

TIGHAR TRACKS

A PUBLICATION OF THE INTERNATIONAL GROUP FOR HISTORIC AIRCRAFT RECOVERY

BATTLE OF BRITAIN II



TIGHAR photo by P. Thrasher.

New fibreglass Spitfire and Hurricane gate guardians at the Royal Air Force Museum, Hendon, London.

TIGHAR's *Aircraft to Artifact* seminar at the Royal Air Force Museum is now history, and no one who was there is likely to forget it. Directors and representatives from ten museums and collections in eight countries spent two intense days discussing and debating the principles which define their profession. An audience of Europeans and Americans participated in lively and often heated discussions with a panel comprised of some of the most distinguished names in aviation historic preservation. The opinions offered were as diverse as the accents in which they were expressed, but debate did bring consensus on some

issues, and the promise of eventual agreement on others.

An analysis of what was said must fairly wait upon the transcription and review of the tapes made during the seminar. These will be published as Proceedings later this fall and made available to all TIGHAR members and interested parties at minimal cost.

It is TIGHAR's hope that out of this seminar can come the beginnings of agreed-upon standards, definitions, and protocols for the entire aviation historic preservation community. Watch for much more on this very important effort. 🐾

L to R: Moderator, TIGHAR's Richard Gillespie (in profile) and the distinguished panel: Stephen Grey, The Fighter Collection, Duxford; David Hallam, Australian War Memorial; Tom Crouch, NASM; David Lee, Imperial War Museum; Michael Fopp, Royal Air Force Museum.



TIGHAR photo by P. Thrasher.

THE TOUGH ONE

On October 1 TIGHAR teams will begin the 19th expedition in search of the French transatlantic fliers who vanished, in Lindbergh's words, "like midnight ghosts" just days before his New York to Paris triumph. Nineteen expeditions, over six years of work, countless hours of searching by TIGHAR volunteers, usually under uncomfortable and sometimes hazardous conditions, something over \$200,000 raised, virtually all in contributions of less than \$100 — Why? Why the persistence? Why the sacrifice? Why the dedication?

Bone stupid, that's why. Or so it seems in the darker moments when a promising lead has, once more, turned out to be a dead end. But there are other reasons, of course.

There's the challenge of attempting the nearly impossible. Finding an essentially biodegradable airplane that crashed over sixty years ago, from which the bigger metal bits, like the engine, have very likely already been salvaged — that's a pretty good definition of difficult.

There's the knowledge of the forgotten historical significance of the Nungesser/Coli flight: The realization that had they made it to New York, Lindbergh would not have flown the Atlantic, would not have become America's greatest 20th century hero, would not have pioneered the airline routes he later explored, would not have inspired a whole generation of American youth who designed, built and flew the machines that won World War II, and who now sit in the board rooms of the world's great aviation companies. How different would our world be were it not for the events of that foggy day in 1927 when the White Bird did not arrive in New York?

Perhaps we continue the search because each time we've thought we were up against a blank wall, some new piece of evidence or testimony has emerged like a ray of light. There is exhilaration in the energy that drives all research, whether historical or scientific. It's the ultimate human addiction — the thirst for knowledge.

Then, too, there is something we call "the curse." It's the force of the story itself, the gothic romance that is the tale of l'Oiseau Blanc, captivating the searcher and creating in him or her a feeling of being part of the story by the very act of searching. And, of course, that feeling is absolutely correct.

Finally, we continue to search for the White Bird because the project has shown itself to be the best of proving grounds for aviation archeological techniques. By constantly testing and revising investigative logic, witness interview style, metal detection procedures, search patterns, artifact excavation, and a host of other disciplines, we have developed skills that have brought success to other, less difficult, projects.

So that's why TIGHAR will be back in Maine for the month of October — because we must. As Charles Nungesser said, "To the valiant heart nothing is impossible, even in its most terrible aspect."



TIGHAR conducts business as usual during expeditions in Maine. Mail is forwarded, or you can write directly to TIGHAR, P.O. Box 73, Machias, ME 04654. From October 1 through October 27 you can phone expedition headquarters in Machias at (207) 255-8800. A machine will take your message and we'll return your call in the evening when we come in from the field.

