TIGHAR TRACKS

THE JOURNAL OF THE INTERNATIONAL GROUP FOR HISTORIC AIRCRAFT RECOVERY

December 4, 1998 Volume 14, Number 2

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

– John Aubrey
Stonehenge Manuscripts
1660

About TIGHAR

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, responsiblity, 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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Contents

Dear TIGHAR 3

Amelia Earhart's Bones and Shoes? 4

Kanawa Point 12

The Wreck Photo 14

The Crash at Sydney Island 15

Turning of the Tide 19

Do You Have an Historic Aviation Property? 20

Yet Another Lost Lockheed 23

On the Cover

Is this the man who found Amelia Earhart? A modern forensic re-analysis of the measurements taken of the bones found on Nikumaroro in 1940 by Gerald B. Gallagher indicate that his initial suspicion may have been correct (see "Amelia Earhart's Bones and Shoes?" page 4). This photo was taken aboard ship enroute from England to the Pacific in 1937 as three new Colonial Service Cadet Officers set out to serve the Empire. Gallagher is seated at left. Behind him is Eric R. Bevington and seated on the deck is D.C.I. Wernham. All would eventually visit Nikumaroro. Gallagher is still there.

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Board of Directors

Dear TIGHAR

4 June 1998

HERE (FINALLY) IS MY RENEWAL. I WANTED TO WAIT for the V14, #1 *TIGHAR Tracks* (which didn't arrive until the last week in May) to see what all was covered. I was hoping to see updates on White Bird, Operation Sepulchre, Beast of Bombay Hook, etc. Or are all these dead issues?

Just to pull your chain a little, at the end of the 4 March *TIGHAR Flash* you talked about TIGHAR being a one-trick pony. At this point, wouldn't it be more accurate to call TIGHAR a "zero-trick pony"??? Unless I've missed something, has the organization actually recovered an historic aircraft?

Also (another little tug), are there any projects that us "ordinary people" can get involved with) other than simply sending money for the BIG projects?)? At one time there was talk about regional groups, projects, etc.

Regards,
Vern Wiese
Beavercreek, Ohio

June 9, 1998

MANY THANKS FOR YOUR RECENT LETTER AND renewal. For a five-year renewal you're entitled to some chain pulling.

Is TIGHAR a "zero-trick-pony? I guess it depends on what you call a trick. We made a decision a long time ago that we would not concentrate our efforts on saving old airplanes from the "teeth of time" only to have them destroyed by "the hands of mistaken zeal." There are very few air museums to whom I would turn over a truly historic aircraft. In that sense, we're an organization well ahead of its time. Before it makes sense to recover historic aircraft a great deal of education still needs to be done.

Over the years we've conducted dozens of seminars, conferences and training courses which have introduced hundreds of enthusiasts (including you) to the principles of historic preservation. That's a pretty good trick. We've helped fund scientific research into new conservation techniques and we put together and published the world's first *Guide to Aviation Historic Preservation Terminology*. And that was no easy trick. Our investigations in Germany have put to rest dozens of rumors about underground Luftwaffe airplanes. We would, of course, have rather found the airplanes than expose the rumors, but the truth is what it is, and finding the truth is always a good trick. Our work in Maine and Newfoundland has not yet discovered the fate of the White Bird, and that goal may never be achieved. But that search has been the school in which we have learned the skills which have made possible the successes of the Earhart Project. Perhaps you are among those who see that project as without meaningful result unless and until we recover the proverbial "smoking gun." As you might guess, I don't see it that way. The Earhart Project has brought to light a wealth of new and accurate information which has replaced myth with documented fact. That's a trick worthy of any pony. When the day comes (and it will come) that we bring whatever remains of NR16020 back to the States, I expect that no one will much care how many other historic aircraft we have recovered.

From time to time we've attempted to start regional chapters but have never found sufficient interest to support them. Maybe that's because TIGHAR, unlike, say, the 99s, is not a club. It is not a member-driven organization; that is to say, it does not exist to serve the needs of its members. TIGHAR is a board-driven organization. It has objectives set by its Board of Directors which the officers and members work to accomplish.

The world doesn't need a TIGHAR to dig bent propellers out of the ground. But it takes a TIGHAR to speak up for aviation historic preservation and only an international research engine like TIGHAR has a chance of finding Amelia Earhart.

I'm pretty proud of our pony.

All the best,
Richard E. Gillespie
Executive Director

The following paper was prepared by Karen R. Burns, PhD (TIGHAR # 2071); Richard L. Jantz, PhD; Thomas F. King, PhD (TIGHAR #0391CE); and Richard E. Gillespie, Executive Director of TIGHAR, for release at the annual convention of the American Anthropoligical Association in Philadelphia on December 5, 1998.

Amelia Earhart's Bones and Shoes?

Current Anthropological Perspectives on an Historical Mystery

Karen Ramey Burns[1], Richard L. Jantz[2], Thomas F. King[3], and Richard E. Gillespie[4]

Introduction

The disappearance of aviation pioneer Amelia Earhart in 1937 is a mystery that continues to grip the imagination of many. Although the most widely held assumption is that she simply crashed and sank in the Pacific Ocean, many speculative and not-so speculative alternative explanations have been advanced over the years. An ongoing interdisciplinary study by The International Group for Historic Aircraft Recovery (TIGHAR) has recently generated anthropological data consistent with the proposition that Earhart and her navigator, Fred Noonan, landed and later died on Nikumaroro Island in the Republic of Kiribati.

TIGHAR is a non-profit research, educational, and historic preservation organization based in Wilmington, Delaware, one of whose specialties is the investigation of aviation-related historical puzzles like the disappearance of Earhart. Following up on a reconstruction of Noonan's most likely navigational decisions given the practices of the time, TIGHAR's Earhart research has focused on Nikumaroro, an uninhabited island some 400 miles southeast of Howland Island, Earhart's destination at the time of her loss. Four archeological surveys and test excavations have been conducted to date on the island with the cooperation of the Kiribati Government, and extensive archival and oral historical research is ongoing. Background documentation and current research findings can be accessed through TIGHAR's web site at www.tighar.org.

Nikumaroro, then known as Gardner Island, was uninhabited in 1937, and is so today. In 1938, however, it became an important part of the Phoenix Island Settlement Scheme (cf. Maude 1968; Laxton 1951) of the British Western Pacific High Commission, and was occupied by I-Kiribati colonists until 1963 when the effort was given up. In 1944–45 the island also hosted a U.S. Coast Guard Loran station.

In 1960, the late Floyd Kilts, a retired

Floyd Kilts

The Floyd Kilts Story

Coast Guardsman, gave an interview to the San Diego, California *Tribune,* in which he posited Earhart's crash-landing on Nikumaroro (Skarr 1960). His speculation was based on what he said he had been told by one of the colonists while Kilts was helping dismantle the Loran station in 1946.

> A native tried to tell me about it... It seems that in ... 1938 there were 23 island people, all men, and an Irish magistrate planting coconut trees... They were about through

and the native was walking along one end of the island. There in the bush about five feet from the shoreline he saw a skeleton.

What attracted him to it was the shoes. Women's shoes, American kind... size nine narrow...

The magistrate was a young Irishman, who...thought of Amelia Earhart right away. He put the bones in a gunnysack and...in a 22-foot, four oared boat started for Suva, Fiji...

When only about 24 hours out of Suva, he died. The natives are superstitious as the devil and the next night ... they threw the gunnysack full of bones overboard.

Kilts' story, though laden with fantastic premises like the sailing of a small four-oared boat from Nikumaroro to Fiji, contains certain elements that resemble known facts. There was never an "Irish magistrate" on the island, but there was a British colonial administrator of Irish descent, Gerald B. Gallagher, whose nickname was in fact "Irish." Gallagher did not die in a boat 24 hours out of Fiji, but he did die on Nikumaroro about 24 hours after returning from leave in Fiji. What sort of actual course of events the story might reflect, if any, has until recently been a matter of mere speculation.

Gerald Gallagher's grave on Nikumaroro. TIGHAR photo by J. Clauss.

The Nikumaroro Shoe

In 1991, while conducting test excavations at a site on Nikumaroro suspected to have Earhart associations, TIGHAR encountered a surface scatter of shoe fragments. These included a Cats-Paw replacement heel, pieces comprising most of a rubber sole, and a brass shoelace eyelet. Experts from the Cat's Paw Division of the Biltrite Corporation identified the heel as dating from the mid-1930s and the sole, which exactly aligns with the nail holes in the heel, as probably coming from a woman's blucher oxford of the same era. Reassembly of the fragmented sole indicates an overall length equivalent to about a size nine. Photographs of Earhart taken shortly before her disappearance show her wearing blucher oxford style shoes of that approximate size with brass shoelace eyelets and what appear to be recently replaced heels (TIGHAR 1996: 25). This discovery, of course, gave added credence to the Kilts account, and justified further detailed investigation of the site in 1997. Analysis of the results of the 1997 work is continuing.

