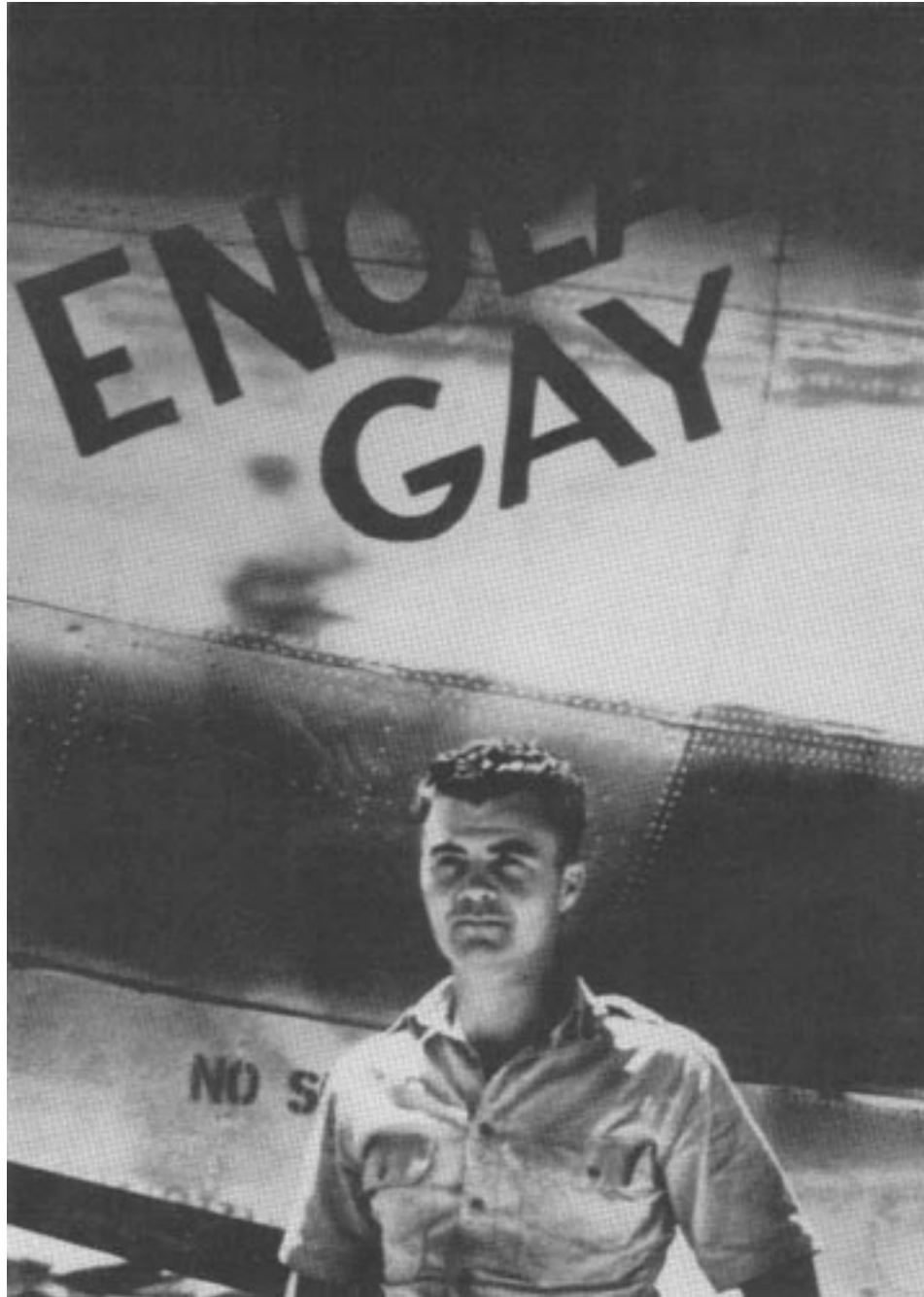


TIGHAR TRACKS

A PUBLICATION OF THE INTERNATIONAL GROUP FOR HISTORIC AIRCRAFT RECOVERY





... that they might escape the teeth of time and
the hands of mistaken zeal.

— JOHN AUBREY
STONEHENGE MANUSCRIPTS
1660

TIGHAR (pronounced “tiger”) is the acronym for The International Group for Historic Aircraft Recovery, a non-profit foundation dedicated to promoting responsible aviation archeology and historic preservation. TIGHAR’s activities include:

- Compiling and verifying reports of rare and historic aircraft surviving in remote areas.
- Conducting investigations and recovery expeditions in co-operation with museums and collections worldwide.
- Serving as a voice for integrity, responsibility, and professionalism in the field of aviation historic preservation.

TIGHAR maintains no collection of its own, nor does it engage in the restoration or buying and selling of artifacts. The foundation devotes its resources to the saving of endangered historic aircraft wherever they may be found, and to the education of the international public in the need to preserve the relics of the history of flight.

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COVER:

Col. Paul W. Tibbetts and his airplane shortly after their mission of August 6, 1945. Compare the lettering style used in the name with the photo on page 12.

Written by Richard Gillespie & Patricia Thrasher.

Research by The members of TIGHAR.

Design by Patricia Thrasher.

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Jim Tierney, Pasadena, California, TIGHAR #0821 – Proofreading.

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DEAD ZONE

As we continue to research and document the events of July 2, 1937 it becomes increasingly clear that the key to understanding what happened to Amelia Earhart and Fred Noonan, both before and after they were declared lost, is to be found in the only link they had to the world outside their airplane – radio. Except for one account (not written down until 1940) of an airplane said to have been heard high in the nighttime sky over the Gilbertese island of Tabituea, no one saw or heard the Electra after it left New Guinea. One hundred percent of what we know about the flight’s progress from that moment on comes from what was heard, and not heard, over the radio receivers of those who were listening. The most obvious clues to the situation aboard the Electra are to be found in the words which make up the messages. Perhaps the most famous, also generally regarded as Amelia’s last, was recorded in the USCG *Itasca*’s radio log at 0844-46 local time:

KHAQQ to Itasca. We are on the line 157 337. Will repeat message. We will repeat this on 6210 Kilocycles. Wait. *and then a few minutes later* We are running on north and south line.

