Air Force and assigned to Boera’s wing as well as to a NATO entity, the Combined Air Power Transition Force (CAPTF), which Boera also commanded—participated in what became by far the largest two-ship helicopter rescue in U.S. Air Force history. The fact that the mission was conducted in a highly-contested area of northeastern Afghanistan only added to the significance of the humanitarian accomplishment: the saving of more than 2,000 Afghan men, women, and children from devastating floodwaters.²

Not only did the mission save a great number of lives, which in itself was of the utmost importance in humanitarian terms, but in the context of the ongoing counterinsurgency in Afghanistan, in which the Taliban and other antigovernment forces continue striving for control with Kabul over allegiance and control of the indigenous population, the mission lent “legitimacy” to the government in Kabul as well as to provincial, local, and nomadic government leaders who were able to call upon the resources of the Afghan Air Force and its U.S./NATO partners and advisors.³

Since the spring of 2007, a combined U.S./NATO-led coalition initiative had been underway in Afghanistan to rebuild an indigenous air force, known in the 1980s as the Democratic Republic of Afghanistan Air Force (DRAAF). With its roots in the 1920s, the small Afghan air service in the 1950s

became highly “Sovietized” as the government turned to the USSR to meet its security needs. By the Soviet-Afghan war of the 1980s, Afghanistan’s air force operated strictly Soviet-made aircraft, especially MiG and Sukhoi fighters, Antonov transports, and “Mil” Mi-8 and Mi-24 helicopters. The factional warfare of the 1990s, including the rise of the Taliban, reduced the air arm of 400-plus aircraft—large by regional standards—to a few dozen ill-maintained fighters, transports, and helicopters in the hands of competing warlords. Most of what remained of the Afghan air force was destroyed in the fall of 2001, during the U.S./coalition response to the September 11 attacks.⁴

By 2010, the CAPTF provided U.S./coalition air advisors to rebuild the Afghan Air Force (AAF). Whereas in 2007, the AAF had possessed only twenty aircraft—mostly Mi-17 and Mi-35 helicopters (export versions of the Mi-8 and Mi-24, respectively) and a half dozen Antonov transports. The fleet had doubled in size and included several Italian-manufactured C-27A “Spartan” transports. Instructor pilots, flight engineers, maintainers, logisticians, communicators, engineers, and personnel specialists—American, British, Canadian, Czech, and others—worked in partnership with their Afghan counterparts to reestablish an indigenous air capability. American and coalition leaders, such as General Boera, recognized that Afghanistan’s forbidding mountainous terrain, lack of ground transportation infrastructure, and threats to ground travel in the form of roadside bombs placed a premium on developing an air capability both for the country’s security as well as for governance. While the CAPTF sought to emphasize training over operational or operational support sorties with the Afghan airmen, the exigencies of the ongoing insurgency in Afghanistan meant that most of the flying effort was operational in nature—often at the expense of training. By the end of July, included among the twenty-five Afghan Mi-17 helicopters were the first two of ten Afghan Air Force “V5” models, tail numbers 702 and 705.⁵

The Mi-17 helicopter, often derided in the West because of its Soviet origins, had stemmed from modifications during the Soviet-Afghan conflict (1979-89) to upgrade the earlier Mi-8 (NATO designation “Hip”) and to better suit it specifically for Afghanistan’s mountainous terrain. When the Soviets prepared to withdraw from Afghanistan at the end of the 1980s, they left large numbers of aircraft for the Afghan government of Dr. Mohammed Najibullah, hoping thereby to assist in the compliant communist regime’s survival. The relatively cheap and simple Mi-17 helicopter also was meant to be sustainable by field level maintenance. But the

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THREATS TO
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DEVELOPING
AN AIR
CAPABILITY**

Forrest L. Marion graduated from the Virginia Military Institute with a BS degree in civil engineering. He earned an MA in history from the University of Alabama and a doctorate in United States history from the University of Tennessee. Since 1998, he has served as a historian at the Air Force Historical Research Agency, Maxwell AFB, Alabama. In 2009, he deployed in military status to Afghanistan, as historian for the 438th Air Expeditionary Wing, and in 2011, he deployed in civilian status to the same position. Commissioned in 1980, he retired from the USAF Reserve in May 2010.

Afghan Rescue 705 Flight

Lead - Afghan Rescue 705

FL/AC Lt Col Greg “Boomer” Roberts, USAF
Copilot Brig Gen Mohammed Barat, AAF
FE 1Lt Shah Aqa, AAF
CC SSGT Abdul Waris, AAF
PA Lt Col Mohammed Bahadur, AAF
PA Maj Mohammed Kazum, AAF
IT(contract) Khwaja Wahidudin “Wahid” Joya

Wingman - Afghan Rescue 702

AC Lt Col Bernard “Jeep” Willi, USAF
Copilot Major Mohammad Hassan, AAF
FE Capt Gulabadin, AAF
CC Advisor MSgt Kevin Fife, USAF
CC SSGT Mohammed Na’eem, AAF
Flt Surgeon Lt Col Jimmy Barrow, USAF
IT(contract) Najibullah Fazli

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AFGHANI-
STAN

“V5” models the Afghans began receiving in July 2010 included several updated features: automatic rear cabin ramps, modern internal rescue hoist, and Garmin 430 Global Positioning System navigation receiver, with Instrument Flight Rules equipment displays. Lt. Col. Robert A. Strasser, the 438 AEW chief of plans in 2010 and 2011, noted the decision to procure the Mi-17V5 was based on the desire for a “Western cockpit” in the Russian helicopter that, despite its origins, would provide the engineering, avionics, and safety features the U.S. Air Force considered acceptable for its coalition partners. Less than three weeks after their arrival, the Afghan Air Force’s first two—and its only—V5s were about to be put to intense life-saving, operational use.⁶

The drama began late on July 27, 2010. An early monsoonal system with large embedded thunderstorms brought heavy rains to the provinces of northeastern Afghanistan, including Nuristan, Laghman, Nangarhar, and Kunar. Jalalabad Airfield in Nangarhar Province received over eight inches of rain by the 28th. In the summer of 2010, the Taliban insurgency remained active in the area but appeared to be struggling. American and coalition officials believed the insurgency in the Kunar and Pech valley areas in southern Nuristan, northern Laghman and most of Kunar Province to be supported largely by antigovernment groups and individuals who crossed Afghanistan’s northeastern border with Pakistan’s volatile Northwestern Frontier Province. But despite the insurgents, the Afghan government and the NATO-led International Security Assistance Force (ISAF) had been making steady progress in the area. Thus, the monsoon rains occurred at a potentially strategic moment as they could easily have demonstrated the inability of the governing authorities to provide relief—indeed, life-saving rescue—to hundreds of local residents endangered by floods.⁷

The Kuchi representative called first. Several

dozen of the nomadic group needed help as floodwaters rose rapidly in the area of the confluence of the Kabul and Laghman rivers. He contacted the Afghan Ministry of Defense in Kabul which quickly passed the mission to the AAF’s Kabul Air Wing Commander, Brig. Gen. Mohammed Barat. Barat in turn called the American air advisors, with whom he had become accustomed to flying since the AAF rebuilding effort began. Despite his seniority, he chose to participate personally in the mission as one of the Mi-17 pilots. The general selected another trusted Mi-17 pilot, Maj. Mohammad Hassan, along with Afghan flight engineers and crew chiefs.⁸

The threat and weather scenario proved somewhat complex. The requested survivor location in Laghman Province was ten miles from the nearest known threat, the town of Mehtar Lam, which the advisors considered a fairly low threat. Perhaps more serious, however, was an area of well-armed insurgents situated along the straight-line course between Kabul and the Laghman survivor site. Moreover, the weather made it likely that the crews would have to “scud-run” under the low ceilings and pick their way through the mountain ranges and valley beds to get to the survivors. General Barat’s advisor, Lt. Col. Gregory A. Roberts—a career Air Force Rescue helicopter pilot who commanded the advisory helicopter squadron at Kabul—recalled that at the airport the weather was “not too bad at mission notification time: overcast clouds at about 1,000 feet and good visibility at two-to-three miles, with light rain. But everyone knew the weather in the mountains surrounding Kabul would be treacherous.”⁹

In consultation with the advisors, General Barat selected the aircraft for the mission: the two new Mi-17V5s. Although the two new helicopters had not yet been modified for defensive weapons, the anticipated low-threat environment made that fact of little concern at the time. Neither Barat nor Major Hassan had completed his “V5 familiarization” with the advisors, but that shortcoming could be overcome by the advisors.¹⁰

Arriving at the flightline, the Afghans and advisors quickly planned their response to the call for rescue. General Barat selected his advisor, Roberts, to fly with him in the lead aircraft; Roberts, in turn, selected Lt. Col. Bernard M. Willi, another career-long Rescue veteran and the USAF advisory group’s deputy commander at Kabul, as the pilot of the second helicopter. Roberts, as aircraft commander, and Barat, as copilot, would fly Mi-17V5 #705; Colonel Willi, with Hassan as his copilot, would fly tail number 702. As no Afghans had yet been trained to operate the new internal rescue hoist, U.S. Air Force MSgt. Kevin R. Fife volunteered as the hoist operator. Roberts assigned him to Willi’s and Hassan’s aircraft which made 702 “the dedicated hoist helicopter, if that was required.” Roberts and Willi conducted a “cursory flightline pre-mission briefing” including basic instructions for the Afghans on the major differences between the new V5 helicopters and the older Mi-17s. The American advisors reviewed the weather, crew members’ responsibili-



Roberts and Willi briefing the mission five minutes prior to engine start. Brig. Gen. Barat in dark uniform is facing camera. An Afghan face on an Afghan mission, supported by USAF air advisors.

ties, and discussed the basics of the USAF's Combat Search and Rescue (CSAR) checklists, including basic formation communications procedures and the survivors' locations relative to the known threats. Meanwhile, everything the advisors said had to be translated by the Afghan interpreter-translators (ITs) from English to Dari to ensure effective communications.¹¹

Several others joined the helicopter crews. On his own initiative, General Barat requested two Afghan public affairs photographers to fly along and record any rescues, an idea the American advisors considered an astute counterinsurgency measure. Additionally, Roberts had contacted the 438th wing's flight surgeon, Lt. Col. (Dr.) Jimmy L. Barrow for medical support. "Doc" Barrow arrived just in time to jump into Willi's aircraft as it began taxiing for immediate departure. The lead aircraft was already on its takeoff climb; Barat had received more calls on his cell phone for the rescuers to hurry.¹²

As Afghan Rescue 705 Flight departed Kabul the weather immediately closed in around the for-

mation. Just five miles east of the capital, the crews nearly turned around because they could barely see the ground below them or the mountains around them as fog billowed down the two-thousand foot eastern mountains. Instead, Roberts climbed above the thicker part of the cloud bank and widened the flight's lateral spacing from the nearest terrain. In aircraft 705, Roberts flew as Barat navigated the familiar valley through which ran the ancient Kabul-Jalalabad Road. In the second aircraft, Willi tightened the formation to better maintain visual contact with lead. Descending under the lower clouds into a series of small draws leading to the Kabul River, the clouds were close enough to the ground so as to afford only one passage to the east—the Tangi Abresham, or "Gorge of Silk"—its mouth marked by the Surobi Dam in far eastern Kabul Province. In keeping with its history from the nineteenth century when local fighters engaged the British, and in the 1980s the Soviets, there had been very recent insurgent activity in the chasm. Only four weeks earlier, General Barat had dispatched two Afghan Air Force Mi-35 helicopters to the strategic gorge where the helicopters located and killed several insurgents battling Afghan National Police forces. Two weeks after Afghan Rescue 705 Flight's mission, a combined Afghan Air Force-Afghan National Army operation targeted the home area of the same group of insurgents near the western mouth of the Tangi Abresham. While the visibility improved to a couple of miles in the area, the cloud ceiling remained low, perhaps one-third of the way down the mountains from their peaks. The bottom of the gorge was full of rushing water and a lone cliff-side road. Roberts led the formation directly above its middle, as if "flying through a tunnel with no place to turn around and no way to respond to an enemy engagement." Despite those concerns, the two helicopters passed through the gorge uneventfully. At a glance it was clear that the area east of the mountains in Nangarhar had received more

The flooded island in Konar. Note the stoic figure in khaki in the center of the photo. He was seen throughout the day directing the survivors - which males could proceed and which could not and hitting women to wear their head and face coverings. He was specifically reported to the combined crews as someone to avoid.





Southern Laghman Province looking south, flooded on the first day.

**THEY
SELECTED A
SMALL FIELD
AT A
VILLAGE
SEVERAL
MILES AWAY
FROM THE
KABUL
RIVER'S
NORTHERN
BANK**

rain than to the west near Kabul and that the flooding was severe. The broad river valley was a disaster area. Unknown to the crews at the time, the scene they were witnessing was caused by the same floodwaters which several days later struck Pakistan, killing nearly 1,700 people. It was to be Pakistan's worst recorded flood.¹³

Quickly, the two rescue helicopters went to work making the first pickups from the swollen Kabul River where the Laghman River joined from the north. The flooding had completely washed out the land area in the river basins. The water was well over its banks and extended for more than one-quarter mile on both sides, in some places much farther. A number of local farmers and nomadic herds-men who worked in the lowland area along the river had become stranded on tiny islands. After spotting the first people waving for help, Willi cleared the idea with his flight lead that he would demonstrate the first approach and landing. In a steady rain and with visibility at about two miles, Willi and Hassan, in tail number 702, made the first rescues of the day by landing on one of the miniscule islands. Next, the two crews needed to decide on a suitable drop-off location for those they rescued. Conferring on the radio among themselves in both English and Dari and also with the onboard survivors about a suitable drop-off location, they selected a small field at a village several miles away from the Kabul River's northern bank. For the next forty-five minutes the formation searched for and rescued thirty-eight people from the overflowing Kabul River. Willi and Hassan made three trips and rescued thirty; Roberts and Barat picked up eight on a single trip.¹⁴

Convinced that all survivors in the area had been picked up and anticipating the possibility of additional rescue requests from downriver, the formation departed for Jalalabad. Unable to penetrate a fog bank near the airport, the flight of Mi-17s doubled back and landed at Forward Operating Base (FOB) Gamberi west of the city. General Barat soon received confirmation via cell phone that the fog had drifted away, and the crews proceeded into Jalalabad. There they refueled and discussed the

situation with the AAF's Jalalabad liaison officer, Colonel Janghir. Shortly thereafter, the Governor of Nangarhar Province and Jalalabad's mayor requested Afghan Ministry of Defense assistance for flood victims immediately northeast of the city.¹⁵

Roberts led the formation just north of town in a renewed search for flood victims. In the back of his mind was the fact that only four weeks earlier his Afghan Air Force flight engineer had been wounded while sitting next to him in-flight by small arms fire not far away. The search area was the confluence of the Kabul River which flowed eastward and the Kunar River whose waters traveled from north to south. The weather remained rainy with low over-casts and fog throughout the afternoon, yielding visibilities no greater than two miles, often less than one. After a quick briefing via the aircraft radios, Afghan Rescue 705 Flight again split the search and rescue scene between them and went to work. Colonel Willi demonstrated a precision approach and hover over a confined area to rescue an imperiled family. Apparently having difficulty seeing through the rain, Barat gave Roberts the controls as the crew chief pointed out a sizeable crowd trapped in their homes and surrounded by rushing waters except for small, low berms and a field between several earthen houses. Colonel Roberts demonstrated another approach and landing among the palms and earthen berms to a washed-out field and picked up thirty of those stranded, promising through the IT that they would be right back for the remaining twenty-two.¹⁶

Throughout the afternoon each of the two aircraft searched a small sector and recovered any obviously distressed residents. The local mayor and several AAF members from the detachment at nearby Jalalabad met the aircraft at the drop-off location on the north edge of town—a small, empty fairground safe from the flooding. As the number of bystanders and rescued flood victims increased, the legitimacy of the Afghan Government in Kabul as well as the local governing authorities also increased. Each time an Afghan helicopter with the AAF's roundel on the fuselage appeared on the scene, and each time additional Afghan men, women, and children were delivered to relative safety, meant an increase in government legitimacy in the eyes of the populace of Nangarhar Province. News crews gathered, and they even interviewed General Barat who spoke briefly from the aircraft. Moreover, a media crew rode aboard aircraft 705 for one trip back to the flooded area and helped in the rescue of some fifteen people. The humanitarian—and the legitimizing work—of Afghan Rescue 705 Flight would be broadly disseminated.¹⁷

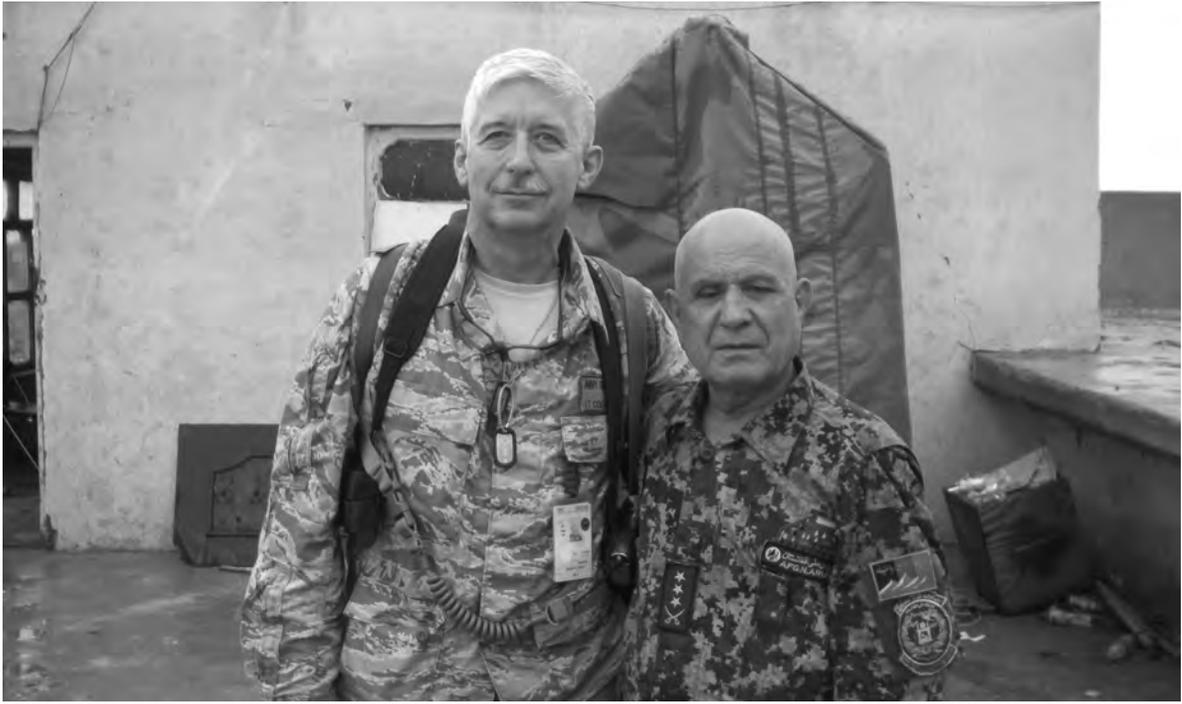
Although the weather remained difficult in the pouring rain and poor visibility, the advisors guided the Afghan crews into a routine. As each Mi-17 landed or hovered just above the ground near a group of flood victims, the AAF crew chief, public affairs personnel, Fife and/or Barrow would hop to the ground, and with the help of the interpreters carry or assist any children, women, elderly, and fathers with children over the flooded ground to the aircraft. Twice



(Above) Inside the Tangi Abreshem and below the clouds. This passage was the only way from Kabul to the east. Three miles to the left of the picture is an insurgent stronghold area which would be the scene of an combined ANA and AAF offensive only 12 days later. The rugged mountain valley (above) contrasts sharply with the flooded plains in and around Jalalabad (right and above right).



Lt. Col. (Doctor) Jimmy Barrow and Col. Jan Ghir (AAF) during second refueling at Jalalabad on first day.



(Below right) The first eight saves for the lead aircraft in southern Laghman, early the first day. Col. Wili had just completed his first eighteen saves.

(Below) Jalalabad flooded early on the first day. Note the visibility.



The pilot waits and watches the weather as the Afghan evacuees run towards the rescue helicopter.



MSgt Kevin Fife helping an Afghan and his son to the AAF rescue Mi-17 helicopter.

