

Expedition to Ambae, the Real Bali-ha'i: Killing Pigs, Moving Stones, Erupting Volcanoes and Crashing Planes in Vanuatu

by

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Report Submitted to:

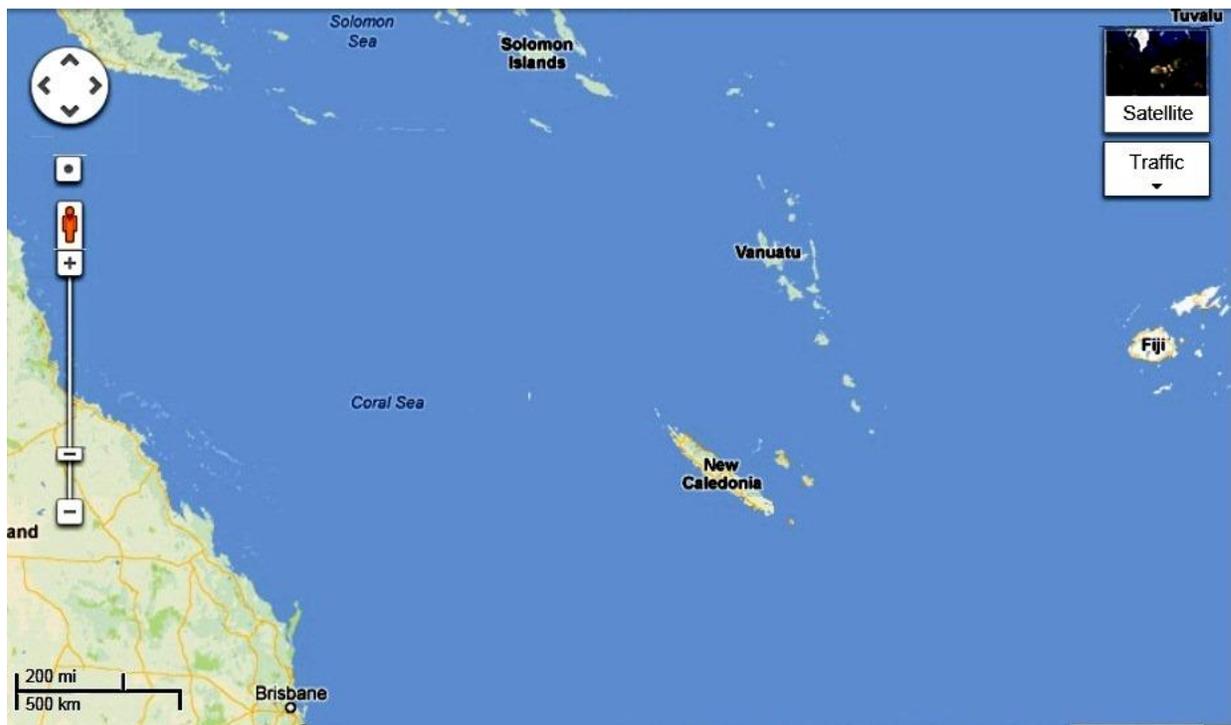
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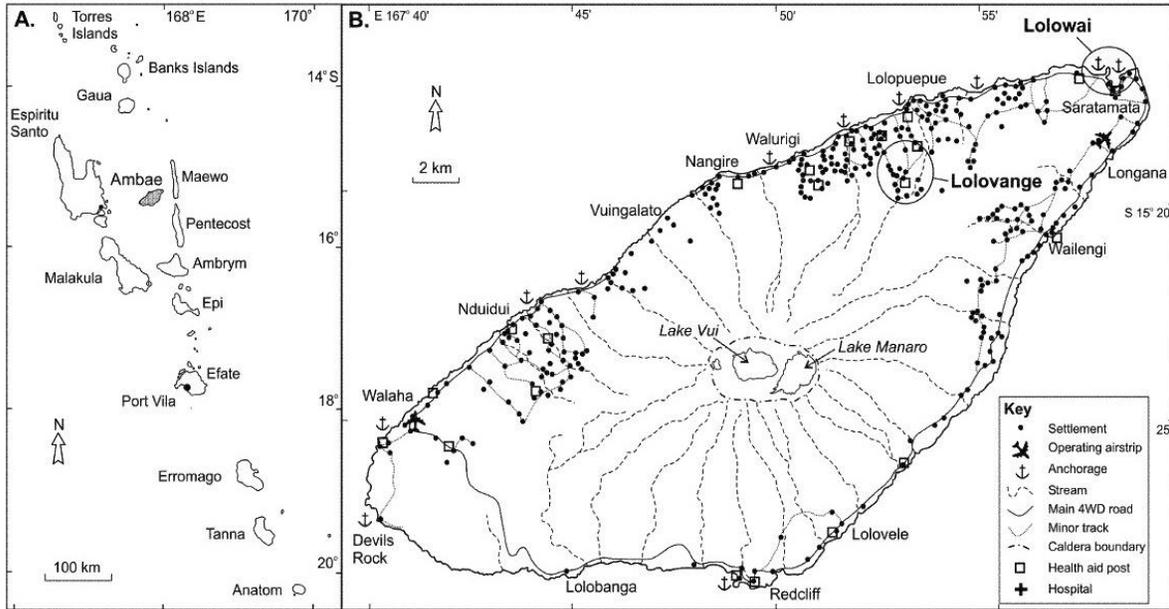
Introduction

The Bali-ha'i Expedition, carrying Flag #101 of The Explorers Club, took place in 2012 and 2013. The purpose of the Expedition was to document different aspects of the fascinating and little-known island of Ambae in northern Vanuatu (ex-New Hebrides). Ambae is virtually unknown in the West, but ironically it is also one of the most famous islands in the world, under the iconic name of "Bali-ha'i," which it received from James A. Michener in his classic novel, *Tales of the South Pacific*. This immortal, Pulitzer Prize-winning book of World War II later was made into the even more famous (and award-winning) play, record, movie and TV mini-series *South Pacific*. The four foci of the Expedition were: proving that Ambae is the primary Bali-ha'i (there are other contenders), while exploring a possible secondary contributor; examining two key "kastom" (custom) ceremonies on the island; reviewing the threat to the island's population and culture posed by its dangerous mafic strato-volcano; and documenting wrecks from World War II on or near the island.

The maps below provide a orientation to the reader of the location of Ambae and Vanuatu within the southwest Pacific area, showing the coast of Australia to the west, the Solomons to the north, Fiji to the east, and New Caledonia to the south.



The southwest Pacific



The island of Ambae or Aoba, a.k.a. “Bali-ha’i” (right) and the country of Vanuatu (left)

This report has the following sections:

- Expedition objectives and summary of findings
- Logistics
- Members
- Future activities
- Biography of the author
- Notes on the Explorers Club Flag authorized for the Expedition
- Suggested key words for indexing
- Annexes with more detailed information documenting aspects of Ambae, including the pig-killing cult, stone moving ceremonies, volcanic threats and preparedness, plane wrecks on the island, and accessing the crater lakes on the summit of Mt. Manaro.



The engine of the World War II plane wreck at Nanako village, west Ambae, on 14 June 2013. Author Lew Toulmin is on the left, with Explorers Club Flag #101. On the right is Andrew Vanua, grandson of Chief Jack Vira, a chief of Nanako, holding the emblem of the Bali Hai Expedition. The Expedition was able to solve the mystery of this wreck, and identify the plane and its USMC pilot, who parachuted out at the last moment.



Staff and 27 volunteers of the Classic Jets Fighter Museum in Adelaide, Australia, who are working to re-create an authentic Corsair from bits of the Nanako plane, six other planes, and 10,000+ re-created parts. The plane is on the right, above the flag. The author is at the right center, in the red jacket, and Bob and Margaret Jarrett, owner-operators of the Museum, are third and fourth from the left.

Expedition Objectives and Summary of Findings

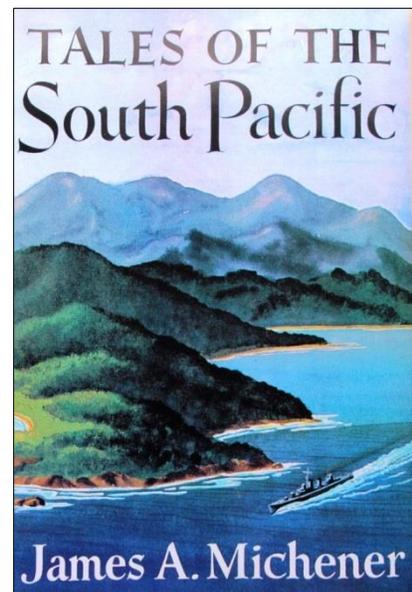
The Bali-ha'i Expedition had four major objectives. These were to:

- Document the real island inspiration for "Bali-ha'i" from *South Pacific* -- Ambae in Vanuatu (with a possible secondary contributor)
- Document the unusual, unique and threatened ethnographical practices of the island, focusing on the chief's pig killing cult and stone moving ceremonies
- Study and document the threat posed by the island's active and highly dangerous volcano, and make recommendations for improving the island's emergency preparedness
- Identify and document a wrecked aircraft found on Ambae, and investigate other wrecks on or near the island.

Each of these four objectives is examined below; all four were achieved. The appendices provide even more detailed data and supporting documentation.

Documenting the Inspiration

The first objective of the Expedition was to document which island served as the real inspiration for "Bali-ha'i," James Michener's unforgettable island paradise in his classic, Pulitzer prize-winning book about World War II, *Tales of the South Pacific*. Later this book was made into the play, movie and TV mini-series, all called "South Pacific." Revivals of the play are still touring the US and abroad, and it is estimated that the play is still performed at least once a week somewhere in the US.¹ The play also won a Pulitzer, eight Tony awards, and nine Donaldson awards, and has been described as "probably the most successful Rogers and Hammerstein musical."²



My research indisputably showed that the primary island inspiration for "Bali-ha'i" was Ambae (a.k.a. Aoba or Leper's Isle) in Vanuatu, formerly the New Hebrides, in the southwest Pacific, north of New Zealand and southeast of the Solomons.

Vanuatu is a country of 82 islands, of which about 53 are inhabited, currently with about 245,000 inhabitants, of which 40,000 live in the capital Port Vila on Efate island and 15,000

¹ John P. Hayes, *James A. Michener, A Biography* (New York: Bobbs-Merrill, 1984) p. 86.

² Stephen J. May, *Michener, A Writer's Journey* (Norman, OK: University of Oklahoma Press, 2005) p. 96.

live in Luganville, on Espiritu Santo island. The islanders are predominantly Melanesian, and Christian, of various denominations.

I have proof from Michener himself that Ambae was his primary inspiration, in the form of a 1994 letter from Michener and his aide to me (in response to my detailed inquiry to Michener), describing the inspiration for his creation (see Exhibit 1). Many (if not most) people mistakenly think that Bali, Bora-Bora, Moorea, or even Tioman island in Malaysia served as the primary inspiration. Wikipedia and some modern guidebooks and travel magazines assert that Ambae is the inspiration, but generally none offer proof. Michener's autobiography, *The World is My Home: A Memoir*, and his other books do not state which island was his primary inspiration for Bali-ha'i, so his letter has definite primary source importance in resolving this literary puzzle -- one of the greatest inspiration mysteries in American literature.

Michener's autobiography only states where the romantic name "Bali-ha'i" came from -- a small run-down village in the Solomon Islands -- not which particular island was the primary inspiration.

Mostly due to the huge popularity of the play and movie, Michener received about six letters a year, including mine, inquiring about where the "real" Bali-ha'i was located. As a result, in 1970 he wrote an article for the *Omaha Sunday World Magazine*, in which he identified "steaming, savage" Aoba as the inspiration, and also noted that no "man in his right mind would choose to go" there! This article is reproduced in the annex.

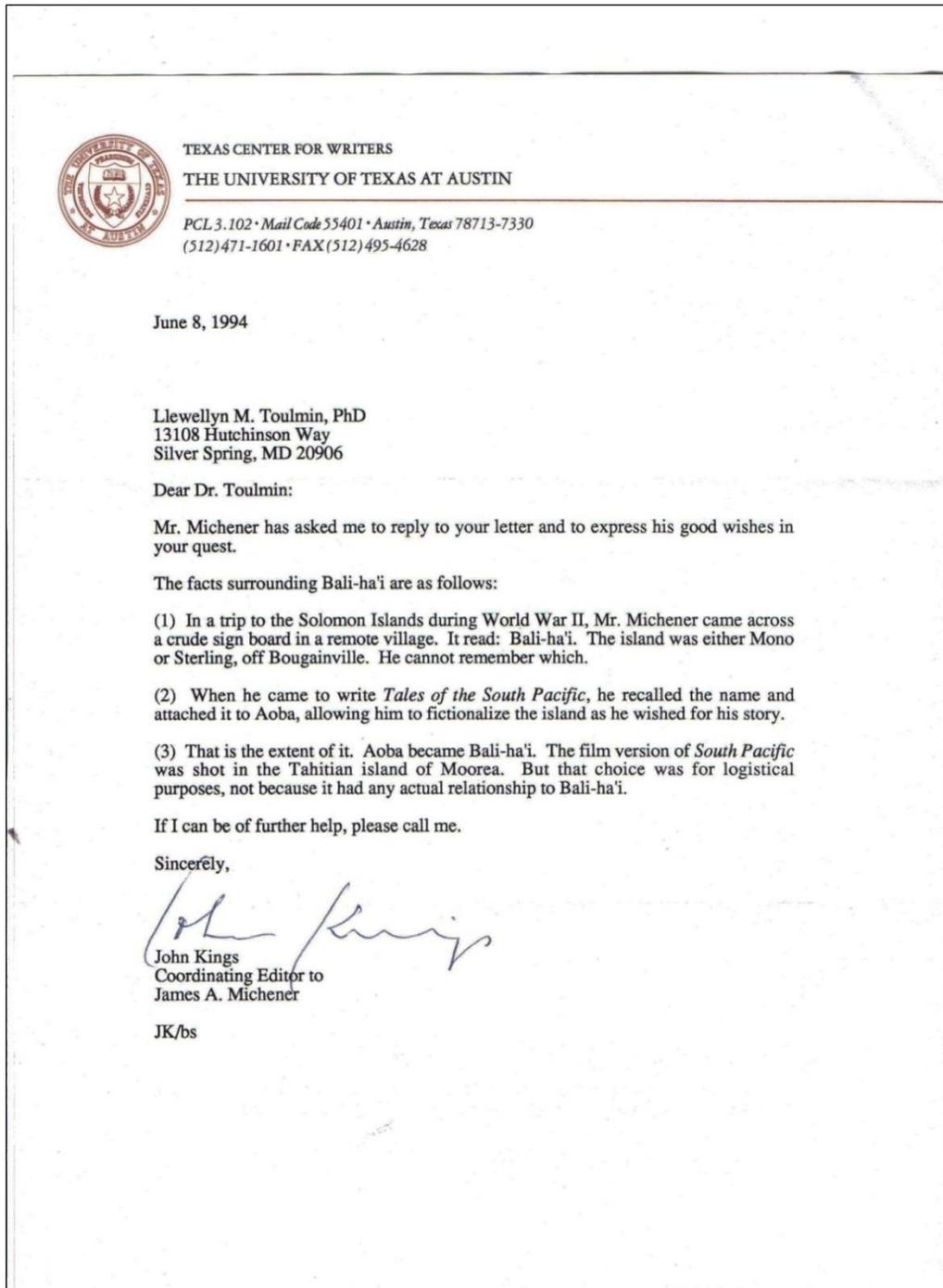
Note that in the *Sunday World* piece, Michener specifically identifies Mona island in the Treasury Islands ("one of the most dismal spots in the world") as the island with the village named Bali-ha'i ("one of the sorriest looking villages in the history of mankind," and "an example of how men lived malarial solitude"). Surprisingly, virtually all the major biographies or critical analyses of Michener's works do not identify which island inspired Bali-ha'i. For example, the biography by Michener's sometime co-author, A. Grove



Movie poster with cast listings

Day (*James A. Michener* (New York: Twayne Publishers, 1964) p. 45) states that “Bali-ha’i...just off Vanicoro, is a Michener invention. Bali-ha’i has passed into our language as a symbol for the island of all of our dreams.”

Exhibit 1



The only secondary source which correctly identifies the inspiration island is, perhaps surprisingly, Laurence Maslon's *The South Pacific Companion* (New York: Simon and Schuster, 2008; this is a companion volume to the movie), where, on page 76, he states:

When he was stationed at Espiritu Santo, Michener could view a small volcanic island from his base at the port of Luganville. The island was called Aoba (now known as Ambae), and it was less of an island than simply the top of a volcano that poked through the sea. Still, the volcano was active and its stern and dramatic promontory would appear and vanish depending on the humid weather.

While the identification is correct, there are several errors in this description. Ambae is about 30 miles from Luganville, and there is no "stern and dramatic promontory" which can be seen from Espiritu Santo. (See the photo below.) Only the shape of the island, a large shield volcano, can be seen. It does appear and disappear depending on the humidity, time of day, recent rain showers, wind direction and other factors. Maslon's description makes Ambae sound like the tiny peak of a large submarine volcano, when in fact it is the very large (26 miles long) peak of a huge submarine volcano.

In *Tales of the South Pacific* the island was called Bali-ha'i as shown in Exhibit 1. In later years this was simplified to "Bali Hai" (or Bali hai) and it is this more current and simpler spelling that was used on the patch/logo of the Expedition.



The misty shield volcano shape of the island of Aoba/Ambae/Bali-ha'i, in the far distance on the horizon, as sometimes visible from south Espiritu Santo

I queried Michener in 1994 at length as to whether another small island, on the north coast of Malakula, was not perhaps a secondary inspiration. (See Annex 1.) In his letter response (written through his editor/assistant) Michener rejected that notion.

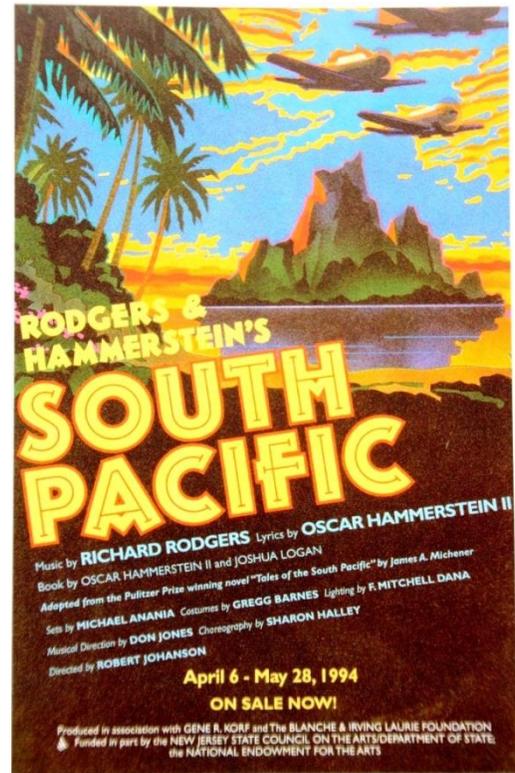
As described in my recent article in *Island Life* (the national magazine of Vanuatu), presented in Annex 2, I argue that in fact Michener must have had a secondary inspiration, and that secondary inspiration was probably little Wala island, just off the north coast of Malekula.³ I base this assertion on the fact that Ambae alone does not completely fit the description of Bali-ha'i in the *Tales*, and particularly that it is not “small and jewel-like” and does not “lie in the arm of a bay of a much larger island.” I also cite a number of other arguments, and have the temerity to dispute Michener’s own assertion that there was only one island that inspired him. I leave it to the reader to decide who is right!

Documenting Pig Killing and Stone Moving

Pig Killing. One of the main reasons for the focus on pig killing was that a pig killing ceremony takes up an entire chapter in *Tales of the South Pacific*. The chapter is called “A Boar’s Tooth.” It portrays the ceremony in a very dramatic and detailed manner, almost minute by minute.

The cult of pig killing is prevalent throughout Vanuatu, and is well documented by anthropologists and historians. The killing of pigs with circular tusks is so important to Vanuatu that a circular tusk is the main symbol on the national flag, and on the Order of Vanuatu, as shown below.

Some of the interesting aspects of pig killing documented in the literature (see the annex for a bibliography) include the following:



Bali-ha'i as seen on a poster for a 1994 play revival

³ Michener stated in interviews that he was “one of very few people, black or white” to have walked across Malekula. He also stated that the Big Nambas of Malekula were “maybe the most primitive people I have ever worked with,” who were “delightful” if “they are not eating you” (Lawrence Grobel, *Talking With Michener* (Jackson, MS: University Press of Mississippi, 1999), p. 76).

- Vanuatuan legend holds that men did not always kill pigs; instead they sacrificed, killed and ate lizards, rats and other small animals. But legendary cultural hero Tariboeaga, who had been living in exile after a quarrel with his father, was advised by a guardian spirit to knock the canine teeth out of the upper jaw of his pigs, and let the lower canines grow into a circle. He was then advised to bring these pigs to the sacrificial rites back in his home village. Tariboeaga did this, and everyone loved the taste of pig (which they had never eaten before) so much that he was accepted back into society and reconciled with his father.



The Flag of Vanuatu



The Order of Vanuatu

- Since the legendary time of Taiboeaga, the chiefs of Ambae (and most other islands in Vanuatu) have raised sacred pigs with circular tusks, then killed them in sacrificial

ceremonies and distributed the meat in a kind of “potlatch” ritual. These rituals allow the chiefs to be promoted up a ladder of ranks which may have from five to twenty grades, depending on the village and area. There are no female graded chiefs on Ambae, although there are some documented on nearby Maewo.

- The graded chief system of ceremonies creates village loyalty. It also creates an inter-village network of chiefly bonds and economic ties, since chiefs support each other by donating or selling enough sacred pigs to help each other achieve their next grade promotion.
- Pig killing is more prevalent on east than west Ambae because the terrain is steeper in the east, and thus there are fewer coconut plantations. The numerous plantations in the west meant that many young coconut shoots were everywhere, and if pigs were allowed to roam freely, they would destroy all these shoots. So the pig population was cut back. Also, the Church of Christ, which for a long period discouraged pig killing, was more entrenched in western Ambae. The Anglican church, prevalent in eastern Ambae, was and is more tolerant of pig killing and other custom ceremonies.
- The role of pigs is pervasive, and sacred live pigs with circular tusks (and the dried skulls of such pigs) are used as currency in bride price, death payments, paying for wrong-doing, paying for workmen and sorcerers, and other transactions. The sacred pigs and their tusks are a constant source of discussion, gossip, jealousy, magic and speculation in village life.
- All sorts of methods are used by chiefs to increase the size of the sacred tusks, to make them grow faster, and to make them grow in a complete circle and even up to three circles. These methods include: singing to the pigs, having the women of each village hand feed the pigs soft food so they don't break their tusks on hard coconuts, casting magic spells, and feeding the pigs small stones (“vatu boe”) which supposedly help the tusks grow. (These stones are recovered from the pig's excrement and re-used!)
- Male pigs are the most common for growing circular tusks. But some rare females have tusks, and these are used in some of the higher ceremonial ranks. The rarest of all now are hermaphrodite (or “intersexed”) pigs, with both male and female genitalia. These used to be much more common, and over 125 were observed in one day by a writer in 1928.
- Chief Selwyn Sese killed 1000 pigs in a ceremony in about 1908. He also practiced cannibalism, and is documented to have ordered the killing and eating of seven

enemies in 1901. Sese's only rival is Chief Rupert Garae, who died in the last decade, and who killed 1000 pigs and 100 roosters in one ceremony.

I observed a pig killing in January 2013 in Vusnavagika village in east Ambae, about two km. northwest of the Longana airstrip, on top of a hill, surrounded by jungle. In this ceremony Chief McKenzie Tari was promoted to the level of Teve Teve Chief, the middle of five rungs in the graded chief system in that village and area. Interesting aspects of that ceremony included:

- Some aspects of the actual ceremony differed from Michener's account. Some of these differences are perhaps just differences in time and slight variations in the way ceremonies were conducted on Malekula (where Michener likely saw the ceremony), but some of these differences were clearly added by the author for dramatic effect, and a few were just mistakes by Michener. A detailed side-by-side comparison of the Michener account and the actual ceremony is presented in the Annex.
- One interesting possible error was that Michener states that the chief has a "woven lap-lap suspended" over his groin. In fact, lap-lap is a dish eaten throughout Vanuatu, which consists of mashed taro, manioc or bananas, basted in coconut milk. This error could be an inside joke by Michener! However, on some islands of the South Pacific and in New Guinea, a "lap-lap" does refer to two flaps of cloth and a string which cover the male private parts and rear. It is possible that this term was used in the past in the New Hebrides, and hence this is perhaps not an error, just an amusing double meaning.
- The actual ceremony on Ambae lasted for three days, with prayer and preparations the first day, the actual ceremonial killing the second day, and eating the pork and other food on the third day. Ten live pigs or dried pig skulls were crushed, raising the chief to the Teve-Teve or mid-grade level of chiefdom in his area. The pigs did not squeal or scream during the ceremony (unlike in the *Tales*) even when a nearby pig was killed. The chief killed the live pigs with four or five quick blows to the snout with a heavy club, unlike the "twenty blows" which "crushed every bone in the pig's head" as in the *Tales*.
- For me, the most amazing part of the ceremony was not reported by Michener, whose characters departed the scene shortly after the pig killing. In reality, that night (some hours after the ceremony) the frail-looking old chief who had killed the pigs, danced vigorously for six hours straight, pounding and shaking the earth with his feet. He led the village braves in an amazing display of chanting, singing and dancing that few young Western dancers could hope to replicate, no matter how fit.

As might be expected, the Hollywood version of the Boar's Tooth Ceremony is ludicrous. In the movie *South Pacific*:

- The entire village dances just before the killing – while in reality only the chief being promoted, other chiefs, and other key relatives, all male, do most of the dancing, and a few older women are allowed to dance off to the side. (See the photos below of the Hollywood version and the real ceremony.)