The heel, sole, and eyelet found oan Nikumaroro. TIGHAR photos by P. Thrasher

Detail of Amelia Earhart standing on the wing of her airplane ten days before she disappeared. The shoe is a blucher oxford with brass eyelets, approx. size 8^{1}/2 or 9. The lighter shade of the lower heel suggests that it may be a replacement heel.

The Tarawa Papers

In the summer of 1997, historical researcher and TIGHAR member Peter McQuarrie discovered a file of papers in the national archives of the Republic of Kiribati on Tarawa Atoll pertaining to the discovery of bones on Nikumaroro (c.f. TIGHAR 1997). The file contained copies of wireless traffic between Gallagher on Nikumaroro and various officials on Ocean Island, on Tarawa, and in Fiji.

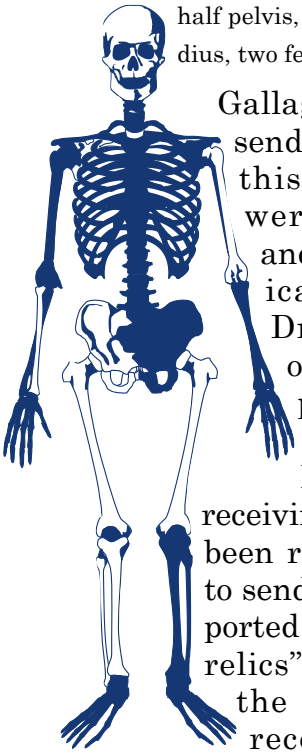
In the first message, dated September 23, 1940, Gallagher reports the discovery of a skull "which is just possibly that of Amelia Earhart." In a second message dated the same day, Gallagher reports that the skull had been discovered "some months ago" and

buried. He goes on to say that:

> Thorough search has now produced more bones (including lower jaw) part of a shoe a bottle and a sextant box. It would appear that:
> (a) Skeleton is possibly that of a woman,
> (b) Shoe was a womans and probably size 10,
> (c) Sextant box has two numbers on it... 3500 (stencilled) and 1542— sextant being old fashioned and probably painted over with black enamel.

Gallagher was directed by the Western Pacific High Commission to keep the matter "strictly secret," and was asked for more information. On October 6, 1940 he describes the shoe as "a stoutish walking shoe or heavy sandal" and on October 17 he reports that the discovery site included the "remains of fire, turtle, and dead birds." He also reports that the bones recovered comprise:

> . . . only skull, lower jaw, one thoracic vertebra, half pelvis, part scapula, humerus, radius, two femurs, tibia and fibula.



Unshaded bones are the ones found on Niku.

Gallagher was instructed to send the bones to Fiji, and this he did, though they were briefly intercepted and inspected by the medical officer on Tarawa, Dr. Lindsay Isaac, who on February 11, 1941 pronounced them the remains of an elderly Polynesian male. After receiving what seems to have been rather pointed direction to send the bones on, Isaac reported releasing the "wretched relics" on February 14, and the Commission reported receiving them on April 28th, 1941.

The Hoodless Analysis

Research in the Western Pacific High Commission's archives in London has recently produced evidence of the next step in the bones' journey. A report by the late Dr. D.W. Hoodless of the Central Medical School in Suva, Fiji (discussed below) documents his analysis of the remains, and his conclusion that they "definitely" represented a male but that they were probably not those of a Polynesian, or Micronesian. Instead, he thought them most likely the bones of a "short, stocky European, or even a half-caste" (TIGHAR 1998:9). Importantly, the report includes Dr. Hoodless' hand-written notes with the measurements and first-hand observations he made on the bones. These are reproduced in facsimile on page 7.

Re-analysis of Hoodless' Observations

The Hoodless report and his handwritten notes were examined by forensic skeletal biologists Burns and Jantz independent of one another, and each separately analyzed Hoodless' measurements. Two questions were considered:

(1) To what extent can the opinions offered by Hoodless about the character of the bones be relied upon?

(2) What can be said about the bones based on the application of modern analytic procedures to Hoodless' measurements?

Reliability of the Observations

Hoodless' report begins:

> I have to-day examined a collection of bones forming a part of a human skeleton. These bones were delivered to me in a wooden box by Mr P.D. Macdonald of the Western Pacific High Commission.

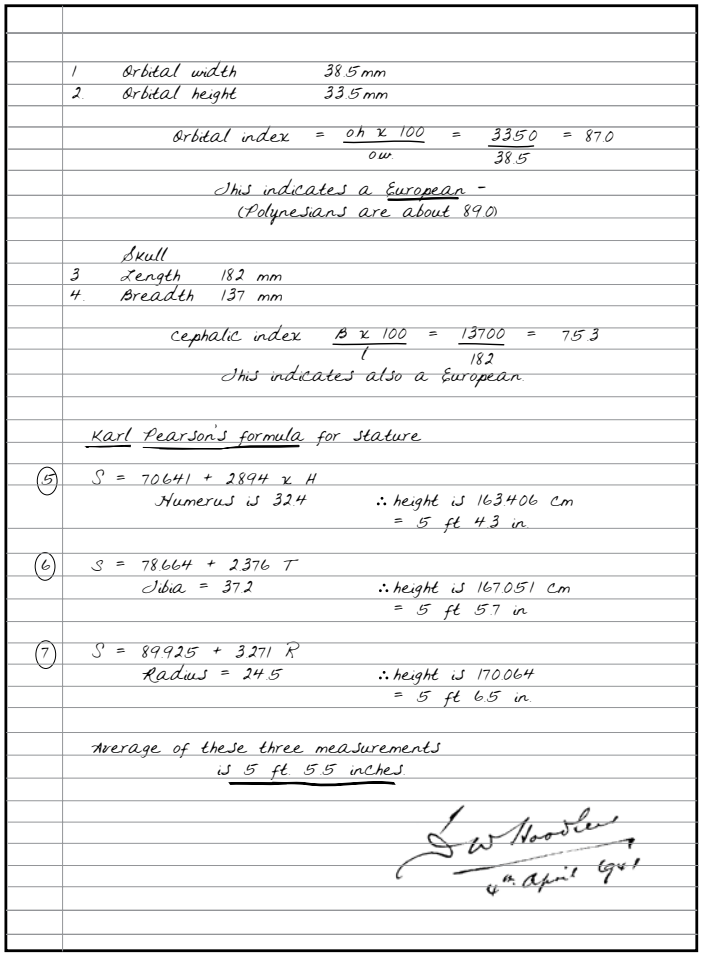
He goes on to list the thirteen bones included, commenting that among them were:

> ... a skull with the right zygoma and malar bones broken off ...

The zygoma and the malar are the same bone. This raises some question about the extent of Hoodless's skeletal knowledge.

Hoodless notes that:

> [f]rom this list it is seen that less than half of the total skeleton is available for examination.



1 Orbital width 38.5mm
2 Orbital height 33.5mm

Orbital index = oh x 100 / ow = 3350 / 38.5 = 87.0

This indicates a European -
(Polynesians are about 89.0)

Skull
3 Length 182 mm
4 Breadth 137 mm

Cephalic index B x 100 / l = 13700 / 182 = 75.3

This indicates also a European

Karl Pearson's formula for stature

(5) S = 70641 + 2894 x H
Humerus is 324 ∴ height is 163406 cm
= 5 ft 4.3 in

(6) S = 78664 + 2376 T
Tibia = 37.2 ∴ height is 167.051 cm
= 5 ft 5.7 in

(7) S = 89.925 + 3.271 R
Radius = 24.5 ∴ height is 170.064
= 5 ft 6.5 in

Average of these three measurements
is 5 ft 5.5 inches

L W Hoodless
4th April 64

As noted, only thirteen bones are listed in this inventory. Officially, the adult human skeleton is composed of 206 bones, or over 130 bones if bones fused in adulthood (e.g. the cranium) are counted as single units and the teeth and very small bones are left out. In any event, thirteen bones is less than 10 percent of the bones of the skeleton. Hoodless examined *much less* than "less than half" of the skeleton.

He goes on to observe that:

> [t]hese bones are very weather beaten and have been exposed to the open air for a considerable time. Except in one or two small areas, all traces of muscular attachments and the various ridges and prominences have been obliterated.

Note that he says that "except in one or two small areas, all traces of muscular attachments.... have been obliterated." This observation is important in evaluating a subsequent statement.

Hoodless continues...

> By taking measurements of the length of the femur, tibia and the humerus, I estimate that those bones belonged to a skeleton of total height of 5 feet 5.5 inches approximately.

When speaking of stature, a value of a half inch is *not* "approximate." The range that includes the standard error of estimate in long bones is between 3 and 4 inches. About one third of the population is not even covered by this range.

Hoodless then concludes that:

> [f]rom the half sub-pubic angle of the right innominate bone, the "set" of the two femora, and the ratio of the circumferences of the long bones to their individual lengths, it may be definitely stated that the skeleton is that of a MALE. *[emphasis in original]*

To a skeletal biologist, these read like the words of a person who never expects to be challenged. Forensic anthropologists will recognize this kind of statement as common in the analysis of skeletal remains by non-osteologists. The victim is not going to contradict the opinion, and the people reading the report are concerned only with the bottom line, not the methodology. Snap judgements are made to satisfy those requesting the report, based on analysis that lacks methodological rigor. In fact, of course, human variation is such that population norms must be taken into account when assessing sex from skeletal remains. Even if the population is well-known to the observer, caution is important. The overlap between the normal curve for male measurements and the normal curve for female measurements is considerable.