... NOR ANY DROP TO DRINK



There has been an important new development in TIGHAR's investigation of the Earhart disappearance. On August 25, 1990 the following letter was received:

Dear Patricia Thrasher:

If you are reading this I am half way home, as I am seeking the Patricia Thrasher mentioned in the Associated Press article about the search for Amelia Earhart's plane. The article says the organization is based in Wilmington and yours is the only Thrasher name listed in the telephone book ... so I hope I got this right.

The article says your group has found a navigator's box picked up on Nickumaroro (sic) and also mentions the Coast Guard base located there during WWII. I was stationed on that base for a good part of the time it was in operation. ... Of course, we were not stationed on Nickumaroro, it was still Gardner in those days.

Among other things, the article indicates you are inclined to discount the idea that the box came from a PBY used to service the base. Your idea is very sound. 99% of our supplies, mostly diesel fuel, came by boat. The PBYs brought our mail about once a month. They arrived from Canton about 10 AM, always landing in the lagoon. They were back in the air by about 2 PM - since there wasn't a damn thing for them to do while they were there. There was never an occasion when one stayed overnight and never, while I was there, did any of them have anything other than a routine landing and takeoff. ... I think you are safe in assuming with absolute certainty that the mysterious box did not come from a PBY connected with the Loran base.

I would also be interested in learning the general location on the island

where you found the box. ... The base was built on the tip of the tear drop ... [t]he native village was North, beyond the inlet, near the shipwreck. ... So if you found things on the East side of the island, you can be pretty sure it had nothing to do with the base. To my knowledge there were only three times when anyone went over there. With one exception we found nothing but turtles.

The exception was a small structure we found designed to collect rain water. We assumed the natives had built it and we ignored it. But when we mentioned it to them a few months later they didn't know anything about it. We suggested that a previous group of natives had built it but they said there were never any people living on the island (prior to their arrival). All we were sure of is that we didn't build it and neither did the natives.

I hope these tidbits of information might be of help to you and, naturally, would be happy to supply you with anything else I might know that would be helpful.

If you are not the Patricia Thrasher who is President of TIGHAR and therefore never received this letter, please ignore it. In any event, Good Luck.

Richard K. Evans, PhD

Knowing Nikumaroro's history and topography as we do, we were intrigued by this report of a structure on the island's eastern shore, so we immediately telephoned and found Dick Evans to be as affable and helpful as his letter implied. Now 64 and recently retired from the Labor Relations department of the Pennsylvania state government, he was an 18 year old Coast Guardsman in 1944 and the youngest man at the Gardner Loran station. The "small structure ... designed to collect rain water" was found during a casual exploratory hike about a month or six weeks after he arrived at the island with the original construction detachment. Others who

were with him that day included "Mac" McDonald from Nebraska, Herb Moffett from Hemmett, California, and Charlie Race, a Pharmacist's Mate from Ft. Worth, Texas. Our subsequent attempts to find them have not been successful.

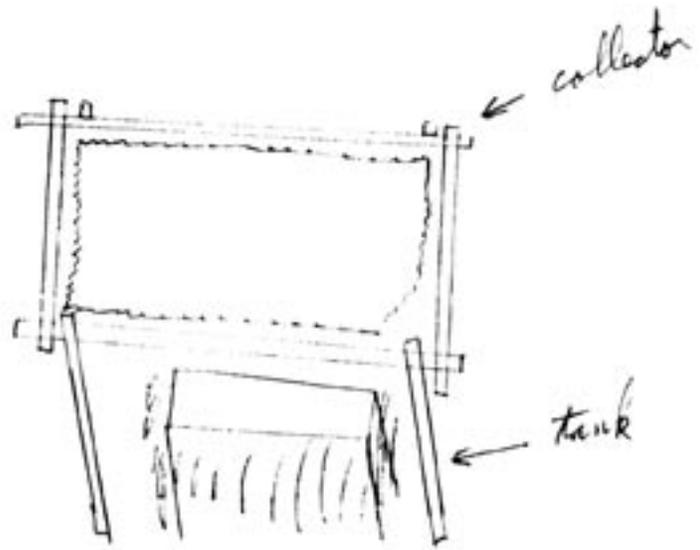
Dick was able to provide further details concerning the structure's make-up and location as well as drawing a rough sketch of what he remembers seeing. After studying his testimony and comparing it with what we know of events in 1937, we were struck by a number of interesting apparent correlations.