...[FIFE] POPPED UP FROM THE WATER, RETRIEVED THE KIDS AND SECURED THEM... TUCKED THEM UNDER HIS ARMS AND TRUDGED THROUGH THE RUSHING RIVER AND ROTOR WASH BACK TO THE HELICOPTER AND TO SAFETY



while on the ground the helicopters experienced a momentary receding, then re-cresting, of the rushing flood waters, no doubt increasing the flight crews' adrenalin. Roberts described the rescue scene as having "an Afghan face, discreetly supported by American advisors towards a resolution of a volatile Afghan disaster." The public affairs officers General Barat had requested were important contributors, too, as they documented the scene and often left their cameras on the aircraft with the ITs to keep them safe from the elements, while they jumped out and assisted with the survivors. After a second refueling of both aircraft at Jalalabad Airfield, the crews resumed their rescue work until sunset. The rain let up late in the afternoon and the cloud deck rose; however, it remained very hazy and humid. Although the prospect of additional rescues the next day was unforeseen at that point, the weather conditions and crew fatigue made Roberts' decision to remain overnight in the local area a prudent one.¹⁸

With no room available at FOB Fenty on Jalalabad Airfield, the U.S.-Afghan crews found refuge for the night with Colonel Janghir. After a quick dinner of lamb, beef, and chicken kebabs, fruit, and soda, the fourteen crewmembers retired at about 10:00 PM to the old Soviet control tower. Janghir had selected the tiny room because it had air conditioning. Though they didn't have the strength or time to think about it at the time, the crews of Afghan Rescue 705 Flight had already conducted one of the largest single-event search and rescue missions in history. Little did they know their rescue work had just begun.¹⁹

The crews were abruptly awakened at about 4:30 AM the following morning by Janghir, who had received word of more local villagers in need. The men quickly made their way to the aircraft in the fog and faint morning light. The formation was off the ground by 5:00 AM, heading back to the alluvial

fan area north of town. Immediately, they began rescuing the few remaining survivors, probably most of whom had experienced a troubling night given the recurring cresting of the floodwaters. Using the same basic method as on the previous afternoon, Roberts, Barat, and crew picked up fifty-nine survivors in three trips. In aircraft 702, Willi and Hassan made one trip and saved twelve, but it was on the ground during this pickup in which "the most memorable and gallant individual effort of the entire mission was put forth."²⁰ Colonel Willi described it in his after-action report:

Our rescues involved the recovery of a group of two men and two children (a ~10 year old boy and ~7 year old girl.) MSgt. Fife had de-planed and was assisting the people to board the aircraft. The two men were ahead of the children. As [Fife] was hurrying over to assist the children, they fell into the fast water and started being swept down the river. Completely disregarding his own safety and without a tether, [Fife] immediately jumped into the dangerous swift water and went after the children. I didn't see him come up at first and I knew that if he continued down the river, there was nothing I could do. . . . Miraculously [Fife] popped up from the water, retrieved the kids and secured them . . . tucked them under his arms and trudged through the rushing river and rotor wash back to the helicopter and to safety. He saved their lives.²¹

After the survivors had been evacuated north of Jalalabad, the Mi-17s flew two low passes through the area. Seeing no one else in need of rescue, the crews turned their attention to refueling and breakfast. Meanwhile, General Barat had received two cell phone calls, piquing Roberts' interest because most of their airborne communications had been directly from Colonel Janghir via radio.²²



The first rescue in Kunar. Even Lt Col Bahadur jumped out to help the family as their house crumbled below them. Photo snapped by Wahid Joya the interpreter with Col Bahadur's camera

After a quick breakfast at Fenty's dining facility—the Afghans ate elsewhere—Barat phoned Roberts. Through the IT, Barat asked the advisors to meet at the aircraft; they had a new mission, but he didn't reveal where. Taking off quickly, the crews found twelve people needing evacuation in knee deep water about a kilometer downstream. It was not yet 8:30 AM. The weather "remained horrible," Roberts recalled. The team began a final search of the area north and east of Jalalabad, as Roberts broached the subject of the next rescue mission with Barat.²³

As Afghan Rescue 705 Flight conducted a final search of the washed out area five miles from Jalalabad, the ceilings had lifted slightly but it was still raining hard. The crews estimated that the water was about a foot higher than on the previous afternoon and faster flowing, covering nearly every piece of land in the river bed. As the flight of two flew low over the washed out river basin, Barat quietly told Roberts through the IT, Wahid, that Kunar's governor had requested rescue for about 300 people. While listening, Roberts instinctively began calculating for the trip north: refueling options and fuel loads, pressure altitude for engine "power available" and "power required" figures, and weather. Checking the weather conditions with Jalalabad Tower, he noted the results on his kneeboard card: clouds at 500 feet (scattered), 3,000 feet (broken), and visibility two miles in fog, haze, with heavy rain.²⁴

Kunar—where 2,300 years earlier Alexander the Great had received a severe shoulder wound from the ancestors of the present-day insurgents—was known by the Afghans and Americans alike as "an insurgent hotbed." In 2010, the valley was one of the most dangerous in Afghanistan, and the air advisors daily reviewed the surface-to-air-fire activity there. Only a few weeks earlier, Colonel Willi's

aircraft had been fired on by a heavy machine gun in the area. Moreover, the two Mi-17 helicopters were completely unarmed. Although no rescue pilot wanted to use weapons in the midst of a humanitarian search and rescue situation, the mere presence of a gun pointing out the window helped dissuade potential attackers from shooting at the helicopter or approaching with a suicide vest while the aircraft was on the ground. General Barat as well as the American pilots understood that the Taliban and various insurgent factions were vying with each other and the legitimate Afghan government to control Kunar. The formation's destination was somewhere in the Kunar Valley bordering Pakistan's wild Northwest Frontier Area. Barat had not specified the exact location, if even he knew, but wherever the rescue helicopters might have occasion to land they would scarcely be able to defend themselves were they to be attacked. For Barat personally, there was an added danger. As a general officer in the air force of the legitimate Afghan government, if caught by the insurgents he would likely be executed on the spot.²⁵

Roberts was on the flight controls as they finished sweeping the river confluence for more survivors and concluded that their job near Jalalabad was done. He headed up the Kunar Valley, still very close to Jalalabad, knowing he needed to brief his wingman on the radio, yet they still didn't know specifically where they were going. As Roberts rearranged his formation with his wingman and long-time trusted search and rescue friend he informed him that Barat had concluded there were no more survivors and that they had received a follow-on request. As Roberts recalled, "Willi's response was memorable, and accurate: 'Let me guess, up Kunar?'"²⁶

Quickly, the formation discussed the request on the radio in both English and Dari. The advisors agreed with the Afghans on the single biggest issue: their helicopters were completely unarmed. Additionally, from the advisors' perspective, there would be pressure on the two instructor pilots not only to fly any demanding mission profiles—such as precise hovering for prolonged periods during a survivor pick up—but to help the Afghan pilots fulfill their roles in the cockpit given their unfamiliarity with search and rescue procedures and the new V5 model. As they climbed to the base of the clouds at about 500-800 feet above the ground, Roberts stumbled on what he thought to be the best approach: "Jeep . . . I'll lead you guys up there, if you're all volunteers—let me know in the next five minutes while we still have time to leave someone at J-Bad [Jalalabad]." "The radio was quiet for about thirty seconds and then Jeep's ever-optimistic voice came in loud and clear: 'Boomer, we're all in.'" With a quick check on the fuel status of both aircraft, Afghan Rescue 705 Flight accelerated up the Kunar Valley at the base of the clouds to minimize the chance of drawing surface-to-air fire.²⁷

Mohammed Barat's bravery was unquestioned: he had earned two awards for valor as a helicopter pilot, one each under two different Afghan regimes.

MOHAMMED BARAT'S BRAVERY WAS UNQUESTIONED: HE HAD EARNED TWO AWARDS FOR VALOR AS A HELICOPTER PILOT

Mid-day Konar Province island south of Assadabad. The river was just about to crest one last time.



MEANWHILE, DOC BARROW WAS BUSY CHECKING THE SURVIVORS' INJURIES. THROUGHOUT THE DAY HE EXAMINED NO FEWER THAN 400 SURVIVORS

During the Soviet-Afghan war years, two of his copilots were shot beside him in his helicopter. On some especially dangerous missions he had flown without a copilot. A warrior at heart with a winsome smile and quick wit, since 2009 General Barat had led the AAF's Kabul Air Wing. Was it wise to risk losing not only an Afghan general officer but two of the highest-ranking American rotary-wing advisors in the country and their crews as well? If a helicopter was shot down or even became stuck in the mud during a pickup attempt, the crewmembers had no way to get out of the situation and they were entirely without backup. After several minutes in which Roberts and Barat discussed such concerns, finally Barat declared, "No, we go. . . . [If] you and Willi go, we go." Roberts nodded and passed him the controls: "Fly us there."²⁸

About ten miles south of Assadabad, the capital of Kunar Province, Barat abruptly began a descent and announced that the formation was in the right area. The river valley was much more channelized, but there was a large inhabited island in the riverbed. It was clear that the floodwaters had completely swept over the island at least once earlier in the day or the previous night. There was also no doubt that Afghan Rescue 705 Flight was in "bad-guy land," as Roberts expressed it. The road within view led directly into Pakistan's Northwest Frontier Province just a few miles away.²⁹

The formation descended and began searching the area for survivors while simultaneously watching out for threats. The advisors introduced the Afghan crewmembers to helicopter search-and-rescue procedures with which they were mostly unfamiliar. The visibility had improved somewhat and the cloud decks were occasionally over the mountain tops to the east, but the rain still fell intermittently. The pilots noted the locations of several groups of survivors and assigned separate areas of responsibility for each helicopter.³⁰

As soon as the pilots had gained their bearings, the formation committed itself to the task at hand.

Willi chose a group of people waving on the large island and had begun his approach just as the lead crew spotted on the aircraft's left side a family waving frantically; a large chunk of their earthen house had just fallen into the rushing water. Quickly realizing that Willi had his hands full with the first group, the career-long and accomplished rescue pilot shed the last vestiges of threat-induced conservatism and entered "an aggressive left-turning, energy-bleeding emergency approach" so as to land in the water downstream from the family and perpendicular to the flow. That way his crew could intercept any family member who might be swept into the water. With rotor blades popping in the hot, humid air, Roberts rolled out on a fifty-meter final approach as the helicopter transitioned through its normal approach shudder. He plunged aircraft 705 into the water, "praying that it was no deeper than a couple of feet." The helicopter landed in about three feet of water, at which point Barat began directing the Afghan crew chief to deplane and help the family of six aboard. This sequence set the tone for both aircraft for the next five or six hours. Upon landing near a group of flood victims, "all hands"—including flight engineer, crew chief, interpreter, photographer, and flight surgeon—would spring into action to assist the survivors aboard.³¹

After filling up their cabins with the first groups of survivors, the flight decided on a series of gently sloping fields east of the town of Dona as a suitable drop-off location. Meanwhile, Doc Barrow was busy checking the survivors' injuries. Throughout the day he examined no fewer than 400 survivors for life-threatening injuries. The security situation, however, also continued to deeply concern the crews. The survivors' nervousness was unmistakable; they appeared wary of insurgents or their sympathizers nearby. But without a better option, Roberts and Willi left the initial group of more than thirty survivors on the hills near Dona. By the end of the day, 1,700 others would join them.³²

During the next ninety minutes, a couple of



Roberts with his first 8 in safe and taking off. Photo taken from Willi's aircraft which is landing to pickup rescue numbers 16-25.

ambulances and some townspeople from Dona appeared on the hills followed by a company-sized element of Afghan National Police in pickup trucks and Humvees. The police carried AK-47 weapons and obviously planned to form a perimeter and secure the area. About every third policeman on the roughly two hundred meter diameter perimeter surrounding the landing site held a rocket-propelled grenade/launcher set (RPG-7). About every fourth vehicle had a .50-caliber machine gun. With the help of the air advisors, the legitimate government of Afghanistan—both its air force and national police—were gradually improving the security of the situation even as survivors were still *in extremis* only a few miles away.³³

While the lead aircraft refueled quickly about six miles away at Assadabad, some of the survivors had begun informing the police at Dona of troublesome fellow Afghans who remained on the island. Whether some actually were insurgents, their sympathizers, or simply antagonistic toward the Afghan government in Kabul and/or the local province was unknown. Regardless, openly carrying weapons and acting in a generally unhelpful manner, they were a concern to those Afghans who supported the legitimate government. After “hot refueling” at FOB Wright, the lead aircraft rejoined the effort just before aircraft 702 departed for fuel. The shuttling of survivors continued for another two hours as the aircraft searched for those most in need of help—many of them waving frantically as the helicopters passed back and forth between the flooded island and Dona’s fields.³⁴

Soon after the first (of two) refuelings for both helicopters, the Taliban made their presence known. By that point, a number of survivors had warned the crews of “shady characters” on the island, at least some of whom were Taliban. When making pickups, the crews could see them badgering, even striking, survivors who lacked the Taliban’s required headgear, and they appeared to be attempting to control the situation on the ground

even as desperate families made their way to the Mi-17s. Still, the crews were shocked when they noticed to the northeast of town a large, white Taliban flag that appeared over several odd-looking buildings. That flag meant only one thing: the insurgents wanted the American and Afghan airmen to know that they were there, eye-to-eye with them. The police at the drop-off site, who could also see the Taliban banner, became nervous and expressed their concerns to the crews as the survivors arrived just outside Dona. Passenger loads were bulging. Roberts and Barat on aircraft 705 averaged thirty-nine passengers throughout the day with a high of fifty-seven. Willi and Hassan in aircraft 702 had a high of sixty-four passengers on one flight!³⁵

For the second time, Roberts and Barat cycled northeast to the FOB in Assadabad for fuel. This time they shut down the aircraft for a quick lunch. When they returned, they found Willi and Hassan engaged in what Roberts described as “the most incredible hover I ever saw in my life,” as aircraft 702’s crew worked to rescue about fifteen individuals, including elderly people who were stranded on what remained of a walking bridge abutment whose bridge had washed away. The rescuers had observed the “bridge” survivors earlier, but, given the hazardous nature of the hover work required to get to them, they had hoped against hope that the stranded might find some way to safety on their own. As it was, the bridge survivors’ rescue was the most challenging of the day. Within an hour the rescue crews started to return to Dona only partially filled. Shortly thereafter the two helicopters saved from a site several miles to the south eight and twelve people, respectively—small numbers by the day’s standards—and delivered them to the Afghan National Police drop-off site. Those were the last to be rescued on the 29th. After landing at the by now well-secured site and bidding farewell to the police and survivors, the flight departed for Jalalabad to refuel, then on to Kabul. Their two-day rescue total was an astounding 2,080—some 1,700 on the second day—who were saved from the dangerous waters. Within the first few days of August, as the raging water continued downstream causing what *BBC News* termed the “worst floods in Pakistan’s history,” nearly the same number perished in Pakistan as were rescued by Afghan Rescue 705 Flight in Kunar Province on July 29.³⁶

Tragically, eight months after the unprecedented rescue of some 2,000 Afghans in distress in Nangarhar and Kunar, in March 2011, two U.S./coalition airstrikes resulted in accidental civilian deaths in Kunar. In the first instance, nine Afghan boys, ages nine to fifteen, collecting firewood were struck; in the second, two children watering their family’s fields. Not only did the highly respected Commanding General of U.S. Forces-Afghanistan, General David H. Petraeus, personally apologize to the President of Afghanistan for the first of the two accidental killings, the two mishaps tended to bring the legitimacy of the Kabul government and, by extension, the assistance of its U.S./coalition partners into question in the eyes of

SOME OF THE SURVIVORS HAD BEGUN INFORMING THE POLICE AT DONA OF TROUBLE-SOME FELLOW AFGHANS

Lt. Col. Greg Roberts received a Distinguished Flying Cross for his rescue efforts from Gen. Edward A. Rice, Jr., Commander, Air Education and Training Command on Nov. 10, 2011.



some Afghans, if not others as well. In stark contrast, U.S. Air Force historian Daniel L. Haulman has written that humanitarian “airlifts have saved the lives of thousands of people . . . abroad and have served as tools of U.S. diplomacy, demonstrating the versatility of air power not only as a weapon of war but also as an instrument of peace.” In the case of Afghan Rescue 705 Flight, “legitimacy” should be included. For instance, in March 2011 an American ISAF officer who was meeting with Kunar’s Provincial Governor Wahidi listened carefully as the governor recounted the rescue effort on his own

Barat flying through the Tangi Abreshem. Photo snapped by Roberts.



initiative, after noting a helicopter flying in the vicinity on what was a beautiful spring day. Later, U.S. Navy Commander Kyle W. Taylor paraphrased the governor who had recalled that during the previous summer’s floods the “Air Corps [helicopters] moved the people quite swiftly and really made an impact on the community . . . and it was the Afghan Air Corps [sic] that responded to the crisis.” As the 438 AEW Commander, Brig. Gen. David W. Allvin, stated for *Air Force Times*, when an Mi-17 or a C-27 “comes in and it’s got an Afghan tail flash, and the ones that get out are Afghans. . . . that’s enhancing the legitimacy of their own government.”³⁷

In 705 flight’s scenario, a dedicated team of Americans and Afghans worked together not only to pull off the largest single-event rescue mission conducted by two helicopters in U.S. Air Force history, they also enhanced the legitimacy of the government in Kabul as well as in the provincial capital of Assadabad in the insurgent-ridden province of Kunar. At times during the mission, although not under Taliban fire, the aircrews found themselves eye-to-eye with the enemy—an enemy that lacked the capability to rescue those it would rule. As suggested by the rescues, as well as by the accidental killings of Afghan civilians in Kunar Province in 2010 and early 2011, the question of whether the residents of Kunar and the other provinces in the critical and historically volatile region of northeastern Afghanistan choose to side *with* the Kabul government, or *against* it, may well depend, in the end, as much on life-saving airlift—including rescue—as on life-taking air strikes.³⁸ ■

1. Michael R. Boera, "The Combined Air Power Transition Force: Building Airpower for Afghanistan," *Air & Space Power Journal*, Spring 2010, at <http://www.airpower.au.af.mil/airchronicles/apj/apj10/spr10/boera.html>.
2. Whether viewed as a purely humanitarian airlift, a search and rescue (SAR), or a combat search and rescue (CSAR) mission, the Afghan Rescue 705 Flight rescue event appears to have been the largest ever in terms of people saved with a two-ship helicopter force by the U.S. Air Force.
3. Historically, the Kuchi were nomadic sheep and goat herders in Afghanistan who typically spent the warm months in the shadows of the Hindu Kush in the north, moving south for the colder months; see Peter King, *Afghanistan, Cockpit in High Asia* (Geoffrey Bles: London, 1966), chap. 11. As of 2010, they were represented in the Afghan Parliament and the Afghan National Army, and they supported the Kabul-based Afghan government. The Afghan Constitution, Article 14, obliges the government to implement effective programs for "improving the economic, social and living conditions" of nomads (Kuchis) as well as adopting "necessary measures for housing and distribution of public estates to deserving citizens."
4. Forrest L. Marion, "The Destruction and Rebuilding of the Afghan Air Force, 1989-2009," *Air Power History* 57:2 (Sum 2010), pp. 22-31.
5. Boera, "Combined Air Power Transition Force;" Hist, 438 AEW, July 2010; Seth G. Jones, *In the Graveyard of Empires: America's War in Afghanistan* (W.W. Norton and Co.: New York and London, 2010 [2009]), pp. 183-92. By early 2011, the AAF possessed ten Mi-17V5s. At least one previous CAPTF commander (in 2009, Brig. Gen. Walter D. Givhan), held the same view as that attributed to Boera in the above paragraph; personal observations, Col. Forrest L. Marion, USAFR, 438 AEW historian, Mar.-Jun. 2009; Marion, "Destruction and Rebuilding," pg. 30.
6. Disc, Lt. Col. Michael Krizanec, Croatian Air Force, with the authors, Kabul, Afghanistan, Apr. 4, 2011; Disc, Lt. Col. Robert A. Strasser, USAF, with the authors, Kabul, Afghanistan, Apr. 3, 2011; Gregory A. Roberts, unpublished ms., "Flight Lead Narrative for Afghan Rescue 705 Flight Operations, 28-29 July 2010," Aug. 6, 2010, revised Jan., Mar. 2011.
7. *BBC News*, "Flood deaths pass 400 in Pakistan and Afghanistan," Jul. 31, 2010, at <http://www.bbc.co.uk/news/world-south-asia-10815265>.
8. Disc, Brig. Gen. Mohammed Barat, Afghan Air Force, with the authors, Kabul, Afghanistan, Apr. 6, 2011; Roberts, "Flight Lead Narrative."
9. *Ibid.*
10. *Ibid.*
11. Disc, Khwaja Wahidudin Joya, Interpreter-Translator, employee with Mission Essential Personnel, Inc., with the authors, Kabul, Afghanistan, Apr. 6, 2011 [hereinafter referred to as "Wahid"].
12. Barat disc; Roberts, "Flight Lead Narrative."
13. "Pakistan floods 'hit 14m people,'" *BBC News*, Aug. 6, 2010, at <http://www.bbc.co.uk/news/world-south-asia-10896849>; Khwaja Baseer Ahmad, *Pajhwok Afghan News*, Aug. 10, 2010, "Soldiers among 24 killed in Laghman offensive," at <http://www.pajhwok.com/en/2010/08/10/soldiers-among-24-killed-laghman-offensive>.
14. Barat disc; Roberts, "Flight Lead Narrative."
15. Barat disc. Colonel Janghir, like many Afghans, used only one name.
16. Roberts, "Flight Lead Narrative."
17. CNN, Josh Levs, "Daring Rescue Saves 2000," Aug. 4, 2010, at <http://www.CNN.com/video/#/world/2010/08/03/nr.daring.rescue.saves.2000.cnn?ref=allsearch>.
18. Roberts, "Flight Lead Narrative."
19. Roberts, "Flight Lead Narrative;" Daniel L. Haulman, *The United States Air Force and Humanitarian Airlift Operations, 1947-1994* (Air Force History and Museums Program: Washington, 1998), pg. 93. The closest comparison to this mission of a large-scale, humanitarian search and rescue mission was probably the *Prinsendam* rescue, Oct. 4-5, 1980, in which more than 500 people were rescued in two days. After the first day, Afghan Rescue 705 Flight had rescued just over 300 people.
20. Roberts, "Flight Lead Narrative."
21. Bernard Willi, unpublished ms., "After-Action Report," Aug. 3, 2010.
22. *Ibid.*; Barat disc.; Roberts, "Flight Lead Narrative."
23. Barat disc.; Roberts, "Flight Lead Narrative."
24. *Ibid.*; Wahid disc.
25. Disc, TSgt. Robert D. Black and 1S3 Otto B. McNaughton, both of 438 AEW Intelligence Directorate, with the authors, Kabul, Afghanistan, Apr. 6, 2011; email, Roberts to Marion, Mar. 31, 2011.
26. Roberts, "Flight Lead Narrative."
27. *Ibid.*
28. Marion, "The Destruction and Rebuilding of the Afghan Air Force," pp. 25-26; Roberts, "Flight Lead Narrative"; Disc, Brig. Gen. Mohammed Barat, Afghan Air Force, with Col. Forrest L. Marion, USAFR, Kabul, Afghanistan, Apr. 2009.
29. Roberts, "Flight Lead Narrative"; Black and McNaughton disc.
30. Roberts, "Flight Lead Narrative."
31. *Ibid.*
32. *Ibid.*
33. Wahid disc.
34. *Ibid.*; Roberts, "Flight Lead Narrative." Given the threat, standard practice was for the helicopters to remain close together for mutual support. During their two refuelings (each), however, they were about six miles, and several minutes' flight time, apart from one another.
35. Roberts, "Flight Lead Narrative." Some passengers were small children, but, regardless, the numbers of persons airlifted by the Mi-17s per load was extremely high.
36. Roberts, "Flight Lead Narrative"; "Pakistan floods 'hit 14m people.'"
37. Haulman, *Humanitarian Airlift Operations*, preface, pg. vii; "Petraeus Apologizes After NATO Airstrike Kills 9 Afghan Children," *Outside the Beltway*, Mar. 3, 2011, at <http://www.outsidethebeltway.com/petraeus-apologizes-after-nato-airstrike-kills-9-afghan-children/>; "NATO air strike killed two Afghan children in east—officials," *Reuters*, Mar. 15, 2011, at au.news.yahoo.com/thewest/a/-/world/9016635/nato-air-strike-killed-two-afghan-children-in-east-officials/; email, CDR. Kyle W. "Chilly" Taylor to the authors, Apr. 2, 2011; Jill Laster, "From the ground up," *Air Force Times*, Apr. 25, 2011, pg. 25. Ironically, a few weeks earlier, in February 2011, Governor Wahidi had dealt with the aftermath of a US/coalition air strike in which civilians were killed, including women and young boys; see CNN Wire Staff, "Afghan governor: Women and children killed in military operation," Feb. 20, 2011, at <http://www.cnn.com/2011/WORLD/asiapcf/02/20/afghanistan.civilians.killed/?hpt=T2>. In another statement on legitimacy, Lt. Col. Frank D. Bryant of the 438 AEW expressed, "An air force . . . is the most visible military force that is for a country, it's not for a city . . . air power is easy to see, it's easy to recognize the advantages of it, especially when it's bringing things to the people"; disc, Bryant with Marion, Kabul, Afghanistan, Apr. 22, 2011. Tragically, Colonel Bryant and eight other warriors of the 438th Air Expeditionary Wing perished five days later in an attack at the Afghan Air Force base at Kabul International.
38. For the strategic nature of Kunar Province, see Matthew Rosenberg and Julian E. Barnes, "Al Qaeda Makes Afghan Comeback," *Wall Street Journal*, Apr. 6, 2011, at <http://online.wsj.com/article/SB10001424052748704355304576215762431072584.html>.