Hoodless does not provide a number of key pieces of data. What is the actual measurement of the sub-pubic angle? What is the femoral head measurement? What population database is he using? Is the database appropriate for the unknown individual in question? What about the angle of the sciatic notch, the size of the mastoid processes, the rugosity of the occipital, the shape and size of the brow ridge, the contour of the frontal bone, and other sex indicators?

He proceeds to discuss the individual's age:

> Owing to the weather beaten condition of all the bones, it is impossible to be dogmatic in regard to the age of the person at the time of death, but I am of the opinion that he was not less than 45 years of age and that probably he was older: say between 45 and 55 years.

Hoodless does not mention cranial sutures, pubic symphysis contour, rib ends, dental wear, osteoarthritis, or any other skeletal age indicator. What is the basis for his opinion? Of course, much of the research on skeletal age has been published since the time of Hoodless's report, but a ten year interval in the middle or late years of life is a narrow range, and he must have had *some* basis for his conclusion. If the skeletal material is in as poor condition as he says, there is no way to determine age within such a narrow range even today except by using microstructural analysis.

Finally, Hoodless comments that:

> I am not prepared to give an opinion on the race or nationality of this skeleton, except to state that it is probably not that of a pure South Sea Islander – Micronesian or Polynesian. It could be that of a short, stocky, muscular European, or even a half-caste, or a person of mixed European descent.

In other words, Hoodless says he is not prepared to give an opinion, but then he gives a rather precise opinion, without providing a basis for it. In assessing the reliability of this opinion, one must consider that:

- "Short" is a relative term. Assessing stature requires an accurate assessment of the long bones.
- "Stocky" requires some idea of weight. Without a belt or measurable clothing, weight cannot be determined from skeletal remains.
- "Muscular" requires analysis of muscle attachment areas, which Hoodless previously described as "obliterated" except in "one or two small areas."
- "Race" is very difficult to determine, and racial mixture is even more difficult, yet Hoodless suggests "half-caste" with no stated basis for his opinion.

Hoodless concludes his report by suggesting that:

> [i]f further details are necessary I am prepared to take detailed and exact measurements of the principal bones in this collection, and to work out the various indices (e.g. the platymeric index for the femur or the enemic index for the tibia) but if such a detailed report is required the obvious course to adopt would be to submit these bones to the Anthropological Dept of the Sydney University where Professor Elkin would be only too pleased to make a further report.

This one paragraph suggests that Hoodless knew he might have missed something in his analysis. Unfortunately, there is no evidence to indicate that his very reasonable suggestion that the bones be subjected to independent analysis was taken up; the University of Sydney has reported no record of having received the bones.

In summary, there is little reason to trust Dr. Hoodless' conclusions about the age, sex, or racial background of the individual represented by the Nikumaroro bones.

Reanalysis of the Measurements

Skeletal measurements taken over 55 years ago by a now-deceased individual of unknown expertise, with no description of the methods or assumptions employed, must be used with great caution. In the case of the Nikumaroro bones, although Hoodless says that six long bones were present, he presented information on only three. For the cranium, he supplied only four measurements. We have no way of judging the reliability of the data he does present. The measurements he provides do not appear unreasonable, however, and in any event they are all we have to work with until the bones themselves are recovered.

Both Burns' and Jantz' analyses were

based on the assumption that Hoodless measured orbit breadth and tibia length in the same way as these variables are recorded in current data bases. This may not be correct, but we have no basis for assuming that he measured them in any different way.

Burns and Jantz both employed FORDISC 2.0 in their reanalyses of Hoodless' cranial measurements. FORDISC is an interactive computer program for the classification of unknown adult crania according to race and sex, using any combination of standard cranial measurements (c.f. Moore-Jansen, Ousley, and Jantz 1994; Ousley and Jantz 1996). Both arrived at the following conclusions:

Ancestry: The skull is more likely European than Polynesian, although it cannot be excluded from any population. Comparing the skull measurements to European, Polynesian and Micronesian populations, it is most similar to Norse females (see Figure 1).

Sex: Assuming the skull represents a person of European ancestry, the FORDISC analysis indicates that the individual represented was most likely female. Unfortunately the level of certainty is very low; the female/male probability is ca. .65/.35. If Hoodless measured orbit breadth in a different way, such that the orbits were in fact a couple of millimeters greater as measured today, this would change the classification to male, with male/female probabilities of .53/.47

Stature: Jantz gave the question of stature special attention. Noting that Hoodless got rather widely varying estimates, depending upon which bone he used, Jantz employed formulae derived from a modern reference sample (Ousley 1995) in the forensic anthropology data bank at the University of Tennessee, Knoxville and obtained the following:

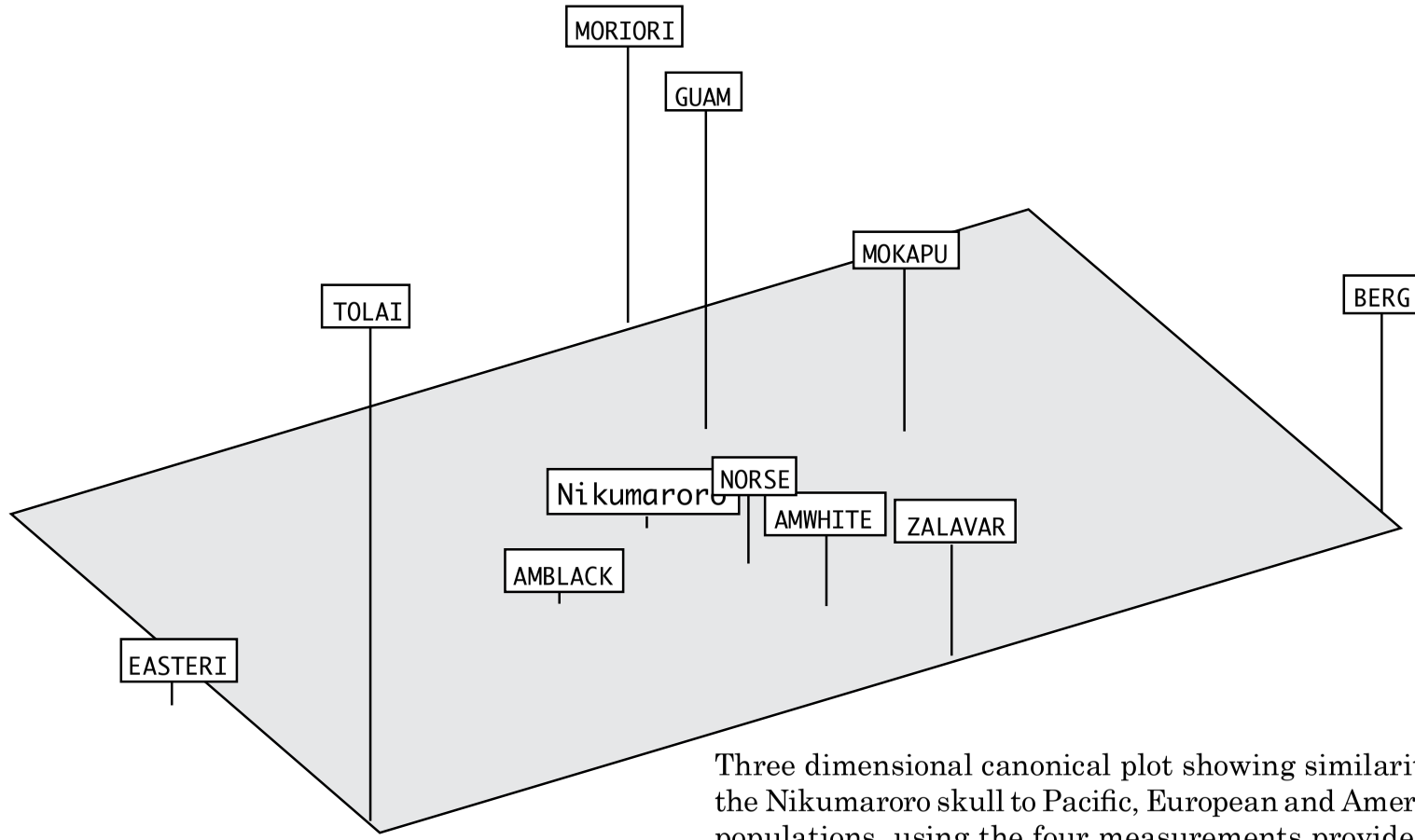
Bone/length	Stature of individual assuming	
	Female	Male
Humerus @ 32.4 cm:	169.2 cm./66.6″	173.0 cm./68.1″
Tibia @ 37.2 cm:	167.9 cm/66.1″	172.7 cm./68.0″
Radius @ 24.5 cm:	171.7 cm./67.6″	173.7 cm./68.4″

These estimates have confidence intervals that range from ca. 162.6 cm./64″ to 177.8 cm./70″. Estimates based on the different bones do not vary greatly from one another–certainly not to the extent Dr. Hoodless' did. If the bones are those of a female, the best estimate is ca. 5′6″ to 5′7″, if male about 1.5 inches more. Since the results from the tibia fall into line with those derived from the other measurements, it is likely that Hoodless measured the tibia comparably with the way Jantz measured the tibiae in the reference sample.

