

# AIR POWER

## History

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FRONT COVER: Barbara Erickson. (Photo courtesy of the author.)

BACK COVER: World War II poster, commonly called “Rosie the Riveter,” although others were as well.

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The lead article in this issue is Sarah Rickman's account of how Barbara J. Erickson managed to rise from "Rosie the Riveter" to become a B-17 pilot during World War II. One of only seven surviving WAFS, "B. J." was recently inducted into the prestigious Women in Aviation International Hall of Fame.

Second, we revisit the Royal Air Force's famous raid on the Ruhr Valley dams. Launched on the night of May 16-17, 1943, by 617 Squadron it was first hailed as a triumph of British arms but subsequently denigrated in importance. Now, sixty years later, T. M. Webster places the "Dam Busters" raid in perspective, arguing that it was a significant victory after all, albeit for different reasons than originally intended.

In the third article, Gary Leiser unveils the "Dawn of Aviation in the Middle East" in 1909, barely six years after the Wright brothers' historic flight in North Carolina. Demonstration flights by Pierre de Caters and Louis Bleriot sparked the interest of Turkish newsmen, bent on educating their countrymen about flying.

George Farfour seeks to dispel the significant amount of misinformation associated with America's first combat action of World War II. Concentrating on the role played by one fighter pilot, 2d Lt. Kenneth M. Taylor, Farfour tells what really happened on December 7, 1941.

Fifteen books are reviewed in this issue. Some merit praise, while others are given "two thumbs down." Check them out for yourself to see whether or not you agree with the reviewers. And, write to tell us your opinions. We welcome hearing from our readers. Also, look over the list of new books received. If you interested in writing a review, contact Scott Willey. See page 62.

Be sure not to miss the report by Air Force Historical Foundation's president, Lt. Gen. Michael A. Nelson, who outlines the Strategic Plan and lays out the plan's major objectives. General Nelson also discusses such new initiatives as an upgraded website, a funding challenge, and an Air Force Chronology book underway. See page 63.

The departments feature "Letters to the Editor," announcements, news items, upcoming events, reunions, and the ever-popular History Mystery. Among the items in the news, you'll find the winner of the year 2004 "Outstanding Article in *Air Power History*." This is the first prize awarded in the category. Another of our articles is a finalist in a U.S. Army competition. [Remember, we were once the U.S. Army Air Forces.]

Again, please write to the editor. We can only progress with feedback from our readers.



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# *Barbara Erickson: From "Rosie the Riveter" to B-17 Pilot*



Sarah Byrn Rickman

(Overleaf) B.J. Erickson (with parachute) ready to climb into a P-51 (unidentified man and Evelyn Sharp). (All photos courtesy of the author.)

The cavernous interior of the aircraft factory dwarfed the metal skeleton destined to be a B-17's left wing. On an adjacent platform, a team of coverall-clad men and women lifted a section of thin aluminum from a conveyor belt and positioned the shiny square of skin over the wing's exposed ribs. They moved back as a woman wearing safety glasses and a bandanna tied over her hair moved forward and began to buck rows of rivets into place.

Twenty-one-year-old Barbara Jane Erickson, part of the swing-shift wing assembly team, watched the woman work with a deftness that belied her status as one of a new breed—Rosie-the-Riveter, women working in American defense plants. Now Barbara, too, was one of them. She had been up since six that morning, had attended classes at the University of Washington where she was a senior, and then reported at 5 p.m. for work on the Boeing Aircraft Company assembly line in her hometown of Seattle.

Assembly line defense work was far from glamorous. It was tedious and physically tiring, but the U.S. was now at war. The bombing of Pearl Harbor had seen to that. War plant work was patriotic, and it paid well. But every now and then, when Barbara had a chance to catch her breath and steal a moment's reflection while waiting for the next square of aluminum, she looked at the B-17 wing taking shape before her eyes and allowed herself to dream a little.

"I'm going to fly this airplane," she vowed.<sup>1</sup>

On July 1, 1920, Barbara Jane Erickson entered the world. Her mother, Vera Peckenpaugh, was descended from pioneer American stock. Vera's parents had traveled west in a covered wagon and Vera, the family's youngest child, was born in Bremerton, Washington. Barbara's Swedish father, Joel Erickson, immigrated to America where he met and married Vera. His Scandinavian work ethic complemented his wife's Puritan work ethic. As a result, their three children—Barbara, Roger and JoAnne—benefited from their combined industrious heritages.

When it came to child raising, the Ericksons also proved to be enlightened parents. They let their children find their own paths, choose their pursuits and, ultimately, decide what they would do with their lives. And they supported them wholeheartedly in those decisions.

Barbara was a freshman at the University of Washington in 1938 when President Franklin D.



Roosevelt unveiled a trial program of subsidized flying instruction known as Civilian Pilot Training (CPT) destined for college campuses. CPT, the brainchild of the Civil Aeronautics Authority (precursor of the Federal Aviation Administration), was based on similar programs tried in Europe and was expected to provide pilot training for 20,000 college students per year.<sup>2</sup> A national defense program in sheep's clothing, one of the disguises was to let women enroll. Barbara was one of several hundred young women and several thousand young men who took advantage of the opportunity beginning in 1939.<sup>3</sup>

*An article about the CPT program appeared in the local newspaper and that changed everything for me. Three of my girlfriends and I thought it would be fun to try out for the class. So, we all went down and applied. Two of the girls were too short and the third didn't pass the eye test. I was the only one who made it. So here I was in this class learning how to fly. I didn't know which end of an airplane was which.*

*Sarah Byrn Rickman is the author of The Originals: The Women's Auxiliary Ferrying Squadron of World War II, the story of the first twenty-eight WASPs, the women who flew for the U.S. Army in World War II. She has written the yet-to-be-published biography of Nancy Harkness Love, WAFS founder and commander, and is now working on a sequel to The Originals. A former journalist, Ms Rickman holds a bachelor's degree in English from Vanderbilt University and a master's degree in creative writing from Antioch University McGregor. Her lifelong interest in aviation was given wings in 1990 through her professional association with the International Women's Air and Space Museum, for whom she is now an advisor. She also does oral history interviews with WASPs (Women Airforce Service Pilots) for the WASP Archives at Texas Woman's University and she has written an award-winning WASP novel, Flight from Fear.*

CIVILIAN  
PILOT  
TRAINING  
[WAS] A  
NATIONAL  
DEFENSE  
PROGRAM IN  
SHEEP'S  
CLOTHING,  
ONE OF THE  
DISGUISES  
WAS TO LET  
WOMEN  
ENROLL

(Left) Barbara Jane Erickson, formal portrait.

*The class consisted of thirty-six boys and four girls. Twenty were sent to the airport and twenty of us were sent to the seaport on Lake Union. I'll never forget the first time I flew. The instructor took me up in this little seaplane, a 65-horsepower Taylorcraft on floats. I thought, "Boy, this is the way to go."*

Barbara soloed in December 1939 and earned her private license in 1940. But unlike the other girls in the CPT classes at the University of Washington, Barbara didn't stop there.

*I wangled my way into all four CPT classes. Yes, I was pushy. I was excited and energetic, and I wanted it. Flying came easily to me. I was good at it. I made friends easily and I had a lot of mentors. One gentleman knew how badly I wanted to go on. A few girls were being allowed to advance, so he encouraged me to apply. I did, and went on through secondary training and cross country and got my commercial and instrument ratings. I still correspond with him to this day and he is now ninety-seven.*

After acquiring her private, commercial and instrument ratings, as well as her flight instructor's certificate, Barbara returned to Lake Union as an instructor for the University of Washington flight school. There, in the same program from which she graduated, she taught other young students how to fly.

"I instructed during my junior and the first half of my senior year, went to school one day a week and flew the other six. The dean of women at the University of Washington bent the rules for me. She allowed me to take all my lectures on Monday so that I could teach flying the other six days of the week." Her major was Home Economics, one of the fields open to women prior to World War II. But, with news of the war coming from overseas, Barbara remembers that school seemed "kind of incidental at that point."

Her job on Boeing's line began after Pearl Harbor. The government shut down all civilian flying within fifty miles of the U.S. coastline and Barbara was out of a flight-instructing job. Working at Boeing through May 1942 helped her finance the last few months of her education.

"I had been working since I was 16—first at the Five and Dime for 37 cents an hour and later at Marshall Fields." Her father was the West Coast representative for Macmillan Publishing, so the family was comfortable. However, her parents had three children in college at one time and all three were expected to contribute financially to their educations.

Barbara's leadership potential was obvious from the beginning. The dean of women had seen it and Buren Reeder, her supervisor at Boeing, now recognized it as well. He supported her dreams and ambitions, and the two remained lifelong friends.

Early in 1942, Barbara received a telegram from famous aviatrix Jacqueline Cochran, asking her to consider going to England to ferry airplanes

for the British Air Transport Auxiliary, but she opted to finish school instead. In May 1942, following graduation, Barbara took a job at the Martin School of Flying in Walla Walla, Washington, far enough inland to remain in operation. The Martin school was, also, training men to be Army flight instructors.

*All the boys were experienced pilots and had hundreds of hours. At first, they didn't like the idea of a girl instructing them. Here I was twenty-two-years-old, just out of college, attractive, dedicated. But we were all in the same boat, up at 4 in the morning in order to fly at 5. We all wanted to succeed and I showed them I could do it too. I always had a smile on my face. I enjoyed what I was doing. Basically, I get along with people and I gained rapport with them. They finally were resigned to their fate and accepted me.*

On September 6, 1942, Barbara received a telegram from another veteran woman flyer, Nancy Love, inviting her to come to Wilmington, Delaware, and apply for the Women's Auxiliary Ferrying Squadron (WAFS), a group of civilian women pilots attached to the U.S. Army Air Forces. "I requested leave from my job. Fortunately, I was working for a flight school operator who would let me go. Others weren't so lucky."

Barbara—who acquired the nickname B.J. in Wilmington because there were four Barbara's among the original 28 WAFS—was the 14th woman to join Nancy Love's elite squadron of women ferry pilots. Their original assignment was to ferry trainer airplanes from the factories to the training fields in the South. Later, they flew bigger, faster aircraft—but always within the 48 states and Canada.

A friend, Eleanor Dressen, who was working at the flight school with Barbara, accompanied her to Wilmington. Not long after they arrived, Nancy Love's secretary left and Eleanor got that job.

In the fall of 1942, Jacqueline Cochran—with the Army's backing—established a flight school in Texas to train women pilots. These women, once they won their wings, were destined to ferry airplanes as part of Nancy Love's squadron.

In January 1943, Nancy divided her original WAFS squadron into four smaller squadrons to be stationed at ferrying bases around the country. She placed B.J. in command of the women's squadron attached to the 6th Ferrying Group in Long Beach, California. B.J. was only 22 years old. Several of the WAFS were older and more experienced. Some were jealous. But Nancy felt she was the one to handle the job and told her, "B.J., I'm going to forget Long Beach. You can take care of it."

This made young Barbara Jane Erickson privy to all the Army's Ferrying Division and Air Transport Command discussions, planning, and decisions concerning the women pilots from then until the deactivation of the group in December 1944. It may have been one of the most intuitive moves WAFS commander Nancy Love ever made.

**BARBARA...  
WAS THE  
14TH WOMAN  
TO JOIN  
NANCY  
LOVE'S ELITE  
SQUADRON  
OF WOMEN  
FERRY  
PILOTS**



Betty Gillies, Evelyn Sharp, B.J. Erickson, and Helen Richards at Camp Pickett, Blackstone, Virginia, December 2, 1942.

## B.J. DELIVERED HER FIRST B-17 AS PILOT-IN-COMMAND ON OCTOBER 31, 1944

Super-organized B.J. became her friend, her confidante, her able leader on the West Coast.

“Nancy even sent Eleanor Dressen out here to work with me.”

Nancy had been reassigned to Cincinnati to work directly with Ferrying Division commander Colonel William H. Tunner. Rather than take Eleanor to Cincinnati, Nancy sent her to Long Beach to lend her skills and support to her friend.

Beginning in May 1943, the number of women pilots grew by approximately fifty each month through the addition of the graduates from the Army flight training school in Texas. They were divided among the four women’s ferrying squadrons operating at Long Beach, Wilmington, Dallas, Texas, and Romulus, Michigan. In July, Cochran was named Director of Women Pilots and Love was named Executive for the women flying for the Ferrying Division. In August 1943, the name of the women pilots attached to the Army Air Forces was changed to Women Airforce Service Pilots or WASP.

By then, the women were transitioning into bigger, faster aircraft.

Nancy Love was the first woman to fly the B-17. She was the first to fly most of the airplanes including the P-51, P-38, C-47 and C-54. Both she and the Wilmington women’s squadron commander, Betty Gillies, checked out in a B-17 in August 1943. B.J. was the third woman to fly a B-17 making two orientation flights on October 8 and 9, 1943. But it was April 9, 1944, before the girl who stood on the catwalk at Boeing and dreamed of flying the B-17 officially checked out as a pilot on the four-engine bomber. On April 11, she and a male first pilot delivered Flying Fortress #42-97932 to Denver.

B.J. delivered her first B-17 as pilot-in-command on October 31, 1944. She and WASP copilot, Virginia Hill, took the aircraft from Long Beach to Cheyenne, Wyoming.

B.J. was one of only five women pilots in the Ferrying Division, Air Transport Command, to hold the rare “5p” classification, which meant she was

qualified to fly as pilot-in-command on heavy four-engine aircraft like the B-17 as well as the swift, powerful single- and twin-engine pursuits.

B.J. recalls the infamous trip of October 16, 1944, when she and Nancy Love were assigned to pick up a war weary B-17 named “Genevieve” at Patterson Field in Dayton, Ohio, and ferry the battered Flying Fortress to Amarillo, Texas.<sup>3</sup>

A large area of grease and oil stained the concrete under each engine. The ship was very dirty and much patched, but—they soon discovered—she had a proud heritage. On the instrument panel, Nancy and B.J. found a plastic plate with the following inscription:

*“Genevieve”—First Airplane Repaired  
By Rome Air Depot. Please Advise of Her  
Escapades, Rome, N.Y., U.S.A.*

Nancy and B.J. decided to take special care of this tired old lady of the air. But when they fired up the four engines, they realized that would be harder than they had hoped—#1 lost 300 revolutions on the right magneto; #2 was OK; on #3, the oil pressure was 20 pounds low; and #4 poured oil on the already saturated concrete ramp. They decided to request repairs before trying to take off.

Finally, the ship was ready. They filed clearance for Scott Field near St. Louis with a true airspeed of 150 mph. A large red sign on the instrument panel warned NOT to try to retract the landing gear!

En route, they did their best to ignore the aircraft that flew by them signaling “in a superior manner” that they’d forgotten to pull the landing gear up. When a squadron of P-47s whizzed by, the pilots laughing and gesturing from inside their bubble cockpits, “we strongly suspected that the epithet ‘women drivers’ was being directed at us along with the hand signals.

“We became very fond of Genevieve. We felt a certain spiritual kinship with her, since we share a common and ignominious fate, we being bound for our ‘figurative’ grave on 20 December 1944, when the WASPs were to be deactivated.”

On November 9, 1944, Nancy wrote to the commanding officer of the Rome Air Depot: “We hope that this account of the final escapade of ‘Genevieve’ will be of interest. Her saga in combat was an honorable one, as discovered in her battered form #1 A.”

“I wrote to my mother and father every week I was in the service. I wrote to them after Nancy and I flew to Cornelia Fort’s funeral in Nashville. I tried to tell them not to worry. Then again after Evelyn Sharp died, I tried again to reassure them. Evelyn was my best friend.”<sup>4</sup>

B.J. lost six of her squadron members to accidents—Cornelia and Evelyn who were fellow original WAFS plus four others. She had only one close call herself—September 19, 1944.<sup>5</sup>

*One of the advantages of being in Long Beach was we had all these factories close by and all these*



B.J. Erickson ready to ferry the 10,000th Vultee BT-13 built.

planes that we could fly. One night I got a call from Operations. "We've got some P-38s down here. Do any of you girls want to check out in one at night?" So down I went. I had flown the P-38 in daylight. No problem. I took one up and flew around for an hour. But when it came time to land, I couldn't get the gear down.

Well, I called the tower and they called Jack.

Capt. Jack London was head of flight transition for the entire base at Long Beach. He and B.J. had been dating.

They told him, "We've got one of your girls in trouble down here."

He drove over to the tower, got on the radio, and gave me instructions out of the manual. I had to pump the gear down. I had no hydraulics. So I went out over the ocean and flew around for an hour and pumped. Then I flew by the tower for them to see if the gear was down.

I was cleared to land, but because I had no hydraulics, I also had no flaps and no brakes. I was going to have to land without brakes. So they told me to land on the longest runway, which is 25 Right. Long Beach had five runways and there were one hundred airplanes parked in the area in the center and those airplanes were guarded by armed sentries with dogs.

Jack got in his Jeep and came racing out to the runway to meet me. I landed and rolled all the way to the end of the runway. Then I had to find a place to park it.

The guard, with his dog, sees this airplane coming down the runway from one direction and a Jeep racing in from the other. He didn't know what was going on and raised his gun. I was watching all this from the cockpit and I just knew he was going to shoot Jack. But Jack stopped the Jeep, hollered to the guard, threw his ID on the ground, and got out with his hands in the air. Fortunately, the guard didn't shoot him, but I know for a minute there, he thought he had nabbed a saboteur red handed.

After Jack convinced the guard that we weren't there to blow up airplanes, he helped me park the airplane and drove me back to Operations.

Like I said, that was my only close call in all my time in the WAFS. Those Rosie the Riveters built good airplanes!

You know, if any of the women had the best job in the Ferrying Division, it was me. I was one of the youngest girls, and yet I was the squadron commander. I had the airplanes. Everything was built in the LA Basin. The girls back east fought to get a P-47 to bring out here so they could get checked out in the other airplanes. Weather-wise, we flew every day while they sat on the ground back east. I was the luckiest of all and I'm the first one to admit it.

It was a fantastic time in our lives. We were lucky to be alive then and equipped to do the job. It all depends on where you are and when. Timing is everything.

B.J.'s contribution to the WASPs during the twenty-eight months of the group's existence is incalculable. She commanded some 80 women ferry pilots stationed at Long Beach. Like Nancy, B.J. was goal-oriented, operated by the book, and led by example with firmness and reason. That was why both women got along so well. "No Nonsense" might well be B.J.'s middle name.

But she did try her commanding officer Nancy Love's patience once.<sup>6</sup>

She and three other original WAFS went to Washington, unofficially, in early January 1944, to see what they could do about securing militarization for the women ferry pilots who were still civilians. B.J. decided to apply for a commission in the Army and a service pilot rating.

Word of what they were doing got around Washington. Someone notified Nancy Love in Cincinnati. "Very gently, but very firmly, she ordered us back to our bases," B.J. confirms.

Most of the original WAFS didn't want to be militarized. Several were married and some had children and the WACs didn't allow that. Others were over the WAC's age limit. But if we were militarized, we wanted to do it as individuals. I was young and single, so I applied for a commission to become a Service Pilot. I had the qualifications. Using my initials, B.J., they wouldn't know if I was male or female. But nothing came of it.

The Air Transport Command awarded Barbara the coveted Air Medal following a remarkable series of cross-country deliveries in an inordinately short amount of time. The award was supposed to represent what ALL the WASPs attached to the Ferrying Division were doing, but it served to embarrass B.J. who did not like being singled out for what she felt all the women ferry pilots did daily—their job.<sup>7</sup>

Today, B.J. is one of seven surviving original WAFS. She is their heart, soul and conscience. She knows their history better than anyone alive—because she lived it, because she led, because she

THE AIR  
TRANSPORT  
COMMAND  
AWARDED  
BARBARA  
THE COV-  
ETED AIR  
MEDAL  
FOLLOWING  
A REMARK-  
ABLE SERIES  
OF CROSS-  
COUNTRY  
DELIVERIES



B.J. Erickson in cockpit of a C-47.

**THE AIR FORCE TRIED TO TAKE AWAY B.J.'S COMMISSION [BUT] SHE TOLD THEM "I HAD A CHILD WHEN YOU OFFERED IT TO ME, I'M NOT GIVING IT UP NOW."**

stayed the course through to deactivation, and because she believes in what they did.

But she will tell you, "We did our jobs. We didn't do anything special. We delivered airplanes for the U.S. Army. That's what we were hired to do." Characteristically, she casts a bit of a jaundiced eye at being called a heroine and at some of the hoopla raised today over what she considers their patriotic duty and something they also loved doing.

B.J. and Jack London were married April 9, 1945. After the war, he received a major's commission in the AF Reserve and, when the new Air Force offered non-flying Reserve commissions to the WASPs in 1948, B.J. was commissioned a major as well. They served as reservists together and retired 20 years later. By then Jack was a full colonel.

The Air Force tried to take away B.J.'s commission when, in the early 1950s, they found out she had two children. She told them "I had a child when you offered it to me, I'm not giving it up now." Most of the WASPs affected by this edict—including Nancy Love—gave in and resigned their commissions. B.J. and fellow WASP Lauretta Foy fought it and won.

Technically B.J. could not log airtime in AF airplanes, but Jack could. He would reserve an A-26 or twin Beech and they would go flying. Jack ferried the first operational jet fighter, the P-80 Shooting Star, after the war and he saw to it that his pursuit pilot wife got to ride in it.

The Londons and Bud and Betty Gillies went in business together after the war when they purchased Acme Industrial Supply, an aviation supply company in Long Beach. Betty and B.J. had established a lasting friendship when both were stationed under Nancy's command in Wilmington in the fall of 1942.

In 1966, B.J. went to work for the Piper dealer in Southern California. In 1970, she and her business partner, Barney Frazier, founded Barney Frazier Aircraft at Long Beach Airport. Jack died in 1973; Barney, in 1983. B.J. continued to run the

company after Barney's death and brought her daughter, Kristy London Ardizzone, in to work with her. Though she has sold the company now, B.J. still brokers airplanes.

In 1949, Betty Gillies recruited B.J. to work with her on the All-Woman Transcontinental Air Race (AWTAR)—nicknamed the Powder Puff Derby and sponsored by the Ninety-Nines, the international women pilots' organization. The nickname was a holdover from the first women's air race held in August 1929.<sup>8</sup> The Ninety-Nines organized their first race in 1947. By 1949, the event was growing in reputation and numbers. Betty served as the chairman of the race for ten years—from 1951 to 1961—and B.J. was executive secretary for fourteen (1951-1965). "That means the one who types and cranks out the copies on a mimeograph machine.

"I ran the office. The typewriter and mimeograph machine sat on my dining room table that was cleared only for Thanksgiving and Christmas. I had young children, so we always met at my house. Betty drove up from San Diego and I'd cook dinner for the board members. Jack put up with it." B.J.'s daughters were born in 1947 and 1949.

At B.J.'s dining room table, the board planned each annual race, determining the start and the terminus, as well as the interim stops, and seeking support from the aviation and business community in each. The event was patterned after the experiences the WASP had encountered as ferry pilots during the war. Times from point to point, fuel economy, and care of the airplane were emphasized. Between 1950 and 1967, B.J. competed in five races (1952, 1954, 1962, 1966 and 1967) and worked the remainder as an AWTAR board member.

A Life Member of the Ninety-Nines, B.J. also served three terms, a total of nine years, on the organization's executive board. She is a charter member of the Long Beach Chapter, in which she is still active.

B.J. has passed the torch of flight to younger generations. Both of her daughters fly. Terry London Rinehart was the first woman pilot hired by Western Airlines in 1976 and retired from Delta Airlines as a Captain in 2005. Kristy, a fully rated pilot, is an executive with JetBlue Airlines. B.J.'s grandson, Justin Rinehart, has his instructor's rating. Her twin granddaughters, Kelly and Lauren Rinehart, have their private pilot's licenses.

Barbara is a fixture at the Long Beach International Airport. The Airport Area Business Council of the Long Beach Chamber of Commerce honored B.J. during the centennial of flight in 2003, noting her more than fifty years of volunteer community service to the Long Beach Airport and business community. On March 24, 2005, the Long Beach City Council named the street in front of the airport terminal building Barbara London Drive.

"I was sent to Long Beach in February 1943 and I never left."

When asked, she speaks to groups—both adults and young people—about the WAFS and



B.J. Erickson ready to take off in a C-47.

WASP and about aviation in general. She flew until she reached her 80th birthday. At that point she said, "The busy airspace of the LA Basin didn't need another 80-year-old woman pilot up there flying around."

In October 2004, B.J. was honored by the Flight Path Learning Center, for her contributions to Southern California's aviation heritage. The

Center and Museum are located on the south side of Los Angeles International Airport (LAX). A bronze plaque with her name has been embedded on Sepulveda Boulevard, the main route to LAX. B.J. joins 44 other aviation pioneers "whose body of work has helped ensure Southern California's world leadership in aviation/aerospace." The Flight Path Learning Center of Southern California is dedicated, through public awareness, to recognizing and preserving Southern California's aeronautical heritage as well as for guiding individuals and young people along their education paths toward careers in science and technology with emphasis on aviation/aerospace."<sup>9</sup>

Her latest, and possibly biggest, honor yet: On March 12, 2005, Barbara Erickson London was inducted into the Women in Aviation, International (WAI) Pioneer Hall of Fame. The ceremony was part of the WAI 16th annual conference held in Dallas. Fellow original WAFS Florene Miller Watson was inducted at the same time.

And Barbara was invited back "home" in 2003 for the Women Fly! Women in Aviation and Aerospace Conference, held at Seattle's Boeing Museum of Flight, to speak on her life and role in aviation.

Barbara Jane Erickson, the twenty-one-year-old who worked for five months as part of the B-17 wing assembly team at Boeing in 1942, was the only WASP in World War II who both flew and built the B-17. ■

## NOTES

1. Most of the information in this article is taken from a series of personal interviews with Barbara Jane (B.J.) Erickson London, conducted by the author between June 1999 and September 2004. Audiotapes and a transcript of the March 2004 oral history interview are on file at the WASP Archives located in the library at Texas Woman's University, Denton.

2. Patricia Strickland, *The Putt-Putt Air Force: The Story of the Civilian Pilot Training Program and the War Training Service (1939-1944)*, Department of Transportation, Federal Aviation Administration, Aviation Education Staff, GA-20-84, Foreword, p. iii. The Civilian Pilot Training Program (it became the War Training Service after Pearl Harbor) originated in the mind of Robert H. Hinckley, a member of the newly created (1938) Civil Aeronautics Authority. It used facilities already in existence. The ground training was handed over to colleges and universities; the flight training to established flight operators. CPTP began with 13 colleges and 330 students. By the time it ended in 1944, 1,132 educational institutions had been involved and 1,460 contractors had qualified 435,165 trainees, including several hundred women. Information also online at [www.centennialof-flight.gov/essay/general\\_aviation/civilian\\_pilot\\_training/GA20.htm](http://www.centennialof-flight.gov/essay/general_aviation/civilian_pilot_training/GA20.htm)

3. Report dated November 9, 1944, from Nancy Love to the commanding officer of the Rome Air Depot, Rome Army Field in Rome, New York—Nancy Harkness Love private collection, in the hands of her daughter Margaret Campbell Love.

4. Cornelia Fort, the third of Nancy Love's original WAFS, died in a mid-air collision March 21, 1943, near Merkel, Texas. She was ferrying a BT-13 from Long

Beach to Dallas. Evelyn Sharp, number seventeen of Nancy's originals, died on April 3, 1944, when she lost the left engine of her P-38 on takeoff from Cumberland, Pennsylvania, enroute from Long Beach to the docks at Newark, New Jersey. Both were members of B.J. Erickson's women's squadron, part of the 6th Ferrying Group, Long Beach, California.

5. Sarah Byrn Rickman, *The Originals: The Women's Auxiliary Ferrying Squadron of World War II*, (Sarasota, Florida: Disc-Us Books, Inc., 2001), pp.302-303.

6. B.J. Erickson London, phone interview with the author, July 7, 2004.

7. Barbara Jane Erickson received her Air Medal on March 11, 1944, during the graduation ceremonies for WASP Class 44-2 in Sweetwater, Texas. General Henry H. "Hap" Arnold personally pinned on her medal. Her series of flights that earned her the distinction were made in late July or early August 1943. After the war, President Harry S Truman awarded the Air Medal to Nancy Love for her service as commander of 303 women ferry pilots during World War II.

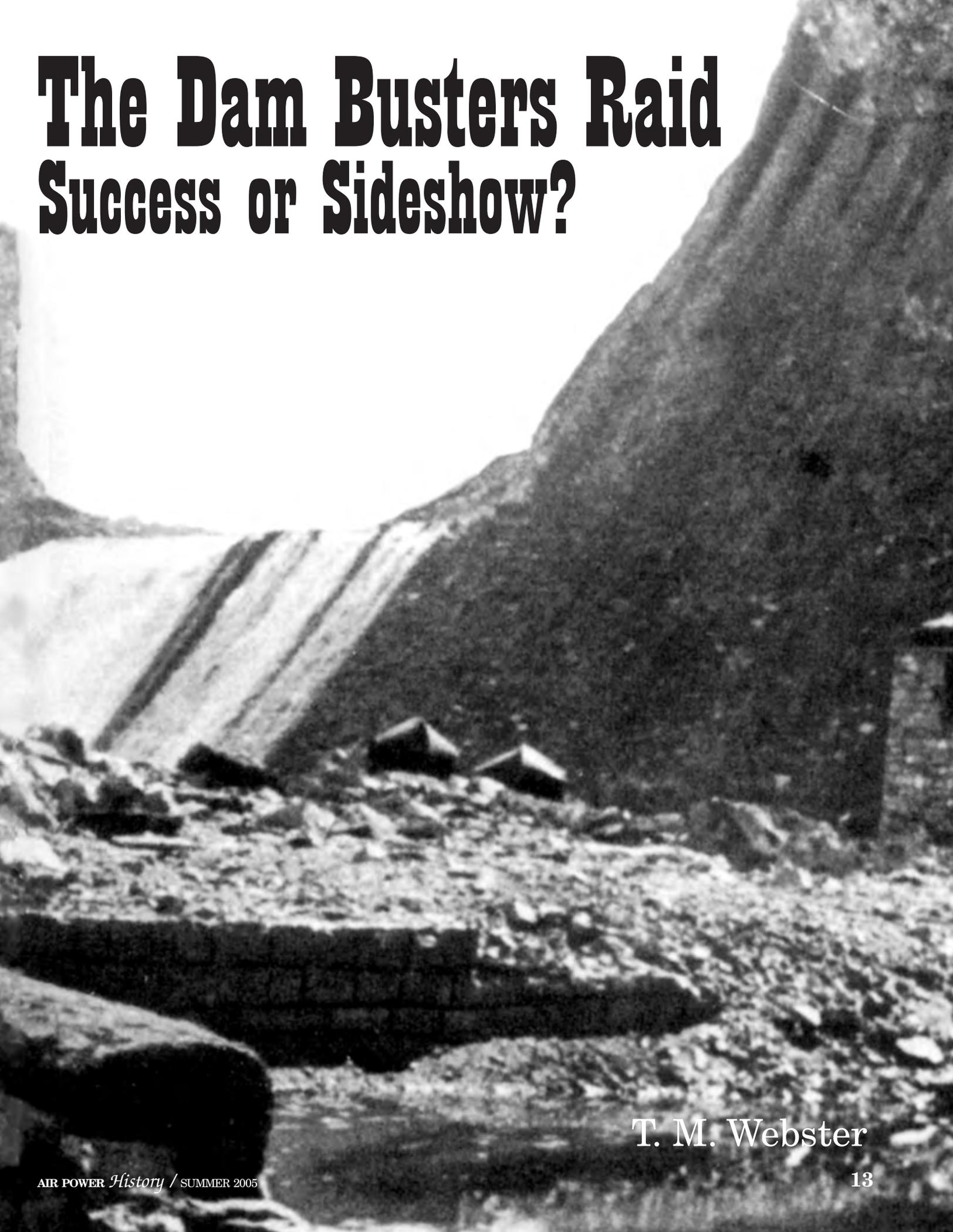
8. *The Ninety-Nines: Yesterday—Today—Tomorrow* (Paducah, Kentucky, Turner Publishing Co., 1996) p. 26; and, Gene Nora Jessen, *The Powder Puff Derby of 1929*, (Naperville, Illinois, Sourcebooks Inc., 2002), p. 288. The first women only air race was flown in 1929 and officially known as the All-Woman's Air Race. Humorist Will Rogers nicknamed it the Powder Puff Derby, the name caught on.

9. "Flight Path Learning Center and Museum" brochure, LAX Imperial Terminal, 6661 West, Imperial Highway, Los Angeles, CA, 90009. Phone: 310-215-5291.



# The Dam Busters Raid

## Success or Sideshow?



T. M. Webster

(Overleaf) The Möhne Dam, after being breached. (All photos courtesy of the author.)

At 2128 hrs on May 16, 1943, the first aircraft of the newly-formed 617 Squadron lifted from RAF Scampton's runway and set course for Germany. So started Operation CHASTISE, an attack that had been in planning on and off since October 1937,<sup>1</sup> and that would be recognised as Bomber Command's most spectacular operation of World War II. By dawn the next day two major German dams had been breached, significant areas flooded, more than 1,250 deaths caused, and the Ruhr Valley's industry disrupted. The British force lost eight aircraft and fifty-three aircrew.

The British would use post-raid reconnaissance pictures to show their Empire, their American allies and, using leaflet drops, Occupied Europe the damage caused to the dams, the countryside below them and, by implication, the industrial complex of the Ruhr Valley.

The understandable wartime use of the raid for propaganda purposes may have led to overstatement of its success. The publication of Webster and Frankland's review of the air offensive against Germany brought a re-evaluation which, while acknowledging the attack's precision, held that the physical outcome was neither "of fundamental importance nor even seriously damaging".<sup>2</sup>

This article examines the context of, and build up to, the Dams Raid, recounts the raid itself, assesses the damage directly caused and the German response to it, outlines the lessons that were or could have been learned from the raid, and finally places the raid in perspective.

### The Background to the Raid

Contrary to popular belief, the Dams Raid's origins did not lie with Barnes Wallis, the Vickers' engineer who designed the "bouncing bomb."<sup>3</sup> As early as October 1937, Air Ministry planners were developing attack options for the expected war with Germany: the thirteen Western Air (WA) Plans. Plan WA5 required Bomber Command "to attack the German War Industry including the supply of oil with priority to that in the Ruhr, Rhineland and Saar."<sup>4</sup> Bomber Command refined this into a plan to achieve the same effect by attacking the Ruhr's forty-five power and coking plants: it was believed these could be destroyed in a fortnight's bombing (about 3,000 sorties) at an expected aircraft loss rate of about 6 percent. That these estimates were wildly inaccurate was shown by the 11.5 percent loss rates of the RAF's then-heavy bombers in the period of the Phoney War<sup>5</sup> and the Butt Report's conclusions on Bomber Command's accuracy<sup>6</sup> which, taking no account of the doubtful effectiveness of the bombs with which



the RAF started the war, suggested that 12,000 sorties would have been required. Extrapolating these figures, a loss of approximately 1,400 aircraft might have been expected.