Just what these words mean, if indeed they were recorded accurately, has been debated since the moment they were heard. But the information in the message is not limited to the words themselves. Because her voice was carried by radio, additional information is available from the known characteristics and limitations of those electromagnetic waves.

The *Itasca* received the above transmission on a frequency of 3105 Kilocycles (today known as Kilohertz) at maximum strength (five on a scale of one to five). The Electra’s Western Electric Type 13C transmitter had an output of only 50 watts, so the “S5” signal strength indicated to the captain of the *Itasca* that the aircraft was not more than 100 nautical miles from his ship. The frequency to which Amelia said she was changing, 6210 Kilocycles, was a standard aviation frequency. And yet, no further transmissions were

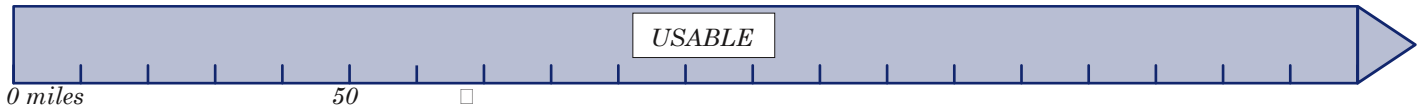
heard by the *Itasca*. What happened? The abrupt silence has long been seen as clear evidence of fuel exhaustion and a crash at sea.

**PLS STAY ON 3105 KCS;
DO NOT HR U ON 6210 ...**

But there is another explanation for the loss of radio contact. TIGHAR’s senior researcher for the Earhart Project, Randy Jacobson (#1364) has recently uncovered Fleet Communications Memorandum 2RM-37 dated 25 April 1937. This U.S. Navy document includes skip-distance diagrams which detail the performance to be expected from various radio frequencies during daytime and nighttime hours. Based upon these diagrams, Earhart’s two frequencies could be expected to behave as shown in Figure 1 on page 4.

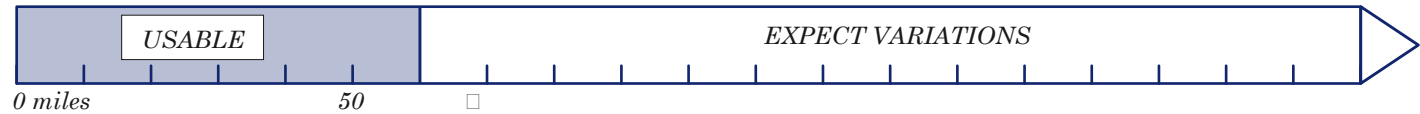
From these predictions it is easy to see why Earhart considered 3105 to be her “nighttime” and 6210 her “daytime” frequency. It also makes sense that, following her take-off, the radio operator at Lae heard several daytime position reports on 6210. The last one, received just before nightfall (17:18 New Guinea time), placed her 735 nm from Lae – within the usable daytime range

3105 KCS NIGHT



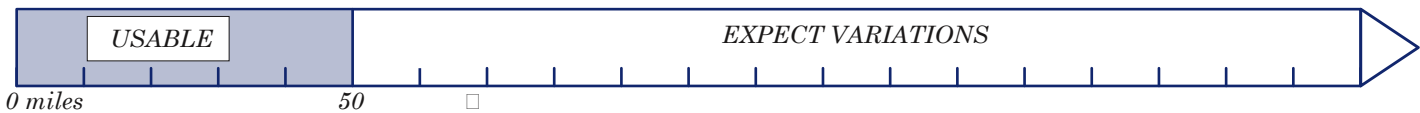
During hours of darkness, 3105 KCS is usable out to 1,000 miles.

3105 KCS DAY



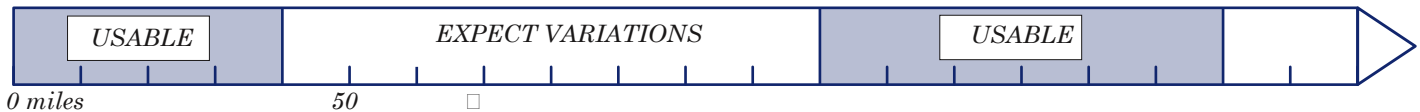
During daylight hours, 3105 KCS is not reliable at distances greater than 60 miles.

6210 KCS NIGHT



During hours of darkness, 6210 becomes usable again from 350 to 750 miles, is unreliable from 750 to 850 miles, then is usable all the way out to 4,000 miles.

6210 KCS DAY



During daylight hours, 6210 becomes usable again from 250 to 400 miles, is unreliable from 400 to 500 miles, then is usable out to 800 miles.

Figure 1.

for that frequency. Likewise, *Itasca* heard its first faint transmission from the airplane on 3105 at 02:45 local time when it was probably about 650 nm away. Gradually the signal got stronger as the *Electra* drew closer until, as dawn broke over Howland Island at 06:15 local time, Earhart's estimate that she was "about 200 miles out" was received at strength 3. Half an hour later, at 06:46 local time, she was coming in at strength 4 and announcing that she was "about 100 miles out." Because the 200 knot groundspeed implied by these two position estimates is not consistent with the *Electra*'s 130 knot cruising speed, there has been much speculation as to which, if either, was correct. Noting the severe degradation in range to be expected on 3105 after sunrise, and knowing that Noonan could not establish his Line Of Posi-

tion until after the sun was up, it now appears likely that the latter estimate was the more accurate.

By 07:42 local time the *Itasca* was hearing Earhart's voice at maximum strength (S5) in broad daylight on 3105 KCS and her signals remained strong through her final message an hour later. Based on the known output of her transmitter, the Coast Guard felt that she had to be within 100 miles. The Navy's skip-distance diagrams, however, indicate that she was even closer – within 60 miles – and, indeed, the Army Air Corps representative aboard the *Itasca*, Lieutenant Daniel Cooper, thought she was "probably within 50 miles." The loss of signal experienced by *Itasca* when Earhart switched to 6210 KCS was most logically the natural result of her being in a dead zone for that frequency.