Hollywood dancers cavort wildly in the Boar's Tooth Dance in the movie *South Pacific*



Real chiefs dance sedately in an actual ceremony

- The dancers leap about in the standard Hollywood dance supposedly used in Africa, the Caribbean and elsewhere for cannibal feasts and bizarre ceremonies – in reality the dancing during the actual pig-killing ceremony is quite sedate, and consists of one to three people almost jogging up and down the sacred field in a serpentine fashion, with up-reaching arms.

- Exotic music is heard in the film – in reality only a large tam-tam log drum provides the music.
- In the movie the tusks are going to be “cut” out of the dead pig’s skull during the ceremony, and there is no reference to the gruesome practice of crushing the pig’s skull with a club – in reality the skull is crushed by a club or axe during the ceremony, and then the tusks removed hours later, often by women, after all the meat from the head has been cut away.
- The movie tusk is quite misshapen and sticks up far too high. (See the photo below.)



Ridiculously oversized and misshapen boar’s tusk from the movie version

Altogether, it is quite clear that the choreographer and the script-writer who designed this movie scene had done little research on the topic, and had probably not even read the book *Tales of the South Pacific*, or at least decided to ignore it.



Two actual unpolished circular pigs tusks from east Ambae, purchased by the author in 2001 for \$100 USD. Each circle is about five inches across.

The annex provides a number of pictures of the actual ceremony, in sequential order.

Stone Moving. Stone moving is a custom ceremony on Ambae that is apparently undocumented by anthropologists or historians. Sacred stones, and stones marking the graves of chiefs, are mentioned in the major sources on Ambae culture (and other islands), but the moving aspect is apparently not. Reviews of the literature, and interviews with Western experts and Peace Corps volunteers familiar with the island revealed no knowledge of this interesting and rare ceremony.

The moving ceremony occurs when a major chief dies, and when he has requested that stones be moved to mark his grave. In unusual circumstances, if the chief is extremely distinguished, he may have the stones moved and grave constructed before he dies. It appears that stones are moved for a chief only once every four to fifteen years on average. Thus it was not possible to observe a ceremony during the course of the Expedition, and this lack of frequency probably explains the lack of documentation.

The main items of interest with regard to stone moving revealed by interviewing participants were as follows:

- No rollers or sledges are used.
- Stones moved range up to two meters tall and almost a meter thick, and are thus very heavy.
- Stones are sometimes moved only a few meters, but on occasion up to 20 kilometers, over very rough terrain to the nearest “road” (often more of a track), and thence to the site.
- Moving a stone may take up to a week. The stone is left in place each night during the move.
- The stones are tied up using jungle vines, which may be as thick as a softball or cricket ball. The stone may be up to fifty percent covered by the vines, thus creating a sort of sledge of vines. The vines are pulled by teams of men up to 20-30 men. No women are allowed to pull. They may observe and provide food and drink.
- Songs and chants are very important in generating the enthusiasm to move the stones. The two main island spirits are invoked and they also reportedly help in the moving, sometimes making the stones almost “float” over obstacles.
- Once a major stone has arrived at the site, a specialist “plants” the stone, with a substantial portion below ground, so that it cannot be dislodged by the frequent earthquakes.
- The chief’s grave is a large hole in the ground. The hole is surrounded by a ring of large stones, and smaller stones (often about the size of baseballs) fill in the gaps between the large stones. The body of the dead chief is wrapped in numerous sacred mats and placed in the hole, which is then covered with earth.

- The current Paramount Chief of Ambae may qualify for a stone moving ceremony, but he is not very old, is vigorous, and may not wish for a ceremony, since he is rather westernized and lives most of the time on the capital island of Efate.

An annex provides interviews on the stone moving ceremony, and pictures of stones that were moved.

Volcano Threat and Emergency Plans

A major purpose of the Expedition was to review, analyze and document the threat constituted by the Ambae volcano, Mt. Manaro (4908 feet high above sea level and almost 12,000 feet above the ocean floor), and provide input into the disaster contingency planning process. Mt. Manaro is a mafic stratovolcano, and is rated by some analysts as one of the ten most dangerous volcanos in the world, since it may erupt with a phreatic or phreatic-magmatic explosion, of the same type and perhaps with almost the same magnitude as Krakatoa did in 1883.

This possibility is due to the two large and one small crater lakes on top of Manaro, which hold about 60 million cubic meters of water. (One of these lakes is more than a mile across.) If this huge amount of water comes in direct contact with the main magma chamber below the lakes, a huge instantaneous explosion would likely occur, possibly wiping out the island, and perhaps causing tsunamis affecting the entire country and beyond. It is not known how much rock lies between the lake and the magma chamber (a few meters? Hundreds of meters?), and a survey is not practical, given the terrain.

Less dangerous but even more likely possibilities include: substantial lava flows from the many vents along the entire fragile east-west rift axis ridge that forms the island; smaller phreatic or phreatomagmatic explosions at either end of the 24-mile long island (such explosions every few hundred years have already left six or more maars -- craters up to 1500 meters wide and 100 meters deep); hazardous de-gassing of SO₂ (which apparently occurred as recently as 1991 and 1995 and possibly in early 2013); acid rain or ash falls that could destroy the crops of the subsistence-farming population; pyroclastic flows; or large lahar mud flows from the crater lakes or elsewhere due to heavy rains (preliminary indications are that such lahars have occurred every hundred years or less).

The image below, taken from space, shows the two year-round caldera lakes (the third small one, west of the other two, is seasonal) and the geology of the island.



The methodology in this area included:

- Review of the existing literature on Mt. Manaro and disaster planning
- Interviews with the Vanuatu METEO/Geohazards department and National Disaster Management Office (NDMO)
- Interviews with NGOs active at the national level and on Ambae in disaster planning
- Interviews with Ambae chiefs, officials and residents re hazards and disaster planning
- Inspection of some maars and tuff rings in east Ambae
- Development of a rough cell phone coverage map for Ambae
- Development of recommendations to NDMO on elements to be included in any future detailed volcano eruption contingency plan for Ambae.

From this methodology, the following three main products emerged:

- Overall conclusions
- Detailed recommendations to NDMO
- Estimated cell phone coverage on Ambae

These are discussed below.

Overall Conclusions. The Expedition's overall conclusions are straightforward and not sanguine:

- In terms of the threat environment, Mt. Manaro is one of the most dangerous volcanoes in the world. In recent years it has threatened Ambae with minor eruptions every 5 to 10 years. It has the potential to explode on a scale approaching Krakatoa, thus destroying Ambae and possibly wreaking havoc on the entire island chain. Lesser

calamities are quite possible and more likely, over a 20-30 year time horizon. The only good news in terms of the threat is that Mt. Manaro would probably give some warning before beginning a major eruption.

- Since the last eruption in 2005, in which half the island's population was evacuated, emergency preparedness rose to a high level for about three years, but has recently dropped to a very low level. No Community Disaster Committees are functioning, and at the national level virtually no preparedness activities or planning have been undertaken, barring climate change workshops, with little or no focus on the volcanic threat. The only exception is in the schools, where NGOs have undertaken emergency preparedness efforts for the students, teachers and staff.



Residents of Ambae wait for evacuation in 2005

Detailed Recommendations to NDMO. One intent of the Expedition was to contribute a section(s) to the Ambae volcano evacuation plan, probably on the topic of communications. Unfortunately, this proved impractical, since no modern plan exists, and the latest approved plan is from 1997 and is hopelessly out of date.

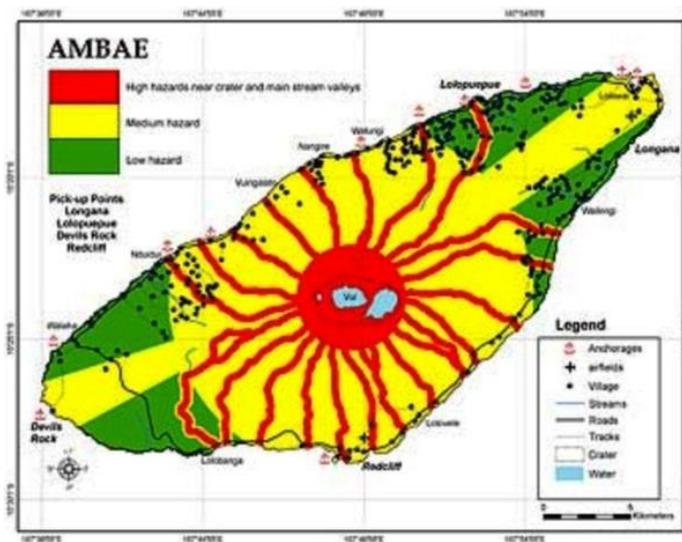
The Vanuatu Red Cross stated that in future, a detailed “contingency plan” for Ambae volcano response may be developed, under the umbrella of the NDMO National Disaster Plan (which is still in draft form and appears destined to remain in draft for some time to come).

Given these problems, the Expedition settled on the plan of writing a memo to NDMO from the OGCIO (Office of the Government Chief Information Officer, in the Prime Minister’s Office), making recommendations for items to include in the future Ambae contingency plan. This covered the following points:

- A national disaster plan in approved, not draft, form is essential. An imperfect final plan is much better than an identical draft plan, because it shows agreement and is sanctioned. An imperfect final agreed plan can always be updated later.
- Detailed contingency plans for major threats such as the Ambae volcano are also essential. National all-hazard plans are of necessity rather vague and non-detailed. When and if a real disaster strikes, a scenario and island-based contingency plan, agreed and approved, is vital.
- The key disaster transport need on Ambae is a perimeter road that is actually passable and useful. Most islanders estimate that at present the perimeter “road” is not really usable at all in the entire south, and is poor in the east and south west. (Of course there is no road at all, just a foot track, in the north central area.) The only truly useful roads on which speeds of up to 40 km/hour are possible are in the extreme northeast on some short segments between the airport and Lolowai, and in the northwest on some segments between the airstrip and Ndui Ndui. None of these “useful” roads are asphalt or hard and smooth crushed coral. All are just graded gravel, subject to rapid erosion and degradation.
- A second key disaster transport need is for reliable and adequate shipping, to carry evacuees away from Ambae and supplies to the island. In the past French warships have been made available by the French dependency of New Caledonia. If the independence referendum in New Caledonia in 2014 succeeds, such French vessels may no longer be available. Furthermore, one of the key Vanuatu inter-island transporters/ferries has recently sunk at its moorings off Tanna.
- Perhaps five percent of families on Ambae will likely refuse to evacuate their homes unless a catastrophic threat is indisputably imminent. Contingency plans need to take this into account, and should include: getting the local chief, Paramount Chief via radio broadcast, or CDC to order families to leave; providing such families with information on how to avoid lava and pyroclastic flows by running uphill to ridges; and identifying the sticking points that hold the families to their locations. These likely include: fearing that livestock (mostly pigs and chickens) will be stolen or die of starvation while the family is away; fearing that pigs will escape and eat and tear up the family gardens; fearing that household goods will be stolen; and fearing that evacuation centers, food, water and supplies will be quite inadequate. All these fears are grounded in fact, but could be ameliorated under the right circumstances.
- Serious planning is underway to improve the port at Lolowai in northeast Ambae, which currently has no wharf or dock, and has a reef blocking much of the entrance.

This reef reduces the use of the harbor to yachts and shallow draft barges. However, care must be taken not to use explosives to remove the reef, due to the fragile nature of the island's geological structure. Interviews conducted with Meteo staff indicate that they consider Mt. Manaro to be so dangerous and unstable, that they advise against using even small dynamite charges to clear out the reef blocking the entrance to the island's only potential harbor, the seawater-filled maar at Lolowai, for fear that the dynamite could set off an eruption.

- All communications methods should take into account that males and male chiefs often do not pass information well to women in village society, despite the fact that women are key to household planning. Getting past this historic cultural inclination is important.
- Maximum use should be made of the new high penetration of mobile phones on Ambae. This penetration may be in the range of 70 to 80 percent of households, and it is certain that 100 percent of all villages have at least one cell phone. These are not smart phones, and are almost all 2G. But they can receive SMS warnings. Recent tests of sending SMS messages to targeted geographic areas are quite promising. The poor coverage of certain areas of Ambae needs to be factored in to the planning, per the report section below.
- Sending of disaster communications messages needs to take into account that research has shown that many people in a wide range of cultures do not react and take action based on the first warning message. It often takes 3-5 messages, frequently from different sources, before people accept the message and begin to act.
- It is clear that the Community Disaster Committees on the island are now defunct. These should be resurrected. Reliance on only the chiefs for information transmission, warnings, and education is not sufficient.
- The maars (shallow craters up to a mile wide that mark old explosions) at either end of the island are very dangerous and could explode again or at least be the site of minor eruptions. Hence no evacuation to the maar Green Zone areas (including the port of Lolowai) should be done until it is established that no volcanic activity is observed in the maars.
- The out-of-date "Green Zone" map (shown below) should be updated as soon as possible, since it will be the major planning item used in evacuating Ambae, if necessary.



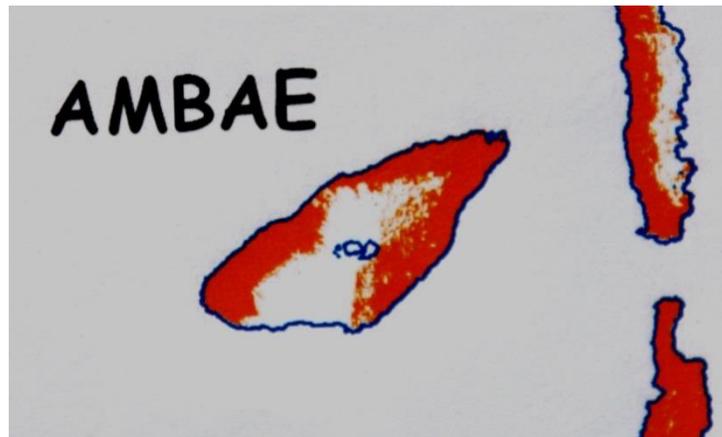
Current "Green Zone" (Safe Area) Map of Ambae

- Evacuation, especially off-island, will be the most contentious situation, and more planning effort should be put into this issue.



**Child of eastern Ambae,
with the rocky, rugged north coast in background**

Estimated Cell Phone Coverage on Ambae. Since 2005, cell phone penetration in Vanuatu has increased from about 10 percent to over 80 percent of the adult population, and about 85-94 percent of households. Ambae has also enjoyed this increase, although as a poor island the penetration may not be quite as high as the national average. Cell phones are now by far the preferred method for two way or even one way communications, since the national radio (which in most developing countries has 80-95 percent coverage) has only about 56 percent coverage, and this figure is falling. Hence for important disaster communications, figuring out the cell phone coverage in an area – Ambae in this case – is vital.



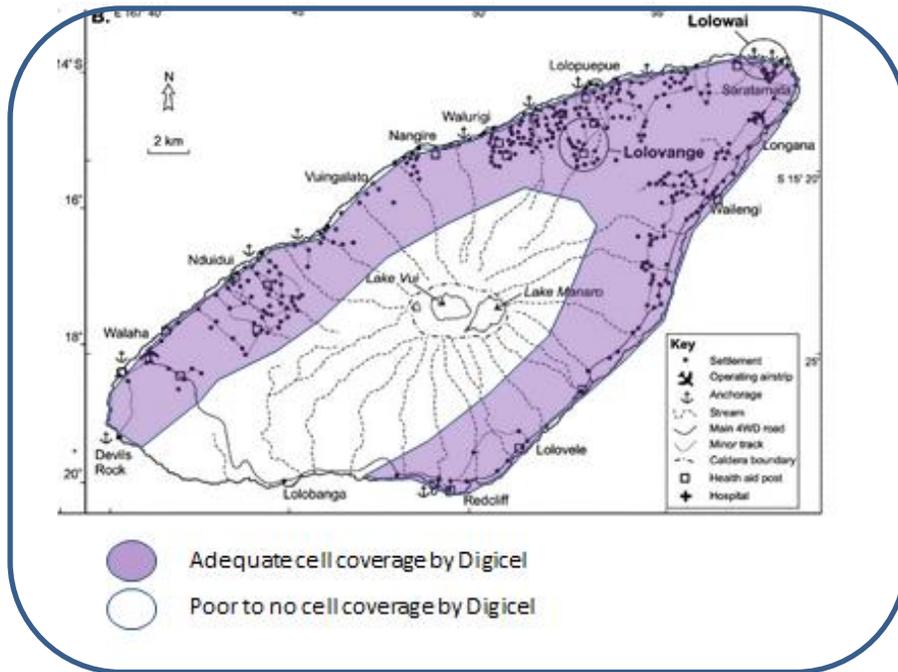
**TVL's Reported Cell Phone Coverage on Ambae, May 2013
(areas with coverage are in orange)**

On National ICT (information and communications technologies) Day, 17 May 2013, TVL (one of the two cell phone companies in Vanuatu) displayed a national coverage map which included the cell phone coverage map of Ambae shown above.

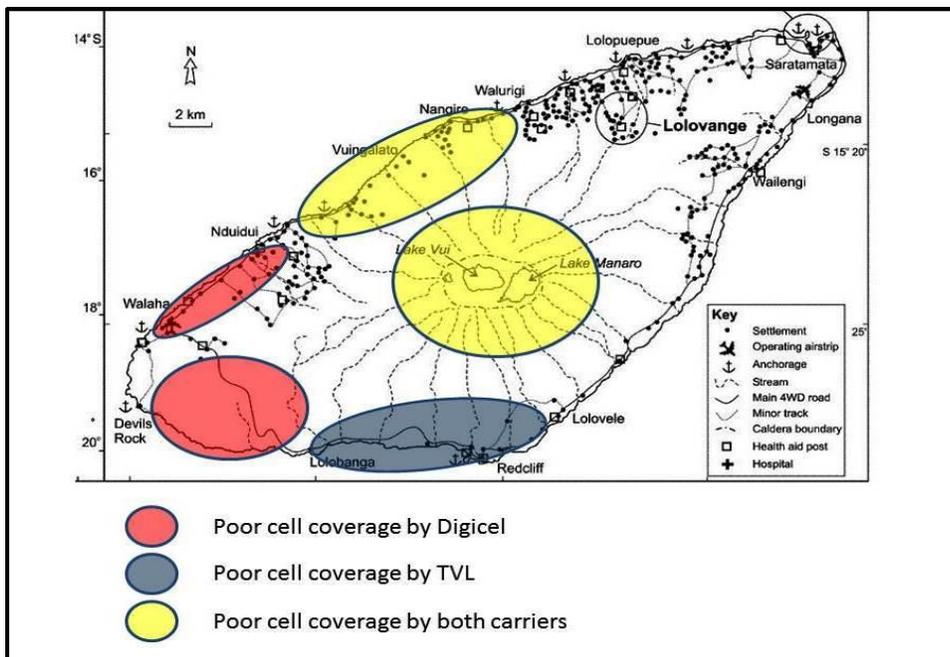
It is not clear if the above map published by TVL reflects estimated coverage using computer modeling based on terrain, or actual measurements using instruments. Given the expense and difficulty of the latter approach, it is almost certain that the map is derived from computerized terrain modeling.

Note that some or all of the TVL coverage on Maewo (ENE of Ambae) and Pentecost (ESE of Ambae) also shown on the map, actually comes from towers on Ambae. Thus if the Ambae towers are destroyed or damaged in a major disaster, coverage may be largely lost on parts of those two islands. This could be important if the disaster plan involves evacuation to those islands.

Expedition members obtained information on the approximate location of Digicel towers on Ambae. An analysis was done using terrain analysis, and the approximate Digicel cell phone coverage was estimated as follows:



From interviews with mobile phone users on Ambae, the crude map below was derived of areas of poor or non-existent cell phone coverage on the island. This lack of coverage in some areas, especially the north coast area where no road exists, needs to be factored in to disaster planning.



The contrast is striking between using the terrain analysis method and the reported actual issues experienced by users, especially in the north-central and north-west areas of Ambae. The only way to resolve these differences is for operators to do actual measurements of cell phone signal strength, using scientific instruments. This is recommended.

An Annex provides a short annotated bibliography of interesting articles re the volcanic threat, recent eruptions, and emergency planning on Ambae, and also provides interviews related to disaster response on Ambae.

Wrecks on Ambae

There are at least four World War II wrecks on or near Ambae. These are:

1. Airplane wreck in Nanako village, west Ambae, near Ndui Ndui. This was the main focus of this part of the Expedition. This wreck is described in more detail later in this section.
2. Airplane wreck in the central volcanic interior of Ambae. This wreck is as yet undiscovered, despite various inquiries by the author. The source of information on this wreck is the war diary of USN VB-98 (Bombing Squadron 98), presented in the annex, which describes the tragic fatal crash of Lt. Leonard Kinnan near the center of Ambae, in his SBD Dauntless dive bomber on 10 January 1944, just a day after he assumed command of his squadron. Kinnan's gunner survived the crash, but Kinnan was killed in the explosion that occurred immediately after the crash, and he was later buried at sea as briefly described in another document in the annex. From the description it appears that the plane was a total write-off and that much of the wreckage would have been scattered and destroyed. However, metal engines, wings and other major parts are hard to totally destroy, and it would seem possible to find this wreck. Unfortunately, the documents do not give a clue as to where "near the center of the island" this wreck might be located, and the terrain there is very challenging.
3. Airplane wreck off the northeast corner of Ambae. Several respondents in eastern Ambae, when queried about air wrecks, stated that during World War II a one-engine, two-man American plane crashed in the water, near the northeast tip of the island, perhaps 20 to 100 meters offshore, near the present location of the Aka Beachfront Bungalow, in Saratamata (the tiny provincial capital). The two crew reportedly survived, used a radio to call for assistance, and were picked up at Lolowai harbor by a vessel and transported to their base on Espiritu Santo. Since currents are quite strong in that area, it is not certain that the plane remains off the Aka Bungalow.
4. Submarine wreck between Ambae and Maewo. Several respondents stated that a Japanese submarine was spotted in this area and chased down by US warplanes. It

was sunk. Unfortunately, it is likely that this wreck is located in several thousand feet of seawater.

Regarding the wreck in Nanako village in west Ambae, the following aspects are of interest:

- Finding the plane
- Remaining parts and part numbers
- Summary of eye-witness and other accounts
- Who the pilot was
- Family of the pilot
- Recovery efforts by other teams.

Each of these items is discussed below.

Finding the Plane. I found the Nanako plane by luck and through the gracious hospitality of Chief Charly Bani, head of Nanako village. I had taken a boat from east Ambae to west Ambae in mid-August 2001, in my first, “Return to Bali-ha’i” expedition, in order to explore more of the island, and because I knew that the west was where more traces of World War II activity would be present. Getting off the boat, I was told that the best (and only) place to stay the night in the area was at the guesthouse of Chief Charly Bani in Nanako. I went there and found the Chief to be a gracious host with a small thatched guesthouse. Talking with him, he naturally asked why I was in west Ambae, since virtually no tourists came there. I told him of my interest in interviewing people who had worked on Espiritu Santo during the war, or had other war stories to tell. Smiling, he said, “Would you like to see my crashed World War II airplane?” And he took me to his yard, where he showed me the radial engine and one blade of the propeller. I was stunned.

He told me that in about 1943 he was 12 years old, and was part of a wedding party. Suddenly a plane came screaming down and crashed into the coconut trees behind his house. The plane burned on impact and had narrowly missing hitting the villagers. Then they noticed a parachute floating down to the west. The American flier was unhurt, said his engine failed, stayed overnight in the area, then was picked up the next day.

Remaining Parts and Part Numbers. The parts of the wreck in Nanako village are scattered in five large sections in an east to west line, about 200 meters inland from the main around-island dirt road, east of the Toa Palms Bungalow. These five are, from east to west:

- A wing portion, machine gun ports, and wheel assembly (eastern-most item)
- A wing root
- Radial engine with one blade of a three bladed propellor. The engine has 18 cylinders arranged in two stacked rows of 9 each
- Supercharger

- Tail section (western-most item).



**Chief Charly Bani and the plane engine and propeller
in Nanako village, west Ambae, in August 2001**

The first four of these sections are each about 50 meters apart. The last item is about 500 meters east of the supercharger. According to several respondents, this part was removed from the main wreck site in about 1960 by a Mr. Elgin and Pastor August Ben. It was buried, then excavated and placed in the yard of the Toa Palms Bungalow, where it remains to this day. Other parts of the wreck may still be buried in the vicinity of the Bungalow. All observable part numbers from these sections were recorded, and are presented in Annex 6. Also presented there are various photos of the wreck.

The important serial number of the plane was not located, only the numbers of various parts.

Also found on the plane wreckage were important part stamps, including “USN,” “CVC” (for Chance Vought Corp.), and “Chance.”



Author Lew Toulmin and Chief John Mole of Nanako Village, Ambae beside the engine and propeller of the plane wreck, in December 2012

Summary of Eye-Witness and Other Accounts. The eye-witness and other accounts of the plane crash yielded various information. Sorting through the secondary and primary accounts, and using the most reliable and plausible, the following scenario can be determined:

- The plane came toward the village from the north east along the coast, its engine failing and possibly trailing smoke. The plane was not under enemy attack, but had engine trouble or had run out of gas after a patrol of the Solomon Islands.
- The pilot tried to ditch in the ocean by looping around, heading back to the north east, so that the plane would hit the water but the north wind would carry him onto land. Before he jumped, he radioed his base to explain that he was ditching “off Aoba” (Ambae) and requested rescue.
- The pilot parachuted out before the plane crashed, and survived. There were no other crewmen. The pilot floated down to the west of the village, just west of the present Nanako health center. He was not injured, and he was American. No-one knows his name, rank, unit or branch of service. The pilot landed in a young coconut tree, but managed to get down and roll up his parachute, which he then carried with him.
- The plane headed toward the sea, but after the pilot parachuted out, it turned inland another 180 degrees, on its own, likely affected by the north wind, and crashed in the village of Nanako. It first hit a breadfruit tree, then broke into pieces, one of which stopped just a meter from the hut of one resident, the grandfather of Chief Charly Bani. Parts of the plane almost struck a large wedding party of about 100 persons. Many of the residents fled, thinking that their village was under attack, but some raced

to the wreck site, where the plane was burning. Ammunition started firing from the machine guns, due to the fire, and the residents scattered again.