The Battle of Britain, in 1940
and
“Big Week,” in 1944:
A Comparative Perspective





Arnold D. Harvey

(Overleaf) B-17s travel east as Heinkel He 111s travel west, each on their assigned mission of destruction.

(Right) Messerschmitt Bf 109, fighter mainstay of the Luftwaffe in World War II.

A fairly standard summary of the Battle of Britain might be that the German *Luftwaffe*, attacking Britain's air defenses in what it thought was overwhelming strength, was misled by their overclaiming successes in combat over enemy territory. The German air force believed it was shooting down nearly five Royal Air Force (RAF) aircraft for every three it had lost itself. Thus, the Germans were dismayed to find that RAF Fighter Command was fighting back in growing numbers and larger formations. Eventually, the Germans were forced to conclude that the British had been much stronger than originally estimated.¹ The various tactical disadvantages under which the *Luftwaffe* operated—British radar coverage of the French coast, the short range of the Messerschmitt Bf 109, Göring's badly timed alterations of the focus of attack, and his staff's poor use of available intelligence—are often rehearsed. The relative weakness of the *Luftwaffe* attacks, perhaps the most important cause of its failure to overwhelm British opposition, has never been discussed. Comparison with the much more concentrated air superiority campaign fought by the U.S. Eighth and Fifteenth Air Forces in late February 1944, makes it clear however that the *Luftwaffe* failed because it had neglected the opportunity to capitalize on its numerical advantage.

Luftflotte 2 and *Luftflotte 3*, the two major German formations principally involved in the Battle of Britain, were marginally weaker in July 1940 than they had been at the outset of the campaign in the West in May 1940.² More than 500 bombers had been lost in that campaign and replacement, of both of aircrew and aircraft, was falling behind the rates being achieved by the RAF.³ *Gruppe I* of *Kampfgeschwader 1*, for example, had thirty-two serviceable machines out of thirty-eight on September 1, 1939, twenty-five out of thirty-four on May 10, 1940 and only twenty-three out of twenty-seven on August 10, 1940, despite having experienced no combat losses for several weeks.⁴ And though there were two *Luftflotten* not deployed in the battle of Britain (1 and 4) - they were essentially headquarters establishments, with no combat units that could be transferred to the English Channel zone. The only major combat formations not involved in the battle during the crucial weeks were two *Gruppen* of *Jagdgeschwader 77* stationed in Norway and Denmark, and near Berlin. *Kampfgeschwader 77* had been withdrawn from the front line in mid-July in order to replace its Dornier Do 17Zs with newer Junkers Ju 88s. Its return to action in mid-September may have been premature, since it lost no fewer than thirty aircraft in combat in ten days, September 18-27, nearly one third of its strength.⁵



Nevertheless, with nearly 900 serviceable twin-engine bombers, more than 300 Junkers Ju 87 dive-bombers, seven hundred Messerschmitt Bf 109, single-engine fighters, and some 200 Messerschmitt Bf 110 twin-engine fighters, *Luftflotten 2* and *3* looked as if they should have been able to swamp the twenty-six Spitfire and Hurricane squadrons in Fighter Command's No. 11 Group and the adjacent sectors of Nos. 10 and 12 Group—about 500 aircraft—covering south-eastern England and London. Though the fighter squadrons in southern England were often engaged on a daily basis, and periodically replaced or, latterly, replenished from squadrons based outside the battle zone, the German *Luftflotten* never deployed their full strength at any one time. German staff papers show that on August 15, 1940, the day on which the *Luftwaffe* flew the greatest number of missions against England. *Luftflotten 2* and *3* launched 1,149 fighter and 801 bomber sorties; other figures indicate 1,270 fighter and 520 bomber sorties.⁶ The figures for fighter sorties are plausible—some units made two sorties that day—but comparison of British and German records suggested that only about 300 bombers from *Luftflotten 2* and *3* crossed the coast: the attacks by *Luftflotte 5*'s *Kampfgeschwader 26* and *30* from Norway were in fact the heaviest attempted raids of the day.⁷ On August 31, there were 1,301 German fighter sorties, with some units once more flying two sorties, but only 150 bomber sorties.⁸ The heaviest bombing raid of the daylight battle (and the one that proportionately caused the most damage) was on September 7, when 348 bombers attacked London's docklands, with an escort of 617 fighters.⁹ Tactics were constantly varied. On August 18, the 9th *Staffel* of the KG 76 carried out a daring low-level attack on Kenley aerodrome, without any escort at all but the rest of the *Kampfgeschwader*, along with KG 1—just over 100 bombers—had an escort of 410 fighters, whereas later that afternoon, 100 bombers of

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THE OVER-ALL NUMBERS INVOLVED IN THE BATTLE OF BRITAIN AND IN “BIG WEEK” WERE NOT VERY DIFFERENT

KG 2 and KG 53 attacked with an escort of only 120 fighters. On average, throughout the crucial phase of the battle, there seem to have been about three escorting fighters sortying for every bomber.

This is in striking contrast to the arrangements during “Big Week,” February 20-25, 1944. During five days of attacks on German aircraft factories, the American Eighth Air Force flew 3,300 bomber and 2,548 fighter escort sorties, supplemented by 712 escort sorties by the Ninth Air Force. In the same period, the Fifteenth Air Force, based in Italy, flew just over 500 four-engine bomber sorties over Germany and 413 fighter escort sorties.¹⁰ The two very different proportions of bombers-to-fighters had in one respect a surprisingly similar result. In both cases it turned out that bombers were at least three times more likely to be shot down than fighters.¹¹ This was also the experience of *Fliegerkorps* II when operating against Malta in 1942: more or less equal numbers of bombers and fighters in the attacking formations, but three times more bombers lost than fighters.¹²

The overall numbers involved in the Battle of Britain and in “Big Week” were not very different, though of course the four-engine Boeing B-17s featured in “Big Week” were larger than the German twin-engine bombers of four years earlier (even if not carrying much heavier bomb loads). The first raid of “Big Week,” for example, involved 941 bombers and 832 fighters, numbers that *Luftflotten* 2 and 3 should have been able to match in 1940. The Germans could put up against them approximately the same number of fighters as were available to No. 11 Group and adjacent sectors in Nos. 10 and 12 Group three and a half years earlier. German losses during “Big Week” were 262 fighters shot down and

about 250 aircrew (including rear-gunners in twin-engine fighters) killed or injured.¹³ The Americans, while losing 226 heavy bombers (with more than 2,000 aircrew killed or taken prisoner) lost only twenty-eight fighters, so that fighter-to-fighter the Americans came out well ahead, whereas in the Battle of Britain RAF and *Luftwaffe* fighter losses ran approximately equal, roughly 900 to 800. It subsequently transpired that the damage to German factories in “Big Week” caused only a brief intermission in rising output, and the loss of trained fighter pilots, especially experienced unit commanders, turned out to be more important in the long term than the damage done by the bombing.¹⁴ Because of the large crews of their four-engine bombers the Americans lost almost as many aircrew in six days as the Germans lost in more than three months in the Battle of Britain, but replacements were arriving in a constant stream from across the Atlantic, and since the object of both campaigns was to weaken the enemy’s air defenses, “Big Week” can be counted as a significant — though costly—victory, not a defeat as the Battle of Britain had been for Germany.

Another feature of “Big Week” was the degree to which the Americans kept up the pressure. On one day out of six, February 23, 1944, bad weather prevented operations by the Eighth Air Force, although the Fifteenth Air Force sent out 102 bombers from Italy, but for 741 Eighth Air Force bomber crews dispatched on February 25, it was their fifth nine-hour mission in six days. The six days of most intense action in the battle of Britain were August 13-18, 1940. Though the distances to be flown were less than a third flown by the American bombers in “Big Week,” only two German bomber units operated on

The Republic P-47 did not have a range long enough to accompany the B-17s all the way to their German targets.



WHILE BOMBERS WERE AT A DISADVANTAGE IN COMBAT WITH DEFENDING FIGHTERS, THE DEFENDING FIGHTERS WERE AT A DISADVANTAGE WITH REGARD TO THE BOMBERS' FIGHTER ESCORT

even four of the six days. Again there was a one-day intermission, August 17: a Junkers Ju 88 on a night intruder mission was shot into the sea off Spurn Head and a Heinkel He 111 on an internal flight was destroyed by *friendly fire* when it strayed too close to a German flak position, but there were no RAF combat losses.¹⁵ The weather however was fine so there seems to have been no good reason why the Germans gave the RAF a holiday. On the other five days, 255 German aircraft were shot down compared to 103 RAF fighters. The attackers' losses were probably not much different from those for "Big Week," but the difference in the number of bombers involved meant that whereas the Eighth Air Force lost only 4 percent of its bombers in the five days of action, more than half of the fifteen bomber *Geschwader* operating August 13-18, 1940 lost a demoralizing 10 percent or more of their crews; the two *Gruppen*-strong *Sturzkampfgeschwader* 2 lost something like 25 percent.¹⁶ During "Big Week" moreover, the Americans dropped 10,000 tons of bombs on German aircraft factories, or at least in their vicinity, whereas during the period 13-18 August 1940, the *Luftwaffe* probably dropped only a fifth of that amount, in many instances jettisoning bomb loads short of target in order to escape from British fighters. In both cases available German aircraft were declining in numbers, while the enemy was increasing in strength.

One obvious reason for the *Luftwaffe* sending more fighters than bombers across the Channel in the Battle of Britain was the belief that there should be at least two, if not three, escorting fighters for every bomber.¹⁷ Whereas the American bomber pilots were trained to fly in defensive boxes that occupied as much sky vertically as horizontally,

the German bombers not only operated at lower altitudes but also flew in formations that spread out mainly sideways, thereby taking up more airspace for their escorts to cover. They also had less effective defensive armament than the American bombers. While the Americans were to learn, as the Germans and British had learned that no bomber could defend itself with guaranteed success against determined fighter attacks, fire from bombers' gun positions was never an entirely negligible factor. During the Schweinfurt-Regensburg mission of August 17, 1943, 376 Boeing B-17s penetrated deep into air space without fighter escort (accompanying Republic P-47s, being shorter-ranged had to turn back near the German border) and claimed to have shot down 288 *Luftwaffe* fighters, with a further eighty-one probably downed. In fact, they had shot down twenty-one compared to fifty-one B-17s shot down by German fighters.¹⁸ It was, therefore, untrue that increasing the number of bombers had no effect other than simply increasing the number of potential targets for the defending fighters: bombers could defend themselves, even if only on unfavorable terms. Moreover, while bombers were at a disadvantage in combat with defending fighters, the defending fighters were at a disadvantage with regard to the bombers' fighter escort. In the Schweinfurt-Regensburg raid, for example, three Eighth Air Force P-47 fighters and four RAF fighters were lost in the initial combats before having to turn back at the German frontier, along with four B-17 bombers (plus one downed by the flak); but twenty-one German fighters were shot down in this phase of the action.¹⁹ In the Battle of Britain, where losses of fighters were approximately equal on both sides, the RAF were on occasion guided by ground

The Messerschmitt Bf 109 was the backbone of the German fighter forces.

LT. GEN. JAMES DOOLITTLE... HAD INFORMED HIS SUBORDINATES THAT THE MISSION OF THE FIGHTERS WAS NOT TO BRING THE BOMBERS BACK SAFELY... BUT SIMPLY TO SHOOT DOWN GERMANS



controllers to meet formations that consisted only of Messerschmitt Bf 109s fighters—despite the complaints of German fighter pilots that they were being tied down by being required to provide close escort for their bombers. As late as September 15, half the German fighter units operating over southeastern England were engaged in sweeps, or *Freijagd* with no accompanying bombers—and in the later stages of the battle No. 12 Group's Duxford Wing employed its Spitfires to give protection from German fighters to its slower Hurricanes while the latter engaged German bombers. Some pilots, like Richard Hillary, seem only ever to have been in action against Bf 109s.²⁰ Nevertheless it is broadly true that interceptions were directed primarily against the bomber component of an enemy attack. This gave a tactical advantage to the escorting fighters, who in any case would often benefit from being at a higher altitude than either the bombers or the enemy fighters that had just taken off to attack them. Before “Big Week,” Lt. Gen. James Doolittle, the Eighth Air Force’s commander, had informed his subordinates that the mission of the fighters was not to bring the bombers back safely, as had been official U. S. Army Air Forces doctrine since before Pearl Harbor, but simply to shoot down Germans.²¹ In a sense bombers served accompanying fighters as bait: and the more bait there was, the more the defending fighters exposed themselves to counter-attacks by fighter escorts. It also seems that the more bombers there were, the more frustrated, and eventually demoralized, the defending fighter pilots felt if the escorts made it impossible to get at them.²²

When the *Luftwaffe*’s failure to use its full bomber strength in the Battle of Britain was

remarked on after the war, two of its senior officers, *Generalfeldmarschall* Erhard Milch and *General-leutenant* Adolf Galland, offered the explanation that the main object of German attacks in 1940 had been to draw the RAF into fighter-versus-fighter combat with a view to employing available bombers in greater numbers after British fighter defenses had been eliminated.²³ There is no record of this strategy having been spelled out or in any way discussed in 1940, and since Milch was State Secretary i.e. administrative head of the Air Ministry in Berlin and Galland only a *Gruppe* commander, their testimony is not authoritative. In fact, German fighter units were instructed on September 9, 1940, that their first priority was to protect German bombers, not to attack RAF fighters, the exact opposite of Doolittle’s tactics in February 1944.²⁴ A week later, Göring was talking glibly of continuing daylight raids on London “to wear down and decimate enemy fighters” (*zur Zermürbung und Dezimierung der feindlichen Jäger*) but this was little more than waffle. Since Milch is known to have attended this meeting it may have been the origin of his subsequent interpretation of the campaign.²⁵ By this stage, *Luftwaffe* commanders were beginning to realize that the battle had been effectively lost, and there were to be only two more large scale daylight attacks on London, resulting in the loss of 103 German aircraft for forty-eight British.

One consideration that influenced the *Luftwaffe*’s planning was uncertainty with regard to suitable targets. “Big Week” was part of a carefully planned long term program. It was hoped to show a clear result by the time of the projected invasion of northwest Europe, which was expected to be launched three months later, but the strategic

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bombing campaign was intended to continue after the invasion. In fact, 65 percent of the total weight of bombs dropped by the U. S. Eighth and Fifteenth Air Force and RAF Bomber Command were dropped after D-Day.²⁶ It was not appreciated until after the war that the damage caused by bombing to the German war economy may not have been commensurate with the human, material, and financial cost of carrying out the strategic bombing offensive. Though dismayed by the 19 percent losses in the Schweinfurt-Regensburg raid of August 17, 1943, the Eighth Air Force regarded the 4 percent losses in bombers during “Big Week” as a reasonable price for the crippling damage supposedly inflicted on the German aircraft industry. The *Luftwaffe’s* assault on Britain in 1940 was, in conceptual terms, an entirely different matter. It was not part of a long term program. In fact, it had not ever been envisaged three months earlier. It was not hoped that the benefits might be evident in three months’ time, it was categorically *required* to show significant results before an invasion could be launched in about one month’s time. It was not carefully planned. The *Luftflotten* commanders submitted their revised suggestions for the assault on southern England together with the views of their *Fliegerkorps* commanders only on August 1, 1940, and *Reichsmarschall* Göring was ready with his comments, not after days of consultation with his staff, but within a few hours.²⁷ *Fliegerkorps* I and II provided relatively specific proposals for a strategy for the campaign, but there were never any detailed plans or detailed instructions as such. In practice the *Fliegerkorps* H. Q.s fixed the time of attacks, and individual *Geschwader* commanders made their own decisions with regard to targets, routes

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and rendezvous points with other *Geschwader*.²⁸ By September, when *Luftflotte* 3 had transferred its fighters to *Luftflotte* 2 and was concentrating on night attacks, the two *Luftflotten* in France and Belgium were essentially conducting two separate campaigns, but this was also essentially the case when they were both carrying out daylight attacks in August. On August 15, for example, the main attack by *Luftflotte* 2 was nearly two hours earlier than the main attack by *Luftflotte* 3, which might in theory have enabled some RAF fighter squadrons to refuel between attacks and deal with each one separately.