Understanding that the boundaries indicated on the Navy's skip-distance diagrams are not absolute, we can, nonetheless, draw some general conclusions about where Earhart had to be when contact was lost at 08:46 local time and in what direction the Electra was most likely travelling. Because *Itasca* was hearing her in daylight on 3105, she was within roughly 60 miles of Howland Island. But because *Itasca* did not hear her when she switched to 6210, she was not

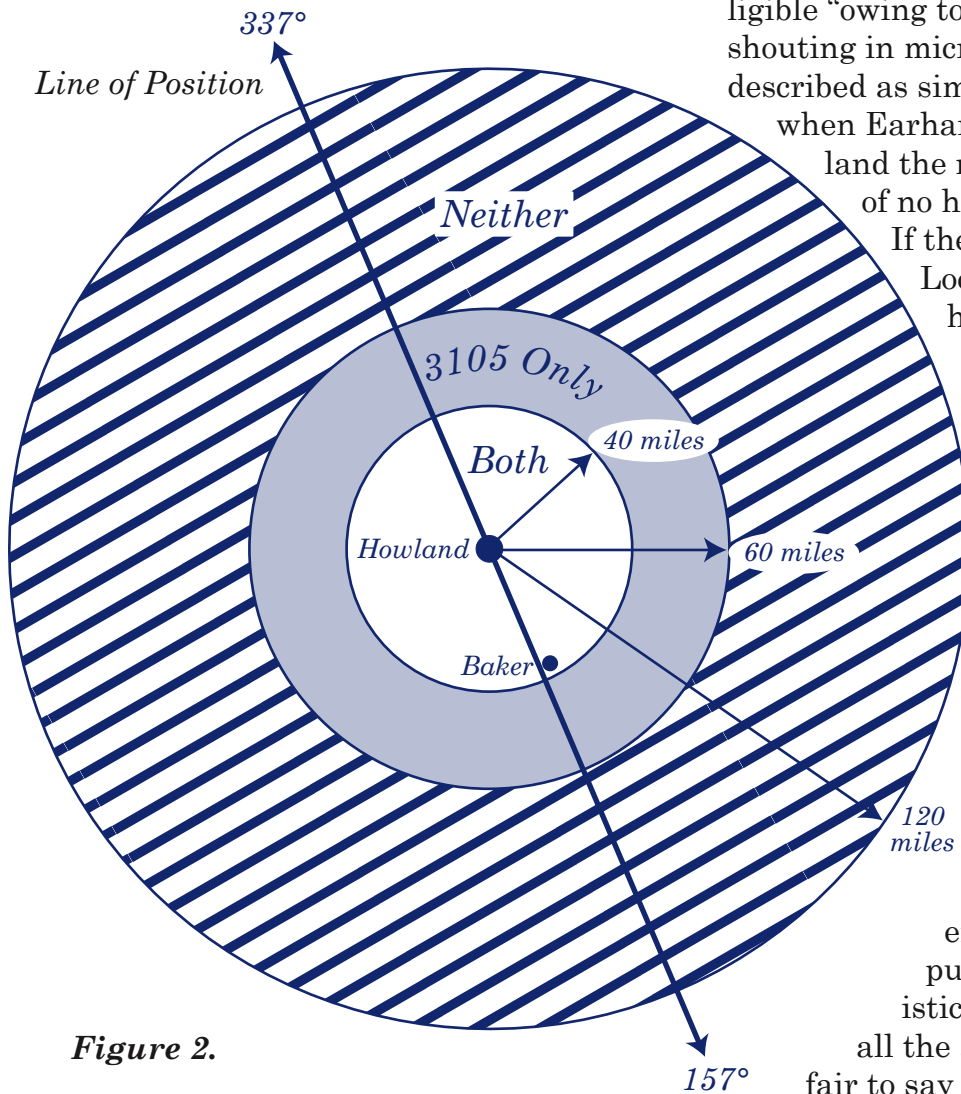


Figure 2.

within approximately 40 miles of the island. That puts the airplane somewhere within the 20 mile band shown above and, as she said, following her described Line Of Position. Had she been travelling toward Howland, the *Itasca* should have soon been able to pick up her transmissions on either frequency. But that didn't happen. It therefore appears that

she was travelling away from the island and, within a few miles, into a dead zone common to both frequencies (see Figure 2).

Whether she was north of Howland and headed northwestward or south of the island and headed southeastward is impossible to determine from the skip-distance diagrams alone. However, a transmission on 6210 heard by the radio operator on the island of Nauru late that same night seems to provide a clue. The words were unintelligible "owing to bad modulation or speaker shouting in microphone" but the signal was described as similar to that heard by Nauru when Earhart passed south of that is-

land the night before "with exception of no hum of plane in background."

If the message came from the Lockheed then the airplane had to be down on an island.

(If the Electra were afloat the radios would have been underwater.) There is no land northwest of Howland within the airplane's remaining 500 nm range. (The closest of the Japanese mandated Marshall Islands is some 800 nm away.) Three hundred fifty nautical miles southeast of Howland is Nikumaroro, then known as Gardner Island. The atoll's 1200 mile distance from Nauru is entirely consistent with the published nighttime characteristics of 6210 KCS. In the light of all the available evidence it seems

fair to say that if Nauru heard Earhart, then Earhart was at Gardner.

Fleet Communications Memorandum 2RM-37 does not prove that the Earhart flight ended at Nikumaroro. It does, however, offer the first documented explanation of why the *Itasca's* reception of messages from Earhart stopped abruptly when she changed frequencies.

NOTES FROM THE FIELD:

Expedition XXVII

September 15 – 24, 1994



Project Director
Project Archeologist
Remote-Sensing Technician
Team Physician
Logistical Support
Newfoundland Coordination
Cape Shore Volunteers

Richard Gillespie (Exec. Dir. TIGHAR)
James Carucci, PhD (TIGHAR #1431CE)
Kenton Spading (TIGHAR #1382CE)
David Scott, M.D. (TIGHAR #1393 CE)
Joseph Hudson (TIGHAR #1689C)
Russell Chafe (TIGHAR # 1876N)
William Roche, Donald Nash, Leo Linehan

IT IS AN AXIOM of all search operations that negative results are results nonetheless. That was cold comfort to the battered TIGHARs who returned emptyhanded from the latest scouring of the frigid waters of the Gull Pond. This was the most intensive search of the pond to date with four team members living on-site for nearly a week. Areas were marked off with buoys and examined using a Geonics EM-61 electromagnetic sensing instrument (sort of an industrial strength metal detector). Where the water was too shallow or clogged with weeds, hand-held White's Electronics PI3000 underwater metal detectors were employed. On some days, shoreline searches were conducted

by local volunteers flown in by helicopter.