Even on the original estimates, the loss rate for the new plan was considered unacceptable and the Air Ministry looked for alternative means to the same end: the result was a plan to attack the Mohne and Sorpe dams. This plan argued that the Ruhr's heavy industry was dependant on the water the dams held for industrial processes, for power generation and for drinking water: if the dams could be destroyed then industry would grind to a halt. Assuming the logic contained no flaws, the next step was to identify a way to attack the dams. Considerable effort went into this, concentrating particularly on the Möhne gravity dam.<sup>7</sup> Suggestions included attacking the air-side of the dam with semi-armour piercing bombs, dropping high-explosives onto the dams or attacks with multiple torpedoes from the water-side. None of these was considered feasible and a guided-bomb based upon an anti-aircraft target drone was considered the best option. Unfortunately, the fall of France placed the target out of the range of such a weapon.

Even before the fall of France Wing Commander Finch-Noyes of the Woolwich Research Department was working on alternative means for attack-

THE DAMS RAID'S ORIGINS DID NOT LIE WITH BARNES WALLIS, THE VICKERS' ENGINEER WHO DESIGNED THE "BOUNCING BOMB"

*Wing Commander Tim Webster joined the Royal Air Force in 1990 having trained in medicine at London University's Royal Free Hospital School of Medicine and undertaken post-graduate studies in Cambridge. He has served at a number of locations in the United Kingdom as well as on Operations Desert Storm, Southern Watch, and Enduring Freedom. This article was written while he was a student on the United Kingdom's Advanced Command and Staff Course. Wing Commander Webster is currently the Senior Flight Medical Officer at Royal Air Force Marham.*

(Left) Barnes Wallis, the Vickers' engineer who designed the "bouncing bomb."

**WORK ON  
THE DESIGN  
OF THE  
WEAPON ...  
STARTED IN  
THE AUTUMN  
OF 1939**

ing the Möhne dam. After reviewing the extant papers, he proposed that a 20,000-lb. explosive charge detonated 40 feet from the top of the dam on its water-side and in contact with it (or a succession of 2,000-lb charges close together) would have a reasonable chance of destroying it. His proposed weapon would be launched from an aircraft at low level, propel itself into the dam, sink and then be exploded by hydrostatic fuses at the desired depth.<sup>8</sup> No single weapon could be used, no RAF aircraft was yet capable of delivering it to the target, and so multiple smaller weapons would have to be substituted. The Wellington bomber could carry a 2,000-lb. charge weapon under each wing to be dropped at height and distance from the dam and, with the weapon propelling itself after hitting the water, skip over any intervening torpedo nets, strike the dam, sink and explode. Finch-Noyes proposed to use a total of sixteen weapons, but Bomber Command decided that this plan was fraught with technical imponderables and it was quietly shelved. Before the Dams Raid took place, other means of attack were put forward: Combined Operations suggested floating a charge down the reservoir and onto the dam, while the Special Operations Executive proposed an attack by parachutists, who would place explosive charges against the dam.<sup>9</sup>

### **Weapon Development**

Work on the design of the weapon to be used on the Dams Raid started in the autumn of 1939. The man behind it was Barnes Wallis, an aero-structures engineer with Vickers-Armstrongs' Aviation, already well known for his work on the R100 airship, and the Vickers Wellesley and Wellington bombers. Wallis believed that modern warfare depended on industrial production which, in turn, relied on sources of power. He argued that production could be dispersed, making it relatively invulnerable to the bombs then available to the RAF, but sources of power like coal mines, oil fields, and hydroelectric dams could not. They were, however, equally invulnerable to the RAF's available bombs.<sup>10</sup> Wallis believed that much heavier bombs could be effective and had started to work, with the blessing of the Ministry of Aircraft Production (MAP), on a massive 22,000-lb. bomb, similar in shape to his R100 airship,<sup>11</sup> the bomb was expected to achieve supersonic speed in its fall from altitude. This would be suitable for these targets as it buried itself deep in the earth before exploding, causing shock-waves that would shake structures apart: the same effect could be achieved by exploding the bomb in the water close to a dam.

In autumn 1940, experiments started to determine how much explosive needed to be detonated at what distance from the Möhne dam to destroy it. Initial experiments were on 1:50 scale models, working upwards to progressively larger models and eventually a one-off test on the disused Nant-y-Gro dam near Rhayader, which on July 24, 1942,<sup>12</sup> proved conclusively that such dams could

be destroyed by an underwater explosion in contact with the dam. The early model tests gave Wallis the information needed to support his "A Note on a Method of Attacking the Axis Powers."<sup>13</sup> He argued that his massive bomb dropped from high altitude would be effective against the Möhne dam, but no RAF bomber was capable of carrying it to the required altitude. The project ran in parallel with a proposal for an equally large bomber to deliver it. The Air Staff rejected both.

Wallis was not to be put off. Somehow, in June 1941, he gained the support of MAP's Aerial Attacks against Dams committee for further experiments on the effects of explosives on dams. Progress was slow: Wallis himself admitted, "conviction that my original suggestion was impracticable ..... led me to seek for other methods."<sup>14</sup> Early in 1942, he hit upon the idea of ricocheting a spherical weapon across the surface of the reservoir thus avoiding torpedo nets and other surface defences, striking the dam, sinking, and then exploding in contact with it at a predetermined depth thanks to hydrostatic fuses. Wallis could not account for how he got the idea but there are similarities to Finch-Noyes' earlier plan.

By the end of April 1942, Wallis had gained important support from Professor Blackett, a scientific adviser to the Admiralty, and from Sir Henry Tizard, who had influence with the Air Council, MAP and the Chiefs of Staff Committee. Their support gained him access to the National Physical Laboratory's water tanks to perfect the delivery technique that now included backward rotation of the weapon. Wallis claimed three advantages for this: "it increases the distance which the missile will travel after release from the carrier, before striking the water; it diminishes the tendency of the missile to plunge downwardly on impact with the water surface; [and] it increases the distance which the missile will travel whilst ricocheting."<sup>15</sup>

In mid-June 1942 Wallis demonstrated his "bouncing" spheres (the weapon was at this stage spherical although Wallis was beginning to have doubts about this) to both MAP and the Admiralty. The Royal Navy was quick to grasp the potential of the weapon for attacks on capital ships. By the end of June 1942, MAP had granted permission for a Wellington bomber to be used for tests involving mock-up spherical bombs commissioned by the Admiralty. The first ground spinning test did not take place until October 20, 1942,<sup>16</sup> and the first air test until December 2, 1942, but it was then proved that it was possible to spin the weapon without shaking the aircraft apart. Two days later the first dropping trials took place in Dorset; they were unsuccessful, the spheres were destroyed as they hit the water. Further experimental drops continued until February 1943, as Wallis sought to overcome this major problem. At this stage it seemed that Admiralty interest in a medium-sized version of the weapon (Highball) to be used by Mosquito aircraft to attack ships, the Tirpitz in particular, was greater than Air Ministry interest



(Above) Air Marshal Sir Arthur "Bomber" Harris.

**BOMBER  
COMMAND[S]  
...SENIOR  
AIR STAFF  
OFFICER  
WROTE A  
PAPER FOR  
... "BOMBER"  
HARRIS**

in the full-sized version (Upkeep) for attacks against the dams. There was a small-sized version (Baseball) meant for launching against ships from a mortar in the bows of a fast attack craft.

Wallis continued to lobby for his weapon and in early February 1943, he gained support from Churchill's scientific adviser, Professor Lindemann, previously not just skeptical but actively hostile to the plan. Things also seemed to speed up at the Air Ministry and MAP although there was concern that, if Wallis devoted his time to developing Upkeep, the development of the projected Vickers Windsor bomber would be neglected.<sup>17</sup>

On February 14, 1943, as Bomber Command was preparing to open the "Battle of the Ruhr," its Senior Air Staff Officer wrote a paper for his Air Officer Commanding-in-Chief, "Bomber" Harris, describing both Upkeep and Highball. At this time, although the Germans were being beaten in Russia, in North Africa, and in the Atlantic, with the Russians calling for a second front in Europe, only Bomber Command could take the war to the

(Below) Upkeep weapon.



continent. Its task had been set at the Combined Chiefs of Staff's Casablanca meeting that January: "[The] primary object will be the progressive destruction of the German military industrial and economic system, and the undermining of the morale of the German people to a point where their armed resistance is fatally weakened."<sup>18</sup>

Harris interpreted this as a free hand to attack any large German city: this having the effect of attacking both the local industry and population, despite uncertainty over the effect of such attacks on civilian morale. Indeed, he stated that his task was "destroying the main cities of the Ruhr."<sup>19</sup>

Harris was unimpressed by Upkeep: he claimed that it would shake apart the carrying aircraft if not perfectly balanced when spun and that the ballistics would not work. It has been widely noted that Harris did not seem initially to grasp the difference between Upkeep and Highball; it also seems he did not grasp that the concept had already been tested. His own account of the Dams Raid is extremely brief and does not mention his skepticism. Indeed, he wrote of Upkeep: "It was one of the weapons designed for the Command outside the official Ministry of Aircraft Production and Air Ministry organisations...it could be taken almost as a rule that such weapons were successful."<sup>20</sup>

This contrasts with his missive to the Chief of the Air Staff (CAS) in which he railed against: "enthusiasts and panacea mongers ...careering round MAP suggesting the taking of about 30 Lancasters off the line to rig them up with this weapon, when the weapon itself exists so far only in the imagination of those who conceived it."<sup>21</sup>

Harris' further assertion that "we have made attempt after attempt to pull successful low level attacks with heavy bombers. They have been, almost without exception, costly failures,"<sup>22</sup> was undoubtedly a more reasonable objection. On February 21, 1943, Wallis was finally able to show film of the Dorset and the National Physical Laboratory tank tests to a still-skeptical Harris. But by now CAS had authorized conversion of three Lancasters for use in the development of Upkeep and on February 26, a formal decision to go ahead was taken. It was to be ready for use that year, the latest date to achieve maximum effect being just three months away. Maximum effectiveness required the dams to be full so the attack had to be launched before the end of May 1943. Time was extremely short.

Development of Upkeep and the specially modified Lancaster that would carry it now began in earnest. Responsibility was split between Vickers and Royal Ordnance for Upkeep, and Vickers and Avro for the aircraft. Gradually Upkeep evolved through the series of trial drops on the North Kent coast, and by trial and error it became a cylinder and lost its wooden covering. The trials were not perfect, the test pilots having difficulty dropping from the right height and at the right speed: unsurprisingly, therefore, Upkeep did not turn out as expected and as late as May 2, 1943, further trial drops were authorized.<sup>23</sup> The extra trials were



Wing Commander Guy Gibson.

## HARRIS PASSED IT TO AIR VICE-MARSHAL COCHRANE

all to be flown at 60 ft, at a groundspeed of 210-220 miles per hour, with Upkeep spun at 500 revolutions per minute. The final trial was on May 13; Upkeep was ready but only just in time.

Meanwhile, the Admiralty and the Air Ministry were still debating whether Upkeep or Highball should be used first, or whether the dams and the Tirpitz should be attacked simultaneously. The Chiefs of Staff had set up a committee to monitor both Upkeep and Highball developments,<sup>24</sup> but with multiple and varying “expert” opinions it was difficult to reach a conclusion. Finally, on May 13, having been informed that Upkeep trials had been successful, while Highball trials had failed, the committee agreed that Operation CHASTISE (the Dams Raid) should proceed. The Chiefs of Staff, in Washington for discussions with their American counterparts, confirmed the decision the next day.

### Preparation for the Raid

Responsibility for execution of the Dams Raid fell to Bomber Command. On March 15, 1943, Harris passed it to Air Vice-Marshal Cochrane, who was told to form a special squadron, 617 Squadron, from within the resources of his 5 Group (Harris having already nominated the highly-decorated Wing Commander Guy Gibson to lead it) to attack the dams. Gibson had significant control over the selection and training of the aircrew, was allowed to devise the means to reach the target and to suggest amendments to the Operational Order, and given control of his force in attacking the dams: an early example of mission command in the RAF.<sup>25</sup>

That Bomber Command was well aware of the propaganda value of a successful raid was shown when Gibson was told that he would be required to write a book about the mission.<sup>26</sup> Indeed, Harris’ account of the Dams Raid follows on immediately from comments on the difficulty of gaining public support for the Royal Air Force, which included: *The Air Ministry had certainly had the idea that it would be a good thing to get the support of the Press and to have the operations of the Air Force reported as fully as possible. No doubt it was hoped to compensate in this way for the obvious inability of the Air Ministry, by comparison with the ministries of other services, to get the attention and the favour of those who matter; public support was to be called in to redress the balance.*<sup>27</sup>

Harris intended to draw the new squadron’s aircrew from volunteers who had completed or nearly completed two operational tours. However, this did not happen; many of the aircrew had actually completed fewer than ten operational sorties and some of the flight engineers none at all. Nor were they all volunteers. The intention to draw the aircrew from among the most experienced aircrew, while partly meant to reduce disruption to line squadrons, suggested the formation of an elite unit and also acknowledged the difficulty of the task. Harris was on record as opposing elite units, he had opposed the Pathfinder Force saying, “I am not prepared to accept all the very serious disadvantages of a Corps d’Elite in order to secure possibly some improvement of methods...at a serious loss of morale and efficiency to the other squadrons.”<sup>28</sup> But 617 Squadron was to be “a Special Duty Squadron” to undertake missions “that entail special training and/or the use of specialist equipment.”<sup>29</sup> The difficulty of the task can be gauged by comparison with the efforts of Bomber Command’s Main Force at around the same time: on March 6, 1943, 293 aircraft attacked Essen, but only 153 bombed within three miles of the target.<sup>30</sup>

Notwithstanding the new squadron’s elite status, rigorous and realistic training was needed to achieve the required standards of bombing accuracy. Cochrane’s original instructions to Gibson, while giving no details of the proposed targets, made it clear that mastery of night-time low flying over water was necessary. Gibson himself tried out the required night-flying skills; the results were not encouraging. The squadron commenced its low-level, cross-country training on March 31, 1943, and by the end of April, following intensive training with over 1,000 flying hours logged, was able to “navigate from pinpoint to pinpoint at night at low level...bomb accurately using a special rangefinder sight... fly safely over water at 150 ft.”<sup>31</sup>

Not all the night-flying training was done at night. Equipment, grandly called “Synthetic Night Flying Equipment,” was used to simulate night-flying conditions. Blue celluloid covered the cockpit transparencies, while aircrew wore amber-colored flying goggles of varying intensities: the combination effectively cut the light levels transmitted

Upkeep weapon on a Lancaster.



from outside the cockpit to approximately that of good moonlight, but cockpit instruments could be clearly seen. A goggleless safety pilot could see the outside world clearly through the celluloid. One apparently unexpected side-effect of prolonged use of the celluloid-goggle combination was that when goggles were taken off outside the aircraft, the world appeared red.<sup>32</sup>

A further medical problem encountered was airsickness. Few of the aircrew had much experience of low-flying in the Lancaster, an aircraft that was not designed for it and in which some of the crew sat at an angle to the line of flight. The situation was sufficiently severe for the squadron's medical officer to fly on a training flight to experience the problem for himself: thereafter airsickness sufferers were treated with chlorobutanol.<sup>33</sup> Low-flying did not just cause medical problems: concerns were raised about its effects on the aircraft's structure after a number of bolts on one airframe were found to have sheared.<sup>34</sup>

On April 26, 1943, having mastered flying at 150 ft, the squadron was required to cut the bombing height to 60 ft and the release speed to 210 miles per hour. Over the next week they trained intensively, dropping nearly 300 practice bombs that on average fell within 120 feet of the aiming point.

If constant practice under realistic conditions had allowed the aircrew to master the necessary flying skills,<sup>35</sup> none of them had yet dropped the

new weapon and would not until May 11, 1943, there were still a number of technical problems to be overcome. One of these was the difficulty of achieving, at night over water, the precise 60 ft altitude required to drop Upkeep accurately. Several unsatisfactory solutions were tried before the Director of Scientific Research at MAP suggested the use of intersecting spotlights. This was not a new idea; Harris himself had tried it in flying boats and, having failed to make it work, was again sceptical. Coastal Command had also tried it unsuccessfully as an aid to nocturnal, shallow-water attacks on U-boats. 617 Squadron were duly sceptical and difficulties were encountered in making the system work adequately, particularly at such low altitude. The two spotlight beams were set to meet on the water (which on a reservoir could be expected to be sufficiently smooth not to interfere with the functioning of the system) just forward of the port wing. Here it was difficult for the pilot to monitor and this duty fell to the navigator, who was thus responsible for altitude<sup>36</sup> as well as for navigating to and from the dams.

Having devised a means to drop Upkeep from the correct height, it was now necessary to find a means to drop it from the correct range. Dropped too close it might simply bounce over the dam endangering the aircraft as the mine exploded out of the water<sup>37</sup> or dropped too far away simply never reach its target. A simple device overcame this problem: a sight using the bomb-aimer's eye at the

**THE SQUADRON WAS REQUIRED TO CUT THE BOMBING HEIGHT TO 60 FT AND THE RELEASE SPEED TO 210 MILES PER HOUR**

ONCE THE BREACH HAD BEEN CONFIRMED, GIBSON LED THE AIRCRAFT WITH UNUSED UPKEEPS (PLUS YOUNG AS DEPUTY LEADER) TO THE EDER DAM

base of a triangle completed by two nails mimicked the desired drop position of the aircraft in relation to the dam's towers. In effect, with the sight correctly held by the bomb-aimer, the aircraft was in the right release position when the nails obscured the dam's towers. Some crews used the sight, but others used their own variations on the theme, often including a length of string and chinagraph pencil marks on the clear-view panel.

It was now possible to drop Upkeep at the right speed, height and range: if the weapon worked as advertised the dams should be destroyed. But Upkeep and the aircraft to carry it were in short supply and it would be possible after each attack to see if the dam had been breached and aircraft could be diverted elsewhere. Accordingly, Gibson needed to be able to control the attack, to call a halt when the objective was achieved and to divert aircraft to subsequent targets. In normal area bombing practice such control was unnecessary and Bomber Command's aircraft were not fitted with radios that allowed for it. The standard radio was adequate for air-to-ground use but was found to be unsuitable for air-to-air use, particularly at night. Specialist advice was sought and the fitting of the radio used in fighter aircraft was suggested. This, with a few extra tweaks, proved suitable and was flight trialled one week before the mission. In the meantime, a series of booths had been rigged in the squadron's crew-rooms to enable procedural training to take place before the radios had been fitted to the aircraft.

### The Raid

The attack was made in three waves. Gibson led the first, consisting of nine aircraft, to the Möhne dam. The second wave, five aircraft, led by McCarthy was to attack the Sorpe dam (identified by the Ministry of Economic Warfare as a vital target if the raid was to achieve its desired endstate) even though Upkeep was not designed to be used against that earth-bank type of dam. The third wave, led by Ottley, comprised a further five aircraft: they were briefed to attack either the Möhne or Eder dams, but with alternate targets. Instructions as to which target they should attack would be passed by radio as the progress of the raid became apparent.

The nine aircraft of the first wave made their way at low-level to the Möhne, losing one aircraft (Astell) to anti-aircraft fire en route. On arrival, Gibson made a trial run before actually dropping his Upkeep: this appears to have fallen short and did not breach the dam. Hopgood followed, but dropped his weapon too late: it bounced over the dam destroying the dam's power station instead. Hopgood's aircraft was shot down by gunners on the dam. Third to attack was Martin, whose Upkeep fell both short and wide of the target and failed to breach it. Young came fourth: his mine exploded in contact with the dam and Maltby, next to attack, reported that there was a breach in the dam before releasing his own Upkeep. Maltby's

mine also exploded in contact with the dam causing a definite breach.<sup>38</sup>

Once the breach had been confirmed, Gibson led the aircraft with unused Upkeeps (plus Young as deputy leader) to the Eder dam. Maltby and Martin headed for home. Achieving the correct dropping position proved very difficult at the Eder; Shannon tried three times before handing over to Maudslay who had two unsuccessful attempts. Shannon then tried twice more before finally getting the right alignment and dropping his Upkeep such that it exploded in contact with the dam but without breaching it. Maudslay came next and finally released his weapon on the third attempt but the release was too late, the mine hit the dam's parapet and exploded damaging Maudslay's aircraft.<sup>39</sup> Finally the last aircraft of the first wave, Knight, attacked: he took one practice run but on the next run Upkeep was successfully dropped and the dam breached. Gibson ordered a return to Scampton but Young's aircraft was shot down by anti-aircraft fire on the way home.

Informed by radio that both the Möhne and Eder dams had been breached Harris placed a call to CAS, in Washington for a conference with his fellow British and American Chiefs of Staff,<sup>40</sup> to inform them of the success. CAS in turn informed Churchill.

The second wave, intended to attack the Sorpe, actually left before the first. McCarthy should have led but his aircraft had mechanical problems and he had to change to another: he finally left well behind the rest of his wave. In the end, though, McCarthy was the only one of the wave to reach the target: it took him ten attempts to satisfactorily drop Upkeep but though the dam was damaged, it was not breached. Barlow's aircraft, which actually led off the raid, was shot down by flak over Germany and the Upkeep failed to explode in the crash. As a result the Germans captured Upkeep intact, rapidly worked out how the weapon worked and produced (but never used) their own, more complicated, version. Next came Munro whose aircraft was severely damaged by flak over Holland and forced to return to Scampton. He was followed by Byers, who was shot down by anti-aircraft fire over Holland, and by Rice who, flying too low over the Afsluitdijk, had the Upkeep wrenched off by impact with the water without the aircraft crashing. Rice had no option but to return to Scampton and so only one of the five aircraft originally destined to attack the Sorpe reached its target.

The third wave was a reserve force, each had its own intended target such that all six dams in the Operational Order<sup>41</sup> might have been attacked but could be re-tasked to attack the Möhne, Eder or Sorpe dams as required. Ottley led the wave but was shot down before he could be diverted to the Sorpe, while Burpee, always destined for the Sorpe, was shot down over Holland. Brown came third and attacked the Sorpe: like McCarthy, he found it difficult to place his Upkeep appropriately and, although hit, the dam was not breached. The fourth aircraft, Townsend's, was tasked against the



**BREACHING THE DAMS UNLEASHED HUGE AMOUNTS OF WATER: AT THE MÖHNE 116 MILLION CUBIC METERS OF WATER ESCAPED WITHIN THE FIRST 12 HOURS**

Ennepe: difficulty was experienced in finding the target and, although Upkeep was dropped, the dam was not damaged. Uncertainty exists about which dam Townsend's crew attacked: they were sure they attacked the Ennepe but the War Diary of the Oberkommando der Wehrmacht records that the Bever Dam was attacked that night and not the Ennepe.<sup>42</sup> Last of all was Anderson's aircraft, originally tasked against the Diemel but diverted to the Sorpe, which never found its target and returned to Scampton, the Upkeep unused.

**The Effect in Germany**

Breaching the dams unleashed huge amounts of water: at the Möhne 116 million cubic meters of water escaped within the first 12 hours (approximately 88 percent of the total contents of the reser-

voir) while at the Eder 154 million cubic meters of water were lost (approximately 76 percent of its total contents). Downstream of the Möhne, in addition to the damage done to its two electricity generating stations, significant damage was inflicted by the passage of the flood-water: bridges were destroyed up to 50 km away and buildings up to 65 km away. Official German figures give the final death toll for the Möhne as 1,294 killed or missing while 11 factories and 92 houses were destroyed, 971 houses and 32 farms damaged, 2,822 hectares of farmland made useless with a further 1,221 hectares damaged, and over 6,300 cattle and swine killed. In addition, nearly 50 road and railway bridges were damaged and several kilometers<sup>43</sup> of railway embankment required repair. On top of this, a large number of power or pumping stations and gas or water supplies were damaged.<sup>44</sup>

**WATER PRODUCTION IN THE RUHR DROPPED BY 75 PERCENT IN THE AFTERMATH OF THE RAID AND TOOK SIX WEEKS TO RETURN TO NORMAL**

The results below the Eder caused less loss of life, only 47 people were killed, but the effects reached far from the dam. Floods requiring the use of boats for mobility were recorded up to 140 kms away and the damage to the river system was considerable: both the Rivers Fulda and Weser had to be dredged to restore them for navigation. Over 5 km of riverbank needed rebuilding and 50 hectares of land was made unusable.

It is worthwhile to digress at this point on the morality of this attack and the legality of the target. By today's standards the collateral damage would be unacceptable: the current RAF would not countenance attacking such a target. But in 1943 high levels of civilian casualties were part and parcel of the strategic bombing offensive: the need to aim at city centers because bombing accuracy was insufficient for anything else was bound to mean significant levels of collateral damage. The civilian casualties caused by Operation CHASTISE would soon be eclipsed by the Battle of Hamburg: on the night of July 27-28, 1943, Bomber Command's incendiary attack raised a firestorm which within 30 minutes had covered 22 square kilometers of the city. The exact casualty numbers will never be known but figures of 40,000 killed with a similar number of injured seem likely.<sup>45</sup> In such a climate, the loss of around 1,300 lives was considered entirely acceptable in the pursuit of the disruption of German industry. Harris even defended the results of the attack on Hamburg:

*In spite of all that happened at Hamburg, bombing proved a comparatively humane method. For one thing, it saved the flower of the youth of this country and of our allies from being mown down by the military in the field, as it was in Flanders in the war of 1914-1918.*<sup>46</sup>

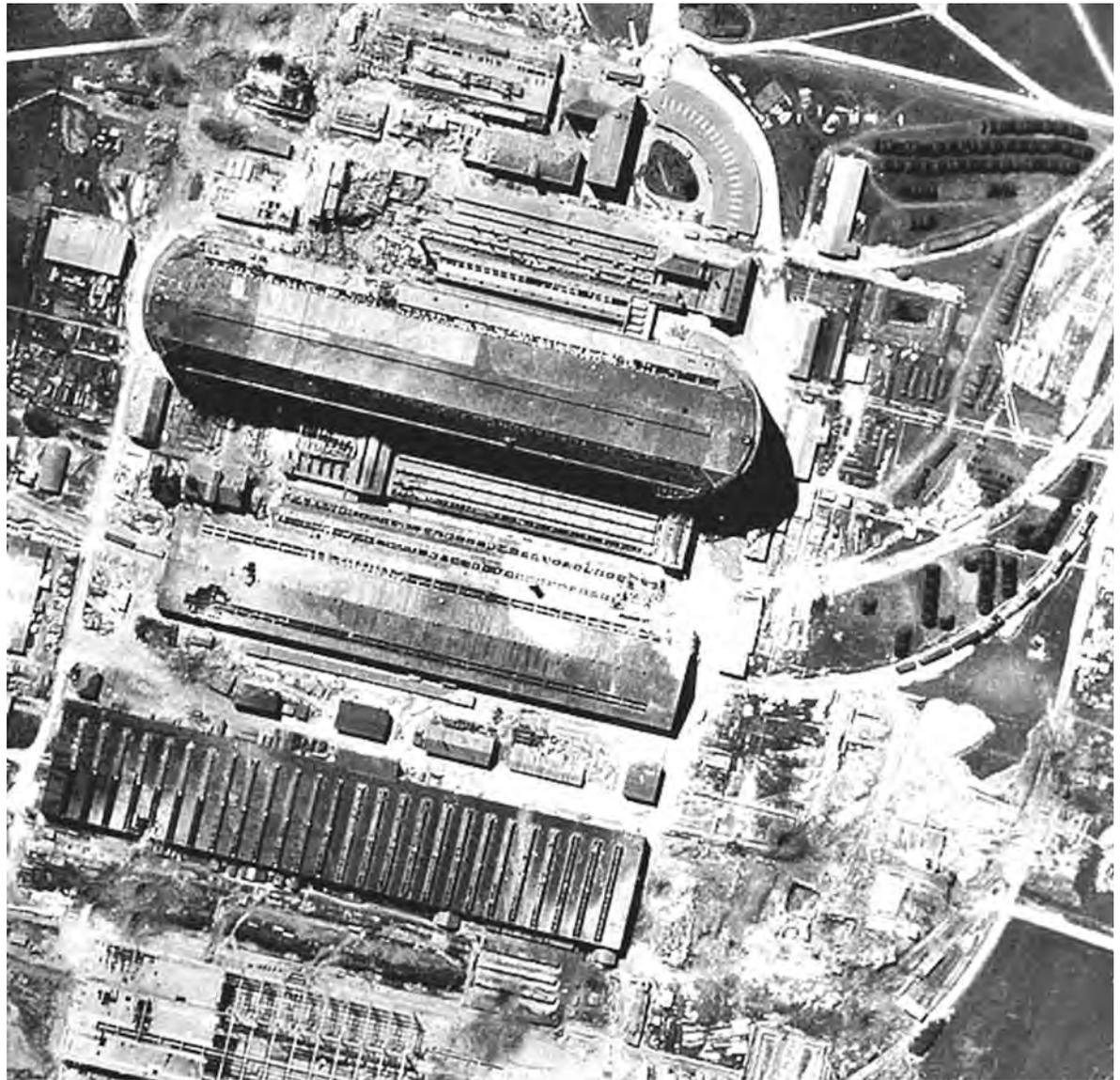
Albert Speer, who had responsibility for the German war economy as Minister of Armament and War Production, led the German response to the raid. He flew from Berlin the following morning to inspect the damage, initially from the air. Speer recorded that the flooding of the valley below the Möhne had caused the "seemingly insignificant but grave consequence that the electrical installations at the pumping stations were soaked and muddied, so that industry was brought to a standstill."<sup>47</sup> He rapidly mobilized manpower to repair the damage: 7,000 men were diverted from constructing defences on the Atlantic Wall to repair the dams. Sweetman<sup>48</sup> records that a further 20,000 workers, again many of them drawn from the Todt Organization's workers on the Atlantic Wall, were diverted to help with the clean-up. It seems likely, therefore, that a total of over 10,000 construction workers were diverted from constructing defenses against the invasion of Europe which would occur the following year for a period of several months: what impact might the fortifications that they would otherwise have built have had on that invasion? In addition to construction workers, both military and civilian specialists of many types were involved in the clean-up.

In order to restore electricity and water supplies in the Ruhr, Speer ordered the requisitioning of electric motors and the importation of experts from elsewhere in Germany regardless of the consequences. He aimed to restore armament production in the Ruhr to half-production within one week and to full production within two weeks.<sup>49</sup> While this did not represent the total and prolonged suspension of production that Wallis and others had hoped for, it did represent the loss of three-eighths of the Ruhr's monthly production: a not insignificant achievement that takes no account of production losses elsewhere caused by the concentration of efforts into the Ruhr.

Attempts to quantify the actual production losses caused by the Dams' Raid are fraught with difficulty: the German economy was, surprisingly, still transforming itself onto a war footing and output was rising rapidly, so production losses are difficult to show definitively. What can be shown is that water production in the Ruhr dropped by 75 percent in the aftermath of the raid and took six weeks to return to normal levels, steel production of over 300,000 tons was lost in both May and June (normal production loss was less than 100,000 tons per month) and gas availability was cut in half.<sup>50</sup> Commentators have argued that this did not represent a good return on the training time invested in preparation for the raid or on the lives of the aircrew lost. The flying hours put into training for Operation CHASTISE were approximately equivalent to those taken up in a normal 500-bomber raid but CHASTISE caused far more damage. No normal raid halved the Ruhr's production for a week and, at a 4.7 percent loss rate,<sup>51</sup> a 500-aircraft raid would have expected to lose 23 or 24 aircraft compared to Operation CHASTISE's eight: for the effect achieved the loss was acceptable, if heavy to bear for a single squadron.

Another response to the raid was the strengthening of defenses around German dams. The level of commitment is illustrated by the Eder dam: a total of 48 barrage balloons, nine searchlights, six rocket launching vehicles, 36 anti-aircraft guns varying in caliber from 20-88 mm and a smoke-screen system were provided. In addition, there was an infantry company to guard against parachute attacks so that up to 1,500 men were tied up in protecting one dam. For all the German dams, 10,000 front-line troops were involved, the equivalent of a full division that could not be employed elsewhere.<sup>52</sup>

The final effect, surely not one the planners intended, was that on German air plans. Hitler was furious, the Reich's Propaganda Ministry's log recording, "The Führer is extremely angry and impatient at the inadequacy of our defensive measures"<sup>53</sup> and he blamed the Luftwaffe for failing to prevent the attack. This reinforced Hitler's prejudices about air power; he did not believe that an effective defense against bombing could be mounted. He refused to allow the Messerschmitt Me-262 to be developed as a pure fighter (a role in



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OPPORTU-  
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CONGRESS  
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FROM THE  
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THE HOUSE**

which it was pre-eminent) instead insisting that it be developed as a fighter-bomber.

#### **Allied Effects**

With the surviving aircrew back at Scampton and a reconnaissance Spitfire on its way to Germany to photograph the aftermath of the raid, the Air Ministry began to exploit the publicity and propaganda benefits of the raid. The news was broken by the BBC's morning news bulletin, the Air Ministry's communiqué coming too late for the morning newspapers. They would not report the raid until May 18, 1943, but made up for the delay with the enthusiasm with which they greeted the news in their headlines. In a generally more restrained era these included, "Huns Get A Flood Blitz" (*The Daily Mirror*), "Floods Sweeping Ruhr From Smashed Dams – RAF's Major Victory" (*The Daily Sketch*) and "RAF Blow Up Three Key Dams in Germany" (*The Daily Telegraph*). Every front page carried aerial reconnaissance pictures of the destruction but inaccuracies were creeping in, as evidenced by *The Daily Telegraph's* implication

that three dams had been destroyed.

News of the attack was quickly spread in the United States: CAS briefed the Combined Chiefs of Staff on May 17. On May 18, the *New York Times* reported: "The RAF has secured another triumph" and hailed the "unexampled daring, skill and ingenuity."<sup>54</sup> Such headlines must have been welcome to the British contingent at the Trident conference: they were facing an American military which was, to say the least, skeptical about British military capability. Churchill made the most of the opportunity in his address to the U.S. Congress on May 19 saying, to cheers from the floor of the House:

*You have just read of the destruction of the great dams which feed the canals and provide power to the enemy's munition works. That was a gallant operation costing eight out of 19 Lancaster bombers employed but it will play a very far-reaching part in German military output. It is our settled policy, the settled policy of our two staffs of war-making authorities – to make it impossible for Germany to carry on any form of industry on a large or concentrated scale, either in Germany, in Italy, or in the*

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*enemy-occupied countries....In the meanwhile, our air offensive is forcing Germany to withdraw an ever larger proportion of its war-making capacity from the fighting fronts.*<sup>55</sup>

Such declarations were aimed also at the Russians who, already fighting the Germans on the Eastern front, were calling for the opening of a second front in Europe. The Raid dramatically demonstrated Bomber Command's ability to take the battle to Germany.

A precision raid was also useful for propaganda purposes in Occupied France: the British War Cabinet had debated the effect of inaccurate British bombing on support there. Leaflets were dropped, both in France and in Holland, which used pictures of the aftermath of the raid and explanatory text, to stress the precision of the operation: factual accuracy was not complete here as the text claimed a breach of nearly 100 meters at the Sorpe, in addition to the Möhne and Eder successes.<sup>56</sup>

On a less positive note, it soon dawned on the British that if an unexploded Upkeep had fallen into German hands, as Barlow's had, it would be possible to reverse-engineer a version to attack British dams: the Heinkel He-177 was theoretically capable of carrying such a weapon.<sup>57</sup> The Ministry of Home Security debated the problem for nine months without reaching a definitive conclusion although steps were taken to protect the dams above Sheffield. As it happened the Germans did not attack, neither did they reverse-engineer Upkeep preferring an unsuccessful attempt to produce a more sophisticated version.