The *Luftwaffe* was basically not organized to plan an air supremacy campaign. Göring, who may justly be held responsible for most of the *Luftwaffe’s* errors, then and later, did in fact understand most of the issues, but he was not accustomed to working with a staff. His Chief of Staff, Hans Jeschonnek, and his head of intelligence, Josef “Beppo” Schmid, were relatively inexperienced men who were too young even to have served in World War I. Albert Kesselring, commanding *Luftflotte* 2 had been an artillery officer holding a staff appointment in the First World War and his chief of staff, Wilhelm Speidel, had commanded a battalion of storm troops. Hugo Sperrle, commanding *Luftflotte* 3, was the only senior *Luftwaffe* commander with a background similar to that of most senior RAF officers: he had been in charge of the aviation attached to an army. His chief of staff, Günther Korten, had been an infantry officer and his head of operations, Karl Koller, though a fighter pilot in World War I, had been a teacher in the police academy at Munich until five years before the Battle of Britain began. It is not clear whether the officers in charge of the



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fighter component of the two *Luftflotten*, *Generalmajor* Kurt-Bertram von Döring and *Oberst* Werner Junck, both fighter pilots in World War I, were even asked to make a formal contribution to the overall planning. It is also not clear whether Döring's six years as an instructor in Argentina and Peru in the 1920s and two years in China in the early 1930s would have stood him in good stead when he took on RAF Fighter Command.²⁹

The Battle of Britain provides a curious gloss on that supposed speciality of the German military, *Auftragstaktik*, the principle of telling subordinate commanders what the ultimate objective is and then letting them make their own choice with regard to means. In Britain the Air Council (effectively the Chief of Air Staff) issues directives to the Air Officers Commanding in Chief (AOC-in-C) of the different commands. These corresponded to the instructions issued to commanders-in-chief of expeditions sent overseas in earlier wars. In the case of Bomber Command, these directives specified which industrial sectors of the enemy war economy should be the focus of attack, and the AOC-in-C issued instructions based on these directives, detailing target locations and dates in the case of major operations, to his group commanders. Then the group commanders issued their own version of these instructions to base commanders, making their own choice of which commanders to employ on particular operations. In some cases the group commanders' instructions were called directives and were couched in terms not unlike those of an Air Council directive. In the case of Fighter Command squadron leaders, though under the orders of their sector commanders, made their own choices about combat tactics and once in the air, though receiving directions

from their sector's operations room, could use their own initiative. In 1940, no officer commanding a formation larger than a squadron flew in combat.³⁰ This seems to be something like *Auftragstaktik* in practice. In the *Luftwaffe*, at least during the Battle of Britain, there seems to have been only a *general* idea of the ultimate objective—the domination of British air space—and no very precise idea of the steps to be taken to achieve this objective. *Seize the top of Hill 60* is clear enough, the hill is at map reference so and so, one is either on it or not on it, the enemy are either still holding out in some positions or they are not holding out, and there is plenty of scope for a subordinate commander to make up his own mind how best to get rid of them. *Seize air superiority* is not clear enough, as air superiority has no map reference and enemy aircraft based 1,000 miles away might bomb your victory celebrations at five hours' notice, and the speed of aircraft means that all operations within hundreds of cubic miles of sky need to be coordinated. At every level in the *Luftwaffe* the objective to be aimed at was discussed in general terms but never sufficiently specified, and it was left to the combat units to select, not only their means, but also their targets.

A key consideration in the *Luftwaffe's* selection of targets in the Battle of Britain seems to have been the fact that the really vital targets were regarded as being *not yet available*. Attacking the RAF's sources of supply, especially the aero-engine industry, was included in one of the four proposals which *Fliegerkorps* I tabled on August 1, 1940, in response to Göring's request for suggestions with regard to how best to carry out an aerial assault on Britain, but it was fully realized from the outset that most of Britain's aircraft and aero-engine

British observer during the Battle of Britain.



industry was some distance north of London and, because of the limited range of the Messerschmitt Bf 109, could only be bombed *after* RAF fighter opposition had been eliminated.³¹ Secondly, the whole air superiority campaign was intended to be simply a prelude to an invasion that would be launched just as soon as air superiority had been achieved. In the six weeks of the campaign in France and the Low Countries the *Luftwaffe* had lost 1,469 aircraft: it needed to be in a position to sustain a similar effort once the invasion force embarked. At least two of the *Kampfgeschwader*, KG 1 in *Fliegerkorps* I (in *Luftflotte* 2) and KG 54 on *Fliegerkorps* V (in *Luftflotte* 3) seem deliberately to have been held back during the earlier stages of the battle, presumably because the main effort was expected to come later.

The *Luftwaffe* also, like the Americans in “Big Week,” overestimated the effectiveness of its bombing. On August 12, 1940, for example the Junkers Ju 88s of *Kampfgeschwader* 51 bombed Portsmouth dockyards and the radar station at Ventnor, on the Isle of Wight, fifteen miles away. The radar station was completely knocked out, though it was replaced by a mobile unit within a few days. The damage sustained by the dockyards was summarized in a report drawn up not quite two weeks later. More than 200 250-kg bombs seem to have been dropped, though the authorities could only account for about 170 of them. It is not clear whether the seventy-two bombs stated to have fallen on the Isle of Wight included those aimed at Ventnor. Probably not since nearly sixty fell on the north shore of the Solent *outside* the dockyard area, and perhaps as many as

fifty others can only be accounted for by supposing they fell in the sea without anyone noticing. Of the forty-one that fell on the naval establishments, only eighteen caused damage thought worth reporting. The Chain Cable Test House lost its roof and a gear wheel on one of the huge machines were smashed. The western end of No. 14 Storehouse was demolished. The basement offices of Dockyard Area Headquarters were wrecked. The walls of No. 1 Dock were damaged. No. 3 Rigging Shed collapsed. Operating gear of “B” Lock caisson was damaged, and the north wall of “C” Lock was badly bulged. The adjacent rail and crane tracks were demolished. Lots of windows were broken and thirty-foot-wide, fifteen-foot deep craters were left here and there, some of them in roadways. Seventeen service personnel were killed, but most of them were in the RAF, not in the Royal Navy. A female canteen worker suffered abrasions and shock.³² By 1940 standards this was a major raid, but it can be seen that it was a long way from putting Portsmouth dockyard out of action.

The *Luftwaffe* was only slightly more successful in its attacks on Fighter Command aerodromes. In the three weeks up to September 7, thirteen Fighter Command bases underwent altogether more than forty attacks.³³ Manston was attacked five times between 12:45 and 5:30 PM on August 24, 1940, also being bombed on August 12, 14, 16, and September 3.³⁴ Air Vice Marshal Keith Park, commanding No. 11 Group, reported that “Sector Operations Rooms have on three occasions been put out of action, either by direct hits or by damage to GPO cables, and all Sectors took into use their Emergency

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Operations Rooms, which were not only too small to house essential personnel, but had never been provided with the proper scale of GPO landlines to enable normal operation of three squadrons per Sector." He pointed out that "Biggin Hill was so severely damaged that only one squadron could operate from there.... Had the enemy continued his heavy attacks against the adjacent sectors and knocked out their Operations Rooms or telephone communications, the fighter defenses of London would have been in a perilous state."³⁵ The enemy did not continue his heavy attacks after September 6, turning instead to London. Park's superior, Air Chief Marshal Sir Hugh Dowding, AOC-in-C Fighter command, acknowledged only a small impact on the efficiency of his command.³⁶ He also rebutted Park's complaints regarding the inadequacy of the arrangements made for repairing aerodromes after they had been attacked.³⁷ Incidentally, the RAF was carrying out attacks on *Luftwaffe* bases in the same period: 1,079 such sorties were flown in July and August 1940, though many were aborted owing to insufficient cloud cover, since the British bombers—mostly Bristol Blenheims—were ordered not to attack if there was less than seven/ten cloud cover near the target.³⁸ In the most successful of these attacks, eight Heinkel He 111s were destroyed and two damaged at Eindhoven on September 10.³⁹ The most damaging airfield attack of the entire battle, however, occurred on August 16, when two *Luftwaffe* Junkers Ju 88s made direct hits on hangars at Brize Norton, destroying no fewer than forty-six aircraft—but these were Airspeed Oxford crew trainers and of no value in combat.⁴⁰ Obviously, those attacks were on the right lines, but overestimation of the results obtained

probably contributed to the decision not to carry them out on a larger scale. Bearing in mind the time scale of the campaign, it may well be that not carrying out attacks on RAF bases with a much greater proportion of available bomber strength was a bigger error than giving them up too soon.

It should always be remembered that the Battle of Britain was a new departure. As a pre-war U.S. Navy memo had pointed out, "a sustained air offensive against an enemy's interior organization will be a test for aviation strategy which will lie entirely outside the sphere of normal military and naval activities."⁴¹ Both sides were on unfamiliar ground and suffered from what now seem to be errors in pre-war planning; the RAF's formation tactics were inappropriate. Its ground control system was probably unnecessarily complicated, and the rifle-calibre machine guns carried on nearly all Spitfires and Hurricanes were less effective than the 20mm cannon carried by German fighters (though the cannon in question, the MG FF, had a much lower muzzle velocity than the machine guns also carried by the same airplane, which meant that when one had to *lead* a target moving transversely across one's sights either the stream of machine gun bullets would be ahead of the target or else the cannon shells would be behind).⁴²

The short range of the Messerschmitt Bf 109 was a major factor in the *Luftwaffe* campaign, as it meant escorted daylight raids on key industrial targets were not feasible: the combat range of the Spitfire was even shorter but that did not become an issue until the battle was over and the RAF went over to the offensive. This is just one instance of how pre-war misjudgements on either side that were comparable in the scale of error in practice worked



Messerschmitt Bf 110.

much more significantly against the Germans than against the British. Another example is investment

in aircraft designs that turned out to be at a disadvantage in combat. The Junkers Ju 87 dive-bomber and Messerschmitt Bf 110 twin-engine fighter proved, in August 1940, to be major disappointments for the *Luftwaffe*: but so did the Boulton Paul Defiant (a single-engine fighter with a four-gun rear turret) for the RAF. The difference was that the *Luftwaffe* deployed twelve *Gruppen* of Ju 87s and eight of Bf 110s, whereas the RAF deployed only two squadrons (together approximately equivalent to one *Gruppe*) of Defiants.⁴³ In the end the RAF was operating to a carefully prepared plan conceived with a view to being sustained indefinitely—and this is also true of the USAAF in “Big Week”—whereas the *Luftwaffe* was improvising in condition it had never anticipated, and on an impossibly tight schedule. It probably *could* have swamped RAF Fighter Command in the summer of 1940, but only if it had thrown all caution to the winds and attacked with its entire strength, bombers as well as fighters. As it was, it failed simply because it had not grasped the parameters of the task it had set itself. ■

NOTES

1. Between July 10 and Oct. 31, 1940, RAF Fighter Command claimed 2,698 German aircraft destroyed (the actual figure was 1,733) and lost 915 aircraft: the *Luftwaffe* claimed to have shot down 3,058. Denis Richards and Hillary St. George Saunders, *Royal Air Force 1939-1945* (London, 1974 edition) vol. 1 p. 190fn.
2. See figures in A. D. Harvey, ‘The French Armée de l’Air in May-June 1940: a failure of conception’, *Journal of Contemporary History* vol. 25 (1990), p. 447-65 at p. 447 and Richard Hough and Denis Richards, *The Battle of Britain: a Jubilee History* (London, 1989) p. 379, appendix VIII.
3. Williamson Murray, *Luftwaffe: a History* (London 1985) p. 44, Table III
4. Henry L. De Zeng IV and Douglas G. Stankey, *Bomber Units of the Luftwaffe 1933-1945* (2 vols. Hinckley/Hersham 2007-8) vol. 1 p. 14. For individual *Luftwaffe* losses (showing unit) see Winston G. Ramsey ed. *The Battle of Britain Then and Now* (London 1980) p. 537-704.
5. De Zeng and Stankey, *Bomber Units of the Luftwaffe*, vol. 2 pp. 251, 252, 256. On Aug. 13, Bf 109s of JG 77 shot down eleven out of twelve Bristol Blenheims attempting to attack the aerodrome at Aalborg: the twelfth had turned back early.
6. Bundesarchiv-Militärarchiv, Freiburg, RL 2/v 3019, 8 Abt. Generalstab der *Luftwaffe*; Richards and Saunders, *Royal Air Force* vol. 1 p. 170.
7. For multiple missions by fighter pilots see e.g. Donald L. Caldwell, *JG 26: Top Guns of the Luftwaffe* (London 1991) p. 42 and Robert Michulec and Donald Caldwell, *Adolf Galland*, (Sandomierz 2003) p. 19. On the Russian front in early Aug. 1943, Erich Hartmann flew 20 missions totalling 18 hours and 29 minutes in six days: see Ursula Hartmann, *Der Jagdflieger Erich Hartmann: Bilder und Dokumente* (Stuttgart, 1978) p. 102-3. In the Battle of Britain the average of 99 pilots in six squadrons studied was 1.9 sorties totalling 1 hour 36 minutes per day, though one pilot flew 19 sorties totalling 12 hours 50 minutes in a week: S. C. Rexford-Welch, ed. *The Royal Air*

- Force Medical Services* (3 vols, London, 1954-8) vol. 1 pp. 180-81. These sorties did not of course involve a double sea crossing as was the case with *Luftwaffe* pilots in the Battle of Britain: on the other hand several squadrons flew *four* sorties (i. e. crossed the Channel eight times) during the attack in Dieppe on Aug. 19, 1942; Group Captain Harry Broadhurst, Deputy SASO No. 11 Group, who also made four flights over Dieppe that day, was in the air for more than eight hours: Norman L. R. Franks, *The Greatest Air Battle: Dieppe, 19th August 1942* (London 1979) p. 188, needless to say one would not be able to sustain such a pace for several days in succession.
8. Cajus Bekker, *The Luftwaffe War Diaries: The German Air Force in World War II* (New York, 1994 edit.) p. 169-70.
9. Francis K. Mason, *Battle over Britain: a history of the German assault on Great Britain 1917-1918 and July-December 1940, and the development of Britain’s Air Defences between the World Wars* (Bourne End 1990 edit.) p. 289.
10. Arthur B. Ferguson, ‘Big Week’ in Wesley Frank Craven and James Lea Cate eds. *The Army Air Forces in World War II* (7 vols. Chicago, 1948-58) vol. 3 p. 30-66 at p. 43. See also Stephen L. McFarland and Wesley Phillips Newton, *To Command the Sky: the Battle for Air Superiority over Germany, 1942-1944* (Washington 1991) p. 174-91 and Eric Hammel, *The Road to Big Week: the Struggle for Daylight Air Supremacy over Western Europe: July 1942-February 1944* (Pacifica 2009) p. 335-56, though this adds little significant to Ferguson’s account.
11. Ferguson, ‘Big Week’, p. 43, cf Ramsey, *Battle of Britain Then and Now*, p. 707 which indicates 871 German fighters lost in the Battle of Britain to over 1,000 bombers and other types. In the Eighth Air Force the bombers were usually about five times more likely to fail to return than fighters and if the figures are combined with those of the Fifteenth Air force, in which bomber losses were proportionately much higher, the ratio is even greater, but the fighters spent a shorter time in German air space than the bombers. On the other hand anti-air-

- craft fire was a bigger factor in 1944 than in 1940: 79 per cent of instances of damage to Eighth Air Force bombers returning from missions in February 1944 were attributed to *Flak*: The National Archives, Kew, AIR 22/350, 'Eighth Air Force: Monthly Summary of Operations: Jan, Feb, Mar, 1944' (also in National Archives Washington).
12. Paul Deichmann, *Der Chef im Hintergrund: ein Leben als Soldat von der preussischen Armee zur Bundeswehr* (Oldenburg 1979) p. 150 gives 5,807 German bomber sorties over Malta Mar. 20-Apr. 28, 1942, and 5,667 fighter sorties; Christopher Shores and Brian Cull with Nicola Malizia, *Malta; the Spitfire Years* (London, 1991) p. 645 gives for the longer period Dec. 19, 1941 to Nov. 7, 1942, *Luftwaffe* losses of 64 Messerschmitt Bf 109s and 178 Junkers Ju 87s and Ju 88s. As the defending RAF fighters were relatively less numerous in the Malta Campaign, the bomber component of the attacking *Luftwaffe* formations tended to be much larger.
13. Donald Caldwell and Richard Muller, *The Luftwaffe over Germany: Defence of the Reich* (London 2007) p. 156-162, cf E. R. Hooton, *Eagle in Flames: the Fall of the Luftwaffe* (London 1997) p. 269, table 75 which gives a figure of 172 killed or missing in action and 49 wounded for the whole of February.
14. Ferguson, 'Big Week' p. 44: the Americans estimated that they had destroyed 75 percent of the buildings in the plants responsible for 90 percent of German aircraft production, but German figures suggest that reorganization and dispersal of plant to reduce the effect of future attacks may have caused more disruption than bombing. In any case deliveries of new fighter aircraft from factories and repair shops in Dec. 1944 were at more than twice the level of Jan. 1944. See also Bekker, *The Luftwaffe Diaries*, p. 350, 353-4.
15. Ramsey, *The Battle of Britain Then and Now*, p. 366 and 380-81.
16. *Ibid.* p. 567-88 the two *Gruppen* of St.G2, already below their combined establishment of 80 two-seater Junkers Ju 87, lost six aircraft on Aug. 13, three on Aug. 15 and nine on Aug. 16: and in addition there was one dead and five wounded crew members aboard four of the aircraft that returned to base.
17. Deichmann, *Der Chef im Hintergrund*, p. 109.
18. Martin Middlebrook, *The Schweinfurt-Regensburg Mission; American Raids on 17 August 1943* (London, 1983) p. 279-80, 284-86.
19. *Ibid.* p. 286
20. Christopher Shores and Clive Williams, *Aces High: a Tribute to the Most Notable Fighter Pilots of the British and Commonwealth Forces in World War II* (London, 1994) p. 329, and see also John Schellenberger, "Richard Hillary and the Battle of Britain," *Aerospace Historian* vol. 35 (1988) p. 198-99. Between Aug. 29 and Sep. 3, 1940, Hillary shot down five Bf 109s, with two more probably destroyed and another damaged.
21. Lowell Thomas and Edward Jablonski, *Bomber Commander: the Life of James Doolittle* (London, 1977) p. 267. See also Richard G. Davis, *Carl A. Spaatz: and the Air War in Europe* (Washington, 1993) p. 359-60.
22. See for example Heinz Knoke's diary entry for 22 February 1944 in Heinz Knoke, *I Flew For the Führer: the Story of a German Airman* (London, 1953) p. 143.
23. T. C. G. James, *The Battle of Britain* (London, 2000) [Air Historical Branch narrative written 1943-1944 with post-war appendices] p. 400, Appendix 37.
24. Mason, *Battle over Britain*, p. 300.
25. Klaus Maier et al, *Germany and the Second World War* (9 vols. so far published Oxford 1990 -) vol. 2 p. 396, cf original German text *Das deutsche Reich und der zweite Weltkrieg* (10 vols. Stuttgart 1979-2008) vol. 2 p. 390, cf Hough and Richards *Battle of Britain* p. 365 for the raids on Sep. 27 and 30.
26. David Brown, Christopher Shores, Kenneth Macksey, *The Guinness History of Air Warfare* (Abingdon, 1976) p. 154.
27. Bundesarchiv-Militärarchiv, Freiburg, RL 2 II/30, memo of Aug. 2, 1940, referring to a conference the previous day.
28. Deichmann, *Der Chef im Hintergrund*, p. 115-6. Deichmann, Chief of Staff of *Fliegerkorps* II, actually states that he himself gave the order to a staff officer: he does not say if the *Fliegerkorps* commander, First World War ace Bruno Loerzer, gave any order to him.
29. For biographical details of the officers referred to see Karl Hildebrand, *Der Generale der deutschen Luftwaffe 1935-1945* (3 vols Osnabruck 1990-92) passim.
30. The highest ranking Fighter Command officer to be killed in the Battle of Britain was Wing Commander John Scatcliff Dewar DSO, DFC, who crashed on Oct. 12, 1940, while en route from Exeter (where he was station commander) to Tangmere. The *Luftwaffe* lost four full colonels—Group Captain would be the equivalent rank—including two *Kampfgeschwader* commodores and the Chief of Staff of *Fliegerkorps* V, Alois Stoeckel. Later in the war Bomber Command station commanders of similar rank sometimes flew as passengers on bombing missions, and Air Vice Marshal Basil Embry flew as a pilot (with a wing commander's rank stripes and identity papers) on Mosquito missions while commanding No. 2 Group. Eighth Air Force commander James H. Doolittle, who had led the first air raids carried out on both Tokyo and Rome, was ordered not to fly with the USAAF's first Berlin mission in case he was taken prisoner: he knew too much about the intended D-Day landings.
31. Bundesarchiv-Militärarchiv, Freiburg, RL 2 II/27, 'Bemerkung des Herrn Reichsmarschalls über die Kampfführung in der Besprechung von 19.8.40.'
32. The National Archives, Kew, ADM 1/10949, Commander-in-Chief, Portsmouth to Admiralty, 25 Aug. 25, 1940, with enclosures. This report estimates the force attacking Portsmouth at about 55: Wolfgang Dierich, *Kampfgeschwader 'Eidelweiss': the History of a German Bomber Unit, 1935-1945* (London, 1975) p. 38 states that it was 70 aircraft, which would mean another 60 bombs unaccounted for and presumably dropped in the sea.
33. The National Archives, Kew, AIR 16/635, Sir Hugh Dowding, AOC.-in-C. Fighter Command, to Undersecretary of State, Air Ministry, Sep. 22, 1940.
34. *Ibid.*, 'Notes of damage and repair at certain fighter aerodromes,' Sep. 21, 1940.
35. *Ibid.*, Air Vice Marshal Park, No. 11 group, to H. Q. Fighter Command, Sep. 12, 1940.
36. *Ibid.*, Dowding to Undersecretary of State, Air Ministry, Sep. 22, 1940.
37. *Ibid.*, Dowding to Undersecretary of State, Air Ministry, Sep. 22, 1940, and see also AIR 2/4576, Chief Engineer, May 29, 1940 and Air Vice Marshal T. G. Pike, Director of Organization August 1940, AIR 16/579, Pike to Home Commands Jun. 18, 1940 and note by Chief Engineer Sep. 3, 1940, and AIR 19/468 Sir Archibald Sinclair, Secretary of State for Air, to Winston Churchill Sep. 2, 1940.
38. Hough and Richards, *Battle of Britain*, p. 292, and see also The National Archives, Kew, AIR 14/3149 and AIR 37/50-51.
39. Ramsey, *The Battle of Britain Then and Now*, p. 636.
40. Hough and Richards, *The Battle of Britain*, p. 195-96.
41. H. H. Arnold, *Global Mission*, (New York, 1949) p. 168.
42. See the criticisms of Battle of Britain pilots H. R. Allen, *Who Won the Battle of Britain?* (London, 1974) p. 64-65. 85-91, and K. W. Mackenzie, *Hurricane Combat: the Nine Lives of a Fighter Pilot* (London, 1987) p. 31, 71,
43. Defiants of No. 264 Squadron operating over Dunkirk on May 29, 1940 claimed 37 German aircraft destroyed for the loss only of a gunner who bailed out of an aircraft that afterwards returned to base: but once the German pilots realized that the Defiant had no forward-firing guns they found little difficulty in dealing with it.