The presence of such a structure on the island's eastern shore is indeed unusual. Dick says it was "less than halfway up the beach." That puts it somewhere along about a mile of some of the most unpleasant beach front on Nikumaroro. The eastern side is the windward side of the island, and those TIGHAR members who participated in the brief survey that was done in that area on September 22, 1989, will remember the constant 15 to 20 knot wind, the soft, steeply sloping beach, and the ceaseless, deafening pound of the surf along the reef. To attempt a boat landing here would be suicidal, and no work party ever tried to clear the dense beachfront scaevola brush to plant coconuts on this part of the island. Neither is there any apparent reason for anyone to camp on the ocean beach rather than on the sheltered lagoon shore just a few hundred yards inland unless they needed to watch the ocean horizon. What Evans saw seems explainable only as a shipwreck survivor's attempt to get drinking water and shade while awaiting rescue.

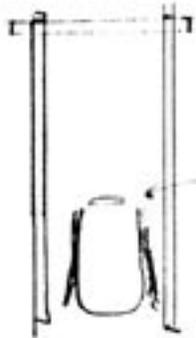
The structure itself, as Evans remembers it, seems odd. He says the upright supports were made of tree branches and stood about six feet tall. They supported (he doesn't remember just how) a piece of heavy cloth or canvas which he estimates was about eight feet long by about three feet wide. He describes the material as being light tan in color and similar in weight to a sailor's hammock. The tank which caught the rain was, he estimates, about five feet by two feet by two feet. Although he doesn't know what it was made of, it had coral piled around it and was full of water when he saw it.

There is nothing occurring naturally on Nikumaroro (larger than a coconut) from which to make a watertight container. The Gilbertese colony used concrete cisterns and corrugated iron sheeting to catch rainwater. So what was the tank Evans saw made of? It had to be metal of some kind, but the only metal tanks on the island in pre-colony days were massive steel structures from the wreck of S.S. Norwich City at the northwest end. A steel tank of those dimensions would be so heavy as to be difficult to move to the other end of the island, and would not require coral piled around it to keep it upright. We're left with the probability that it was an aluminum tank. But where could it come from? Faced with an anomalous artifact unexplainable in the context of the island's known history, we must consider the possibility that it is connected to the only known alternative explanation, that of the Earhart disappearance

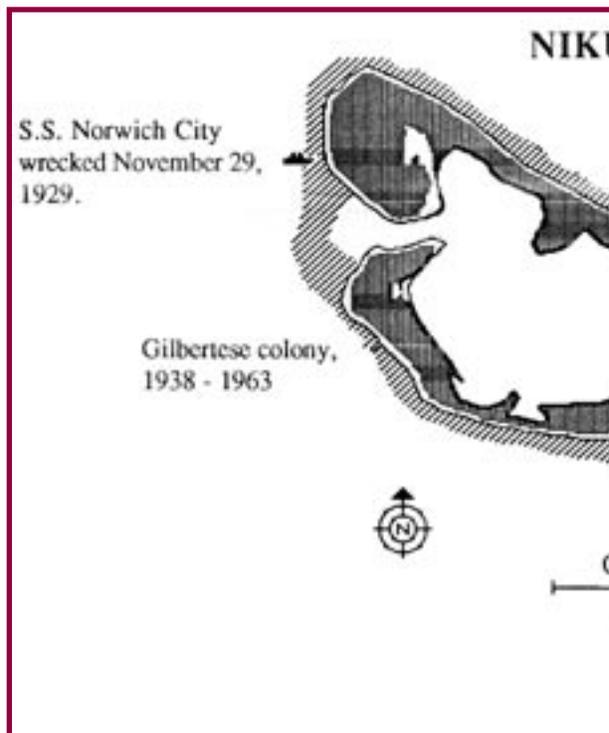
The 149 gallon main fuel tanks in the fuselage of NR16020 were very similar in dimension to the tank described by Evans. They were, of course, aluminum,