It was expensive, uncomfortable, and thoroughly puzzling. That an aircraft crashed at the Gull Pond in the late 1920s is almost certain. That the aircraft was l'Oiseau Blanc, the White Bird of vanished French transatlantic aviators Charles Nungesser and François Coli, appears highly probable. If the wood and fabric biplane burned on impact, as suggested by contemporaneous reports, then the wreckage was immediately reduced to its few metal components. Local tradition holds that metal debris was long ago

retrieved from the pond by various individuals. Whatever survives has been subjected to the pond's highly corrosive environment for nearly seventy years and, we can say with some certainty, is now very hard to find.

What next? It is apparent that we need either better luck or better technology.

While we're waiting for the luck we're researching the technology. Meanwhile, the local group searching the pond in defiance



Archeologist Jim Carucci, L, takes Joe Hudson's report of a shoreline search. TIGHAR photo by R. Gillespie.



Dave Scott, L, and Kent Spading use the Geonics EM61 to search the pond for metal hits. TIGHAR photo by R. Gillespie.

of Newfoundland's Historic Resources Act (see *TIGHAR Tracks* Vol. 10 No. 1, "Bandits In The Hills") continues its operations heedless of government threats. Rumors abound about what they may have found but because they disdain accepted archeological procedures and ethics it's difficult to separate fact from fiction. We at TIGHAR can only continue to pursue our investigation according to our standards of full compliance with appropriate regulations and public disclosure of our findings.

David 1, Goliath 0

For years the U.S. Navy has insisted that it retains title to all unrecovered U.S. Navy aircraft, no matter how old. The U.S. Air Force, by contrast, says it has abandoned any airplane lost prior to 1961. Although probably on shakier legal ground, the Air Force's position has, understandably, gone unchallenged while the Navy is widely regarded as the selfish bully of the air museum world. It was, therefore, with some satisfaction that aviation historic preservationists received the news that a confrontation between the Quonset Air Museum and the U.S. Navy has ended favorably for the young Rhode Island museum.



*F6F-5 Hellcat Bu.No. 70185 comes ashore after 48 years.
Photo courtesy Quonset Air Museum.*

In December of 1993 a salvage team hired by the Quonset organization recovered a Grumman F6F-5 Hellcat from the ocean off Martha's Vineyard. Acknowledging the Navy's ownership, Quonset asked only that they be allowed to keep and conserve the aircraft on loan. What they got was a demand that they crate and ship the airplane, at their own expense, to the National Museum of Naval Aviation in Pensacola or face legal action. The Quonset Museum didn't back down and, after nearly a year of legal wrangling, it became apparent to the Navy that if the case went to trial they could lose in such a way as to set a catastrophic precedent for challenges to their ownership of unrecovered aircraft. In an out-of-court settlement it was agreed that the Navy will retain title but Quonset will keep the airplane. Meanwhile, under the guidance of Quonset Air Museum curator Larry Webster (TIGHAR #0084C), preservation of the Hellcat is proceeding according to state-of-the-art conservation techniques.

You Wait Right Here

Certainly the most ambitious old airplane recovery project since the Greenland Expedition Society said they expected to "just fly those P-38s right off the ice" has been mounted by a consortium led by air racing legend Darryl Greenamyer. Their goal is the retrieval of "Kee Bird," a B-29 which was landed in a shallow lake 250 miles north of Thule AFB, Greenland on February 21, 1947 and – you guessed it – they plan to fly it out. Hoping to bring the Superfortress to this year's Reno Air Races in September, a 13-man expedition worked much of the summer hauling the bomber from the lake, hanging new engines and props, changing the tires, rigging new flight controls and replacing much of the electrical system. A 4,500 foot runway was prepared but never dried adequately to permit a take-off. They'll try again next year.

At least ten B-29s are in museum collections so the type is not exactly in danger of extinction. The one example maintained as an operational aircraft, the Confederate Air Force's "Fifi," turns a respectable profit from public appearances, thereby helping to support other less marketable aircraft in the CAF fleet. Greenamyer and company reportedly hope to sell Kee Bird for double the \$500,000 they think (or, rather, thought) it will take to recover her. No TIGHAR members are known to be associated with this endeavor.

The Champlin Fighter Museum

4636 Fighter Aces Drive (Falcon Field)
Mesa, Arizona 85205
602/830-4540
Open daily 10—5; admission \$6.00.

Lack of focus and a somewhat fuzzy sense of purpose are problems which may afflict some air museums but certainly not this publicly accessible private collection. Doug Champlin collects fighters – period. His purpose is to offer the public the experience of standing before machines much like the ones flown by the great aces. Except for one or two notable exceptions, the airplanes exhibited are not individually historic and, indeed, many are replicas or conversions created to resemble a particular type; but the placard posted in front of each aircraft clearly describes what it is, and what it is not. By presenting some 30 designs from the Rumpler Taube to the McDonnell-Douglas F-4 Phantom II the collection demonstrates roughly half a century of fighter evolution.

The airplanes are repaired to airworthy condition but, although the engines may occasionally be run, the machines are not flown. Although this policy may seem contradictory (if you're not going to preserve it, why not fly it?) there is a practical rationale at work. Because this is a private collection, the open-market value of the aircraft is a prime concern. The market values flyable airplanes, so the machines are made airworthy, and yet these same money concerns dictate that the investments not be risked by taking them aloft. That the Champlin shop has an excellent grasp of the difference between historic preservation and aircraft repair is evidenced by the contract work it recently completed for the Smithson-

ian on a Kawanishi Shiden (American reference “George”) fighter. Under the supervision of former NASM Senior Curator Robert Mikesch, the shop performed a true restoration of the aircraft, returning it to its known previous appearance through cleaning, conservation, and the minimal introduction of new material.

The Champlin Fighter Museum serves its purpose with integrity, competence and professionalism. Next time you're in the Phoenix, Arizona area we heartily recommend that you visit this fine collection.