Refighting the Pacific War: An Alternative History of World War II. By Jim Bresnahan, ed. Annapolis, Md.: Naval Institute Press, 2011. Photographs. Notes. Bibliography. Index. Pp. x, 277. \$29.95 ISBN: 978-1-59114-079-5

Alternative, counterfactual histories are generally too superficial and trivial, although often entertaining. This one is an exception for several reasons. It examines a number of events leading up to or occurring during World War II. Each is analyzed by several (a total of thirty-six) contributors who look at the topic from different perspectives. This provides a variety of possible outcomes for the key decisions reviewed. The format employed is generally a series of questions that lead to a variety of answers. One of the most fascinating features of the book is an introduction by VAdm. Yoji Koda, which lays the groundwork from the Japanese perspective.

The incidents chosen for coverage are divided into ten chapters beginning with the period between the World Wars, the Seeds of Conflict. The topics of this period concern the several arms limitation agreements or attempts and other seeds of the conflict to come. One speculation for this period is, "What if . . ." For example, if the two Vinson bills had not passed in 1940, there is reason to speculate that the Atlantic war probably could not have been won, and the UK might have been forced into surrender. Inevitably, the U.S. buildup would have been long delayed.

The remaining nine chapters cover events of 1941, Pearl Harbor, the five months where the Japanese moved quickly throughout much of the Pacific, the turning of the tide in the Spring of 1942, Midway (of such import that it takes two chapters), Guadalcanal, the beginning of the end in 1943-44, and the final eight months of war in 1945. The Coral Sea, Midway, Solomons, Marianas, and Leyte are given the most attention; while the Gilberts, Aleutians, Iwo Jima, and Okinawa receive less.

The individual studies not only suggest the variable "what ifs" but also give what for many readers may be a better grasp of "what did" happen. For this reason alone, the book becomes one not just for the casual reader in search of titillation but a serious study worth the attention of professionals. In addition to the realm of speculation, the contributors provide a great deal of information on what actually happened that may not be widely known. Certainly there is an element of "Monday-morning-quarterbacking" about the necessity of the attacks on Tarawa, Peleliu, and Iwo Jima with the benefit of sixty-plus years of insight. Some of the possible con-

sequences developed by the contributors are also a bit far-fetched but are still thought-provoking. The opposing opinions by intelligent, well informed contributors also show that different conclusions, or decisions, can be drawn from the same evidence.

My one major criticism is the absence of maps or diagrams of the battles. These are essential to an understanding of the action. The book also, unfortunately, contains the frequently seen confusion between ULTRA and MAGIC. The photographs provided are a mixed lot and contribute little to the book's impact.

These criticisms, however, do not change my opinion that this is a book worth reading.

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In My Time: A Personal and Political Memoir. By Dick Cheney with Liz Cheney. New York: Threshold Editions, 2011. Index. Photographs. Notes. pp. 565. \$35 ISBN: 978-1-4391-7619-1

The George W. Bush presidency has produced an outpouring of memoirs, each explaining what really happened in those controversial eight years: President Bush, Donald Rumsfeld, George Tenet, Condoleezza Rice, Hank Paulson, et al., and this one by Vice President Cheney. All provide important insights into decision-making at the highest level of the administration. Cheney's is especially important because his forceful voice was central to many key initiatives, in particular the decision to go to war in Iraq and, in the aftermath of 9/11, the war on terrorism.

Cheney portrays himself as a self-made man of modest beginnings; a serious reader of history, especially of leadership in difficult times; and as a person with strongly held political beliefs. He recalls a period when he entered a downward spiral. He failed to apply himself at Yale, lost a scholarship for cause, and was thrown out of the school. He was later cited twice in one year for driving under the influence. Cheney totally turned himself around, graduated with honors from the University of Wyoming, and went on to get his master's degree.

Although the preponderance of the book dwells on the Bush years, especially the war on terror and the wars in Afghanistan and Iraq, it is also about Cheney the man, his thirty-three years in government, and jobs in the private sector. He served in the cabinets of three presi-

dents, was a White House chief of staff, Wyoming's congressman for four terms; and Secretary of Defense. He was perhaps the most influential and powerful Vice President in U.S. history. In industry, Cheney was CEO of Halliburton, was on several corporate boards, and was in a major think tank.

This book does not shy away from criticizing high-profile members of the administration and Congress. Cheney repeatedly expresses his disappointment in Colin Powell for not providing adequate leadership as Chairman of the Joint Chiefs during Desert Shield/Storm. He criticizes General Schwarzkopf's leadership as well. He later frequently criticizes Powell as Secretary of State even more strongly—a key culprit in the failure to create an Iraqi provisional government prior to the invasion. The administration came under strong criticism after Iraq's collapse into chaos and insurrection; this may be Cheney's explanation of why Iraq's occupation from the beginning was so poorly managed. In contrast to Cheney's observation, Condoleezza Rice maintains in her book that it was she who felt compelled to press the Pentagon to address Iraqi occupation security requirements prior to the Iraq invasion. Cheney later criticized Powell's diplomacy efforts in the Middle East as contrary to administration policy on Israel.

National Security Advisor and, later, Secretary of State Rice is a major disappointment to Cheney. He believed she acted counter to the President's national security vision in a number of situations, in particular negotiations she conducted concerning Middle East peace and nuclear proliferation in North Korea. He claims she misleadingly represented her diplomatic endeavors and was more interested in her own legacy as the administration was coming to a close.

Cheney justifies the highly controversial enhanced interrogation program, claiming it provided timely and actionable intelligence critical to preventing imminent and potentially catastrophic attacks on the U.S. He also clears the air on a number of controversies for which he believes he was unfairly criticized.

This book must be read for its insights and the understanding it provides into the inner workings of the George W. Bush presidency and to appreciate the role played by the most powerful Vice President in American history.

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



Combat Stress in the 20th Century: The Commonwealth Perspective. By Terry Copp and Mark Osborne Humphries. Kingston, Ontario: Canadian Defence Academy Press, 2010. Tables. Diagrams. Photographs. Notes. Appendices. Glossary. Bibliography. Index. Pp. xiii, 594. Free from Canadian Government website ISBN: 978-1-100-12726-2

Melancholia, shell shock, combat fatigue, post traumatic stress disorder: the names have changed over the years, but the issue of war's psychological toll has been a constant throughout history. A host of questions surround this contentious issue. What is it really? How do you identify it? How does it affect people? Why does it affect some a great deal, others very little and others seemingly not at all? What can and should be done to treat those diagnosed? This book examines the approaches to the issue and practices in dealing with this difficult problem by British Commonwealth forces throughout the 20th century. The historian authors are not psychiatrists and make no claims to provide definitive answers either in defining the problem or its treatment. Instead, they approach the problem through comparative analysis using the original sources to review the practices and beliefs of Commonwealth military and medical professionals who attempted to address this challenging issue. Readers are left to reach their own conclusions.

Copp and Humphries make no effort to decide the merits of any one approach. Instead, they frame the discussion separated by time periods and then let medical and military professionals speak through contemporary literature. It is an interesting approach and provides unique insight into the evolving understanding of this complex topic. The book is divided chronologically with chapters covering time periods that roughly correspond to the two World Wars and the times of peace before, between, and after. The first chapter starts with a discussion of "railway spine" (the 19th century term describing post traumatic symptoms following railway accidents) and the concept of traumatic psychosis that started developing in the middle of the 19th century. This chapter extends the discussion through the development of the well-known concept of "shell shock" from the First World War. The next chapter discusses psychological injury and its treatment for veterans in the interwar period. The final two chapters cover World War II and the post-war period through the First Gulf War.

The historians limit their discussions at the beginning of each chapter to between fifteen and twenty pages, where

they provide the issue's historical context, identify trends in diagnosis and treatment, and discuss the changing atmosphere in both the medical community and society at large. They then use an unusual method to present the source material. Rather than citing the material in the course of their own discussions, they append the original reports and articles in their entirety. Each appendix (there are forty-one articles and reports) has only a one- or two-sentence introduction identifying the author and the circumstances surrounding the document's creation. The reader is thus given the unfiltered original discussion. The material isn't too technical in nature and allows laymen to grasp the issues and the authors' perspective and draw their own conclusions. The primary drawback isn't the organization, but rather the sometimes limited context provided in the chapters introducing the original material. The authors assume a level of familiarity with Canadian or Commonwealth history that sometimes falls flat with a non-Canadian reader. But a visit to the internet helps fix this and doesn't detract from the book's overall usefulness.

This is the third book I've reviewed from the Canadian Defence Academy Press on ethics, leadership, and combat stress—all of the same high quality. Typical of compilations of many writers is the expected variation in the prose quality, but overall this book is very readable. The chapters introducing each section are clear and generally provide sufficient background on the medical issues involved. The book is very well documented with extensive end notes and an excellent bibliography. Its scope is greater than the title suggests. The medical professionals cited were leaders in their fields and bring in sources and opinions far beyond their immediate responsibilities and experience with Commonwealth forces. This book is an excellent source for those interested in the ever-evolving and often confusing subject of combat stress and its effects.

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Together We Fly: Voices from the DC-3. By Julie Boatman Filucci. New Castle, Wash.: Aviation Supplies and Academics, 2011. Photographs. Pp. xvi, 171. \$24.95 ISBN: 978-1-56027-795-8

Julie Filucci is an aviation writer and technical editor whose father flew the "Hump" (over the Himalayas). This is a

seventy-fifth anniversary commemorative book on the legendary Douglas DC-3 of 1936 and beyond (the C-47 to youngsters in the USAAF/USAF, and the R4D to naval aviators).

The book is a mix of Douglas history and personal reminiscences of those associated with the Gooney Bird/Dakota. The story is mainly an American Airlines one, ending with the fates of some of AA's machines. The book contains many quotations from interviews that started in 2003 with the December issue of *AOPA Pilot*. An index would have been helpful.

Filucci starts with a brief history of how the DC-1 became the DC-3 and includes original photos from what is now the Boeing-Douglas archives and domestic stories that personalize Donald Douglas and his team. Her book then goes on to explain the origins and design ideas behind the DC-1 and DC-2. The cockpit of the latter leaked so badly that in rain the two pilots flew with waterproof sheets over their laps to stay dry! By the time the C-47 Dakota flew, that had been cured, unless the clear-vision panel was open into the 160-mph slipstream. American Airlines took the first batch and many more DC-3 Flagships.

As a former RAFVR co-pilot on the type, I can state that the book is accurate. On my way to Kansas State University in 1963, as we boarded a DC-3 of Central Airlines at Kansas City, I said to my wife, "I used to fly these things twenty-five years ago" not exactly an encouragement for one who was then not yet a happy flyer!

Robin Higham, Professor Emeritus, Military History, Kansas State University, Manhattan, Kansas

Fogg in the Cockpit: Howard Fogg—Master Railroad Artist, World War II Fighter Pilot—Wartime Diaries, October 1943 to September 1944. By Richard and Janet Fogg. Philadelphia: Casemate, 2011. Map. Illustrations. Photographs. Pp. 360. \$32.95 ISBN: 978-1-61299-004-6

In October 1943, budding artist and Republic P-47 Thunderbolt pilot, Howard Fogg, went to war. Assigned to the 368th Fighter Squadron of the 359th Fighter Group, Fogg deployed to England in support of Eighth Air Force's bombing campaign against German-occupied Europe. Fogg was one of the squadron's twenty-six original pilots. In this account of a year-long combat tour, Fogg's son and daughter-in-law have relied on the pilot's detailed

diary to share one man's perspective on the air war raging over Europe.

To complement the almost daily diary entries, the Foggs have included portions of the group history and, occasionally, informal "morale" reports. As should be expected, the story unfolds in chronological order. The pace quickens when the group achieves operational status in December 1943. In spring 1944, the group transitioned to the North American P-51 Mustang.

The group underwent its strongest test immediately before and after the Allied invasion of France in June 1944. During this period, the 359th primarily focused on low-level attacks against lines of communication and airfields. The Mustang's vulnerability to ground fire was increasingly obvious. Higher headquarters concluded that P-51-equipped units in the future would focus on higher-altitude counterair operations.

Serving primarily as a flight leader and, later, as a mission planner and instructor for recent arrivals, Fogg seldom encountered enemy aircraft during his tour. Readers seeking dramatic accounts of aerial battles as portrayed in biographies of Boyington, Foss, Johnson, or Zemke will be disappointed. However, Fogg's uncensored insights into the day-to-day routine of a typical fighter pilot offer an informative perspective. To provide some historical context for the layperson, the Foggs briefly interject significant events elsewhere in the world. The historical summaries and morale reports provide a point of view on a grander scale.

The casual, ho-hum approach found in the diary entries is somewhat misleading. The final entry lists the status of the 368th's original pilots at the end of Fogg's tour. Half the original twenty-six were dead, missing, or captured; four were killed in action, two killed under other circumstances, three missing in action, four prisoners of war, four on operational status, seven returned to the United States, and one performing in-theater instructor duties.

While Fogg's accounts will be of interest to students of World War II fighter operations, railroad enthusiasts should be especially pleased. After the war, Fogg emerged as one of the nation's premier railroad artists. Included in the book copies of eight rough sketches and color reprints of thirty paintings. In addition, nine political cartoons from Fogg's undergraduate days at Dartmouth are included.

Lt. Col. Steve Ellis, USAFR (Ret.), Docent, Museum of Flight, Seattle, Washington



The Elusive Enemy: U.S. Naval Intelligence and the Imperial Japanese Fleet. By Douglas Ford. Annapolis, Md.: Naval Institute Press, 2011. Maps. Notes. Bibliography. Index. pp. xiv, 264. \$30.00 ISBN: 978-1-59114-280-5

The Elusive Enemy refers to the challenge to U.S. Navy intelligence working on the Imperial Japanese Navy during World War II. Ford teaches military history at the University of Salford in the United Kingdom. His academic focus is admirable in sorting through extensive records comprising dry intelligence memoranda from the Office of Naval Intelligence (ONI). Since intelligence is the book's focus, I offer a standard that gets the reader set for the surprises that one expects with reading books laced with intelligence. Photo intelligence (imagery intelligence or IMINT in today's parlance) accompanied by signals, communication, human, electronic, and acoustical intelligence offers a construct that allows the process to be better understood. Ford's intelligence theme would have been extensively reinforced by adding a comprehensive table that listed platforms (such as airplanes), intelligence roles and missions, unique collection systems (such as camera types for photoreconnaissance), and bases of operations. His discussion on the intelligence role against the Imperial Japanese Fleet needed that extra perspective.

Ford's depth of research is admirable but doesn't do justice to intelligence being a compilation of all sources. His realm of analysis for this important theater stops with the U.S. Navy. He would have made a more convincing discussion if his research had paid equal attention to the archives offered by the U.S. Army Air Forces (USAAF) in the Pacific. The absence of discussion involving the Purple cipher that Allied codebreakers had mastered and maintained throughout the war is troubling. Another gap is the lack of primary sources coming from the Japanese side. Ford should have captured more Japanese insights from key aviation figures such as Saburo Sakai, the great Japanese ace whose book *Samurai!* is a masterpiece.

I served in the Joint Intelligence Center Pacific (JICPAC) in the 1990s. From that perspective, it was enlightening to see Ford mention Joint Intelligence Center Pacific Ocean Area (JICPOA). A footnote to the effect of how this center evolved over the years would have illuminated the text more and provided the reader with a relevant genealogy on military intelligence that centers on the Pacific Theater of Operations.

The absence of the USAAF really does a disservice to Ford's premise. One major

standout in reviewing the intelligence documentation of that era is *IMPACT*, a then-classified magazine produced for combatants to gain insight into successes with aerial photography. *IMPACT* covered both European and Pacific Theaters—adding to its value for both aviator and intelligence professional—and was published in its entirety for military enthusiasts in the 1980s. Ford could have put a little spice into his work with information acquired from the articles as well as a few photos and contemporary drawings offered in *IMPACT*.

Naval Institute Press has provided Ford with a quality package. The text is well arrayed and the charts are very easy to follow. The cost is reasonable for an academic publication—however, for the casual reader it might be beyond reach.

I strongly endorse *The Elusive Enemy* for those readers wanting to understand the bigger picture. Ford has done the community a favor by sorting through volumes of intelligence data (remembering that his U.S. Navy emphasis is only half the picture) and providing those who accomplish follow-up research with a window into the thinking of military intelligence.

Col. Terrence J. Finnegan, USAFR (Ret), Gold River CA



Fighting for MacArthur: The Navy and Marine Corps' Desperate Defense of the Philippines. By John Gordon. Annapolis Md.: Naval Institute Press, 2011. Index. Maps. Photographs. Appendices. Notes. Pp. xiii, 370. \$32.95 ISBN: 978-1-61251-057-6

This is an outstanding book about a very small segment of fighting at the beginning of American involvement in the Second World War. General MacArthur, former Chief of Staff of the US Army and then senior military advisor to the Philippine Government, was brought back into active service in 1941 and made Commander U.S. Army Forces Far East. He shared that exalted command level with Admiral Hart, Commander in Chief, U.S. Asiatic Fleet. That was about all they shared.

MacArthur, always a grandiose strategist, came up with the idea that he could successfully defend the Philippine Islands against a Japanese attack with 100 long range B-17 bombers plus motor torpedo boats, submarines, and a large number of hastily-trained Philippine Army infantry divisions to preclude Japanese invasion forces from securing

landing sites. He sold Army Chief of Staff General Marshall and Secretary of War Stimson on his theory. Previously US Army planners had determined that a successful defense of the islands was not possible given the size and strength of Japanese naval forces. MacArthur's enthusiasm prevailed, and many B-17s were rushed to the Philippines.

MacArthur was convinced that the Japanese would not attack until April 1942. Admiral Hart thought otherwise and took steps accordingly to position the Asiatic Fleet to defend the Philippine Islands and the Dutch East Indies as well as it could. Despite early warning of the Japanese air attack on Pearl Harbor, MacArthur's Army Air Forces bomber contingent was caught on the ground and half were destroyed on December 8th. His pursuit planes lasted a little longer but suffered grave losses in combat with highly capable Imperial Japanese Navy Zero fighters.

MacArthur's touted Philippine Army divisions fell apart on the beaches of Luzon when a well-prepared, well-executed Japanese amphibious invasion took place at Lingayan Gulf. The execution of plans to move U.S. Army supplies into the Bataan Peninsula was delayed until too late. The result was famine and disease from a lack of calories and medicines for the US Army and Philippine Army units that crowded into Bataan.

Admiral Hart's views were much more realistic. He had directed the movement of naval supplies of all kinds well in advance. He also recognized immediately that the defeat of the Army Air Force pursuit squadrons in the first few days of the conflict made the defense of the Philippines impossible. The only question was how long the defense forces would be able to hold out. The failure of U.S. submarine torpedoes at this critical juncture made matters worse.

The story is about Navy and Marine Corps units and individuals fighting under Army guidance in a major land campaign to defend the Philippines. The author is no friend of General MacArthur and readily points out his erroneous decisions that made matters worse for American forces. The book is well equipped with maps that enable the reader to follow the small unit actions which took place. These include the forts in Manila harbor: Corregidor (Fort Mills), Caballo Island (Fort Hughes), El Fraile Island (Fort Drum), and Carabao Island (Fort Frank).

The reader is left wondering how Admiral Kimmel and Lieutenant General Short could have been discarded in disgrace after the Pearl Harbor attack while

General MacArthur remained in command in his theater.

*Capt. John F. O'Connell, USN (Ret),
Docent, National Air and Space Museum*



The Battle of Heligoland Bight 1939: The Royal Air Force and the Luftwaffe's Baptism of Fire. By Robin Holmes. London: Grub Street Publishing, 2009. Photographs. Pp. 190. £20.00 ISBN: 978-1-9065-0256-0

Until he retired, Professor Robin Holmes of Watt University in Edinburgh, Scotland, was a specialist in underwater robot vehicles. It was with one of these that he located, in Loch Ness, the last Vickers Wellington "R (for Robert)" that saw combat. He set up a trust fund to recover and restore it, one of the very few examples left of this interesting bomber type. Wellingtons, designed by the famous Barnes Wallis, served throughout World War II, first as a heavy and then as a medium offensive weapon.

In researching the story, Professor Holmes came across the little-remembered disastrous air battle of December 18, 1939, the first real clash of the RAF and the *Luftwaffe*.