Turning the question around, Jantz asked what bone lengths would be expected from a women of Earhart's height? According to TIGHAR records, Earhart gave her height as 5′8″, but there is some indication she may have been closer to 5′7″. Regression predictions of bone length from stature for women of 5′8″ and 5′7″ are as follows:

	5′8″(172.72cm)	5′7″(170.18cm)
Humerus		
Observed length	324 cm.	324 cm.
Predicted length	322.4 +/-10.95	318.4 +/-10.95
Observed-Predicted	1.6	5.6
Radius		
Observed length	245	245
Predicted length	238.0 +/-9.67	236.7 +/-9.67
Observed-predicted	6.0	8.0
Tibia		
Observed length	372	372
Predicted length	377.9 +/-14.25	373.4 +/-14.25
Observed-predicted	-5.9	-1.4

These results indicate that the Nikumaroro bones fit Amelia Earhart's stature very well. The observed lengths all fall within one standard deviation of the estimates. For the humerus and tibia, the departures are trivial.



Three dimensional canonical plot showing similarity of the Nikumaroro skull to Pacific, European and American populations, using the four measurements provided by Hoodless. The Nikumaroro skull is most similar to Norse and American White.

Figure 1

Based on the information now in hand, Jantz and Burns both concluded that the remains found on Nikumaroro in 1939-40 represented an individual who was:

(1) More likely female than male

(2) More likely white than Polynesian or other Pacific Islander

(3) Most likely between 5′5″ and 5′9″ in height

Conclusions

It is, of course, impossible to know whether the bones inspected by Dr. Hoodless in 1941 were in fact those of a white female, and if anything even less possible to be sure that they were those of Amelia Earhart. Only the rediscovery of the bones themselves, or the recovery of more bones from the same skeleton on the island, can bring certainty. What we can be certain of is that bones were found on the island in 1939-40, associated with what were observed to be women's shoes and a navigator's sextant box, and that the morphology of the recovered bones, insofar as we can tell by applying contemporary forensic methods to measurements taken at the time, appears consistent with a female of Earhart's height and ethnic origin. Historical, ethnohistorical, archeological, and forensic research is continuing in an effort to achieve more definitive conclusions. Current planned research includes further inspection of archives in Tarawa and in England, further study of the site where the shoe parts were found in 1991, and a detailed archeological survey of another site on Nikumaroro that closely matches Gallagher's description of the bones discovery site. Details of the ongoing investigation may be accessed via www.tighar.org.

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Kanawa Point

Is there where it happened? Photo taken on Kanawa Point in 1989. Photo courtesy Tom King

EVER SINCE THE DISCOVERY OF THE TARAWA FILE (see *TIGHAR Tracks* Vol. 13, Nos. 1&2) in the late spring of 1997, we have thought that the site described by Cadet Officer Gerald B. Gallagher was most likely the same site where we found the shoe parts in 1991 and the campfire (with can label fragment) earlier in 1997. This did not require a great leap of faith. Gallagher said that the site was near the lagoon shore on the "southeastern corner" of the island. Depending upon how loosely you define "corner", our site fit that description. Gallagher said that it was an area scheduled for clearing. We know that our site was cleared about that time. Gallagher described finding part of the sole of a woman's "stoutish walking shoe." We found the same thing. Gallagher said there was a fire there. We found a fire.

But if this was, indeed, the castaway's campsite, why have we not found more artifacts or bones despite intensive searching? And isn't it perhaps just too much of a coincidence that we should have stumbled upon the campsite in the course of an investigation of a feature (the baby grave) which turned out to have nothing to do with the Earhart case? And what if Gallagher was speaking specifically instead of generally when he said "southeastern corner?"

Our doubts that the site was the same place where Gallagher found the bones became stronger when, at the Amelia Earhart Search Conference in San Carlos, California in July, Walt Holm (TIGHAR #0980C) noticed the similarity of features on a torn corner of the can label fragment to a commercial barcode. Walt's further research confirmed that the markings were entirely consistent with the European barcode system. His findings were later independently confirmed by McCrone Associates, a noted forensic laboratory whose help was recruited through the good offices of Bob Perry (TIGHAR #2021).

By late August, with our initial hypothesis that the fire was the same one mentioned by Gallagher disproved (there was no indication of repeated or "stacked" fires in that spot) we were ready to rethink our initial hypothesis about where Gallagher had found the bones. Tom King, our Senior Archeologist, pointed out that Nikumaroro is actually an atoll made up of two islands separated by narrow passages into the central lagoon. He wondered if Gallagher may have been referring to the

The presence of a barcode on the fragment of a paper can label recovered from the campfire found in 1997 effectively dates the fire to the 1970s or later.

southeast side of the westernmost of the two islands. Tom also noted that a small promontory in that area is associated in island folklore with an encounter with Nei Manganibuka, the Gilbertese ancestor/spirit who is the guardian of Nikumaroro. As described in an article entitled "Nikumaroro" published in the journal of the Polynesian Society and written by Paul B. Laxton, the post-war District Commissioner who spent several months on Niku in 1949:

> The wife of Teng Koata, the first island leader, had been walking one afternoon and saw a great and perfect maneaba, and sitting under its high thatched roof, Nei Manganibuka, a tall fair woman with long dark hair falling to the ground about her, with two children: she conversed with three ancients, talking of her island of Nikumaroro, and its happy future when it would surely grow to support thousands of inhabitants.

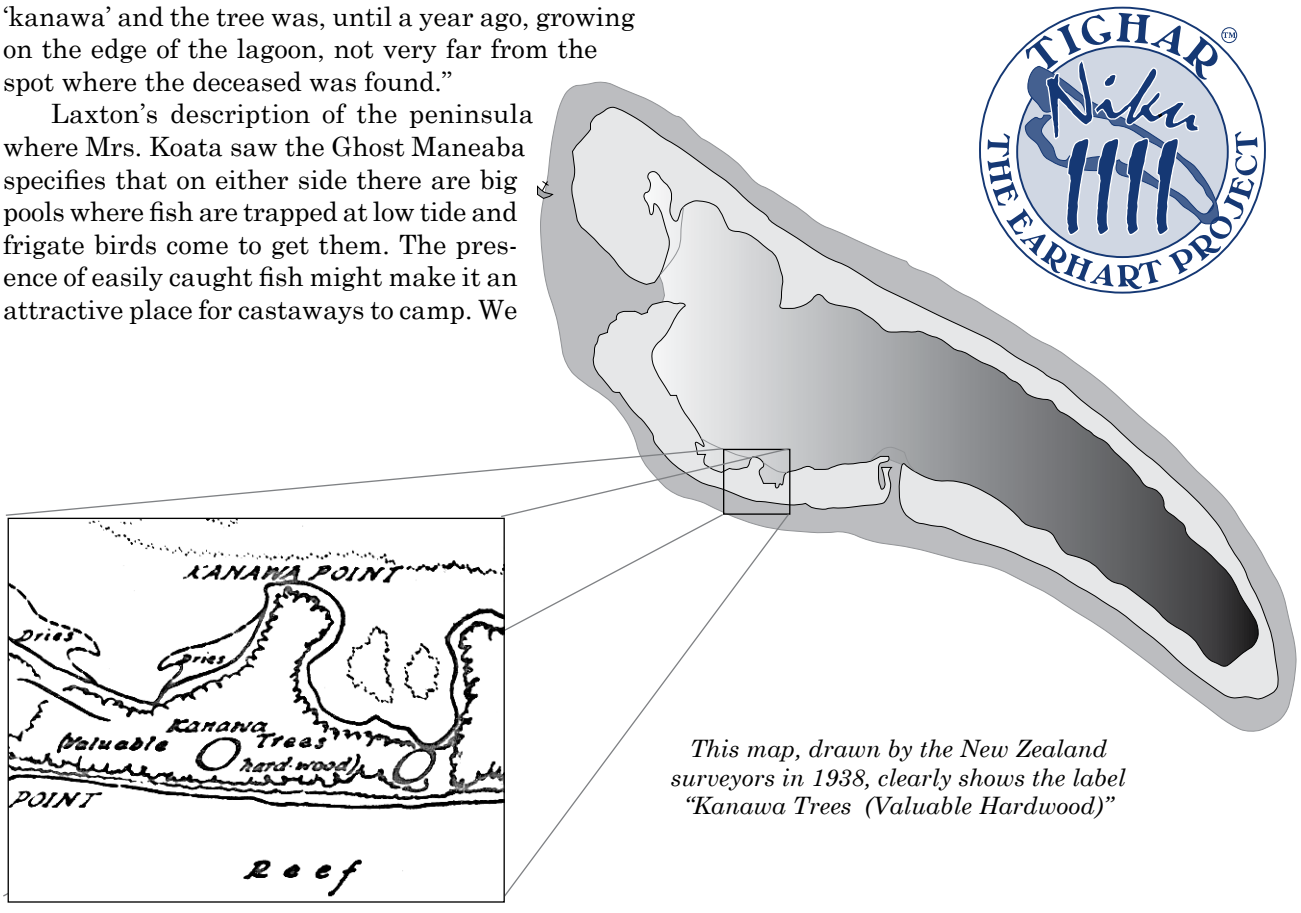
(A maneaba is a communal meeting house and is the central feature of a Gilbertese village.)