In Aviation Archaeology at the Champlin Fighter Museum in November, Ken Ohtani (TIGHAR #1791C) of Tokyo inspects the cockpit of the Kawanishi Shiden. TIGHAR photo by P. Thrasher.

Pima Air & Space Museum

6000 E. Valencia Road
Tucson, Arizona 85706
602/574-9658
Open daily 9—5; admission \$5.00.

Overload” is the only way to describe our first reaction to the Pima Air & Space Museum. A bevy of B-52s, a flock of '50s jet fighters, more Connies than you can shake a stick at (if that's your idea of a good time) – Pima just has a whole bunch of airplanes. Blessed with the same desert climate that preserves the mothballed aircraft at nearby

Davis-Monthan AFB, the museum enjoys the luxury of parking most of its collection outdoors. It's great for the aluminum, but murder on paint. Consequently, the shop spends much of its time repainting the collection which, like painting the Brooklyn Bridge, is an exercise in perpetual motion. Much to its credit, Pima has recently adopted a policy of insisting that an aircraft wear only colors that the particular machine wore at some time in its service life. We were particularly impressed when the guide who took us through the collection's newly restored DC-6/VC-118 (which occasionally served as Air Force One for both Kennedy and Johnson) carefully described the airplane's dazzling blue, white and polished aluminum exterior as an “illusion” to compliment the cabin's largely “original” interior furnishings. Nearby, a rare Curtiss AT-9 trainer is displayed in as-found condition because “to put it back together would mean replacing and adding so much material that it would become a replica of itself.” In a WWII exhibit hangar a B-24J wears a sponsoring American bomb group's colors on one side but retains its Indian Air Force markings on the other because “we didn't want to destroy its true identity.”

This is just the kind of enlightened and intelligent approach to historic preservation the air museum world so desperately needs. TIGHAR applauds the Pima Air & Space Museum and would encourage any aviation history enthusiast to pay this huge collection a visit.



Panther, Cougar, Skyray, etc., etc. TIGHAR photo by P. Thrasher.

WHAT TO SAY ABOUT ENOLA GAY?

The fallout has never stopped. At 17 seconds past 08:15 local time in Hiroshima the old world disappeared in one blinding flash and every moment since has been colored by that light. The immediate effect was death for somewhere between 80,000 and 140,000 people – and life for perhaps millions of others who would not die in a lingering war. For them and their children, the day that dawned on August 6, 1945 stretched through a long and terrifying morning of Cold War that has only recently turned to a peaceful, if unsettled, noon. Now, as we approach the 50th anniversary of that defining moment, there is almost universal agreement that it be commemorated – and that is where the agreement stops.

For many, including most American veterans of World War Two, the use of atomic weapons against Japan was justifiable and laudable and the event worthy of celebration as an almost Biblical triumph of right over wrong. For others, many prominent academics among them, the act was unnecessary and shameful and deserving of remembrance only as one of the war's horrors that must never be repeated.



At the center of the controversy is the airplane that delivered “Little Boy,” B-29 44-86292, known to history by its pilot’s mother’s name, “Enola Gay.” It is a cold dead thing of metal, rubber, leather and cloth with no will or awareness of its own. But because of where it once was, and the load it once carried – and then stopped carrying – it has become the focus of an intense debate over good and evil as though the machine itself were capable of either quality.

This human capacity for using inanimate objects as catalysts for our contemplation of the past is what historic preservation is all about. This is why we seek out historic

properties, save and safeguard ancient relics and carefully conserve artifacts. These are the lifeless things which speak to us of life. In the case of Enola Gay it’s more of a shout.

The Road From Hiroshima

The earliest documented recognition of the airplane’s significance as an historic property dates from a November 1945 entry in the bomber’s Aircraft Record Card which cautions that, “Before aircraft is declared excess or disposed of in any manner, a check should be made as to desirability of retention for historical reasons.” For the next year the airplane served with a succession of USAF units in a variety of roles and, despite being repainted in different unit markings, continued to carry the “Enola Gay” name on its left forward fuselage. On August 14, 1946, the first anniversary of the war’s end, the airplane was officially declared “Class 32” and ownership was transferred to the Smithsonian Institution. It was 1949, however, before the airplane was officially turned over to the museum at a ceremony in Chicago. At that time, and possibly for that occasion,

the airplane was returned to an approximation of the markings it carried shortly after the Hiroshima mission. In 1951 it was flown to Andrews Air Force Base near Washington, D.C. where it languished in open storage, subject to graffiti and souvenir hunting, and home to birds and raccoons. Ultimately, much the worse for wear, it was disassembled and moved to the Smithsonian's storage facility in Suitland, Maryland.

For the National Air And Space Museum (NASM) "Enola Gay" presents a quandary. Clearly one of the collection's most historically significant

Others deplored its very existence and urged that it be destroyed.

aircraft, it is also the collection's most controversial artifact. The fact that the bomber is too large for display as a complete aircraft in the museum on the Mall was long used as an excuse to avoid questions of how to represent its role in history. At the same time, NASM paradoxically lobbied Congress for a museum annex at Dulles airport large enough to display aircraft such as – well, Enola Gay. Consigned to a warehouse at Silver Hill (now the Paul E. Garber Facility), the bomber did not rest in peace. Veteran's groups bemoaned the airplane's dilapidated state and agitated for its restoration. Others de-

plored its very existence and urged that it be destroyed.

Partly in response to veteran's groups, partly in the hope that an annex would be built at Dulles and partly in anticipation of the 50th anniversary, work was begun on the B-29 in the mid-1980s. Following the standards then prevalent at NASM, the engines were rebuilt to like-new condition and an attempt was made to return the interior to its presumed configuration at the time of the atomic mission. In converting this wildlife habitat back to a Superfortress, great pains were taken to preserve any components dating from August of 1945 while removing later additions and modifications. Missing equipment was replaced with units of the correct type. The radios were even turned on and talked on before being pickled for preservation.

The recession of the late 80s and early 90s made it apparent that a multimillion-dollar annex at Dulles was not going to happen by 1995, if at all, and that some way would have to be found to display the aircraft for the 50th anniversary of its atomic mission. A plan to park the airplane in front of the museum under a temporary shelter was considered – briefly. Finally it was decided that the first fifty-six feet of the ninety-nine foot fuselage would be displayed in the National Air & Space Museum and the rest of the airplane would remain in storage at the Garber Facility.