RAF intelligence was woefully inadequate on German *Freya*, their gun-laying search radar capable of detecting an incoming raid an hour out. This allowed the defending fighters adequate time to climb to altitude and to use their defensive tactics and superior armament. The Bf 109s and 110s had the superior 20-mm cannon with which to oppose the Wellingtons' pairs of .303-caliber two-gun turrets. And the enemy's flak would soon be lethal.

RAF bomber doctrine was to use daylight penetration raids without escorting fighters (the Air Staff had discussed and rejected the idea). Daylight tactics required tight formations, but these had never been practiced, nor had the three squadrons assigned to what became known as the Heligoland raid ever flown together. The escape tactic was to dive to the deck; but, at 300 mph, the fabric began to rip off the airframes. Even worse, the fuel tanks in the wings were unarmored.

Of twenty-four Wellingtons that set out on the Heligoland raid, two aborted and twelve were shot down. On a subsequent sortie on January 4, 1940, two of three did not return. At last, the RAF switched to night attacks, their prewar doctrine destroyed.

What Professor Holmes very clearly

shows is that the RAF's schizophrenic doctrine of a bomber offensive was untenable. RAF defensive fighter doctrine had been firmly established on the technical nuances in fighter design and radar. But bomber doctrine, the dominant one, was based upon wishful thinking and a dismissive approach to technology. In 1939 the RAF had neither the .50-caliber machine-gun nor the 20-mm cannon, though Armaments had samples. No one had calculated how long the bomber's ammunition would last on a daylight penetration. Nor had tactics and practices been worked out for these penetrations. Foreknowledge would have been "cheap" at half the price.

Holmes's account is meticulous and follows up with brief notes on the fate of the survivors of December 18, 1939. His short but detailed book contains many useful lessons that can be summed up as "Foresight before boresight."

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Bully Able Leader: The Story of a Fighter-Bomber Pilot in the Korean War. By Lt. Gen. George G. Loving, USAF (Ret.). Mechanicsburg Pa.: Stackpole Books, 2011. Photographs. Maps. Pp. 238. \$24.95 ISBN: 978-0-8117-1026-8

This is an exciting story about a very interesting Air Force officer who flew fighters and fighter-bombers in World War II and the Korean War. General Loving's latest, fast-paced autobiographical book is focused on his exploits during the Korean War. "Bully" was the daily call sign for the F-80 fighter-bombers; "Able" was the call sign for the first F-80 formation flight of the day; and "Leader" was the role Loving performed in that flight. The book also serves as a good synopsis of America's Air Force fighter-bomber war efforts in Korea.

Loving takes the reader through a maze of highly intensive wartime operations that he experienced. His book starts when he volunteered to fly P-51s at the onset of the Korean conflict. Later, he became an F-80 pilot; an air field operations officer; a squadron flight operations officer; and, ultimately, the F-80 squadron commander. He clearly portrays the fast-paced flight activity at the airfield and in the F-80 cockpit: aircraft malfunctions, poor flying weather, low-level flying in mountainous terrain, the impact of the improving North Korean anti-aircraft capabilities (radar-assisted firings), and the developing MiG threat to F-80s

throughout his tour in Korea. Loving also presents the logistics demands of stockpiling enough fuel, ammunition, and bombs at the airfield to satisfy high sortie rates, as well as problems of identifying and destroying enemy positions while flying at low level and high speed. Thus, he successfully writes about many aspects of air power employment.

The book is a historical record of USAF efforts during the Korean War, but it is also an emotional book. Loving writes with passion for the Air Force, the combat flights in which he participated, and the military operations he supported. He portrays the conflict as it was fought from the perspective of a jet fighter-bomber pilot. The book also affords readers the advantage of looking back in time knowing how the conflict ended. One may view military decisions made at that time from a historical advantage of today and second guess some of the strategic decisions made. For example, the sea-based invasion at Inchon that attacked the North Koreans behind their front lines was a military success but is often cited as a very risky tactical maneuver. Another historical perspective discussed in the book is the movement of UN forces to drive the North Koreans north to the Chinese border. Was that a militarily wise maneuver, or did it precipitate China's entry into the war on the North Korean side? These questions are not, appropriately, answered in this book whose theme is combat aircraft operations.

The details of how to fly the F-80 during a strafing run on a truck convoy, how to destroy a steam locomotive, or the appropriate speed and altitude to deliver napalm are adequately described. Loving relates encounters with MiG-15s, the use and limitations of runaways constructed from "pierced-steel-planking," F-80 missions as escorts during B-29 bombing operations, and his recollections of the improvements made by North Korean anti-aircraft radar-control capabilities and their impacts on F-80 tactics. This is the heart of the story; the details seem fresh in Loving's mind and are enriched through his ample historical research.

I recommend this book. The experiences covered are written with the flair and passion of an individual who fought in the war. Loving offers the reader valuable insights of the flying environment that earmarked this first war of extensive use of jet combat aircraft.

Col. Joe McCue, USAF (Ret.), Leesburg, Virginia

The Other Pearl Harbor: The Army Air Corps & Its Heroes on Dec. 7, 1941.

By John Martin Meek. Mustang Okla: Tate Publishing, 2011. Appendices. Bibliography. Pp.224. \$14.99 (paperback) ISBN: 978-1-61346-765-7

"This is an entertaining read that I believe is an important work because it adds to the Pearl Harbor literature a missing dimension—the story of two men who are usually given one or two lines in most books." So writes Donald Goldstein, Professor Emeritus, University of Pittsburgh, and a leading Pearl Harbor historian, in his foreword. Meek has worn the uniform of the Army, Navy, and Marine Corps, the latter during the Korean War. He taught at The American University and University of Virginia and has researched this "missing dimension" for over 10 years, including numerous personal conversations with principals and families.

How could a book about one of the most important and disastrous days in American history be characterized as "entertaining"? It is because its structure and energetic style will likely engage serious historians, history buffs, other researchers, and the general public alike.

The centerpiece of the book consists of eight chapters, one for each day up to and culminating in the Day of Infamy itself, November 30-December 7, 1941. These chapters are written in a novel-like manner, depicting in a dialogue-rich story line the day-by-day events in the lives of two pilots, Second Lieutenants Ken Taylor and George Welch. Meek presented factual events as he knew them from his extensive research including official documentation; speeches; and tapes of interviews with one of the principals (Taylor), the families of Taylor and Welch, and other military witnesses. While this "creative non-fiction" style is unusual, Meek is not the only author to have employed it, including Truman Capote in his *In Cold Blood*. The eight central chapters are bookended with Meek's Prologue and Epilogue, in which he provides analytical commentary and new source findings of additional interest to historians and other Pearl Harbor researchers. He adds context to the internal struggles in both the Navy and Army over the role of air power in combat and attempts to minimize that role in favor of protecting long-standing power bases among the Army ground warfare and Navy battleship brass.

A bibliography details source materials including official documentation in the National Archives, the USAF Historical Research Agency, various libraries (presidential and otherwise), numerous inter-

views, documentaries, and news and other video tapes Meek used in over a thousand hours of research. Beyond that, the book also reveals some records of statements by Admiral Kimmel and General Short not earlier noted in other historical accounts concerning their accountability for the lack of U.S. preparedness for the daring Japanese air attack. Meek also provides a commentary on the process for awarding combat medals and how that may have played in the post-attack loss, destruction, removal, or failure to report military records that could have provided clear documentation of the actual role of air power during the attack.

For most people, the understanding and images of the attack on Pearl Harbor comes through movie and television dramatizations and/or historical accounts, all largely portrayed through a Navy lens. This book centers on the Army Air Corps' important contribution to the battle. It gives appropriate and long-overdue recognition of the Army's role, especially as it was reflected in the actions of Taylor and Welch, and provides a richer understanding of what truly happened in the days leading up and subsequent to the attack. Meek helps fill in that historical gap and correct the incomplete historical account of December 7, 1941.

Rick Barry, former Cold War/Vietnam naval aviator and retired World Bank chief of information services



Command Culture: Officer Education in the U.S. Army and the German Armed Forces, 1901-1940, and the Consequences for World War II. By Jorg Muth. Denton Tex.: University of North Texas Press, 2011. Notes. Bibliography. Index. Pp. x, 366. \$29.95 ISBN: 978-157441-303-8

Dr. Muth, an historian from the University of Utah, endeavors to "reveal that the education of the American officer corps has not been evaluated critically enough and has not been put into context." His frame of reference is culture which, in his view in the American experience, is largely derived from West Point and somewhat tempered with later education or training at the Command and General Staff School (CGSS). His standard of comparison is similar German officer education institutions of the period. Muth concludes from these comparisons that during the land battle following the Normandy invasion, American leadership was generally woefully lacking.

He defines command culture as “how an officer considers himself to be in command, i.e., does he command as a visible person close to the action or rather through orders by his staff from his command post? It also means the way an officer tackles the turmoil and chaos of battle and war—whether he tries to make sense of it by the application of doctrine or rather utilizes the pandemonium to make bold moves. This study will therefore also deal with the question of whether the command culture of an officer corps emphasizes personal initiative or playing by the rules and regulations.”

As worthy as this undertaking might be, it is seriously lacking in analytic rigor. Mr. Muth rightfully relies heavily on historical primary and secondary sources to provide numerous examples and anecdotes to make his case. As such as these stories are illustrative, however, without some framework for critical analysis, the reader is left to simply nod his head up and down as stories unfold. The bibliography is most impressive but lacks any references to some of the leading theories of organizational and leadership culture developed in the 1970s and 80s.

The book might have been much more convincing if Muth had relied on a more academic approach to decipher the command cultures of the German and American armies. For example, Edgar Schein’s seminal *Organizational Culture and Leadership: A Dynamic View* (1985) suggests three levels of observation and analysis to unravel culture:

Artifacts: wherein culture is revealed by observable objects or function

Values: outward images of the core assumptions held by the group

Core assumptions: provide the foundation of the group and shape the values, perceptions and behaviors exhibited

To really understand an organization’s culture, we need to pierce the organization’s surface below the artifact and value levels to reveal the basic underlying assumptions which are the core of an organization’s culture. Muth seeks to do this but falls short of building a convincing case. He might have chosen a less academic approach to give his analysis some framework by relying on the analytical techniques used by Carl Builder in his *Mask of War* (1989) that examined the service cultures of the American army, navy and air force:

Altars of Worship: Tradition is the Navy’s altar and the icon on the altar is independent command. The Air Force worships at the altar of technology. The object of the Army’s worship is the country; the means of worship is service.

Measuring Themselves: The Navy

counts ships, the Air Force counts newer, higher technology airplanes; and the Army counts people.

Toys (weapon systems) versus the Arts: The Navy is attached to the art of being a naval officer, the Air Force is the service most attached to its toys; and the Army is moving from its attachment to art to an attachment to toys.

Intra-service Branch Distinctions: The Navy has a much rationalized pecking order, the Army has extensive branch distinctions, and the Air Force distinguishes between pilots and everyone else.

Institutional Legitimacy and Relevancy: The Navy is supremely confident of its legitimate position as an independent institution; relevancy was a challenge in the nuclear age, but the Navy rejected nuclear war as unlikely. The Air Force is less confident about its legitimacy but secure in the knowledge of the relevance of air power to modern war. The Army remains the most secure of the three services on the assumption that wars are ultimately decided on the ground.

Despite the lack of an analytical framework, such as the two preceding suggestions, Muth provides much food for thought and heated discussion. Those readers with an idealized view of West Point are forewarned that his scathing indictment of the Point and the CGSS will be tough to digest. As a parting comment, I would suggest that his heavy criticism of the US Army’s reliance on doctrine vs. individual initiative fails to recognize the massive resource foundation of this doctrine that allows a somewhat inexperienced force, from general officer to rifleman, to prevail. Indeed, had the German staff paid more attention to resources, the Russian campaign, which was the first peal in their death knell, might have been avoided or, at least, conducted differently. Individual initiative on the battlefield cannot overcome significant resource deficiencies in the long run. As every serving officer knows, *more is better*.

Dr. Gerald Abbott, professor emeritus, Industrial College of the Armed Forces, National Defense University



Global Air Power. By John Olsen, ed. Washington D.C.: Potomac Books, 2011. Notes. Appendices. Bibliography. Index. Pp. xix, 539. \$55.00 ISBN: 978-1-59797-555-1

Global Air Power is a hefty, impressive, expensive, and important volume. Olsen has assembled a stellar group of

authors, including some top scholars in the field of aviation history, to write nine essays on the subject, and a practitioner and planner to sum up. Six chapters deal with the leading and largest air powers (China, India, Israel, Russia, UK, and U.S.), and three chapters cover a number of smaller air forces in specific regions (Europe, Latin America, and Asia Pacific).

Unlike Olsen’s previous *A History of Air Warfare*, this collection focuses on doctrine, administration, and social/cultural issues rather than operations and hardware. It is very broad in coverage and contains considerable detail; even those familiar with the various subjects will probably learn something. Notably it brings the story into the 21st century to include operations in Afghanistan and Iraq.

Of the many positive elements of the book, a number stand out. First is the excellent treatment of “lesser” air forces, those little known and seldom considered by most English language readers. This adds new and interesting material and balance, in contrast to similar books that focus only on major states. Second, *Global Air Power* is enhanced by extensive and rich notes and a bibliography which together comprise almost 100 pages. These demonstrate the solid underpinning of the essays and serve as a valuable resource for students. Third, the authors are outspoken, blunt, and candid at points and thus shine a critical light on the actions of the various players.

For all of the praise, the collection has flaws. As is customary in all collections, the chapters vary in prose, content, detail, and analysis (while this is a characteristic of the genre, the editor should have wielded a heavier red pen). There is also the inevitable issue of coverage. German air power is not the focus of any of the essays, and French and Italian air power is also largely absent. Certainly the contributions of these nations to air power history, theory, and practice are greater than some of those treated in detail; their absence weakens the book. One can also properly criticize the brief treatment of U.S. Navy and Marine Corps aviation. The scant treatment of drones and their use in anti-terrorism warfare is perhaps understandable but, nevertheless, regrettable. At the least, the wrap-up essay should have dealt with this increasingly important element. Depending on the reader’s interest and background, some essays will bore, some will stimulate, some will frustrate, and some will educate. For many readers, several essays will appear as rehashes, while others break new ground. Further, despite the theme of air power, the essays are not joined by a common thread. While most of them can stand alone, together they show

a lack of focus and editing. However, this criticism is valid only for those who slog through the entire book, chapter by chapter, word by word. Reading the collection cover to cover is not easy going.

Overall this is an excellent overview of air power as we enter the 21st century—particularly valuable for those who want a concise, documented, authoritative discussion of a particular air power and those who desire to venture into some virgin territory. *Global Air Power* is a welcome and valuable addition to anyone interested in military aviation and is highly recommended.

Kenneth P. Werrell, Christiansburg, Virginia



The RAF, Small Wars and Insurgencies in the Middle East, 1919–1929. By Sebastian Ritchie. London UK: Air Historical Branch (AHB), Ministry of Defence, 2011. Pp. 94 ISBN: none

Dr. Sebastian Ritchie, an historian at the Ministry of Defence in London (and the author of *Industry and Air Power: The Expansion of British Aircraft Production, 1935–1941* published in 1997), has produced a short official history which should be of great interest to Allied airmen. While, admittedly, the period barely covers two decades, and the aircraft in service for most of the time were single-engine, two-seater derivatives of World War I types, useful and enduring lessons were learned from sorties over, and operations in, Somalia, Iraq, Afghanistan, and Palestine.

Command, control, communications, and psychological sorties were flown, weather permitting. Observations, photos, and W/T (wireless telegraphy, or radio) were in use as well as no-fly zones. An essential part of the RAF's success in the interwar years was the excellent training from 1923 at Halton of the ground crew who kept the aircraft serviced in all weather conditions.

Equally important were the close-liaison with the surface naval and army commanders, intelligence, and the activities of political officers, quite often ex-servicemen themselves.

This AHB volume starts with the ground-breaking 1919 operations in Somaliland in which six RAF aircraft and crews took a successful part, setting the precedent for the 1920 Cairo decision to use the RAF in colonial campaigns to gradually replace the slow, cumbersome Army garrisons. Shortly, Iraq, Aden/Yemen, and eventually Trans-Jordan were so controlled. At a time of financial con-

straints, Lord Trenchard, a Boer War veteran and head of the RAF, bet correctly that a few RAF squadrons could replace Army battalions economically and efficiently.

The RAF flew reconnaissance sorties collecting photo evidence, dropped leaflets warning of attacks, and occasionally bombed and machine-gunned obstreperous villages. It also employed armored cars, especially in Iraq. Because of careful planning and preparations, casualties in these conflicts were negligible.

Air control was not used in Palestine during the 1936–1938 Arab Revolt when British troops and police committed a number of atrocities. Ultimately the solution was imposed by a tri-service effort on the eve of World War II.

Ritchie provides conclusions and the principal lessons for air power. This AHB volume should be read as a corrective to David Omissi's *Air Power and Colonial Control: The Royal Air Force, 1919–1939* that was published in 1990.

Robin Higham, Professor Emeritus, Military History, Kansas State University, Manhattan Kansas



Finish Forty and Home: The Untold World War II Story of B-24s in the Pacific. By Phil Searce. Denton Tex.: University of North Texas Press, 2011. Map. Photographs. Notes. Bibliography. Index. Pp xiv, 373. \$29.95 ISBN: 978-1-57441-316-8

In mid-December 1941, sixteen-year-old Herman Searce lied about his age and successfully enlisted in the U.S. Army. Trained as a radio operator, he spent more than two years flying in B-24 Liberators with the 42nd Bomb Squadron of the 11th Bomb Group. In this well-written account of his father's combat career, Phil Searce examines in considerable detail the 11th's combat operations as part of the Seventh Air Force beginning in 1943.

During the first year of the war, the 11th flew Boeing B-17s primarily in support of Marine and Army operations in the Southwest Pacific. These missions occurred before Searce's arrival. Thus, B-17s are mentioned only in a brief analysis when the author compares them with the Liberators. Proceeding in chronological order, the book takes the reader on a series of flights from April 1943 through February 1945, when Searce fulfilled his required forty combat missions. Drawing on unit records and interviews with former crewmembers, the son discusses most

of the missions in considerable detail. He also includes accounts concerning the 11th's three other squadrons—the 26th, 98th and 431st—emphasizing loss of specific aircraft.

For the most part, the 11th Bomb Group supported Admiral Chester Nimitz's island-hopping campaign, which began with the invasion of Tarawa in November 1943. After the war's first year, the early B-17s were withdrawn from the Pacific theater in favor of the longer-range B-24s. The B-17s were considered more rugged and better suited for the extensive air defenses encountered over Europe. Recalling conversations with 11th crewmembers, Searce points out that they recognized that Japanese defenses were less formidable if for no other reason than they were usually restricted to a relatively small area associated with an island or atoll.

On the other hand, 11th Bomb Group missions frequently required flying more than a thousand miles one way. From time to time, they would deploy to primitive forward operating bases. Because of the unpredictable weather and vast distances, proper fuel management was essential. As the war progressed, the Navy and Army Air Forces deployed dedicated search-and-rescue aircraft and ships to the Western Pacific. The chances of being picked up from a downed aircraft improved. Escaping from a B-24 that ditched was extremely difficult, however, but lives were saved because of flying boats and, sometimes, submarines.

Searce briefly touches on B-29 Superfortress operations after the 11th moved up to Guam. Unfortunately, he repeats what I believe to be a significant error by a well-known naval historian twenty years earlier. Both authors cite the loss of an early B-29 over the northern Solomons in May 1943, as yielding an intelligence bonanza to the Japanese, but no primary sources in either work are listed. I find such a questionable assertion, without solid foundation, disturbing. It reflects negatively on what otherwise would appear to be a fine research effort.

While the reconstruction of wartime conversations eases the flow of the narrative and brings to life key personalities, the reader will have to decide if this literary device, increasingly in use, adds or detracts from the work's historical legitimacy.

Lt. Col. Steve Ellis, USAFR (Ret.), Docent, Museum of Flight, Seattle, Washington



Boeing B-17: The Fifteen Ton Flying Fortress. By Graham M. Simons and Dr. Harry Friedman. South Yorkshire, UK: Pen and Sword Books, 2011. Photographs. Index. Pp 256. \$30.36 ISBN: 978-184884538-1

This relatively short book packs a punch. With the set purpose “to subject the design, in all its forms, to close scrutiny,” Simons and Friedman detail the development and fielding of the B-17 from its infancy to its post-war use. To attempt this daunting task, they begin with prewar theory followed by initial aircraft development and continue as harsh lessons learned in combat dictate changes to the weapon system. Included in their efforts are discussions concerning the challenges of production by three separate companies (Boeing, Douglas, and Lockheed).

Only during their discussions of B-17 use by the Royal Air Force do the authors provide any significant discussion of B-17 combat operations. The lack of detailed discussion of combat operations doesn't take away from the text, as the authors focused on discussing development rather than wartime operations. Numerous tables and charts detail the many changes made to the B-17. Supplementing the text and tables are numerous photographs and drawings. These are primarily technical images, such as drawings of the various bomb bay configurations or photos of the changing gun mounts, and serve to document and detail the myriad changes made to the Flying Fortress.