### **Benefit and Lessons**

In addition to the direct results in terms of the damage caused by the floodwater there were a number of indirect benefits. The most obvious of these was the continuing existence of 617 Squadron, although it took some time to recover from the crew losses sustained. The presence of a squadron that had proved its ability to deliver novel weapons, using new techniques and with great precision enabled the RAF to look towards further precision raids. The original WA5, crippling the industrial Ruhr by attacking its power and coking plants, was a "choke point" plan seeking strategic effect by targeting precise locations. The RAF now had the potential ability to apply this concept to other "choke points" in production and other such attacks would be undertaken. An example was the June 20-21, 1943, attack on the Zeppelin factory on Lake Constance, which was thought to be vital to German radar production. The concept of attacking "choke points" remains firmly part of RAF doctrine, although more likely these days to be applied to infrastructure, logistic chains or communication nodes than to production facilities, a task made easier by the development of truly precision-guided weapons.

Allied to 617 Squadron's continued existence was a willingness by the Air Ministry and MAP to look

more favorably at Barnes Wallis' other ideas for large bombs. These would evolve into Tallboy and Grand Slam, respectively 12,000-lb and 22,000-lb penetration bombs. 617 Squadron would use Tallboy with great accuracy on a number of occasions. In June and July 1944, they successfully attacked the Saumur railway tunnel, preventing the transit of a Panzer division to attack the Normandy bridgehead, the E-boat installations at Le Havre and Boulogne, V-1 launch sites in the Pas de Calais, and the first launch site for the proposed V-3 weapon.<sup>58</sup> In addition, the combination destroyed the Dortmund-Ems canal, the Krebs Dam (using delayed-action fuses and low-level attack) and twice (in conjunction with IX(B) Squadron) attacked and finally sank the German battleship Tirpitz. The massive Grand Slam bomb was successfully used against the Bielefeld viaduct that had resisted all previous attempts to destroy it.

Gibson had been the first to use the "Master Bomber" technique, controlling the actions of formation and directing them from one target to another by radio. Three months later Group Captain Searby would attack as "Master Bomber" in the raid against the V-weapons research site at Peenemünde. This raid was altogether larger in scale with nearly 600 aircraft, controlled by air-to-air radio as Searby circled the site for the duration of the attack,<sup>59</sup> and caused Reichsminister Goebbels to comment that, in relation to V-weapon attacks, "preparations were set back by four or even six weeks."<sup>60</sup> The combination of this technique and of radio control from Group headquarters would eventually lead to the development of sophisticated airborne command and control systems. The use of ground spotters, using ground-to-air radio to talk tactical aircraft onto targets, would become commonplace in Normandy following D-Day. In Afghanistan last year, we saw ground troops calling in close air support from B-52 heavy bombers via controllers aboard orbiting AWACS aircraft.

### **Conclusions**

If the sole criterion of success is the permanent paralysis of the Ruhr's munitions industry and Germany's consequent inability to prolong the war, then Operation CHASTISE failed. The Air Ministry and the Ministry of Economic Warfare both knew that the destruction of the Sorpe dam was vital if this aim was to be met, but that Upkeep was not really a suitable weapon for the task. It is interesting, however, to speculate on what might have happened if more of the second and third wave aircraft had reached and attacked this target. If the disruption to German transport infrastructure, reduced agricultural production, and the diversion of labor from the construction of Atlantic defenses are considered, a picture begins to emerge of the Dams Raid as a triumph.

As we have seen, however, there are other important factors to take into account. The raid had very important moral and psychological

**IT WAS, AT THE TIME, IN WEBSTER AND FRANKLAND'S WORDS "THE MOST PRECISE BOMBING ATTACK EVER DELIVERED"**

effects. It was one of a number of Bomber Command "set pieces"<sup>61</sup> which raised both the British public's confidence in the Command's ability to take the fight to the Germans and public morale in general. Allied to this, the timing of the raid was fortuitous, as it allowed the British to parade an aerial success before the Combined Chiefs of Staff Conference and Churchill to exploit that success before the United States Congress. Furthermore, the dramatic pictures could be used both in persuading the Russians that Britain was doing its share against Germany and in showing occupied Western Europe that Britain could now attack precision targets. The Germans were not immune to the psychological effects: Speer records that the raid made "a deep impression on the Führer."<sup>62</sup> Reinforcing Hitler's prejudices, this assisted the misemployment of the Luftwaffe as an offensive rather than defensive force. In addition, fear of repeat attacks (never apparently contemplated) caused the equivalent of an entire regular division to be tied down, protecting the remaining dams: in itself this was probably worth

the loss of eight aircraft.

There were other gains for the RAF: the start of the "master bomber" technique allied to the demonstration that bomber aircraft could be effectively controlled by radio; the demonstration that Bomber Command could undertake precision attacks (albeit with specialized training and selected crews); the creation of an "elite" squadron which would develop new techniques and undertake other precision attacks; and the impetus the raid gave to the Command to take Wallis' other specialized bombs seriously.

Undoubtedly it was, at the time, in Webster and Frankland's words "the most precise bombing attack ever delivered,"<sup>63</sup> even if their assertion of "a feat of arms which has never been excelled" smacks of hyperbole. Allying this precision to the dramatic post-raid reconnaissance photographs, the undoubted bravery of the crews involved and a pre-determination to use the raid for propaganda purposes, it is hardly surprising that the Dams Raid remains that RAF's most famous single operation and 617 its most famous squadron.

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**NOTES**

1. Sweetman (1990) p.1.
2. Webster and Frankland (1961) p.168.
3. The "bouncing bomb" is part of the mythology of the raid. The weapon is more accurately described a ricocheting depth charge: it ricocheted across the water rather than bouncing and its explosion was triggered by hydrostatic pistols of the kind used in Royal Navy depth charges.
4. Sweetman (1990) p.1.
5. *Ibid.* p.12.
6. Quoted in Terraine (1985) pp.292-3, the Butt Report assessed the accuracy of Bomber Command's efforts for the period 2 June 1941- 15 July 1941 by studying the photographs taken when bombs were dropped. It reached the depressing conclusion that of all aircraft taking off on raids only about a quarter actually got within 5 miles of the target, and of those actually claiming to have attacked only one in three was within 5 miles of its target.
7. Two types of dams were involved. The Sorpe was an earth dam (a waterproof concrete core surrounded by earth banks on either side) and not susceptible to destruction by shockwaves; the rest were gravity dams which derive their strength from their own weight but are vulnerable to shockwaves.
8. Sweetman (1990) p.8.
9. *Ibid.* p.43. Neither plan progressed, though there is a suggestion that Combined Operations' effort was held in reserve in case the bombing raid should be unsuccessful. It is hard, however, to see how a charge floated down the reservoir could have avoided the Mohne's existing defences.
10. *Ibid.* pp.18-19.
11. *Ibid.* p.14. The intention was to achieve supersonic speeds in the drop from height to bury the bomb as deep in the ground as possible before it exploded.
12. *Ibid.* pp.32-34.
13. *Ibid.* p.18.
14. *Ibid.* p.28.
15. *Ibid.* p.30. The third point is counter-intuitive: most golfers realize that a back spun golf ball stops short on pitching rather than leaping forward. Wallis

was a golfer; indeed he was working from offices at his own golf club.

16. *Ibid.* p.35. These timings appear to be correct. Although Wallis would later claim that initial dropping trials occurred in September 1942, there is no documentary evidence to support his assertion.

17. Andrews & Morgan (1988) pp. 387-9. The Vickers Windsor was a four-engined bomber developed to meet Specification B3/42 but which would, in fact, never enter series production: four prototypes were built of which only three flew.

18. Terraine (1985) p.514.

19. *Ibid.* p.518.

20. Harris (1947) p.157.

21. Messenger (1984) p.119.

22. Sweetman (1990) p.44.

23. *Ibid.* p.56. It appears that the extra trial drops were requested by MAP and Air Ministry officials rather than by Wallis. At this stage the attack was only 2 weeks away and 617 Squadron were well into their training for the operation but the method of attack was not yet fully proved.

24. *Ibid.* p.76. Initially chaired by Rear-Admiral Renouf the appointment soon passed to AVM Bottomley, ACAS (Ops).

25. AP3000 p.1.3.4. Mission command gives instructions on what is to be achieved and why rather than what to do and how to do it.

26. Messenger (1984) pp.73-74. Harris was not averse to publicity. He had authorized the "Thousand Bomber" raid against Cologne in May 1942 as much for domestic propaganda reasons as for operational ones.

27. Harris (1947) p.156. One does not have to be unduly cynical to infer that the potential propaganda and public relations benefits of a successful attack on a high profile target helped to smooth the way for high-level support of the Dams Raid.

28. Messenger (1984) p.85.

29. Sweetman (1990) p.83. The statement suggests that Harris, despite his avowed dislike of elites, accepted from the start that 617 Squadron was to be an elite squadron kept in-being for specialised tasks.

30. Verrier (1968) p.220. Whilst these results clearly show that an average heavy bomber squadron could not bomb sufficiently accurately to destroy the dams, they also show that standards in Bomber Command were improving. By comparison with the Butt Report's one-third of attacking aircraft bombing within 5 miles of the aiming point, the Main Force was now achieving one-half bombing within 3 miles.

31. Sweetman (1990) p.64.

32. *Ibid.* p.66. A similar visual anomaly (magenta eye) is experienced after prolonged use of night vision goggles. This is caused by suppression of the sensitivity of retinal green cones by the green light transmitted by night vision goggles while the sensitivity of red and blue cones is increased. The response of the eye when re-exposed to white light is to produce over-reaction to the red and blue frequencies and hence a magenta image.

33. Airsickness caused by low-level buffet in aircraft not originally designed for low-level flight is still encountered in the RAF where Nimrod MR2 rearcrew are particularly prone to it for precisely the same reasons. 617 Squadron's sufferers were treated with chlorobutanol, now recognized as a hypnotic and sedative: it is interesting to speculate on the potential impact on performance of using such a drug in low-level flight. It is impossible now to establish whether any aircrew actually used chlorobutanol during the raid and whether their performance might have been degraded by it.

34. Sweetman (1990) p.68. Bomber Command would have further experience of the damage done by low-level flight to aircraft not specifically intended for that role in 1965. The Vickers Valiant was designed as a high-speed, high-altitude unarmed bomber but in early 1964 was switched to the low-level role as high-altitude operations were deemed to be too dangerous. Less than a year later the entire fleet was grounded with fatigue damage to the wing main spar.

35. In many ways this was an innovation as most World War II aircrew mastered their operational flying skills on operational sorties.

36. Getting Upkeep on target was a genuine team effort: the pilot set the line, the air engineer who controlled the throttles was responsible for airspeed, the navigator monitored altitude and the bomb-aimer was responsible for timely release of the weapon. Given the precise requirements in all parameters, it is a testament to the crews' skill that the weapon was delivered with sufficient accuracy for it to function at all.

37. This happened to Hopgood, the second aircraft to attack the Möhne. It is not entirely clear that the destruction of this aircraft was caused by the explosion of Upkeep and it was more likely to be due to defensive gunfire from the dam.

38. It seems likely that the Möhne dam was breached by the first Upkeep to explode in contact with it and that Maltby's mine merely widened the breach.

39. The evidence on the fate of Maudslay's aircraft is unclear. It was thought to have been destroyed by the mine's explosion but radio transmissions were heard afterwards and German records suggest that the aircraft was actually shot down by anti-aircraft fire on its way home.

40. Euler (2001) p.40. The "Trident" conference was held to clarify future Anglo-American operations: these included confirmation of POINTBLANK, the joint strategic bombing offensive aimed at fatally weakening Germany. The directive was issued on 10 June 1943.

41. Operation Order B.976. The six, in the order of importance attached to them, were Möhne, Eder, Sorpe, Lister, Ennepe and Diemel.

42. Euler (2001) p.108.

43. Cooper (2000) p.72. US experience with flood dam-

aged railway tracks suggested they took up to 25000 man-hours per mile to repair. The Ruhr-Kassel railway line was, indeed, unusable for several months.

44. Sweetman (1990) pp. 154-5.

45. Terraine (1985) pp.546-7.

46. Harris quoted in Terraine (1985) p.548.

47. Speer (1970) p.281.

48. Sweetman (1990) p. 162.

49. *Ibid.* p. 162.

50. *Ibid.* pp.180-2.

51. Terraine (1985) p. 518. Bomber Command lost 872 aircraft out of 18506 sorties despatched during the 1943 "Battle of the Ruhr", a loss rate of 4.71%.

52. Sweetman (1990) pp. 184-5.

53. Quoted in Rumpf (1975) p.74.

54. Sweetman (1990) p.174.

55. Euler (2001) p.117.

56. Sweetman (1990) p.175.

57. Philpott (1980) p.114.

58. Sweetman (1990) p.189.

59. Terraine (1985) p.541.

60. Morpurgo (1972) p.282.

61. The first "Thousand Bomber Raid" against Cologne could be seen in the same light. Harris needed a major raid wreaking significant damage to demonstrate that his ideas on the employment of Bomber Command could work. Nonetheless, the need for 1000 aircraft was undoubtedly for propaganda purposes.

62. Speer (1970) p.280.

63. Webster & Frankland (1961) p. 168. It is a testament to advancing technology that what in 1943 was thought of as remarkable precision would be routine with today's laser and GPS guided weaponry.

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# The Dawn of Aviation The First Flying Machine



# on in the Middle East Machines over Istanbul



Gary Leiser

(Overleaf) Blériot's crash site in Istanbul. (Photo © Musée de l'Air de l'Espace/Le Bourget [MA 29080].)

**IN 1909  
PIERRE DE  
CATERS AND  
THEN THE  
WORLD-  
FAMOUS  
FRENCHMAN  
LOUIS  
BLÉRIOT  
PILOTED THE  
FIRST HEAV-  
IER-THAN-AIR  
FLYING  
MACHINES  
OVER  
ISTANBUL**

The dawn of aviation in the Middle East began in 1909, six years after the Wright brothers' renowned flight on the coast of North Carolina. In a cold and blustery December of that year, the Belgian Baron Pierre de Caters and then the world-famous Frenchman Louis Blériot piloted the first heavier-than-air flying machines over Istanbul—or Constantinople as it was commonly called in Europe—the capital of the Ottoman Empire. The flights of these machines astounded the thousands of spectators who had gathered to watch. "Bravo!" they cheered, clapping and waving, as these fabulous inventions rose into the sky. What did these observers think of this new technology? Did they believe that these machines simply provided a platform for stunts or did they believe that they had serious implications for mankind or, more specifically, the Ottoman Empire?

At that time, no one thought, of course, to poll the spectators on their reactions to these flying machines. Indeed, to my knowledge, the recollections of only one such spectator have been published. By spectators I mean the subjects of the Ottoman Empire—Turks, Greeks, Armenians, Arabs and others—for there were also many foreigners, that is, Europeans, present. These latter lived mainly in the large European colony in the Pera, modern Beyoğlu\*, section of Istanbul. This was the commercial hub of the city, where powerful foreign banks and embassies were located. But among the "ordinary Ottoman" spectators a number of local journalists were on hand. Their reports of these flights provide a unique insight into the impression that they made on those who witnessed them. Here, I shall focus primarily on the reports in the leading Turkish newspapers and secondarily on those in "foreign" newspapers. Turkish was, of course, not only the language of the dominant and ruling element of the Ottoman Empire, but it was also widely understood among various minority groups within the state.<sup>1</sup> Accordingly, Turkish newspapers were the most numerous and had the widest circulation. "Foreign" newspapers were those published in Beyoğlu by various interests within the European colony.

With respect to Turkish newspapers, I shall concentrate on the three leading dailies in 1909, which, in order of importance, were the following: *İkdam*, *Tanin*, and *Yeni Tasvîr-i Efkâr*. I shall also

\*For those unfamiliar with Turkish orthography, ö and ü are the same as in German, ğ is silent and lengthens the preceding vowel, ı = the o in atom, ç = j, ç = ch, and ş = sh.

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add a few details from *Yeni Gazete*, which was representative of the second tier of Turkish newspapers.<sup>2</sup> *İkdam* had a circulation of about 40,000. *Tanin* and *Yeni Tasvîr-i Efkâr* had circulations of at least 20,000 each. In 1909, greater Istanbul had a population of perhaps a bit more than a half million, but most of this population was illiterate.

Among these newspapers, *Yeni Tasvîr-i Efkâr* devoted the most attention to aviation and the flights of de Caters and Blériot. This was because the owner's son Velid Ebüzziya, who eventually took over the newspaper in 1912, was especially interested in flight. Many of the articles in *Yeni Tasvîr-i Efkâr* on this subject are signed with the initials V.E. (i.e., the letters *waw* and *alif* in the Arabic alphabet), which must stand for Velid Ebüzziya. No articles on aviation in any of the other Turkish papers cited in this study are signed. It is worth noting that Velid Ebüzziya and his older brother, Talha, set up a darkroom for photography, effectively the first for an Istanbul newspaper, in 1912 and in the same year Velid apparently took the first aerial photographs of Istanbul.<sup>3</sup>

As for newspapers published by Europeans, the most important was the *Levant Herald*. In 1909, the language of the *Levant Herald* was French with two columns of summaries in English. At that time, French was the language of trade and diplomacy for the European colony. Indeed, French was spoken and Parisian social graces were imitated by even the Ottoman high society in Beyoğlu. The *Levant Herald* took a great, but rather different, interest in the flights of de Caters and, above all, Blériot. Apart from this different emphasis, its accounts of these flights add further details to those of the Turkish press and help complete the picture of those events. I have supplemented this newspaper with a few references from the *Moniteur Oriental*. It too was published in French with English summaries.<sup>4</sup> The narrative of the flights of Baron de Caters and Blériot given below is a synthesis of the reports from all these newspapers, but *Yeni Tasvîr-i Efkâr* and the *Levant Herald* provide the heart of the story, the former especially for de Caters and the latter for Blériot.<sup>5</sup>

### **Istanbul at the Beginning of the Twentieth Century**

As the twentieth century began, Sultan Abdülhamid II was completing a quarter-century as monarch of the Ottoman Empire. He had come to power in 1876, following a financial crisis left to him by his predecessors who had spent enormous sums and borrowed heavily to build an army and

## Istanbul (Constantinople) in 1909



Approximate routes flown  
by de Caters and Blériot.

**THE FIRST  
BALLOON  
ASCENT IN  
ISTANBUL  
HAD  
OCCURRED  
BY AT LEAST  
1802**

navy strong enough to fend off the European powers and preserve the integrity of the empire. Taking advantage of such economic and political crises, he suspended the constitution in February, 1878, and then ruled as an absolute monarch. The sultan's ineffective policies and heavy handedness, however, provoked a movement for change led by the Young Turks. With the support of the army, their political arm, the Committee of Union and Progress (CUP), forced Abdülhamid to restore the constitution on July 23, 1908.

In the elections of November-December, 1908, the CUP came to power. This precipitated a struggle between the Unionists and conservative elements led by the sultan. The latter instigated an uprising that was put down by the Third Army in Macedonia under the command of General Mahmud Shevket Pasha, a reform-minded officer who supported the constitution.<sup>6</sup> With the Third Army, which became known in the Western press as the "Army of Deliverance" (Haraket Ordusu, or Action Army), he entered Istanbul, quickly crushed the revolt, and saved the CUP. While legally maintaining a state of siege that lasted for two years, he became the dominant force in the cabinet, eventually assuming the position of Minister of War and Inspector General for the First, Second and Third Army corps. On April 28, 1909, Abdülhamid was deposed. His brother

Mehmet Reshad succeeded him as Mehmet V.<sup>7</sup>

Abdülhamid may not have been a political progressive, but he was an enthusiastic proponent of reforms and technological advances that helped him increase or centralize his power. Thus, he supported the expansion and improvement of both primary and secondary education on one hand and, on the other, higher education—especially in the military schools, and even founded the first Turkish university. As for technology, he was an avid patron of the telegraph system, for example, which already crisscrossed the empire and had become an important instrument of his autocratic rule. He was less enthusiastic about expanding the railroad system because its construction was almost entirely in the hands of foreigners, but he recognized its usefulness.

Meanwhile other technological wonders had begun to penetrate the Ottoman Empire, above all the capital, during Abdülhamid's reign. Electric lighting was introduced in 1878. Between 1881 and 1907, tramway lines were expanded throughout the city. A Briton drove the first automobile to Istanbul in 1905, but the sultan would not allow one to be imported until around 1908. Photography, of which the sultan was a great enthusiast, became increasingly common. The first cinema opened in 1897.<sup>8</sup> And upon the heels of Abdülhamid's deposition, a somewhat familiar version of aviation returned to Istanbul.

### The Return of Ballooning

Ballooning was not new to the Ottoman Empire. The first balloon ascent in Istanbul had occurred by at least 1802, but subsequent ascents or attempted ascents, were very rare. As soon as Mahmüd Shevket Pasha established himself in Istanbul, he wanted to modernize the Ottoman Army. He had spent eight years in Germany and afterwards tried to keep informed of all technological developments in Europe that had military applications. These developments included balloons and airships. Thus, the time seemingly was auspicious for the Frenchman Ernest Barbotte who arrived in Istanbul in May 1909, with a balloon that he wished to demonstrate and, if possible, sell to the Ottoman government. On May 28, at the Taksim Parade Ground, on the northern edge of Beyoğlu, Barbotte made his first demonstration. Thousands of people, including 4,000 to 6,000 paying customers, converged on the Parade Ground to witness the spectacle. Among those present were the sultan's second son Ziyaeddin and the sultan's nephew Ahmed Tevfik. A military band tried to entertain the spectators who were kept waiting for some time. Finally, late in the afternoon, Barbotte rose into the air with his yellow balloon named "Osmanlı" (the Ottoman). Riding in a small basket attached to the balloon were, in addition to Barbotte, Henri Turot, a journalist and member of the city council of Paris, a Turkish engineer for the city of Istanbul, and the aide to the commander of the First Army Corps.

# Mardi le 17/30 Novembre 1909

entre 2 heures et 3 heures de l'après-midi

## Le célèbre Aviateur BARON DE CATERS VOLERA

SUR LA PLACE DE LA COLLINE DE LA LIBERTÉ  
Les billets sont en vente dès aujourd'hui à la Maison STEIN, Place de Karakouy No 2 à Galata et à Baghché Capou No 61-65, Stamboul  
Papeterie ZELICH FILS, Grande Rue de Péra No 551, et au PERA PALACE à Péra

VELID  
EBÜZZIYA,  
WHOSE  
FATHER WAS  
THE OWNER  
AND EDITOR  
OF THE  
NEWSPAPER  
YENI TASVİR-I  
EFKÂR TOOK  
IT UPON HIM-  
SELF TO EDU-  
CATE [HIS  
COUNTRY-  
MEN ABOUT  
FLYING]

The balloon rose without difficulty to about 600 meters and managed to drift across the Bosphorus and land on the Asian side. On May 31, Barbotte attempted a second ascent with other passengers, but it was aborted because of strong winds. Later, he made ascents on June 4 and 6. In the latter, he carried aloft the Ottoman prince Ahmed Tevfik, who thus became the first member of the royal family to "fly," and a member of Mahmud Shevket Pasha's staff. Later Barbotte went to Izmir and made another ascent on June 9. Despite his successful "flights," the Ottoman government did not purchase his balloon.<sup>9</sup> Nevertheless, Barbotte helped set the stage for a new era in aviation in the Ottoman Empire, and the appearance of the most wondrous innovation of all. Indeed, as we shall see, the demonstrations by de Caters and Blériot would parallel those of Barbotte in more ways than one.

### Reports of Marvelous Flying Machines

Amidst the political and social turmoil in Istanbul and the appearance of a series of technological advances that were beginning to change the lives of at least some of the city's residents, word began to arrive from the West with increasing frequency of the astonishing feats of the most amazing technological advance of all—flying machines. Ever since the Wright brothers' flight, news had reached Istanbul via telegraph and post, the foreign press, newspaper correspondents, military attachés and other diplomatic personnel, travelers, and businessmen of the evermore astounding accomplishments of these machines.

One resident of Istanbul who, as mentioned, was captivated by the notion of controlled heavier-than-air flight was Velid Ebüzziya, whose father was the owner and editor of the newly established *Yeni Tasvir-i Efkâr*. This newspaper had barely been in business for four months when Velid, at the age of twenty-seven, contributed the first of two long articles on the subject of flying machines.

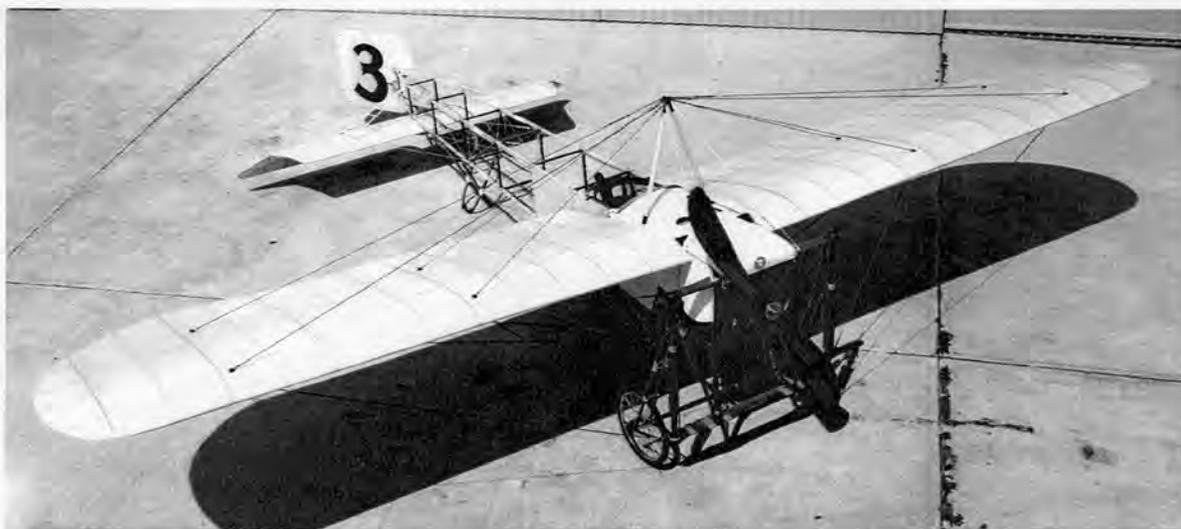
Through the press in Europe, Velid had followed advances in aviation in the West for some time. To his mind, most of his countrymen were poorly informed, if not completely ignorant, of these developments, so he took it upon himself to educate them as best he could through the mass media. In his first article, "The Subject of Flying

Machines," which appeared on October 4, 1909, he first points out that all segments of the Western world were completely preoccupied with the matter of flying machines and that this technology was of the utmost importance. Yet, this subject had been ignored by the Turkish press. Velid states that the desire to fly was as old as mankind, but not until recent scientific developments, especially in automobile engines, was the stage set for the invention of the flying machine. Only now could its full implications be contemplated. Indeed, he speculates that flying machines would make political borders meaningless and that this might lead to world peace and reconciliation.

Before providing a history of major aviation achievements beginning with the Wright brothers, Velid describes for his readers the different approaches that had been taken in attempts to invent an airship. These were the creation of an ornithopter, which flew by imitating the movements of birds; a helicopter, which ascended by propellers; and what the French called an *aeroplane*, which was composed of flat or semi-concave planes and was driven by propellers. Among these, only the last had been successful, although the helicopter had possibilities. Velid also goes into further detail to describe the structure of aeroplanes and their different versions—monoplanes, biplanes, and multiplanes—and stresses again how aeronautical progress would parallel advances in appropriate engines. In the course of this, he introduces new technical terminology to his readers and coins new words in Turkish.

In Velid's second article, which appeared the next day, he divides the history of aviation into four periods after the invention of the aeroplane. The first began in 1906, when the Brazilian Alberto Santos-Dumont, after steering a balloon around the Eiffel Tower, built an ungainly flying machine with which he managed to travel through the air for fifty meters in the Bois de Boulogne in Paris—the first flight in Europe. Velid describes this in some detail and then recounts Santos-Dumont's subsequent flights. The second period, according to Velid, began in 1908, when Wilbur Wright made his first flight in Europe. This was followed by a number of other flights of greater and greater duration. The success of these flights not only impressed Europeans but also stimulated them to imitate and surpass Wilbur Wright's

The Blériot XI aircraft, the type flown over Istanbul. (Photo courtesy of NASM.)



## THE LEVANT HERALD ANNOUNCED THAT BARON DE CATERS PLANNED TO MAKE A DEMONSTRATION OF FLIGHT IN ISTANBUL

achievements. The next year, Louis Blériot astounded the world by being the first to fly from France over the English Channel to England. This flight thus initiated the third period in the history of the aeroplane. It captured the imagination of at least some of the Turkish press, for Velid cites *Tanin* as declaring that Blériot opened a new era in history, one that would change the way of life of the entire world. But the Turkish press, according to Velid, published the briefest of information on Blériot's flight, information that was insufficient to allow one to appreciate the full magnitude of Blériot's achievement. Therefore, Velid decided to provide a detailed account of it based on European sources, probably newspapers, which he does not name. Finally, Velid comes to his fourth period in the development of flight, the first aircraft races, which were held at Reims, France a month after Blériot's flight. He describes the various competitions and the participants, including Henri Farman, Blériot, and the American Glenn Curtiss. Modeled after the periodic automobile races in the famous cities of Europe, the Reims air races were extremely important, stated Velid, because they attracted great interest and stimulated rapid progress in the technology of aviation. Velid promises to follow this progress and keep his readers informed. Little did he know then that he would soon bear witness to the dawn of aviation in his own country and the Middle East.

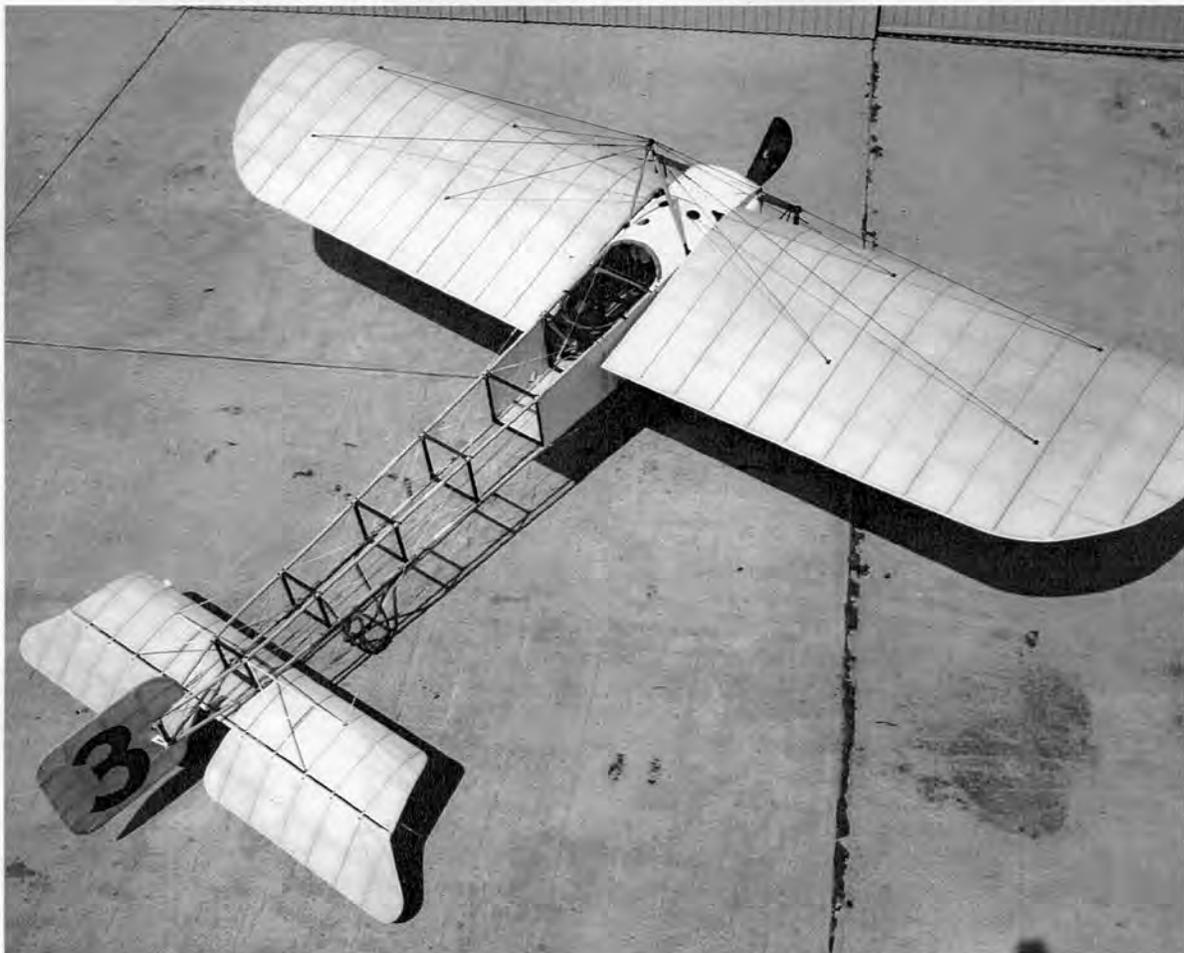
### Baron Pierre de Caters' Demonstration of Flight in Istanbul

On Wednesday, November 23, the *Levant Herald* announced that Baron de Caters, a Belgian whose name was well known in Europe, was arriving that day on the Orient Express and that he planned to make a demonstration of flight in Istanbul. Disposed of a vast fortune (and married to a direct descendant of the celebrated painter Peter Paul Rubens), he had dedicated himself to aviation and had participated in various competitions. In Istanbul, his demonstration of flight would be for the benefit of the Ottoman Navy and,

in fact, most tickets for his demonstration had already been purchased by subscription opened for the fleet. On Sunday, November 27, the same newspaper reported that the Baron intended to fly across the Bosphorus, that is, from Europe to Asia, and that he had scouted Haydar Pasha, on the Asian shore of the Bosphorus opposite the Golden Horn, for possible landing or takeoff sites. For his flights, he had brought two aircraft at a cost of 10,000 francs and he planned to build hangars for them at a cost of at least 25,000 francs. General Mahmüd Shevket Pasha had received de Caters and assured him of the cooperation of the Army. On November 28, 1909, *Yeni Gazete* published a banner advertisement announcing that the famous flyer Baron de Caters was coming to Istanbul to make a demonstration of flight. This demonstration would be held on November 29 at Hürriyet-i Ebediye Tepesi (Hill of Eternal Liberty),<sup>10</sup> between two and three o'clock. Tickets were now on sale and could be purchased at various department stores, shops, and the famous Pera Palas Hotel.<sup>11</sup> But this advertisement proved to be a bit premature. On December 1, the same paper, under the headline "Baron de Caters' Balloon," stated that the flight was postponed until 1 December, weather permitting, and again mentioned where tickets could be purchased, including at kiosks at Hürriyet-i Ebediye Tepesi.<sup>12</sup> Meanwhile, on November 29, the *Levant Herald* wondered if the Baron would have favorable weather for crossing the Bosphorus and stated that the editor of *Le Monde Hellenique*, Mr. Revelis, would fly with him.