- After the pilot got down from the young coconut tree, he was approached by one or possibly two villagers. (There is dispute about who these villagers were and whether there was one or two.) The pilot, fearing danger, pulled out and pointed his pistol at the villager(s) and they raised their hands in submission. He asked if there were any Japanese around, and they (he) said no. They persuaded the pilot that they were friendly, and he was taken to the Church of Christ Mission Station, where he was able to reach his base via radio, and where he stayed one night. The next day he was picked up by a seaplane at the “port” (really just a rocky beach) of Ndui-Ndui (west of Nanako about 500 meters), and was transported back to his base on Espiritu Santo.
- The pilot apparently never came to the wreck site itself. It seems likely that he could have seen the smoke and fire from his landing spot. He reportedly was concerned that the plane hit the land and could have injured someone, and was relieved that this did not happen.
- The crash took place on May 17, according to one living eyewitness who is absolutely sure of that date but not the year. Another respondent thinks the wreck was in May, June or July of 1944 or 1943.

Who the Pilot Was

Until now it was a mystery as to who the pilot was who flew the Nanako plane, and bailed out, but heroically attempted to ensure that the plane ditched in the sea. The Expedition has now proven that the plane that hit Nanako was an F4U-1 Corsair fighter flown by Lt. John E. Date, Jr., USMCR (United States Marine Corps Reserve), which crashed on 17 May 1944. The conclusive proofs are as follows:

1. The short description of the crash on 17 May 1944 in Lt. Date’s unit war diary (from Marine Fighting Squadron 211) matches quite well with eyewitness accounts from the villagers and analysis of the plane wreck. (The war diary excerpts and interviews with villagers are shown in the annex.)
2. The main exception is that the war diary states that the plane crashed “off” Aoba, whereas the plane actually crashed on Aoba. This discrepancy is explainable by the fact that Lt. Date reportedly tried to crash the plane into the sea, and called his base by radio to state that. Thus that intention was likely recorded in the squadron war diary as fact.
3. One actual eyewitness, who was 11 at the time of the wreck, clearly and convincingly states that the wreck occurred “on May 17.” He found the crash so interesting and dramatic that he remembered that date and marked it for the rest of his life. (This witness does not recall the year and was not prompted at all regarding the date.)

4. Another eyewitness states that the wreck occurred in May, June or July of 1944 or 1945.
5. Eyewitnesses in Nanako state that the plane seemed to have engine trouble, there was possible smoke, and the engine did not sound right. According to the accident report, Lt. Date's plane suffered "engine failure."
6. According to the USMC incident report, Lt. Date "bailed out," survived, and "was picked up the next day by the crash crew." This all matches eyewitness reports from Nanako.
7. The incident report states that the plane was "not recovered." This matches the Nanako incident, where the plane broke into five major pieces, burned, and was a total write-off.
8. After the war, Lt. Date did not talk much about his experiences. But he did tell his wife once that he "put a plane down near an island." This would seem to match his intention in the Ambae incident.
9. According to the F4U-1 *Erection and Maintenance* manual, the diameter of the propeller's circle on the F4U-1 with a three bladed prop was 13 feet 3 inches or 13 feet 4 inches in "nominal" diameter. (Pages 106 and 182 of 204.) By actual measurement of one blade of the Nanako propeller, the radius of the size of the circle encribed by the blade is exactly 6 feet 8 inches, or precisely half of the 13 foot 4 inches described in the manual.
10. The only engine found at Nanako is a single radial engine with 18 cylinders stacked in two rows of 9. This matches the engine of an F4U-1 from early in the war, which had a single Pratt & Whitney R-2800 "Double Wasp" engine with 18 cylinders stacked in two rows of 9.
11. An expert aircraft restorer (Bob Jarrett) from the Classic Jets Fighter Museum (CJFM) near Adelaide, Australia has carefully examined the entire Nanako wreck and its engine, and is "highly confident" it is a P&W R-2800 engine and an F4U-1B Corsair. He notes that an F4U-1 (but not later models and not other fighters) has an unique teardrop shape behind the shoulders of the pilot, to allow him to swivel around and see to the rear better. The wreck in Nanako has this unique shape.
12. The wreck in Nanako has the letters "USN" inscribed in two places in its metal parts.
13. The wreck in Nanako has the number 16280-2 inscribed in small numbers on a horizontal plate in the tail of the plane (in the portion of the plane in the yard of the Toa Guesthouse). The parts manual for the Corsair (pp. 630-631) states that part number VS 16280-2 is a right hand plate assembly in the tail of the plane. The diagram in the parts manual matches the appearance of the plate in the Nanako plane.
14. The wreck in Nanako has the number 10535-2 inscribed on the face of a ring in the machine gun port in the wing. The parts manual for the Corsair F4U-1 (p. 98-99) states that part VS 10535-2 is a ring in the machine gun tube assembly. (Unfortunately, the

serial number of the Lt. Date plane (Bureau No. 56076) was not observed on the Nanako plane; the serial number plate was likely destroyed or removed.)

15. The F4U-1 had six .50 caliber machine guns arranged in two sets of three, one set in each wing, with distinctive round ports. The Nanako plane wreck has one remaining wing, and it has the three ports that match the appearance of the F4U-1. Near the wreck, and reportedly taken from the wreck, is a rusted .50 caliber machine gun.
16. The wreck in Nanako has the word "Chance" in the metal of the supercharger, indicating the Chance Vought Corporation. Also, the letters CVC appear on one part number on the Nanako plane. Chance Vought built the F4U-1 Corsair.
17. Research in secondary sources in US military records revealed no other plausible missing aircraft on or near Aoba/Ambae. A comprehensive search was made, using the key words Ambae and Aoba, of all wrecks in the South Pacific in the excellent compilation of War Diaries and WW II documents assembled by Aviation Archaeological Investigation and Research (AAIR; see the website www.aviationarchaeology.com). Furthermore, any anomalous wrecks in the New Hebrides or South Pacific in the AAIR documents, which were not clear as to location, were pursued to establish whether they could have been on or near Aoba. Neither search found any other wrecks on Aoba, except the Lt. Kinnan wreck (described later) which is clearly not the Nanako wreck. Thus this search helps eliminate the possibility that a plane other than the Lt. Date plane hit Nanako.
18. Eyewitnesses of the crash on Ambae state that the pilot was a good looking American; Lt. Date was a good looking American pilot!



2nd Lt. John E. Date, Jr., USMCR



Lt. Date in the cockpit of a Corsair



Three Corsairs in flight

Family of the Pilot

Using genealogical and investigative techniques, I was able to locate the surviving family of Lt. Date. My main contact was Julia F. Date, daughter of Lt. Date, and owner of Julia F. Date Design in Arizona. She stated that her father survived the war, died in 1973, was married to Helen Peters Date (who is still alive), and fathered five children. After the war, he lived and died in the Pittsburgh area. He did not talk much at all about his wartime experiences, and

never mentioned the island Aoba or Ambae. He did tell his wife later that he “put a plane in the water near an island.” This would seem to refer to the Aoba crash, and indicates that he did not realize that his plane hit the island.

Lt. Date did state in his letters that he flew Corsairs and other aircraft, and he told his family verbally after the war that he crashed at least three times in his flying career. Once he was pulled from the water, once he went off the side or end of a carrier, and once his family is not clear on. Julia Date obtained her mother’s box of wartime material, including photos and letters. The family graciously shared these with me and gave permission to include them in this report. These show that Lt. Date was very pleased to be flying Corsairs, was very keen to “have a crack at the Zeros,” and shipped out to the New Hebrides in early 1944. These letters and photos are presented in an annex. Also presented are excerpts of other mentions of Lt. Date in the war diary of his squadron from June 1944. These show that he was in action, bombing the Japanese and active on combat patrols, in the month after he crashed on Aoba. He continued with his squadron through the rest of the war, to the Philippines, and after the war served for many years in the USMC Reserves, retiring as a Captain.

Recovery Efforts by Other Teams

According to respondent Wesley Hambu of west Ambae, in about 2009 a team of three Australians came to Nanako village to view the plane parts. All the visitors were about 40 years old. They stayed four days and were looking for the serial number of the plane, which they did not find. They did not dig for parts of the plane. Hambu also states that in about 2008 one Australian man came to the village, and he was working with the Cultural Center in Port Vila. He bought one wing of the wreck for 50,000 Vatu (about \$USD 450) and took it away. This led to a dispute, in which other landowners demanded a portion of the payment, and stated that the amount received was too little. This man also looked for the serial number but did not find it. He stated that the plane was unique and different from other WW II planes. He did not dig at the site. Hambu does not have any contact information on any of these Australians.

Hambu states that some other parts of the plane are under ground, buried by rain and floods that affect the area. This natural burial happened about seven years ago, in a gully near the Toa Palms Bungalow (which is on a side road, off the main road between Nanako and Ndui Ndui). He is not sure exactly where those buried parts are.

It appears certain that both groups described by Hambu were from the Classic Jets Fighter Museum near Adelaide, Australia. The director of this museum, Bob Jarrett, states that he and his museum obtained a bulkhead from the wreck, visited Nanako twice, and identified the plane as an F4U-1B Corsair with a Pratt and Whitney R-2800 engine. He and over 25 volunteers are using the bulkhead in the re-creation of an F4U-1 for static display in the Museum, putting together the parts from seven different wrecks, and re-creating over 10,000

parts. The restoration/re-creation is about 50% complete, and has about three years of work to go. Bob and Margaret Jarrett of the Museum were extremely gracious and even offered to give a part of the Nanako plane to the family of Lt. John Date, Jr.!

Logistics

Visits to Ambae were undertaken during December 2012 and January and June 2013. I flew Air Vanuatu, utilizing the grass strip in the west or the small tarmac strip in the east.

In December 2012 I flew into Longana airstrip on eastern Ambae, interviewed officials, chiefs and residents in that area, and attended a wedding custom ceremony. I stayed at the Aka Beachfront Bungalow in Saratamata, in a small thatch hut with a mosquito net and cold water shower. I then took a hired 20 foot outboard motor boat from Lolowai Harbor in the northeast, and cruised along the north coast of Ambae, about 20 miles to Ndui Ndui in the northwest. I waded ashore and walked to Nanako village. There I interviewed the village chief and other residents, inspected the plane wreck, and toured the village. I stayed in the Toa Palms Bungalow, another thatch structure but a bit larger, and blessed with a substantial and vigorous population of bedbugs. I flew from Wallaha airstrip in west Ambae to Luganville in Espiritu Santo, where I went to the Coral Quays Resort to see if this was the model for the Emile de Becque plantation in *South Pacific*, and toured the island's numerous WW II sites. I then returned to my home base in Port Vila on Efate.

In January 2013 I received 48 hours notice that a custom pig-killing was going to occur in east Ambae. I took leave from work and rushed to Longana, where I was picked up by my guide and Expedition member Alban Tari, who took me to his small village of Vusnagivika, just NW of the airstrip, in the jungle on a hilltop. I stayed in his house, made of 2x4s and corrugated metal, with mosquito nets and an outside village privy. In the village I interviewed residents and chiefs and hiked to a nearby village to interview another chief. I observed the pig-killing ceremony and the custom dancing and chanting that night. (And participated a bit, throwing in an Alabama "rebel yell" which was immediately adopted into the local culture by the delighted male warriors of the village.) I then flew to Espiritu Santo, where I interviewed a Pentecost land diver who doubled as a taxi driver and who gave me a tour of Luganville and took me to the Turtle Bay resort. (This interview is not reported here, since land diving was not a focus of the Expedition.) After this short transit period, I again returned to Port Vila.

In June 2013 I flew to west Ambae and undertook additional interviews re the Nanako wreck. These provided conclusive proof of the identity of the plane and pilot. I attempted to climb the central volcano, but unfortunately conditions were so wet and muddy that experienced local guides stated that climbing the volcano was impossible.

Later in June 2013 I flew to Adelaide, Australia and viewed the re-creation of the Corsair at the Classic Jets Fighter Museum, using parts from the Nanako plane, three planes from Espiritu Santo, and three planes from Efate, and thousands of newly manufactured parts.

CJFM supplied a parts manual which allowed the further confirmation of the plane's identity, due to two part numbers observed in Nanako being listed in the detailed parts catalog. I had not been aware at the beginning of the Expedition that any other team had visited Nanako, and had no inkling that a museum was re-creating a Corsair, drawing in part on the Nanako plane. So this was a tremendous and very pleasant surprise.

Members

Expedition members and their roles were as follows:

- Lew Toulmin, Ph.D., MN '04, F.R.G.S., Expedition Leader, senior advisor on e-government in the Prime Minister's Office, Republic of Vanuatu, author of this report
- Robert Hyman, FN '94, F.R.G.S., Expedition advisor on logistics and climbing
- Jethro Webston, Ambae expert, former resident of east Ambae, Expedition advisor, Senior Telecommunications Engineer, Office of the Government Chief Information Officer, Republic of Vanuatu
- Alban Tari, resident of east Ambae, guide and translator
- Ray Tari Tabiana, resident of east Ambae, guide and translator
- Pastor Jeffrey Hambu, resident of west Ambae, researcher and logistician
- Bob and Margaret Jarrett, owners and managers of the Classic Jets Fighter Museum, Adelaide, Australia, who are re-creating a Corsair, and who supplied invaluable information.

Future activities

The Expedition published an article on Bali-ha'i in *Island Life* (the national magazine of Vanuatu) and in *International Travel News* during the period of the effort. These are included in the annexes of this report. Future efforts derived from the Expedition include some or all of the following planned publications, which are already in train:

- Publication of an article on the Expedition and its findings in *The Montgomery Sentinel*, in the author's regular travel/adventure column
- Publication of a description of the Expedition and its accomplishments in *Island Life*, the national magazine of Vanuatu
- Publication of an article in a journal on emergency management on the threat posed by Mt. Manaro, and the findings of the Expedition re evacuation and communications plans
- Publication of an article in a literary or history magazine on the comparison between Michener's account of a pig-killing ceremony and observation of an actual ceremony. The peer-reviewed *Journal of Pacific History*, published by the Australian National University, is being targeted.
- An article in *Military* magazine or *Army, Navy, Air Force Times* on documenting the wreck in Nanako village on the north shore of Ambae.

In addition, donation of the correspondence between the author and James A. Michener and his editor is underway, with the likely recipient being the University of Northern Colorado (UoNC), which already has a massive archive of Michener material. That University has expressed a great interest in obtaining the original of the letter, and in having me give a lecture on the comparison between the fictional and the real “Bali-ha’i.” A copy of this report, and of my book *The Most Traveled Man on Earth*, with a section on Ambae, will also be given to UoNC, as they requested.

A copy of all research related to Lt. Date and his family, and a copy of this report, are being given to the Classic Jets Fighter Museum, which will use the information in storyboards beside the restored Corsair. Bob and Margaret Jarrett of the Museum have very kindly agreed to donate a part of the Nanako plane to Lt. Date’s family as a memento of his war service.

Biography of the Author

Below is the detailed, exploration-oriented biography of the author, as submitted to The Explorers Club as part of the Flag application, to help justify award of a Flag.

Llewellyn (“Lew”) M. Toulmin, Ph.D., MN '04, FRGS (Fellow of the Royal Geographical Society). Expedition Leader. Member of the Board of Directors of the Explorers Club Washington Group (ECWG). Leader or co-leader of various expeditions including the “2001 Return to the Real Bali-ha’i,” (Vanuatu); the “Search for Steve Fossett,” (Nevada/California); the “Search for N2700Q” (Arizona); “The 2009 Search for Gertrude Tompkins: the Last Missing WASP of World War II” (California); “The Search for the Lost Ghost Town of Washington Court House” (Alabama; Flag Expedition); and the “White Hall Revolutionary War Archaeological Expedition” (South Carolina, Flag Expedition, also approved by the Royal Geographical Society). Planner and researcher for the “2011 Honduran Biodiversity Expedition” (Flag Expedition). Participated in the “Archaeological Search for Missing Fort Claiborne” (Alabama); “Search for the 1813 Battle of the Burnt Corn” (Alabama); “Archaeological Examination of ‘The Village’: Site of a 1781 British vs. Spanish Revolutionary War Battle” (Alabama); and “Flathead Lake Search for the F9F Cougar of Capt. John Eaheart USMCR” (Montana).

Lead interviewer, researcher and consultant for law enforcement and search and rescue (SAR) authorities, in extensive aerial and ground searches for missing light aircraft, including: N174BH (Pilot Michael Bratlie, Minnesota), N650RV (Pilot Joseph Radford, Grand Canyon NP, Arizona), N26837 (Pilot Tony Nicholls, Oregon), and N222TB (Pilot Courtland Mumford, Oregon). Assisted Oregon and Nevada law enforcement and the Royal Canadian Mounted Police in a two-state search for missing British Columbians Albert and Rita Chretien. Co-founder and Research Director of the private Missing Aircraft Search Team (MAST).

Expertise in historical research, emergency management and disaster response, search and rescue, and sociology/anthropology. Consultant in emergency management, disaster response and emergency communications to the Federal Emergency Management Agency, USAID Office of Foreign Disaster Assistance, US Defense Communications Agency and various foreign governments. Worked in 30 less-developed countries in disaster relief and telecommunications for

the World Bank, USAID and AusAID, and travelled to 140 countries. Currently serving as senior advisor in communications policy and e-government development in the Prime Minister's Office (PMO), Republic of Vanuatu. Has also been designated as the Official Photographer for the PMO and for the Vanuatu Parliament.

B.A. in anthropology, sociology and political science; M.P.A., Maxwell School, Syracuse University; Ph.D. in public administration, American University (focus on development projects, disaster response, and utility economics).

Author of books and manuscripts including: *The Most Traveled Man on Earth*; "Manual for Finding Missing Aircraft;" and "Revolutionary General Andrew Williamson: Backcountry Warrior and America's First Major Double Agent." Author of various articles published in peer-reviewed journals such as *Public Administration Review*; the *International Journal of Mass Emergencies*; and *Disasters: The International Journal of Disaster Studies and Practice*. Author of over 150 published articles on adventure, travel and exploration. Basic facility in French (second language of Vanuatu) and Bislama (the national language of Vanuatu). For more information, see www.themosttraveled.com.



The author steers the tall ship *Soren Larsen* along the coast of Ambae/"Bali-ha'i" in 2001

Notes on the Explorers Club Flag Authorized for the Expedition

Members of The Explorers Club may apply to carry one of the 202 registered Flags of the Club on sanctioned expeditions. The applications are carefully scrutinized by the Flag and Honors Committee before an award is made. Some Flags have been carried to the moon, to the bottom of the Marianas Trench, to the top of Mt. Everest, and on numerous other scientific, historical and ethnographic expeditions. (Club members have many famous “firsts,” including first to the North and South Poles, first to climb Mt. Everest, first to the deepest ocean trench, first to the surface of the Moon, first to circle the Earth non-stop solo in a balloon, first to circle the Earth non-stop in a plane, etc.) Each Flag has an interesting and varied history, reflecting the expeditions on which it has been carried.

I applied for Flag number 28, which had been carried by Steve Fossett, a Medalist of the Club, in his solo non-stop flight around the world in an airplane, in February 2005. This was the first successful such flight in history, and was one of 115 similar aviation and sailing records that Steve broke in his incredible career. Steve went missing in 2007, and I became the research director of a private search to find his plane and body. Eventually a member of our search team found the site of his remains and closed the case. Unfortunately, Steve’s flag had been “retired” by the Club and was no longer available to carry. Hence I asked for and received Flag number 101, which included in its history the search for Amelia Earhart by TIGHAR (The International Group for Historic Aircraft Recovery). I felt this Pacific and aircraft connection was appropriate for the Bali Hai expedition. No other Explorers Club Flag has apparently ever been issued for an expedition to Ambae or Vanuatu. The complete history of Flag 101 is shown in the list below.

Dr. William M. Mann	1940	Smithsonian-Firestone Expedition to Liberia
Christopher Bird	1961	Rupert River Reconnaissance
Dr. Farouk El-Baz	1987	Sealed Chamber of Pharaoh Khufa, Giza, Egypt
Austin A. Mardon	1988	Arctic Meteorite Search - 1988 Expedition
O.W. Bud Hampton	1989	Irian Jaya Expedition
Richard S. Knutson	1989	Lost World Expedition X, Jul Mas Nim, Guatemala
Thomas Claytor	1990	Bush Pilots--7 Continents Expedition
Glenn E. Porzak	1990	1990 American Everest/Lhotse Expedition
Lonnie Dupre	2001	2nd Thule Expedition Greenland
Lonnie Dupre	2005	1 World Exp. – 1st Summer Crossing of the Arctic Ocean
Richard E. Gillespie	2007	TIGHAR Amelia Earhart Project V, Nikumaroro Island
Janet C. Ciegler	2010	Conservation of the Church Forests of Ethiopia
Rosaly M.C. Lopes	2011	Erta Ale Lava Lake, Ethiopia
Milbry C. Polk	2012	Chasing the Light: Greenland Art Expedition
Llewellyn M. Toulmin	2012/3	Expedition to Ambae, the Real “Bali-ha’i” from <i>South Pacific</i> : the Next Krakatoa?

In addition to the Explorers Club endorsement of the Expedition, the effort was directly or indirectly supported, assisted or endorsed by:

- The Office of the Prime Minister, Republic of Vanuatu
- The Vanuatu Meteorological and Geohazards Department
- The Paramount Chief of Ambae.

Suggested Key Words for Indexing

Ambae	Melanesia
Aoba	Michener, James A.
Bali-ha'i	Mt. Manaro
Bali Hai	Nakamal
Boar killing	New Hebrides
Boar's tooth	PENAMA province, Vanuatu
Boar's tusk	Pig killing
Cable, Lt. Joe	Pig killing cult
Chief's headstones	South Pacific
Disaster planning, Vanuatu	Stone moving
Emergency management	Stone moving ceremony
Garae, Chief Rupert	<i>Tales of the South Pacific</i>
Graded chief system	Toulmin, Lew
Graded hierarchy of chiefs	Toulmin, Llewellyn M.
Leper's Isle	Vanuatu
Liat	Volcanoes of Vanuatu

List of Annexes with detailed information and photos

Annex 1: Correspondence with Michener re the inspiration for “Bali-ha’i” in *Tales of the South Pacific*; interviews re the location of *South Pacific* sites on Espiritu Santo; various sources which do not reveal the inspiration for Bali-ha’i; article from 1970 by Michener naming Aoba as the inspiration island; images of “Bali-ha’i” from the play and movie

Annex 2: Articles in *Island Life* and in *International Travel News* re the primary and secondary inspirations for Bali-ha’i

Annex 3: Interviews re pig killing on Ambae; news stories about pig-killings at public events; comparison of Michener’s account with a real ceremony on Ambae; pictures and time line of an actual ceremony; a pig-killing song; a pig-killing poem; and interviews about Ambae magic, village life and other related matters.

Annex 4: Interviews re Ambae stone moving

Annex 5: Interviews and other items re the volcano threat and emergency evacuation plans for Ambae; statement by Meteo of raising the threat level posed by Mt. Manaro in 2013; bibliography of articles related to the volcanic threat and emergency management on Ambae

Annex 6: Observations, items, pictures and interviews re aircraft and other wrecks on or near Ambae, including photos and war letters of the pilot of the Nanako plane, and mentions of him in his squadron war diaries, also photos of the Corsair being re-created at the Classic Jets Fighter Museum; accident and incident report on a yet-to-be-found WW II wreck on Ambae

Annex 7: Pages from *The Most Traveled Man on Earth*, documenting the first Bali-ha'i (Ambae) expedition by the author, in mid-August 2001

Annex 8: Accessing the caldera of Mt. Manaro on Ambae.

Note: all interviews were in-person, except as otherwise noted

Annex 1:

- Correspondence re the inspiration for “Bali-ha’i” in *Tales of the South Pacific*
- Interviews and information about the locations from *South Pacific* on Espiritu Santo
- Various sources which do not identify the location of Bali-ha’i
- Article from 1970 by Michener identifying inspiration island for Bali-ha’i and the source of the name
- Images of Bali-ha’i from the play and movie

Note: The letter in this annex led to the response from Michener that is presented in the main body of this report.

**Correspondence re the inspiration for "Bali-ha'i" in
*Tales of the South Pacific***

Llewellyn M. Toulmin, Ph.D.
13108 Hutchinson Way
Silver Spring, MD 20906

June 1, 1994

Mr. James A. Michener
c/o Texas Center for Writers
PCL 3.102, Main Library
21st at Speedway
University of Texas at Austin
Austin, TX 78713

ATTN: Barbara

Dear Mr. Michener:

Enclosed please find the letter I sent to Random House in New York in September. I understand that unfortunately you did not get it; perhaps you can answer some of the questions now?

Since writing the letter I have been in touch with the Baltimore Sun and Cruising World, and both expressed great interest in an article on the inspiration for Bali-h'ai. I am planning a trip to Vanuatu later in 1994, and intend to sail from Efate to Aoba, Espiritu Santo, Malakula, and other islands in the northern New Hebrides.

I would be very grateful if you could call, write, fax or otherwise communicate with me and answer the questions in the enclosed letter.

Also enclosed please find a few clips from my portfolio of travel articles.

I can be reached at 703-902-5437 (Booz, Allen & Hamilton office tel.), 703-902-3333 (office fax) or 301-942-6062 (home tel). Thank you very much for your assistance.

Sincerely,

Llew Toulmin

Llewellyn M. Toulmin
13108 Hutchinson Way
Silver Spring, MD 20906

September 1, 1993

(PLEASE FORWARD TO CURRENT ADDRESS)

Mr. James A. Michener
Writer-in-Residence
Eckerd College
c/o Random House
201 East 50th St., 12th Floor
New York, NY 10022

Dear Mr. Michener:

I am a former Eckerd College student (class of 1971) and a reader and follower of many of your books. For example, while recently working in Poland and advising the Ministry of Post and Telecommunications, I read your book Poland and as a result visited the town of Zamosc and the two castles of Niedzica. They were indeed romantic and fascinating--thank you!