Further research led to the observation that, on the map produced by the New Zealand survey of early 1939, that same promontory is labeled "Kanawa Point." This rather clearly implies that there was a Kanawa tree or trees at that location in late '38/early '39. Kanawa is rare and valuable wood. Gallagher, on 27 December 1940, says that the coffin built to convey the bones to Fiji "is made from a local wood known as 'kanawa' and the tree was, until a year ago, growing on the edge of the lagoon, not very far from the spot where the deceased was found."

Laxton's description of the peninsula where Mrs. Koata saw the Ghost Maneaba specifies that on either side there are big pools where fish are trapped at low tide and frigate birds come to get them. The presence of easily caught fish might make it an attractive place for castaways to camp. We also know from our interviews with former residents of Nikumaroro that there is a place on the island known to them as "Niurabo" which is sacred to Nei Manganibuka and is the place where Mrs. Koata a had her encounter. It would seem safe to conclude that Kanawa Point is Niurabo and may well be the spot where the bones were found. (Tempting as it may be to speculate that what Mrs. Koata saw was actually a 'round-the-bend Amelia Earhart, it is more likely that her encounter was a spiritual experience perhaps prompted by the association of that place with the discovery of human remains.)

Kanawa Point was visited briefly by a small TIGHAR team led by Tom King in the last days of the 1989 expedition (Niku I). A cursory look turned up nothing of particular interest except a place nearby along the shoreline where a scatter of opened clamshells indicated former human presence (only people eat clams by prying open the shell). Because the shells had been there long enough to be cemented into the coral, Tom regarded them to be possible evidence of prehistoric habitation. Recently, however, we've learned that such cementation can occur in a matter of decades rather than centuries.

Needless to say, an intensive search of Kanawa Point is high on our agenda for the Niku IIII expedition.

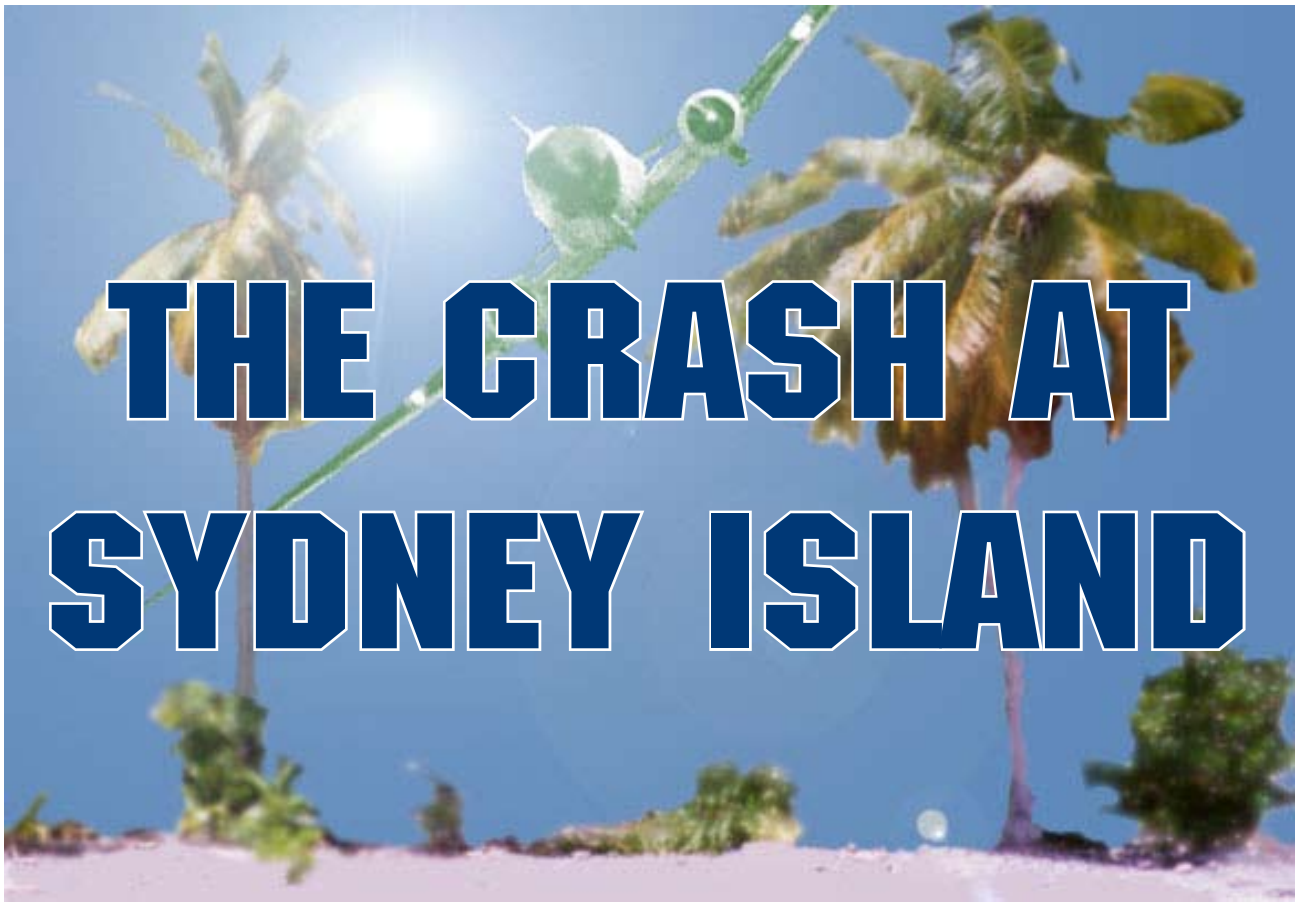


This map, drawn by the New Zealand surveyors in 1938, clearly shows the label "Kanawa Trees (Valuable Hardwood)"

The Wreck Photo

With the help of the RAAF Museum in Point Cook, Australia and the Smithsonian's Paul E. Garber Facility in Suitland, Maryland we've been able to eliminate the Tachikawa Ki-54 as a candidate for the aircraft in the photo. The Lockheed Model 10 equipped with the Pratt & Whitney R1340 engine is now left as the only known type which features all of the structural elements visible on the wreck. The type of damage exhibited, details of the environment, and even the existence of a photograph, correspond well with anecdotal accounts of aircraft wreckage seen on Nikumaroro which are corroborated by forensic imaging of aerial photos of the island which appear to indicate the presence of metal debris in a specific location. Based upon what we know at this time, this could be a picture of NR16020 on Nikumaroro.

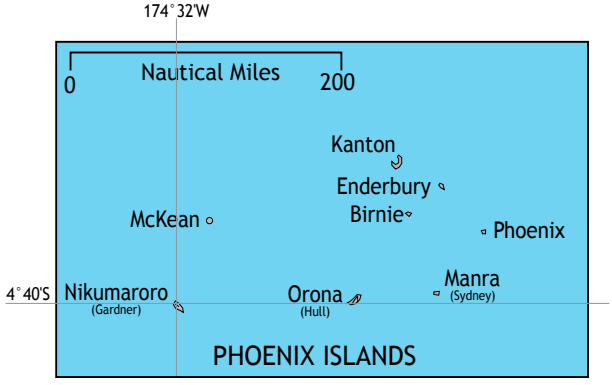
Various hypotheses about who took the picture and how it was that the wreck was never linked with the Earhart disappearance are being tested. The possibility that the photo was taken by a crew member of USS *Swan* during a visit in 1942 is being researched by Ron Dawson #2126. The chance that surviving members of the New Zealand survey party, who were on the island in late 1938 and early 1939, have recollections which may be of help is being checked out by researchers in New Zealand.



THE CRASH AT SYDNEY ISLAND

After many years of fruitless and frustrating research, TIGHAR has finally pinned down the details of an elusive World Two accident. The crash of an airplane on Sydney Island in the Phoenix Group is of interest to us primarily because of its possible implications in our investigation of another aviation loss that occurred in that same region of the Central Pacific six years earlier. We've found scraps of aircraft wreckage in the abandoned village on the island of Nikumaroro, an atoll about 200 miles west of Sydney. Is it just wartime debris or could some of the pieces be from Amelia Earhart's Lockheed Electra? Part numbers are in short supply and much of the recovered material is difficult to identify conclusively as to the type of aircraft it came from. To make an educated assessment of what we've found it's important that we document the possibilities.