Not until November 30 did *Yeni Tasvîr-i Efkâr* announce that de Caters had arrived in Istanbul.<sup>13</sup> It said that he planned to make a demonstration flight in place of Blériot, who would arrive later to make a similar demonstration. The implication was that de Caters was trying to get to Istanbul before Blériot, no doubt in an attempt to be the first to fly across the Bosphorus in emulation of Blériot's flight across the English Channel—although at its widest point the Bosphorus is only about 3,500 meters. Sermet Alus, an eyewitness to

The Blériot XI aircraft, the type flown over Istanbul. (Photo courtesy of NASM.)



## THE BARON PLANNED TO MAKE A NUMBER OF FLIGHTS

## THE PEOPLE OF ISTANBUL WOULD HAVE A CHANCE TO LEARN FIRST HAND ABOUT HOW FLYING MACHINES OPERATED

the flights of de Caters and Blériot, recalled forty years after the fact that at the end of November all the newspapers were abuzz about the coming appearance of Blériot. According to Alus, they speculated that he would want the distinction of flying among Istanbul, Beyoğlu, and Üsküdar, on the Asian shore of the Bosphorus, thus flying across both the Golden Horn and the Bosphorus. When de Caters suddenly appeared, says Alus, the newspapers said he would make an aerial tour over the Bosphorus, to Üsküdar and the Princess Islands in the Sea of Marmara.<sup>14</sup> In any case, while Blériot was en route, the Baron was busy building a shed to protect his machine—only one is subsequently mentioned in the press—at the site of his planned flight.

Although Baron de Caters had achieved some fame in Europe, nothing had been said of him in the Turkish press. Consequently, Velid went to the Pera Palas where he was staying and interviewed him. In a long article that he published in *Yeni Tasvir-i Efkâr* on December 1, he acknowledges that the Baron was virtually unknown in Istanbul, that he had arrived with a dual-winged flying machine, and that he had been in the city several days making preparations for a demonstration of flight. Velid goes on to describe de Caters as one of Blériot's competitors. The Baron was a wealthy aviation enthusiast and an "amateur," not an engineer who designed his own machines. He was

unknown because he was Belgian and the French newspapers had ignored him. Nevertheless, he began to win fame at the Frankfurt races where he had surpassed Blériot, with respect to time aloft and altitude, and won first prize.

Velid describes de Caters as a member of the Belgian nobility, about thirty-five years old, powerfully built, and an energetic "sportsman." He had been a race-car driver and had received the title of "World Record Holder" at the Monaco races. In 1907, the Baron became interested in flying machines and purchased a Voisin aircraft built by the French brothers of the same name. After the Frankfurt races, and preceding his rival Blériot, he came to Istanbul, spending more than 16,000 francs to bring his machine to the city.<sup>15</sup> As soon as he arrived, he obtained the necessary permit and built a shed to protect his machine at the site of his proposed demonstration. Velid states that the Baron planned to make a number of flights until he had matched his successes in Europe. Thus, the people of Istanbul would have a chance to learn first hand about how flying machines operated and be able to assess their importance.

Velid goes on to say that de Caters met Mahmūd Shevket Pasha, the commander of the Hareket Ordusu, while obtaining his permit and the general ordered a commission to study the flights that were to take place in order to determine the usefulness of aeroplanes for military purposes.



### THE BARON WAS UNABLE TO GET HIS FLYING MACHINE READY FOR TAKEOFF

### THE HOURS DRAGGED ON AND THE CROWD BECAME INCREASINGLY IMPATIENT

Meanwhile, bad weather threatened to hamper the Baron's plans. At the same time, he was not completely satisfied with the site he had chosen from which to launch his flights. Long, wide, level, and open spaces were difficult to find around Istanbul.

On December 2, *Yeni Tasvir-i Efkâr*, probably Velid, reported that the previous day had been spring-like and clear with no wind. But by the time the Baron had gotten his machine in order, installed the motor, and attached the propeller, it was sunset. Still, de Caters started the engine and tested the aircraft by "flying" it along the ground several times for about 100 meters. The reporter for the newspaper was greatly impressed with the speed and ease with which this was done, but, like the rest of the spectators, was disappointed that the Baron did not fly. He noted that 500 or 600 people had come to watch. *Yeni Gazete*, on the other hand, reported on the same day that thousands of people came to watch de Caters fly. The good weather doubled the crowd. Even the schools were empty. Indeed, the male and female students from most of the schools in Beyoğlu went "in battalions" to the site. Among the crowd were princes Mecid, Necmeddin, Hilmi, and Ziyaeddin. Thanks to the rain that had fallen in previous days, this crowd turned the roads going to Hürriyet-i Ebediye Tepesi to mud.<sup>16</sup>

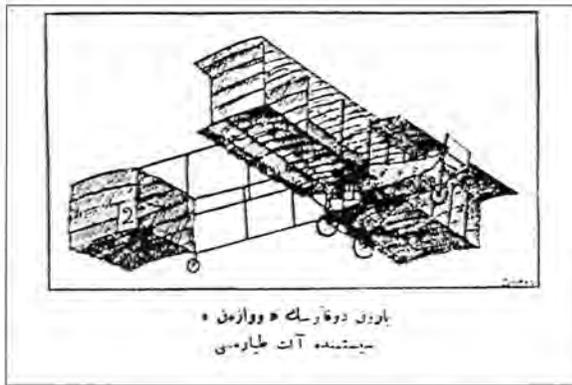
On December 3, *Yeni Tasvir-i Efkâr* announced that the event that Istanbul had been waiting for had finally occurred. On the previous day, Baron de Caters made the first flight with a flying machine over the city. The early morning had again been calm and clear and a torrent of people had surged toward the site. Among them were Sermet Alus and two friends who paid 50 *kurush* each for the entry fee.<sup>17</sup> There was another school holiday. Among the dignitaries present were again princes Mecid, Necmeddin, Hilmi, and Ziyaeddin as well as Salahaddin (the son of Sultan Murad V who reigned briefly in 1876), various ambassadors, including the one from Italy, the head physician from the Imperial Palace, Hayri Bey, and the governor of Beyoğlu. Second Lt. Cemaleddin was also there, perhaps as a representative of the Army.<sup>18</sup> The box seats and roofed viewing stand that the governor had set up were completely filled. Those with tickets could enter a special area to observe and examine the aircraft in the shed. The princes took a special interest in the aircraft and asked the Baron many questions about it.<sup>19</sup> The Baron's machine was a canary-yellow, "pusher" biplane, which Alus called a "monster."<sup>20</sup> In the center of the two wings was a small "cockpit." The wings were attached to a box kite-like tail by a skeleton

frame. The engine had eight cylinders and could produce 70 horsepower. The top speed of the aircraft was 76 kilometers per hour. It carried 80 liters of fuel, which was enough for three hours. Under the direction of the governor, rows of soldiers lined up on each side of the field to keep the spectators away from the runway. And police also patrolled among the rest of the crowd.

Despite the good weather in the morning, the Baron was unable to get his flying machine ready for takeoff as early as planned. Around eight o'clock, a white flag was raised over the shed, which seemed to indicate that the Baron was ready,<sup>21</sup> but the hours dragged on and the crowd became increasingly impatient. Finally around noon, the Baron had his aircraft brought from its shed and had it pointed toward the field that stretched beyond for 200 meters. Wearing a yellow beret and a "jumpsuit" of the same color, he leapt into the machine and started the engine. It made such a loud booming and tapping sound and so shook the ground that it terrified the horses hitched to various conveyances and threatened to cause a stampede. Some people feared that they would be trampled to death. Alus recalled how the horses reared up and spread confusion among the crowd.<sup>22</sup> At the same time, the propellers caused awesome whirlwinds that blew dust and smoke high into the air in all directions.

Meanwhile, strong winds began to blow from the southwest, but the Baron decided to carry on. His machine moved ahead quickly. Its three wheels remained on the ground for a distance of about 20 meters and then it gently rose into the air. The raging dragon suddenly became silent in the distance as the crowd cheered wildly.<sup>23</sup> Indeed, many people ran in the direction from which the aircraft had left the ground.

The Baron went up to an altitude of about 50 meters, or, according to Alus, the height of a minaret,<sup>24</sup> and headed toward the southeast, the direction of the Bosphorus. The strong southwesterly wind, however, prevented him from making much progress. Buffeted by the winds, the Baron tried to fly southeast toward the Bomonti Brewery.<sup>25</sup> The electric lamps on his wings twinkled, making it easy for the spectators to follow him. But as he approached the Bulgarian Hospital, he suddenly descended sharply and crash landed in a meadow on the uneven slope of a hill near the hospital, only 200 meters from where he had departed.<sup>26</sup> Women screamed and the whole crowd rushed to the spot with great anxiety.<sup>27</sup> The Baron escaped injury, but his aircraft was slightly damaged: mainly the wheels and several cylinders of the motor. One propeller was



## THE BARON ESCAPED INJURY, BUT HIS AIRCRAFT WAS SLIGHTLY DAMAGED

## THERE WAS ALSO SOME MOCKERY OF THE BARON IN THE TURKISH PRESS

buried in the ground.<sup>28</sup> The strong winds were probably the cause of the forced landing, although *Yeni Gazete* says that the Baron struck some telegraph wires.<sup>29</sup> De Caters promised that after the necessary repairs were made he would attempt another flight.<sup>30</sup>

The *Levant Herald* barely acknowledged the Baron's flight. The *Moniteur Oriental* completely ignored it. In fact, following this flight, which was clearly not successful with respect to crossing the Bosphorus, at least some elements of the European press in Beyoğlu ridiculed de Caters—for *Yeni Tasvir-i Efkar* goes to some length to take this press, especially the French newspaper *La Turquie*, to task for insulting Turkish hospitality. The position of *La Turquie* was, no doubt, related to the Baron's rivalry with Blériot. Yet, there was also some mockery of the Baron in the Turkish press. Alus recollected that he was disappointed that this flight had not lasted longer and that satirical magazines, such as *Kalem*, poked fun at de Caters. This magazine stated:

*Some scientists agreed that the place chosen for the flight was a poor one. They said it was not possible to fly at Hürriyet-i Ebediye Tepesi [Hill of Eternal Liberty]. They claimed that even rubbish could not be made to fly from the place where liberty will remain firmly established forever. If they [sic] want to be successful in flying, they should fly from Yıldız Tepesi [Star Hill], for there, not light things like the Baron's aircraft, but much heavier things have flown—33 years of the nightmare of national despotism.*<sup>31</sup>

The reference here, while playing on words, is to the Yıldız Palace, which was built over a period of many years, mainly by Abdülhamid II, a few miles up the European shore of the Bosphorus. The main building, the sultan's residence, is on a hill.<sup>32</sup>

On December 4, *Yeni Tasvir-i Efkar* announced that de Caters' second attempt at flight on December 3, had to be postponed because he had not been able to repair all of the damage from the previous flight. Several thousand people, who had gone to the site to watch, departed in disappointment. Among them were such notables as Talat Bey, the Minister of the Interior,<sup>33</sup> and Halaciyani Efendi, the Minister of Public Works. On December 3, the *Levant Herald* again stated that the Baron

would probably fly with the journalist Mr. Revelis and also with the Consul of Greece and a French writer named Rene Arcos, but he made each of his flights alone.

Finally, two days later, on Sunday, the Baron was ready for another attempt. The weather was again calm and spring-like. Many people began to stream toward Hürriyet-i Ebediye Tepesi. By ten o'clock the streets of Şişli were so crowded that they became impassable for horse carts and automobiles.<sup>34</sup> *Yeni Tasvir-i Efkar* estimated that 10,000 people were present for the flight. Among them were again the royal princes, Salih Pasha, the Minister of War, and the Iranian ambassador. No doubt the partial success of the Baron's first flight and the press coverage helped to bring out the crowds.

At three o'clock de Caters removed his aircraft from its shed, jumped aboard and sped down the field. He quickly became airborne and went up to an altitude of fifty meters. He then circled the astonished spectators who applauded and cheered. Near the end of his second circuit,<sup>35</sup> the Baron headed west toward the Kağıthane Valley,<sup>36</sup> whose stream flows south into the Golden Horn. The aircraft slowly descended and then disappeared from sight. At first the spectators thought this was a planned maneuver and waited about half an hour for the Baron to return. When he did not do so, they became alarmed and ran in the direction in which he had disappeared. Reaching a nearby hill, they saw the flying machine on a small plateau above the valley, near the Terkos water depot. Ottoman troops and gendarmes were busy towing it away. The reporter from the *Yeni Tasvir-i Efkar* raced over to the Baron and asked him what had happened. De Caters stated that his rudder wire had snapped and he could not control the direction of the aircraft, so he slowly descended into the valley. When he reached the ground he collided with a flock of sheep and broke one of his wings. According to *İkdam*, the Baron said, "The aeroplane went down because the steel wires on the edge of the rudder snapped. If this had not happened, I would have gone straight ahead and crossed the Bosphorus."<sup>37</sup> Apparently the Baron meant that he could not turn the aircraft because the Bosphorus is in the opposite direction. When asked if he would make another flight, he said that it would not be possible, for he planned to leave the coming Tuesday. Indeed, de Caters took his aircraft aboard a ship and went to Egypt. On December 15, he became the first man to fly in that country, making several short trips at Cairo.<sup>38</sup>

Baron de Caters' flights over Istanbul, although the first, were obviously not overwhelming successes, lasting altogether only a few minutes. The disappointment in not witnessing longer flights, not to mention a crossing of the Bosphorus, is clear from the Turkish press. *Yeni Tasvir-i Efkar* noted that a month earlier the Baron had made a flight that lasted more than four hours. The *Levant Herald* barely gave de Caters' second flight two sentences, being more concerned with the recep-



## IN THE FALL OF 1909, BLÉRIOT WAS "ON TOUR" IN EUROPE MAKING VARIOUS EXHIBITION FLIGHTS

tion planned for Blériot. The *Moniteur Oriental* was equally disinterested; and on December 7, the day after mentioning this flight, it published a 36-line poem by someone named Guize that mocked the Baron's flight.<sup>39</sup> On December 9, a certain A. Paviot wrote an article in the same paper saying the advertisements for the Baron's attempts at flight had been overly sensational, that Constantinopolitans had paid high prices to watch these flight but didn't get much for their money, that they were victims of unscrupulous promoters, and that the Baron was an unskilled practitioner who made the mistake of trying to pass for a master of aviation. His aeroplane was an "aero panne" (*panne* = breakdown) and his amateur performances did not merit a demonstration of flight.<sup>40</sup> Even Alus and his friends thought the Baron was an imposter. They wanted to watch the real flyer, Blériot.<sup>41</sup> Nevertheless, many spectators, perhaps most, were impressed with what they saw.

### Blériot, "Ruler of the Skies"

While Baron de Caters was busy making preparations for his second attempt at flight, advertisements began to appear in the press and elsewhere that the world-famous Louis Blériot, the "Ruler of the Skies," was coming to Istanbul. The ads announced that he would fly from Taksim Parade Ground, which was much closer to the Bosphorus than Hürriyet-i Ebediye Tepesi, on December 12. Tickets were on sale at all fashionable stores and hotels in Beyoğlu, Istanbul, and Galata.<sup>42</sup> Blériot had actually announced his intention to come to Istanbul somewhat earlier. Nevertheless, his impending arrival in Istanbul electrified the European colony, especially, of course, the French.

In the fall of 1909, Blériot was "on tour" in Europe making various exhibition flights. In September, he was in Brescia in northern Italy. In October, he was in Budapest, Hungary, and Bucharest, Romania, and made the first flights ever in those countries. Promoters paid him handsomely.<sup>43</sup> He supposedly received 250,000 francs in

Bucharest alone.<sup>44</sup> From Romania he continued to Istanbul where he was promised 50,000 francs for a similar exhibition. His aircraft was shipped in advance of his arrival and was put on exhibit in the Ice Skating Palace on the Grand Rue de Pera, now İstiklal Caddesi, from December 8 through 11. Tickets for this exhibit were on sale at the site.

On Friday, December 10, Blériot and his wife Alice arrived in Istanbul by a ship of the Romanian Maritime Lines. Members of the French colony, various notables from the city, and representatives of the press greeted them at the landing. From there they continued to the Tokatlian Hotel, also on the Grand Rue de Pera, where they resided during their stay in the city. Blériot spent the next morning and part of the afternoon reconnoitering the field from which he would fly. Then, at five o'clock the Blériots went to the great hall of the French Union where a reception with wine was held in their honor. The president of the Union, who had invited all of its members and their families, toasted the great aviator and his wife and wished him further aerial triumphs. Blériot in turn thanked the French Union for their hospitality.

The leading Turkish newspapers ignored virtually all the fanfare surrounding Blériot's appearance in Istanbul, although most acknowledged his arrival. Again *Yeni Tasvir-i Efkâr*, among the Turkish papers, devoted the most attention to him. Velid went to the Ice Skating Palace to have a look at his machine and later described it in some detail on December 12, comparing the sleek design of this monoplane with de Caters' unwieldy biplane. He said it reminded him of a large seagull with out-stretched wings. In the front was a place for a man where he could control the machine with a motor. Attached to each side of this place was a large concave plane about three and a half meters long and a meter and a half wide. These planes, which could keep the machine and a man weighing 70 or 80 kilograms aloft for hours, were made from a frame of slender pieces of wood covered with American cloth. Extending from the back of the machine was a tail that was also composed of a frame of slender pieces of wood. This frame was also about half covered with cloth starting from the place where the driver sat. At the end of the tail were two small planes that flapped like fans. They were horizontal and were attached to a vertical rudder that, together with the two main planes, allowed the machine to take off, gain altitude, and maintain balance. All of these planes and frames were attached to each other with fine steel wires. In front was a powerful motor that drove a propeller made of mahogany. The propeller had two blades, two and a half meters long and no wider than 30 centimeters. Velid also included in his report a summary of Blériot's lecture at the Ice Skating Palace on the evening of December 11.

On December 11 the *Moniteur Oriental* described Blériot's aircraft in somewhat different terms. It stated that this machine had the appearance not of a bird but of a gigantic flying fish

## TURKISH NEWSPAPERS IGNORED VIRTUALLY ALL THE FANFARE SURROUNDING BLÉRIOT'S APPEARANCE IN ISTANBUL

## بارون دو قاترسك آلت طياره ايله

### ايلك تجريرهسى

دون هوا ريبى بر لطافت و كئاشى حائر اولارق روزكار دخی تماماً مقنود بولدىنى جهته قاج كوندنبرى حاضر لامقده اولان بارون دو قاترس آلت طياره سیه ايلك تجريره سى اجرا ايله بيلمسدر . فقط اولجه ده يازديشمز وجهه بارون شيدى به قدر طيارندن منع ايدن كيفيت . انسا ايندردىكى باراقنك ختايذير اولماسى و آلت طيارنك قورولماش بولتى ايدى . دون هوا آجيلنجه ساحلين ايركندن آلتك تنظيم وترينه باشرت ايدلش ايمده اولجه اعلان ايدلدىكى وجهه بدالظهر آفرانته ساعت ايكده حاضر لامق قابل اوله مامسدر . حتى آلتك اوفق تنك تفرماتى تنظيم ايتك ، تلررى ، ويدلررى طاقق ، بزلىرى دوزلنك كى مشاغل ايله وقت آقتسامى بولش مومتور دخی رينه قونيله رق پروانه طاقيدلدىنى و آلت پروازه ميهيا برحاله كلدىكى وقت ايمه ساعت آلا توره اون ايكى بولسدر . بو قدر كچ وقت طياران قابل اوله جنى ايسه طيبى ايدى . مع مافه بارون دو قاترس هيچ اولمازسه دعايى كيتيريش اولدىنى مومتورى اينده رك تجريره ايتش اولوق اوزره ايكى دفعه آلت طياره يول ورمش و هر دفعه سنده زمين اوزرندن اوچر يوز مترو قدر يول آلمسدر . آلت بومسافه لرى فوق العاده برسرعته و همان مان اوجه سنده رمق قاله جق برسورنده طى ايلسدر . بو حركى اتاسنده آلت ايكى اوج دفعه دائره چيز . مسدر كه بو مانورالر فوق العاده بر سهولته و عادتاً اوتوموبيل ويا حربه قدر قولايقله اجرا ايديله بيلمسدر . بر بر وانه نك سوقيه بو قدر سهل الحركه اولان بر آلتك هوا ده دخی عين سهولته سيران ايدى جى آلا شلمقده در . بارون تجريره سنده ختام و رهره ك ماكنه سنى باراقيه ادخال ايدلىكى زمان ساعت برى بولش ايدى . بوكون هوا دونكى كى كئاشه وسا كن اولورسه بدالظهر آفرانته ساعت ايكده اصل تجريره طياران اجرا ايديله جكدى .

دونكى تجريره لرى سير ايتك ايجون بش آلتى يوز قدر تماشا كر كئش ايدى . فقط حريرت ايديه تيه سنك اهديت قدر اوزون اولان بولرى قاج كوندنبرى ياغان ياغورلر ايله چامور

## BLÉRIOT'S AIRCRAFT HAD THE APPEARANCE NOT OF A BIRD BUT OF A GIGANTIC FLYING FISH

whose wings extend and bend graciously and whose struts were delicate and of minimum size to reduce weight. The body of the craft consisted of a steel casing in the shape of an elongated, truncated, four-sided pyramid with a lobster tail. The total length was 7 meters and the wing span was 8.4 meters, but the surface area was 14 square meters. The wings were mounted on two lengths of ash laminated with mahogany covered with rubberized fabric. The motor had 25 horsepower, three cylinders, and an automatic carburetor. The propeller placed in the nose of the machine produced a pull of 100 kilograms and 1,500 rpms. It measured 2.65 meters in diameter and had two blades. The aircraft weighed 200 kilograms and could reach a speed of 64 kilometers per hour, depending on the direction of the wind. The landing gear, mounted on three wheels, could withstand a stress of several hundred kilograms on tires of extra strong rubber.<sup>45</sup>

On December 12, Velid went into further detail on Blériot's lecture. He described Blériot as a bit bashful and hesitant, rather unlike a celebrity or political speaker. Blériot recounted the evolution of flying machines in Europe and his own experiments with flight, abandoning ornithopters and helicopters to settle on aeroplanes. Blériot summarized his successful flights, especially his crossing of the English Channel, which he illustrated with a *cinématograph*. He ended his lecture by giving his impression of air travel and making some remarks on the future of aviation, emphasizing the importance of being able to land on water, predicting higher speeds and altitudes and longer duration of aircraft, and pointing out that flying machines would have a great effect on the future of the world. Velid was impressed by his remark that these machines would improve communications, above all where there were no roads, and make possible discoveries of various kinds on poorly known continents. Despite much advertising, few people were present at Blériot's lecture. Velid noted that no one from the sultan's family was in the audience. The only important government official there was the Foreign Minister along with the mayor of Beyoğlu. Indeed, apart from *Yeni Tasvir-i Efkâr*, the Turkish press seems to have ignored the exhibition of Blériot's aircraft and his lecture. Even the *Levant Herald* had little to say about the lecture. In fact, it said more about the poor acoustics in the Skating Palace, which made it difficult to hear what Blériot had to say, than about the content of his talk. In contrast to *Yeni Tasvir-i Efkâr*, this paper claimed that a large number of people were in attendance.

During the time between Blériot's arrival in Istanbul on Friday, December 10, and his announced ascent on Sunday, December 12, advertising for this sensational event reached a fever pitch. All leading newspapers ran ads. Photos of the flyer, with his distinctive thin curling moustache, and his aircraft, sometimes described as a "balloon," appeared in illustrated magazines. Large bills in French and Turkish were posted on walls or placed in the windows of stores and shops.<sup>46</sup> The ultramodern Cinéma Théâtre Pathé Frères, which had opened in Istanbul on January 30, 1908, announced a special showing, for three days only, of their film of Blériot crossing the English Channel.<sup>47</sup> And, of course, souvenirs were available. The fashionable Heyden's on the Grand Rue de Pera offered, as part of its Christmas show, toy models of Blériot's aircraft.<sup>48</sup> Tickets were on sale at all leading stores and hotels as well as at the Taksim Parade Ground. The prices were steep. Box seats went for five gold liras, bleachers for one lira.<sup>49</sup> Meanwhile, the preparations at the site included the construction of a special viewing stand for His Majesty the Sultan, who had expressed a desire to attend Blériot's flight. It is worthy of note that the promoters who had organized Blériot's demonstration in Istanbul also built a special gallery reserved for Turkish ladies, which was described by the

*Levant Herald* as “a wonderful gesture for the feminine element of the country.”

### The Great Day!

At last the great day arrived. “All our hopes,” said Velid, “rested on Blériot’s single-winged aeroplane.” Virtually the entire city had been waiting impatiently for Sunday to watch this French devotee of technology. His visit had been announced for days in the newspapers, in the shining windows of the large stores, and on the street corners; and he had generally been described boastfully as the “Ruler of the Skies” because he had crossed the English Channel like a seagull.

From early Sunday morning in Beyoğlu the excitement was extraordinary. Although two o’clock had been announced as the time for the takeoff, people began arriving at Taksim Parade Ground at six o’clock, and by nine o’clock the streets were teeming with people streaming toward that site. Trams going in that direction overflowed with people. As one approached the Parade Ground, the streets became impassible for trams or horse carts. Indeed, people could not walk shoulder to shoulder. Among them, as with de Caters’s demonstration, were a great many school children.<sup>50</sup> Fearing losing a seat or missing part of the show, many people had foregone breakfast. This resulted in a “gold mine” for street vendors who further contributed to the congestion. As people poured into Taksim Parade Ground, they smothered the field and choked all four entrances. They quickly filled the viewing stands and invaded the grassy areas. Latecomers could not reach the ticket booths, much less buy a ticket. Some tried to storm the grounds. Within the grounds, military officers sat precipitously on the roofs of the Taksim Barracks in an attempt to get a grand view of the field. Indeed, even the upper windows, balconies, terraces, and roofs of houses adjoining the Parade Ground and those of houses across the way to the north on the heights of the suburb of Tatavla, now called Kurtuluş, were black with spectators.<sup>51</sup> In the stands were people of every class and kind. Most leading newspapers reported in particular that the upper crust of the capital was fully represented by the royal family, heads of other distinguished families, leading state officials, the officer corps and the diplomatic corps. The French Ambassador Mr. Bompard, although he was ill, and his wife made a point in coming. It was estimated that 10,000 people were at the Parade Ground. Another 10,000 were on balconies, terraces, and roofs and yet another 10,000 were in the streets. If every spectator had paid a fee, Blériot’s flight would have been profitable indeed!

It was chilly that Sunday with gusty winds. Many people, faces purple from the cold, paced back and forth, if they could move at all, in an attempt to keep warm. As the hours slowly ticked by, the low temperature and wind contributed to the restiveness of the crowd. Many spectators

speculated about the likelihood of actually seeing a flight, or joked among themselves saying, “De Caters crashed into a flock of sheep. God grant that this fellow does not crash on our heads.” Some people released balloons to break the tedium. Several inventive people attached a paper figure of Karagöz, the main figure in Turkish shadow puppet shows, to balloons and made him dance with wings that would not allow him to fly. From time to time the cries of hawkers selling postcards and other souvenirs could be heard. The police tried to ensure order and keep the crowd calm. A military band provided entertainment.<sup>52</sup> Gendarmes also patrolled the area while Army troops, joined hand to hand and standing in rows, formed a solid wall around the place of ascent.

As two o’clock approached, Blériot and his wife arrived in a car decked in the French colors.<sup>53</sup> He greeted the French ambassador and his wife in their lodge and took them over to his machine and explained it to them. Shortly thereafter, Blériot changed into his “balloonist” uniform, as described in the Turkish press, had his aircraft brought out of the hangar, and got in the cockpit. His crew gave the propeller a few turns and the engine started. Moments later, however, Blériot turned off the engine and descended to the ground. The crowd followed all of these actions with great interest and their emotions ran high. They thought a mechanical problem was delaying the flight and grew increasingly impatient.

What they did not know was that the famed French pilot was anxious about the weather, not his machine. According to Velid, who went to see him, he had a worried look on his face and spoke diplomatically with a forced smile. Velid realized that the wind conditions had given him a bad feeling about attempting a flight. Indeed, the *Moniteur Oriental* reported that Mrs. Blériot begged her husband not to fly, believing it to be an act of folly. He agreed to a brief delay. But pressure mounted on the pilot, both from the crowd and from his promoters. The latter questioned him aggressively, making comparisons and asking if other fliers had not flown in stronger winds. And they pointed out that, if he did not fly, all of the receipts would have to be refunded, and they touched on the issue of compensation. Blériot appears to have become a bit unnerved.

Finally at 3:45 he shouted, “Clear off the field! There will be an accident.”

“No, there won’t be an accident, you can take off,” retorted one of the organizers.

“OK, then. It will be your responsibility,” replied the flier.<sup>54</sup>

Blériot calmly placed himself in the seat of his machine and put on his cap and goggles. His crew turned the propeller and the motor started. The plane shook and rolled on its wheels for a dozen meters. Then its tail section sprang from the ground. The machine raced across the field for another 30 meters on two wheels and then, reaching its top speed, gracefully rose into the sky as the last rays of the setting sun reflected on the sur-

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**HE BANKED  
TO THE LEFT  
AT THE  
CORNER OF  
THE HILL AND  
THEN SUD-  
DENLY DISAP-  
PEARED**

**A HORSEMAN  
ARRIVED TO  
INFORM MRS.  
BLÉRIOT  
THAT THERE  
HAD BEEN AN  
ACCIDENT**

rounding hills. All eyes were on Blériot. The crowd was momentarily breathless and then became ecstatic. Everyone clapped, cheered, and shouted, "Bravo Blériot! Bravo!"<sup>55</sup> Ascending several hundred meters and passing over the crowded roofs of Tatavla to the north, his craft became increasingly difficult to follow as it sped into the distance. By the time it was over Tatavla, it seemed to take on the appearance of a bird. Blériot maintained perfect balance. He banked to the left at the corner of the hill at the northern end of the Parade Ground, and then suddenly disappeared.

Five, ten, fifteen minutes passed, but there was no sign of the intrepid flyer. Some spectators began to murmur, "He has fallen from the sky." Others claimed, "He is making a good maneuver," or "He will come back this way." As the time passed, and Blériot did not reappear, the crowd became increasingly agitated. Some people started to head in the direction of Blériot's flight. The police tried to prevent this and shouted, "Don't leave the field! He will come back here."<sup>56</sup> Mrs. Blériot, who had had a premonition of disaster, anxiously scanned the horizon. Then she herself started running in the direction of her husband.<sup>57</sup> Suddenly there was an uproar from the top of a hill at the northern end of the Parade Ground. Word spread that Blériot had crashed. The crowd then stormed the police barrier and began running toward that hill. Velid went with them. Meanwhile, a horseman arrived to inform Mrs. Blériot that there had been an accident.

Following the crowd for several kilometers, Velid eventually came to a house on Sandalcı Street in Tatavla. In its garden he found Blériot's aircraft smashed to pieces. It had come to rest there after tearing through the roof of the house and shattering many windows. It also slightly damaged a neighboring house. By the time Velid arrived, Blériot was nowhere to be found. Miraculously, he had managed to survive the crash. Reportedly, he got up shaken, but smiling, from his demolished aircraft. The lady of the almost equally demolished house, who was no doubt equally shaken, tried to help him. Blériot got to his feet and asked directions to the nearest pharmacy.<sup>58</sup> Several young men from the neighborhood quickly came on the scene and directed the aviator to the nearby Hercules Gymnastic Club,<sup>59</sup> which he was able to reach on his own power. There he lay down and waited for doctors, who were immediately summoned. Soon a German and four Greek physicians were attending him. They determined that he had a contusion of the kidneys and another of the hand.

Meanwhile, Mrs. Blériot had jumped in a car with a marine from the French Embassy and drove with great speed toward Tatavla. When she reached the site of the crash and saw the utterly destroyed aircraft, she feared the worst and was overcome with grief. Those at the scene tried to console her and assured her that no harm had come to her husband. She then raced to the Hercules Club where she found her husband and embraced him with great emotion. The doctors

reassured her about his injuries but advised that he neither walk nor be moved by car because his injuries might be exacerbated by excessive jolting. Consequently, Blériot was provided with a sedan chair and porters who carried him to the French Hospital near the southern edge of Taksim Parade Ground. As he passed through the streets of Tatavla, the populace shouted "Vive Blériot! Vive Madame Blériot! Vive la France!"

Mrs. Blériot left her husband at the hospital and returned to the Tokatlian Hotel where they had been staying. The French Ambassador Mr. Bompard was there and introduced her to a doctor who offered his services. "They should not have allowed him to fly," she said. "They should have clung to his machine, broken it, but not let the man go to certain death. It's an act of folly that he has just committed. He knew that I would not have let him take off. You see, that's why they tried to keep me at a distance and I was far from the airplane when I heard the noise of the motor and, turning around, I saw my husband take off. Too late, alas, to stop him."<sup>60</sup>

Back at the crash site, Velid found only the remains of the unlucky aircraft. Gendarmes were busy dispersing the people who had rushed to the scene. A number of French soldiers arrived and wanted to remove the demolished machine. By then the lady of the house had overcome the initial shock of the crash and had begun to come to her senses. "What are you doing?" she shouted. "You have destroyed my house! You must pay for it! Then take your balloon!" Although she may not yet have realized what had smashed into her house from out of nowhere, she certainly knew she was owed damages. It probably never dawned on her, or anyone else, that her house had the dubious distinction of being the first to be destroyed by a falling aircraft.