I have recently reread your classic Tales of the South Pacific and would now like to identify and visit the true "Bali-ha'i," your wonderful evocation of an island paradise.

In researching this topic, I have of course read your article from November 22, 1970 in the Philadelphia Sunday Bulletin in which you stated that Bali-ha'i was imaginary but based somewhat on the rather savage island of Aoba, 30 miles east of Espiritu Santo in Vanuatu (New Hebrides), and that on Aoba the French girls of the islands were isolated during the war. I have also noted articles in Islands, Travel Tips and various guidebooks which said that Bali-ha'i is Aoba. In The World is My Home and in the Bulletin you noted that "Bali-ha'i" was a romantic name taken from a run down village in another island group, not the name of a particular island in the New Hebrides.

But I wonder if there is not a little bit more to Bali-ha'i than just Aoba and imagination. Going back to the original source, in Tales of the South Pacific you say that "Bali-ha'i" is a "tiny island" lying "in the arm of a bay of Vanicoro," and that Vanicoro can be viewed from "Emil de Becque's plantation" to the south of Espiritu Santo. Bali-ha'i is "small enough to be taken in at a glance;" there is a fairly narrow channel between Bali-ha'i and Vanicoro; and Liat and Lt. Cable can apparently easily walk across the tiny island and view Espiritu Santo in the distance. Bali-ha'i cannot be distinguished from Vanicoro until an observer is close to it. Vanicoro is also described as "a large and brooding island 16 miles to the east" of Espiritu Santo, and the setting sun behind Santo shines in the face of watchers on Vanicoro. (All the other references in the Tales also state or imply that Vanicoro is to the east.) Vanicoro has four mountains, two of which are volcanos, and a lake inside one of the volcanos. Vanicoro has an extensive inland boar tusk cult, inland cannibalism and head shrinking, and the coastal people are quite different from the inland dwellers. Vanicoro is also known as the "lepers' isle."

From the Tales I therefore think that there must be more inspirational material than just Aoba. I wonder if Bali-ha'i and Vanicoro are not a combination of: 1) Aoba; 2) Malakula; 3) one of the small islands just off the north coast of Malakula; and, of course, 4) imagination.

I think that finding "Vanicoro" is key to searching for the inspiration to "Bali-ha'i." The candidate islands for "Vanicoro" would seem to be narrowed down to Aoba or Malakula or both.

Aoba lies to the east of Santo, thus coinciding with most of the references in the Tales, but is about 30 miles away, not 16. Aoba has four interior mountains, thus matching "Vanicoro," and three volcanic lakes (not one). Aoba was known at one time as the "lepers' island," thus matching the Tales. It has a boar cult but has a more homogenous population than Malakula. Most important, there are no tiny small islands just off the Aoba coast that could have inspired Bali-ha'i itself.

Malakula (spelled Malekula in Return to Paradise and on the map in your Rascals in Paradise) is south of Santo (thus fitting the one reference to it being to the south). It is about the right distance from Santo (16 miles). It has three mountains in the south and a high area in the north, but apparently has no interior volcanic lakes. The island has a very strong boar cult in the interior among the Big Nambas. The Big Nambas are quite different from the coastal people. In The World is My Home you mention "mysterious Malakula of the headhunters," thus matching the headhunting references in the Tales, and from this reference, one of your biographies, and Return to Paradise it is clear that you visited Malakula. Some earlier versions of the name of the island were very close to "Vanicoro," including Manikuro and apparently Vanicuro. Most important, Malakula has several small islands set along the northeast and southeast coasts, just a few hundred yards offshore, that could have inspired the reference to Bali-ha'i being hard to see until the viewer was very close to it.

I therefore think that "Vanicoro" is an amalgamation of Malakula and Aoba, with Malakula contributing the distance away, the headhunting, the strong boar cult, the Big Nambas, and the non-homogenous interior vs. coastal people. Also, I think perhaps one of the coastal islands contributed the concept of a tiny island just off the coast, hard to see until it was close aboard. I think perhaps Aoba contributed the interior volcanos and the volcanic lake, the interior topography, the eastern location, and the isolated girls.

If I am right, the probable tiny islands that could have been an inspiration for tiny Bali-ha'i are Vao, Atchin, Wala or Rano islands, with my guess being Atchin, since it sits "in a bay of" Malakula ("Vanicoro"), is nearer Santo than the ones to the south, and probably couldn't be distinguished from Malakula until it was close aboard. (See attached photocopied maps.)

Can you confirm this guesswork on my part? Is Atchin a partial inspiration for Bali-ha'i? Or is the tiny island of Bali-ha'i totally imaginary? I would be very grateful if you could answer these and the following other questions:

- . From The World is My Home I know where the wonderful Bloody Mary character in the Tales came from. Was Emil de Becque modelled after Jean Perouse (described in Return to Paradise) or Aubert Ratard (described in The World is My Home)? How about Liat and Lt. Cable?
- . Have you ever returned to "Bali-ha'i" and "Vanicoro"--what did you find? (I have read Return to Paradise and noted the story "The Jungle" in which some ship passengers visit the Big Nambas in Malekula--but what about Bali-ha'i and your visits after the war?)
- . Would you recommend going to "Bali-ha'i" now? What obstacles might one encounter? What disappointments or joys?

I will take your suggestions seriously in the Bulletin that Bora Bora and Moorea are really what you had in mind when you conceived of Bali-ha'i--I definitely plan to visit these two lovely places! But I am also interested in the original conception.

I would be very grateful for any information you could supply. Thank you for this, and for all the enjoyment your books have given me over the years.

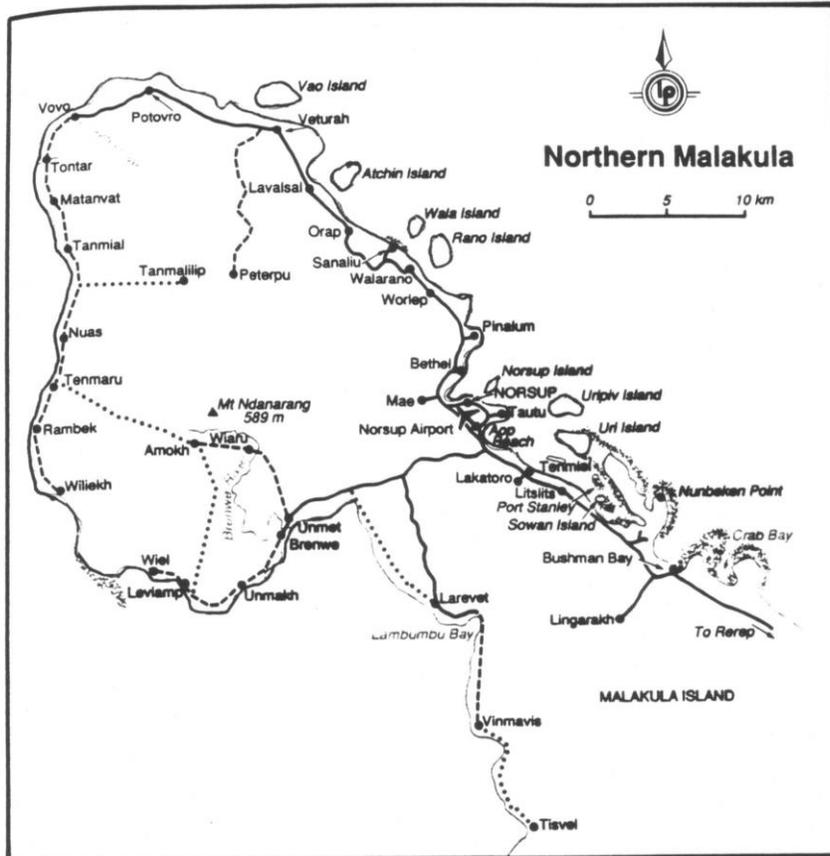
Sincerely,

P.S. If you would like to contact me directly I can be reached at 703-902-5437 (Booz, Allen & Hamilton office tel.), 703-902-3333 (office fax) or 301-942-6062 (home tel.). Thanks very much.

Attachment to the letter above:

from Vanuatu; Lonely Planet publishing.

Malakula Island – Around Malakula 197



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settlement. Norsup (pronounced 'Norrh-soup') used to be the branch centre for French administration in northern Malakula, and is still mainly French-speaking.

Norsup is pleasantly shrouded by red coral trees, locally called *naradas*, and also by the yellow hibiscus or *durao* tree. There are also a few candelabra pines in the grounds of the large school beside the hospital.

About 800 metres offshore from the town is small, French-speaking Norsup Island. There is a narrow sandy beach on its western edge opposite the mainland.

Only 300 metres beyond the airport termi-

nal is the slender golden shore of Aop Beach, the prettiest spot around Norsup. A long stretch of colourful coral reaches all the way southwards to Litslits.

Plantations Most of Norsup's activities revolve around the huge coconut estates of the PRV company (Plantations Réunies de Vanuatu), which border the town on three sides. This is Vanuatu's largest and most active copra producer, and the largest agricultural operation in the country.

PRV's block is at the north-western end of Norsup. Staff huts are lined up along the

km journey between the two towns costs 500VT by taxi.

Getting There & Away See the Getting There & Away information in the Malakula section, above.

Getting Around Norsup's airport is three km from town. It's a 300VT taxi ride into Norsup or on to Lakatoro. If you hitch instead to either place, expect to pay about 100VT.

Walarano (13 km)

The people in this village originally came from the nearby islands of Wala and Rano, hence its name. Both are one km from the shore and have sandy beaches facing the mainland.

There's often a disco in the village on weekend nights, but it has a reputation for rowdiness. Only 1.5 km to the north of Walarano is Sanaliu, a friendly village with some attractive onshore coral gardens.

Atchin Island (31 km)

Tiny Atchin is 0.8 sq km in size yet has a population of about 1100, making it Vanuatu's most densely populated island. Its people are considered to be the wealthiest in Malakula, owning two shipping companies amongst other things.

Many Atchin people own gardens on the mainland, daily canoeing the 300 metres to the black sand beach at Potinweiu (pronounced Fot'n-way). Islanders talk of 'Big Atchin' and 'Smol Atchin', meaning Atchin itself and the mainland opposite, between Lavalsal and Smol Onma, where some have moved to.

Onma is the largest village on the island. Its sister settlement on the mainland, populated by people of the same clan, is called Smol Onma.

Sharks have taken several people off Atchin in recent years. A particularly bad year was 1984, when four people were lost to sharks. Atchin people have, therefore, decided not to have any tourist facilities on their island for fear of further tragedies.

If you want to visit Atchin for a few hours, contact the island's council (☎ 3202) first. They will arrange a guide to show you around. A canoe ride across the narrows between Onma and Potinweiu costs about 80VT.

Things to See & Do Atchin has white sand beaches along its north-western shore, and also at Onma where the island's anchorage is. One km north of Atchin is the beautiful Malveveng Reef. There's good coral here, with many tropical fish as well as sharks. Two km further north, Tolamp Reef is similar.

Atchin has two natsaros, at Tchinarbare and Melep. To win membership of either natsaro, an Atchin aspirant has to kill a pig there and put his mark on the coconut tree growing nearby. The notches near the treetop, beyond the reach of bush knives, have been made by bullets, signifying one pig killed for each bullet hole.

Handicrafts Islanders carve model canoes complete with stylised frigate bird figure-heads and a small replica sail.

Places to Eat Atchin Islanders own three restaurants on the mainland. These serve local food, 150VT being a typical price for a standard meal. The *Lavalsal Restaurant* and the *Potinweiu Restaurant* are at the villages of the same names, whilst the biggest one, the *Onma Restaurant*, is at Smol Onma.

Vao Island (36.5 km)

Traditional customs have survived on Vao better than elsewhere along Malakula's north-eastern coastal strip. Nimangki grade-taking still occurs at the island's natsaros, though this tends nowadays to be only once every few years.

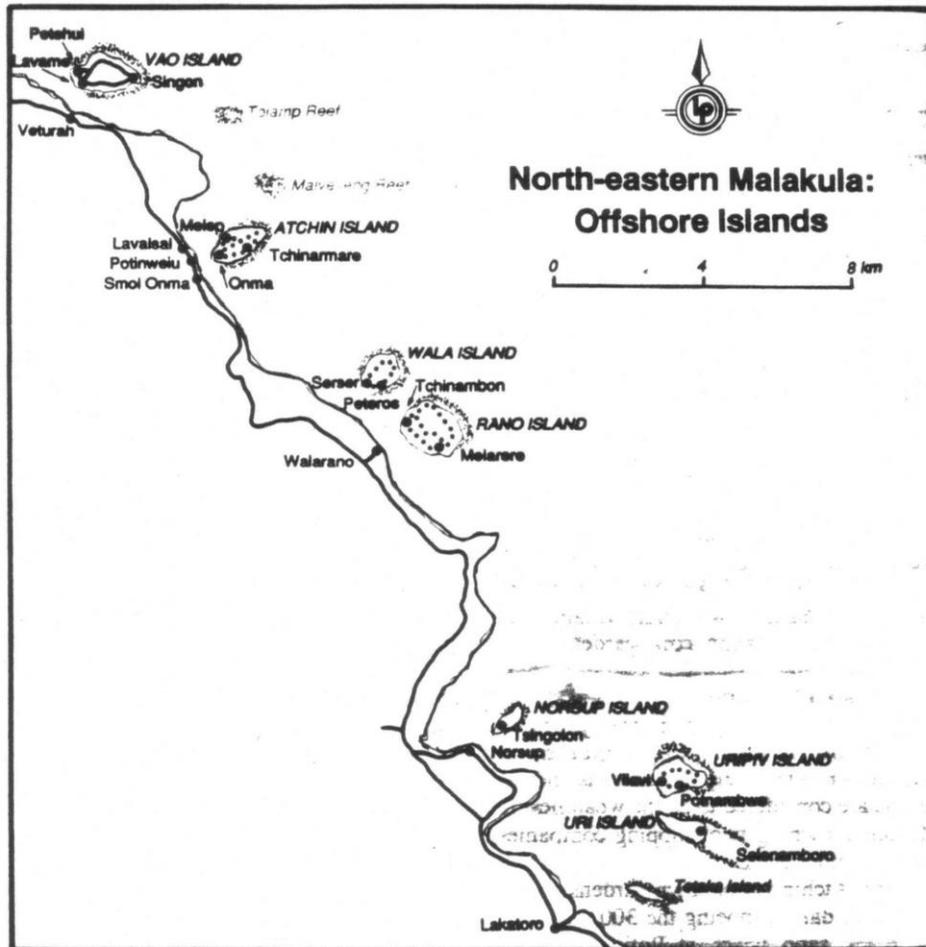
Until recently, initiation used to be an important rite for young boys on Vao. Once they had been circumcised, they lived in a special initiate's hut where they were taunted and teased for a month. If they couldn't take it, they were forbidden to marry.

With a dense population of 1350, spare



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200 Malakula Island – Around Malakula



land has become extremely scarce. Many islanders tend gardens on the mainland opposite, especially around Veturah.

Things to See & Do There's a sandy beach on Vao's south-western shore at Petchul, the island's largest settlement, and another at Singon on the north-eastern tip. However, the large number of sharks make swimming here hazardous. Access to this small, 1.3-sq km island is from Veturah.

Handicrafts Vao Islanders make gaunt wooden masks in addition to wooden clubs

and ceremonial bowls. They also fashion small limestone effigies for ceremonial purposes.

Getting Around Some footpaths on Vao are for men only, while others are reserved for females. Men's paths pass freely through the island's very distinctive natsaros, whilst women's trails deliberately bypass them. Ask islanders which is which, and only go where they say you may. The chief, or one of the island's elders, will probably appoint a teenager to escort you around, to see you don't accidentally breach any tabus.

Interviews Re Locations on Espiritu Santo that Relate To *South Pacific*

Interview with Charmaine Viljoen, Owner of “Coral Keys” Resort, South Luganville

Date: 20 Dec 2012

Location: Coral Keys Resort, South Luganville, Espiritu Santo, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: Location of Emile de Becque’s plantation in *South Pacific*

Est. Age of Respondent: 45

Mrs. Viljoen stated the following.

1. [The Coral Keys resort is located in South Luganville, on the west side of the coast road, with a dock on the east side of the road. The resort is about 5 meters above sea level.]
2. The resort was built about 45 years ago, after WW II. It was called the Relais Bouganville until about 10 years ago.
3. Before the resort was built, the area was a plantation built and owned by French people.
4. She understands that there was a structure west of the present resort a few hundred meters, up on a bluff, with a very good view of the area in several directions. This was likely the house of the previous French plantation owners. This house may have been the model for the Emile de Becque house in *South Pacific*, with its excellent views to the south and west. The bluff is much higher than the 5 meters above sea level of the present resort. Since that bluff is now “custom land” [owed by local ni-Van residents], she has never been up on the bluff.
5. From the dock of the resort, it is possible to see Ambae on some days, especially early in the morning before the haze rises from the sea. This is true, even though there is a barrier island east of the resort. Ambae can be seen over that barrier island and through a passage north of the island.
6. From her dock and resort location she cannot see Malekula south of Espiritu Santo. However, it might be possible to see Malekula from the bluff west of the resort.

[These items about views are important, because in the *Tales*, Emile de Becque’s house is up on a bluff back from the coast, has views to the east and south, and he can see “Bali-h’ai” (Ambae) to the east and “Vanicoro” (Malekula) to the south. It seems unlikely, given the shape of Espiritu Santo, that any other location would have both of these views. Hence

it appears that this plantation just west of the present Coral Keys is a good candidate for the inspiration of de Becque's plantation.]

Interview with Chris Christopher, Re Michener House, North Luganville

Date: 20 Dec 2012

Location: by phone from south Luganville to Chris Christopher, in his office in Luganville, Espiritu Santo, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: Location of James A. Michener's house on Espiritu Santo

Est. Age of Respondent: unknown

Mr. Christopher stated the following.

1. The so-called James Michener house was not in fact owned by Michener. It was rented by him, and he wrote some of *Tales of the South Pacific* there, after the war.
2. This house is hexagonal in shape, is north of Luganville near the coast, and has views to the east.
3. The house is owned by Peter Kolmar.
4. Kolmar is out of town at present.

#end of interview#

**List of Sources Consulted Which
Do Not
Reveal the Source of the Inspiration for Bali-ha'i**

The following is a non-exhaustive list of sources which might have been expected to reveal the source(s) of the inspiration for the location of Bali-ha'i, but which in fact do not.

George J. Becker, *James A. Michener* (New York: Frederick Ungar Publishing, 1983).

A. Grove Day, *James A. Michener* (New York: Twayne Publishers, 1964).

Lawrence Grobel, *Talking with Michener* (Jackson, MS: University Press of Mississippi, 1999).

John P. Hayes, *James A. Michener, A Biography* (New York: Bobbs-Merrill, 1984).

Jim Lovensheimer, *South Pacific: Paradise Re-Written* (Oxford: Oxford University Press, 2010).

Stephen J. May, *Michener, A Writer's Journey* (Norman, OK: University of Oklahoma Press, 2005).

James A. Michener, *Rascals in Paradise* (New York: Random House, 1957).

James A. Michener, *Return to Paradise* (New York: Ballantine Books, 1951).

James A. Michener, *The World is My Home: A Memoir* (New York: Random House, 1992).

Marilyn S. Severson, *James A. Michener, A Critical Companion* (Westport, CT: Greenwood Press, 1996).

Article from 1970 by Michener Stating the Inspiration Island for Bali-ha'i and the Name Source⁴



Bali Hai, crudely lettered on a signboard in a savage, steaming village, was to emerge as a famous paradise.

By James A. Michener

Return to Bali Hai

Author James A. Michener has ... A scouting team was landed on any man in his right mind choose to

By James A. Michener

Return to Bali Hai



Author James A. Michener has brought the Pacific closer to the hearts and minds of America than any single writer of our time. His novels, "Hawaii," "The Bridge of Toko-Ri," and "Sayonara," all have made best-seller lists and movie history. But none captured the imagination like "Tales of the South Pacific," immortalized further by Rodgers and Hammerstein in their stage-and-screen musical version, "South Pacific."

A QUARTER of a century ago I wrote a yarn about the imaginary island of Bali-h'ai. Rodgers and Hammerstein read it, composed one of their most haunting songs about it and made it a real place, famous throughout the world.

They simplified the name to Bali Hai and today, wherever I go, I find bars, cocktail lounges and restaurants called Bali Hai. A refreshing wine punch is being peddled under that name and in the Tahiti area two deluxe Bali Hai hotels have been opened, with others planned for Samoa, Huahene and Hawaii.

The name has become common property as a synonym for paradise.

Each year I receive a score of letters asking me which of the South Pacific islands served as the model of Bali Hai. I have heard that at least six different islands now claim that honor. I had better set the record straight.

In World War II, when I was stationed on Guadalcanal, it became necessary for the Navy to know what the Japanese were doing on the Treasury Islands, 400 miles to the northwest.

A scouting team was landed on Mono Island, one of the most dismal spots in the world, and we climbed inland to see if the enemy had fortifications at any point. We found none, but as we toiled upward through dense jungle, we came upon one of the sorriest looking villages in the history of mankind. It was composed of a dozen abandoned lean-to shacks and we could spot which had belonged to the chieftan, because it had a roof of flattened-out tins.

FOR SOME reason I never knew, someone had posted on the edge of this desolate place a hand-lettered signboard: "This is Bali-h'ai."

I remember staring at it in incredulity, then taking out a sweat-soaked notebook and jotting the name down with the conviction that, if I ever wanted to write about the South Pacific, I would use this godforsaken place as an example of how men lived in malarial solitude.

About a year later I started to compose that small group of stories which were to form "Tales of the South Pacific," and I needed a name for an island in the New Hebrides group, far to the southeast of Guadalcanal, on which the French planters of the region had sequestered their pretty daughters to protect them from the invading Yanks.

I knew the island well, having devised many tricks for getting to it, and it was almost as sorry a place as Mono Island. It was called Aoba and contained an active volcano.

So the real Bali Hai was a combination of a miserable village on Mono Island and a steaming savage island called Aoba. To neither would

any man in his right mind choose to go. As a writer, however, I had the privilege of dressing them up a little, and this I did, creating an island of loveliness and imagination named Bali-h'ai. It caught the fancy of many people and, thanks to the song of Rodgers and Hammerstein, will probably live in romantic imagery for some time.

AFTER my manuscript was finished and in New York, where under an assumed name I had submitted it to a publisher, I left the hideous islands around Guadalcanal and traveled to Tahiti and its neighbors. On my first trip, like many another voyager to this heavenly part of the world, I saw Cook's Bay on the northern coast of Moorea.

We arrived there at dusk, on a small copra schooner, and as we cast anchor in that extraordinary bay, surrounded by the most beautiful cliffs and mountains imaginable, I thought: This is what I had in mind when I invented Bali-h'ai. It was amazing that, at a time when I had never seen Cook's Bay, I had imagined it so faithfully.

When the time came to make the movie "South Pacific," the cameras went to Moorea and found Cook's Bay ideally suited for the photographing of a visual image of Bali Hai. Today, around the bend from the spot where I first anchored to fall forever under the spell of this incredible beauty, there is a Hotel Bali Hai, run by three imaginative and hard-working young Americans.

It's a luxury place, far removed from the lonely original of its name: In

⁴ Note that this same article apparently appears in the Philadelphia Sunday Bulletin of the same date.

a 15-minute walk you can turn the corner and catch a sight of Cook's Bay, and that unequaled rim of mountains that encloses it.

The men at the hotel will assure you, "This is the original Bali Hai." In a sense, they are right. I would not contradict them, for I no longer know what the relationship between fiction and fact is, or ought to be. All I know is that I created an idea long before I saw its reality, and I believe that often happens in art. It is the job of nature to catch up with art.

FAR to the northwest of Tahiti and Moorea, which lie side by side, there is another island, however, which has an equal claim to the title Bali Hai.

It is Bora Bora, that incomparable jewel, a tall volcanic island set within the heart of the most perfect coral reef in the world.

I first saw Bora Bora in late 1944, when the Pacific war had passed it by. Admiral Halsey sent me there to investigate an extraordinary circumstance. Throughout the Pacific American soldiers and sailors who had served overseas two years were being sent home as heroes. They had been fighting in malarial islands, beset by jungle, a fearful enemy and terrible loneliness, with never a woman in sight.

They were real heroes and were overjoyed at being able to get out of what had been a rough and miserable war.

Not on Bora Bora. The trouble I was being sent to investigate was this: Our men who had served there for two years, or even three, refused to go home. They wanted no part of the States and threatened mutiny if we tried to pry them loose from their island.

"Find out what the hell is happening," were my orders.

I found out. After two weeks on Bora Bora, I didn't want to go home either. It was as close to paradise as men in this world ever get.

There was no disease, no war, no bitterness, and certainly no loneliness, for the most beautiful girls of Polynesia had come there to be with the Americans.

There was a party every night of the week. There was dancing till dawn. There was good island food and a regular supply ship from the States once a month.

ON MY FIRST afternoon at headquarters I was appealed to by a redheaded sailor from California who broke into tears when I explained that by Navy standards he was a hero and entitled to go home.

"Please don't make me go," he pleaded.

He took me to his quarters, a grass hut he and his girl's family had built beside the lagoon. In it waited a lovely island beauty who begged me to allow her man to stay on the island a little longer. He stayed.

The thing I remember best about Bora Bora in those days was that we had only one moving picture, "Flying Down to Rio," which we showed in the recreation hall four nights a week. We would all report for the show, night after night, and the Bora Borans would go wild with excitement as the silly plot unfolded. It was as fresh to them on the fiftieth viewing as it had been on the first.

I saw it about a dozen times and enjoyed it. Fred Astaire and Ginger Rogers danced in it, I remember, and if it were playing around the corner tomorrow night I'd go see it again.