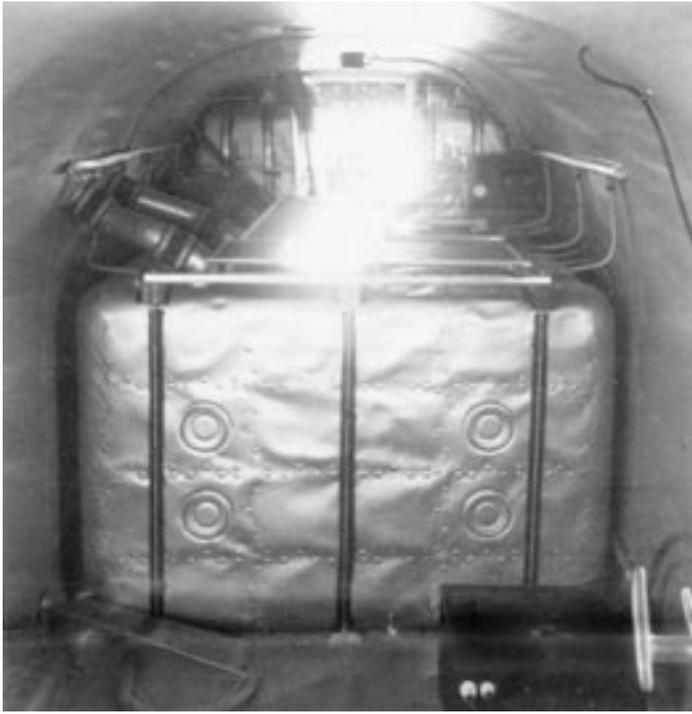


aluminum

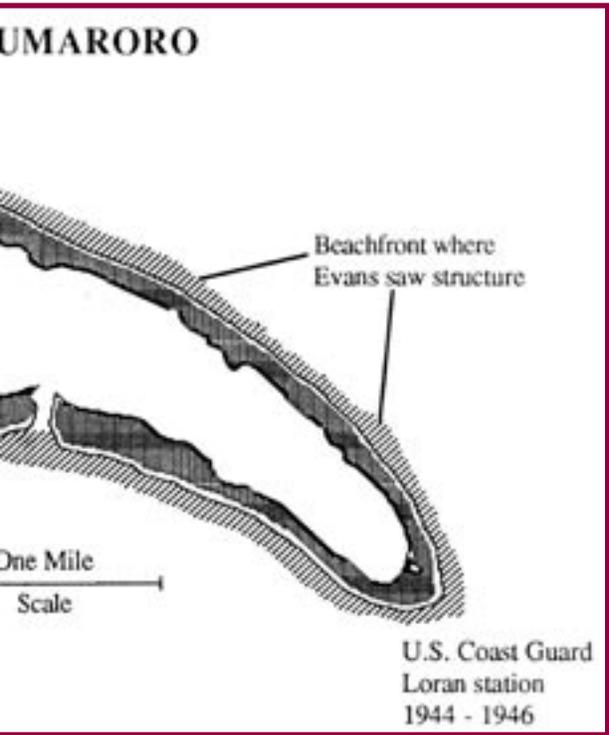


the tank itself was
could sit or lean on
top, you could reach
water level was in
The tank had coral





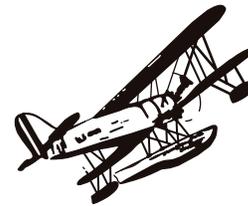
the cover with something fast
 it did not seal the
 up to the edge.
 peeled around it.



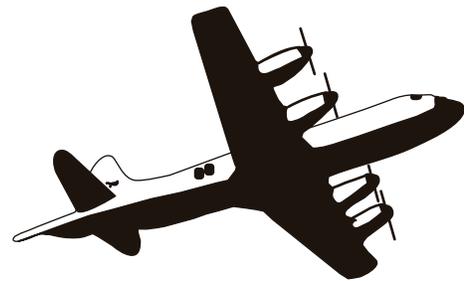
and weighed 64.3 pounds each (according to original CAA records). Readily removable from the aircraft (they were just strapped down and would fit through the door), an empty tank used as a cistern would need to be stabilized with coral slabs as Evans describes. One cannot help but notice the similarity between Evan's sketch of the tank with "something to lean or sit on" partially covering it, and the Lockheed photo (which Evans had never seen) of the fuel tanks as installed in the Electra.

The "piece of heavy cloth or canvas" described by Evans is also interesting. A March 7, 1937 article in the New York *Herald-Tribune* includes an interview with Amelia in which she describes "specially made covers of Grenfell cloth for the propellers and engines." How big would a piece of Grenfell cloth have to be to cover the nacelles and face of the Electra's R1340s? About eight feet by three feet would do it. And what, by the way, is Grenfell cloth? TIGHAR researcher Bob Kujawa (TIGHAR #962) came up with the answer from *Fairchild's Dictionary of Textiles*: "A closely woven twilled fabric of ply yarns of Egyptian cotton. Water repellent, windproof, and reversible."