What had caused the crash? Almost all the newspapers that mentioned the crash agreed with Mrs. Blériot and attributed it to bad weather, that is, strong winds. It was almost impossible for the spectators to determine what had happened. Velid simply says Blériot rose to about forty meters, passed over the Parade Ground, turned toward Tatavla, and passed out of sight. According to *Tanım*, he started to zigzag after takeoff, went up to about ten meters, passed over the depression at the end of the Parade Ground, began to descend, and then went up and down again. Unable to control the rudder, he headed somewhat toward the left and then disappeared.<sup>61</sup> *Yeni Gazete* reported that once Blériot was airborne he approached the ground once or twice but then went up in the air again each time. When he left the circuit of the Parade Ground, he headed toward Tatavla, passed over the Church of Aya Constantine and almost struck a building in that area. Then, on the upper side of Çeşme (Fountain) Square in Tatavla he crashed. The *Moniteur Oriental* stated that Blériot's takeoff was normal, but there was a strong westerly wind. A gust struck him broadside. He struggled to keep his heading and managed to

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GET ABOVE  
THE HILLS

climb. But the winds became stronger and Blériot began to falter. Suddenly he plunged, veering toward the Valley of Papaz Köprüsü (Priest's Bridge). He managed to come back up and slowly passed over the houses of Tatavla. Then "the great white bird gave up in mid flight." In short, it appears that he stalled.<sup>63</sup> The *Levant Herald* simply said that Blériot never gained sufficient altitude to get above the hills crowned with houses in Tatavla. Moreover, it attributed at least part of the cause of the crash to Blériot's poor knowledge of the terrain, pointing out that he had but glanced twice at the part of town over which he planned to fly.<sup>64</sup> Indeed, if Blériot had planned to cross the Bosphorus on this flight, one would have expected him to carry out a far more thorough reconnaissance of the route and, if he had intended to touch down in Asia, potential landing grounds. Curiously, none of our press accounts of this flight specifically mention the Bosphorus in any fashion, although *Tanin* noted that Blériot had a much better aircraft than de Caters and said, somewhat sarcastically, that this great flyer, who crossed the English Channel, couldn't fly from Taksim to Kasim Pasha Deresi, which was about a kilometer to the west and would require crossing one or two narrow streams.<sup>65</sup>

There was in fact some other criticism of Blériot's exhibition in the press. *Yeni Gazete* wondered why Blériot had failed and asked, mockingly, if the beauties of Tatavla had simply drawn him like a magnet.<sup>66</sup> The *Moniteur Oriental* was mainly critical of the organizers of his exhibition, saying, for example, that the charges for admission were too high and that the grandstands were set up as for an agricultural exhibit. One saw nothing from there but rows of other spectators on the grass.<sup>67</sup> Local comedians found the crash to be good material for their routines. Alus mentions that Henri Yan, who had opened a cabaret like those in Montmartre in Paris, wrote an article in the satirical magazine *Kalem* in which he wittily remarked how the French verb *voler*, "to fly," had come to mean "to strike the ground." Yan also compared Blériot, the "King of the Skies," with Çakırcalı, the "King of the Mountains." The latter was a contemporary "bandit" who lived in the mountains around Izmir. According to Alus, readers roared with laughter at Yan's article.<sup>68</sup>

Nevertheless, virtually all newspapers expressed their concern about Blériot's health, and most published the bulletins describing his condition issued by the French Hospital. On December 14, Blériot's doctors reported that all danger of complications and internal injuries had passed. Still, the patient had to remain immobile and could not receive visitors. The next day the *Levant Herald* reported that Mrs. Blériot graciously received all those who inquired after her husband and that among them was Hüseyin Hilmi Pasha, the Grand Vizier. On December 16, *Yeni Tesvîr-i Efkâr* said the Sultan himself had extended his sympathies to Mr. Blériot as had Mahmud Shevket Pasha. *İkdam* noted that the French Ambassador went to the

hospital and that Talat Bey, the Minister of the Interior, and Halacıyan Efendi, the Minister of Public Works, had inquired after the flyer.<sup>69</sup>

While Blériot recuperated in the hospital, his mechanic went to Tatavla to retrieve what remained of his flying machine. On behalf of Blériot, the mechanic thanked the residents of Tatavla for their assistance. Mr. Caroizieris of the Hercules Gymnastic Club requested a photograph of the flyer that could be placed in the main hall of the club. Subsequently, the club held a special meeting and decided to admit Mr. Blériot as an honorary member.

Finally, by December 17, Blériot had seemingly regained his health completely. And that afternoon he and his wife returned to Paris on the Orient Express. En route he suffered a relapse and, upon arriving in Vienna, was rushed to a hospital. His condition was soon announced to be good, however, and he and his wife continued to France. Blériot may have suffered from the consequences of his crash for the rest of his life. Thereafter, he rarely made flights in public and never made another major exhibition.<sup>70</sup>

## Epilogue

As mentioned above, high-ranking officers in the Ottoman Army, not to mention the troops on duty at Taksim Parade Ground, witnessed Blériot's exhibition of flight. Many officers certainly took a close look at his flying machine before it took to the air and others may have examined it when it was on display at the Ice Skating Palace. It is unclear, however, if a commission was formed to investigate its potential military use, as was the case with de Caters' aircraft. In any case, little more than a year later, in 1911, at the direction of Mahmud Shevket Pasha, the Ottoman General Staff sent a circular to the Army, stating that two officers would be sent to Europe to learn to fly. They were also to make a study of the profession of aviation and, upon their return, lay the basis for it in the Ottoman Army. Officers who wished to learn to fly, who had nerves of steel, who were familiar with motors, and who knew French were requested to apply.

In May, Captain Fesa, a cavalry officer, and Lieutenant Kenan, a fortification engineer, were selected. In July, they were sent to the Blériot Aviation School at Etampes near Paris. Meanwhile, Lieutenant Colonel Süreyya, who was in the second echelon of the General Staff, was given the task of working out aviation matters in the Army. Knowing little about the subject, he requested the Ottoman military attachés in Paris, Berlin, and Vienna to collect books and articles on this subject and send them to him. As these materials arrived and were analyzed, he soon realized that establishing an air arm would be a major task, requiring a fundamental change in military organization and considerable funding. Süreyya recommended that a flying school and flying center be set up as soon as possible. He also recom-

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mended that a commission be created to deal with matters of training pilots, purchasing aircraft and balloons, and building aviation facilities. In fact, he was eventually named to head this commission. Thus began the Ottoman Air Force.

The modern Turkish Air Force, the successor of the Ottoman Air Force, traces its origin to these events of 1911. The Ottoman military did not take flight, however, until 1912, after Fesa and Kenan returned with the *brevet* of the Aéro Club de France. In January of that year the first airfield was established near Yeşilköy southwest of

Istanbul, now the site of Atatürk International Airport, and in March the first aircraft, two Deperdussins, arrived from France. Fesa and Kenan had planned to fly them in the coronation ceremony of Sultan Mehmet V, but they were severely damaged in a storm. Afterwards another aircraft, a R.E.P. (the initials of the manufacturer, Robert Esnault-Pelterie), was purchased from France. On April 20, Gordon Bell, an English test pilot, brought it to Yeşilköy.<sup>71</sup> A few days later, on his second flight from there, he flew across the Bosphorus. ■

## NOTES

1. The various minority groups in Istanbul published their own newspapers, sometimes several, in their own languages. Thus there were newspapers in Greek, Armenian, Arabic, Persian, and even in Spanish but in the Hebrew alphabet for Sephardic Jews. Lists of the leading newspapers of all kinds in Istanbul were published from time to time in *Die Welt des Islams*, pp. 3 (1915), 278; 5 (1917), 78-80; 6 (1918), 61-62.

2. In 1909, the year following the deposition of Sultan Abdülhamid II and the beginning of complete freedom of the press, there was a burst of publication activity in the Ottoman Empire. According to *Türk Dil ve Edebiyatı Ansiklopedisi* (Istanbul, 1976-98), s.v. "Basın," pp. 322, 353 newspapers and other periodicals were published in 1909. A year later this number dropped to 130. The vast majority, ninety percent, were published in Istanbul. See *Istanbul Ansiklopedisi* [hereinafter cited as *IA*], s.v. "Basın" (Orhon Koloğlu). No library holds complete sets of all these publications or even the major newspapers. I used *İkdam* from the UCLA library, *Tanın* from the Library of the Social Sciences Faculty of Ankara University and the National Library in Ankara, *Yeni Tasvir-i Efkâr* from the UC Berkeley Library, and *Yeni Gazete* from the Yapı Kredi Cultural Center, Sermet Çiftler Research Library in Istanbul. For a guide to Turkish newspapers, see Hasan Duman, *Osmanlı-Türk Süreli Yayınları ve Gazeteleri (1828-1928): Ottoman-Turkish Serials and Newspapers (1828-1928)* (Ankara, 2000).

3. *IA*, s.v. "Ebüzziya, Velid" (Ömer Faruk Şerifoğlu). In this article, there is a photograph of Velid dressed for flight and standing before an aircraft that is certainly one like Blériot flew over Istanbul in 1909. Yet, the caption reads, "Velid Ebüzziya in front of the first aircraft that flew over Istanbul, 1912." The location of the photograph is not given. As we shall see below, however, de Caters' flight preceded that of Blériot. The aircraft in the photograph is definitely not the one that de Caters flew.

4. Again, no library has complete sets of the European newspapers published in Istanbul. I used the *Levant Herald* from the Library of Congress and the *UCLA library* and *Moniteur Oriental* from the Municipal Library in Istanbul. I wish to thank Berrin Dirim for obtaining copies of the latter for me.

5. A fuller account of these events, including complete translations of the relevant reports found in these two newspapers, is in preparation. It must be admitted that Western accounts of the history of aviation generally ignore the Middle East, especially the early decades of the twentieth century. Typical is Richard Hallion's *Taking Flight: Inventing the Aerial Age from Antiquity through the First World War*, (New York, 2003). His remarks on that region are both cursory and uninformed.

6. On Mahmüd Shevket Pasha (1856-1913), see *Encyclopaedia of Islam*, 2nd ed. (Leiden, 1960-2002), s.v. "Mahmüd Shevket Pasha" (Feroz Ahmad).

7. The basic works on this period in Ottoman history are Niyazi Berkes, *The Development of Secularism in Turkey*, (Montreal, 1964); Bernard Lewis, *The Emergence of Modern Turkey*, 2nd ed. (Oxford, 1968); Feroz Ahmad, *The Young Turks: the Committee of Union and Progress in Turkish Politics 1908-1914* (Oxford, 1969); and Aykut Kansu, *The Revolution of 1908 in Turkey*, (Leiden, 1997). See also *IA*, "Otuzbir Mart Olayı," (Necdet Sakaoğlu).

8. On the introduction of these innovations, see *IA*, s.v. "Aydınlatma" (Doğan Kuban and Zafer Toprak), "Tramvay" (R. Sertac Kayserilioğlu), "Otomobil" (Burçak Evren), "Fotografelik" (Engin Çizgen), and "Sinemalar" (Burçak Evren).

9. On early ballooning in the Ottoman Empire, see Yavuz Kansu et al., *Havacılık Tarihinde Türkler* [Turks in the history of aviation] (Etimesgut, Turkey, 1971), pp. 112-14, and, on Barbotte's ascents, especially P. Oberling, "A History of Turkish Aviation Part I: Aerostation among the Ottomans," *Archivum Ottomanicum*, 9 (1984), pp. 152-55.

I might add that *Fly* magazine, June, 1909, p. 13, reported the following: "The first Turkish airship, the 'Osmanlı,' has just undergone its trial flights near Paris. The airship was ordered by the Ottoman government that has just vanished and its arrival in the sultan's dominions is awaited with much speculative interest by the natives, as aeronautics has hitherto been a forbidden sport in that country.

Major Feihy Bey, the Turkish military attaché in Paris, took part in the first flight, which was accomplished very satisfactorily, a descent being made at Mormant, twenty-eight miles from Paris. The aeronauts, Turot and Barbotte, will take the airship to Salonica, hoping that delivery will not be refused owing to the change of government in Turkey."

On the Sultan's paranoia about balloons, see Oberling, p. 151.

10. At an elevation of 120 meters in the northwestern part of the modern district of Şişli in Istanbul, it is one of the highest points near the city. Much of this area is now covered by development. Today the high point of the hill lies within a triangular park bounded on the south by the Çevre Yolu (Ring Road) leading to the southern bridge across the Bosphorus, Şişli-Kâğıthane Street to the east, and Piyale Paşa Boulevard to the west. In 1911 a monument was built on this site in memory of those who died in putting down the revolt of April 13, 1908. It is called the Âbide-i Hürriyet, see *IA*, s.v. "Âbide-i Hürriyet" (Latife Batur). I would like to thank Tony Greenwood for clarifying this for me.

11. *Yeni Gazete*, nr. 452, p. 4. On the renowned Pera

Palas, see *İA*, s.v. "Pera Palas" (Çelik Gülersoy and Afife Batur).

12. *Yeni Gazete*, nr. 455, p. 4. Cf. a similar short announcement in *İkdam*, nr. 5460, December 1, p. 4.

13. It is worthy of note that on November 30 *Yeni Tasvir-i Efkâr* also announced the installment of the first telephone in the Sultan's palace.

14. Alus, "40 Yıl Evel İstanbulda İlk Uçan İki Uçak" [The first two aircraft to fly over Istanbul forty years ago], *Havacılık ve Spor*, December, 1949, p. 10. Alus does not specify the newspapers in question. I would like to thank Stuart Kline for bringing this article to my attention.

15. In mid-November, de Caters had been in St. Petersburg where he gave demonstration flights, *Flight*, vol. 1, nr. 48, November 27, 1909, p. 767.

16. *Yeni Gazete*, nr. 456, December 2, p. 4; these were all sons of Sultan Mehmed V (1909-18).

17. "40 Yıl Evel İstanbulda İlk Uçan İki Uçak," p. 10. The Ottoman Empire had a bimetallic system based on the silver *kurush* and gold *lira*; one hundred *kurush* equaled one gold *lira*. One U.S. Dollar was equal to .229 liras. See Şevket Pamuk, "Money in the Ottoman Empire, 1326-1914," in Suraiya Faroqi et al. ed., *An Economic and Social History of the Ottoman Empire* (Cambridge: Cambridge University Press, 1994), vol. 2, pp. 971-72.

18. On those present, cf. *İkdam*, nr. 5462, December 3, pp. 3-4; *Yeni Gazete*, nr. 457, December 3, p. 3.

19. *İkdam*, nr. 5462, December 3, pp. 3-4.

20. "40 Yıl Evel İstanbulda İlk Uçan İki Uçak," p. 10.

21. *Tanin*, nr. 450, December 3, p. 2.

22. "40 Yıl Evel İstanbulda İlk Uçan İki Uçak," p. 10.

23. *İkdam*, nr. 5462, December 3. *Tanin*, nr. 450, December 3, says the aircraft traveled 100 meters on the ground before becoming airborne.

24. "40 Yıl Evel İstanbulda İlk Uçan İki Uçak," p. 10; and according to the *Levant Herald*, 300 meters, December 3, p. 1.

25. On this facility, see *İA*, s.v. "Bomonti Bira Fabrikası" (Vefa Zat).

26. *İkdam*, December 3, and *Tanin*, December 3, on the direction and distance he went. The latter says that at one point he was ten meters above the spectators. The Bulgarian Hospital is now the Türkiye Gazetesi Hastanesi on Darülaceze Boulevard.

27. *Yeni Gazete*, nr. 457, December 3, p. 3. The *Levant Herald* confirms that the courageous aviator frightened the crowd, December 3, p. 1.

28. *Tanin*, nr. 450, December 3, on damage.

29. December 3.

30. The headlines of our four Turkish newspapers the day after the Baron's flight were as follows: *Yeni Tasvir-i Efkâr*, "The First Flight with a Flying Machine in Our City"; *İkdam*, "Ascent of the Flying Machine"; *Tanin*, "The Aeroplane Flew"; *Yeni Gazete*, "Baron de Caters Crashes."

31. "40 Yıl Evel İstanbulda İlk Uçan İki Uçak," p. 10. On the satire of aviation by certain Ottoman Turkish gazettes, cf. Palmira Brummett, *Image & Imperialism in the Ottoman Revolutionary Press, 1908-1911* (Albany, New York, 2000), pp. 304-08.

32. See *İA*, s.v. "Yıldız Sarayı" (Afife Batur).

33. On Talat Bey (1872-1921), who was a member of the triumvirate that ruled the Ottoman Empire during World War I and who became Grand Vizier in 1917, see *Encyclopaedia of Islam*, 2nd ed., s.v. "Talat Bey" (Feroz Ahmad).

34. *İkdam*, nr. 5465, December 6, p. 3.

35. *Ibid.*, says this occurred on the third circuit.

36. On this area, see *İA*, s.v. "Kağıthane" (editor).

37. *İkdam*, nr. 5465, December 6, p. 3.

38. *Flight*, vol. 1, nr. 52, December 25, 1909, p. 836.

39. On December 6, p. 1, this newspaper, nr. 5527,

reported that the Baron made a "splendid" six-minute flight in which he rose to an altitude of 70 meters, but a propeller mishap forced him to land. The poem "Au Baron" was on the front page for December 7, nr. 5528.

40. The *Moniteur Oriental*, nr. 5530, December 9, p. 1.

41. "40 Yıl Evel İstanbulda İlk Uçan İki Uçak," p. 10.

42. E.g., *Yeni Gazete*, nr. 457, December 3.

43. Brian A. Elliot, *Blériot: Herald of an Age* (Stroud, Gloucestershire, 2000), p. 165.

44. The *Moniteur Oriental*, nr. 5534, December 13, p. 1.

45. The *Moniteur Oriental*, nr. 5532, December 11, p. 1.

46. Alus, "40 Yıl Evel İstanbulda İlk Uçan İki Uçak," p. 10. For a photo of Blériot with his "balloon," see *Servet-i Funûn*, 2 Dhü al-Hijja, 1327, nr. 967, p. 79.

47. The *Levant Herald*, December 11, p. 3. On this theater see *İA*, s.v. "Pathe Sinemas" (Burçak Evren).

48. The *Levant Herald*, December 11, p. 2.

49. Alus, "40 Yıl Evel İstanbulda İlk Uçan İki Uçak," p. 10. On the *lira* see above n. 17.

50. *Tanin*, nr. 460, December 13, p. 3.

51. *Ibid.*, and the *Moniteur Oriental*, December 13, p. 1.

52. *Tanin*, nr. 460, December 13, p. 3.

53. The *Moniteur Oriental*, December 13, p. 1.

54. *Ibid.*

55. *Tanin*, nr. 460, December 13, p. 3; and *Yeni Gazete*, nr. 467, December 13, p. 2. *İkdam* barely mentions this flight.

56. *Tanin*, nr. 460, December 13, p. 3.

57. The *Moniteur Oriental*, December 13, p. 1.

58. *Ibid.*; *Tanin*, nr. 460, December 13, p. 3.

59. This Greek club, founded in 1896, was fairly well known, see *İA*, s.v. "Kurtuluş Gençlik Kulübü" (Cem Atabeyoğlu).

60. The *Moniteur Oriental*, December 13, p. 1.

61. *Tanin*, nr. 460, December 13, p. 3.

62. *Yeni Gazete*, nr. 467, December 13, p. 2.

63. The *Moniteur Oriental*, December 13, p. 1.

64. *LAérophile*, December 1909, p. 557, echoed this. It also said he tried to turn right, toward the Bosphorus, but the wind was too strong.

65. The headlines were as follows: *Yeni Tasvir-i Efkâr* "Blériot's Aeroplane and His Flight Yesterday"; *İkdam*, which gave only a few lines to this event, "The Crash of Blériot"; *Tanin*, "Blériot Too . . ."; *Yeni Gazete*, "Blériot's Aeroplane," with the subheadings "At Taksim Square—Spectacle of the Aviation Hero—Thousands of People—Can't Blériot, Who Flew Over the English Channel, Who Crossed from France to England by Air, Fly?—He Flew—Alas! He Crashed—İstanbul's Weather Does Not Allow People to Fly." In the *Levant Herald*, we simply have "The Sunday Flight," then the subtitles "The Accident" and "Madame Blériot." As for the *Moniteur Oriental*, its headline was "Attempt at Flight," with the subheading "Exciting Flight—The Crash—Blériot Injured—What Madame Blériot Had to Say."

66. *Yeni Gazete*, nr. 467, December 13, p. 2.

67. The *Moniteur Oriental*, December 13, p. 1.

68. "40 Yıl Evel İstanbulda İlk Uçan İki Uçak," p. 10.

69. *İkdam*, December 13, p. 2.

70. Elliott, *Blériot*, p. 166.

71. Mazlum Keyusk and Sıtkı Tanman, *Türk Havacılık Tarihi, 1912-1923* [The history of Turkish aviation, 1912-1923] (Eskişehir, Turkey, 1950-53), vol. 1, pp. 14-30; Kansu et al., *Havacılık Tarihinde Türkler*, pp. 117, 124-27; Pierre Oberling, "The State as Promoter of Technology Transfer: The Early Years of Ottoman Aviation," *Journal of Turkish Studies*, 8 (1984), p. 211; Elliot, *Blériot*, p. 173. See also Stuart Kline's exhaustive chronology of Turkish aviation, *Türk Havacılık Kronolojisi/İA Chronicle of Turkish Aviation* (İstanbul, 2002), pp. 58-65.

# The Fog of War: Lt. Kenneth M. Taylor on December 7, 1941





# George R. Farfour

(Overleaf) A row of Curtiss P-40 Warhawks. The Warhawk was the last of the Curtiss Hawks. Behind the Republic P-47 and North American P-51, the P-40 was the most extensively built American aircraft in World War II. British and export models were designated as Tomahawks or Kittyhawks depending on their model designation.

2D LT.  
KENNETH M.  
TAYLOR AND  
... 2D LT.  
GEORGE  
WELCH, ...  
WERE THE  
FIRST  
AMERICANS  
AIRBORNE TO  
CONFRONT  
THE  
JAPANESE  
ATTACK ON  
DECEMBER 7,  
1941

Clausewitz explained the concept of fog and friction of war to military professionals. In the study of history, many events fall victim to a similar fog and friction especially with the passage of time. The lens of history can often distort or change events. Therefore, a true study of history demands a critical eye to decipher not only what happened, but why. To understand why, we must ascertain the true facts. This article attempts to clear that fog about one such event in American military history, clarifying details of the United States' first air combat of World War II, by concentrating on the actions of one of the participants. Although a great deal of information exists about this event, much of it is erroneous or contradictory. Beyond the recitation of facts, circumstances, and statistics, the most important aspect of this story is the resourcefulness, tenacity and courage of 2d Lt. Kenneth M. Taylor and his squadron-mate, 2d Lt. George Welch, who were the first Americans airborne to confront the Japanese attack on December 7, 1941.

Kenneth M. Taylor was born on December 23, 1919, in a small town called Enid, on the plains of Oklahoma. To start a better life, his parents soon moved eighty-three miles east to the small town of Hominy, located about twenty-five miles northwest of Tulsa. Young Ken grew up there. His childhood was normal for the time. He was a hard working boy who learned from a young age the responsibility and sense of value to the land that come from working diligently day in and day out in the tedium of small town life.

Taylor graduated from high school in 1938, and then attended the University of Oklahoma. Some friends from Hominy were enticed by the lure and adventure offered by flying and Taylor was no exception. Taylor completed the minimum two years at the university for Army pilot training as an Aviation cadet and was assigned to class 41C.<sup>1</sup> He graduated on April 25, 1941, was commissioned a second lieutenant and on the same day received the silver wings of an Army Air Corps pilot. He was assigned to the 47th Pursuit Squadron (Fighter), 15th Pursuit Group, Wheeler Field, Hawaii.<sup>2</sup>

Arriving in the U. S. Hawaiian territory at the beginning of June 1941, Taylor reported to Wheeler Field and began flying within two weeks. The 47th Pursuit Squadron was less than a year old, having been activated on December 1, 1940.<sup>3</sup> The 47th operated a variety of aircraft, including the Martin B-12A, Boeing P-26—both considered obsolete—the Curtiss P-36, and the most modern, the Curtiss P-40.<sup>4</sup> Taylor was happy to be assigned to train in the P-40 Warhawk, as fourteen B models and one C model had arrived just a month earlier.<sup>5</sup>

Life in the 47th revolved around a training environment, as the new pilots learned their craft, jockeying for opportunities to fly the squadron's few fighters. Pursuit tactics were drilled into the pilots daily. Their lives were not overly taxing, however. Their typical schedule was 0800-1600 with an hour for lunch. Wednesday and Saturday afternoons, as well as all day Sunday, were off-duty periods.<sup>6</sup> Due to the low number of aircraft, many of the pilots struggled to reach the 100-hour point, which marked one as fully combat qualified.<sup>7</sup>

About twice a year, the squadron deployed to one of the outlying fields for aerial gunnery practice and qualification. Usually the deployment lasted about two weeks, with the deployed personnel living in tents (typically as close to the beach as they could get away with) and messing from mobile field kitchens. Even with tents and mobile kitchens, they enjoyed the deployments mainly because of the compact training schedule—0500–1000. Squadron personnel spent the remainder of the day on the beach swimming, playing volleyball or baseball. Every evening the squadron ran a truck across the island to Kailua where personnel could take in the latest movie, go dancing or participate in other social activities. It was during one of these deployments when the squadron had its first party with a menu of “[q]uantities of beer and fried chicken.”<sup>8</sup>

Though learning pursuit tactics was their primary mission, squadron members also underwent ground defense training. This training was intended to prepare them for the task of protecting their own airfields under austere conditions. The airmen must have had a rude awakening as they were marched into the jungle and lived for a week with a pup tent as their only shelter. The squadron history reports that the “training was a bit rougher than usually experienced by Air Corps personnel” but admitted that it paid dividends after December 7th.<sup>9</sup>

As war with Japan got closer, the squadron transitioned from training pursuit tactics into full-fledged simulated combat flying. At this time six P-40s (five B models and their only C model) were transferred to other units. Even with the restriction on aircraft flying, Taylor managed to accumulate more than 430 flight hours by December 6th.<sup>10</sup> Contrary to popular belief, the 47th Pursuit Squadron had not been dispersed to avoid the effects of an attack on Wheeler or because the unit had performed poorly on their gunnery qualifications, but was there to perform the normal rotation of gunnery practice.<sup>11</sup> An Anti-Sabotage alert was put into effect on November 28th requiring a 24-hour guard of the aircraft.<sup>12</sup> For gunnery practice, the 47th had been assigned to Haleiwa Emergency Landing Field, along the North shore of the island

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Surviving pilots who managed to get into the air on December 7, 1941. Note the pistol belts worn by those on duty. (left to right): 2d Lts. Harry W. Brown, Philip M. Rasmussen, Kenneth M. Taylor, George S. Welch, and 1st Lt. Lewis Sanders.



**TAYLOR ...  
PULLED ON  
THE TUXEDO  
PANTS HE  
HAD WORN  
THE NIGHT  
BEFORE....  
RACING  
FROM HIS  
ROOM, HE  
MET WELCH**

some ten miles northwest of Wheeler. The quarters for the deployed personnel consisted of tents, but instead of being located near the beach as usual, they were adjacent to the runway, owing to the Anti-Sabotage alert.<sup>13</sup>

Saturday, December 6th dawned like any other with many of the squadron personnel ready to escape the confines of Haleiwa. Taylor and Welch decided to spend Saturday night at the officers' clubs at Hickam and Wheeler Fields, dancing and playing poker in what had slowly evolved into the norm. Since Sunday was a duty-free day, they could sleep late at Wheeler and return to their Haleiwa cots and tent late Sunday.<sup>14</sup> The Officers' Clubs at Hickam and Wheeler required black-tie on Saturday nights. Rumor had it that the higher-ranking officers instituted this policy to keep the younger officers out of the club, because the latter were not issued dress uniforms. The young officers, realizing the best time was on Saturday nights, took matters into their own hands and procured tuxedos. Some of the pilots of the 47th, including Taylor and Welch, who had become inseparable buddies, decided to join the festivities.

Welch was an outstanding pilot known for his daring and outspoken nature, and he exuded all the characteristics of the typical fighter pilot. Taylor, an equally capable pilot, was more affable, with a quiet confidence that complemented Welch. They worked well together on duty and off. They had gotten the reputation as "goof-offs," mainly through harmless fun and pranks that didn't always square with strict military rules. The party at the Wheeler Officers' Club usually started about 2100 hrs and continued until the first signs of sunlight. At some point during the evening, poker would replace dancing as the activity of choice. After a night of dancing and playing cards until the early morning hours, Taylor and Welch decided to get some rest, turning in about 0630.<sup>15</sup> Many published stories maintain that the two were debating

the merits of an early morning swim at Haleiwa vice turning in at Wheeler, or that they were just finishing their card game when the attack began. These tales turn out to be nothing more than interesting and colorful fiction.<sup>16</sup>

At about 0755, a peaceful Sunday morning came to an abrupt end. Taylor and Welch were jarred awake by the noise and vibrations of bombs exploding. After the first explosion, Taylor thought a Navy aircraft was buzzing the field as they often did on Sunday morning or had an accident, and he rolled over to go back to sleep. But when he heard the second explosion, he got up and pulled on the tuxedo pants he had worn the night before which were the closest pants he could find.<sup>17</sup> Racing from his room, he met Welch who was also on the way out. As they stood outside the BOQs, a plane was strafing the hangars and flight line and bullets were hitting dangerously close to the Officers' Club. The crimson red "meatball" of the Empire of Japan was clearly visible to the pair. As the two watched, they decided to take Taylor's car and drive up to Haleiwa.

Popular versions of the story contend that Welch alerted the Haleiwa Duty Sergeant to get two aircraft ready for immediate take-off.<sup>18</sup> Neither Taylor nor Welch positively recalled this event when testifying before the Pearl Harbor Attack hearings. Welch, remembering the condition of the waiting aircraft on Haleiwa when they arrived, stated, "[t]hey had been alerted, apparently, from Wheeler field..."<sup>19</sup> Taylor said that "[w]e had called them, or somebody had called them; so they were practically ready to take up."<sup>20</sup> Taylor, in later accounts stated he called the airfield.<sup>21</sup> This version was immortalized in the motion picture *Tora! Tora! Tora!* as Taylor phones Haleiwa and directs Welch to find a car—at least half correct. Taylor recalls that while he phoned Haleiwa, he told Welch to bring his [Taylor's] car around to the officers' club.<sup>22</sup>

In their haste both Taylor and Welch had apparently done the same thing and grabbed the closest



Brig Gen (Ret.) Kenneth Taylor standing in front of a restored Japanese Aichi Type 99 Carrier "Val" Bomber, 2004. (Photo courtesy of Mr John Meek, © 2004.)

**THOUGH OUT-NUMBERED SIX-TO-ONE, NEITHER HESITATED, IMMEDIATELY DIVING INTO THE ENEMY FORMATION OF VALS WITH GUNS BLAZING, CATCHING THE JAPANESE BOMBERS BY SURPRISE**

pants and shirts available, which gave rise to the often embellished story of the two flying in their tuxedos. At least this part of the myth is true.<sup>23</sup> Welch and Taylor ran to Taylor's car and raced to Haleiwa at breakneck speed. With the explosions and enemy planes flying overhead, the incentive to hurry was extraordinary, but as the Japanese planes flew even lower over the airfield, it added motivation to the trip. Driving at speeds sometimes reaching 100 mph, the two quickly traveled the ten-mile road between Wheeler and Haleiwa, unmolested by Japanese gunfire. Several versions have the pair being strafed as many as three times on the drive to Haleiwa, yet Taylor recalls he was as afraid of the local police as he was the Japanese. Welch had recently been relieved of his own car due to the strict enforcement of speed limits around the bases.<sup>24</sup>

When the pair arrived, ground crews had started getting the planes ready. Taylor and Welch ran to two P-40s their crew chiefs had prepared with engines running and were in the most advanced stage of preparation and readied for immediate take off. Taylor's crew chief, Staff Sergeant George Wilson, was not there, so Sergeant Hurley took over the crew chief duties for Taylor. As Hurley was strapping him in, he told Taylor they only had the .30 caliber guns ready for action as Haleiwa didn't have any .50 caliber ammunition. In addition to telling Welch about the ammunition situation, his crew chief Staff Sergeant Cecil Goodroe told him orders had been received for the planes to be dispersed on the ground. Welch dismissed Goodroe's concern and instructed him tersely to get off his wing as he was going to fight. It should be noted that the practice of assigning a crew chief and a pilot to a particular aircraft had not yet evolved, especially in units like the 47th with so few aircraft. Additionally, the training nature of the unit further made this impractical. Since crew chiefs were in training status also, they were assigned to pilots instead of specific aircraft. Ignoring preflight and takeoff checklists, Taylor and Welch pushed their throttles to full power and roared off the small runway in formation.<sup>25</sup>

This is where the story gets even more confusing, not due to lack of research or documentation,

but primarily because of the inherent confusion of war. Several accounts, including Taylor and Welch's congressional testimony, seem to indicate the pair took off and landed at Wheeler before engaging enemy aircraft.<sup>26</sup> Other accounts, including the squadron history and their own decoration citations suggest otherwise.<sup>27</sup>

As the two got airborne, they requested instructions from the interceptor control center and were directed to proceed at 8,000 feet to "Easy," a code name for one of the ten initial points on the island. These were pre-designated points pilots would be assigned to patrol. Though Welch and Taylor knew them well, they testified they doubted very many pilots knew the points from memory on December 7th. In fact, many carried maps as a reminder of the points. Actual combat immediately transformed the training program. Welch testified that after the attacks the initial points have "been very well impressed upon us."<sup>28</sup> Once at Easy, which was Barber's Point, the two saw no sign of Japanese aircraft and began scanning the skies for the enemy. They observed a formation of unarmed B-17s and continued searching for the Japanese. Taylor later commented, "we didn't have to look very long" as they quickly spotted a formation of twelve enemy aircraft about ten miles away over Ewa Field, another auxiliary base used primarily by the Marine Corps. The formation was about 1,000 feet below Taylor and Welch.<sup>29</sup>

Though outnumbered six-to-one, neither hesitated, immediately diving into the enemy formation of Vals with guns blazing, catching the Japanese bombers by surprise. Taylor and Welch shot down one aircraft apiece, nearly simultaneously. Although Welch is credited with the first official shoot down, both probably downed their first enemy aircraft at about the same time. Taylor said neither knew who exactly was the first and they had agreed in the air that whoever survived could claim the title. Of course, both survived. Since Welch outranked Taylor by two Aviation cadet classes and was technically the lead aircraft in the attack, credit went to Welch.<sup>30</sup> Taylor doesn't have any trouble with that to this very day. Taylor commented that they were both just glad to be alive at the end of the day.

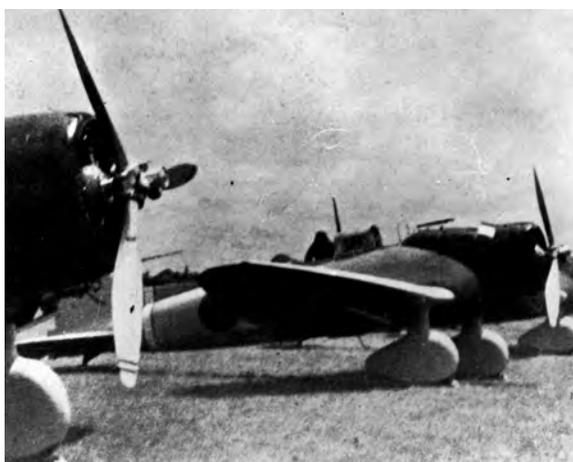
Dispersing the formation of Japanese bombers in the initial attack, both pilots broke in different directions to pursue fleeing enemy aircraft. On the first pass, Welch discovered one of his guns had jammed. Taylor spotted another Japanese aircraft heading out to sea and pursued it. Climbing slightly above it, he then began descending on the lumbering Val, and got so close that when he squeezed the trigger he could see that he had killed the rear gunner.<sup>31</sup> As the Val went into some clouds, Taylor was unsure if he had knocked out the plane, so he continued the pursuit. As he cleared the cloudbank, Taylor saw the Val, trailing smoke behind it, like a long kite tail, lose altitude suddenly and crash into the sea. Rolling back toward Ewa, he again gained altitude to better observe the area. Welch, apparently out of ammunition, turned

(Top) Kate – Allied nickname given to the Nakajima Type 97 carrier, B5N1/2 two or three-man Japanese dive-bomber.

(Middle) Zero or Zeke – Allied nickname given to the A6M2 one-man Japanese fighter.

(Bottom) Val – Allied nickname given to the Aichi Type 99 Carrier Bomber model 22 D3A2 two-man Japanese torpedo-bomber.