Today, Bora Bora remains unspoiled. It boasts a very fine hotel with excellent food and a great view of the majestic lagoon. When I was there earlier this year, the management gathered together all the islanders who remembered me from 1944.

Timi Haotae, the tough beef-voiced kid who worked at CPO mess, is now leader of a first-class chorus that makes phonograph records.

Germaine, the marvelous dancer who was 13 at the end of the war, went on to become the world's top Polynesian dancer and one of the most beautiful women ever produced by the islands. She is, if anything, even lovelier now, with several children and a husband who works as the island pilot.

MARIE TERANGI, the oldest of the sisters who sang so enchant-

ingly at the midnight soirees, has made several topnotch records and is now married to Al Bourgerie, who runs the hotel.

Rota, and Maeva, and Tiare have grown sons with blue eyes and American names. Francis Sanford, the splendid chap who acted as liaison with the Americans, is now deputy for French Oceania and sits in the Chamber of Deputies in Paris.

And even though everyone is 25 years older, the parties still last till morning.

I once wrote that Bora Bora was the most beautiful island in the world. This judgment has often been thrown back in my teeth, so I was just a little afraid to go back.

I needn't have been. I spent all day Friday working in New York, caught a 5 o'clock Pan American jet and was in Bora Bora for Saturday morning breakfast.

It is more beautiful than when I first saw it, for the scars of war have been removed. The great sea still breaks on the reef, thundering like a thousand volcanoes. The fishermen still go out to the lotus that edge the lagoon. The outriggers still flash across the golden waters.

This is Bali Hai of the spirit. If anyone wants to claim that it was this island I had in mind when I wrote, I would agree, for I was describing a perfect island, and there can be no other more perfect than this.

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Images of Bali-ha'i and Related Items from the Play and Movie



Bali-ha'i as shown in the stage backdrop in the Broadway version



Bali-ha'i as shown in the movie version



**Bloody Mary praises Bali-ha'i to Lt. Cable in the movie;
and the island "calls" to Cable, who is captivated**



**Lt. Cable's boat approaches Bali-ha'i, in the movie version.
Note the relatively bare upper slopes of the mountain,
and that the island is not vertical as in the set immediately above.**



**Native village and cliffs of Bali-ha'i, movie version. The natives are
all Polynesian-looking, not Melanesian. Likely Hawaii or Moorea.**



**Typical north shore landscape on Ambae, with ravines, cliffs, a narrow
rocky beach, some coconut trees, a stream, thick jungle all the way to the top,
and steep ridges leading back to the central volcano**



**Native village, shoreline and ridgeline of Bali-ha'i, movie version.
Note the high roofs of the village structures.**



An actual traditional structure on east Ambae, with the low roof almost touching the ground to avoid being blown away in cyclones. This structure is used by women to prepare food.



The French-Cambodian actress France Nuyen played Liat



Mitzi Gaynor was Ensign Nellie Forbush



Bloody Mary (Juanita Hall) and Luther Billis (Ray Walston); movie version



**William Tabbert as Lt. Joe Cable and Betta St. John as
the Tonkinese girl Liat
in the original stage production**



**Betta St. John played Liat in London opposite Peter Grant
as Lt. Cable; they married and lived happily ever after
(unlike their characters in the play)**

Annex 2: Articles in *Island Life* and *International Travel News* re the primary and secondary inspirations for Bali-ha'i

Notes:

- Since writing the enclosed *Island Life* piece it has come to my attention that there is an island named “Vanikoro” north of Vanuatu, in the southeast part of the Solomons, in the Santa Cruz group. It thus appears that Michener took the name Vanikoro, changed it to Vanicoro, and substituted this name for Malakula in his *Tales of the South Pacific*.
- *Island Life* is the national magazine of Vanuatu.

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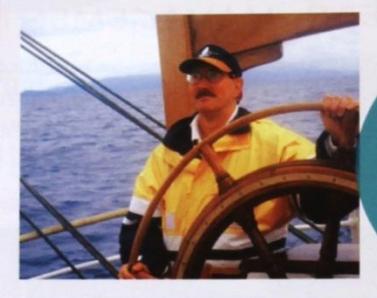
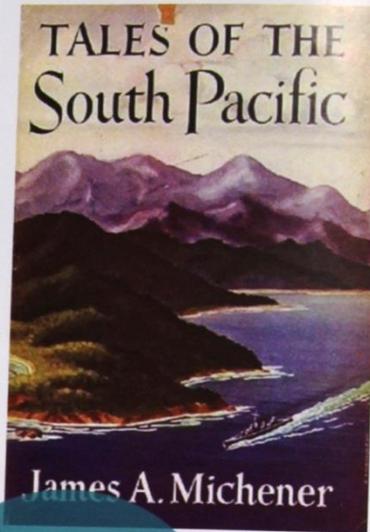
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Top Left: Wala Island, possible contributing inspiration to Bali Ha'i. Top Right: Tales of South Pacific book cover, first edition, January 1947. Left: Lew Toulmin sails a tall ship along the shore of Ambae-Bali Ha'i.

Finding Bali Ha'i

Story by Lew Toulmin

I grew up in Haiti and Thailand in the 1950s and '60s, where we had no TV and only a record player for entertainment. As a kid, I listened to the record from the movie *South Pacific* at least a thousand times and was obsessed with the movie's island paradise of Bali Ha'i; lush, exotic, and populated with beautiful girls, I was convinced it was a real place. I wanted to live on that "special island" that was constantly calling "come to me." I was not alone. Millions

of Americans listened to the magical song and dreamed about visiting the island.

As an adult, I realized that the tale and the island were fictional, but I was still obsessed. I read the original book *Tales of the South Pacific* by James Michener, his autobiography and other novels, saw the play, movie and later TV mini-series and researched the Pacific theatre of World War II. I determined to solve the mystery of which island inspired Michener to write about Bali Ha'i and to see for myself what the real island was like. This mystery is one of the greatest inspiration puzzles in literature.

To solve the puzzle, I had to re-examine the Tales for clues. As you may know, the Tales state that the large island of Espiritu Santo in the northwest New Hebrides (now Vanuatu) is where the characters in the story are stationed. They are in a rear base, supporting the fierce battle against the Japanese on Guadalcanal, 800 kilometres to the northwest. It is on Espiritu Santo that nurse Nellie Forbush meets and loves French plantation owner Emile De Becque. It is from Espiritu Santo that Marine Lieutenant Joe Cable sails across to the small island of Bali Ha'i and meets the beautiful Tonkinese (Vietnamese) girl Liat, daughter of the famous beetle-nut-chewing "Bloody Mary." Clearly the fictional island of Bali Ha'i is very close to the real island of Espiritu Santo.

The Tales say Bali Ha'i is a "small...neat...jewel-like" island, with "banyans, giant ferns and lovely gardens," and a small hospital run by French nuns. It is where the French authorities have hidden "all the young women of the islands" to keep them away from the hundreds of thousands of American men passing through Santo. Bali Ha'i lies "within the protective arm" of a bay on the much larger "Vanicoro". There is a narrow channel between Bali Ha'i and Vanicoro. Unfortunately, Vanicoro is not a real name for any island in Vanuatu. It is described as being "large and brooding", having four volcanoes, with lakes in one of the volcanoes. Cannibalism is still practiced there and it has primitive natives who wear penis sheaths. Vanicoro is located "sixteen miles [24 kilometres]...east" of Espiritu Santo or, in one contradictory description, "south" of Espiritu Santo.

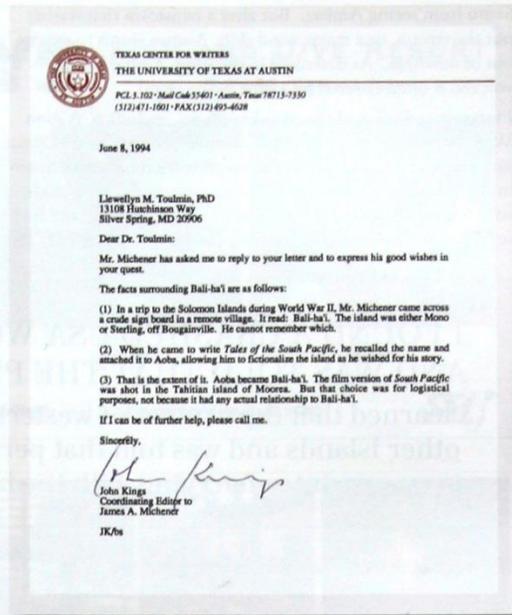
I studied maps and concluded that Ambae (also known as Aoba), about 50 kilometres east of Espiritu Santo, was the most likely model for Bali Ha'i. Ambae was in fact where the French hid the women of the islands away from the Americans during the war. But there were problems with Ambae; it is not small and jewel-like, it is 40 kilometres long. It has

Bali Ha'i will whisper, on the winds of the sea: "Here am I, your special island, come to me, come to me."

South Pacific

no small islands next to it, so it cannot be "Vanicoro", either. It has one large central volcano, not four (although it does have three lakes at the top of its volcano). It did not have any French nuns in residence or cannibals wearing penis sheaths. I noticed that Malakula, a large island south of Espiritu Santo, did have several small islands on its north shore, lying in a protective bay, facing Santo. Malakula has a mountainous interior with tribes who wore penis sheaths and practiced cannibalism until the 1960s.

In 1994, still fascinated by Bali Ha'i, I wrote to Michener and proposed that he had taken Ambae, combined Malakula (as



Top: Letter from Michener's aide regarding Lew Toulmin question about Michener's source of inspiration for Bali Ha'i.

"Vanicoro") and one of the small islands on its north shore, employed his own touch of genius and created the fictional Bali Ha'i. On June 8, 1994, Michener kindly wrote back through his aide and said that only Ambae was his inspiration.

I had to go. It took me a few years to organize my trip, but in 2001, I spent ten days exploring the island, interviewing chiefs, residents and the Secretary-General and documenting the World War II experiences of the islanders. I learned that virtually no other travel writers or explorers had been to Ambae and that it was largely forgotten by the rest of the world despite its famous fictional name.

I confirmed many of Michener's descriptions of the island. He said that Bali Ha'i was dominated by a pig-killing tradition, in which the chiefs raise large pigs, knock out their lower incisors, let the upper ones grow in a circular shape and then sacrifice them in sacred ceremonies. I confirmed that this tradition is still very important on Ambae and on many Vanuatu islands, such that a circular tusk was placed on the national flag.

I found that Ambae was lush and tropical and could mysteriously disappear and re-appear, as described in the Tales. It is usually obscured by a stream of dust and water vapor coming from a volcano on Ambrym Island. This stream normally blows north-northwest and prevents observers on Espiritu

Santo from seeing Ambae. But after a rainstorm that washes out the stream, or a major wind shift, Ambae seems to appear out of nowhere. As described in the song, Ambae's single volcano is often covered by a "low flying cloud."

I interviewed some of the island residents, including Wilson Wiri, a catechist in the Anglican Church. In 1942 he was ordered to leave Lolowai on Ambae to work on Espiritu Santo in the war effort. He laboured for six months building roads, watering down dusty runways and unloading some of the 150 supply ships that typically crowded the Luganville harbor.

little east of Espiritu Santo and like Vanicoro, Malakula had cannibalism and tribes who wore penis sheaths. In Michener's book of essays 'Return to Paradise', he makes it clear that he was quite familiar with Malakula. Malakula has four small, round islands on its north shore, any of which might be the model for the "small, jewel-like island" of Bali Ha'i. But none of the four have ever previously been identified as such.

I researched all four islands. Vao has always been a bit standoffish towards visitors, while Atchin is very densely populated and Rano is rather low and flat. Wala was by far the most

“ I FOUND A CRASHED USA WORLD WAR II FIGHTER PLANE AND WAS TOLD THAT THE PILOT SURVIVED THE CRASH. I learned that the women of western Ambae are more Eurasian than in other islands and was told that perhaps this results from French men intermarrying with the hidden women of the war. ”

"For recreation we saw a cinema every night," said Wiri. "I was thirty years old and had never seen a movie before. It was nambawan!" The Americans had built over 40 cinemas on Santo to keep all the troops and workers happy.

While visiting Ambae, I stayed in guest houses made of nangora leaf and mats for a few dollars a night. I took 'trucks' as taxis, and found that there were no paved roads and very limited tourist facilities despite its 10,000 residents. Almost all the population lived in small mat and grass homes with corrugated iron roofs and worked as subsistence farmers. But everyone I met was happy and cheerful.

I found a crashed US World War II fighter plane and was told that the pilot survived the crash. I learned that the women of western Ambae are more Eurasian than in other islands and was told that perhaps this results from French men intermarrying with the hidden women of the war. I found that malaria was endemic and precautions were mandatory. The island was lush, with rich volcanic soil and as it said in a song in the movie, there were "mangos and bananas you could pick right off the tree."

For a while I was content. I had found Bali Ha'i, solved the mystery, and liked the reality.

But a few points still nagged at me. Where was the "small, jewel-like island"? Where were the cannibals, the penis sheaths, the French nuns and the other elements? Were they all the products of Michener's fertile imagination?

In June 2012 I took a job with the government of Vanuatu working as a policy advisor in e-government. I determined to use that opportunity to explore my other theory about Bali Ha'i and get to the mysterious island of Malakula.

Malakula could well be the fictional "Vanicoro" described in the Tales. Malakula is only about 30 kilometres south and a

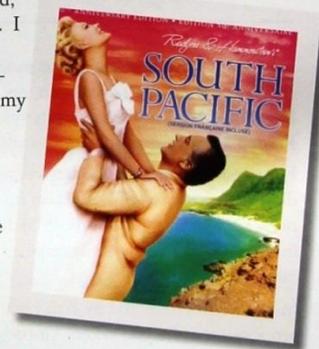
promising, so I decided to visit it. Surprisingly, none of these islands are discussed in current guidebooks such as Lonely Planet, so I had to ask my colleagues at work to learn about them.

I flew Air Vanuatu from Port Vila to Norsup Airport in central Malakula and was surprised to find that the airport terminal had been burned down years ago by a disgruntled loser in a land dispute and had never been rebuilt, since it would likely be burned down again! Luckily the airstrip still functions.

I took a truck north along the rough road toward the Wala area; due to the large potholes, we could only drive about 20 kilometres per hour and it took us about an hour to get to the mainland part of the Wala neighborhood. I had made a reservation at the best place to stay in the area, the Nawori Bungalow, run by Etienne Tiasinmal. The three-room bungalow had mosquito nets, thatched roof and walls, a cold shower in a shared bathroom and a good view of Wala island.

Etienne, my friendly and approachable host who doubles as the chairman of the local tourism committee, offered to take me on a tour of Wala island, about 900 metres offshore. I clambered over the rough coral reef just off the mainland shore, in water up to my shins to board the eight-metre-long transit boat. Upon arrival at the short floating dock on Wala Island, I was pleased to see a nice swimming area and an attractive white sand beach.

We walked up to the





Top: Chief Vincent Taissets. Above: Nawori Seaview Bungalow. Bottom right: Chief Bue on Ambae with his grandson. Previous page: South Pacific, the musical.

little village just above the beach where we met 90-year-old Chief Vincent Taissets, who told me about his service with the US Navy in World War II. He said that he was twenty in 1942 when an American military team asked him to come to Espiritu Santo to help in the war effort. Vincent worked in Santo for eighteen months in construction as a civilian employee, but was also trained to use a machine gun. He was present when the troopship SS President Coolidge hit a friendly mine and sank to become what is today one of the world's greatest wreck dives. He said, "I was paid well for my war work and I am still grateful to you Americans."

Etienne took me on a one-hour tour of the island. He told me that the island's small population of 200 is divided into five tribes and although they did not have a hospital staffed with French nuns (as Bali Ha'i did in the Tales), they did have a Catholic church, now ruined, with French nuns formerly in residence.

We hiked across the 1.5 kilometre wide island, through the lush, rainy, jungle interior. There is no electricity on the island (except solar chargers and a few diesel generators), no cars, no landline telephones and no worries! We climbed up to the top of the 27-metre high hill at the center of the island which was not

as high as the 100 metre cliffs that Bali Ha'i is supposed to have, but it is the highest island on the Malakula coast.

The island was "jewel-like" with the tall palm trees, gardens, ferns and banyans described by Michener. It fits many of the elements of Michener's classic Bali Ha'i and covers almost all the features that Ambae, his primary inspiration, lacks. I concluded that Wala was very likely a secondary but important contributor to

The island was "jewel-like" with the tall palm trees, gardens, ferns and banyans described by Michener.

Michener's creation. Michener stated in his letter to me that only Ambae was his inspiration, but in television interviews he acknowledged that he had done so much research on so many topics, that after a few years he couldn't remember all his facts, sources and inspirations.

Etienne showed me some attractions on Wala not mentioned by Michener: the exotic and atmospheric "nasaras." These are ritual locations marked by lines of large standing stones, one for each family, where chiefs were promoted based on how many pigs they sacrificed. Etienne stood beside his family stone in the spooky, misty jungle, under a huge banyan tree. He said that his ancestors would present a large pig with circular tusks to the Paramount Chief at the stone and if the offering was acceptable, the Chief would bestow land rights, give out "kastom" (custom) names and approve marriages. Etienne can recite his ancestry for seventeen generations and is trying to revive the nasara rituals, which have fallen into disuse.

As we walked back to the small dock, I was amazed to learn from Etienne that the small island is a regular stop for P&O cruise ships that sail from Sydney.



About eighteen P&O cruise voyages and several Carnival cruises are expected to stop at Wala for the day in 2013, each bringing ashore about 1000 tourists, mostly Australians. The passengers use tenders to get to the floating dock built by P&O on the island. They then take walking tours to the nararas, lie on the beach, have a barbeque, snorkel on the nearby reef, or watch a "kastom" dance. According to Etienne, neither he nor any of the thousands of cruise ship visitors have ever realized that they might be relaxing on what may have been a contributing source of inspiration to the most famous South Pacific Island of all, Bali Ha'i!

Lew Toulmin has worked in 30 developing countries on e-government and telecommunications projects sponsored by the World Bank, USAID and AusAID and traveled to 138 countries. He is from Silver Spring, Maryland in the United States and is a member of The Explorers Club and a Fellow of the Royal Geographical Society. He notes that accommodation for tourists has recently improved on Ambae, and bungalows can be reserved for about 2200 Vatu per night. For more info about accommodation visit www.positiveearth.org/bungalows/penama/ambae.htm. To stay at Etienne's Nawori Bungalow call 678-48888 678-5685852 or email nawori.bungalows@malampa.travel

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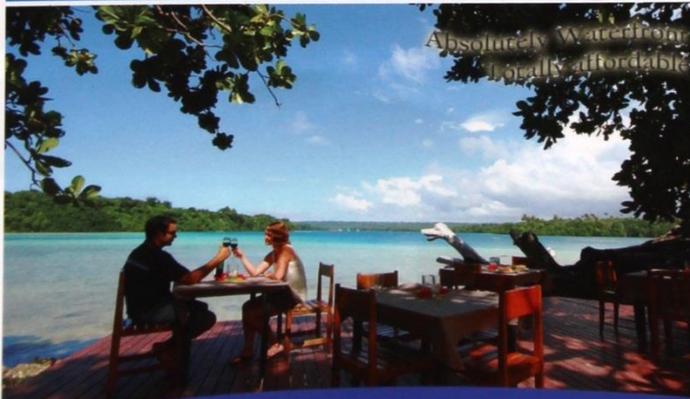

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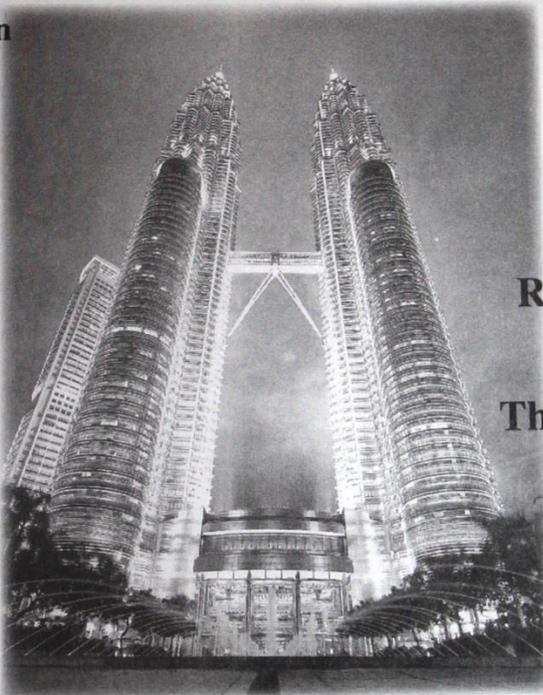
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The Cruising World

by Lew Toulmin



Chief Jacob Bue and his grandson on Ambae. Photos: Toulmin

The search for the real Bali Ha'i (First of two parts)

Bali Ha'i will whisper, on the wind of the sea, 'Here am I, your special island. Come to me, come to me.' — "South Pacific"

I grew up in Haiti and Thailand in the 1950s and '60s, where we had no TV and only a record player for entertainment. As a kid, I listened to the record "South Pacific" at least a thousand times and was obsessed with the island paradise of Bali Ha'i — lush, exotic and populated with beautiful girls — which I was convinced was a real place. I wanted to live on that "special island" that was constantly calling, "Come to me."

As an adult, I realized that the tale was fictional, but I was still obsessed. I read the original book, "Tales of the South Pacific," by James Michener, read his autobiography and other novels, saw the play and movie and later the TV miniseries and researched the Pacific theater of World War II. I determined to solve the mystery of which island it was that inspired Michener to write about Bali Ha'i and to see for myself what it was like.

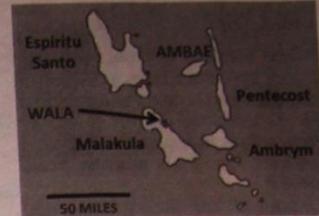
The evidence

To solve the mystery, I had to reexamine the "Tales" for clues. As you may recall, the "Tales" state that the large island of Espiritu

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Santo in northwestern New Hebrides (now Vanuatu, about 1,000 miles north of New Zealand) is where the characters in the story are stationed. They are in a rear base, supporting the fierce battle against the Japanese on Guadalcanal, 500 miles to the northwest.

It is on Espiritu Santo that nurse Nellie Forbush meets and loves French plantation owner Emile de Becque. It is from Espiritu Santo that Marine Lt. Joe Cable sails across



Northern Vanuatu in the South-west Pacific.

to the small island of Bali Ha'i and meets the beautiful Tonkinese (north Vietnamese) girl Liat, daughter of the famous, betel-nut-chewing "Bloody Mary." Clearly, the fictional Bali Ha'i would be very close to the real Espiritu Santo.

The "Tales" say Bali Ha'i is a "small... neat... jewel-like" island, with "banyans, giant ferns, and... lovely gardens" and a small hospital run by French nuns. It is where the French authorities have hidden "all the young women of the islands" to keep them away from the Americans.

Bali Ha'i lies "within the protective arm" of a bay on the much larger "Vanicoro." There is a narrow channel between Bali Ha'i and Vanicoro.

Unfortunately, Vanicoro is not a real name for any island in Vanuatu. It is described as being "large and brooding" and having four volcanoes, with lakes in one of the volcanoes. Cannibalism is still practiced there, and it has primitive natives who wear penis sheaths. Vanicoro is located "sixteen miles... east" of Espiritu Santo or (in one contradictory description) "south" of Espiritu Santo.

I studied maps and concluded that Ambae (also known as Aoba), about 30 miles east of Espiritu Santo, was the most likely model for Bali Ha'i. Ambae was, in fact, where the French hid the women of the islands from the Americans.

But there were problems with Ambae's being the model for Bali Ha'i. It is not small and jewel-like; it is 25 miles long. It has no small islands next to it, so it cannot be Vanicoro, either. It has one large

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The Cruising World

central volcano, not four (although it does have three lakes at the top of its volcano). During and just before the war, Ambae did not have any French nuns in residence, and it did not have cannibals wearing penis sheaths.

I noticed that Malakula, a large island south of Espiritu Santo, did have several small islands off its north shore, lying in a protective bay, facing Santo. Malakula also has a mountainous interior with tribes who wore penis sheaths and practiced cannibalism until the 1960s.

In 1994, still fascinated by Bali Ha'i, I wrote to Michener and proposed that, with his own touch of genius, he had taken Ambae and combined it with Malakula (as Vanicoro) and one of the small islands on its north shore and come up with the fictional Bali Ha'i. On June 8, 1994, Michener kindly wrote back through his aide and said that only Ambae was his primary inspiration.

Closer to paradise

I had to go to Ambae. It took me a few years to organize my trip, but in 2001 I spent 10 days exploring the island, interviewing chiefs, residents and the governor and documenting the World War II experiences of the islanders. According to those with whom I spoke, virtually no other travel writers or explorers had been to Ambae and, despite its famous fictional name, it had been largely forgotten.

I confirmed many of Michener's descriptions of the island.

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obscured by a stream of dust and water vapor coming from a volcano on Ambrym island. This stream is usually blown north-northwest and prevents observers on Espiritu Santo from seeing Ambae. After a rainstorm washes out the stream or when there's a major shift in the wind, Ambae seems to appear out of nowhere.

Also, Ambae's single volcano is often covered by a "low-flying cloud" as described in the song.

Observations on Ambae

I stayed in "guest houses" (really, grass shacks) for a few dollars a night. I took *utes* (rusted-out open trucks) as taxis and found that there were no paved roads; the dirt roads were a series of giant potholes. Despite Ambae's 10,000 residents, there were no hotels or tourist facilities.

All the population lived in small grass huts with corrugated iron roofs, and they worked as subsistence farmers, with cash incomes of only a couple of dollars a day each. But everyone I met seemed happy and cheerful.

I found a crashed, World War II, US fighter plane and was told that the pilot survived the crash.

I learned that the women of western Ambae are more Eurasian than those on other islands and was told that this may have resulted from French men intermarrying with the hidden women of World War II during and just after the war.

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But a few points still nagged at me. Where was the "small, jewel-like island"? Where were the cannibals, the penis sheaths, the French nuns and certain other elements? Were they all the products of Michener's fertile imagination?