But perhaps Dick Evans' testimony is not the first report we've had of such a structure seen on the beach at Nikumaroro. We have long wondered what Lt. John O. Lambrecht, Senior Aviator, U.S.S. Colorado, saw that caused him to include the following passage in his official report of his flight over Gardner Island on July 9, 1937, one week after Earhart disappeared:



"Here signs of recent human habitation were clearly visible, but repeated circling and zooming failed to elicit any answering wave from possible inhabitants, and it was finally taken for granted that none were there." (*Aircraft Search for Earhart Plane*, Lt. John O. Lambrecht USN, to Chief of the Bureau of Aeronautics, 16 July 1937.)



On September 20, 1989, a Royal New Zealand Air Force P-3 Orion flew over Nikumaroro and engaged in "repeated circling and zooming" over the island and over TIGHAR's expedition ship Pacific Nomad. The crew of the P-3 failed to see more than a dozen people on the island, in the open, dressed in colorful clothing, jumping up and down and waving. But we had a way home... 🐾



BOOKCASE UPDATE



Although the photo of “our” bookcase in Earhart’s airplane has yet to surface, a great deal of other information has come out as a result of the search. The appeal for research help in the last issue of TIGHAR Tracks (see The Grail, Vol. 6, No. 3) brought a flood of excellent work by TIGHAR members all over the U.S. and, so far, everything we learn seems to bring Artifact 2-1 closer to being the long-sought proof that we have the answer to the riddle. Even some of those who espouse other theories, in trying to disprove TIGHAR’s hypothesis, have uncovered information which strengthens it.

Where did the books come from?

Elgen Long is a retired airline captain who has spent many years researching the Earhart disappearance. He believes the airplane ran out of fuel and ditched at sea northwest of Howland and, although we disagree with his conclusions, we respect the tremendous amount of information he has gathered over the years and have always enjoyed a friendly and open relationship with Captain Long in the belief that honest peer-review is a cornerstone of sound research. In that spirit we sent him a copy of the project book and asked for his comments and criticisms. He reviewed his several hundred photos of the Electra in an attempt to either confirm or deny our suspicions that the bookcase came from NR16020 but what he came up with was both frustrating and fascinating. He was unable to find photographic coverage of two important areas within the airplane, either of which would be logical locations for a navigator’s bookcase. Neither was he able to find, in the remainder of the airplane, any means for stowing a navigator’s books. And yet, among his files was a copy of an inventory of the contents of the Electra made on March 20, 1937. That was the day Amelia wrecked the airplane in Hawaii on the first ‘round-the-world attempt and then turned it over to the military for preparation for shipment home for repairs. In the process, a very detailed inventory of all contents of the airplane not affixed to the airframe was made. That inventory clearly lists the navigator’s reference books but, unlike all other instances where bags, boxes or containers are listed along with their contents, no means of stowing or carrying the books is listed. We must conclude, therefore, that whatever the books were in remained in the

aircraft as an installed component. Whatever they were in does not show up in Elgen Long’s photos and so must be in one of the two areas as yet not seen in any photo.

Bo Doesn’t Know

Memories are not nearly as good as photographs but when we learned that Earhart’s mechanic, “Bo” McKneeley, was still alive it seemed worth a try to see if he remembered how the navigator’s station was set up. The only address we had for him was in Houston and that proved to be no longer good but the TIGHAR network once more came to the rescue. One call to Houston member Rick Siciliano (TIGHAR #247) and some on-site investigation resulted in a current address for Mr. McKneeley in no time. Unfortunately, after all that, Bo McKneeley just doesn’t remember any more and, of course, we’d much rather have someone say they don’t remember than have them remember poorly.