Contrary to popular assumption, all Pacific islands are not littered with trash from World War Two. Certainly the archipelagos which saw major battles–the Gilberts, the Carolines, the Marshalls, the Solomons, etc.–are still haunted by the steel and aluminum ghosts of those events, but islands that were always beyond the combat zone have only the hulks of rear-area installations, shipwrecks and the occasional aviation accident to remind them of the bad old days. Fortunately for us, the eight islands



of the Phoenix Group fall into this latter category.

Canton (now Kanton) had an airfield and was a major steppingstone in a transpacific air route which stretched from California, to Hawaii, to Christmas or Palmyra, to Canton, to Funafuti or Fiji and on into the Southwest Pacific Theater of Operations. Three other islands of the group–Sydney (now Manra), Hull (now Orona) and Gardner (now Nikumaroro) had small civilian populations of Gilbert Islanders settled there by the British in 1939 to raise coconuts. The remaining islands–Phoenix, McKean, Enderbury and Birnie–were and are barren, uninhabited wastelands.

There were accidents at Canton and aircraft disappeared at sea on the way to and from there, but in only one known instance–the crash at Sydney Island–did an airplane go down on one of the other atolls of the group. No loss of Japanese aircraft on any of the islands was reported and an unreported loss seems highly improbable. A flight from the closest Japanese base–the airfield at Betio on Tarawa–meant a round trip of nearly 2,000 nautical miles. It was done once. Early in 1943 a bombing raid caused minimal damage on Canton with no losses to the attacking force. Tarawa fell to U.S. amphibious forces later that year. In 1944, Gardner became the site of a 25-man U.S. Coast Guard Loran navigation station resupplied periodically by a PBY flying boat from Canton. Records of those flights show that no accidents occurred. In short, the possible sources for aircraft wreckage found on Gardner (Nikumaroro) are few.

The crash on Sydney Island is of special interest to us because the Gilbertese settlers there were said to have used the wartime wreck as a source of aluminum. In the years after the war some of the Sydney residents came to live on Nikumaroro and it seems likely that they may have brought pieces of wreckage with them as raw material. Understanding just what happened on Sydney might help us better understand what we've found on Niku and either eliminate or further substantiate the artifacts suspected of being from the Earhart aircraft.

But pinning down the details of the Sydney crash proved to very difficult. A search of all the usual, and many unusual, sources for accident reports turned up nothing. Rumor held that it was a "large, four-engined aircraft from Canton," and because some of the parts found on Nikumaroro appeared to be from a Consolidated B-24 we began to suspect that the airplane had been a Liberator. Earlier this year, we obtained photos of wreckage seen on Sydney in 1971. They showed two 14-cylinder, twin-row radial engines such as those used on the B-24 and our suspicions were strengthened, but nowhere could we find a B-24 loss which might be the Sydney crash. Then this week a TIGHAR researcher stumbled upon the official U.S. Army Air Force accident file which tells the story. It is tragic, poignant, and different than we expected.

It was only one among the thousands of airplanes that struck the ground with unspeakable violence in 1943. They were only nine among the millions of young lives that ended suddenly and unnaturally that year, but perhaps because we have sought the facts about their death for so long, their end–as revealed in the dry tones of the official reports–seems real and very personal.

It was late November 1943 when Second Lt. William Prater, USAAF and his crew arrived at Canton Island in C-47A-60DL serial number 43-30739 enroute to their first combat assignment in Toatouta, New Caledonia. The airplane, Douglas constructor's number (c/n) 13890, had come off the Long

On November 24, 1943 they had set off across the Pacific Ocean in an airplane that was as new and as green as they were.

Beach assembly line for delivery to the Army on October 5th. Bill had gotten his wings the previous May and had less than 100 hours in type when he picked up his crew, Second Lt. John Barcharik, co-pilot; Second Lt. Morris Steinberg, navigator; and Sgt. Malcom Willson, radio operator, on November 15th. On November 24th they had set off across the Pacific Ocean in an airplane that was as new and as green as they were.

Sydney Island as it would have looked to the passengers and crew of 43-30739. National Archives photo.

Although Canton was supposed to be only a refueling stop on the long haul to the Southwest Pacific, somewhere along the way Prater had taxied into a guy wire and damaged the ship's right wing tip. They were stuck on Canton until it could be fixed. About a thousand miles off to the northwest, the bloody Tarawa landings and the re-taking of the Gilbert Islands had just been completed. Canton had played a major role as a staging area and the repair facilities were undoubtedly busy with business from that action. It was weeks before Prater's wingtip was tended to. There wasn't much to do on the hot, barren atoll. Pilots were allowed to take their aircraft out on local flights with little formality and jaunts to Hull or Sydney Islands, which were said to be interesting to look at, were not uncommon. Two civilian USO entertainers–Bob Ripa and Bobby Del Rio–were equally bored and shared quarters with the various transient crews. On at least one occasion the two entertainers had gone along on a sight-seeing hop even though, as civilians, their participation on such flights was against regulations.

By the afternoon of December 17, 1943 the C-47 had finally been fixed and signed off as airworthy. Boredom, rather than the coincidence that it was forty years to the day since the Wright brothers' first flight, was the likely reason for Bill Prater and John Barcharik's decision to take a ride down to see Sydney Island. Morris Steinberg, the navigator, was up for it and they found several other guys who wanted to go along. The radio operator, Sgt. Willson, decided to let the officers have their fun without him. Bob Ripa and Bobby Del Rio were alone in the barracks shack reading, stripped own to their shorts in the heat, when Barcharik stopped by in a jeep and asked if they were ready to go. Del Rio wanted to finish his book and declined. Ripa hesitated for a bit but then decided to join the others. Bobby thought it was odd that his friend should accept because he and Ripa had just been on such a flight a few days before. Neither had any idea that they had just made life or death decisions.

To get around the regulations, Bob Ripa was listed on the manifest by his real name, Edvin Hansen. Second Lt. Ed Hall, the Assistant Operations Officer who approved the flight, assumed that this Hansen guy was an Army private. He knew that the only civilians on the base were Ripa and Del Rio. Around 3 p.m. Prater, Barcharik, Steinberg, Hansen, another 2Lt. named George Gee, and four Sgts–nine men in all–took off in 30739 and headed south for Sydney, about an hour's flight away.

The only first hand account of what happened next was later provided by the Native Magistrate of Sydney Island:

The wreckage of 43-30739 as it appeared in 1971.

> The plane was crashed on land. Flew around the island more than four times. At last during the time flying it slide wheel down and flew off at a distance of not more than a mile and then return perhaps ten or twenty feet above sea level. When reached above there be fit [sic] flew up of all a sudden it bumped the palm with right wing. During that time the plane get in fire and at the last the body fell down beyond the Maneaba [meeting house]. All the crew found dead except one of the lot get breath not fifteen minutes later, then died again.

From this it would seem that the plane may have been attempting to land, but the accident report by Major W. C. Cotner, Commanding Officer of the Air Transport Command unit at Canton, paints a more complex picture. Cotner inspected the site the next day and wrote:

> It was found that the right wing had clipped a tree, outside of the motor, at the beach while coming in low from the water. ... The right wing struck a tree breaking the tree off about thirty feet from the ground. The ship must have been in a right bank or there would have been other trees damaged in this vicinity as there was not enough room for a ship to come in between the trees. A portion of the right wing was found approximately 86 feet inland. The plane went up over the trees for a distance of about 150 yards and started coming down through the trees again, shearing off the trees until it came to rest approximately 376 yards from the first tree which was struck. The motors continued on after the plane came to rest, one for 46 yards and the other 63 yards from the plane. The airplane burned completely with the exception of the tail section and the left wing from the motor out, and the right wing which had been lost. The right elevator showed evidence of the plane having been scraped along the ground on the right side. The wheels were retracted and that the throttles and controls were in full flight or cruising position. All evidence indicates that the pilot came in in a right bank, struck the tree, careened on over the village and other trees and finally hit ground with all power on. Both propellers were badly bent and broken off. One occupant was said to have been thrown clear of the plane but died a few minutes later. The remaining eight were said to have been found in the plane after the fire. The natives stated that the plane made several circles over the island and kept coming lower and lower and finally came in over the water quite low just before the crash occurred.

The Gilbertese wrapped the bodies in white sheets and covered them with woven mats in graves six feet deep. The next day an Army Air Force investigation team exhumed and recovered the bodies. Maj.Cotner put the cause of the accident to "low flying." A review board later found that "it appears that the pilot may have been attempting a forced landing." Whether Bill Prater simply smacked a tree while pulling a buzz job or had an inflight emergency and failed in a desperate attempt to land his airplane will never be known for sure. What is certain is that ten tons of Douglas workmanship and the lives of nine young men came to a fiery end on an otherwise tranquil Pacific island on an afternoon 55 years ago. It seems likely that relics of that tragedy eventually made their way to Nikumaroro and are among the artifacts collected by TIGHAR. It is also the case that knowing what airplane crashed on Sydney Island may allow us to eliminate yet another alternative explanation for recovered objects which we suspect are from a much more famous, but no less tragic, loss.