*(These nicknames were not in use during the attack on Pearl Harbor. They came into practice later in the war. For consistency, they are used in the article.)*



**HE OBSERVED WHAT COULD ONLY BE DESCRIBED AS COMPLETE AND TOTAL CHAOS. SMOKE WAS RISING TO THE SKY FROM VARIOUS POINTS AS FAR AS THE EYE COULD SEE**

back toward Wheeler. Taylor observed another Val heading toward the open sea and maneuvered behind it. He carefully allowed the aircraft to fill his crosshairs and fired, causing smoke and damage. As he went to complete the kill, he too ran out of ammunition. Rather than pursuing the Val and possibly getting caught alone and unarmed, Taylor immediately turned back toward Wheeler. This was Taylor's first probable kill of the day.<sup>32</sup>

When Taylor approached Wheeler, the sky was still full of anti-aircraft fire. Few of the gunners had received extensive aircraft recognition training and on that day, anyone with a weapon became an "expert" in shooting at aerial targets. Taylor took his aircraft in and landed without any damage from friendly fire. When he taxied in, he observed what could only be described as complete and total chaos. Smoke was rising to the sky from various points as far as the eye could see. Men were running everywhere—looking busy while at the same time seeming to be doing nothing. Planes were

being pushed and pulled all over the field. A ground crew went to meet Taylor's plane. He told them he needed ammo and the crew looked toward Welch's aircraft nearby. Welch had landed minutes earlier and was told to get out of his plane so it could be "dispersed" for safety reasons. Welch convinced the ground crew to rearm his aircraft as he intended to go back up and fight.<sup>33</sup>

Another popular story of the day holds that the required ammunition was in a hangar that was on fire. A heroic crewman ran into the blazing building and emerged loaded down with ammunition. Taylor indicated he and Welch actually taxied to the edge of the field, away from the row of hangars where they knew there would be .50-caliber ammunition.<sup>34</sup> The crewmen around Taylor's plane, seeing the resolution of the argument with Welch, began servicing and reloading Taylor's P-40 as well. Taylor was relieved to see the .50 caliber ammunition belts being loaded into his aircraft. Many accounts have the pair receiving fuel on their first landing, yet Taylor recalls they didn't need fuel, just ammo.<sup>35</sup> Both pilots got an earful from higher-ranking officers, each taking a turn on their wing dispensing guidance and advice. As the two pilots gulped water without leaving their cockpits, a growing roar of incoming aircraft could be heard.<sup>36</sup> Welch yelled for everyone to clear his aircraft. Trying in vain to repair his jammed gun, a sergeant shouted to Welch he had been unsuccessful. Welch nodded, pushed in the throttle and roared with full power onto the runway, almost immediately leaving the ground.<sup>37</sup>

Taylor was still getting ammunition when the second wave of Japanese came into sight. All at once the ground crew and the "advisors" ran for cover in such haste they left their partially filled ammo boxes on Taylor's wing. Taylor was by himself and an armament dolly stood in his way. "...[S]o I gave it the throttle and my P-40 jumped over the armament dolly with no damage at all." The ammo boxes fell off the wings and spilled onto the apron as he departed.<sup>38</sup> Taylor was only a few minutes behind Welch and as he taxied out made a quick decision. Seeing the Japanese descending and closing in on the field, he recognized if he took off away from them, he would be a target for them on his take-off run and when he became airborne. Taylor realized he could maintain fire on them but because they were so low, they could not fire upon him without risking crashing. He gunned the engine, swinging the plane around and faced into the incoming enemy aircraft. Pushing in the throt-



P-40 wreckage at Wheeler Field along Hangar Row. The devastation of the Japanese attack is clear. It was along this row of hangars that Taylor and Welch were re-armed with ammunition.

**AFTER TAYLOR HAD SCORED HIS SECOND PROBABLE, HE CONTINUED TO ENGAGE THE ENEMY UNTIL HE RAN OUT OF AMMUNITION**

tle for his take-off, he held the tail down as long as possible while firing his guns into the very low flying enemy formation. Taylor finally raised the tail and pulled back, maintaining his fire as he rose into the air. When he heard the landing gear lock into place, he pulled back and to the left, executing a chandelle which must have looked better than any contrived story of the day.<sup>39</sup>

Taylor estimated the location of the enemy formation he had flown into at takeoff. As he descended onto the line of Kates and Zeros, he got a Kate in his sights and let fly with all of his guns. Unfortunately, the clouds and the smoke had obscured the fact that Taylor was not behind the enemy formation as he had thought, but in the middle of it. Just as he was beginning to think that dogfighting was pretty easy, his plane rocked violently in the midst of a hail of Japanese bullets. One pierced the canopy right behind his head and went through his arm, striking the trim tab and sending shrapnel flying into his leg. Taylor ignored the wounds as he realized his predicament.<sup>40</sup> Taylor revealed in a recent telephone conversation that his crew chief had sent him two additional slugs that he never knew about which were pried from behind his seat.

Meanwhile, Welch had seen the situation evolve and knew Taylor was in trouble. He descended on the plane threatening Taylor and pulled the trigger. His guns, now with the lethal .50 calibers, hit their mark and the Zero exploded and crashed on the island.<sup>41</sup> Taylor and Welch later visited the crash site to view the wreckage which had come to a fiery rest at 711 Neal Street, Wahiawa, just off the runway and near Schofield Barracks.<sup>42</sup> Taylor, injured, continued his attack. Taylor rolled out of the formation thankful to his friend. As soon as he was out of immediate danger, he rolled back in from above the enemy formation, taking care to locate the actual tail of the formation. As Taylor attacked a Kate, he watched it begin smoking and lose altitude but then had a terrible realization. He noted a large

formation of Zeros coming toward Wheeler. Realizing Welch was busy engaging the enemy also, he quickly extracted himself from the area to get and give some help before confirming the kill, making it his second probable. The P-40 was no match for the Zero, especially alone. The Zeros seemed to deliberately turn away from Taylor and Welch's position.<sup>43</sup> The sequence of the second attack dogfights occurred just north of Wheeler and is important because it dispels another myth of Pearl Harbor.

Though some accounts indicate Haleiwa was not attacked during the Japanese raid, the squadron history indicates a lone Japanese aircraft strafed the field and indeed several maps indicate Japanese routes over Haleiwa.<sup>44</sup> The attack apparently had no effect on the operations of Haleiwa. Conventional wisdom held that the primary reason Haleiwa was not attacked was because the Japanese simply did not know it was there. Historian Gordon Prange indicates that a small force of Zeros was directed to attack any aircraft at Haleiwa before going to their rendezvous point.<sup>45</sup> Prange interviewed several key Japanese flight leaders of the attack and indicates Sub-Lieutenant Iyozo Fujita, a Japanese pilot, had orders to attack Haleiwa with his formation and destroy any enemy planes found there. This secondary objective would not, however, be accomplished at the expense of the primary objective. Commander Minoru Genda, the master target planner for the attack, had included Haleiwa in his calculations, so the Japanese certainly knew the field existed well before that fateful Sunday morning. Apparently, Fujita saw a vicious dogfight near Haleiwa and after viewing several of his countrymen going down in flames decided not to attack the field and proceed to his primary objective—protecting the bombers attacking Wheeler. Fujita most likely saw Taylor and Welch engaging his lead formation. By their engagement just north of Wheeler, Taylor and Welch almost certainly prevented an assault on Haleiwa, saving the airfield, its aircraft and its personnel from further attack and destruction—another accolade to place at the feet of these two remarkable airmen.<sup>46</sup>

After Taylor had scored his second probable, he continued to engage the enemy until he ran out of ammunition, attempting to disrupt their attack formations as they flew out to sea. He again flew through the thick anti-aircraft and small arms fire and for the second time managed to get through without being shot down by friendly fire, a fate his squadron-mate, 2d Lt. John Dains, was to suffer.<sup>47</sup> The Japanese had gone, finishing their treacherous plan and speeding back to their carriers.

Taylor returned to Haleiwa and rejoined Welch. Both were happy to see each other. Taylor and Welch, after a hard day of fighting, decided that they would try to find aircraft they had destroyed. As they were searching for remains of their kills, they ran into their squadron commander, Major Gordon H. Austin, who had returned from his duck-hunting trip on the nearby island of Molokai



Wheeler Field after the attack. This is likely what Taylor and Welch saw when they lined up to land at Wheeler after their first sortie.

and was in an understandable state of excitement and depression. Taylor recalls they were immediately tongue lashed by Austin as he expected Welch and Taylor had missed everything probably due to their unorthodox flying attire and since they were considered “goof-offs.” When they explained what they had done, the commander became their instant friend and remains so to this very day.<sup>48</sup> They apparently found at least one of the crash sites—the one mentioned earlier on Neal Street.<sup>49</sup>

When that terrible day was complete, Taylor had two confirmed kills and two probables. Welch ended the day with the most kills at four. One other member of the 47th, 2d Lt. Harry Brown, scored a single kill and a probable.<sup>50</sup> Of the eleven air-to-air kills recognized on December 7th, seven were the result of pilots from the 47th. The 47th was also responsible for all four probables credited.<sup>51</sup>

The 47th Pursuit Squadron did quite well, all things considered. In a process which must have broken decoration submission and approval records, their medal citations were approved in time for the December 17, 1941 headlines—“Heroes of the Air Battle of Wheeler” and “Army Fliers Get DSC for Heroism in Raid”—a mere ten days.<sup>52</sup> In a ceremony on Wheeler, January 8, 1942, Taylor and Welch were awarded the Distinguished Service Cross, the Nation’s second highest decoration for valor in action against an armed enemy.<sup>53</sup> Taylor was also awarded the Purple Heart on July 1, 1942 for the wounds he received during his second sortie of the day.<sup>54</sup>

As a final tribute to the personnel of the 47th, all of her personnel on leave status on the islands reported back for duty before the sun set on that horrible day. All the units were on continual alert after the attack. Many recognition and award photos, including publicity shots, conspicuously show the sidearms and helmets worn by the on-alert personnel. Officers and enlisted men were even directed to wear sidearms when on pass for a time after December 7th.<sup>55</sup>

The 47th continued as a unit committed primarily to training pilots and alert and patrol duties around the islands. On March 6, 1942, the unit was redesignated as the 47 Pursuit Squadron (Interceptor) from (Fighter) as it had been since being activated.<sup>56</sup> The unit underwent another administrative change when on May 22, 1942, its designation was changed from “Army Air Corps” to “Army Air Forces” and became the 47th Fighter Squadron.<sup>57</sup>

Taylor was later assigned to the 44th Fighter Squadron and continued flying P-40s where most contend he scored two more aerial victories. Oddly enough, the date of his last kill was December 7, 1943, though this fact cannot be verified. After the war, Imperial Japanese war records revealed the true number of their losses on the attack on Pearl Harbor. After reviewing the records, the Inspector General upgraded Taylor’s two December 7th probables to victories bringing his total kills to 6 and making him an “Ace.”<sup>58</sup> The Air Force Historical Research Agency’s (AFHRA) records on aerial victories disagree with this data, however. According to the official Air Force World War II credits, Taylor earned two victories on December 7, 1941, and one victory on January 27, 1943.<sup>59</sup> Dr. Daniel Haulman, a historian with the AFHRA and the keeper of the Air Force’s aerial victory records, indicates that at least two studies have investigated Taylor’s aerial victories, one in 1978 and another in 1991. The 1991 study verified and assigned him credit for the January 27, 1943 kill. Haulman found no official evidence of Taylor ever being awarded additional aerial credits or any documentation to suggest the reported two probables were later redesignated as victories after the war. Taylor recalls a colonel from the Inspector General’s office giving him credit for the two probables but cannot locate the documentation. Taylor positively recalls splashing at least four enemy aircraft that day.<sup>60</sup>

Taylor’s wartime highlights also included flying the P-40 from the aircraft carrier USS *Nassau* to Guadalcanal. He then returned to the United States to train pilots for combat in Europe as the commander of a Republic P-47 Thunderbolt Replacement Training Unit and later the 12th Pursuit Squadron. He returned to the Pacific too late to go back into combat. Immediately after the war, he commanded a squadron of the first USAF combat jets, the Lockheed P-80 Shooting Star, in the Philippines.<sup>61</sup> Subsequent assignments included command of the 4961st Special Weapons Test Group, tactical evaluator duty at United States Air Forces in Europe Inspector General’s office and a tour as a planner on the Air Staff in Washington, DC. He was later assigned as the Deputy Chief of Staff, Plans for the Alaskan Air Command and finally as a long range planner on the Joint Staff.

In 1967, he retired from active duty and assumed duties as the Assistant Adjutant General for the Alaskan Air National Guard where he was promoted to brigadier general. He retired from the National Guard in 1971. General Taylor began another career as an aviation insurance broker rep-

**[TAYLOR] THEN RETURNED TO THE UNITED STATES TO TRAIN PILOTS FOR COMBAT IN EUROPE**

resenting Lloyds of London. He has been fully retired since 1985. He now resides in Anchorage, Alaska and Green Valley, Arizona.

General Taylor's words about December 7th speak volumes about the man and to us, "I believed I was a better trained pilot than the ene-

my. I had good equipment and I was proud of it. And I doubt that [today's pilots are] the least bit concerned about being outnumbered by the enemy. I wasn't."<sup>62</sup> That spirit is characteristic of a man and a day that deserves our efforts to clear the fog of war. ■

## NOTES

1. Brig. Gen. Kenneth M. Taylor, Sr., USAF (Ret.), interviewed by the author, Apr 8, 2003; William Wolf, "Aerial Action... Pearl Harbor Attack," *American Aviation Historical Society Journal* 34, no. 1 (Spring, 1989): 60; Although a large volume of material has been written on the Pearl Harbor attack, the information on the exploits of Second Lieutenants Taylor and Welch conflict in almost every version. As time has passed and the smaller details lost to history, it appears many have inserted their own versions of events, which in turn grow, with much liveliness. Often, the accounts are fragmented and have numerous inaccuracies and disagreements. Though all accounts were used as research and some will be used in the article, the Congressional testimony of Lieutenants Taylor and Welch, the unit's history, and interviews and discussions with Brigadier General Taylor will be regarded as the definitive or final arbiter of events and facts, unless otherwise indicated.
2. US Congress, *Pearl Harbor Attack: Hearings Before the Joint Committee on the Investigation of the Pearl Harbor Attack* Part 22, 79th Cong., 1st sess., 1946. S. Con. Res 27, 252; The *Congressional Record* misspelled Welch's name as "Welsh".
3. *History of the 47th Fighter Squadron, Part I*, i-27, SQ-FI-47-HI 1 Dec 41 - 1 Apr 44, IRIS No. 00056535, in USAF Collection, AFHRA, iv.
4. *History*, Part I, 4; US Congress, 250, 252.
5. *History*, Part I, 2.
6. *Ibid.*, 3.
7. *Ibid.*, 19.
8. *Ibid.*, 3.
9. *Ibid.*
10. US Congress, 252.
11. "Amazing George Welch, The: Part One, The Tiger of Pearl Harbor," Planes and Pilots of WWII On-line, 2000, 1-9, on-line, Internet, 13 January 2003, available from <http://home.att.net/~historyzone/Welch1.html>; *History, Part I*, 4; Wolf, 60.
12. *History*, Part I, 4.
13. *History*, Part I, 4; U.S. Congress, 253.
14. Amazing, 3.
15. Amazing, 3; Rod Hafemeister, "In a Tomahawk and a Tux, Army Air Corps Pilot Shot Down the Enemy," *Army Times* 62, Issue 20 (10 December 2001): 36; US Congress, 250, 253-4; Hafemeister refers to the P-40 as a *Tomahawk* vice a *Warhawk*.
16. Raymond J. Castagnaro and Lyle F. Padilla, "George Welch—Pearl Harbor Hero," date unknown, 1-2, on-line, Internet, 13 January 2003. Available from [http://www.acepilots.com/usaaf\\_welch.html](http://www.acepilots.com/usaaf_welch.html); Harry A. Gailey, *War In The Pacific: From Pearl Harbor to Tokyo Bay*, (Novato, Calif.: Presidio Press, 1995), 78; Walter Lord, *Day Of Infamy*, (New York, N. Y.: Henry Holt and Company, 1957), 60; Gordon W. Prange, *At Dawn We Slept: The Untold Story of Pearl Harbor*, (New York, N. Y.: Penguin Books, 1981), 524; Dan van der Vat, *Pearl Harbor: The Day Of Infamy—An Illustrated History*, (New York, N. Y.: Basic Books/Madison Press, 2001), 125; Taylor Interview; Later sections of Castagnaro and Padilla's work appears to be the same as the aviation.com narrative. It repeats the same errors with the exception that Welch's name is spelled correctly. Also, in an Amazon.com advertisement apparently written by Castagnaro and Padilla as recommended reading include at least two inaccuracies. The first is that Taylor and Welch accounted for seven victories on 7 December 1941—see note 50. The second is that Prange interviewed Taylor and Welch for his book, *At Dawn We Slept*. Prange's work, in a 40 page exhaustive list of source material does not list interviews, diaries, taped reminiscences or statements with either Taylor or Welch. He does record them in a "List Of Major Personnel." ; Van Elsberg refers to the P-40 as a *Tomahawk* vice a *Warhawk*.
17. Len Deighton, *Blood, Tears And Folly: An Objective Look at World War II*, (New York, N. Y.: Harper Collins Publishers, 1993), 564; Hafemeister, 36; Taylor Interview; U.S. Congress, 250; TSgt Robert Van Elsberg, "First to Fight," *Airman* 32, no. 12 (December, 1988): 37.
18. "Pearl Harbor: George Welsh [sic], Ken Taylor, Fritz Hebel," The Aviation History On-Line Museum, 2002, 1-2, on-line, Internet, 13 January 2003, available from <http://www.aviation-history.com/airmen/pearl.htm>; Prange, *Dawn*, 524; Lord, 81; Amazing, 3; Aviation History website also misspelled Welch's name as "Welsh", and inaccurately claimed P-35s (vice P-36s) managed to get airborne and included numerous other errors of fact.
19. U.S. Congress, 254.
20. U.S. Congress, 249.
21. Taylor Interview; Van Elsberg, 37; Wolf, 60.
22. Richard Fleischer, director, *Tora! Tora! Tora!*, Screenplay by Hideo Oguni and Ryuzo Kikushima, 20th Century Fox Home Entertainment, 145 min., 1970, DVD; Taylor Interview; The flying portions of the motion picture *Pearl Harbor* are very loosely based on the exploits of Taylor and Welch. It is so historically inaccurate it is not relevant to use in the subject of this article.
23. Deighton, 524; Hafemeister, 36; Van Elsberg, 37; Stanley Weintraub's work, *Long Day's Journey Into War: December 7, 1941* was not useful for research due to the peculiar method of source citations. For that reason, it was not cited except to expand on endnotes. Weintraub also indicates on page 251 that Taylor had been in "...formal uniform...". Taylor verified they were in civilian tuxedos and not uniforms, formal or otherwise.
24. Amazing, 3; Castagnaro, 1; Robert F. Dorr, "Valiant Air Defense at Pearl Harbor," *World War II History* Vol. 2, No. 6 (November 2003): 78; Taylor Interview; Prange, *Dawn*, 524; Wolf, 60; Dorr's article had no source citations. Dorr also referred to the P-40 as a *Tomahawk* vice a *Warhawk*.
25. Amazing, 3; *History, Part I*, 22; Taylor Interview; U.S. Congress, 250; Van Elsberg indicates there were 18 P-40Bs on Haleiwa on the morning of 7 December 1941. The squadron history indicates the squadron only had eight P-40s assigned that morning. To further confuse the issue, the *Pearl Harbor Attack: Hearings Before the Joint Committee on the Investigation of the Pearl Harbor Attack, Part 1* indicates the exact number of aircraft at Haleiwa on 7 December 1941 is unknown, but that the organization strength of the unit was 13 P-40s. Before the attack, the squadron history indicates it never had more than 14 P-40Bs. In any case, 18 seems too high. Dorr has Welch making three sorties (78). No document I could find indicates substantiates more than two sorties,

- including Welch's DSC citation and his Congressional testimony.
26. Lord, 152; Prange, *Dawn*, 533; U.S. Congress, 249-56; van der Vat, 125.
  27. Leatrice R. Arakaki and John R. Kuborn, *7 December 1941: The Air Force Story* (Washington, D. C. : U. S. Government Printing Office, 1991), 76; *History, Part I*, 5-6; Van Elsberg, 37; Wolf, 60; Arakaki and Kuborn list Taylor as a 1st Lieutenant vice 2nd Lieutenant in Appendix E of their work.
  28. U.S. Congress, 252-3, 255.
  29. Hafemeister, 36; *History, Part I*, 5-6.
  30. Van Elsberg, 38; Wolf, 60; There is wide disagreement on exactly what type of aircraft Welch and Taylor shot down. Though Wolf's account is the most detailed in this regard, it disagrees with Van Elsberg's interview with Taylor. Wolf's account also seems to disagree with the location of enemy aircraft at the time of the attacks. Even the squadron history lists only aircraft victories for that day without providing further detail. Wolf's account is complete, but lacks footnotes or any source citations to verify his assertions. I have adhered to the interview with Taylor as being the most authoritative during the first attack with regards to the types of aircraft shot down.
  31. Van Elsberg, 38.
  32. Wolf, 60; Wolf's work contains math errors and inconsistencies between the article and the "Chronology of American Aerial Action" chart.
  33. U.S. Congress, 254.
  34. Mr. John Martin Meek, to Tony Thornton and forwarded to Major George Farfour, ACSC student, email, subject: Ken Taylor, 11 April 2003; Wolf, 62.
  35. Dorr, 78; Hafemeister, 36; Taylor Interview.
  36. Van Elsberg, 38.
  37. Amazing, 4.
  38. *History, Part I*, 6; Gordon W. Prange, Donald M. Goldstein, and Katherine V. Dillon, *December 7, 1941: The Day The Japanese Attacked Pearl Harbor* (New York, N. Y. : McGraw-Hill Book Co. ,1988), 289; Van Elsberg, 38; *December 7, 1941; The Day The Japanese Attacked Pearl Harbor* is essentially the same work as *At Dawn We Slept* from the perspective of Taylor and Welch's activities.
  39. *History, Part I*, 6; Prange, *Dec 7*, 289; Van Elsberg, 38.
  40. Hafemeister, 36; Van Elsberg, 38-9; Some accounts contend that Taylor landed after he was wounded to receive medical attention. In fact, Taylor continued to fight after being wounded and landed only after he ran out of ammunition. Taylor characteristically downplayed his injuries describing them as mainly scaring him and being of little account.
  41. Amazing, 4; *History, Part I*, 6; Wolf, 63.
  42. Hafemeister, 36; Van Elsberg, 39.
  43. Prange, *Dawn*, 534.
  44. Arakaki, 63, 76; Gailey, 83; *History, Part I*, 4; Lord, 116; van der Vat, 125; van der Vat fails to list Haleiwa airfield on any of his book's maps.
  45. Prange, *Dawn*, 534; Stanley Weintraub, in his work, *Long Day's Journey Into War: December 7, 1941*, states on page 273, referring to Haleiwa, "[t]he primitive field was not on the list of Japanese targets...".
  46. Michael E. Haskew, "Two Heroic American Aviators Led a Spirited Defense Against The Japanese At Pearl Harbor On December 7, 1941," *World War II* 12, Issue 5 (January 1998): 6; Donald M. Goldstein, Katherine V. Dillon, and J. Michael Wenger, *The Way It Was: Pearl Harbor—The Original Photographs* (Washington, D. C. : Brassey's (US), Inc. , 1991), 2; Prange, *Dawn*, 533-4; Haskew refers to the P-40 as a *Tomahawk* vice a *Warhawk*.
  47. *History, Part I*, 4; Wolf, 63-4.
  48. Hafemeister, 36; Meek email; Prange, *Dawn*, 538; Taylor Interview; U.S. Congress, 251, 255; Numerous accounts, including Taylor's Congressional testimony indicate Major Austin, the 47th Pursuit Squadron's commander was deer hunting on nearby Molokai when the attacks occurred. Major General Gordon H. Austin, USAF, Ret., in interviews given and verified by Mr. John M. Meek indicated he was duck hunting, not deer hunting.
  49. Amazing, 3.
  50. *History of the 47th Fighter Squadron, Part II*, iv-1, SQ-FI-47-HI 2 Apr 44 – Monthly supplements (no end date), IRIS No. 00056536, in USAF Collection, AFHRA, 1; Taylor Interview; Haskew, Weintraub and both Prange works claim Taylor and Welch are credited with seven kills on 7 December. The squadron history, among numerous others credit the pair with six—four for Welch and two for Taylor. Even if Taylor's two probables were added, the correct number would be eight. This inaccuracy apparently comes from a careless reading of the reference cited in both Prange works. The *Pearl Harbor Attack: Hearings Before the Joint Committee on the Investigation of the Pearl Harbor Attack, Part 1*, page 55 states, "Between 8:15 and 10 a. m. two flights were made, each consisting of four P-40's and one P-36. Four enemy planes were downed by the first flight while the second flight downed three." The reference does not mention Taylor and Welch by name and obviously includes the victory of fellow 47th Pursuit Squadron pilot Second Lieutenant Harry M. Brown which would bring the total of all *three* pilots to seven. Brown managed to fly a P-36 off of Haleiwa Field as well.
  51. Wolf, 64.
  52. Author unknown, "Heroes of Air Battle Over Wheeler," and "Army Fliers Get DSC For Heroism in Raid," *Honolulu Advertiser*, Dec 17, 1941; There is a movement to award Welch and Taylor the Medal of Honor. Many works describe a Medal of Honor recommendation for Welch being rejected because he took off without orders. I cannot find a single footnote, reference, or official document to verify these statements. The only detail that may infer a Medal of Honor recommendation is that some sources indicate Welch did receive a Distinguished Service Medal (DSM) in addition to the Distinguished Service Cross (DSC). Even that contention is in doubt. The squadron history does not indicate Welch received more than the DSC for his activities on 7 December 1941 and I cannot find any documentation to confirm Welch received a DSM for his activities on Dec 7, 1941. Dorr's article agrees with this assessment (pp. 78-79). However, as to the 15 other Medal of Honor recipients, they were all given to US Navy personnel.
  53. *History, Part I*, 5.
  54. Arakaki, 174; Wolf, 61.
  55. Amazing, 6; Arakaki, 78; *History, Part I*, 11; Goldstein, 145; Author unknown, "2 Army Fliers Get D. S. C. ," *Honolulu Star-Bulletin*, Dec 17, 1941; Author unknown, "2 Fliers Who Downed Planes Receive DSO [sic]," *Honolulu Star-Bulletin*, Jan 9, 1942; *Honolulu Advertiser*, 1; Wolf, 61.
  56. *History, Part I*, 13.
  57. *Ibid.* , 14.
  58. Wolf, 64.
  59. *History of the 44th Fighter Squadron*, 1-6, SQ-FI-44-HI 1 Jan 41 – 31 Dec 43, IRIS No. 00056474, in USAF Collection, AFHRA, 4; World War II Victory Credits, The Air Force Historical Research Agency On-Line, 2003, online, Internet, Apr 2, 2003, available from [http://afhra.maxwell.af.mil/wwwroot/aerial\\_victory\\_credits/avc\\_wwii\\_tab\\_tem.html](http://afhra.maxwell.af.mil/wwwroot/aerial_victory_credits/avc_wwii_tab_tem.html), names beginning with TAB and ending with TEM, 2.
  60. Dr. Daniel L. Haulman, AFHRA, to Maj George Farfour, ACSC student, email, subject: RE: Aerial Victories, 4 April 2003; Taylor Interview.
  61. Van Elsberg, 39.
  62. *Ibid.*

**American Combat Planes of the 20th Century.** By Ray Wagner. Reno, Nevada: Jack Bacon & Co., 2004. Photographs. Tables. Bibliography and source notes. Index. Pp. x, 758. \$65.00 ISBN: 0-930083-17-2.

Ray Wagner's *American Combat Planes* has been an indispensable reference work since it was initially published in 1960; the text was revised and updated in 1968 and expanded again in 1982. This handsome (and hefty) new edition continues to pursue the same monumental goal that Wagner first set for himself over four decades ago. That is, to describe and illustrate in a single volume "every aircraft—experimental, operational, sea or land based—that was ever designed to carry Americans to war in the skies," as Wagner's publisher claimed in the 1982 edition. No other author has come so close to achieving such an ambitious intent.

As before, Wagner has arranged his material thematically by mission area and branch of service within a given chronological period. Part One, called "The Biplane Period, 1917 to 1932," consists of ten essays and their accompanying photographs. Among the essay topics are titles such as "Close Support for the Army, 1917-1923," "Multi-Engine Bombers, 1917-1932," "Flying Boats for Navy Patrols, 1917-1934," and "Adapting Fighters to Flight Decks." Part Two, "Monoplanes for World War II, 1931-1945," includes 14 essays. Among the essay titles are "Army Attack Monoplanes from A-7 to A-41," "Navy Scout and Observation Aircraft, 1932-1946," "Crisis-Born Fighter Projects, XP-48 to XP-77," and "Very Heavy Bombers End the War." The nine essays in Part Three ("Air Weapons for the Cold War, 1946-1962") include "Navy Patrol Planes from Neptune to Orion," "Strategic Air Command's First Bombers," and "Supersonic Fighters, F-100 to F-108." The final section is entitled "An Awesome Generation since 1963." This fourth chronological division is the shortest in length; among its five essays are "The Cold War, 1963-1991," "Attack Planes for Small Wars, 1963-1991," "Bombers from the B-70 to Stealth," and "From Iraq to Afghanistan." In addition to the 34 mission area essays, Wagner also includes an essay on aerial weaponry development in each of the four chronological sections.

Wagner's ability to encapsulate U.S. military aviation history in concise, well-written essays is impressive, but it is more than matched by his skill at ferreting out high-quality imagery. There are about 1,700 photographs interspersed among 722 pages of descriptive text in this new edition, but what impresses the experienced eye is that they are consistently fresh and well-focused, type-representative, and accurately identified—and that their contribution is ensured by high-quality printing on coated paper stock. Each image is "sourced," and its caption provides standardized data entries reflecting dimensions (including wing area),

weights (include fuel capacity), and performance parameters. The result is synergistic: the value of the whole is greater than the sum of its parts.

That said, there remains the critical question: to what extent has Wagner succeeded in achieving his goal of producing a single-volume reference describing and illustrating all of America's warplanes of the Twentieth Century? Some specialists may complain that he did not include many of the U.S.-built aircraft types offered to, or acquired by the U.S. Army and Navy before World War I, including those flown operationally in quasi-combat roles in Mexico—or flown by the Services during that War but not actually used in combat operations. But even specialists must agree that those minor types could hardly be called 'warplanes' when compared to their European contemporaries. Similarly, those who are fascinated by U.S. military aviation's 'what ifs'—those often exotic projects which never amounted to anything more than draftsmen's drawings or wood and metal mockups—will find an occasional gap in text or image. But these are quibbles. Certainly every U.S. military and naval combat aircraft (and many sub-variants) of any genuine consequence post-1917 is presented here, as are many lesser machines that had little real influence on the development of American airpower. Like its predecessor editions, Wagner's latest version of *American Combat Planes* is an essential reference. If your U.S. military aviation bookshelf can only support the addition of one more title this year, this is it.

*George Cully is a staff historian assigned to the Air Force Historical Studies Office, Bolling AFB, DC.*



**Splendid Vision, Unswerving Purpose: Developing Air Power for the Untied States Air Force during the First Century of Powered Flight.** Wright-Patterson AFB, Ohio: Aeronautical Systems Center History Office, 2002. Maps. Photographs. Notes. Appendices. Glossary. Bibliography. Index. Pp. xvii, 508 ISBN 0-16-067599-5

Lavishly illustrated, this tome is not a critical history but rather a chronological celebration of the USAF's role in developing powered flight. Just roaming through the photography alone makes this book a worthwhile addition to any aviation enthusiast's library. As a scholarly text though, it serves as the "initial marker" on a glide-slope toward deeper research. On the cover is a photo of a sign from the early days posted on the front of a rickety looking hangar, "THIS FIELD IS SMALL-USE IT ALL." In real contrast, this book is huge. so don't expect to sit down and peruse it all at one sitting.

As General Bernard Schriever notes in

the Foreword, the book is fascinating because it takes the warfighter's perspective—rather than a politician's or a bureaucrat's—in telling the story. The book spends no time debating the need for the work it describes. Instead, it focuses squarely on the "who, how, where, when, and what" of delivering the finest military aviation capabilities the world has seen over the better part of a century.

I was particularly taken by three facets in the book. First was the depth of the recounts of the early years. Having been diluted and redacted by hour-long television programs of dubious parentage, this period of military aviation history has been reduced to a string of sensational pearls in the minds of the broader audience. Here, instead, is a book that, true to its title, describes the unswerving purpose and the attendant passion and dedication of the previously nameless (and often thoughtlessly characterized as un-heroic) men and women who labored to ensure the solid technical string was there to connect those pearls.

Second was the period that covered my father's "greatest generation." I knew from his stories and all the reading through the years that only one type aircraft for 8-10 developed during the war years? made it to combat. This book helped shape for me the effort it took to accomplish the feat. The stories of individual aircraft and leaders are well known to us; the story of the next tier of contributors is less so. This book helps redress that. One gets a sense of the sheer volume of their efforts where other books have focused on their intensity.

Third was the period covering my own years of service. Here I began to run into the common phenomenon of "that's not how I remember it!" Once I got past that reaction, I actually began to discover some of the forces acting on programs I was responsible for that were opaque to me at the time. This is where the book lets the reader down just a bit. My own experience with history offices (not this one in particular) is that they seldom have access to all information they might need to truly write a history. This is why I characterize the book as a chronological celebration.

And what a lovely, photographically rich celebration it is. Enjoy it and reflect on what a special country it takes to produce the people this book is really about.

*Col. Christopher A. Waln, USAF (Ret), Sector Vice President, Strategy, Northrop Grumman Information Technology*



**Today's Best Military Writing: The Finest Articles on the Past, Present, and Future of the U.S. Military.** By Walter J. Boyne. New York: Forge, 2004. Notes. Index. Pp. 397. \$26.95 ISBN: 0-765-30887-8

The market for yearly anthologies of the "best" articles in various genres appears to be insatiable. A quick search of *Books in Print* reveals such titles of as *The Best American Short Stories 2004*, *The Best American Mystery Stories 2004*, *The Best American Travel Writing 2004*, and *The Best Adventure and Survival Stories 2003*. "Best of" collections promise to deliver the finest writing in a given field to readers overwhelmed by the volume of articles being published. Consequently, it comes as no surprise that some enterprising author would eventually publish an annual anthology of the best military articles. The 2002 edition of the *Standard Periodical Directory* listed over 450 military related magazines and journals, excluding military history journals. No military professional can possibly keep up with all this material, especially during wartime. Walter Boyne's new volume will be greatly welcome by officers, enlisted personnel, and DOD civilians trying desperately to keep up with all the new ideas and information being generated in this field.

No single theme dominated Boyne's choice of articles, but he is sensitive towards the needs of war-fighters engaged in the Global War on Terrorism (GWOT). Navy personnel involved in maritime interception operations, for example, will find insights from Spencer Tucker's essay, "Lieutenant Andrew H. Foote and the African Slave Trade." In trying to interdict slave traders of the coast of Africa during the middle of the Nineteenth Century, Lieutenant Foote con-

fronted many of the same challenges that destroyer commanders grapple with today, in trying to intercept terrorists in the Persian Gulf and Red Sea. Army soldiers will enjoy "No Master Plan: The Employment of Artillery in the Indian Wars, 1860-1890" by Prisco R. Hernandez, and see correlations between how field artillery was employed in the Indian Wars and how it is employed today in Iraq. Forward deployed Marines at embassies and other outposts will similarly benefit from David Ulbrich's "Clarifying the Origins and Strategic Mission of the US Marine Corps Defense Battalion."