Now the long-avoided question of what to say about Enola Gay – in museum parlance, its "interpretation" – had to be addressed.

Unacceptable Risk

All museums interpret their collections. Simply the inclusion of an artifact in a museum implies a perceived importance, and its placement with regard to the rest of the collection tells the visiting public whether the object is regarded as a star attraction or a minor player. Typically, a "script" is written for each exhibit detailing how the artifact will be presented to the public along with what photographs, placards, ancillary artifacts, dancing girls or whatever are to be part of the display. Scripts, of course, are traditionally internal documents and, while often the subject of spirited debate in the lunch room, are seldom topics for discussion outside the museum. Not so with Enola Gay.

Originally written by Aeronautics Chairman Tom Crouch and curator Michael Neufeld in February of 1993, the first draft of the NASM script was reviewed not only by NASM's Director, Martin Harwit, but also Smithsonian Secretary Robert Adams. In retrospect it seems incredible that anyone, regardless of his historical perspective or isolation in academia, would think the museum could get away with statements such as, "For most

Americans, this ... was a war of vengeance. For most Japanese it was a war to defend their unique culture against Western imperialism” and “The question of whether it was necessary and right to drop the bombs ... continues to perplex us.” Not only are they inflammatory, they’re also arguably untrue.

The inclusion of a photograph of despondent POWs might not be seen as inappropriate, but the one NASM wanted to use showed Japanese prisoners listening to the emperor’s surrender speech. The horror of the bomb’s effects would be emphasized through the display of objects found in the rubble, but there

would be little mention of the earlier Japanese atrocities which so influenced American attitudes at the time. In July of 1993 Secretary Adam’s expressed his concern that the exhibit, as planned, “greatly – and I think unacceptably – increases the risk to [the Smithsonian].” Crouch suggested some minor changes but raised the question of whether the museum wanted “an exhibition to make veterans feel good or ... an exhibition that will lead our visitors to think about the consequences of the atomic bombing of Japan?” Perhaps the museum would have sorted out these questions on its own, but when a veterans group somehow got hold of a copy of

the script that possibility became purely theoretical.

Duck And Cover

Predictably, the veterans went ballistic and it wasn’t long before the Smithsonian found itself at ground zero under a fireball of criticism. The *Washington Post* had a field day quoting charges of political correctness and anti-Americanism. The *Wall Street Journal*, on August 29, 1994, editorialized that “the museum

This human capacity for using inanimate objects as catalysts for our contemplation of the past is what historic preservation is all about.

whose business it is to tell the nation’s story is now in the hands of academics unable to view American history as anything other than a woeful catalogue of crimes of aggression against the helpless peoples of the earth.” Within a month the Senate had passed a resolution labeling the planned exhibit “revisionist, unbalanced and offensive.” At the museum on the Mall it was time to duck and cover and by the end of September the plan had been extensively revamped. Gone were the offending language, the photo of the Japanese POWs, and the macabre artifacts. Also dropped was a lengthy discussion of the Cold War that followed the hot one.

In place of the bomb’s “legacy” was more emphasis on the Japanese actions that provided its perceived justification.

The fallout is, nonetheless, sure to continue. When the exhibit opens next May, whatever form it takes, it is bound to be labeled revisionist by some and jingoistic by others. And at the center of it all will be the artifact. The B-29 that became Enola Gay was built as a tool to do a particular job. Now it is a different tool doing a very different job. It is the

thing that was there then and is here now. It is the philosopher’s stone that brings the past to life so that we can face it, deal with it, and try to learn

from it. What we learn, if we learn, is up to each individual who contemplates the artifact. The important fact is that the object is there to be contemplated. And that, in the end, is the point of aviation historic preservation.



HOW MUCH IS LEFT?

National Air & Space Museum visitors who view the Enola Gay exhibit next May, whether they're awed or appalled, will see only the forward half of the airplane's cigar-shaped fuselage. On the left-hand side of the nose they'll see the name "Enola Gay" and five little stylized "fatman" symbols signifying the four practice and one for-real "pumpkin missions" during which a dummy or live atomic weapon was carried. Lower on the nose will be the airplane's number, 82, along with various standard notations and placarding. They'll see their own reflections in the freshly-buffed aluminum skin of the world's first atomic bomber (the philosophical implications of which they may or may not contemplate) and through the clear nose panels they'll see the bombsight, the radios, the instruments and the controls that clutter the flight deck. Whether they view the act that was performed there as heinous or heroic, they will be moved by the knowledge that this was where it happened.

But how much of what they see will be history, and how much will be illusion? What is left of the physical material that hung in the sky above Hiroshima the day the world changed forever? Quite a bit, really. The basic structure of the airframe is, for the most part, original to August of 1945. Of the interior furnishings, one estimate is that approximately 70% is stuff that was really there while the other 30% is at least the right kind of stuff. As is always the case with an airplane that remained in service after its most historic flight, not everything we might wish was there, is there. The bombsight used on the Hiroshima mission, for example, did not stay with the airplane (the top-secret Norden bombsights were always

installed immediately before and removed immediately after a mission). The exterior finish of the fuselage and its markings will look new because they are new. Museum officials, in fact, went to great lengths to determine how much, if any, of the surviving markings were original to August of 1945, and there is still some question. The puzzle concerns the name itself.

Everything of the original markings, except the name Enola Gay, is acknowledged to have been stripped off long ago. But is the name itself the original artwork? As painted on the airplane when presented to the Smithsonian in 1949,



Enola Gay in storage at the Garber facility. TIGHAR photo by P. Thrasher.

the letters differed from their 1945 appearance in two respects. The original application of the name to the airplane was done, according to its pilot Col. Paul Tibbets, the evening before the Hiroshima mission in less than half an hour by a mechanic shanghaied from a softball game. A photograph taken immediately prior to the mission's departure shows the paint to have been thinly applied, with individual brush strokes evident. Later photos of the plane in different unit markings show the name in the same location

and with the same lettering style, but darker – as if somebody had given it a second coat. By the time the B-29 was turned over to the Smithsonian, not only had the August 1945 unit markings (509th Composite Bomb Group) been re-applied, but the style of at least some of the letters in Enola Gay had been significantly altered. In an attempt to find out if any of the original artwork survived, NASM Conservator Ed McManus called in experts from the National Gallery of Art who examined the name using the same infrared photographic techniques they

use to detect over-painting and original artists' sketches on works of art. Their conclusion was that the letters on the airplane consisted of only one layer of paint and that, therefore, nothing survived of the original rendition. However, when buffing was performed under the direction of the airplane's curator Tom Allison, a definite layered effect was noted, with the under-layer exhibiting the same brush strokes as the 1945 photo. Just to be safe, everyone agreed that the name should be preserved with a wax barrier over which a new reproduction of the name would be painted.