Overview

The Turning of the Tide

It hardly seems possible but this month, November of 1998, marks the tenth anniversary of the Earhart Project. Of course, people have been trying to figure out what happened to Fred and Amelia for about six times as long as TIGHAR has been on the case and there are those who would say that we have only added to the heap of conjecture. We would respond that whether or not you agree with our hypothesis that the missing flight ended at Nikumaroro, it is certainly true that TIGHAR has made significant contributions to the fund of knowledge concerning the Earhart disappearance.

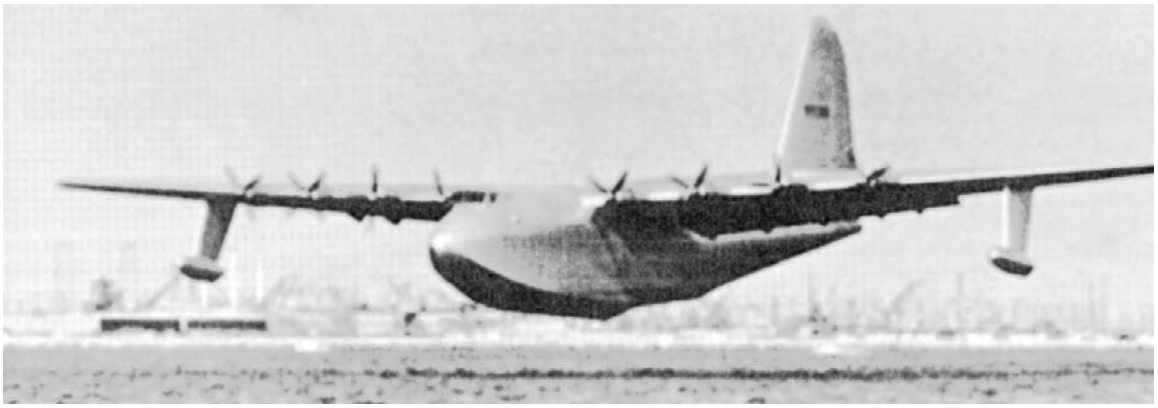
But we can see something happening. Over the course of the past 18 months the nature of at least some of our investigation has changed in a fundamental way. Prior to the discovery of the Tarawa File (the official correspondence which describes the finding of bones on Gardner; see page 5) we were investigating suspected events. In 1988 we started with what seemed a logical premise that the Earhart flight may have ended at Nikumaroro and we were looking for evidence to support that hypothesis. We were asking, "Is there anything about this island to indicate that this event may have occurred here?" Now, ten years later, we're asking a very different question. We now know for certain that something very odd happened on this island. We're now asking, "Is the unusual thing that happened here what we think it was?"

From a practical standpoint, when we return to Nikumaroro we'll no longer be looking in places we've selected based upon pure speculation for things we've theorized might be there. We'll now be looking in specifically described places for things that we either know for sure were once there (i.e. the rest of the skeleton), or have been told were once there (the aircraft wreckage). We may still have the wrong places, or the things may now be gone, but there's a big difference between looking for something that might be there and looking for something that you know was there once and should still be there.

The Earhart mystery will not be solved until we recover what Tom Crouch (Chairman of the Aeronautics Dept. at NASM) calls "the smoking gun" and what we call "the any-idiot artifact"–a bone that matches Earhart's or Noonan's DNA, an engine or other aircraft component with a serial number, or the whole darn wreck, or maybe all of the above. Until then, for most people, TIGHAR's work will be just one more theory about happened to Amelia Earhart. But the tide has turned and those of us who are standing on the beach can see it.

Do You Have An Historic Aviation Property?

Would You Like to Know What You Can Do With It?



Expensive to create, born of controversy, and of little practical use, the National Park Service's "Guidelines For Evaluating and Documenting Historic Aviation Properties" is the Spruce Goose of aviation historic preservation publications.

The United States Department of the Interior's National Park Service has pub-lished a National Register Bulletin entitled "Guidelines for Evaluating and Documenting Historic Aviation Properties." You can order your very own copy for free by calling the National Register reference desk at (202) 343-8012 or via e-mail at nr_reference@nps.gov.

TIGHAR's Senior Archaeologist, Dr. Tom King (TIGHAR 0391CE) has some answers to frequently asked questions:

What can you do with this Bulletin?

A National Register Bulletin like this one (there are dozens of others, dealing with different kinds of historic properties, identification methods, and so on) has two basic purposes.

1. If you'd like to nominate your airplane to be included in the National Register, these are the guidelines to use in doing so.
2. If a Federal agency, or somebody seeking a Federal permit or funding, wants to do something that might change an airplane that could have historical importance, the responsible agency has to consider whether the airplane might be eligible for the National Register. If it is, the agency has to consider what effects its actions will have on the plane, and what might be done to mitigate those effects, following specific regulations (found at Title 36, Part 800 of the Code of Federal Regulations). The agency should use this bulletin in figuring out whether the airplane is eligible for the Register. If you're concerned about an agency doing damage to an airplane you think is historic, you could use this bulletin in pointing out the plane's historic value to the agency.

Why would I want my airplane to be listed on the National Register?

Some people are impressed by such registration.

Will that increase its value?

It might (see above).

Will "The Gummint" give me money for to fix up my National Register airplane?

Unlikely, but every now and then Congress decides to toss money in the direction of historic preservation projects, and inclusion in the Register is usually a prerequisite for getting some.

If I later decide I want to replace or change something on my National Register airplane will they kick me off the list?

Could be, if you change enough to make it lose its "integrity."

TIGHAR's Executive Director Ric Gillespie has this to say about how this publication came about and how useful it might be in the cause of aviation historic preservation.

This fifty-four page booklet has a history only slightly less tortured than that of the 1781 Articles of Confederation and is about as useful. The first draft, released for comment in early 1995, brought a storm of criticism from virtually every corner of the aviation historical community–including TIGHAR. In "Your Tax Dollars At Work" (*TIGHAR Tracks* Vol. 11, No. 3) we expressed our misgivings about the draft but vowed to do our best to help correct the problems. After many hours of donated work and face-to-face meetings in Washington, we ultimately concluded that the National Register of Historic Places was simply not an appropriate tool for protecting historic airplanes (see "Great Hammer, Lousy Screwdriver" Vol. 11, No. 4). No revised draft was ever circulated and the issue seemed to be mercifully dead. But a federally funded project is the only example of true immortality known to science and, three years later, "Guidelines for Evaluating and Documenting Historic Aviation Properties" appeared unheralded in the mailbox.

In all fairness, it's not as bad as the initial draft and where it discusses conventional properties–buildings, structures, archaeological sites, etc.–its advice is unremarkable. A superfluous section purporting to tell the story of "Aviation In American History" is merely shallow and poorly proofed rather than being biased and inaccurate. For example: "Goddard (Robert H., that is) undertook research during WWI that led to the development of a solid-projectile, which was used during WWII as the bazooka." Make that "solid-propellant." Some of the errors are pretty basic. Thoughout the booklet "hangar" is rarely spelled correctly.

But it is in attempting to explain what airplanes are eligible for nomination to the National Register of Historic Places that the bulletin wanders from the obscure to the hilarious. In a section entitled "Evaluating the Integrity of Historic Aviation Properties" it carefully states that "a property must retain the key materials from its period of its significance" [sic] and that "a property whose historic features and materials have been lost and then reconstructed is usually not eligible." So far so good, but then the bulletin goes on to explain that, because airplanes have various parts replaced during their service life, "As long as an aircraft retains the majority of its structural members, it should be considered the authentic aircraft." So it looks like your J-3 Cub, re-engined and re-covered in 1998 and equipped with the latest avionics, is eligible for the National Register so long as most of its steel tube skeleton dates from the old days.

But wait. "Setting"–defined as "the physical environment of a historic property"–is a crucial factor in eligibility. The aircraft must be "in a setting which is appropriate to an aircraft and allows it to convey its significance as an aircraft. An example of an appropriate setting would be an air-related facility where the aircraft is maintained." That means your historic 1998 J-3 Cub with the 1938 skeleton may be eligible for the National Register if you keep it down at the airport and not someplace weird like a museum. "The National Register generally excludes museum objects from being listed" because "museum objects do not have integrity of location and setting ..." even though all six (that's right, six) of the intact aircraft now on the Register are in museums.

But–but sometimes a museum is not a museum. For example: the bulletin points out that the Hughes

Additional comments from professionals in the field, Paul Chattey and Tim Smith.

...my intentions are good. Oh, lord, please don't let me be misunderstood!

It is necessary to know what the National Register of Historic Places is all about before considering this bulletin. It evolved when Congress passed The National Historic Preservation Act of 1966. That act was, in part, a reaction to large "urban renewal" projects that eradicated numerous historic districts and neighborhoods across the country. The act, amended many times since 1966, is the foundation for the Federal government's historic preservation program. The act 1) authorizes each state to have a State Historic Preservation Officer (whose role, among other things, is to maintain an inventory of historic properties in their state and generally provide the state's input to Federal agencies on treatment of historic properties in the state); 2) directs Federal agencies to inventory their lands to locate, evaluate, and appropriately treat historic properties they own, 3) requires Federal agencies to take historic properties into account in planning their undertakings; and 4) establishes the

National Register of Historic Places (which we'll call the "NRHP" to save space).