Unlike many other books that describe B-17 development from the Boeing Model 299 to the famed World War II bomber, Simons and Friedman don't end their discussion with the end of the war. They include highlights of the B-17s that continued to fly after the war in civilian capacities. These post-war aircraft are documented with numerous photographs.

While the text appears authoritative, a review of the one-page bibliography reveals only secondary sources. Moreover, historians and interested readers will certainly be hampered by the absence of footnotes or endnotes as they are left to wonder where the information came from.

To close the book, the authors apparently felt compelled to compare the B-17 to the B-24, Soviet, Axis, and British bombers. This seventeen-page chapter is definitely the greatest weakness of the text. The analysis is superficial at best and reads more like an armchair history buff's attempt to compare statistics to reach a definite conclusion. Once again highlighting the lack of documentation, the authors describe one efficiency study “of particular interest” without ever mentioning the

name of the study, thus leaving readers to question its merits. They then quickly conclude that determining which aircraft was best is “too simplistic” and “would be termed brand loyalty.” That being the case, they would have been better served by leaving any attempts to compare the various bombers out of the text. Their attempt appeared to only be an afterthought without adding any merit to the text.

Boeing B-17 is not a “there I was” type book. While focusing on the technical aspects of the B-17, the book is an easy read. Unlike previous books of a similar nature, this book does not break down in to an endless stream of charts, tables, and pictures of nose art. It is a detailed outline of the Flying Fortress's technical development. While Simons and Friedman set out to write the definitive study of the legendary bomber's history, their failure to document their research mars their effort. Despite this flaw and their shallow attempt to compare World War II bombers, they penned an interesting analysis of the B-17's development. While not perfect, the book merits reading by both fans of the B-17 and students of the European Air War.

*Lt. Col. Daniel J. Simonsen, USAF (Ret.),
Ruston, Louisiana*



Three **Profiles of Flight** combined: **Panavia Tornado: Strike, Anti-Ship, Air Superiority, Air Defense, Reconnaissance & Electronic Warfare Fighter Bomber; Sepecat Jaguar: Tactical Support and Maritime Strike Fighter;** and **British Aerospace Hawk: Armed Light Attack and Multi-Combat Fighter Trainer.** By Dave Windle & Martin Bowman. South Yorkshire, UK: Pen & Sword Aviation, 2010. Tables. Illustrations. Photographs. Notes. Pp. 70. \$31.52. ISBN: 978-1-84884-235-9, 237-3, and 236-6, respectively

Growing up around U.S. and Royal Air Force bases in eastern England, Martin Bowman developed a love of aviation at a young age. Having written several dozen books on aviation, Bowman is well qualified. Whether in his descriptions of the history of an air campaign or the genesis and performance of an airframe, Bowman has covered the breadth and width of almost all subjects pertaining to Anglo-American aviation in his varied books and contributions to aviation journals such as *Flight International*, *Rolls-Royce Magazine*, *Aeroplane Monthly* in

Britain, *Air Combat*, *Air Classics*, and *Air Progress*. He also experienced real life interactions with the airframes he chronicles through international travel and participation in German and USAFE missions aboard Transall C-160 and C-130 Hercules aircraft. This combination of academic and real-life experience firmly establishes his credentials.

The *Profiles of Flight* series traces the inception, production, and operational history of the Tornado, Jaguar, and Hawk, all British warbirds, from blueprint to boneyard. It does not provide a definitive thesis on the operational success of these airframes. Bowman does not render judgment upon these aircraft but, instead, provides a treasure trove of pictures and information about each one.

The books are similar in coverage: aircraft specifications and history and an abundance of pictures and artwork by Dave Windle. The standard layout for the series chronicles each aircraft through its service life including why the aircraft was designed, aircraft changes (where much of the technical data on performance is covered), and its operational history. Personal accounts from pilots of the aircraft are interspersed throughout the books to give insight into the aircraft and provide opinions on performance. Units currently flying the aircraft are listed followed by illustrations of the aircraft in accurate paint schemes. Of the three books, the one on the British Aerospace Hawk stands apart due to the much higher amount of personal narrative included. This is appropriate because the airplane is used for RAF pilot training. The personal excerpts provide an insight into this training.

The biggest strength of these relatively slim volumes is the level of detail in descriptions, specifications on aircraft and, most of all, the pictures. They contain a plethora of some of the best aviation pictures available. For aircraft enthusiasts or airplane modelers looking for high quality pictures to admire, or as a jumping off point for modeling, look no further. Going beyond a pretty face, the books also provide a wealth of information on the aircraft they cover, whether it is the history of the airframe, why and how it was built, weapon systems carried, and upgrades. This level of detail permeates the series and provides an understanding of the airframe's evolution and how real world demands often spurred innovation in the aircraft themselves. Further, excerpts of personal accounts also give insight into the unique flight characteristics of each airframe, whether it is engine performance or ergonomics of a cockpit.

The only problematic issue for these books, and likely the series in general, is

readability for those who are not practicing members of the cult of airpower. The heavy use of aeronautical phraseology makes this a hard casual read to those not really interested in the subject. Once again, this series aims at providing in-depth information for those looking for details about a specific airframe. If airplanes are an interest to the reader, the book is an easy enough read to further educate oneself.

In summary, these books excel at their objective of providing an overview of an aircraft with outstanding images. For those less interested in airplanes, it is still worthwhile just to leaf through the high quality photos and superb drawings.

2d Lt. Erol G. Asu, Research Assistant, USAF Academy



The World Air Power Guide. By David Wragg. South Yorkshire UK: Pen & Sword Aviation, 2010. Index. Glossary. Photographs. Tables. Pp.vi, 298. \$36.50 ISBN: 978-1-8488-4282-3

The book is a useful reference for anyone who wants to rapidly survey a number of countries with respect to their military air arms. The user may also need access to

another volume, such as *The Complete Encyclopedia of World Aircraft* or *Jane's*, since this book identifies aircraft by their name and number and frequently by manufacturer and numbers of aircraft in inventory, but not with key operating parameters. This is not a criticism, since that information would double or triple the size of the book.

Wragg includes information on naval air arms including some coast guard air arms and army air arms, where applicable, as well as the air forces of the 175 nations covered. Nations are arranged alphabetically. He also includes a table of NATO designations for Russian aircraft and missiles.

Directly under each country name, Wragg provides information *a la The Economist* of what I think are useful data for comparison: Population, Land Area, GDP, Defense Expenditures, and number of Service Personnel. Areas are designated in both square miles and square kilometers and funding in both US dollars and British pounds.

Although the back inside dust cover lauds the author by remarking about several of his books on the Royal Navy as "meticulously researched," I found some clear evidence of sloppy research in this book. Several, of many, examples follow. On page 272, in the otherwise well-written section on the United States Army Air

Corps, he comments on aircraft procurement subsequent to the Munich crisis of 1938 and the outbreak of the European War in September 1939. According to him, USAAC procurement at that time included the Boeing P-26, Seversky P-35, and Curtiss P-36 fighters; Northrop A-17 and Curtiss A-12 and A-18 ground attack aircraft; and Martin B-10 and B-12 bombers. None of those aircraft was being procured after the early-middle 1930s. His section on U.S. Navy and Marine air arms errs in identifying Eugene Ely, on page 278, the man who first took off (1910) and landed (1911) aboard U.S. Navy ships, as a "young naval officer." Young he was—actually twenty-four years old—but he was never a naval officer.

That being said, Wragg's description of each country and its air arms is usually quite informative and accurate. The description provides a context for otherwise dry facts about types and numbers of aircraft currently employed by each nation. Often he notes the average number of flight hours per year of the nations' fighter pilots—a key indicator of expected relative effectiveness in combat.

*Capt. John F. O'Connell, USN (Ret.),
Docent, National Air and Space Museum*



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Parts One and Two were reviewed in *Air Power History* magazine, Fall 2008

Part Three was reviewed in *Air Power History* magazine, Fall 2007

All available at Amazon.com

Books Received

Althoff, William F. *Arctic Mission: 90 North by Airship and Submarine*. Annapolis, Md.: Naval Institute Press, 2011. Maps. Photographs. Illustrations. Notes. Appendices. Glossary. Bibliography. Index. Pp. xviii, 264. \$39.95 ISBN: 978-1-61251-010-1

Caver, Joseph, Jerome Ennels and Daniel Haulman. *The Tuskegee Airmen: An Illustrated History, 1939-1949*. Montgomery, Ala. And Louisville, Ky.: NewSouth Books, 2011. Map. Photographs. Illustrations. Bibliography. Index. Pp. 230. \$27.95 ISBN: 978-1-58838-244-3.

Dunbar, Carl O. and Peter M. Dunbar, Ed. *Before They were The Black Sheep: Marine Fighting Squadron VMF-214 and the Battle for the Solomon Islands*. Gainesville: University Press of Florida, 2011. Maps. Photographs. Notes. Bibliography. Index. Pp. 305. \$32.00 ISBN: 978-0-8130-3725-7

Magruder, Mark A. *Nightfighter: Radar Intercept Killer*. Gretna: La.: Pelican Publishing Co., 2012. Maps. Photographs. Illustrations. Index. Pp.303. \$26.95 ISBN: 978-1-4556-1532=2

Meilinger, Phillip S. *Into the Sun: Novels of the United States Air Force*. Chicago: Imprint Publications, 2011. Pp. xiv, 241. \$29.95 Paperback ISBN: 978-1-879176-47-8

Osgood, Kenneth and Andrew K. Frank, Eds. *Selling War in a Media Age: The Presidency and Public Opinion in the American Century*. Gainesville: University Press of Florida, 2011. Notes. Pp. xii, 278. \$29.95 Paperback ISBN: 978-0-8130-3800-1

Picarella, Giuseppe. *Japanese Experimental Transport Aircraft of the Pacific War*. Haverford, Pa.: Casemate, 2012. Photographs. Illustrations. Appendices. Bibliography. pp. 248. \$69.00 ISBN: 978-83-61421-21-2

Springer, Emily D., Ed. *Proceedings of the Thirty-Ninth History Symposium of the International Academy of Astronautics*, Fukuoka, Japan, 2005. [History of Rocketry and Astronautics: AAS History Series, Vol. 36-AAS History Symposia, Vol. 25], San Diego, Calif.: American Astronautical Society, 2011. Notes. Photographs. Illustration. Pp. 303. \$75.00 Paperback ISBN: 978-0-87703-573-2

Watson, George M., Jr., *Choices: The Crisis of Conscience of the Vietnam Generation*. Xlibris, 2011. Photographs. Pp. xx, 251 Paperback ISBN: 978-1-4653-0895-5 [To order, call 888-795-4274 or email: Orders@Xlibris.com]

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

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Exciting Modern Work on the Tuskegee Airmen



The Tuskegee Airmen, An Illustrated History: 1939-1949, by Joseph Caver, Jerome Ennels, and Daniel Haulman, is a comprehensive account of the pioneering group of African-American pilots beginning prior to World War II. Using many never-before-published photographs, the exploits of the pilots—as well as their support personnel—are chronicled in fine detail. An important feature of this book is a chronology detailing missions flown. The facts presented here debunk some of the myths and legends surrounding this exceptional group. A complete pilot roster is also included.

Available from NewSouth Books: www.newsouthbooks.com/tuskegeeairmen, (334) 834-3556, ISBN 978-1-58838-244-3, \$27.95

Coming Up



April 1-4, 2012

The **Army Aviation Association of America** will hold its annual Professional Forum and Exhibition at the Gaylord Opryland Hotel in Nashville, Tennessee. For details, see the Association's website at www.quad-a.org, or contact the event registration office at AAAA_Attendee@experient-inc.com, tel. (866) 229-2386.

April 11, 2012

The **U. S. Naval Institute** will hold its 138th annual meeting at the U.S. Naval Academy in Annapolis, Maryland. For more details, see the Institute's website at www.usni.org or contact the Institute at customer@usni.org, tel. (410) 268-6110.

April 16-19, 2012

The **Space Foundation** will hold its 28th National Space Symposium at the Broadmoor Hotel in Colorado Springs, Colorado. For more information, see their website at www.SpaceFoundation.org or call (719) 576-8000.

April 17-20, 2012

The **National Museum of the U.S. Air Force** will host a reunion commemorating the 70th anniversary of the Doolittle Tokyo Raid. Public events will feature autograph sessions and a memorial service. All five of the surviving raiders are programmed to attend, and the Museum anticipates a fly-in of the largest number of B-25 Mitchell bombers to gather in one place since WWII. For more details, see the website at www.nationalmuseum.af.mil or contact the Museum's Public Affairs Division at (937) 255-1337.

April 18-22, 2012

The **Organization of American Historians** and the **National Council on Public History** will hold their annual meetings concurrently at the Frontier Airlines Center in Milwaukee, Wisconsin. The theme of this year's meeting is "Frontiers of Capitalism and Democracy," with more than 150 panels on the program. For more details, see the Organization's website at www.oah.org or contact the OAH via e-mail at help@oah.org, tel. (812) 855-7311.

April 27-28, 2012

The **Vietnam Center and Archive** will host its annual conference at the Overton Hotel and Conference Center in Lubbock, Texas. For more details, see the Center's website at www.vietnam.ttu.edu/events/ or contact Mr. Steve Maxner at vietnam-centerconference@ttu.edu.

May 1-3, 2012

The **American Helicopter Society** will hold its 68th annual Forum and Technology Display at the Fort Worth Convention Center in Fort Worth, Texas. This year's theme is "Steering Vertical Flight Technology in New Directions." For more details, see the Society's website at www.vtol.org or contact the forum coordinator, Mr David Renzi at (703) 684-6777, ext. 105.

May 4-6, 2012

The **Society of Air Racing Historians** will host its annual convention in Cleveland, Ohio. For details see the SARH website at www.airrace.com/index.htm or contact the Society's Secretary/Treasurer, Herman Schaub, at herman@airrace.com, tel. (440) 234-2301.

May 9-12, 2012

The **Aircraft Engine Historical Society** will hold its 9th annual convention in Pensacola, Florida. For details, view the website at www.enginehistory.org/ or write to the AEHS at 4608 Charles Dr NW, Huntsville AL 35816.

May 10-13, 2012

The **Society for Military History** will hold its annual conference at the Hyatt Regency Crystal City in Arlington, Virginia. This year's theme is "The Politics of War." For details, see the Society's website at www.smh-hq.org/conference.html or contact the conference coordinator, Mr. Matt Seelinger, at matt.seelinger@army-history.org.

May 15-17, 2012

The **U.S. Naval Institute** will host its 6th annual Joint Warfighting Conference and Exposition at the Virginia Beach Conference Center in Virginia Beach, Virginia. Contact the Institute via its website at www.usni.org/ or e-mail: customer@usni.org, tel. (410) 268-6110.

June 4-9, 2012

The **American Society of Aviation Artists** will hold its 26th annual International Aerospace Art Forum at the Kalamazoo Aviation History Museum in Kalamazoo, Michigan. This event will include the judging of the ASSA's 26th International Aerospace Art Exhibition; entries will remain on display at the museum until September 8, 2012. For more details, see the Society's website at www.asaa-avart.org or contact the Society's executive secretary, Ms. Nanette O'Neal at ASAAcontact@assaa-avart.org, tel. (732) 940-1646.

June 13-17, 2012

The **Council on America's Military Past** will hold its 46th annual conference in Lexington, Virginia. For details, see the CAMP website at www.campjump.org/ or write to the Council on America's Military Past, P.O. Box 4209, Charlottesville VA 22905.

July 10-14, 2012

The **International Committee for the History of Technology** will host its 39th annual symposium in Barcelona, Spain. The theme of this year's gathering is "Technology, the Arts and Industrial Culture." For more details, see the website at www.icohtec.org/index.html or contact Prof. Antoni Roca Rosell at antoni.roca-rosell@upc.edu.

July 11-15, 2012

The **International Organization of Women Pilots**, better known as "the Ninety-Nines," will hold its annual International Conference at the Marriott Providence Downtown in Providence, Rhode Island. For details, see the Organization's website at www.ninety-nines.org, or contact the Organization at 99s@ninety-nines.org, tel. (800) 994-1929.

August 3-5, 2012

The 15th annual convention of **The Mars Society** will be held in Pasadena, California. This year's meeting will be held in conjunction with the anticipated landing of the NASA spacecraft *Curiosity*, which is expected to touch down on the surface of Mars on August 5. For details, visit the Society's website at www.marssociety.org/ or contact info@marssociety.org, tel. (303) 980-0890.

August 6-9, 2012

The **Association for Unmanned Vehicle Systems International** will host “Unmanned Systems North America 2012” at the Mandalay Bay Resort and Casino in Las Vegas, Nevada. For details, view the website at www.auvsi.org, or contact via info@auvsi.org, tel. (703) 845-9671.

September 6-9, 2012

The **Tailhook Association** will hold its annual Reunion and Naval Aviation Symposium in Reno, Nevada. For details, view the Association’s website at www.tailhook.org/ or contact the Association’s Reunion Coordinator, Mr. Marc Ostertag, at tag@tailhook.net, tel. (800) 322-4665.

September 7-8, 2012

The **World War I Historical Association** will hold its annual National Seminar at the USMC University in Quantico, Virginia. For further information, see the WWIHA website at www.worldwar1.com/tripwire/smtw.htm or contact Ms. Carol Vandenbruhl at cvandenbruhl@netscape.net, tel. (248) 471-2366.

September 11-13, 2012

The **American Institute of Aeronautics and Astronautics** will host “AIAA Space 2012,” its premier annual event on space technology, policy, programs, management, and education, at the Sheraton Pasadena in Pasadena, California. For details, see the Institute’s website at www.aiaa.org/SPACE2012/ or contact the Institute at custserv@aiaa.org, tel. (703) 264-7500 or (800) 639-AIAA.

September 17-19, 2012

The **Air Force Association** will present its 2012 Air & Space Conference and

Technology Exposition at the Gaylord National Resort & Conference Center on the Potomac River’s National Harbor, directly across from Alexandria, Virginia. View the Association’s website at www.afa.org/events/conference/2012/default.asp or contact the AFA’s expositions director, Mr. Dennis Sharland, at DSharland@afa.org.

September 23-26, 2012

The **Association of Old Crows** will host its 49th International Symposium and Convention at the Phoenix Convention Center in Phoenix, Arizona. For details, see the Association’s website at www.crows.org/ or pulse a Headquarters Crow at tel. (703) 549-1600.

September 26-29, 2012

The **Society of Experimental Test Pilots** will host its 56th annual Symposium and Banquet at the Grand Californian Hotel in Anaheim, California. For details, see the Society’s website at www.setp.org/ or contact the Society at Setp@setp.org, tel. (661) 942-9574.

October 4-7, 2012

The **Society for the History of Technology** will hold its annual meeting at the Copenhagen Business School in Copenhagen, Denmark. One of this year’s major themes is “Technology, East-West Relations, and the Cold War.” For more information, see the Society’s website at www.historyoftechnology.org/annual_meeting.html, or contact them by e-mail at shot@virginia.edu.

November 15-18

The **History of Science Society** and the **Philosophy of Science Association** will co-host their annual meetings at the

Sheraton San Diego Hotel and Marina in San Diego, California. For details, see the Society’s website at www.hssonline.org or contact them at Info@hssonline.org, tel. (574) 631-1194.

November 28-29

The **American Astronautical Society** will hold its annual meeting in Pasadena, California. For details, see the Society’s website at astronautical.org/conference, or contact them at aas@astronautical.org, tel. (703) 866-0020.

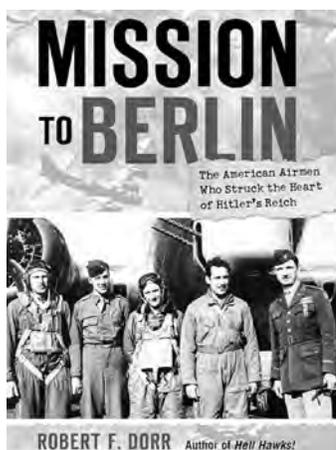
January 3-6, 2013

The **American Historical Association** will hold its 127th annual meeting in New Orleans, Louisiana. The theme of the meeting will be “Lives, Places, Stories,” emphasizing the impact of environment and geography upon human history, but other topic proposals will also be entertained. To propose panels or papers, or to request additional information, contact the AHA’s meeting program committee via the AHA website: www.historians.org/perspectives/issues/2011/1109/1109ann4.cfm.

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

Air Power History
11908 Gainsborough Rd.
Potomac, MD 20854
E-mail: JNeufeld@comcast.net

Recently Released



The book “MISSION TO BERLIN” by Robert F. Dorr was published April 15. This is a general-interest World War II history that focuses on the B-17 Flying Fortress crews who attacked Berlin on February 3, 1945, in the largest mission ever flown against a single target. The book also includes a new look at the entire bombing campaign in Europe.

The young men who flew and maintained the B-17 are at the center of the story but “MISSION TO BERLIN” also has lengthy passages about Americans who flew and maintained the B-24 Liberator, P-47 Thunderbolt and P-51 Mustang.

Bob Dorr is technical editor and co-creator of this journal and was recently honored by the Foundation for his work on Air Power History. Bob describes “MISSION TO BERLIN” as a “Stephen Ambrose-style popular history of the triumphs and tragedies of everyday Americans who did something no one had done before. They fought giant battles several miles up in the sky across vast distances inside aircraft where oxygen was always needed and the temperature was almost always below freezing.”