With buffed skin and fresh markings, the face that Enola Gay presents to the public will be largely illusion even though the underlying structure is, for the most part, original to 1945. The decision to remove the bogus 1949 markings is probably a good one because they were weathered enough to be mistaken for the real thing. Few who visit the exhibit will question why it is that something supposedly half a century old looks almost new. After all, the ninety-one-year-old Wright Flyer, and the seventy-some-year-old airplanes in the World War I gallery all look newer than the sixty-seven-year-old Spirit Of St. Louis, the twenty-five-year-old Apollo 11 Command Module, or even the eight-year-old Voyager aircraft. Air museums, like the theater, require a certain suspension of disbelief which the public seems more than willing to grant. And to the degree that museums alter artifacts to fit a particular interpretation, perhaps they are indeed practicing theater rather than preservation. In the case of Enola Gay it appears that very little that was genuine has been sacrificed for the sake of a good show.

TIGHAR wishes to thank the following for their help in researching this article: Norm Chipps (TIGHAR #1329);

Randy Jacobson (TIGHAR #1364); Ed McManus, Conservator, NASM; Tom Allison, Curator of Enola Gay, NASM; Stuart Wolf, Technician, National Gallery of Art.

CYBER TIGHAR

TIGHAR's new computer Bulletin Board, TIGHAR OnLine, is up and running!

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Sign on anytime and leave your message or suggestion for the SYSOP. Here's your opportunity to meet TIGHAR and TIGHARs without leaving your keyboard. All TIGHAR members welcome. New materials added weekly.

An Embarrassed Silence



For something like three years, TIGHAR has carried on a running correspondence with *Air Classics*, a nostalgia magazine published by Challenge Publications of Canoga Park, California. In the past, the correspondence has centered around the Earhart Project, TIGHAR's findings, and the reluctance of a few vocal critics to accept our work as scholarly and rigorous. As each issue has appeared with a new letter to the editor from Earhart conspiracy theorists such as Col. Rollin Reineck, we have replied, and within two to three issues our reply has appeared in the magazine.

The September 1994 issue of *Air Classics* contained a departure from this by now routine procedure. In addition to the usual rounds from Col. Reineck and others, Michael O'Leary, the Editor of *Air Classics*, published a signed editorial accusing TIGHAR, and TIGHAR's staff personally, of various mal- and misfeasances. Naturally we responded. Mr. O'Leary did not. In spite of repeated attempts to elicit an answering wave from *Air Classics* since the September issue, our response has not been published. Neither have the letters of those TIGHAR members who wrote in protest. (For that matter, neither has any further correspondence from Col. Reineck.)

For those who have been waiting with bated breath for the next round – wait no more. Here is our reply to Mr. O'Leary. For those with an interest in the entire correspondence, a summary of others' letters and the complete texts of our replies may be found on TIGHAR OnLine, the TIGHAR BBS (302/998-6678) in the Earhart Project Forum.

Dear Mr. O'Leary,

I appreciate the opportunity to respond to your editorial published in the Inside section of the September 1994 *Air Classics* and to the several letters from readers included in the Airlines section of that issue.

Your description of TIGHAR and how it operates ("not exactly professional" is the way you put it) is interesting in that you seem to have gotten the journalistic process backward. Normally it's a good idea to get the facts first and then write the editorial. You chose to do it the other way 'round so, now that you've written your piece, here are the facts.

My wife and I are employed by an historical and educational foundation which operates under Section 501(c)(3) of the United States IRS Code. TIGHAR's finances and business practices are, therefore, subject to special federal restrictions and scrutiny. Like most non-profits, TIGHAR's revenue comes primarily from charitable contributions made in response to fund-raising activities. In TIGHAR's case, our demonstrated base of popular support is broad enough to qualify the foundation as a Public Charity under IRS regulations. Part of my job is to keep TIGHAR's members informed

about the progress of the historical investigations they support. If I overstated the foundation's results, as you say I do, they would soon stop supporting the work and TIGHAR would become extinct. That's the way the American system works – voluntary contributions and absolute accountability.

As required by law, TIGHAR is governed by a Board of Directors. Their names are published in every issue of the foundation's magazine, *TIGHAR Tracks*. Patricia Thrasher and I are employed as President and Executive Director, respectively. The Board sets our salaries, monitors our performance, and has the authority to terminate our employment. Pat and I serve on the Board but, of course, have no vote on issues concerning our remuneration. As with all non-profits, TIGHAR makes a detailed financial accounting to the IRS annually, specifying how much money was raised, from what sources, and how it was spent. The IRS makes all of that information, including salaries, available to any interested citizen (even Rollin Reineck).

Complaints about "mass media coverage" by the editor of a magazine that devoted the better part of six pages of its September issue to TIGHAR-related copy hardly seem

worth addressing. However, your assertion that TIGHAR "solicits money from individuals to go on these expeditions, thus giving the individuals the cachet of being a qualified 'explorer/archeologist' – even if that title is far from reality" deserves a response. In addition to being ungrammatical, your statement is simply not true. For our less demanding field operations (what we call Category I) volunteers are asked to kick in something to help with the overhead (typically \$100). On more rigorous expeditions (Category II), such as our search for the Nungesser/Coli aircraft in Newfoundland, a team is hand-picked from among qualified volunteers who pay only their own travel and accommodation expenses. For the hairy stuff (Category III), like the Earhart expeditions to Nikumaroro, the team members donate only their time and expertise. The foundation covers all their expenses from general fund-raising for the expedition. It is not possible to buy your way onto any TIGHAR expedition because, believe me, the last thing you want out there is somebody who thinks he or she has paid for an adventure vacation.