Fuzz Does

Francis O. “Fuzz” Furman remembers a great deal about the time he spent with AE and Fred in Java while they were having some repairs made to the airplane. Fuzz was the representative of the Martin Company servicing the new B-10 bombers used by the Netherlands East Indies Air Force and he spent five days with Earhart and Noonan while mechanics fixed a broken exhaust gas analyser on the Electra. He remembers that AE kept to herself, took her meals in her room, and frequently called her husband, George Putnam, on the

8	Ea.	1 Qt. Sealright containers
2	"	Canteens, type 4 N
1	"	Ditto 6 N
1	Bdl.	Containing: 4 Prop. Blade Covers and 2 engine covers
1	Pkg.	Kleenex
*1	Ea.	Funnel with chamois strainer
1	Pkg.	Air Bottles for life jackets
1	Ea.	Fuel tank gauges
1	Book	Radio Aids, Navigation
1	Box	Lead Pencils
1	Book	List of Broadcasting stations
2	"	American Nautical Almanac 1937
1	"	List of Coast Stations & Ship Stations
1	"	List of Aeronautical Stations and aircraft stations
1	"	List of Stations performing special services
2	"	Navigation tables for Mariners and Aviators
1	Ea.	Envelope containing miscellaneous navigation papers
1	"	Parallel
2	"	Dividers
3	"	Scratch Pads

Excerpt from inventory of NR16020 made March 20, 1937, following groundloop accident at Luke Field, Oahu. Note nine various books listed, but no listing of any case to contain them, although the envelope containing parallel, dividers, and scratch pads is separately catalogued. Whatever the books were in stayed in the airplane. Note also the bundle “Containing: 4 Prop. Blade Covers and 2 engine covers.”

telephone. He spent most of his time with Fred Noonan who he remembers as being quite concerned about the upcoming Howland leg. But far from hitting the bottle as some have alleged, Fuzz remembers Fred as never taking a drink while he was in Java and being almost obsessive about checking his chronometers for accuracy. He does not remember Fred having his navigational books out of the airplane, nor did Fuzz ever have occasion to board the Electra so he was unable to help us regarding the bookcase.

Paint Drips and Screw Heads

Research into the physical characteristics of the artifact itself has been more rewarding. An inspection of the paint remnants visible on the bookcase by Alexander A. Chasan, Coatings Specialist at the U.S. Navy's David Taylor Research and Development Center in Annapolis, Maryland, brought a very strong opinion that the case had never been installed in a military aircraft. Another line of research focused on the fact that one of the modifications to the case (an apparent anchor for a canvas strap) is attached with a truss type Phillips head screw. When did that type of screw come into use? If the date was after June of 1937 we would be — well, screwed. We were surprised at the number of aircraft restoration experts who couldn't answer the question, and it was finally TIGHAR member Bob Kujawa, TIGHAR # 962, who put us in touch with, guess what, the Phillips Screw Company of Gloucester, Massachusetts. It turns out the Phillips head screw was developed by Dr. Henry Frank Phillips, a dentist in Eugene, Oregon, who bought out early patents on cross head screws and patented his own improved version in 1932. By 1936 screws such as the one on Artifact 2-1 were being test marketed in various industries (Cadillac automobiles, for one). Bulk orders of the new screws were not placed by the aviation industry until 1939 and 1940.

So could a test market Phillips head screw have been used on the Earhart "Flying Laboratory" in 1937? The answer is certainly yes. Was it? To answer that we still need the elusive photograph.

H.M. Navigator's Bookcase

Other research has eliminated one more possible alternative explanation for the unique mounting holes and bracket on Artifact 2-1. We know that our bookcase was installed very differently from those in U.S. military PBYS, but there was another major purchaser of the aircraft. Might the bookcases in British Catalinas be installed differently than those in their American cousins? After all, Nikumaroro's primary affiliation was British, and if a post-war Catalina had visited the island it might well have started out as an RAF or RAAF airplane.

Thanks to librarian Peter Elliott at the RAF Museum we have the answer. British Catalinas carried an entirely different navigator's bookcase than the U.S. aircraft, and a moment's thought makes the reason obvious. Part No. 28F 4023 was designed for publications of the U.S. Navy's Hydrographic Office; while the British bookcase, Part No. 28F 5662, was designed for manuals produced by the Royal Observatory. Different size books, different bookcase. Is Artifact 2-1 from a British airplane? No way.

The Search Goes On

Nobody said this was going to be easy and there are still plenty of sources being investigated by a number of TIGHAR members. Bob Kujawa (TIGHAR #962) in Wisconsin, Kristin Tague (TIGHAR #905) and Mike Bowman (TIGHAR #758) in California, and Mike Williams (TIGHAR #371) in Indiana are just a few of those who are digging for the next piece of the puzzle. That photo is out there somewhere. If you'd like to help find it call Project Director Ric Gillespie. Maybe there's a source that needs checking in your area. 