Thirteen out of twenty-one articles in this anthology focus on historical events. The balance cover more current operations. One of the most chilling contemporary articles is Rex Kiziah's "The Emerging Biocruise Threat." Another one that air power professionals will appreciate is Darrel Whitcomb's "Combat Search and Rescue: A Longer Look." Whitcomb not only discusses the evolution of CSAR, but why it is critical for the Armed Services today and how it should change to meet to the emerging challenges of the GWOT.

A retired Air Force colonel, the former director of the National Air & Space Museum, and the author of numerous military history books, Boyne points out in his introduction that many of the articles in his volume received awards, but that he never allowed these prizes to dictate his selections. One of the few shortcomings of his book is

that he relied only on his own expertise to choose the best military writing of the past five years. For subsequent volumes, Colonel Boyne might consider enlisting a panel of experts to help him sift through the voluminous literature of this field. If formed, this panel also may want to consider translations of foreign articles, as well as web published material in its selection process. The Armed Forces desperately need works like this one and Walter Boyne has proven himself to be up to the task. With some refinement in his methodology and annual updates, *Today's Best Military Writing* promises to emerge as a "must-read" for anyone in the field.

*John Darrell Sherwood is a historian with the Naval Historical Center. His most recent book, Afterburner: Naval Aviators and the Vietnam War, was published in 2004 by New York University Press.*



**The First Space Race: Launching the World's First Satellites.** By Matt Bille and Erika Lishock. College Station: Texas A&M University Press, 2004. Illustrations. Photographs. Notes. Glossary. Bibliography. Index. Pp. xviii, 214. \$19.95 Paperback ISBN: 1-58544-374-3

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analysis of events familiar to space historians and vigorous pursuit of details obscured by the passage of time, they supply new insights to one of the Cold War's most dramatic chapters. As the legendary James Van Allen admits in the Foreword, this volume even provides still-living participants in that race with a much improved context for their own fragmentary knowledge.

Laying the foundations for successful launch of the first artificial, Earth-orbiting satellites took several centuries. During the 17th century, Johannes Kepler and Sir Isaac Newton formulated the necessary theories of motion. Edward Everett Hale and other science-fiction writers in the 19th century inspired serious spaceflight theoreticians like Konstantin Tsiolkovsky, Hermann Oberth, and Robert Goddard at the dawn of the 20th century. The pace of hardware development quickened at mid-century under the leadership of brilliant engineers like Wernher von Braun, Sergey Korolev, Theodore von Karman, and others. Long-range rockets built by the U.S. and USSR could travel through outer space to deliver thermonuclear warheads halfway around the globe. Informed visionaries recognized the feasibility of using those same rockets to launch satellites.

While long-range rocket and satellite development occurred within the U.S. and Soviet military establishments, plans for the International Geophysical Year (July 1957-December 1958) committed both countries to launching satellites for scientific research. The Soviet Academy of Sciences created a Commission for Interplanetary Communication, chaired by academician Leonid Sedov, to oversee its IGY satellite program. Meanwhile, a committee headed by the Jet Propulsion Laboratory's Homer Stewart selected the U.S. launcher and satellite from among several proposals by the military services. On October 4, 1957, the USSR launched Sputnik, the world's first artificial satellite. After the U.S. Navy's failure to launch a Vanguard satellite on December 6, the Army put America's first satellite, Explorer 1, into orbit on January 31, 1958. Both nations commenced "storming the heavens" with civil and military satellites.

Bille and Lishock drew information from a variety of sources (written and oral, primary and secondary, older and recent) to tell this complex story in a relatively straightforward style. They discuss how erroneous "facts" crept into the literature over time. For example, the color scheme on museum models of Explorer 1 differs from the actual flight article. Furthermore, Goldstone could not have confirmed that Explorer 1 was in orbit, because the Goldstone tracker became operational months later to support the Pioneer lunar probes. The authors analyze the Stewart Committee's choice of the Navy's proposal over the Army's, the relationship between early military and civil satellite programs, and the question of whether the U.S. purposely

refrained from becoming first to launch a satellite. Finally, they describe NOSTRIK, a "secret competitor" who aimed to place tiny satellites in orbit via a five-stage booster launched from a U.S. Navy fighter aircraft.

Readers will have difficulty putting down *The First Space Race* before turning the last page. The authors have achieved a wonderful balance between the American and Soviet sides of the story. Their new research and refreshing analyses correct inaccuracies that have crept into the literature over the years and prompt space historians to question causal connections once taken for granted.

*Dr. Rick W. Sturdevant, Deputy Command Historian, HQ Air Force Space Command, Colorado Springs, Colorado.*



**Air Fare: Stories, Poems & Essays on Flight.** By Nickole Brown and Judith Taylor, eds. Louisville, Ky.: Sarabande Books, 2004. Pp. xv, 237. \$16.95 Paperback ISBN 1-889330-99-X.

I read this book on a flight from Austin TX to Dayton OH via Atlanta to attend a conference. For both legs, I was on small jets; the flights were full so the airline could maximize efficiency and profit. I understood this, but I resented the fact that the airline also was minimizing comfort. We left late, and I barely made my connection. Frequent travelers know that time and airlines wait for no man, but I made my connecting flight in the nick of time. I missed lunch in the process, but had a yummy snack on my flight to Dayton. I stopped drinking airline coffee years ago because it's so bad, so the bottled water or a cranberry mix has become my drink of choice.

Most of the stories and poems in *Air Fare* could have been written by the people seated next to me. While we were on the same planes, all of us had a different reality, different experiences, different journeys. Compiled in the post-9/11 era, this collection of poems and short stories recalls a different world. Jeffrey Harrison's "Pale Blue City," written in December 2000, reminds us how the towers of the World Trade Center used to peek above the early morning clouds as we made our descent into JFK airport. His last line, "Here: take it before it disappears," is prescient in a way he could not imagine.

In our takeoffs and landings, the past, present, and future collide. We leave "someone" or "someplace" looking for more. Or we go, someplace...anywhere, perhaps, expecting to learn something, to experience something, to become better, to become wiser. Too often, our expectations—our hopes—exceed the reality of our experiences. Our one-way tickets express our discomfort with the past, our dreams of the future. And if we return, as most of us do, we come home changed. Regardless of the reason for our leaving in

the first place, even if it's only because we've ventured away from home, from our everyday workplace, from our family and friends, we are changed by the experience of traveling.

The selections in this short volume span the galaxy—looking at wartime flight, commercial aviation, private flying experiences, ballooning, and space flight. The authors are exultant, pensive, comic, and tragic in turn. While most of us, thankfully, will never experience a hijacking or a dog-fight to the death against an enemy, we share common experiences with the millions who fly. The hub cities of our connecting flights offer us choice. Do we follow our chosen path or improvise? (Colson Whitehead, from John Henry Days.) Is knowing that "the world will let us down many times but it will never run out of coffee" a good thing or a bad thing? (Joshua Beckman, "Ode to the Air Traffic Controller.") There are more questions than answers in the experience of *Air Fare*. And that's a good thing for a flight from Austin to Dayton, with a mind partially engaged in what I will experience during the conference, partially wishing I were home, and partially imagining the endless possibilities.

*Bruce Ashcroft, Air Education and Training Command History Office*



**Mario Calderara Aviator and Inventor: The First Italian Pilot Pupil of Wilbur Wright.** By Lodovico Calderara and Attilio Marchetti. Translated by Lodovico Calderara. Trento, Italy: Museo Aeronautico "Gianni Caproni" di Trento, 2003. Illustrations. Photographs. Bibliography. Pp. 304. ISBN 88-87621-41-1.

Mario Calderara is best known to English-speaking readers as the student who Wilbur Wright distrusted because he was "a cigarette fiend." However, this volume by his son, a labor of love rather than a scholarly biography, reveals Calderara to be much more; he was a significant figure in early Italian military aviation.

Born in 1879, Calderara entered the Italian Navy in 1902, as an officer and engineer. The navy became interested in aviation as means of observation, and the young officer used that as an entrée into flight. In 1907, he constructed a biplane mounted on a raft towed behind a speedboat in which he "managed to obtain a controlled lift to a certain height." (p. 55) Caldera then took leave to work in Paris as a designer with pioneer airplane manufacturer Gabriel Voison. This step led in March 1909 to the Calderara-Goupy, the first successful tractor biplane at a time when most aircraft were monoplanes or pushers. He then returned to Italy, where he became Wilbur Wright's first Italian student, soloing on April 29, 1910. Subsequently, the navy assigned him to

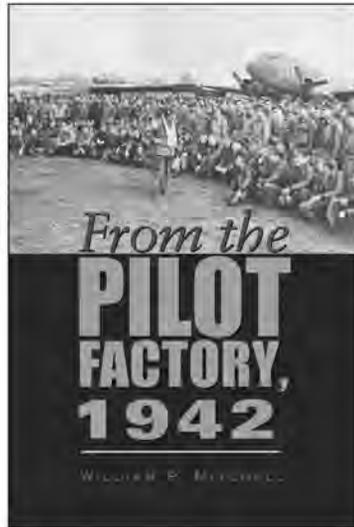


**INTO THE WILD BLUE YONDER**

*My Life in the Air Force*

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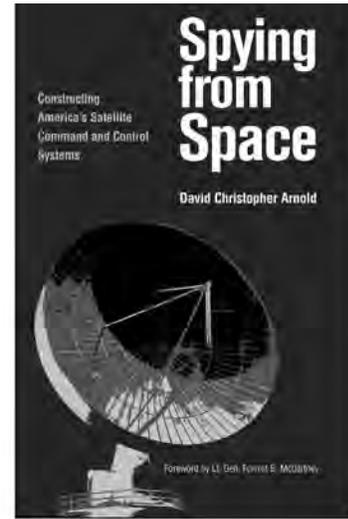
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design and build a seaplane. His creation, a large monoplane on floats, powered by a 100 h.p. Gnome rotary engine, flew successfully in March 1912.

The seaplane was the zenith of Calderara's contribution to aircraft design, but he was not done with aviation. He left the navy in 1913, but was recalled during World War I and in late 1917 took command of the flying school at Lake Bolsena, where U.S. Navy pilots trained to fly seaplanes. Calderara served as Italian air attaché in Washington, D.C., from 1923 to 1925, and from 1925 to 1939, he was the international representative in Paris for the Pioneer Instrument Company, a division of the Bendix Corporation, which manufactured aircraft instrumentation.

The author demonstrates that his father was a better than competent pilot and an innovative designer. In September 1909, barely five months after soloing, Calderara competed in the aviation meet at Brescia, winning four prizes, including the King's Cup, and finishing second to American Glenn Curtiss for the International Prize. As for his designs, both the 1909 biplane and the 1912 seaplane were successful, though they were never exploited. A 1911 sketch of a "future seaplane" (p. 178) suggests the lines of the world-girdling flying boats of the

late 1930s, then far in the future.

The book is unclear as to why Calderara made little further contribution to the progress of aviation in Italy after 1912, but offers several possibilities. Especially, his son recognizes "that certain aspects of my father's character did expose him to negative reactions on the part of his colleagues and superiors." (p. 151) The book bears this out. Several disciplinary episodes suggest a young man who sometimes failed to show proper respect for his superiors. And Wilbur Wright noted that the flights Calderara made before the King of Italy and the public adulation in 1909 appeared to go to his head. All this earned him enemies, and Calderara's claim that jealousy on the part of his superiors and other officers sided tracked his career may not be far off the mark. Additionally, Calderara apparently saw limits to his opportunities. He wrote Wilbur, in 1912, that he intended to resign from the navy and leave Italy, because of the lack of industrial development and because his "work has never been sufficiently free and independent so as to allow me to overcome all the bureaucratic impediments which in Italy, as you know, are unending." (p. 179)

Lodovico Calderara has produced a useful and interesting biography. The large

number of typos detracts, and the translation is not always as clear as one would prefer. It badly needs a real index; the "index" at the end is actually the "table of contents." But the book's strengths offset its weaknesses. Attilio Marchetti, author of *Il golfo degli idrovolanti* [*The Gulf of Seaplanes*] has provided an extensive set of footnotes that add much detail, clarity, and value to the narrative. The illustrations—mostly photographs from family albums, newspaper articles, and documents—are worth the price. Most interesting is the photo of a Wright-type pusher crashing at the moment the wing tip touches the earth (p. 126), and a December 8, 1930, letter from Orville Wright (p. 256) that sheds some light on changes to the Wright control system in 1908.

*Mario Calderara Aviator and Inventor* will be an enjoyable addition to the library of any reader interested in the history of the early "bird men."

Roger G. Miller, Ph.D., Air Force Historical Studies Office, Bolling AFB, Washington, D.C.



**Taming Liquid Hydrogen: The Centaur Upper Stage Rocket, 1958-2002.** By

## Lancaster Index to Defence & International Security Literature

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**Military Policy Research Ltd.**

Virginia P. Dawson and Mark D. Bowles. Washington, D.C.: NASA History Office [NASA SP-2004-4230], 2004. Tables. Index. List of Interviews. Pp xiii, 289.

This is another book in the NASA History series, specifically in the Project History sub series. It won the 2004 American Institute of Aeronautics and Astronautics History Manuscript Award. Professor Dawson has already published another book in the series, while Dr. Bowles is currently at work on yet another NASA history book. Centaur had a long difficult history, being cancelled or reassigned between NASA Centers several times. As a result, relevant documentation was preserved at different stages. Of course, other files were purged, so that available source material depends upon other people's sense of what is important. To supplement the written record, the authors interviewed over 60 government and contractor personnel who played a role in the Centaur story.

Centaur began as a contractor proposal (before there was a NASA) to increase the ability of Atlas to orbit heavier payloads and to provide a means of sending more capable probes almost anywhere in the Solar System. It ended because of a marketing decision to sell a family of Atlas launch vehicles, some of which had an unnamed upper stage very similar to the old Centaur. In between, Centaur was praised and cursed, management moved between NASA Centers, versions started and stopped (Titan-Centaur and Shuttle-Centaur), and it finally returned to the private sector. Even there, the consolidation of the aerospace contractors moved it from General Dynamics to Martin Marietta to Lockheed Martin. Through it all, Centaur was the upper stage of choice for demanding missions.

The history is told at several levels. For those interested in organizational and political matters, the relations between NASA and Congress, NASA and other parts of the Executive branch (primarily the Air Force, but also the Department of Transportation), Headquarters and the Centers, and NASA and its contractors are described very well and honestly. For C-SPAN junkies, this is a good read.

For technologists and project management fans, the story of translating the theoretical advantages of liquid hydrogen (LH2) as a fuel into reality is entrancing. The success of Apollo can be laid at the feet of liquid hydrogen upper stages. The Soviets did not test an LH2 upper stage until the 1980s. Centaur's first test flight was in May 1962. That flight ended with an explosion 54 seconds after launch, but the problems were solved and enabled Surveyor to be successful. The lessons learned enabled the S-II and S-IVB stages to use LH2 to put men on the moon. But where did all the LH2 come from? In 1956 the U.S. could produce 500 pounds per day. By 1959, the rate had jumped to about 68,000 pounds per day. The USAF had

looked at a liquid-hydrogen fueled replacement for the U-2 and foresaw a vast increase in fuel requirements. That project did not work out, but the production facilities helped Centaur and Apollo.

One of America's greatest strengths is its ability to find people willing and able to solve problems and make things work. Usually only their coworkers know what they have achieved. There are several such stories here. By their dedication, sacrifice, and ability, America can brag about Surveyor, Viking, Voyager, a series of communication satellites and the lead in the routine use of LH2 upper stages.

I enthusiastically recommend this book for anyone interested in space history.

*James A Painter, Docent, National Air & Space Museum, Washington, D.C.*



**Thatch Weave: The Life of Jimmie Thatch.** By Steve Ewing. Annapolis, Md.: Naval Institute Press, 2004. Photographs. Notes. Appendices. Bibliography. Index. Pp. x, 338. \$34.95 ISBN: 1-59114-248-2

James Mitchener concludes his novel, *The Bridges at Toko-Ri*, with a question by Admiral Tarrant: "Where did we get such men?" Professor Ewing is the senior curator at Patriots Point Naval and Maritime Museum, Charleston Harbor S.C., and the author of several books on naval history. He answers the question with this biography. One man the admiral might have had in mind was John S. "Jack" Thatch, who was dubbed "Little Jimmie" at the Naval Academy and will forever be known as "Jimmie."

During his aviation career, Thatch tested aircraft; commanded squadrons and ships; planned combat operations in the Pacific during World War II; led Task Force Alpha (the Navy's first experimental task force devoted to antisubmarine warfare) in the early stages of the Cold War; and was Deputy Chief of Naval Operations (Air) and Commander in Chief, U.S. Naval Forces, Europe. He was a powerful spokesman for the Navy during the debate concerning unification of the services (especially aviation service) and the Revolt of the Admirals. He was articulate in the need for the mobile air forces of the Navy. He retired after forty years of service as an admiral.

Thatch graduated from the Academy in 1927 (the year the Navy commissioned its first aircraft carrier, the *USS Langley*) and served on the battleships *USS Mississippi* and *USS California*. He then went to Pensacola to begin his remarkable aviation career. After receiving his wings, he flew the Loening OL-8 amphibian observation aircraft—hardly an auspicious beginning for the man most known for fighter tactical development.

At the start of World War II, naval aviation faced the Mitsubishi A6M2 Zero, a

Japanese aircraft superior to the Grumman F4F Wildcat. At the time, pursuits in the air armies of the world were closely bunched in groups of three to increase firepower. Air combat quickly degenerated into a melee between individuals. Combat outcome was determined by individual skills, dominated by aircraft performance.

Naval scout bombers and torpedo aircraft required fighter escort. Navy fighters also had to defend their mobile airbases. Thatch worked out a solution using matchsticks on the kitchen table. Fighter pilots today would recognize his formation with a division of four aircraft divided into two mutually supporting sections of two aircraft each—today called the "fluid four." The result was that look out was improved. By observing the maneuver of the other section, the tactical situation was obvious without radio communication. An attacking aircraft would in turn find itself under attack from the supporting section. Teamwork was the secret to winning against a superior foe.

Training was essential to the Thatch approach. Fighter training included target practice against towed banners and gun sight films; as well as tactical training. When Thatch learned that the Army Air Corps practiced against static targets on the ground, he made available the equipment used by his squadron. He went to Hollywood to make films to train the large number of naval pilots required.

Experimentation was also an important element. Thatch tested his tactics with Butch O'Hare, a natural pilot. Later in his career he applied the same principals of teamwork, training, and experimentation in facing the Soviet submarine challenge.

Readers familiar with doctrine development from the top should note the Navy encouraged very junior officers to develop tactics. This freedom to let the fleet aviator discover the solution to tactical problems continues to this day.

Thatch's combat record was impressive. He led the Grim Reapers during the Battle of Midway. He served as Task Force Operations Officer during the Great Marianas Turkey Shoot. To counter the suicide attacks of the *Kamikaze*, Thatch devised tactics that deserve as much recognition as his Weave, the Thatched Roof. During Korea, he commanded an escort carrier, *USS Sicily (CVE-118)*, with embarked Marines, the famous Blacksheep, Marine Fighter Squadron 214 (VMF-214). Once again, his emphasis was on teamwork.

This biography completes Ewing's Navy fighter pilot trilogy on Butch O'Hare, Jimmy Flatley, and Jimmie Thatch—books that answer Admiral Tarrant's question. It is an easy read, but thought provoking.

*Cdr. Robert W. Covey, USN (Ret.), USNA 1962, Naval Aviator V-20499.*



**The Ploesti Raid: Through the Lens.** By Roger A. Freeman. London: Battle of Britain International, 2004. Maps. Tables. Diagrams. Illustrations. Photographs. Index. Pp. 160. £24.95 (approx. \$47.00) ISBN: 1-870067-55-X

Freeman aptly describes the Ploesti Raid of August 1, 1943, as “the most ambitious, the most daring, the most foolhardy, the most disastrous, and most historic...” His book is a planning, logistical, tactical, and most importantly a photographic history of the raid. It is enlightening and educational in that virtually all photographs and maps are from the period.

In the planning stages, there was much discussion and division within the U.S. bomber command on what altitude to fly the mission: high, with consequent bombing inaccuracies, or low and accept higher aircraft losses in order to attain greater bombing accuracy. They decided to fly in at low level and fly no pre-strike reconnaissance flights that would tip off the Romanians. Even so, intelligence was quite good since British, Dutch, French, and U.S. companies had operated the refineries before the war

that the Allies were going to bomb. The degree of preparation that occurred was surprising. For example, in the space of one week, the RAF constructed several models of the targets in 1:5,000, 1:50,000, 1:500,000 scale. U.S. bomber crews were impressed by their quality and immediately understood that the mission was important, because they had never seen such a degree of preparation.

Freeman gives the reader a good sense of what it was like to prepare and fly the raid, but sometimes tells the story poorly. For example, he quotes Maj. Gen. Brereton’s orders justifying the use of a low-level attack, but presents it as a photo caption that runs two-thirds of a page long. Another photo caption lists all bomb loads and fuse delays for each attacking formation. At another point, he shows all fourteen pages of target diagrams for the seven-target strike forces.

He gives a more personal view of the attack by quoting various crewmembers in side-bars throughout the book. But, the quotes sometimes create more questions than they answer. For example, the copilot of “Vagabond King” complains that the charts

used shades of blue and purple rather than the usual shades of brown. Was the color coding scheme not adequately explained? Did the crews understand the new color coding but have trouble reading the maps intuitively when they were under the pressure of flying an actual mission? Or did the crews simply never ask what the new coding meant?

Before reaching Ploesti, the 376th Bomb Group made a wrong turn at a critical moment. In the lead ship, the interaction between General Ent, Colonel Compton, and the navigator is suggested, but not described. The circumstances are important because the force got separated and attacked the refineries at different times, giving anti-aircraft gunners plenty of warning. A map showing the 376th and 93rd Bomb Group’s incorrect turn is on one page, but the map showing the other three groups’ route is sixteen pages later, without any photo caption.

Freeman created detailed diagrams of aircraft formations and spent an inordinate time discussing them. Does this really contribute to the story? Would making part of an appendix have been better? In one photo



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Illustration courtesy NASA

caption he describes Ploesti's topography with positions and fields of fire for all anti-aircraft batteries. The task was doomed to failure; it is impossible for the reader to remember the topography and visualize the placement and fields of fire of all the batteries. Creating a map showing what was described would have been better.

This very knowledgeable historian clearly went to great lengths to research his unusual book. In his introduction, he states that "This volume provides a straightforward, historical account and makes no attempt to do other than present the known and reported facts to support its main purpose, a chronological presentation of photographic images relative to the mission." Unfortunately this does not relieve the historian's duty to the reader of weaving a tale and telling a story in a concise, understandable manner.

*Ramsey Gorchev, Docent, National Air and Space Museum's Udvar-Hazy Center, Dulles, Virginia.*



**Ask the Chief: Backbone of the Navy.** By J.F. Leahy. Annapolis, Md.: Naval Institute Press, 2004. Photographs. Notes. Glossary. Biography. Index. Pp. xiv, 230. \$27.95 ISBN: 1-59114-460-4.

U.S. Navy and Coast Guard veteran Leahy has taken on the task of informing the world how important chief petty officers are to the running of the Navy. While the work is both admirable and useful, one can envision Navy chiefs the world over providing the book with an honored place in their homes, while senior enlisted members of the other services are scratching their heads and wondering why someone would bother to publish the work in the first place.

To research his work, Leahy gained access to a large number of Navy chiefs, including the entire contingent aboard the carrier *George Washington*, while on a Mediterranean cruise. Through these interviews he manages to put together an engaging narrative of what it's like to be a chief, including the importance of the Chief's Mess in resolving ship's problems and mentoring young sailors. Leahy also explores relations with junior officers and mustangs (enlisted personnel who have received commissions).

Clearly the book's most important parts are those that describe to the reader what it is like to be a Navy chief. Leahy covers how one makes chief and, when one does, how he or she is initiated into the chief's community. Both the chief initiation process and the inner workings of the Chief's Mess are steeped in tradition, and here the men and women with whom Leahy spoke give one a sense of how important those traditions are.

Leahy culminates his work by describing several of the former Master Chief Petty

Officers of the Navy and their individual contributions to Navy enlisted personnel. Lastly, he describes the actions of several chiefs who in the past were noted for gallantry and bravery.

Written in an easily readable manner, *Ask the Chief* gives the reader a sense of the inner workings of the Chief's Mess and the rank itself. The reader quickly picks up that to be a chief means one has to rely upon the chief fraternity as well as the tradition that accompanies it. Unfortunately, the author was never a chief. Because of that, his writing is tainted with hero worship which detracts from the book's overall effectiveness. In a number of instances Leahy notes that the typical Navy chief has powers and responsibilities far beyond those of senior NCOs of the other services. In fact Air Force and Army senior NCOs and Marine Corps staff NCOs are equally charged with the responsibility of managing duty sections and mentoring junior officers. The only discernable difference between chiefs and other senior enlisted personnel is in the way the communities view themselves internally. Once an individual becomes a chief it doesn't matter whether that person is an E-7, E-8, or E-9—he or she is member of the chief's community. In the other services there is a decided break between E-8 and E-9. That difference aside, they are all charged with basically the same responsibilities. I was once assigned to a U.S. Navy base, living with chiefs, and quickly came to appreciate the influence they have on the Navy. If Leahy would have left it at that and refrained from denigrating other services' senior enlisted members, this would have been a much better book.

*MSgt Dennis Berger, USAF (Ret), history teacher and graduate student in military history, Lubbock, Texas.*



**Amelia Earhart: Case Closed?** By Walter Roessler and Leo Gomez, with Gail Lynne Green. Hummelstown Pa.: Aviation Publishers, 1997. Maps. Illustrations. Photographs. Appendices. Pp. 206. \$16.95 Paperback ISBN: 0-938716-24-7

My favorite aviation personality to study and discuss with National Air and Space Museum visitors is Amelia Earhart (AE), so I jumped at the chance to review this book. The ultimate fate of AE and her navigator Fred Noonan when they crossed the southern Pacific on their round-the-world flight in July 1937 has become one of aviation's enduring mysteries. Almost as soon as they disappeared, and continuing to this day, scenarios abound concerning their tragic end. These include: ditching and either dying in the crash or of exposure awaiting rescue, capture and execution by the Japanese for flying over several of their mandated islands, and one that

had AE living under an assumed name in New Jersey as late as 1970!

Using sixty-seven years of combined experience flying Lockheed 10E Electras or similar aircraft, the authors explain the navigation and communication skills Amelia and Fred would have used and describe aircraft parts that figure prominently in their two circumnavigation attempts (e.g., propellers, autopilot, and radio direction finder) in easily understandable terms.

Once the characters have been introduced, the story shifts to AE's first round-the-world attempt in March 1937. Having flown from Oakland, California, to Luke Field, Hawaii, on the first leg of the trip, she lost control of the Electra when attempting to take off several days later. Numerous accounts (Air Corps accident review board, civilian eye witnesses, and newspaper reports) are included, detailing the aborted takeoff due to equipment failure.

With the Electra again airworthy, the second attempt began in May 1937, again from Oakland, but heading in the opposite direction (a world map is included showing their route). This trip, lasting forty-two days, ended somewhere in the vicinity of Howland Is. Having twenty hours of fuel to make Howland, their luck apparently ran out; jet lag, radio communications problems, and unexpected head winds combined to bring this trip to a premature end. The authors included the radio logs of the Coast Guard's cutter *Itasca* which was stationed near Howland to provide radio signals to guide the Electra. At this point, they tie together all of their material and present a chilling, albeit short, conclusion on what they believe ended the journey.

Other possibilities—AE's capture by the Japanese, secretly living under an assumed name, and reports that AE had been found—are recounted in a subsequent chapter. Amelia's short, ten-year aviation history is summarized in the final chapter.

This book, with its large text, abundance of pictures (some of which were new to me), and route maps is perfect reading for the novice AE or aviation fan. An AE scholar will learn little from this book and should look elsewhere for a more detailed account of her final flight. The narrative is fine, but several layout changes would improve later editions. The accident reports and newspaper and eyewitness accounts should be in a new appendix. Currently, these are in a similar pitch and font as the narrative, making it difficult to differentiate them from the narrative. Also needed are source notes for sections of the book not covered by the various reports of her flights and an index for easy fact finding. The book also contains an unneeded introduction of early flights by other aviators and the poem "High Flight" that could easily be deleted.

After some sixty-five years, AE is still "the" name when talking of an aviatrix; her

disappearance is the most studied aspect of her life. This book continues the trend. For an introduction to aviation's biggest mystery, it is a great place to start!

*Scott R. Marquiss, Docent, NASM's National Mall and UHC Facilities*



**Inside the Iron Works: How Grumman's Glory Days Faded.** By George M. Skurla and William H. Gregory. Annapolis Md.: Naval Institute Press, 2004. Photographs. Index, Bibliography. Pp. xiv, 225. \$32.95 ISBN: 1-55750-329-X

This book provides an inside view of the triumphs and disappointments of America's onetime top aerospace company. Its thirteen chapters define how the company got started, grew through World War II into the Cold War era, and faded from its glory days as the Cold War ended. Grumman's former president and chairman, George Skurla, and William Gregory, a former editor of *Aviation Week and Space Technology*, trace the company's rise from its humble beginnings in the 1930s, through World War II, to the success of the Navy's A-6 Intruder, E-2C Hawkeye, EA-6B Prowler, F-14 Tomcat, and NASA's Apollo Lunar Module. The authors describe how Grumman's former president, Lew Evans, bought into the F-14 contract which nearly bankrupted the company and led to the Navy's lightweight fighter dilemma. They describe how the F-14 program was fixed and how the F-14 was sold to Iran by putting on a better flight demonstration at Andrews AFB than the F-15 could do for the Shah. Grumman's challenges at Kennedy Space Center during the lunar landing missions are discussed as are problems of coping with Congress and the customer. The well established company failed to keep itself together and was eventually taken over by one of its biggest competitors. Written as part history and part memoir, the book describes the rise and fall of Grumman through the eyes of Skurla who began his career as an apprentice engineer in 1944, then worked as a mid-level engineering manager and, ultimately, as president and chief executive officer of Grumman. He retired in 1986 and died in 2001.

This is a case study of how a multibillion-dollar business declined through lack of integrated business planning, internal scandals, misguided investments, and stark differences between making and marketing military products versus commercial products. Skurla's candid comments from the shop floor, the carrier deck, and the executive board room are provided along with remarks from top naval aviators and other Grumman personnel to explain why the company wound up as a junior partner in another firm. Of particular interest are the oral history remarks compiled by the

National Air and Space Museum of the late George Spangenberg, the Navy's Mr. Fighter, which cite how the intrusion of politics upset the planned procurement of the F-14 and imposed an unreasonable fixed-price ceiling in the original contract. Skurla laments about the spin off and sale of the successful Gulfstream business aircraft program while watching the progressive write-off of nearly a half billion dollars over ten years on failed diversification programs for Flexible buses, hydrofoil boats, Dormavac cold storage modules, windmills, waste disposal systems, and other non-aerospace technologies. As a result, some aerospace technologies were not developed (e.g., missiles and stealth), and some business opportunities were allowed to pass by, such as teaming with British Aerospace on its V/STOL Harrier aircraft that the U.S. Marine Corps eventually bought. Of course, the successful formation of Grumman Data Systems and winning the USAF J-STARS target detection aircraft program were attractive assets for the eventual merger with Northrop. Skurla mused about Grumman's unfulfilled destiny. Had the right men made the right decisions at the right times, there might be a Grumman Northrop or even a Grumman Boeing Northrop Corporation today.

Included are the insights of many of Skurla's coworkers and contacts within the Navy, USAF, and NASA. While the ending is sad, this book is bound to be of great interest to former Grumman employees who "worked their tails off" trying to retain the company's glory as well as everyone on the outside who dealt with Grumman and its products. At the very least, it provides an interesting account of how lack of good business strategy and planning for diversified products can lead a high-tech company astray.

*Ronald W. McCaffrey, retired Grumman engineer.*



**Then There Were Six: The True Story of the 1944 Rangoon Disaster.** By Karnig Thomasian. Bloomington Ind.: Author House, 2004. Illustrations. Photographs. Pp. ix, 160. \$20.00 Paperback ISBN: 1-4184-4931-8

This book is a personal memoir of the World War II service of Karnig Thomasian, a B-29 gunner. Captured by the Japanese in December 1944, Thomasian describes his harrowing experience as a prisoner of war (POW). As World War II history, it provides the reader with an interesting first-person account by a B-29 crewmember but gives few details on the overall B-29 program and operations. However, for those readers who typically associate the B-29 with firebombing raids on Japanese cities and the atomic bombs, Thomasian provides a glimpse into the earlier, generally unsuccessful, B-29 efforts from India and China.

The book's subtitle refers to a December

14, 1944, mission to Burma. Four B-29s were lost and seven others damaged when bombs collided and exploded in mid-air. Thomasian and five of his crewmates were among the twenty-nine airmen who survived to be captured by the Japanese (hence the title "Then There Were Six"). After a short biographical introduction and some details on his training and deployment to India, he jumps to the Burma mission and his bailout and capture by the Japanese. Details on his prior combat missions and daily life in India are unfortunately missing.

Thomasian's story after his capture is one of perseverance and faith overcoming the brutality so often faced by Allied POWs in the Pacific. He relates several poignant incidents, including the singing of "Silent Night" by a fellow POW on Christmas Eve 1944 and a secret Easter service conducted with the help of the dozen Jewish POWs who distracted the Japanese guards. Included are several drawings by Thomasian himself, who studied art after the war.

He finishes the book with a brief description of his return home to New York City following his liberation in May 1945 and his postwar career and family life. Since retirement in 1996, he has worked with ex-POWs and other veterans on disability compensation.

*Then There Were Six* lacks an index and bibliography. For additional background on B-29 operations, the best source is Kenneth P. Werrell's *Blankets of Fire: U.S. bombers over Japan in World War II*, published by the Smithsonian Institution. His book includes a short description of the December 14, 1944, Burma mission.

*Maj. Jeffrey P. Joyce, USAF (Ret), Docent, National Air and Space Museum.*



**Rockets and Missiles: The Life Story of a Technology.** By A. Bowdoin Van Ripper. Westport, Ct. and London: Greenwood Press, 2004. Photos. Illustrations. Glossary. Index. Pp. xvi, 176. \$45.00 ISBN: 0-313-32795-5

I perused the book, *Rockets and Missiles*, but focused on Chapters 5 and 6. Entitled, "Rockets for Research, 1945-60," Chapter 5 surveys postwar research by the U.S. Army and Navy. Curiously, it fails to mention the research performed by the Army Air Forces (AAF), the predecessor of the United States Air Force. (Elsewhere in the book, the author mentions the AAF, but mistakenly calls it the Army Air Force—singular.) Thus, the reader is left with the impression that no research was performed by the AAF, or later by the United States Air Force. Similarly, only brief mention is made of the contributions of the world famous aerodynamicist Dr. Theodore von Karman, but not with reference to the AAF or his long-term association as chairman of the AAF Scientific Advisory Committee, later

the Air Force's Scientific Advisory Board.