TIGHAR has never used the term "explorer/archeologist," and I'm sure your allegation that we bestow

that “cachet” on member volunteers would be received with hilarity by the brightest, toughest, most dedicated group of men and women it has ever been my privilege to know. I’ll let the degreed archeologists among them reply to your charge that TIGHAR’s field methodology causes “confusion and problems for future, more qualified researchers.” It’s just as true as your statement that “TIGHAR has not discovered any evidence relating to [the Earhart] flight.”

I will, however, reply directly to your defense of Paul Dean, whose *L.A. Times* article you reprinted almost word for word under your own byline in the August 1992 issue of *Air Classics* without once mentioning his name. (Perhaps Mr. Dean would find that flattering, but I somehow doubt it.) I characterized his article as “biased and error-strewn” because it is riddled not only with inaccurate statements but also contains demonstrably false allegations concerning my ethical conduct. He didn’t do his homework, and neither did you when you wrote that he has “a great deal of experience in aviation, certainly more than Mr. Gillespie or other TIGHAR members playing at being aviation archeologists.” Paul Dean is an automotive columnist for the *L.A. Times*. According to the FAA Airman Certification Branch he holds a Private Pilot Certificate with Single-Engine Land privileges. As a non-pilot yourself, perhaps you see that as “a great deal of experience in aviation.” My perspective is somewhat different. I have been professionally employed in aviation for 21 years and hold a Commercial Pilot Certificate with Single and Multi-Engine Land privileges and an Instrument Rating. My four thousand hours pale in comparison to those of the airline captains and military veterans among the “TIGHAR members playing at being aviation archeologists.”

Turning to other questions raised in the September issue’s battery of letters: Rollin Reineck’s latest attempt to convince everyone that it was all a plot describes, ad nauseum, Japanese military construction in the Marshalls. That

the Japanese fortified the mandated islands prior to December 1941 has never been disputed, but in trying to establish that military installations were in place four and a half years earlier, the best he can come up with is, “It should be obvious that such extensive fortifications were not planned and constructed overnight.” Of course they weren’t. The April 1955 issue of *United States Naval Institute Proceedings* (Vol. 8, No. 4) detailed the process in an article by Thomas Wilds entitled “How Japan Fortified the Mandated Islands.” Construction was not begun on any airfield or seaplane ramp in the Marshalls prior to 1940, and none was completed until 1941. Where the unattributed map appearing with Reineck’s letter came from is anybody’s guess, but the information typed on it is nonsense.

As I mentioned in an earlier letter, Bill Larkins’ suspicion that the parachute in the “Bay Airdrome” photo of Earhart’s Electra has nothing to do with the airplane is correct. The registration history of the aircraft is, however, a bit more complicated than he describes. Bureau of Air Commerce records show that Lockheed registered c/n 1055 as X16020 on July 19, 1936. The airplane was delivered to AE on her birthday, July 24, and an “application for re-assignment of license number to NR-16020” was made on July 27. The airplane was so marked but the application was canceled and replaced with a request for license number R-16020 submitted on August 7, 1936 and approved on August 15th. The unauthorized “N” (designating approval for international flight) was removed and the airplane carried R16020 until sometime after September 21, 1936 when the “NR” designation was approved. Despite the “original night parking records from San Francisco Airport” mentioned in the letter from Mr. Swanson, the paperwork for the airplane and all the photographs I’ve seen indicate that c/n 1055 was never marked NX16020 or NC16020. Maybe it was just hard to read the numbers in the dark.

What to say to Mr. Rohr? He says I have a lot of explaining to

do. Seems like that’s all I do. No, I don’t have a problem with people questioning my information. I expect them to. I want them to. That’s how the scientific method works. I am more than happy “to accept that Earhart could have been on a spy mission for FDR.” I also accept that she could have been kidnapped by space aliens. I have not, however, seen any evidence to support either hypothesis. Mr. Rohr is upset that TIGHAR has “meddled” in a laundry list of issues concerning historic aircraft. I guess we didn’t realize that we needed his permission. Incidentally, while the Historic (not Historical) Preservation Act does not mention aircraft, neither does it mention ships or Indian burial mounds. I can, however, assure Mr. Rohr that the folks who make such decisions are quite sure that historic aircraft are protected under the Act. Let’s see. What else? Yes, we’ll “need all the credibility we can get” to raise the money it’s going to take to return to Nikumaroro to find Earhart evidence that will pass what we call the any-idiot test. Yes, there were two Consolidated Model 32 (B-24, PB4Y-1, or LB-30) parts on the island. Unlike the debris believed to be from Earhart’s aircraft, these were found in the remains of the abandoned village and exhibit clear signs of having been extensively altered by the local population. Catalogued as TIGHAR Artifacts 2-1 and 2-2-V-8, the objects were fully described and discussed in the publicly available report we published following our 1991 expedition. Just because Mr. Rohr doesn’t know something doesn’t make it a secret.

And finally, I was intrigued by Mr. Kinder’s account of the priest who said that Fred Noonan did not drink during a breakfast and dinner he attended in Lae. This supports the recollection of Francis “Fuzz” Furman who, as a technical representative for the Martin Company servicing the B-10s of the Royal Netherlands East Indian Air Force at Bandoeng, Java in the summer of 1937, spent several days and evenings with Fred Noonan during the flight’s lay-over there.

(cont. back page)

(cont. from p. 15)

Furman, too, says he never saw Noonan take a drink. Certainly the film of the crew boarding the Lockheed for their final takeoff at Lae shows a bright and chipper Fred Noonan and not the hung-over boozier of legend. I'm still waiting for the first piece of contemporaneous documentation to support the notion that Noonan had a drinking problem at all.

Well, there's my contribution to the "hysteria factor" for this month. If you find that you need to edit this

letter due to space constraints, please be sure not to delete the bits you might find embarrassing. We can't have the readership thinking that you're less than impartial – now can we?

Love to Mother,

Richard E. Gillespie

Richard E. Gillespie
Executive Director

BLUE SIDE UP

Calvin and Hobbes

by Bill Watterson



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