What then, is the NRHP? Simply put, it is a list of buildings, structures, objects, and sites that the Federal government deems worthy of consideration in planning their activities. For most any other purposes, it is simply commemorative. It does NOT automatically protect something or turn it into a National Park or a museum. It recognizes that something important happened in a particular place, and it gives us a direct, physical connection to our history. In practice, it is much more complicated than that and you can fill a bookshelf with all the bulletins, guidelines, forms, and regulations that go with listing properties in the NRHP. The latest bulletin (one of about 40) is the subject of this article.

To be listed in or considered eligible for inclusion in the NRHP, a property must be historically significant somehow. The criteria for inclusion are a) association with important historic events, for example, Gettysburg Battlefield; b) association with important people, for example, George Washington's Mount Vernon; c) important architectural works or examples of an important type, like High School Auditorium in Mariopsa, California as an example of the Spanish Revival architectural style; and d) properties which contain information important in prehistory or history. This criterion was added to include archaeological sites.

Further, a NRHP property must have integrity. That is, it must look more or less like it did during its period of significance. In practice this is also a good bit more complicated. But, to boil it all down, a property's got to be historically significant for solid reasons, and its got to be pretty much original.

Moving on to the purpose of this bulletin, the NRHP was invented to deal with buildings, structures, sites and objects: things that don't move about. Airplanes don't really fit, with some exceptions. This bulletin explains in the necessary detail how one may list airplanes in the NRHP and it does a fairly good job of that. It deals rationally with the issue of integrity for aircraft that have a major portion of parts replaced on a regular basis. It deals sensibly with the issue of aircraft as moveable objects. Most of the bulletin deals with aviation-related properties like airports, hangars, factories, and so on-properties that make up the vast field of aviation history.

Since airplanes are what TIGHAR members are most interested in, we'll be surprised if more than a few members follow this discussion with riveted interest. (Just seeing if you're awake.) Generally, the NRHP is of interest to cultural resource managers and consultants who are part of the planning process for government projects. While the NRHP is useful to these folks as a planning tool, it fails in other areas. Try filling out a NRHP nomination form some time. It is not fun and very few people do it for free or even cheaply. An on-line database of NRHP properties is available at <http://www.nr.nps.gov/nrishome.htm>. While access to the data has been improved over the last few years, the National Park Service does not have the funds to make the system user-friendly or provide more than superficial information about individual properties. Regarding finances, it has been many years since federal grants were available to restore NRHP properties (that ended shortly after Ronald Reagan took office). Still, some income-producing properties are eligible for a tax credit to ease the cost of restoration.

Back to the bulletin. What it does not do well is provide the context for the importance of aviation in American History. The 4 1/2 page section "Aviation in American History" is, as Ric says, not useful. That's because no one can cover aviation's complex history very well in four or even five pages. Also, drafting the bulletin was a government contract job. It went to the lowest bidder. You sometimes get what you pay for. The bibliography is much more useful.

To address some of Ric's comments briefly: The J-3 Cub example is an interesting one. In our experience, there is a broad continuum of significance. We've participated in evaluating hundreds, maybe thousands by now, of buildings, structures, objects and sites for NRHP eligibility. After a while, you develop a feel for it. There are things that are clearly not eligible. There are things that are just as clearly eligible. But then, there's a bunch of stuff in a big gray area, like Ric's J-3. If it were ever necessary to do so, eligibility of a particular Cub would be decided on its individual history and the degree of modifications over the years. There are certainly Cubs that are more original than others. But, the alert reader may ask, what about Criterion C? Isn't the J-3 an example of a significant type? Yes, but is it the original prototype? Is it the last remaining Cub? Is it the best-known example? Just because it is more than 50 years old does not automatically make it eligible for listing in the NRHP.

The issue of museum objects and the NRHP is a little complicated. First, there is no practical use in listing a museum object in the NRHP. Unless a museum goes bankrupt, it is already protected to a degree and, should a museum go belly up, NRHP listing won't help. I would speculate that most of the museum planes that Ric mentions were not in

museums when they were listed. One of Alaska's NRHP aircraft was still hauling fish when it was listed but now is retired to a museum. It is still listed because nobody has asked the Park Service to take it off the NRHP.

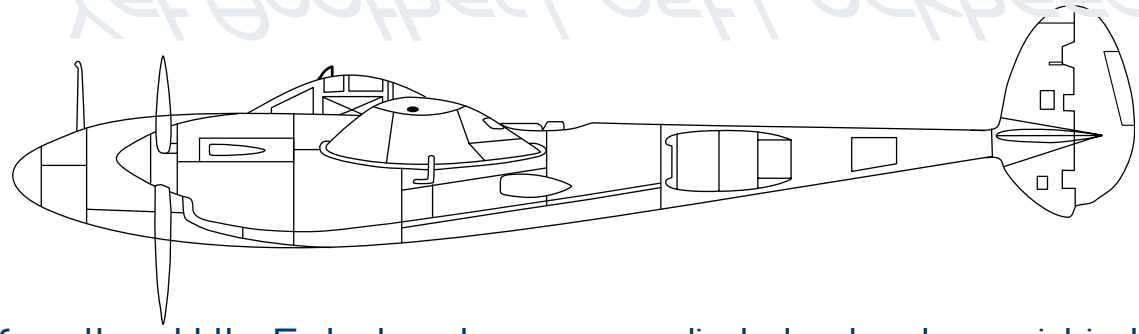
Ultimately, the NRHP is just a list like any other. The NRHP's ties to federal planning and preservation programs have turned the NRHP into something about as complex as the FARs. As an official list, we can reasonably expect that updating it and performing required maintenance will take a little longer than a similar list in the private sector. Unfortunately for most of us, getting something listed in the NRHP, and thereby simply recognizing something that people want to honor, is like trying to herd cats.

Moving right along, let's go find AE.

Tim Smith (1142C) is an archaeologist on the staff of the Alaska State Historic Preservation Officer from 1982-86 and 1990-present. He is in charge of the Review & Compliance Program (seeing that the Feds follow their own regulations concerning cultural resources). He has been assigned to deal with aircraft issues as they arise simply because of his interest in them. He can be reached at tims@dnr.state.ak.us

Paul Chattey (1120C) is an architectural historian. From 1983 to 1988, he learned and applied the arcane skill of writing and editing nomination forms to list properties in the NRHP while on staff of the Alaska State Historic Preservation Officer. He is now project historian with the Center of Expertise for Historic Preservation with the Corps of Engineers in Seattle. His work takes him to military posts around the country, where there are numerous significant buildings but regrettably few historic aircraft. Paul can be reached at Paul.W.Chattey@nws02.army.mil.

Yet Another Lost Lockheed



If you thought the Earhart mystery was complicated and controversial, just be glad that you're not involved in the search for Antoine de Saint-Exupéry.

ASIDE FROM HAVING A NEARLY-IMPOSSIBLE-TO-pronounce name, the famous French author/pilot (*The Little Prince*; *Flight To Arras*; *Night Flight*; *Southern Mail*) may not even be missing.

In September of this year some aluminum debris and a silver bracelet bearing Saint-Exupéry's name, and that of his wife Consuelo, and the name of his American publisher (Reynal and Hitchcock) appeared in a fisherman's net about 20 miles off the coast of Marseilles. But three months after he failed to return from a photo-recon mission off Corsica in his Lockheed P-38 on July 31, 1944, fishermen from a Mediterranean village pulled a corpse, presumed to be that of the missing aviator, out of the water and buried it in a local cemetery. The Saint-Exupéry family has a always discouraged any attempt to exhume the body for positive identification, wishing to let the matter (and the body) rest.

But lost heroes never rest easy and the recovery of the bracelet has prompted Henri-Germain Delauze, the owner of a salvage company in Marseilles, to announce an attempt to locate the wreckage with two mini-submarines. He is searching a 38 square-mile area around where the bracelet was found. Depths range from 1,080 to 2,100 feet. At last report, nothing resembling P-38 wreckage had turned up. Delauze vows

that he "just wants to understand" and that he "will not touch the plane." The Saint-Exupéry family isn't buying it. A nephew, Jean-Ginaud d'Agay, says "We have not received any prior notice of the search and no one has asked for our authorization. We find this slightly odd and scandalous."

It's not clear just why the family's authorization would be needed to search for a lost military airplane. After more than half a century it is highly unlikely that any human remains would be present (assuming that the body in the cemetery is not Antoine) and, unless the fighter made a controlled ditching, there is little reason to expect anything but a jumble of wreckage, if it can be found at all. And yet, he's a famous missing flier and people want to know what happened to famous missing fliers. We can understand that.

Thanks to Lou Schoonbrood (TIGHAR#1198) for providing us with the news releases and information about St. Exupéry.

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