Chapter 6, "Ballistic Missiles and the Cold War, 1945-1990," also fails to mention the role of the Air Force in missile R&D. This chapter starts with the story of the Germans' V-2 and then segues to the Soviet postwar program, also beneficiaries of the German V-2 experience. The next logical, central figure in the U.S. account is the former top scientist of World War II Nazi Germany's missiles program, Dr. Wernher von Braun. Van Riper devotes much attention von Braun and his work on the U.S. Army's Redstone ballistic missile. In passing, Van Riper makes mention of the Thor intermediate-range ballistic missile (IRBM), but neglects to point out that the missile was developed and fielded by the U.S. Air Force.

Perhaps the oddest episode in this book is the case of the Atlas intercontinental ballistic missile (ICBM). As most readers of *Air Power History* know, the Atlas was the first ICBM developed by the United States, specifically the by the Air Force. It had its genesis in the MX-774B program, an effort built on the V-2 but improved considerably beyond it by the Air Force. Under contract to the Air Force, Dr. Karel J. Bossart of Convair made several major changes in the design of the V-2 by replacing its individual tankage and employing, instead, the MX-774's skin to house the oxidizer and propellant liquids. Bossart also installed swiveling engines, and made the warhead separable. He thereby improved the missile's weight, control, and survivability.

Moreover, as the Air Force continued its missiles development, it also created the infrastructure for the ICBM program by developing liquid rocket engines far more powerful than those on the V-2, it built test stands and firing ranges, fabricated new airframes, designed multiple stage missiles,

introduced computers into the missiles, developed an array of guidance instruments, developed liquid and solid rocket fuels, created launch stands and underground launch facilities, refined accuracy, improved reliability... the list goes on and on.

Again, Van Riper's research comes into question as he makes no mention of the Teapot Committee, a study group under OSD auspices organized, funded, and staffed by the Air Force in 1953, to shake out the missile programs for all of the services. The resultant was to designate the Air Force as executive agent for the ICBM program; President Dwight D. Eisenhower subsequently assigned to USAF the Nation's top priority. Nor is any mention made of the man who led that effort—Gen. Bernard A. Schriever, USAF, and who headed the Western Development Division. This organization and its successors produced the Atlas, Titan, Thor, and Minuteman long-range ballistic missiles—to name the most prominent—that stood guard for the Nation throughout the Cold War.

Typical of the book's egregious omissions of the Air Force's role appears in a photograph of an Atlas ICBM (page 78). The caption clearly shows the Atlas, but fails to mention its lineage. Instead, the caption talks only about NASA. Similarly, not until page 82 does the author acknowledge the Thor IRBM as belonging to the Air Force, but muddies the subject by labeling Thor as "undistinguished." What in the world is an undistinguished missile? Actually, Thor had quite a career, serving as part of one leg of America's Triad of deterrence at the height of the Cold War. Indeed, OSD chose to field both the USAF's Thor and Army's Jupiter missiles (it assigned Jupiter to the USAF) to be deployed to the UK, Italy and Turkey.

I suspect that the problem with this

book is due to the author's limited research. Dr. Van Riper, a history of science professor at Southern Polytechnic State University in Marietta, Georgia, could and should have read more and a greater selection of books.

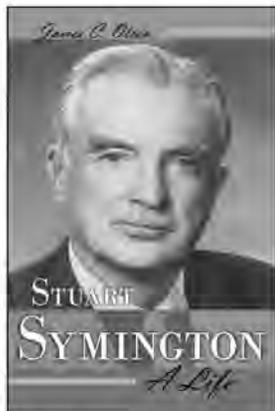
For a corrective to many of the mistakes cited in the book above, readers are referred to:

**Blazing the Trail: The Early History of Spacecraft and Rocketry.** By Mike Gruntman. Reston, Va.: American Institute of Aeronautics and Astronautics, 2004. everything pp. xiv, 503. \$59.95 ISBN: 1-56347-705-X

Although not a historian, Mike Gruntman—a professor of aerospace engineering at the University of Southern California—manages to get the history right. Gruntman got it right because he conducted his research more thoroughly than did Van Riper, especially with respect to consulting official histories. The latter are based largely on primary documentary sources and oral history interviews with participants.

Writing in a "compressed lecture-notes style," Professor Gruntman's intended audience are college and high school instructors and students. Gruntman's book is a comprehensive account from the beginning of rocketry to the entry into space in the 1960s. It is accurate and detailed, without being overly technical, and honest (showing failures as well as successes). The book makes excellent use of sidebars to provide technical details in digestible, bite-sized bits. It is easy to read and makes an excellent reference work. *Blazing the Trail* is highly recommended.

Jacob Neufeld, Potomac, Maryland.



## Stuart Symington

### A Life

James C. Olson

*Stuart Symington* is the first full-length biography of one of Missouri's most influential and effective twentieth-century political leaders. Known as "Harry Truman's Trouble Shooter," Stuart Symington was unanimously confirmed by the Senate for six major presidential appointments—a record. As assistant secretary of war for air, he represented the War Department in negotiations leading to the National Security Act of 1947, which unified the armed services into a single national military establishment under the secretary of

defense. During his tenure as secretary of the air force, he steered that organization through a series of crises, including racial integration, as it developed into an independent entity within the Defense Department. **560 pages, 40 illustrations, \$39.95**

"Stuart Symington's story is as fascinating as it is complicated, and James C. Olson tackles the Herculean task of sorting it all out. This well-crafted book provides the first comprehensive portrait of Symington and his multifaceted career. The writing is clear and to the point. The research is impressive. Olson's access to personal papers still in the hands of the family afforded him valuable insights about Symington and his actions. *Stuart Symington: A Life* is a fascinating read."—William E. Foley

www.system.missouri.edu/upress

UNIVERSITY OF MISSOURI PRESS

Phone: 1-800-828-1894

# Books Received

Arnold, David Christopher. *Spying from Space: Constructing America's Satellite Command and Control Systems*. College Station: Texas A&M University Press, 2005. Photographs. Notes. Bibliography. Index. Pp. xiii, 209. \$32.95 ISBN: 1-58544-385-9

Chertok, Boris. *Rockets and People, Vol. I*. Washington, D.C.: NASA History Division, 2005. [NASA SP-2005-4110] Photographs. Notes. Glossary. Index. Pp. xxix, 402.

Cornelius, Wanda and Thayne Short. *Ding Hao: America's Air War in China, 1937-1945*. Gretna, La.: Pelican Publishing, 2004. Photographs. Appendices. Bibliography. Index. Pp. x, 505. \$19.95 Paperback ISBN: 1-56554-523-0

Dawson, Virginia P. *Ideas into Hardware: A History of the Rocket Engine Test Facility at the NASA Glenn Research Center*. Cleveland, Ohio: NASA Glenn Research Center, 2004. Photographs. Appendices. Bibliography. Index. Pp. xv, 144.

*Dwight D. Eisenhower, National Security Conference, 2004: Final Report*. Washington, D.C.: The Atlantic Council, et al., 2004. Pp. 103. [www.eisenhowerseries.com](http://www.eisenhowerseries.com)

Hodgson, Marion Stegeman. *Winning My Wings: A Woman Airforce Service Pilot in World War II*. Albany, Tex.: Bright Sky Press, 2004. [Originally, Naval Institute Press, 1996] Photographs. Pp. xi, 286. \$24.95 ISBN: 1-931721-47-5

Hua, H. Mike. *Lost Black Cats: Story of Two Captured Chinese U-2 Pilots*. Bloomington, Ind.: Author House, 2005. Photographs. Pp. x, 208. Paperback ISBN: 1-4184-9917-X

Lynch, Kristin F. et al. *The Air Force Chief of Staff Logistics Review: Improving Wing-Level Logistics*. Santa Monica, Calif.: Rand Corp., 2005. Tables. Diagrams. Notes. Appendices. Glossary. Bibliography. Index. Pp. xxi, 178. \$20.00 ISBN: 0-8330-3658-0

Mahbubani, Kishore. *Rebuilding Trust between America and the World: Beyond the Age of Innocence*. New York: Public Affairs, 2005. Notes. Appendices. Index. Pp. xx, 235. \$26.00 ISBN: 1-58648-268-8

Mitchell, William P. *From the Pilot Factory*. College Station: Texas A&M University Press, 2005. Photographs. Notes. Bibliography. Index. Pp. x, 195. \$32.95 ISBN: 1-58544-387-5

Peszke, Michael Alfred. *The Polish Underground Army, the Western Allies, and the Failure of Strategic Unity in World War II*. Jefferson, N. Car. and London: McFarland & Co., 2005. Photos. Notes. Appendices. Bibliography. Index. pp. x, 244. \$45.00 ISBN: 0-7864-2009-X

Shaw, Frederick J., Ed. *Locating Air Force Base Sites: History's Legacy*. Washington, D.C.: Air Force History and Museums Program, 2004. Maps. Tables. Diagrams. Photographs. Notes. Appendices. Glossary. Bibliography. Index. Pp. ix, 215.

Stein, Allan T. *Into the Wild Blue Yonder: My Life in the Air Force*. College Station: Texas A&M University Press, 2005. Maps. Photographs. Index. Pp. xi, 181. \$29.95 ISBN: 1-58544-386-7

\* Tripp, Robert S. et al. *Supporting Air and Space Expeditionary Forces: Lessons from Operation Enduring Freedom*. Santa Barbara, Calif.: Rand 2004. Maps. Tables. Diagrams. Illustrations. Photographs. Notes. Appendices. Glossary. Bibliography. Index. Pp. xlvii, 119. \$20.00 Paperback ISBN: 0-8330-3517-7

## PROSPECTIVE REVIEWERS

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

Col. Scott A. Willey, USAF (Ret.)  
3704 Brices Ford Ct.  
Fairfax, VA 22033  
Tel. (703) 620-4139  
e-mail: [scottwille@aol.com](mailto:scottwille@aol.com)

\* Already under review.

## The President's Report

By Lt. Gen. Michael A. Nelson, USAF (Ret.)

Whether by GPS, Mapquest, or the old folding paper variety, we all use maps to help us get where we want to go. Okay, some of you, mostly male, won't use a map because—well, because. But most *sensible* people use maps and we, who are privileged to lead this Foundation, certainly count ourselves among the sensible. So, we have built our own Roadmap for 2005, using as our guide the Foundation's Strategic Plan, approved by the Trustees last fall.

What's in it? Well, the highlights can be found in these six objectives: 1) increase our outreach by a variety of means; 2) strengthen our ties with the USAF; 3) preserve Air Force heritage, in this case by developing a companion *Chronology of Air Force History* to go with our popular coffee table book, *Air Force*; 4) upgrade our technology aggressively, primarily by creating a brand new website; 5) expand our membership; and 6) seek sources of funding for our activities.

How are we doing? Well, pretty well so far. You'll soon be able to look at our completely new, user-friendly website, opening this summer. Eventually, we want this to be a premier site for anyone interested in the heritage of the USAF, as well as a place to join the Foundation, change addresses, buy stuff, get up-to-date news about military aviation history—and more.

We have already taken steps to strengthen our ties to the active Air Force and will continue this campaign indefinitely. And I'm happy to say the *Chronology* book is now under contract with a well-known and respected military aviation expert.

We're showing less progress thus far in attracting new members, but I am confident that the result of all our efforts will be increased recruitment. Certainly our flagship, this magazine, has been so good consistently that it alone should be a people magnet. We only need to market it better, which our website and other initiatives will do.

Now, about the funding. We are looking at a variety of sources of income, and I expect these to produce results to help us get airborne. We're on the takeoff roll today because of some very generous Trustees who have challenged each other and the membership at large to ante up the funds needed to get where we're going. In fact, Lt. Gen. John Conaway, USAF (Ret.) has an open \$5,000 challenge, which still has some space to be filled, and Maj. Gen. John Patton, USAF (Ret.), is ready to toss out his own \$5,000 challenge once we fulfill General Conaway's.

If you'd like to help us on our way, please mail a check to the Foundation. We can double our income through one of these challenges.

To sum up, we have established ambitious targets and a clear map with which to get there. Now, we are assembling an airplane capable of flying the route. I urge everyone to help if you can, but in any case, enjoy this magazine and tell others about it and about the Air Force Historical Foundation.

# Coming Up



Compiled by George Cully

## Jun 28-30

The Association for Unmanned Vehicle Systems International will host its annual symposium and exhibition entitled **Unmanned Systems North America 2005** at the Baltimore Convention Center in Baltimore, Maryland. Contact:

AUVSI  
2700 S. Quincy Street, Suite 400  
Arlington, VA 22206  
(703) 845-9671, Fax x9679  
e-mail: [info@auvsi.org](mailto:info@auvsi.org)  
website: [www.auvsi.org](http://www.auvsi.org)

## Jul 15-17

The **Center for the Study of War and Society** and the **University of Tennessee Press** will host a conference on the 60th anniversary of the atomic bomb and the impact of the development of nuclear weapons on American society and culture. Contact:

Prof. G. Kurt Piehler, Director  
Center for the Study of War and Society  
220 Hoskins Library  
University of Tennessee  
Knoxville TN 37996-0128  
(865) 974-7094  
e-mail: [gpiehler@utk.edu](mailto:gpiehler@utk.edu)  
website: [web.utk.edu/~csws](http://web.utk.edu/~csws)

## Jul 21-24

The **Aircraft Engine Historical Society** will hold its 2nd annual convention in Kalamazoo, Michigan. Contact:

AEHS, Inc.  
1019 Old Monrovia RD NW, # 201  
Huntsville, AL 35806  
(256) 683-1458  
e-mail: [info@enginehistory.org](mailto:info@enginehistory.org)  
website: [www.enginehistory.org](http://www.enginehistory.org)

## Jul 24-30

The International Committee for the History of Technology will present **Electronics in the 20th Century: a Symposium** as a part of its participation in the XXIInd International Congress of History of Science. This year's theme is "Globalization and Diversity: Diffusion of Science and Technology throughout History." The meeting will be held in Beijing, China. Contact:

Alexander Magoun  
David Sarnoff Library  
201 Washington Road  
Princeton NJ 08543-5300  
609-734-2636, Fax: 609-734-2339  
e-mail: [amagoun@davidsarnoff.org](mailto:amagoun@davidsarnoff.org)  
website: <http://2005bj.ihns.ac.cn/index.frame.htm>

## Aug 5-7

The Yankee Air Museum will host its **7th Annual 'Thunder Over Michigan'** Fly-in and WWII Aviation Symposium at Willow Run Airport, in Belleville, Michigan. This year's program will feature the world's largest gathering of flyable WWII-era bombers, including

7 B-17s, 5 B-25s, 2 B-24s and a B-29, along with fighters, transports and amphibians. Contact:

The Yankee Air Museum  
P. O. Box 590  
Belleville MI 48112-0590  
e-mail: [yankeeamuseum@provide.net](mailto:yankeeamuseum@provide.net)  
website: [www.yankeeamuseum.org](http://www.yankeeamuseum.org)

## Aug 5-21

The **Society of American Archivists** will hold its annual meeting at the Hilton New Orleans Riverside Hotel in New Orleans, Louisiana. Contact:

Society of American Archivists  
527 S. Wells St., 5th Floor  
Chicago, IL 60607  
(312) 922-0140, Fax 347-1452  
website: [www.archivists.org/](http://www.archivists.org/)

## Aug 11-14

The **8th International Mars Society convention** will be held on the campus of the University of Colorado at Boulder. Contact:

The Mars Society  
P.O. Box 273  
Indian Hills, CO 80454  
website: [www.marssociety.org](http://www.marssociety.org)

## Aug 30-Sep 1

The **American Institute of Aeronautics and Astronautics** will host its Space 2005 conference at the Long Beach Convention Center in Long Beach, California. Contact:

AIAA  
1801 Alexander Bell Dr., Ste. 500  
Reston VA 20191-4344  
(703) 264-7551  
website: [www.aiaa.org](http://www.aiaa.org)

## Sep 8-9

The **Centre for Second World War Studies** will host a conference entitled "Defeat and Memory." The conference will be held at the University of Edinburgh in Edinburgh, Scotland. Contact:

Dr Jenny Macleod  
Center for Second World War Studies  
University of Edinburgh  
24 Buccleuch Place  
Edinburgh Scotland EH9 9LN  
e-mail: [jenny.Macleod@ed.ac.uk](mailto:jenny.Macleod@ed.ac.uk)

## Sep 8-11

The **Tailhook Association** will hold its annual naval aviation symposium and reunion at the Nugget Hotel in Sparks (Reno), Nevada. Contact:

The Tailhook Association  
9696 Businesspark Ave.  
San Diego, CA 92131  
(858) 689-9223 or (800) 322-4665  
website: [www.tailhook.org](http://www.tailhook.org)

## Sep 23-25

The **Great War Society** will hold its 16th Annual National Meeting at the Virginia War Museum in Newport News, Virginia. This year's theme commemorates the Society's 25th anniversary. Contact:

Dr Steve Gehrlich  
608 Grasson Lane  
Fruitland MD 21826  
e-mail: [segehrlich@salisbury.edu](mailto:segehrlich@salisbury.edu)  
website: [www.wfa-usa.org](http://www.wfa-usa.org)

## Sep 28-Oct 1

The Society for Military History will sponsor a slate of presentations at **The Northern Great Plains**

**History Conference** to be held at the Plaza Hotel in Eau Claire, Wisconsin. Contact:

Joe Fitzharris  
Department of History – Mail #4018  
University of St. Thomas  
2115 Summit Avenue  
St. Paul, MN 55105 USA  
651-962-5734 fax: 651-962-6360  
e-mail: jcfitzharris@stthomas.edu  
website: personal2.stthomas.edu/jcfitzharris/NGPHC/

**Sep 28-Oct 1**

**The Society of Experimental Pilots** will host its 49th annual symposium and reunion in Anaheim, California. Contact:

SETP  
P. O. Box 986  
Lancaster CA 93584-0986  
Tel.: (661) 942-9574, Fax 940-0398  
e-mail: setp@setp.org  
website: www.setp.org

**Sep 29-Oct 1**

**The Canadian Science and Technology Historical Association** will hold its 14th biennial conference at the Canadian Museum of Science and Technology in Ottawa, Canada. Contact:

Edward Jones-Imhotep  
Department of History  
University of Guelph  
Guelph (Ontario) N1G 2W1  
Canada  
e-mail: imhotep@uoguelph.ca  
website: www.er.uqam.ca/nobel/r20430/ahstc-cstha/english/home.html

**Oct 3-6**

In honor of the 100th anniversary of its involvement with, and support of aviation in the U.S., the **Society of American Engineers** will sponsor 2005 SAE Aerotech Congress and Exhibition. Its theme is “Where Technology Takes Off,” and it will be held at the Gaylord Texan Resort and Convention Center in Grapevine (Dallas/Ft. Worth region), Texas. Contact:

SAE International  
400 Commonwealth Dr.  
Warrendale PA 15096-0001  
website: www.sae.org/aerotech

**Oct 5-6**

**The U.S. Naval Institute** will host its 10th Annual Naval Warfare Symposium and Exhibition in Virginia Beach, Virginia. Contact:

U.S. Naval Institute  
Beach Hall  
291 Woods Road  
Annapolis MD 21402  
Tel.: (410) 295-1067, Fax x1048  
e-mail: frainbow@usni.org  
website: www.usni.org/

**Oct 5-9**

**The National D-Day Museum** will host an International Conference on World War II with a theme entitled “The War That Changed The World.” The conference also includes a World War II Film Festival; it will be held at the New Orleans Hilton Riverside and the Ernest N. Morial Convention Center in New Orleans, Louisiana. Contact:

The National D-Day Museum  
945 Magazine Street  
New Orleans LA 70130  
(877) 813-DDAY, Ext. 226  
e-mail: info@ww2conference.org  
website: www.ww2conference.org

**Oct 8-10**

**The George C. Marshall Foundation**, working in conjunction with the **McCormick Tribune Foundation** and the History Department of the **Virginia Military Institute**, will host “From Quagmire to Détente: The Cold War from 1963 to 1975.” The conference will be held at the Marshall Center in Lexington, Virginia. Contact:

Prof. Malcolm Muir, Jr.  
Department of History  
Virginia Military Institute  
Lexington VA 24450  
(540) 464-1224  
e-mail: muirm@vmi.edu

**Oct 14-15**

The 2006 topic for the annual conference of the **Centre for Conflict Studies** will be “Terrorism in History: The Strategic Impact of Terrorism From Sarajevo 1914 to 9/11.” This gathering will be held at the University of New Brunswick, Fredericton, NB, Canada. Contact:

Dr. David Charters  
Centre for Conflict Studies  
University of New Brunswick  
(506) 453- 4587, Fax (506) 447-3175  
e-mail: charters@unb.ca  
website: www.h-net.org/announce/show.cgi?ID=144293

**Oct 27-28**

**The Center for Cryptologic History** will host its 2005 Symposium on Cryptologic History near Baltimore, Maryland. Contact:

National Security Agency  
Center for Cryptologic History  
Suite 6886  
Fort Meade, MD 20755  
301-688-2336  
e-mail: history@nsa.gov <mailto:history@nsa.gov>  
website: www.nsa.gov/cch/

**Nov 3-6**

**The Society for the History of Technology** will collocate its annual meeting in conjunction with the **History of Science Society**; the meeting will be held in Minneapolis, Minnesota. Contact:

Dan Holbrook  
Marshall University  
Dept. of History  
One John Marshall Blvd.  
Huntington, WV 25705  
e-mail: holbrook@shotprogram.org  
website: www.shotprogram.org

**Nov 10-12**

**The Rothmere American Institute at Oxford University** will host a conference on The United States in the 1980s: The Reagan Years, including panel presentations on “Reagan and the American Military.” Contact:

Ruth Parr, Assistant Director, Academic Programme  
Rothermere American Institute,  
Oxford, OX1 3TG United Kingdom  
e-mail: academic.programme@rai.ox.ac.uk.

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

George W. Cully  
10505 Mercado Way  
Montgomery Village, MD 20886-3910  
e-mail: warty@comcast.net

## Letters

Lt. Sean Atkins' article, "Unwanted Allies," in the winter edition [Vol. 51, No. 4] of *Air Power History*, was of great interest to me. I was the Deputy Director of the Ground Launched Cruise Missile Planning Group in the Air Staff (AF/XOXXG), 1981-82, and this article brought back to mind a period of intense activity and effort, as we simultaneously tried to complete the development, infrastructure, training, governing policy and deployment of this important NATO nuclear deterrent.

As near as I can recall, Atkins covers the issues concerning our deployment to the UK rather completely, with one significant exception: that of the massive funding of the anti-nuclear "movements," in the U.S. and in Europe, by the Soviets—as documented in the Verona Reports and other sources that became available upon the collapse of the Soviet Union, especially in the recovered secret records in East Germany.

To cover in such detail the anti-nuclear campaign waged in Britain and elsewhere, without reference to the source of much of the financial and material support that facilitated these protests is to present an incomplete picture of these events. The protests made our efforts much more difficult, and the courage and determination of our NATO allies, Britain, Belgium, Italy and Germany, much more significant, in the ultimate success of the program—the decision by the Soviet Union to withdraw the very dangerous SS-20 missile system from Europe.

Lt. Atkins has made an important contribution to our understanding of the political and policy issues of overseas deployment of U.S. forces and systems, especially as they apply to current and future requirements for such basing.

*Col. Frederic H. Smith, III, USAF (Ret.),  
Peachtree City, Georgia*

### Author's Reply

I would only like to thank Colonel Smith for his insightful comments. My research was primarily focused on domestic issues and did not give proper weight to the influence of Soviet funding to the anti-cruise missile protest. Additionally, outside support would likely be a significant influence on current and future negative domestic reactions. Iranian support to Iraqi insurgents or Al Qaeda funding to domestic terrorist groups in states that

host U.S. forces are just a couple examples that come to mind. Outside support and funding will certainly be considered in future research and writing I do on this subject.

*Lt. Sean Atkins, Hickam AFB, Hawaii.*

## News

### And the Winner is . . .

The Foundation's Publications Committee met this spring to select the **Outstanding Article in Air Power History** published during 2004. Chaired by John F. Kreis, a Foundation Trustee, the committee included Kenneth Alnwick, Don Baucom, Al Hurlley, Don Lopez, John Shaud, and Robert Vickers. The winning article was "Fighting Machines for the Air Service, AEF," appearing in the Fall issue, Volume 51, Number 3. Theodore M. Hamady, (**see picture below**) the author of the article will be awarded a \$500 prize.

Mr. Hamady's article bested four other contestants: Don Baucom's, "Eisenhower and Ballistic Missile Defense: The Formative Years;" Dino Brugioni's, "The Effects of Aerial and Satellite Imagery on the 1973 Yom Kippur War;" James Corum's, "The Luftwaffe and its Allies in World War II: Parallel War and the Failure of Strategic and Economic Cooperation;" and Manny Horowitz's, "Were There Strategic Oil Targets in Japan in 1945?"

The committee members considered and scored each of the nominated articles in the categories of relevance and importance of the article, logic in construction and presentation of facts, readability, thesis construction and development, and scholarship. The judges praised the high quality of the articles published throughout the year 2004.



### Another Air Power History Article is a Finalist

The Army Historical Foundation announced that Dr. Daniel L. Haulman's article, "Before D-Day Dawn: Reassessing the Troop Carriers at Normandy," *APH*, Vol. 51, No. 2, Summer 2004, has been selected as a finalist for the Distinguished Writing Award. The winners will be announced in June.

### Martin Blumenson (1918-2005)

One of the foremost historians of World War II, Martin Blumenson died of cancer on April 15, 2005. He was eighty-six.

Blumenson wrote more than twenty books, but is best known for his biographies of Gen. George S. Patton, Jr. Born in New York City, Blumenson was raised in New Jersey. He received BA and MA degrees in history from Bucknell University in Pennsylvania, and a second MA from Harvard. A talented pianist, Mr. Blumenson performed at Carnegie Hall as a youth. He also formed and played in a jazz band.

During World War II he was an officer and a U.S. Army historian, serving at Patton's Third Army headquarters. He remained in Europe after the war, where he met and married Genevieve Delbert. As an Army Reservist, he was recalled to active duty during the Korean War. In 1954 he moved to Washington and remained there permanently. He worked for the Army's history office until 1967. Blumenson also wrote biographies of Generals Eisenhower and Mark Clark. He became an independent scholar and writer in 1970. Among his books at the time is his history of the Air Force in Viet Nam. He lectured and taught at George Washington University, West Point, and the Army and Navy War Colleges.

His final work, "Heroes Never Die," is a collection of essays about military commanders." Mr. Blumenson's wife died in 2000. He is survived by his son John J. G. Blumenson of Toronto.

## Notices

### The Edward S. Miller Research Fellowship in Naval History.

The Naval War College Foundation intends to award one grant of \$1,000 to the researcher who has the greatest need and can make the optimum use of research materials for naval history located in the Naval War College's Archives, Naval

Historical Collection, and Henry E. Eccles Library. A guide to the College's manuscript, archival, and oral history collections may be found on the Naval War College's website <http://www.nwc.navy.mil>. Click on "Library," then "Library Publications," then "Naval Historical Collection." Further information on the collections and copies of the registers for specific collections are available online or on request from the Head, Naval Historical Collection. E-mail: [cherpake@nwc.navy.mil](mailto:cherpake@nwc.navy.mil).

The recipient will be a Research Fellow in the Naval War College's Maritime History Department, which will provide administrative support during the research visit. Submit detailed research proposal that includes statement of need and plan for optimal use of Naval War College materials, curriculum vitae, at least one letter of recommendation, and relevant background information to Miller Naval History Fellowship Committee, Naval War College Foundation, 686 Cushing Road, Newport RI 02841-1207, by 1 August 2005.

For further information, contact the chair of the selection committee via e-mail at [hattendj@nwc.navy.mil](mailto:hattendj@nwc.navy.mil). Employees of the U.S. Naval War College or any agency of the U.S. DoD are not eligible for consideration; EEO/AA regulations apply.

## Reunions

The **22d Tactical Fighter Squadron** will hold its reunion on June 2-5, 2005, in Scottsdale, Arizona. Contact:

Carl G. Schneider  
(480) 595-7668  
e-mail: [dukesch@aol.com](mailto:dukesch@aol.com)

The **394th Bomb Group 584th, 585th, 586th, and 587th Bomb Sqs.** (World War II B-26) will hold its reunion on June 3-5, 2005, in Valley Forge, Pennsylvania. Contact:

Elden Shook  
PO Box 77  
Enon, OH 45323  
(937) 864-2983  
e-mail: [shook585@aol.com](mailto:shook585@aol.com)

**FB-111A** (Aircrew and staff) reunion will be held July 21-24, 2005, in Portsmouth, New Hampshire. Contact:

Dave Dow  
e-mail: [davedow@earthlink.net](mailto:davedow@earthlink.net)  
website:  
<http://members.cox.net/fb111reunion>

The **106th Veterans of Foreign Wars** annual convention will be held August 20-

25, 2005, in Salt Lake City, Utah. Contact:  
Vanessa Kane, CMP  
e-mail: [vkane@vfw.org](mailto:vkane@vfw.org) or  
Diane Putthoff  
e-mail: [dputthoff@vfw.org](mailto:dputthoff@vfw.org)  
1-800-325-9377.

The **Sampson AFB Veterans Association** will hold its reunion on September 8-11 at Sampson State Park, on Seneca Lake, Romulus, N.Y. Contact:

Chip Phillips  
PO BOX 331  
Williamsville, N.Y. 14231-0331  
(716) 633-1119  
e-mail: [chip34@aol.com](mailto:chip34@aol.com)

The **27th Fighter Wing Association** (Kearney/Bergstrom era) will hold its reunion on September 22-24, 2005, in San Antonio, Texas. Contact:

John McConnell  
(210) 824-1329  
e-mail: [johnmc@stic.net](mailto:johnmc@stic.net)

The **459th Bomb Group Association** (World War II, Fifteenth Air Force), will hold its reunion on September 29-October 2, 2005, in Shreveport, Louisiana. Contact:

Charles "Skip" Johnson #1388  
PO Box 6419  
Bossier, LA 71171  
(318) 549-0522  
or  
John Devney #002  
90 Kimbark Rd  
Rochester, NY 14610-2738  
(585) 381-6174

The **27th Air Transport Group** (310, 311, 312, 325th Ferrying Sqs; 86, 87, 320, 321st Transport Sqs.), will hold its reunion on September 29-October 2, 2005, in San Antonio, Texas. Contact:

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

The **Fina-Commemorative AIRSHO 2005** will take place October 1-2, 2005, at the Midland (Texas) International Airport. Contact:

Tina Corbett  
CAF Headquarters  
PO BOX 62000  
Midland, TX 79711-2000  
(432) 563-1000 ext.2231  
[www.commemorativeairforce.org](http://www.commemorativeairforce.org)

The **306th Bomb Group** reunion will be held October 19-20, 2005, in San Antonio, Texas. Contact:

Royce Hopkins  
35427 Pontiac Dr.  
Brookshire, TX 77423-9541

The **20th Fighter Wing** and **20th Fighter Group Associations** will hold their reunion on October 26-30, 2005, in Tucson, Arizona. Contact:

Ray L. Rider  
5031 South Auckland Court  
Aurora, CO 80015-3911  
or  
Dennis L. Schaan  
5645 Nicole Court  
Las Vegas, NV 89120-2226

The **TAC Missileers** will hold their reunion in 2005 in Nashville, Tennessee. Contact:

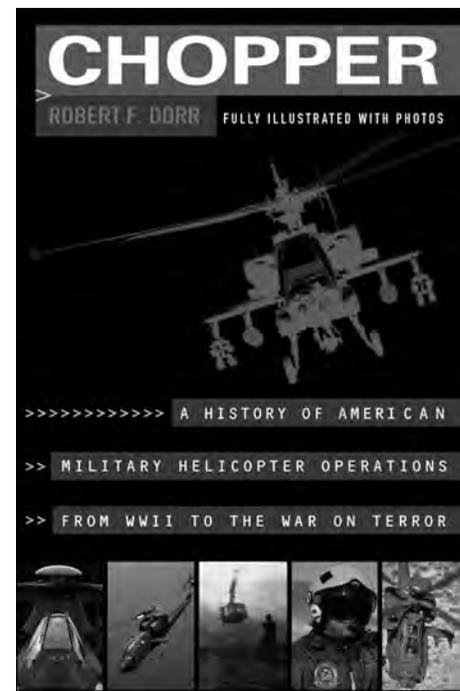
Joe Perkins  
(904) 282-9064  
e-mail: [perkster@fcol.com](mailto:perkster@fcol.com)

**USAF Pilot Training Class 56-D** will hold its reunion November 3-6, 2005, at Colorado Springs, Colorado. Contact:

Troy Hanson  
6547 No. Academy Blvd. #451  
Colorado Springs, CO 80918  
(719) 632-1179  
e-mail: [troyhanson@juno.com](mailto:troyhanson@juno.com)

**Troop Carrier Homecoming** for all troop carrier veterans from World War II through Vietnam, Galveston, Texas, November 9-13, 2005. Contact:

Sam McGowan  
3727 Hill Family Lane  
Missouri City, TX 77459  
e-mail: [SEMCGowanJr@aol.com](mailto:SEMCGowanJr@aol.com)





The readers of *Air Power History* know their airplanes. Once again, they proved it by identifying last issue's "What Is It?" flying machine. Fourteen readers, including many of the usual suspects, sent in postcards. All but one got it right.

Last issue's mystery plane was an Army Air Corps Grumman OA-9 amphibian, photographed in the late 1930s by Steve Savko.

OA-9 was the Army's term for the "observation, amphibian" military version of the twin-engine Grumman G-21 Goose, a utility transport that made its initial flight on May 29, 1937. In military circles, the plane is more familiar as the JRF, its name in Navy and Coast Guard service.

Our follow-up photo, taken by J. Meyer and provided by Norman Taylor, shows another OA-9 Goose (serial no. 38-581) assigned to the 71st Air Base Squadron at Gander, Newfoundland, and seen on the Humber River in Newfoundland in September 1943.

A typical Goose was powered by two 450-horsepower Pratt & Whitney R-985 radial engines. The first aircraft in the series went to civilian owners in July 1937, only weeks after its initial flight.

The Royal Canadian Air Force subsequently became the first military buyer, but it was the Army Air Corps that invested in the Goose in significant numbers, buying twenty-six of the planes. During the December 7, 1941, Japanese attack on Pearl Harbor, two OA-9s were destroyed on the ground. The Army later acquired five more OA-9 and five OA-13 models.

The Navy acquired several hundred Gooses in JRF-1 through JRF-6 versions, some of which were still in service in the 1950s. Grumman manufactured 345 examples of this aircraft in all of its civilian and military guises.

Our "History Mystery" winner is Steven P. McNicoll of De Pere, Wisconsin. Thanks to all readers who joined in our "name the plane" exercise.

## This Issue's Mystery Plane

Once more, we present the challenge for our ever-astute readers. See if you can identify this month's "mystery" aircraft. It's a helicopter this time. But remember, please: postcards only. The rules, once again:

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

2. Correctly name the aircraft shown here. Also include your address and telephone number, including area code. If you have access to e-mail, include your electronic screen name. Note, however, that History Mystery entries should not be submitted by e-mail.

3. A winner will be chosen at random from the postcards with the correct answer. The winner will receive an aviation history book as a prize.

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