A typical rocky, volcanic beach on Ambae. There are no white-sand beaches, only a few black-sand beaches. Sharks lurk, so the locals do not do much swimming.

In June 2012 I took a posting in the office of the Prime Minister of the Republic of Vanuatu, working as a policy advisor in e-government. I determined to use that opportunity to explore my other theory about Bali Ha'i... by going to the mysterious island of Malakula.

Would I finally resolve my 50-year quest? Next month, I will tell you what I found there. I will even tell you how to get there by cruise ship!

Accessing Ambae

Conditions on Ambae are still challenging, according to the paramount chief of the island, whom I interviewed in October 2012. Roads are poor and malaria remains endemic.

Air Vanuatu has flights almost every day to at least one of the three grass airstrips on the island, and stays in local bungalows for about \$20 per night can be arranged upon arrival or by calling the phone numbers at www.positiveearth.org/bungalows/penama/ambae.htm; click on "Find places" and "Bungalows." *mn*

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The Cruising World

by Lew Toulmin



The search for the real Bali Ha'i (Second of two parts)

As described last month, I have been searching for 50 years to find the inspiration for Bali Ha'i, James Michener's classic island-paradise creation in his immortal "Tales of the South Pacific" and one of the most famous islands in literature. Recently, my quest took me to dark, rainy, brooding Malakula, one of the western islands of the Republic of Vanuatu in the Southwest Pacific.

Malakula has many of the elements of the fictional island of Vanicoro that is described in the "Tales." This is key, because Bali Ha'i is described as lying just off the shore of Vanicoro.

Malakula is only about 16 miles south and a little east of Espiritu Santo, and it is clear from the story that Bali Ha'i and Vanicoro must be close to Santo. Like Bali Ha'i, Malakula had cannibalism (until the 1960s) and had tribes who wore penis sheaths all the time in the 1940s (and still do today on ceremonial occasions).

In Michener's book of factual essays and short fiction, "Return to Paradise," he makes it clear that he was quite familiar with Malakula. Importantly, Malakula has four small, round islands off of its north-east shore and in view of Espiritu

Lew Toulmin with Chief Vincent Taissets and his son Walter. A US Navy mess tray is one of the chief's only souvenirs from his service during WWII.

Santo, each of which lie in a wide bay of the larger island. The islands all are separated from the main part of Malakula by narrow channels.

Thus, any of these small islands might be the model for the "small, jewel-like island" of Bali Ha'i, but none have ever previously been identified as such.

Malakula quarters

I explored the area in late August 2012, researching all four islands.

Vao has always been hostile to visitors, while Atchin is very densely populated and Rano is rather low and flat. Wala was, by far, the most promising prospect, so I decided to visit it.

Surprisingly, none of these islands are discussed in current guidebooks, such as those of Lonely Planet, so I had to ask my colleagues at work to learn about them. (I currently work in the office of the Prime Minister of Vanuatu.)

I flew Air Vanuatu from the capital of Port Vila to Norsup Airport in central Malakula. I was shocked to find that the airport terminal had been burned down many years before by a disgruntled loser in a land dispute — common in Vanuatu. No one can rebuild the terminal, since it would just be burned down again! Luckily, the airstrip still functions.

I took a 4WD Toyota HiLux — one of toughest trucks in the world and, hence, the most popular vehicle in Vanuatu — north along the rough road toward the Wala area, the part of Malakula that faces Wala island. Due to the large potholes, my driver could

go only about 10 miles per hour; it took us about an hour to get there.

I had made a reservation at the best place to stay in this area, the **Nawori Bungalow** (phone 678 48888 or 678 5685852 or e-mail nawori_bungalows@malampa.travel), run by Etienne Tiasinmal. I stayed for two nights in the 3-room bungalow, with mosquito nets, thatched roof and walls, a cold shower in a shared bathroom and a good view of Wala island. Prices start at about \$28 per room per night.

Village chief

Etienne, our friendly and approachable host who doubled as the chair-



Etienne Tiasinmal beside his family stone in a nasara on Wala island. Photos: Toulmin

man of the local tourism committee, offered to take me to Wala island, about 900 yards offshore. He spoke excellent English and French and said that his island was named after Chief Wala, who was the first to settle the island some 1,200 years ago.

We clambered over the rough coral reef adjoining the mainland shore, in water up to our shins (bring reef shoes!), to board the 25-foot transit boat. Upon arriving at the short floating dock on Wala island, I was pleased to see a nice swimming area and an attractive white-sand beach — surprisingly rare in the islands of Vanuatu.

We walked up to the little village of huts built of grass and corrugated iron, just above the beach. There I met 90-year-old Chief Vincent Taissets, who told me about his service with the US Navy in World War II.

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He said that he was 20 in 1942 when an American military team asked him to come to Espiritu Santo from Wala island to help in the war effort. As a civilian employee, he worked there for 18 months in construction but was also trained to use a machine gun.

He watched as Japanese planes attacked the five large American



Little Wala island.

bases on the island. He said they did virtually no damage, killing only a single cow! And he was present when the troopship *President Coolidge* hit a friendly mine and sank to become what is today one of the world's greatest wreck dives.

He said, "I was paid well for my war work, and I still am grateful to you Americans. Thanks!"

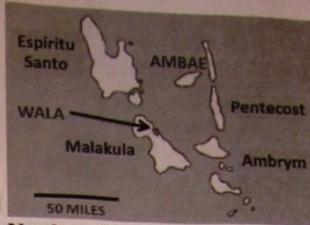
All about Wala

Etienne took me on a complimentary one-hour tour of Wala island (the usual price is \$5). He told me that its small population of 200 is divided into five tribes. In addition to there being no electricity on the island (except that from solar chargers and a few diesel generators), there are no cars, no landline telephones and no worries!

Etienne said that the island had not had a hospital staffed with French nuns (as Bali Ha'i did in the "Tales"), but it did have a Catholic church, now ruined, with French nuns formerly in residence.

We hiked up to the top of the 80-foot-high hill at the center of the island. This was not as high as the 300-foot cliffs that Bali Ha'i is supposed to have, but it is by far the highest island off the north coast of Malakula.

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Northern Vanuatu, South Pacific.

We hiked across the 1.5-kilometer-wide island through the lush, rainy jungle interior. The island was "jewel-like," with tall palm trees, gardens, ferns and banyans as described by Michener. It fit many of the elements of Michener's classic Bali Ha'i, including almost all of the features that Ambae — his primary inspiration — lacked.

I concluded that Wala was very likely a secondary though important contributor to Michener's creation.

Etienne showed me some attractions on Wala not mentioned by the author: the exotic and atmospheric *nasaras*. These are ritual locations marked by lines of large standing stones — one for each family — where chiefs were promoted based on how many pigs they sacrificed.

In the spooky, misty jungle, Etienne stood beside his family stone under a huge banyan tree. He said that his ancestors would present a large pig with circular tusks to the paramount chief at the stone, and if the offering was acceptable, the chief would bestow land rights, give out *kastom* (custom) names and approve marriages.

He said he could recite his ancestry for 17 generations and that he is trying to revive the nasara rituals, which have fallen into disuse.

Getting to Wala

As we walked back to the small dock, I was amazed to learn from Etienne that the small island of Wala is a regular stop for ships of P&O Cruises (www.pocruises.com.au) that sail from Sydney. In 2013 and likely into 2014, about 18 voyages with P&O Cruises (and several with Carnival Cruise Lines [www.carnival.com]) are expected to stop at Wala

for the day, each taking about 1,000 visitors ashore, mostly Australians.

The passengers use tenders to get to the floating dock built by P&O Cruises. They then take walking tours to the *nasaras*, lie on the beach, have a barbecue, snorkel on the nearby reef or watch a *kastom* dance.

Because of the island's difficulty of access via air — not to mention a poor road, coral reef and transit boat — taking a cruise ship based in Sydney is probably the best way to visit little Wala.

According to Etienne, neither he nor any of the thousands of cruise ship visitors have ever realized that they just might be relaxing on the most famous South Pacific island of all: Bali Ha'i!

Lew Toulmin usually lives in Silver Spring, Maryland, but currently is stationed in Vanuatu. He can be reached by e-mail at lewtoulmin@aol.com.

Geografle KLM, founded in 1919, is the world's oldest continuously operating airline. — Bryan Henry, Contributing Editor, Bay Harbor Islands, FL


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Note: The articles above state that the lower canines of sacred pigs are knocked out and the upper canines grow in a circle. The reverse is correct; this error was based on a respondent who was confused. Also, one respondent noted that Ambae/"Bali-ha'I" often is visible early in the morning from SE Santo, but then disappears as the heat of the sun causes obscuring evaporation and haze to rise from the ocean.

Annex 3:

- **Interviews re pig killing**
- **News articles re pig killing at public events**
- **Comparison of Michener's account with a real ceremony**
- **Pictures of a 2013 pig killing ceremony**
- **Time line of an actual pig killing**
- **Pig killing song**
- **Pig killing poem**
- **Other interviews about village life, magic and related**

Note: any items in square brackets [xxxx] are inserted by the interviewer/writer as comments or questions, and did not take place in the conversation.

INTERVIEWS RE PIG KILLING

Interview with John Tarilama, Paramount Chief of Ambae

Date: Oct 2012

Location: Freshwater Nakamal, north Port Vila, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Very good

Topic: Pig killing ceremonies, Ambae customs, plane wreck

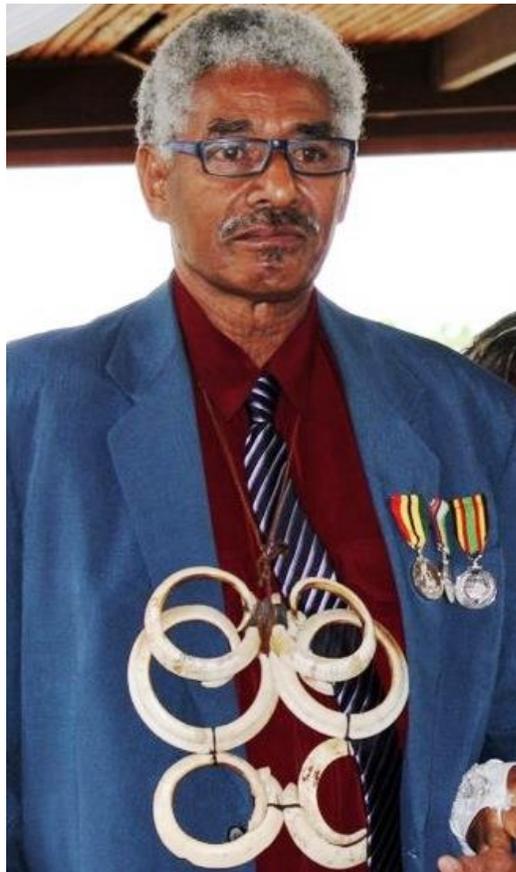
Age of Respondent: 67 (born in Sept 1945)

Chief Tarilama stated the following.

1. He lives mostly in Port Vila on Efate now, but is still the Paramount Chief of Ambae.
2. He is an ex-colonel of the Vanuatu Police, serving on the “English side” during the English/French Condominium period.
3. Chief Charly Bani of Nanako Village in west Ambae died about a year ago. It is in this village that the air wreck is located. Chief John provided the names and numbers of three nearby chiefs to Nanako who would likely be willing to help in documenting the plane wreck and interviewing villagers. [In the event these persons were not needed.]
4. Chief Charly’s son is alive.
5. Devil’s Rock on the western tip of Ambae is very powerful. Sharks gather there. The Rock can cause a cyclone to be created if you talk about it near it. It can get angry easily. You need to offer it cigarettes and tobacco if you go there, to calm it.
6. Americans have seen ghosts at Devil’s Rock, especially one male ghost with long hair. There are lots of ghosts on Ambae.
7. The Chief owns land near Devil’s Rock.
8. The “one sided man” or “goli-goli” is a ghost on Ambae that looks like a beautiful girl but is really male. If you touch him/her, you will die.
9. Ambae has the most attractive women in the islands; many men from other islands wish to marry them. During WW II the authorities of the islands took all the girls from Santo and hid them on Ambae near Devil’s Rock. At that time there was a nice sand beach there, but it is gone.
10. The Vietnamese girls came to Vanuatu after WW II, not before or during. [This contradicts the *Tales*.] Some Ambae girls are part Polynesian or part French. There was some intermarriage on Ambae with French men.
11. Vanuatians had no passports or citizenship under the Condominium.

12. He has never heard of Bloody Mary or anyone like her. After I described her, he said he thought she must be Ambaean, not Vietnamese. [This contradicts the *Tales*, in which Bloody Mary is from northern Vietnam.]
13. In a normal pig killing ceremony, about 10 pigs are killed. In some ceremonies 20 are killed. The best ceremony has 10 pigs killed, and all have circular tusks.
14. In the future he may hold a ceremony and kill between 100 and 1000 pigs. A 1000 pig ceremony was held in the past.
15. In 2007 the Chief was asked to go to Holland to a Melanesian festival. He was the only representative of Vanuatu. He brought along a pig's skull with circular tusks, and took it on the airplane to Amsterdam. To him this pig was still "alive," because its dried skull had not been crushed. The authorities let it through, because to them it was dead. During the Melanesian festival, he crushed and "killed" the pig in front of the crowd. He thought it was quite funny that the airline and Dutch authorities had let him bring a live pig all the way to Holland. He is the only person to have done anything like this.
16. With such an uncrushed skull with circular tusks, you can buy a substantial amount of land on Ambae.

#end interview#



John Tarilama, Paramount Chief of Ambae, showing his police medals and boar tusks chief insignia

Interview with Alban Tari

Date: 17 Dec 2012

Location: Port Vila Airport, Port Vila, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Pig killing ceremonies, stone moving

Est. Age of Respondent: 42

Note: this respondent also provided some limited information on stone moving, which is presented here for brevity.

Note: no relation to Ray Tari whose interview follows. Tari is a very common name on east Ambae.

Alban Tari stated the following.

1. He is a carpenter, lives in east Ambae, and is traveling there today.
2. He lives near the east Ambae airport at Longana
3. On about Jan 5, 2013 there will be a pig killing ceremony in his village
4. On day 1 of the ceremony, the food is prepared, the pigs are gathered, and many people arrive.
5. On day 2, they beat the tam-tam drum, the crowd gathers, pigs are brought and given to the chief. The chief announces that "I have no pigs" even though he really does.
6. A pig with circular tusks is worth about 50000 Vatu (about \$USD 450)
7. It takes about 10 years to grow a circular pig's tusk, and about 20 years to grow a double circle.
8. The number of pigs with circular tusks is decreasing.
9. There are few wild pigs in Ambae, unlike on Efate, Erramango and Tanna, where there are many wild pigs and cattle. On Ambae all pigs are owned.
10. A young pig about 2-3 years old only costs about 1000-2000 Vatu.
11. To raise a pig with circular tusks, the pig is fed by hand. If they are allowed to just run around, they will destroy the gardens near the village. They eat manioc, taro, and potato (kumala). They do not eat kava. They are also fed shaved white coconut meat. They are fed three times per day, but on their own they would eat all the time.
12. To create the circular tusks, the lower incisors are knocked out. [This turned out to be a mis-statement. By observation and other interviews, it was clear that it is always the upper incisors that are knocked out.]
13. Knocking out teeth takes 5-10 minutes. The pig's mouth is held open with sticks. It is not given whiskey or kava. The teeth are knocked out with a club and any remainder pulled out with pliers. The medicinal "American rope" plant is used to relieve some of the pain

- and prevent infection. (This can work on humans, too.) The juice is squeezed out of the plant and onto the teeth.
14. The upper and lower teeth normally rub against each other, so removing some allows the opposing teeth to grow much longer.
 15. During the killing ceremony, the junior chief has a senior chief as guide and mentor.
 16. An axe or club is used to kill the pigs, never a bush knife (machete). The blow is struck to the head near the snout. The killing stroke is never to any other part of the body.
 17. 15 years old is the typical age of the pig, for killing it.
 18. There are 18 levels of chief in his part of Ambae.
 19. Chief Rupert Karae (or Garae) was the greatest chief in Vanuatu. He once killed 1000 pigs and 1000 chickens in one ceremony. Not all the 1000 pigs had circular tusks.
 20. Chief Rupert has a big stone marking his grave, and other stones too. The total burial mound is about 4-5 meters in circumference and 2 meters high.
 21. Chief Rupert picked out his own burial stones, this is very unusual and a great honor.
 22. His stones were arranged in a circle around the grave, with the large stone in the front. He was buried in numerous custom mats.
 23. Some of the stones for the grave were brought by truck. However, some were brought by teams of pullers, from 50 to 1000 meters away. Most of the teams were only about 10 people.
 24. At this point, I arranged with Alban to exchange phone numbers, in case another pig-killing ceremony came up, since I could not attend the one in early January, because I would be traveling to Kiribati, Tuvalu and American Samoa. [In the event, the early January pig-killing was postponed to mid-January, and I was able to attend, although I was only given 24 hours' notice! Alban became my guide and translator, and member of the Expedition. In general, I have found that the best contacts in Vanuatu exploration come from chatting up passengers on the plane headed toward the island I am exploring!]

#end interview#



Alban Tari (left) and his family in front of their house in east Ambae

Interview with Ray Tari

Date: 17 Dec 2012

Location: E. Ambae, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Pig killing ceremonies

Est. Age of Respondent: 35

Note: this respondent also provided some information on stone moving, which is presented in the next section.

Ray Tari stated the following.

1. He is a seaman and the brother of Jethro Webston, another member of the Expedition who now lives in Port Vila.
2. A pig-killing ceremony lasts about a half day, plus the feast the next day.
3. When the pig head is to be used as a sacred object, the pig is killed 2-3 months ahead of time, using a gunshot through the heart. The head is cut off, meat removed and the skull is dried. The skull (and lower jaw with curved tusks) are usually kept in a strong waterproof bag. The skull and lower jaw (now wired together) are then brought to the ceremony where the skull will be crushed, or brought to some other transaction.
4. A skull with a complete circular tusk is worth about 25000 Vatu (about \$285 USD); with a double circle 60,000 Vatu; with a half circle 10,000 Vatu; and with a one-eighth circle, 5000 Vatu. A solo pig tusk by itself, without the skull and jaw, is worth little.
5. Such skulls can be used to pay the bride price required at all Ambae weddings. This price is about 80,000 Vatu for a bride (whether she is pretty or not, hard-working or lazy), if the groom is from a reasonably well-off family. For a groom from a poor family, the bride price is reduced to 40,000 to 60,000 Vatu.
6. If a man is a chief and wants to be promoted to a higher grade of chief, he can buy a pig's skull with circular tusks for, say, 50,000 Vatu, then crush the skull in a pig-killing ceremony. This will count toward the total number of pigs needed in the ceremony, often 10 to 100.
7. Pig skulls can be used to pay fines imposed for crimes, including getting into a fight after drinking too much (but not injuring the opponent): 5000 Vatu; having consensual but unmarried sexual relations with the daughter of a villager: 5000 Vatu or a pig without curved tusks, for each time relations took place, or 10,000 per time for repeat offenders; rape of the daughter of another villager: 25,000 Vatu in cash or one pig with a full circle of

tusks, or the equivalent in mats.

8. Mats are woven by women and are worth about 5000 Vatu for a 4 meter by 2 meter mat with a fringe; up to a mat 100 meters long, taking many women months to weave, and worth perhaps 100,000 Vatu.
9. If a man commits a major crime, pig's skulls with curved or circular tusks will likely be accepted as part of the compensation payment. However, victims or victim's families who are Anglican, Church of Christ, or Catholics will not accept pig skulls. They will accept cash or mats, however. Seventh Day Adventists, Jehovah's Witnesses and Mormons will accept pig skulls.
10. If any form of crime is committed, the chief(s) of the village(s) involved will decide the fine. If the crime took place across village lines, then the two chiefs will negotiate the appropriate fine. This is a major duty of chiefs. The chief of the village of the offender will announce the fine, and the offender will pay the compensation to the victim, or the victim's family if a murder occurred. The payment will be made via the other village's chief, who will decide exactly how the payment is distributed.
11. Even crimes like assault and murder are often resolved by this method, and the police are usually not involved. Because of this complex chiefly system which covers civil and criminal cases, there are very few cases that go to the police and courts, and very few police are needed – only about five for all of Ambae (with 10,000 residents).
12. The justice system works, and there are very few repeat offenders or revenge crimes, after compensation has been negotiated and arranged and paid.
13. This justice system and pig-killing ceremony is the same all over east, north and south Ambae. He is not sure if it exists in west Ambae. The system and ceremony is not declining, but is on-going.

#end interview#

Interview with Chief Augustine Garae

Date: 13 Jan 2013

Location: E. Ambae, Vanuatu; outside the Chief's home, sitting down underneath some trees, beside a coconut husk fire

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Very high

Topic: Pig killing ceremonies

Est. Age of Respondent: 65

Chief Augustine stated the following.

1. He is the son of the famous Chief Rupert Garae of Ambae, who killed the most pigs (one thousand; 1000) in a ceremony on Ambae. This is the most pigs killed of any pig-killing ceremony in the history of Vanuatu. Since the assembled crowd could not have eaten all those pigs, Chief Rupert "ceremonially" killed many of the 1000, by tapping them on the snout, rather than smashing their snouts and skulls. These pigs, who were spiritually already killed, were physically killed later when meat was needed. Only 2-3 of those 1000 pigs were killed on the roof of the nakamal (sacred kava house for chiefs); most were killed on the ground, in the nasara (sacred field). There are books written by Peter Lovell and Bill Rodman which describe the life of Chief Rupert. Chief Rupert achieved many special titles, including Wara Fundulua, for killing 100 pigs in one ceremony, including some with circular tusks.
2. The levels of chief in E. Ambae are as follows, from top down to the lowest:
 - a) Alla Han Rahvenvulu. This requires the killing of ten female pigs with tusks, which are very rare and valuable. Chief Rupert undertook this ceremony twice, just for the prestige of it.
 - b) Manavu Hannah Vulu
 - c) Durugu
 - d) Teve Teve. (It is a Teve Teve ceremony that will be conducted tomorrow in the nearby village, that Chief Augustine will participate in and Lew Toulmin will witness.)
 - e) See See
 - f) Vere
 - g) Mole
3. To go up through these levels, it is very important to understand that no chief could possibly raise all the needed pigs by himself. Rather, when it is "his time," a chief will ask other chiefs in the area for support, and they will bring live pigs and pig skulls to the ceremony. Thus in tomorrow's Teve Teve ceremony, only about 3 of the 10 pigs (and skulls with tusks) will come from the village in which the ceremony will take place. The remainder will be brought by nearby chiefs. Achieving "his time" means achieving age, wisdom and performing chiefly

duties (mainly adjudicating disputes) that are outside the pig-killing ceremonies. As one approaches advanced age and death is more likely, other chiefs will recognize that it is “his time” for the chief. This is partly the reason why the ceremony tomorrow is taking place. The ceremony tomorrow is for Chief Augustine’s elder brother, who is aging. Chief Augustine will participate, and will donate some pigs.

4. To raise pigs, old men used to sing special song to the pigs, and feed them special foods, to try to grow their tusks faster. It is a mistake to give raw coconuts to pigs with tusks, since the hard coconut shells and husks may break the tusks. Hence the need to hand-feed soft food. Usually this is women’s work.
5. The first born son of a major chief does not necessarily become the next big chief. Each son must prove himself worthy, mainly by community service. It is quite difficult to rise through the chiefly grades, and takes quite a bit of work and building relationships with other chiefs in the area.
6. Pigs without tusks may roam around a village, untethered, and feed themselves. They eat all the time. But pigs with curved or circular tusks must be penned in or tethered, so they do not damage their tusks.
7. Chief Augustine’s own pig with curved tusks is called “Bobbie.” But most such pigs in most villages do not have names or nicknames. [This statement is contrary to at least one published source on the topic.]
8. The origin of pig killing goes back to the two island founding spirits, Takaro (the good spirit) and Murambutu (the devil spirit). Takaro had 10 disciples and together they began the pig killing as a sacrifice to identify and symbolize the big man or chief.
9. Clubs were generally used in the old days to kill the pigs. But modern hand axes are often used today. Here the Chief showed me a seven kilo club, about a yard long, with a round handle about 2 inches thick and a long (1 foot) round head about 4 inches thick at its thickest. It was made from a heavy, blond colored wood, and he stated that it was about 25 years old and he was given it. Such clubs have no standard shape.
10. I asked if, as mentioned in *Tales of the South Pacific*, the club was made of “ironwood” and would rust in water. The Chief stated that he had never heard of ironwood and did not know of any wood that rusted.
11. Pigs can sometimes sense that “something bad is going to happen to them” and run away before a ceremony. Then they must be chased down in the jungle and captured, using trained dogs.

12. At this point the fire was generating quite a bit of smoke, and I asked about this. The Chief stated that a coconut husk fire was good for keeping away mosquitos.
13. The Chief stated that his elder brother has been preparing for tomorrow's ceremony for 2-3 weeks. Each day he has been blowing over custom, sacred leaves; calling out the names of key people; asking a blessing for the field where the ceremony will take place; and observing signs indicating whether people will come to the ceremony and whether it will be successful. Such signs include whether children or chickens come around nearby when he is praying, and whether birds fly overhead. [I observed the next day that this chief and his brother also drank a shell of kava after praying in the nasara field.]
14. In tomorrow's ceremony, 10 small sacred namele trees will be planted and the pigs tied to them. Tam Tam drums will call the people to the ceremony, and about 60-100 are expected. Another brother in the family, who is also a chief, will also be a key participant.
15. I asked if, as in *Tales of the South Pacific*, the women would use a pole to touch the testicles of the pigs to be sacrificed, to obtain fertility. The Chief stated that he had never heard of anything like this in Ambae.
16. The role of women before, during and after the ceremony is to: raise the pigs and feed them carefully; weave the sacred mats used as currency and used in the ceremony; prepare the food for the ceremony; dance a bit in the ceremony; put down the mats after the ceremony. Weaving the mats can take months per mat.
17. Women today are getting more of an education and are not keen to undertake all these many tasks, especially hand-feeding the pigs. His own daughter is like that.
18. Circular tusk pigs are fed the following soft foods: taro, manioc, coconut meat, bananas, and paw-paws (papayas).
19. I asked if, as in *Tales of the South Pacific*, when a pig skull with circular tusks is crushed in the ceremony, the chief is careful to fully crush the skull but not touch the tusks. He agreed that that was important and the tusks should not be touched by the club or axe. This takes skill.
20. Only two chiefs in East Ambae have ever reached the highest, Alla, level of chief. Three Alla level chiefs died recently; these were scattered around the entire island [population 10,000]. He estimates that only about 20 chiefs in East Ambae currently are alive, who have reached the second highest, Manavu, level.
21. Young potential chiefs start pig-killing early, at about age 2-3. They are helped in killing the pigs. If one includes children and youth and all grades of adults in the total count of pig-killers in East Ambae, then the total is currently about several hundred.