Is There Life Beyond Earhart?

Although it may seem like it lately, TIGHAR is not The International Group for Historic Amelia Recovery. Other active, if less media-hyped, projects include:

Operation Sepulchre — WWII Luftwaffe aircraft sealed in underground German hangars since 1945.

Lady in Waiting — B-17E 41-2446, the world's oldest complete and original Flying Fortress, awaiting recovery from a Papua New Guinea Swamp.

Under investigation: A Doolittle B-25 in shallow water off the China coast; Curtiss Sparrowhawks with the wreck of the Airship Macon; relics of the **Bellanca WB2 Columbia** buried in Delaware; and much more.

At the same time, TIGHAR has become the leader in discussions throughout the air museum world concerning the establishment of long-overdue standards, definitions and protocols which will have a profound effect upon the future of both static and airworthy historic aircraft.

The Ushers Will Now Collect the Offering

Everything TIGHAR does is funded entirely by public contributions, and the progress we're making can only continue if TIGHAR members make it possible. With this issue of TIGHAR Tracks we've included a summary of the many high quality publications and wearables the foundation offers exclusively to you, the members. Use the order form to express your support for the work your organization is doing. Renew your membership promptly, and when you do, take advantage of the reduced rates for multiple year renewals. And if you're especially moved by something we're doing, there's no better way to express your approval than by sitting down, writing a note, and enclosing a check as a tax-deductible contribution. That's the most meaningful way to say "Go get 'em, TIGHAR!" 

STRICTLY BUSINESS

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A big THANKS!! to Federal Express Houston who, through TIGHAR member Rick Siciliano, has donated two desks and two large filing cabinets to TIGHAR. We still need bookcases, credenzas or low cabinets, a large table suitable for meetings (and maybe some folding chairs?), more bookcases (actually, utility shelving would do very nicely), one or two two-drawer filing cabinets, and a partridge in a pear tree. Further donations of desks would also be welcome, as additional work stations will be necessary soon. Please call before sending anything — if we're in Maine, we'd just as soon stuff didn't sit outside for five weeks ...

Membership renewal notices are now being mailed on the 17th of each month. Please renew your membership on the first notice — every quarter spent on postage means a quarter not spent on a project. If you are in any doubt about the status of your membership, do not hesitate to call.

If you have not received your membership directory, please call or drop a postcard to us, and we'll send you one. A major snafu developed in the mailing list, apparently, and quite a few people did not get one. If you want yours, let us know and we'll send it right out.

Already panicking about that impossible-to-buy-for person on your holiday shopping list? Try a gift membership in TIGHAR for something different that gives all year 'round. Sure to please anyone interested in history or airplanes!

Additional TIGHAR patches and membership decals can be purchased for a small price — see the order form in this TIGHAR Tracks for details.



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 cooperation 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; neither does it engage in the restoration or buying and selling of artifacts. Instead, the foundation devotes its energies to the saving of endangered historic aircraft wherever they may be found, and to the education of the international public in the need to responsibly preserve the relics of the history of flight.

TIGHAR Tracks, published nine times each year, is the official publication of The International Group for Historic Aircraft Recovery. A subscription to **TIGHAR Tracks** is included as part of membership in the foundation (minimum donation \$35.00 per year). The editors welcome contributions of written material and artwork. Materials should be addressed to: Editors, **TIGHAR Tracks**, 1121 Arundel Drive, Wilmington, DE 19808 USA. Telephone 302/994-4410. Photographs and artwork will be returned on request.

Editors: Patricia R. Thrasher and Richard E. Gillespie

MEMBERSHIP FORM

I would like to join TIGHAR. Enclosed is my donation of —

\$35.00 for a one year membership

\$60.00 for a two year membership

\$125.00 for a five year membership

\$1,000 for a life membership

As a member of TIGHAR, I will receive the following benefits:

- Annual subscription to TIGHAR Tracks
- Membership patch, directory and catalog
- Expedition and educational opportunities

Name _____

Address _____

Telephone _____

Please return this form with your membership dues to TIGHAR, 1121 Arundel Drive, Wilmington, DE 19808 USA; Telephone 302/994-4410, 9 a.m. to 5 p.m. EST/EDT, M-F. ALL DONATIONS TAX-DEDUCTIBLE WITHIN THE LIMITS OF THE LAW.