“MISSION TO BERLIN” is available from on-line sources and at bookstores. You can order a signed copy directly from the author by contacting Robert F. Dorr, tel. (703) 264-8950, robert.f.dorr@cox.net

At this time of year our Foundation closes out the old fiscal year and prepares for the next. This process compels us to assess our status as an organization and how well we serve our membership.

Bottom line up front: your Foundation finds itself at a critical financial junction.

For the past three years the Board of Directors has employed an aggressive cost cutting effort that has the Foundation running as efficiently as we can reasonably expect given our current programs and member services. Unless we come up with other significant sources of revenue, the Foundation will be forced to take drastic action that will definitely affect the way we support our membership—and even our status as an organization.



Here are the major considerations facing us:

Our membership is great and loyal. Without their voluntary contributions over the last few years we would already be on the “trash heap of history.” However, our membership is aging, the numbers have been trending downward, and we have been unable to broaden our appeal in order to attract the next generation of support.

We have had a small stable of corporations that have reliably supported us over the years. The economy and changing tax rules have severely reduced their support in the most recent three years by roughly fifty percent. Expecting a recovery or easing environment to appear on the horizon is a strategy built on hope and not reality.

The Air Force has eliminated their more than fifty years of financial support for the publication of *Air Power History*.

Like much of the economy, our investments have declined, and even more concerning, we have had to dip into the principal just to meet annual expenses.

We have done just about all we can to reduce costs: **An example of this effort is our plan to reduce the printing and mailing of *Air Power History* from four issues to two** (the other two issues will be distributed electronically via our website).

As we approach our 60th anniversary as an organization, we are faced with deciding whether the Foundation can remain viable. Your Board of Directors remains committed to sustaining it. However, without a near term boost in revenue, we will have to face additional, major restructuring, or perhaps even dissolution.

The most important element in our moving forward is hearing from you. We need your immediate help and feedback if we are to continue promoting the preservation and appreciation of *Air Power History*.

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

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



The Air Force *Historical* Foundation

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

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

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

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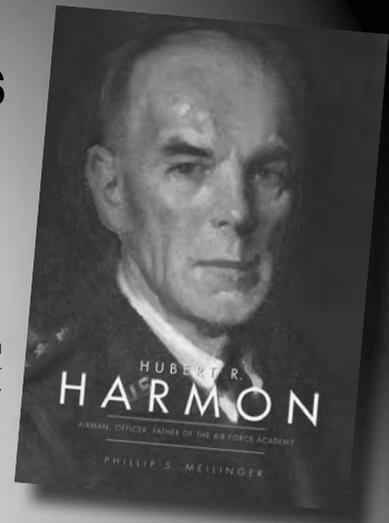
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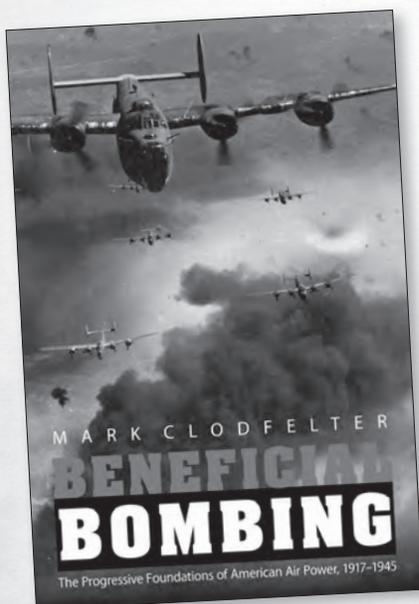
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Letters

Fan Letter

Long ago, when I was still a staff sergeant, I was induced to subscribe to *Air Power History*. Now some forty plus years later, I have finally gotten off my duff to write you a fan letter. While some of the articles are a bit too academic for me, they are almost always interesting, if not fascinating. Indeed, I save my most recent copy until I can read it in peace and thoroughly enjoy it.

One section in particular is of great value—the book reviews. They have been a regular burden on my budget. Your reviewers, especially General O’Sullivan and Lt. Col. Eldridge, are so knowledgeable, thorough, and careful, that I have no trouble following their recommendations.

I am very grateful to all those whose evident labor produces such an excellent journal.

Curt Weil, CFP, President, Lasecke Weil, Palo Alto, California

Saturn V

In the Winter 2011 issue [Vol. 58, No. 4] author Jeffery Bateman wrote: “At the time Phillips made his pitch, Apollo 7, the first manned mission with the Saturn V rocket, had not even launched.” Apollo 7 was launched with the Saturn 1B, Apollo 8 was the first manned mission launched with the Saturn V rocket and the third launch of the Saturn V. Apollo 4 and Apollo 6 were unmanned missions launched with the Saturn V.

Steven P. McNicoll, De Pere, Wisconsin

Notice

Roberts Awarded DFC for Kunar Valley Rescue

On November 10, 2011, General Edward A. Rice, Jr., USAF, Commander, Air Education and Training Command, presented the Distinguished Flying Cross to Lt. Col. Gregory Roberts for his actions in the Kunar Valley rescue in Afghanistan. The story of that event appears in this issue on pages 20-33. The photo of the award is on page 32.

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Reunions

1st Radio Relay. 17-20 September 2012.
Dayton, OH. Contact:
William Hayton
385 Lower Gragston Creek Road
Pritchard, WV 25555.
(304) 486-5349
wshayton@netzero.net

4th Fighter Interceptor Sq. 10-14 April 2013. Fairborn, OH. Contact:
Col (Ret) Bob Ettinger
2122 Via Pacheco
Palos Verdes Estates, CA 90274
(310)541-8625
rcettinger@aol.com

8th Tactical Fighter Sq. (1972 Takhli). 5-8 September 2013. Fairborn, OH. Contact:
Ron Hunt
1328 Meadow Moor Drive
Beavercreek, OH 45434.
(937) 426-0867
ron.hunt.oh@gmail.com

22nd Military Airlift Sq. 5-7 June 2012. Fairborn, OH. Contact:
Ray Daley
4775 Dayton-Springfield Road
Springfield, OH 45502
(937) 323-6304.
dthe2orfs@aol.com

26th Bomb Sq. 10-13 October 2012. Fairborn, OH. Contact:
Jan Demuth
3486 Weavers Ft. Jefferson Road
Greenville, OH 45331
(937) 548-4710
jan.demuth3486@gmail.com

38th Air Police Sq. 27-29 September 2012. Dayton, OH. Contact:
Ray Cummings
1128 Brookdale Ave.
Bayshore, NY 11706
(631) 667-7783.
djraegs@verizon.net

42nd Bomb Wing (Loring 60s Generation). 20-23 September 2012. Dayton, OH. Contact:
Col. (Ret.) Paul Maul
4605 Bobolink Drive
Castle Rock, CO 80109
(303) 523-8972
pablomaul@aol.com

50th Supply Sq. (Hahn AB, Germany). 1-6 October 2012. Dayton, OH. Contact:
Dave Thompson
5122 Havana Ave.
Wyoming, MI 49509
(616) 531-2979.
daves3iron@yahoo.com

51st Fighter Interceptor Wg. 13-16 September 2012. Dayton, OH. Contact:
Allie Craycraft
9501 East Jackson
Selma, IN 47383
(765) 744-1489.
alandjuanita@yahoo.com

63rd Troop Carrier Wg. 3-6 May 2012. Fairborn, OH. Contact:
Brian Forrester
6969 E Shea Blvd., #101
Scottsdale, AZ 85254
(480) 998-1112
brian@hcttravel.com

95th Bomb Gp. 7 May 2012. Dayton/Fairborn, OH. Contact:
Meg Brackney
261 Northwood Drive
Yellow Springs, OH 45387
(937) 767-2682
meggyib@aol.com

343rd Strategic Recon Sq. 19-22 September 2012. Fairborn, OH. Contact:
Paul Dolby
1221 Riverside Drive
Huntington, IN 46750
(260) 356-1761
Paul343rdrsrs@yahoo.com

351st Bombardment Gp. 14-17 June 2012. Erlanger, KY. Contact:
Deborah Eason
3722 Sussex Drive
Milledgeville, GA 31061
(478) 453-7388
dbme@windstream.net

355th Fighter Gp. Assn. 4-8 October 2012. Fairborn, OH. Contact:
William Cook
811 Old Forge Road
Kent, OH 44240
(330) 541-2653
bigbilldot@aol.com

379th Bomb Gp. Assn. 5-8 September 2013. Fairborn, OH. Contact:
Larry Loveless
140 Newton Road
Fredericksburg, VA 22405
(540) 373-1596
ginlotfarms@verizon.net

381st Bomb Gp. 1-5 August 2012. Fairborn, OH. Contact:
Kevin Wilson
145 Kimel Park Drive - Ste. 370
Winston-Salem, NC 27103-6972
(336) 760-2105
WilsonKvn@aol.com

388th Fighter-Bomber Wg. 30 May - 2 June 2013. Fairborn, OH. Contact:
Don Rahn
5902 Lynnaway Drive
Dayton, OH 45415
(937) 278-4390.

463rd Bomb Gp. Historical Society. 11-14 October 2012. Fairborn, OH. Contact:
Art Mendelsohn, Jr.
PO Box 1137,
La Canada, CA 91012
(714) 547-6651
swoosegroup@463rd.org
www.463rd.org

510th Fighter Sq. 4-8 September 2013. Mason, OH. Contact:
Guy Wright
1701 Mall Road Apt. 14
Monroe, MI 48162
(734) 740-3164
guywright@chartermi.net

815th Troop Carrier Sq. 20-23 September 2012. Fairborn, OH. Contact:
Bob Tweedie
2783 Double Eagle Drive
Beavercreek, OH 45431
(937) 426-7947.
ineztwbird@aol.com

4950th Test Wg./ARIA 328 Memorial. 6 May 2012. Fairborn, OH. Contact
Bob Beach
1616 Ridgeway Drive
Springfield, OH 45506-4023
(937) 325-6697
w8lcz@woh.rr.com

6147th Tactical Control Gp. 30 July-5 August 2012. Dayton, OH. Contact:
Tony Pascale
164 Timberton Drive
Hattiesburg, MS 39401
(601) 544-9248
tony_pascale@yahoo.com

Tan Son Nhut Assn. 11-14 October 2012. Fairborn, OH. Contact:
Johnnie Jernigan
956 Donham Drive
Beavercreek, OH 45434
(937) 426-3785
jernigan1@ameritech.net

Udorn Air Base. 22-25 July 2012. Dayton, OH. Contact:
John Moody
328 N. Elm Ave.
Fairborn, OH 45324
(937) 878-1944
winnemuccajohn@yahoo.com

3500th Pilot Training Sq. 11-14 October 2012. Fairborn, OH. Contact: Ed Mentzer
2734 Pheasant Run Lane
Beavercreek, OH 45434-6664
(937) 426-8807.
edmentzer@aol.com

OCS Class 60-B. 26-30 June 2012. Fairborn, OH. Contact: Bob Meyers
2558 Onandaga Drive
Columbus, OH 43221
(614) 738-9676
granpameyers@yahoo.com

PTC 67F (Vance AFB). 20-23 September 2012. Fairborn, OH. Contact: Bill Simmons
5528 Brewer Road
Mason, OH 45040-9236
(513) 404-2422
Bsimmons02@earthlink.net

Blind Bat C-130 Flarebirds. 25-27 May 2012. Fairborn, OH. Contact: John Philson
PO Box 419
Syracuse, OH 45779
(740) 416-1053
rushnpat@hotmail.com

B-52 Assn. 9-12 August 2012. Fairborn, OH. Contact: Wayne Pittman
PO Box 340501
Beavercreek, OH 45434-0501
(937) 426-1289
kwavn@earthlink.net

B-52 DFCS Assn. 13-16 June 2013. Fairborn, OH. Contact: Sharon Lemanek
1326 Town Hall Road
Beavercreek, OH 45432
(937) 426-8557
kenamel.s.j@fuse.net

B-58 Hustler Assn. 25-30 September 2012. Dayton/Fairborn, OH. Contact: Ray Guffe
8675 West Carol Lane
Glendale, AZ 85305
(707) 481-5665
rwg1@uad1.com

F-15-A Gathering of Eagles. 27-29 July 2012. Fairborn, OH. Contact: Donna Friedman
2508 Cedronella Drive
Chapel Hill, NC 27514
(919) 382-7271.

Loring AFB Ramp Rats. 26-29 July 2012. Fairborn, OH. Contact: Buzz Stock
225 Kline Street
Mishawaka, IN 46544
(574) 257-4797
buzzdotcom@sbcglobal.net

MacDill Flyers. 4-6 October 2013. Fairborn, OH. Contact: Gene Stevens
3380 Greenburn Road
Beavercreek, OH 45434
(937) 429-1552
genestevens@sbcglobal.net

Professional Loadmasters Assn. 19-23 September 2012. Fairborn, OH. Contact: Kent Brown
28 Pine-view Drive
Browns Mills, NJ 08015
(609) 893-1833
kabrown9@comcast.net

Ranch Hands Vietnam Assn. 10-13 October 2013. Fairborn, OH. Contact: Jack Spey
4245 South Rome Way
Hurricane, UT 84737
(435) 877-1166
maresfwb@aol.com

Retired Air Force Chapel Staff Alumni. 5-8 October 2012. Fairborn, OH. Contact: Thomas Curry
2500 Parkway Drive
Selma, AL 36703
(334) 872-7895
tcacpkwy@earthlink.net

Vietnam Dustoff Assn. 26-29 July 2012. Dayton, OH Contact: Neal Casperson
3905 Croydon Road
Pensacola, FL 32511
(850) 969-1961
caspertn@bellsouth.net

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

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. Most Word processors can be accommodated including WordPerfect and Microsoft Word. 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*, 11908 Gainsborough Rd., Potomac, MD 20854, e-mail: editor@afhistoricalfoundation.org.



The mystery aircraft in our Winter issue was the BAE Systems Hawk jet trainer. The U.S. Navy version is the T-45C Goshawk.

The example of a Hawk shown is BAE Systems Hawk T. Mk2 (serial no. ZK020), flown by experimental test pilot Andy Blythe at the Fort Worth Alliance Air Show in Texas on October 21, 2011.

The Hawk was designed in the late 1960s to replace the Folland Gnat as the Royal Air Force's fast jet trainer. An employee competition to name the aircraft resulted in "Tercel," a male hawk, but the RAF prudently selected the more common name. The first Hawk flew on August 21, 1974. The plane maker, Hawker Siddeley merged with other British companies to form British Aerospace, which later became BAE Systems.

The Hawk entered service with the RAF in April 1976, beginning with the T.Mk1 version. Subsequent Hawk T.Mk1A models were modified to carry Sidewinder missiles and a centerline gun pod.

Almost two-dozen versions of the Hawk have been developed, armed and unarmed, and are serving in air forces from Australia to Zimbabwe.

The U.S. Navy's T-45 Goshawk version was developed by the McDonnell Aircraft Corp. (now

Boeing) and had a troubled beginning as engineers worked to adapt the Hawk design to Navy carrier decks. The Goshawk replaced the T-2C Buckeye and TA-4J Skyhawk at training bases. The initial version was the T-45A with analogue instruments. The term T-45B applies to a land-based version that was never built. All Goshawks in Navy service today have been upgraded to T-45C standard with glass cockpit, inertial navigation, and other improvements.

Hawk ZK020 was one of two Hawk T. Mk2s that made a grand tour of U.S. training bases last year as part of a BAE Systems effort to promote a proposed Hawk AJT (Advanced Jet Trainer) variant as a replacement for the T-38C Talon in the U.S. Air Force's T-X trainer program. After the tour was completed, when the administration released its fiscal year 2013 budget proposal, officials said the T-X program would be postponed by three years. The T-38C, whose basic design is about fifteen years older than the Hawk, is now expected to be in service until 2025.

Hawk ZK020 was one of two planes on loan from No. 19 Squadron at RAF station Valley on the island of Anglesey, Wales, that made the swing around the United States. While they were away from home, No. 19 Squadron, the last active RAF unit that fought in the Battle of Britain, was disbanded on November 24, 2011, and reformed as No. 4 Squadron at Valley.

Was the choice of the Hawk too easy for you or too hard? Of twenty-nine people who entered our latest "name the plane" sweepstakes, all but one identified the Hawk correctly. That, however, is not unusual. Readers generally don't enter the contest unless they know the answer.

Our latest "History Mystery" winner, Michael LeGendre of Chaparral, New Mexico, told us that he saw ZK020 when it visited Holloman Air Force Base in his state last fall. Michael's prize is a gratis copy of the book "Mission to Berlin," about American B-17 Flying Fortress crews in Europe in World War II.

This Issue's Mystery Plane

See if you can identify our latest mystery aircraft. Remember, we also want to hear from you as to whether you think this long-running contest is too easy or too difficult. Remember the "Mystery" rules:

1. Submit your entry via e-mail to robert.f.dorr@cox.net. Entries may also be submitted on a postcard to Robert F. Dorr, 3411 Valewood Drive, Oakton VA 22124.

2. Write a sentence about the aircraft shown here. Include your address and telephone number. One contest entrant had to be disqualified this time around because she did not include a phone number.

3. A winner will be chosen from among correct entries and will receive an aviation book.

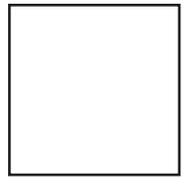
And let's get serious about those historical treasures in your attic or basement. Some readers say they just don't remember where their color

slides are. That's not a good way to assure the preservation of history. Dig out your slide or snapshot of a rare aircraft and lend it to Air Power History for this contest.





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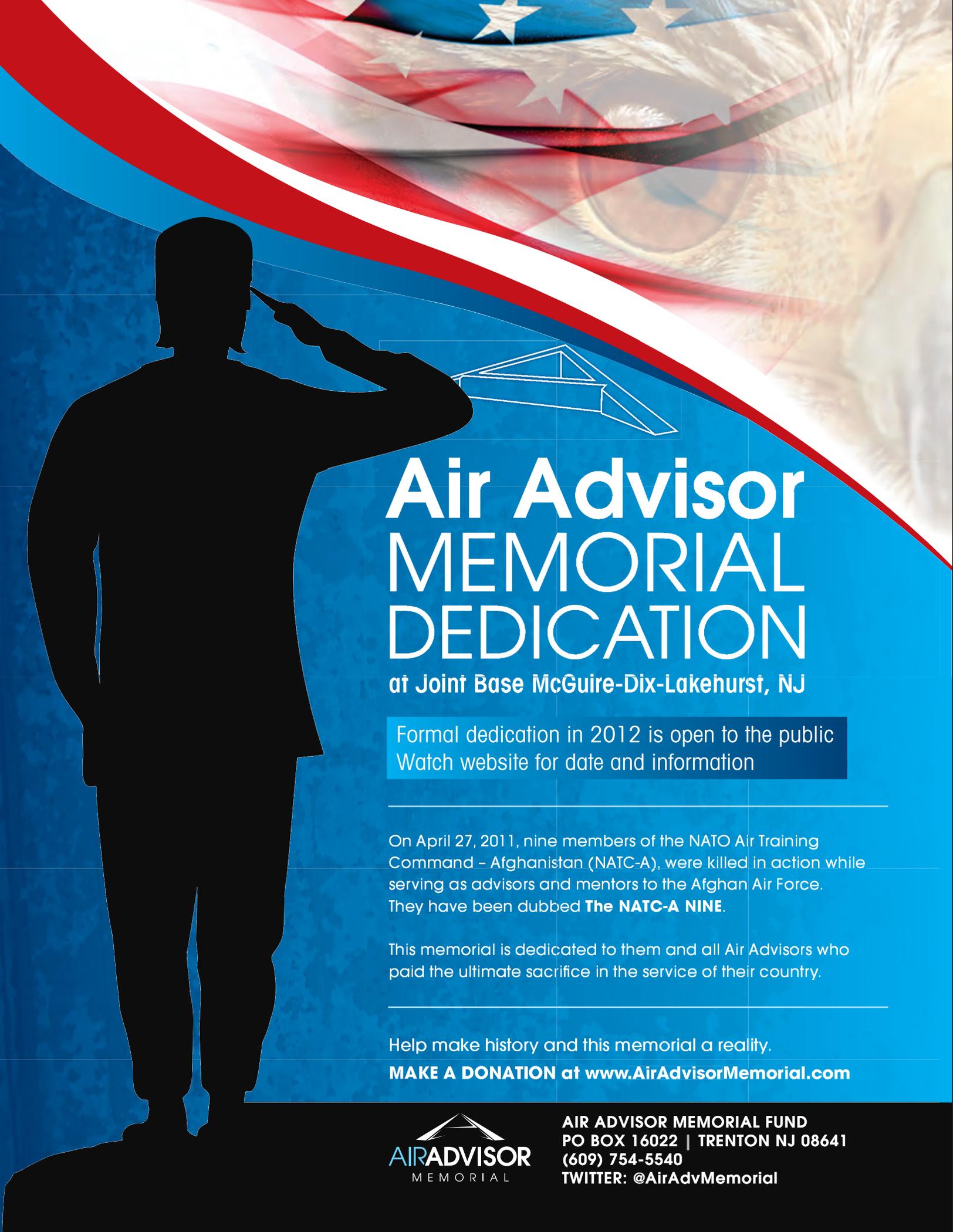
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