22. There is sometimes jealousy among these chiefs and pig-killers; this was more of a problem in the past. Jealousy [and black magic?] can be warded off by wearing sacred leaves.
23. After Chief Rupert died, the area slowed down a lot in terms of pig-killing ceremonies. [At this point a short conversation about chiefly burial and stone moving took place; this is recorded in the next section on stone moving.]
24. Chief Augustine stated that tomorrow he is donating a dried pig skull with curved tusks to be crushed, as one of the ten live pigs or dried skulls. [Thus he is not donating his live pig "Bobbie." One observer after the ceremony expressed to me some disappointment that more of the 10 pigs were not live, since that is more of an appropriate "kastom" procedure. This local observer also wished that all the participants wore kastom costume all the time, instead of sometimes wearing T-shirts and shorts, and only wearing traditional costume during parts of the ceremony.]
25. In the 1990s or 1998s the Governor General of New Zealand, Sir Paul Reeves, was invited to smash the skull of a live pig in a pig-killing ceremony, thus making him an honorary chief. Animal rights groups in NZ made such a fuss that he had to resign.
26. During each ceremony, the chief being promoted will announce and designate which person or family gets which pig to eat. The pigs will be baked overnight in an oven in the ground, and eaten the next day.
27. The ceremony tomorrow will happen at a sacred field called a nasara. I asked if, as at Wala Island off Malakula, the nasara had large stones around it or on one side. The Chief stated that on Ambae this was not done, and the field was beside the village and was just marked with sacred nemele trees, not with stones.

#end of interview#



The author and Chief Augustine Garae



Chief Augustine Garae and his seven kilo club, which he lent to his brother to use in the pig-killing ceremony

Interview with James Mera

Date: 18 Dec 2012

Location: E. Ambae, Vanuatu; outside the Chief's home, sitting down in a small shelter of palm leaves

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Pig killing ceremonies

Age of Respondent: 82

Profession: minister of the Anglican Church, for 40 years

Note: this interviewee provided a great deal of information on stone-moving; this is presented in the next section.

Mr. Mera stated the following:

1. He is the son of a chief, and has attended many pig-killing ceremonies. He is very familiar with the practice.
2. There are five levels of chief in this part of E. Ambae, as follows:
 - a. Mambohanavulu (the highest): requires the killing of 10 live pigs, male, castrated, with full circle tusks
 - b. Teveteve: 10 live male castrated pigs, with half circle tusks
 - c. Votaca: 10 live male castrated pigs, no tusks required
 - d. SeSe: 10 live male pigs, no tusks required
 - e. Vava Lea or Vava Heike; 10 live pigs, no tusks required
3. Above the highest level of chief (Mambohanavulu) there are three "decorations." These are:
 - a. Decoration for killing 1000 pigs. The highest decoration. Only Chief Rupert [Garae] achieved this. He killed 2 of the pigs on the roof of the nakamal, and the rest on the ground. Pigs can be live or dried skulls and tusks. Some of the 1000 pigs were not physically killed during the ceremony, but were only "ceremonially" killed there, since even the large crowd could not consume 1000 pigs.
 - b. Decoration for killing 100 pigs and 100 chickens. Second highest decoration. The 100 pigs can be live or a mixture of live and skulls with tusks.

- c. Decoration for killing 10 “ala” pigs. Third highest decoration. The “ala” dried pig skull has tusks that have two complete circles; this is very rare and each skull is currently worth about 40,000 Vatu (about \$USD 380).
4. Other skull values include: TeveTeve, with tusks curving back and almost touching the lower jaw: 5,000 Vatu (about \$45); and Gole, with tusks curving back and penetrating the jaw: 30,000 Vatu (about \$280). [See Joel Bonnemaïson, *Arts of Vanuatu* (Honolulu: University of Hawaii Press, 1996) figure 58, for illustrations and more detailed descriptions.]
5. In east Ambae there are currently about 1000 pigs, and all are owned by someone. There are no wild pigs, unlike in Santo and Efate. Of the 1000 pigs, less than 100 are sacred, with circular or curved tusks.

#end of interview#



Teve Teve curved but not circular tusks on a pig skull wrapped in palm fronds, ready for use in the custom pig killing ceremony observed by the author in January 2013



**James Mera, holding a sacred pig skull
with semi-circular tusks**

Interview with Joylyn Boe, Formerly of East Ambae

Date: 9 Mar 2013

Location: Office of the Telecommunications and Radiocommunications Regulator (TRR),
Port Vila, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: Pig killing by women, marriage ceremonies in east Ambae

Est. Age of Respondent: 25

Profession: Receptionist at TRR

Ms. Boe stated the following:

1. She is from east Ambae, in a small village several kilometers south of the Longana airstrip.
2. She converted to Seventh Day Adventism (SDA) from Anglicanism, which is the faith of almost all her family. SDAs do not believe in or allow participation in most custom ceremonies, including pig killing, while Anglicans do believe and participate.
3. In a typical Anglican marriage ceremony in east Ambae, representatives of the bride and groom will meet before the marriage and negotiate the bride price (paid by the groom's family to the bride's family) and the gifts that the bride will be given by her family, and take in to her new family, the family of the groom. These gifts often include pigs, which are killed in the marriage ceremony by the bride. These pigs are generally given by the father of the bride to the bride. Usually they are not sacred pigs with curved or circular tusks. However, if the father wants to signal that he really treasures his daughter, he might include some sacred pigs in the ceremony. This is quite rare, however.
4. The typical number of pigs killed by the bride is 2 to 6.
5. The bride uses a club or axe to kill the pigs, and hits them on the snout and forepart of the skull, just as the men do in killing sacred pigs.
6. Brides do not feel squeamish about killing the pigs; they feel it is an honor to do this.
7. Mats and household items such as pots and pans, are also given to the bride to take to her new home.
8. During the ceremony, the father will give a number of emphatic lectures to the groom and groom's family, ordering them to treat the bride well.
9. Very occasionally the gifts to the bride by the father, especially the number of pigs to be sacrificed, will be more than expected or negotiated with the groom's family. In that case, the groom and his family may need to scrape up more cash or other elements of the bride price, to increase it above the negotiated amount, to match the gifts given the bride.

10. Sometimes, the bride price will not meet the expectations of the bride's family, and there will be a public delay or quarrel over the terms of the marriage. This is rare, however, since the prior negotiations usually resolve all issues.
11. Divorces were unheard of in the old days, but sometimes divorces do occur these days, in which case a demand may be made that the bride price is returned.

#end interview#



Joylyn Boe of TRR and east Ambae, 17 May 2013



The father of a bride shows off the two sacred skulls he is giving to his daughter as a wedding gift, at a wedding in Nanigama village, east Ambae, in December 2012. These skulls are quite valuable, although they do not have full circular tusks.



Women prepare to pack up the massive pile of mats and other gifts given to the bride by her father and family, Nanigama village.

NEWS STORY MENTIONING PIG KILLING AT THE OPENING OF A NEW LAND OFFICE IN AMBAE

2 | VANUATU DAILY POST | Monday March 11, 2013

Penama customary land office launched

By Godwin Ligo

THE NEW CUSTOMARY LAND office for the Penama Province was launched last week to coincide with the formation of the new Penama Provincial government.

Shortly after the induction of the new Penama Provincial government, custom ceremonies were performed at the Penama Provincial Headquarter in Saratamata on Ambae to mark the official opening of the Customary Land Office.

The Ambae representative in the Malvatumuari National Council of Chiefs, Chief Isaac Bani, ceremonially killed a pig, followed by another pig killing ceremony, performed by Chief Alickson Wai, who is the Ambae representative in Penama Province, signifying their approval, for the Penama Provincial Customary Land office, to be accommodated on the land which the Penama Provincial Headquarter is situated at Saratamata.

Addressing the Ambae Lungei Tagaro Council of Chiefs, the Acting Prime Minister Ham Lini, said he was pleased to note that the people of Ambae through their Island Council of Chiefs have accepted to play host for the Penama Customary Land Office to be situated on their land at the Penama provincial headquarter.

He said this is a long awaited project that has eventually come to fruition as part of the government overall localization policy.

The Land Minister, James Bule, joined the Acting Prime Minister to see that this particular project has eventually realized and believe it will carry out its functions as expected by both the people of Penama and the national government.

Note: Chief Isaac Bani is interviewed later in this report, under the section on disaster preparedness on Ambae.

NEWS STORY MENTIONING PIG KILLING BY YOUNGEST MEMBER OF PARLIAMENT TO CELEBRATE HIS ELECTION

Lebanon, Panama, Costa Rica, ...

Meet the first MP born after Independence

By Godwin Ligo

"I KNEW BEFORE POLLING that I would be elected into parliament. Not for my personal interest but to serve the interest of the people and the country that my father loved and left behind."

Those were the first remarks from the 27-year-old Pascal Iauko, after his arrival in Port Vila yesterday morning.

He was welcomed at the Port Vila domestic airport on arrival from Tanna by the Vice-Chairman of the Iauko political group, MP Tony Nari, along with families, friends, political supporters and a Tanna custom dance in front of the main terminal building before continuing in a victory drive through Port Vila town up to their family home at No.2 Paray then passing the parliament house where he paused for a photograph before continuing to his late father's nakamal at Emten Lagoon.

On arrival at his father's nakamal, the newly elected Tanna MP Pascal Iauko, was received by the Leader of the Opposition, Ham Lini, PPP Vice-President and Torba MP Dunstan Hilton, Nagriamel MP Samsen Samson and the Iauko Group Vice-President Tony Nari, Luganville MP Kalfau Moli along with the Middle Bush chief representative in Port Vila, Peter Iawak, other chief representatives and political supporters from Opposition political parties, families and friends.

A pig killing ceremony was performed and presented with kava and mats to the Leader of the Opposition, Ham Lini, followed by speeches from political party leaders.

"We are here to mourn and to rejoice for the victory because in the end there is always victory," the Master of Ceremony Chief Peter Iawak remarked, as women mourn in a mix feeling for the late Harry Iauko and for the welcome of their new young MP Pascal Iauko.

Pascal Iauko who unofficial results show he scored 4,000 plus votes in the Tanna by-election believed to be the highest number of votes ever cast for an MP on Tanna since 1979 elections for Independence and a youngest MP since 1980. He fills the seat vacated by his father the late MP founder and President of the Iauko political group who died in 2012.

"I thank all the supports I have received before, during and after the bye-election without which I could not go through it alone.

"All the Opposition political parties leaders who physically came to Tanna for my political campaign, all the resources from the Opposition political parties their time and encouragements to me and the voters on Tanna as well as my families and especially too the support from the Vice-President of the Party Tony Nari and the party leaders and every support that helped to place me where I am today is truly appreciated.



The 27-year-old Pascal Iauko (right) posing in the drizzle with Iauko Group Vice-President Tony Nari at Parliament House yesterday morning during a victory drive through the town.

Story continues on page 2 >

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Comparison of Michener's Account of a Pig-Killing in *Tales of the South Pacific* and an Actual Ceremony in Vanuatu

In James A. Michener's classic novel, *Tales of the South Pacific*, he spends an entire chapter, entitled "A Boar's Tooth," on a pig-killing ceremony. Not surprisingly, all of this gruesome but fascinating ceremony did not make it into the later play, movie or TV mini-series, all named *South Pacific*, although there are references to the ceremony.

The purpose of this article is to compare the central elements of Michener's account of the ceremony with a real ceremony, which I observed in 2013 on Ambae island in Vanuatu, and to evaluate the accuracy of his observations and the amount of imagination introduced by the author. Although there is a considerable ethnographic literature on pig-killing in Vanuatu (see the bibliography), such a literary comparison has apparently never before been undertaken.

This ceremony in the novel takes place on "Vanicoro" in the New Hebrides, during World War II. The ceremony I saw was located on Ambae, in Vanuatu, the name for the archipelago of the New Hebrides since 1980. As I argue elsewhere, "Vanicoro" (a fictional name or a name borrowed from the Solomons, where an island named Vanikoro exists in the Santa Cruz group) is an amalgamation of Ambae and Malakula (a large island in the north central part of Vanuatu). I have proof that Ambae was the primary inspiration for Michener, in the form of a 1994 letter from him and his editor to me, reproduced elsewhere in the report as Exhibit 1.

The actual ceremony took place in the Vusnagivika village in east Ambae, near the tiny provincial capital of Saratamata in January 2013. It is quite difficult to observe these ceremonies, since they only occur a few times a year on each island, often are not publicized, outsiders are not generally invited, and the exact dates and times are usually not set until a few days in advance. I was lucky to have made the right connections, and to have lived in Vanuatu for six months at the time of the ceremony.

Besides observing the ceremony personally, I interviewed a number of chiefs and other respondents. A key respondent was a senior chief who was the son of the famous Chief Rupert Garae of Ambae, who slaughtered 1000 pigs at one go, including three on the roof of the sacred kava shelter ("nakamal"). I also reviewed the well-developed secondary literature on this ceremony.

The basic purposes of a pig killing ceremony are as follows:

- To increase the prestige and rank of the chief involved (Miles). If a chief does not kill pigs, he is considered “rubbish” (Hume), and if he discontinues the practice, he quickly loses the respect of the community (Bolton). The chief kills valuable pigs which have been raised over many years, and distributes the much appreciated meat to spectators. Meat is rarely eaten in village society, where the diet is largely fruit, roots, tubers and vegetables, and occasional fish.
- To promote the chief in the graded hierarchical system of honor and importance. Various parts of Vanuatu have chiefly grading systems ranging from five to twenty grades.
- To allow the chief’s soul to escape snares after his death, and permit him to join his ancestors in heaven.
- To integrate the social, religious and economic bonds of the villages in an area, and to provide a spectacle for the villagers.
- To distribute a substantial portion of the wealth of the chief, in that he must pay for many of the services and inputs that go into the ceremony (e.g. the drummers, rental of the massive drum, some of the food, etc.) (Toulmin, 2013).
- To increase the value placed on pigs and pig skulls with curved or circular tusks, thus creating a high market price for these items, which are used as bride wealth, compensation to the victims of an attack or relatives of a murder, compensation for turning traitor to one’s country (Miles), or as payment to craftsmen or sorcerers.
- Even to secure votes in an election (*The Economist*).

Promotion of a chief to a higher grade, as a result of a pig-killing, yields various benefits, including a new chiefly title which is added to the person’s name, rather like a “post-nomial” in British society; the privilege of eating at a more prestigious oven, closer to the rear of the nakamal; better grade insignia (armbands, necklaces, body paint, head-dresses); the right to chant special songs; and the right to touch certain sacred objects (Hume).

Note that pig killing chiefs are almost always men, but there are carefully documented reports of women chiefs killing pigs on the island of Maewo (Hume), near Ambae. This also occurs on Pentecost island. On Ambae and in most islands, there are no women chiefs. In the old days, prior to the effective introduction of Christianity, male chiefs had multiple wives, and the main purpose of this practice was apparently to increase the number of workers feeding and raising the sacred pigs.

The key elements of the ceremony from the novel vs. the reality are presented in the table below, for a side by side comparison. The elements are presented in the order discussed in the novel.

<i>Tales of the South Pacific</i>	Actual Ceremony on Ambae/ Conclusion re the Comparison
<p>Young pigs are tied to trees and live out their lives at the end of a short jungle rope. They are fed by old “Maries” (women) of the village, who chew up food and spit it out, making it soft for the pigs to eat, so they don’t damage their tusks with hard food.</p>	<p>Young pigs are tied to trees or stakes or enclosed in pens for their entire lives. They are fed by the women of the village with soft food (bananas, papayas, taro, manioc and coconut meat), although this food is not usually chewed and regurgitated. The purpose of soft food is to avoid having the pigs damage their tusks with hard food, especially coconuts in their raw state with husks and shells. <u>Conclusion:</u> Michener’s account is generally correct. He may have borrowed the chewing and spitting motif from the actual south Vanuatu practice of having young virgin boys chew kava roots and spit it into a bowl, for later drinking by adults, or this may have been the actual practice in the ceremony and village he observed.</p>
<p>The pigs are sacred. The “whole religion is pigs.”</p>	<p>The pigs are sacred. But Ambae is (and was in World War II) nominally Christian, with various denominations. The pig ceremony is arguably much more important than this Christian practice, and both plus ownership of coconut plantations was used on Ambae to consolidate chiefly power (Allen). Malekula is now largely Christian but was more animist and pig-oriented in WW II. <u>Conclusion:</u> Generally correct.</p>
<p>Circular tusks are key to the sacred status of the pigs. The upper incisors are pulled and cut out by the chief, so the pig’s lower incisors will grow unopposed. The lower incisors, in the lower jaw, grow backwards, sometimes around in a circle, and sometimes piercing the jaw of the pig. This hurts the pig a great deal and can kill it. Two circles are more valuable than one, and a three-circle pig is very rare and extremely valuable. The skull and jawbone of the pigs with curved tusks are sometimes dried</p>	<p>All of the items are correct, except that Michener does not directly address the fact that even a half circle is considered sacred and valuable, and is used in some chiefly ceremonies like the mid-grade “Teve Teve” ceremony which I observed. Circular pig’s tusks are so central to Vanuatu that one appears on the national flag, the national seal, and on the Order of Vanuatu. <u>Conclusion:</u> Generally correct</p>

and preserved.	
It takes about 7 years to grow a good circular tusk.	Chiefs and other respondents I interviewed stated that growing a circular tusk took longer, about 10 for a circular tusk up to even 20 years for a double or triple circle. <u>Conclusion:</u> off by a bit.
Tusks are cased in enamel like elephants tusks and are “pure ivory.”	Michener’s description seems to imply that the raw, sacred tusks are smooth and beautiful. In reality a raw tusk is often a bit wrinkled, with black or discolored areas and is not very attractive. Polishing a tusk and capping it with gold or silver tips on both ends substantially increases its commercial value (to about \$USD 1000 per tusk), and makes it quite beautiful, but destroys its sacred value. <u>Conclusion:</u> Misleading
The islands are the place on earth where the living is easiest, since they are full of fruit, vegetables and wild boar. The pig-killing religion creates an enormous amount of unnecessary work for all concerned. But it gives people a reason for living, and for aspiration. Giving away the meat of the pigs after they are killed, in a kind of potlatch ceremony, is what gives a chief his status as a “very fine man.” It is documented that this religion was created to give everyone something to do.	All accurate, except for the last statement that it is “documented” that this religion was made up, implying a known date when it was created. In fact, respondents I interviewed stated that the origins of the ceremony and religion are lost in the mists of pre-history and go back to the founding of the islands by good and bad spirits, long before the first visits by Europeans. (Archaeologists estimate that Vanuatu, part of Melanesia, was populated about 4000 years ago by migrations from Papua New Guinea. (Miles)) Also, Michener does not make it clear that on each island there are various grades of chief (between 5 and 20 grades, depending on the belief system), and that killing pigs is the key way to rise through the hierarchy. <u>Conclusion:</u> Generally correct.
The ceremony is “limited to this small circle of islands,” and the islands can “all be seen from an airplane.”	The pig-killing ceremony is limited to Vanuatu, but Vanuatu stretches for 650 miles from north to south, and cannot all be seen from a modern or a WW II aircraft. Vanuatu is not a circle, but a Y-shaped, long, narrow archipelago. <u>Conclusion:</u> Partially incorrect.
As the ceremony approaches, the pigs squeal and “always seem to know” that they will be killed.	The pigs squealed when they were seized in their pens, tied up and carried to the sacred nasara (field), but lay surprisingly quiet during the ceremony, even when a nearby pig was killed. However, a senior chief I interviewed stated that the pigs sense danger is coming, squeal, and often try to escape their pens into the jungle, where they are chased down by the villagers and trained dogs. <u>Conclusion:</u> Generally

	correct.
The chief of the village wears a “woven lap-lap suspended” in front of his groin area.	Traditional chiefs and warriors on Malakula (but not Ambae) wore penis sheaths during and before WW II. “Lap-lap” is a dish served throughout the islands, and is made of taro or bananas, pounded into a paste and basted with coconut milk. It is not an item of dress. <u>Conclusion</u> : Incorrect (or, could that perhaps have been an inside joke by Michener?)
In the center of the “kraal” (the village area) an altar is built of sanctified palm fronds, for use in the ceremony.	A “kraal” is a South African word which means a village surrounded by a thorn fence. This is not how villages in Ambae or Malakula are constructed. No altar was used in the observed ceremony, instead, the hog-tied pigs were further tied to small sacred nemele trees, or to stakes decorated with nemele leaves. <u>Conclusion</u> : Misleading
The pigs are killed by a chief wielding a “heavy, brutal sacrificial club” made of “ironwood, that unbelievable jungle wood that rusts in water.”	Before and during WW II, clubs were generally used to kill the pigs. (Today modern hand axes are often used.) In the ceremony I observed, a 7 kilo rounded club, made of a blond hardwood, and a modern axe were used. The senior chief I interviewed, very educated and fluent in English, stated that he had “never heard of ironwood or any wood that rusts.” Ironwood is a tree which grows in Brazil, the American southwest, and elsewhere, but reports of it growing in Vanuatu could not be found. However, W. L. Rodman (1973) in his authoritative description of Ambae and pig-killing, reports that “ironwood clubs” were used to attack French explorer Bougainville on Ambae in 1768. <u>Conclusion</u> : Probably correct
The “old Maries” bring out the pigs they have raised and stake them in a semi-circle.	The younger warriors and chiefs brought out the pigs, usually suspended upside down from poles by their tied feet, and staked them in a line at the edge of the small sacred field. <u>Conclusion</u> : Different, possibly incorrect or to heighten the dramatic effect of all this on the women, who have done most of the work to raise the pigs, for over 10 years. (Harrison notes that the women “wailed” when the pigs they have spent so much time on were killed.)
The “oldest Mary” brings out a “long ancient ironwood spear” and “places it on the testicles of the boar she had reared” to gain its fertility. Other women touch the	No such ceremony by the women was observed. In my interview with a senior chief (the son of the famous Chief Rupert Garae , who killed 1000 pigs in one giant ceremony, the most ever killed in the history of the country), he stated that “I have never

spear to gain this same fertility.	heard of any such fertility ceremony anywhere on Ambae or in Vanuatu.” ⁵ <u>Conclusion</u> : incorrect; possibly added for dramatic effect and to include a sexual element.
The chiefs sing half dolefully, then burst into violent shouting. The old chief grabs a pig and with his ironwood club smashes it down on the pig’s snout. The pig screams horribly. The chief then “thunders twenty blows upon the pig’s skull,” crushing every bone in the pig’s head. The chief then, “with delicate precision,” gives two light ceremonial blows on the skull which end the sacrifice. Despite the wild smashing, neither of the two tusks is touched. The old chief moves on to kill the other pigs, and each one takes a large number of blows. The entire killing takes quite a while.	The drums beat dramatically, and the old chief took his club, and with one blow smashed the snout of one pig. That one blow was enough to kill the pig, and a stream of bright red blood bubbled out of the nostrils and onto the ground. In a rather horrible element not mentioned by Michener, each pig convulsed for one to two minutes after being struck, before finally dying. The old chief took four blows to kill the next pig, having traded his club for a modern hand axe. He took five axe blows to cut a dried skull in half. The entire killing of all the 10 pigs and skulls only took about fifteen minutes. Some cries from the crowd were heard, but no singing or violent shouting. No light ceremonial taps were observed. The chief did not damage any of the tusks, and my interview with a senior chief indicated that this “takes a lot of skill.” <u>Conclusion</u> : somewhat misleading, probably to heighten the dramatic effect.
At the end of the ceremony, the “sacred ceremonial branch was broken by the chief.”	Not observed. This may have been added for dramatic effect and to punctuate the end. <u>Conclusion</u> : possibly inaccurate.
The chiefs and their sons rush to carve up and dress the meat.	This account implies that the carving and dressing takes place at the sacrifice location. In the observed ceremony, the pigs were removed from the sacred area and taken to a shelter and cooking area, and carved up, mostly by women and a few men. <u>Conclusion</u> : <u>Conclusion</u> : somewhat misleading, probably to heighten the dramatic effect.
The sex of the sacred pigs is not addressed, but by not discussing this, the reader assumes that they are male.	Generally the sacrificed pigs are male. However, to attain the highest rank in eastern Ambae (the Alla Han Rahvenvulu), the chief must kill ten female pigs with tusks, which are very rare and valuable. The vast majority of chiefs never get even close to this rank. The famous Chief Rupert undertook this ceremony

⁵ One interviewee stated that a common tale in Vanuatu is that Noah cut off the testicles of all the male animals on the Ark, so they couldn’t reproduce on board and flood the vessel with excess passengers. Just before landing on Mt. Ararat, the talented Noah re-attached all the testicles. But the male pig was so eager to get ashore that he dashed off without his testicles, and Noah had to throw the testes after him, where they hit his backside, stuck on, and stuck out quite prominently, as they still do today. Perhaps Michener heard this story and it suggested the fertility story he apparently invented.

	<p>twice, just for the prestige of it. Sacrifice of rare and prestigious hermaphrodite pigs is also reported (Pacchiolli; Marshall). <u>Conclusion</u>: Generally accurate, and it is quite likely that Michener did not see any female or hermaphrodite pigs sacrificed, as I did not.</p>
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In summary, it seems fair to say that Michener as a reporter was generally accurate. He apparently made a few minor errors, such as calling the groin covering a “lap-lap” and stating that an ironwood club was used. Importantly, he added a number of elements, such as having the women touch the testicles of the pigs with a spear, and having the chief use many blows to kill the pigs, when in fact only a few blows are necessary. These elements were apparently added to increase the drama, sexual content, and impact of the story.

Why did Michener include this ceremony in the book, and devote an entire chapter to it? There are several possibilities:

- The ceremony, which Michener clearly had seen in person, made a big impression on him, and he realized that this bizarre rite had not been presented in a novel before.
- The ceremony, especially with his alterations and additions, had both sex and violence, always an attractive combination for a writer, reader or editor.
- Michener may have felt that the sacrificed pigs were symbolic and a fitting foreshadowing of the later sacrifice of Lt. Joe Cable on the altar of war, when he volunteers for the dangerous job of coast-watcher after breaking off his relationship with the beautiful Tonkinese girl Liat, and is then killed by the Japanese.

It is interesting to consider whether, with our modern sensibilities, inured to violence and death, if the movie *South Pacific* was being made today, would the entire bizarre, bloody and gruesome pig killing ceremony be included in the film? This would certainly be truer to Michener’s original vision, and to the on-going reality in Vanuatu.

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**A polished and gold-capped circular boar's tusk from Vanuatu
(author's collection)**

#end article#

Pictures Documenting an Actual Pig-Killing Ceremony

The selected pictures below are presented in chronological order, and show the different phases of a pig killing ceremony observed in January 2013 in north eastern Ambae in Vusnagivika village.



Villager Hendry Tari prepares special kava for the chiefs to drink before the ceremony



Chief McKenzie Tari, who will be promoted to the Tevi Tevi grade, sings a custom song and drinks kava from a coconut shell in the sacred field on the day before the ceremony



A few hours before the ceremony, Chief McKenzie plants a line of ten sacred nemele trees, to which the pigs will be tied



Village men fight with a (non-sacred) pig to extract it from its pen. The pig will be killed for by the Chief during the ceremony, even though it does not have curved tusks.



The hired drummers, one only 15 years old, play the hired tam-tam log drum to call villagers from miles away to come to the ceremony. Note the typical lack of “kastom” dress.



Chief Markleen Tagaro Tari, son of Chief McKenzie Tari, in “kastom” attire, dances near the beginning of the ceremony. He is a TB program supervisor at the Ministry of Health in Port Vila, Vanuatu



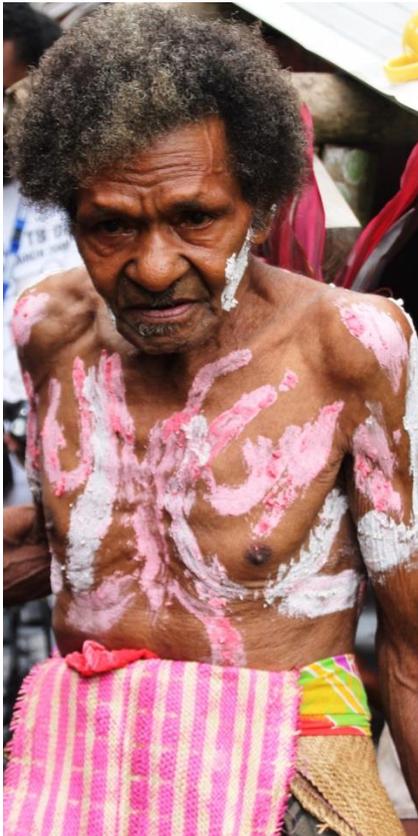
Chief Selwyn Tafoa, a cousin of Chief McKenzie, dances to celebrate the promotion of Chief McKenzie to Teve Teve



A relative of Chief McKenzie, Chief Simon Garae (older brother of Chief Augustine Garae) dances in full kastom garb to support the promotion. Chief Simon is one of the sons of the famous Chief Rupert Garae.



Close-up of Chief Simon Garae



Chief McKenzie Tari-lui, dressed in custom costume for his promotion to Teve Teve. Although he looks frail here, he danced for six hours straight the evening after the ceremony, pounding the earth with his feet, and leading the chants of the men of the village.



One of the sacrificial pigs makes a determined bid to get away, but doesn't quite succeed. The white bags hold dried pig skulls.



Women of the village, dressed to dance in the ceremony. On left, Belo Tari, cousin of Chief McKenzie, and right, Fale Tari, aunt of Chief McKenzie



Chief McKenzie takes aim at the pig's snout, with the seven kilo club. Death is only a second away. The pig, with Teve-Teve curved tusks, had previously been stunned with blows from the back of a hand ax.



Chief McKenzie splits a dried pig skull with a modern hand axe



Chief McKenzie, upper right, cuts a dried pig skull in two with an axe. In the left middle ground are three newly killed dead pigs with fresh blood coming out of their snouts. In the left foreground is another spilt dried pig skull. Three live pigs and seven dried pig skulls were crushed in total.



The Tari family after the ceremony, with Chief McKenzie Tari in the center, now a Teve Teve grade chief. On the far left is Issac Tari, then Willy Garae (brother of Chief Augustine Garae). Next is Chief McKenzie Tari (or Tari-lui), then Alban Tari, then Chief Simon Garae on the far right.



The author and the Tari clan just after the pig-killing ceremony



Belinda Tari removes the meat from the jaw and tusks of a sacred pig killed in the ceremony



Bubu (Bionga) Garae, granddaughter of Willy Garae, visiting the village for the ceremony, looks forward to some fresh juicy pork. Meat is a rare delicacy in the village.



Dafodill Tari (center) and other women of the village prepare masses of food, mostly taro, lap-lap and manioc, for the 70 attendees of the ceremony



On the night after the ceremony, the village men dance intensely from 9 pm to 3 am, pounding and shaking the earth with their feet, with only intermittent 1-2 minute breaks. The women (left) occasionally dance in a circle around the edge of the scrum of men (right). White flour is thrown onto the dancers as a decoration.

Time Line of An Actual Pig-killing Ceremony

This section describes the time line of the actual pig killing ceremony witnessed by the author, in Vusnagivika village in eastern Ambae on Friday, 11 January 2013, and relates to the pictures above. It was not possible to record every event or obtain information on every speech, or identify all the actors, so this must be considered an overview, not a detailed description. Some videos and photos of the ceremony were studied to assist in supplementing notes taken, to make the time line more accurate. Some parts of the ceremony are quite gruesome, so some readers may wish to skip this section.

The ceremony took place at the edge of the village, on a field made sacred by the planting that morning of 10 sacred nemele trees (small saplings supported by stakes). The field was roughly rectangular, about 20 meters wide and 40 meters long, with the nemele trees planted on the long side furthest from the village.

The ceremony was scheduled to start at 10 am, but as with many such events, it actually began at 1:26 pm.

Time	Event and Notes
1:26 pm	Large tam-tam slit drum begins to be beaten by one adult and one 15 year old boy. Two other smaller log drums, apparently solid, are also played by individual drummers. The drums were under a shed like open structure, about 5 x 4 meters.
1:30 pm	The young drummer is not satisfied with one of his drumsticks, so he cuts another one with a knife.
1:38 pm	About 40 people are in attendance, scattered around the edge of the sacred field
1:41 pm	About 7 more people arrive
1:46 pm	Chief McKenzie Tari-liu (CMT), the chief being promoted, dances with another person. CMT is wearing shorts and a T-shirt, not traditional dress, at this point. Each dance was rather like a jog around the field, often with arms held out horizontally.
1:48 pm	Speech by Chief Selwyn Tafoa saying what his father gave to him years ago and what he wants to give back to the Tari family
1:50 pm	Vigorous drumming (no other instruments were present)
1:51 pm	CMT gives a speech saying he is ready to take on the Teve-Teve level of chief before he dies
2:01 pm	Young men bring out three pigs, one with curved tusks and two without; five dogs follow
2:02 pm	Speech and short dance by Chief Markleen Tagaro Tari, wearing traditional dress

2:12 pm	Speech by a young man giving two small pigs as gifts; CMT touches them with a branch
2:13 pm	Dance by another chief, who then offers three pig skulls with circular tusks, wrapped in strong carrying bags. He also donates a small live pig.
2:15 pm	Speech by Chief Augustine Garae, who states he is glad to be giving gifts including a dried head of a pig with circular tusks, and a live pig, to assist with the Teve-Teve promotion ceremony.
2:18 pm	CMT thanks Chief Augustine Garae
2:19 pm	8 more observers arrive
2:20 pm	Another chief, dressed in traditional dress, gives gifts, and a small speech
2:22 pm	Another chief, dressed in western-style shorts, dances for a couple of minutes and announces a gift of 4 mats and 2 dried pig skulls with curved tusks
2:26 pm	Two small pigs cross the field. One urinates and one defecates.
2:27 pm	A long silence
2:30 pm	The drum begins again
2:31 pm	Chief Simon Garae begins his dance
2:34 pm	A truck arrives bringing more observers; bringing the total to about 70
2:35 pm	Chief Simon Garae concludes his dance and makes a short speech. He says that the ceremony helps fulfill the intent of his famous father, Chief Rupert Garae, who supported CMT and wanted him to rise in the chiefly ranks.
2:37 pm	Chief Augustine Garae makes a longer speech, saying he is pleased to support the promotion.
2:47 pm	Three pig skulls with circular tusks are brought out, all donated by Chief Augustine
2:49 pm	CMT thanks Chief Augustine.
3:02 pm	CMT's speech ends.
3:02:30 pm	Three pigs are brought out to the sacred namele tree stakes at the far side of the field.
3:03 pm	Numerous large mats, woven by the women of the village and other villages, are brought out, unrolled and displayed. The mats are red or blue in color, on a tan natural background. CMT thanks the donators of the mats.
3:25 pm	The mats are rolled back up and put on the side of the field. CMT continues his thank you speech.
3:26 pm	A large pig tied to one of the nemele trees and stakes almost escapes by pulling on his rope, which is tied to his leg. Just before he breaks free, a male member of clan adds another stake, and seals the pig's fate. [Reportedly sometimes pigs do escape from ceremonies, and must be chased through the jungle with dogs to recover them.]
3:28 pm	CMT concludes his speech of thanks. He comes and sits with Chief Augustine Garae and the author for a short period in the shelter where the

	large drum is located, beside the field. Chief Augustine says that the key to having a ceremony is to get enough local chiefs to donate live and dried pigs to have a ceremony. This requires a web of favors and support. CMT states that it is harder to organize ceremonies today, because fewer people raise Teve Teve and other sacred pigs, and hence dried pig skulls must be substituted. But since these are crushed and destroyed during the ceremony, these are becoming rarer and more expensive.
3:35 pm	A little pig is killed near the drum by CMT with Chief Augustine Garae's 7 kilo wooden club. The pig convulses for several minutes before dying. [This is a separate killing from the main promotion killing of ten pigs, which happens a little later.]
3:39 pm	CMT dances around the 10 sacred nemele trees.
3:43 pm	Short speech by another, young chief.
3:44 pm	Chief Augustine dances around the 10 sacred nemele trees.
3:48 pm	CMT, who until now has been wearing western shorts and a blue T-shirt, takes a 15 minute break to change into custom dress. Women of the village are also dressed in traditional style, at this point. They have been using a house near the field to get dressed.
4:02pm	CMT returns to the field. He is still dressed in shorts and Crocs, but is wearing white paint decoration on his bare chest, a traditional mat around his waist, and a frond along his back. The traditionally clad women also come out to the field. The women dance off to the side of the field, also in a sedate, jogging manner, following one another in single file, chanting and holding out their arms. CMT and three other chiefs also dance near the center of the field, in a line with CMT second in line.
4:14 pm	The pig killing begins, after two and a half hours of build-up. CMT takes the 7 kilo wooden club and tries to crush a dried pig skull (non-sacred) at the end of the line of nemele trees. The skull is unmarked and is not cut in half, which is the goal. He is handed a modern hand ax by Chief Simon Garae.
4:15 pm	CMT then cuts apart the skull with five blows, using the hand ax's sharp edge.
4:16 pm	CMT cuts two more dried skulls in half with only a few blows each, using the sharp side of the hand ax.
4:16 pm	CMT approaches the first live pig in the line, holding aloft the hand ax. The off-white and grey pig, with semi-circular tusks (the only live pig in the ceremony with curved tusks), who had previously tried to escape, moves uncertainly back and forth, sensing danger. But he makes no sound. The pig is not "hog-tied," but is able to move around, since only one leg is tied to the stakes with a one meter rope.
4:16:10 pm	CMT hits the pig in the snout with the flat back end of the hand ax. A number of people in the crowd cheer, perhaps applauding the accuracy and strength of the blow. The pig seems a little stunned but then shrugs

	off the blow and retreats to the side, then behind the stake. Two other chiefs in attendance grab the pig's rear legs and drag the pig to the front again, for another blow. The pig struggles in their grasp.
4:16:30 pm	CMT hits the pig with several more blows with the blunt back of the ax, and the pig collapses on the ground. CMT picks up the 7 kilo club and hits one more heavy blow on the snout. The pig starts to bleed from his snout, and convulses. The three chiefs, including CMT, dance around the nemele trees.
4:18 pm	CMT uses the 7 kilo club to kill a smaller white pig (without circular tusks), by hitting the pig on the snout with one heavy blow. The pig begins convulsing after about 10 seconds, and bright red blood comes out of his snout. At this point, the off-white and grey large pig has lots of bright red blood coming out of its snout, and one leg is still moving slightly.
4:18:30 pm	CMT uses the sharp edge of the hand ax to cut another pig skull in half, using only two blows.
4:18:45 pm	CMT reverses the ax and uses the blunt end to hit a live grey pig in the snout. He hits it with four blows and it begins to convulse. Neither this nor any of the other two live pigs ever make a sound.
4:19 pm	CMT cuts two more dried skulls in half, using the hand ax.
4:20 pm	One of the other attending chiefs cuts the final dried skull in half, using the hand ax.
4:20 pm	The chiefs dance around the nemele trees and sacrificed pigs.
4:25 pm	The ceremony is over.
4:30 pm	Photos are taken of the participants.
4:40 pm	The pig carcasses are removed to a cooking area about 100 meters away, for removal of the flesh, and cooking, all this done mostly by women.
10:30 pm	Custom dancing on the field began, with chants and stamping, led by CMT. Most chants were very vigorous, lasting 2-4 minutes, with a one minute break afterwards.
1:30 am	20 minute break in the dancing, stamping and chanting
1:50 am	Dancing begins again
2:30 am	CMT and the author both retired for the night.
5:30 am	Young braves of the village reportedly finally stopped dancing.

A Pig Killing Song

The following is a rough translation of one of the many songs chanted or sung by the participants, on the evening after the pig killing.

We prepared the taro,
We prepared the firewood,
We prepared the leaves,
We prepared the stones,
We prepared the pork.
In our chiefly line, my father killed the pigs,
So all his sons will carry on the tradition.

A Pig Killing Poem

Observing the pig-killing ceremony, and especially listening to the hypnotic, intense chanting and stamping of the men at night, after the ceremony, inspired me to write the following poem, which tries to reflect some of the simple words and intense rhythm of the chants:

Pig Killing on Ambae

by

Lew Toulmin

We come today, to kill the pig
Our will is strong, our club is big.

The boar is huge, his blood is hot.
He wants to live, but he cannot.

His mighty tusk, his rolling eye,
The coco husk, it soon will fry.

Tonight we dance, tonight we play.
We will prance, until the day.

Tomorrow when our legs are sore,
We'll drink the blood, and eat the boar.

We came today, to kill the pig.
Our will was strong, our club was big.

#end#

INTERVIEWS RE MAGIC AND OTHER MATTERS

Interview with Sinix Tari, Resident of East Ambae

Date: 11 Jan 2013

Location: Vusnavagika village, east Ambae

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Magic and Ambae customs

Age of Respondent: 17

Sinix stated the following.

1. I am 17 years old, and I am daughter of Timon Tari and the granddaughter of Chief McKenzie Tari
2. In 2003 some nearby villagers tried to kill my father, using witchcraft.
3. The killer changed his form into that of a large vicious dog, and he came at midnight into my village. The dog called out to my father, who came to the door of his house and saw the devil-dog. The dog was all black and about one meter tall.
4. Shortly thereafter my father got a bad stomach ache, so bad he had to go to the hospital.
5. In hospital he was given an injection. He slept for an hour. But he was still under the witchcraft spell. So my grandfather gave him traditional medicine, and my father slept well, got better, and came home. The traditional medicine was made from special leaves.
6. The big dog was really a bad person in the nearby village. We figured out who he was. So our grandfather called a meeting of the two villages, and accused the bad man of trying to kill my father through the dog witchcraft. The meeting lasted two hours.
7. The accused man admitted his guilt in the big meeting. If he hadn't admitted it, the people in the meeting would have killed him.
8. His motive was a large on-going land dispute.
9. The confessed accused man agreed to pay 5000 Vatu [about \$USD 47], and some valuable custom mats, as recompense for the attempted killing. This was agreed to by the meeting and both village chiefs.
10. Everything is fine now. No revenge against the man was taken, and he has not tried again to hurt my father. No other attempt is expected. [Note: when asked about this magic dog incident later, Chief Markleen stated that he was not familiar with it. However, his relatives state that he was not living in the village at the time, and was not aware of the incident.]

11. The village name of Vusnagavika comes from Vus ("hill") of the Nagavika ("apple") or "hill of the apples."
12. There are about 20 people in the village, all descended from my grandfather, and all of the Tari family.
13. The children in the group with Sinix are Dafodill, 22, Justine, 12, Annette, 7, Nick, 13, and Nestor, 19.
14. Markleen Tagaro is a chief of the village and can and does call meetings to discuss problems. At the meetings the villagers sit on a sort of grandstand under a sheltering roof to discuss problems.
15. Recently, in early January 2013, Chief Markleen called a meeting to discuss how the children were coming home too late. A group of youth from the village had walked to another village about ½ hour away. [There is no transport in the village except an old broken down Toyota truck belonging to Alban Tari; this truck is not running now and has not been operational for months.]
16. The youth went to the other village to play volleyball and to get volleyball coaching. They came back about 10 pm. Chief Markleen was very concerned that this was too late. It was not safe. He wanted all the youth back in the home village by 8 to 9 pm. The danger is devils out at night, and also young men or boys who might scare the youth when they are walking home.
17. Sinix stated that all the youth agreed to do this, and will all obey next time.
18. Also in early January, one boy in the village couldn't sleep and had a high fever. So our grandfather had to use traditional medicine to give him something to let him sleep. The problem was probably caused by a devil or spell.
19. Our village has had a few other foreign visitors [besides the author]. In about 2001 a New Zealander, Andrew Sorenson, came to the village, while staying in a nearby school. He was about 60 years old and became friends with the villagers. But we lost touch with him.
20. Two US Peace Corps volunteers, Ginger and Steve, lived near here. He taught engineering and carpentry, and she taught cooking and sewing.
21. Three of the girls in my group have accessed the Internet at their secondary school.

#end interview#



Sinix Tari, age 17

Annex 4: Interviews re stone-moving

Interview with James Mera

Date: 18 Dec 2012

Location: E. Ambae, Vanuatu; outside the Chief's home, sitting down in a small shelter of palm leaves

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Stone moving

Age of Respondent: 82

Profession: minister of the Anglican Church for 40 years

Note: this interviewee also provided information on pig killing; that information is presented in the previous section.

Mr. Mera stated the following:

1. He is the son of a chief, is very familiar with the history of the island and its chiefs, and has seen stone-moving ceremonies.
2. Stones are moved to a place where a chief is buried, to honor him. Only major chiefs get this honor.
3. Chiefs of the highest grade (Mambohanavulu) can select the stones that they want at their burial site, and have them moved to that site, before they die. Chiefs of lower grades do not receive this privilege.
4. Sometimes a stone is moved from the burial site of a chief who died long ago to the site of a recently deceased chief. This does not dishonor the old chief, rather it brings more power to the recently deceased chief.
5. There is a chief located near here, in Loganvilli, named Chief Nasil. He is of the highest rank, and was born in 1927. He is a member of the Church of Christ. He could move his stone now to his burial site, but the Church has ruled that he cannot perform this rite. Some of the elders disagree with this ruling.
6. Two other local chiefs, Simon and Willy, are of the highest rank, and they might move stones to their burial sites before they die.
7. Desirable stones are chosen because they are currently are located at the burial site of a powerful old chief; there is a "kastom" name that has been given to the stone; the location of the stone has kastom or magic power.

8. Important stones have names, a typical one might be Fatumala. When you pass such a stone, you should decorate it with leaves, because it is sacred.
9. Holy, important stones may be large or small. It is all right to move a stone if (and only if) you are a chief or have a family connection with the stone.
10. Chiefs here can trace their ancestry with confidence back to the 1500s, and can recite this genealogy. Stones are often connected to the family tree. The nearby “pillow stone” [a small, about 11 x 11 inch stone in an enclosure, reputed to have been placed by a founder of Ambae] dates back into prehistory. Some stones have definite dates.



The pillow stone mentioned in the text

11. Some stones are only moved 10-20 meters to a burial site. Such a move is performed easily. But some stones are moved up to 15 kilometers. For example, one large stone was moved from south Ambae to east Ambae, and this was quite a difficult move. A team for a large move might be up to 30 men.
12. The move starts with a ceremony and special sacred songs. Sacred leaves are put on the stone. Then the stone can be moved.
13. The move is done with jungle ropes (vines) and special songs. A move never uses a raft or boat. The move is always on land, and can be cross-country, on a trail, or on a road. [Note however that roads on Ambae, especially south Ambae, are so bad that they

recently destroyed a new Land Rover Defender in two months!] The move can be slow, and the stone can be left to “sleep” overnight at an intermediate location. A move can take up to a week.

14. A stone moving song in the east Ambae language is:

Ruru hia, ruru hia
Ruru hia, ruru hia
Anga [anka] welwelo

In English this means:

Pulling, pulling,
Pulling, pulling,
Almost there

15. No sledges or rollers are used in moving the stones. The stone is wrapped in vines, many of which are up to 3 cm thick. These vines are specially selected, are very strong, and do not break. They are called “karavato” or “stone ropes.” Up to 30 men pull on the vines to move the stones. Only men and boys pull, women are not allowed to pull. They are allowed to watch.
16. When the stone arrives at the correct location, the stone is “planted” by a special man, who is the only one who can perform that task. Songs are sung, and then the planting begins. The stones are planted, usually in a circle around the hole in which the chief will be buried.
17. Usually not just one large stone is moved, but rather up to twenty for a big chief. These large stones are arranged in a loose circle [rather like Stonehenge but without the capstones], and then smaller stones [about softball sized] are used to fill in the gaps. The large stones might typically stick up a meter out of the ground, and hence the small stones rise in a wall a meter high, so that the entire wall around the hole is about a meter high. The hole for the chief’s body, inside the circle, might be about a meter deep.
18. To build this sort of large grave for a chief might take a team of 2-3 men 10 days.
19. The most recent stone moving ceremony in east Ambae was in 1997. Previously there was a move in 1994. The current Paramount Chief of Ambae might wish to have a stone moving ceremony and a large stone grave created for him. He would certainly qualify. And he would qualify for creating his grave before he died. But this ceremony is optional and he might not choose to have any kind of grave on Ambae, especially since he spends most of his time in Port Vila on Efate. In general, a stone moving ceremony occurs in east Ambae only about once every generation. [Hence they are very hard to observe.]

20. Stones in east Ambae are never moved to a nasara [a sacred field]. [Such moves to nasaras do take place on other islands, such as Wala off Malakula.] Nasaras are marked only with sacred nemele trees or bushes, never with stones, in Ambae.
21. [At this juncture I went with the interviewee James Mera to see a nearby burial place, about 30 meters away. This was composed of two large stones, one of which I measured. It was generally rectangular, 144 cm above the ground, 72 cm deep, and 78 cm wide. (See picture below.) The interviewee told me that about 80 cm additional was “planted” in the ground, in addition to the 144 cm sticking up above ground. He stated that this deep planting was done to prevent the stone falling over in an earthquake. This grave belonged to Chief Vire, who died in the 17th century, exact date unknown. This large stone that I measured, was reportedly only moved about 50 meters to help create this grave.]

#end of interview#



**James Mera and the stone measured
by the author at the end of the interview above**

Interview with Ray Tari

Date: 17 Dec 2012

Location: E. Ambae, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Stone moving ceremonies

Est. Age of Respondent: 35

Note: this respondent also provided some information on pig killing, which is presented in the previous section.

Ray Tari stated the following.

1. He is a seaman and the brother of Jethro Webston, who now lives in Port Vila.
2. He observed a stone moving ceremony on east Ambae about 10-12 years ago.
3. A big chief died and a stone about 2 meters tall was moved to mark his grave.
4. The move was about 2 kilometers.
5. The song sung during the move said, "Pulling, pulling..."
6. The island spirits, Takaro and Werambutu, help in the move. Takaro is the male spirit of the island who lives on Mt. Manaro [the central volcano] and is male, wise and friendly; while Werambutu is unfriendly and female.

#end of interview#

Interview with Bradley Aka

Date: 18 Dec 2012

Location: Aka Beachfront Bungalow, Saratamata, E. Ambae, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Stone moving ceremonies

Est. Age of Respondent: 45

Bradley Aka stated the following.

1. He is the owner of the Aka Bungalow. He is from a village in the highlands of Ambae called Lovusiqwitaki.
2. This village has about 10 big stones. The biggest is 3 meters high, 1 meter wide, and 50 cm deep. It was probably brought from a creek about 10-15 km away.
3. Special songs are used to urge the spirits to help the stone movers in their task.
4. People say that when a stone is going to be moved, it is first placed in a stream bed to allow smaller stones to scour it smooth.
5. No custom ceremonies are held today beside the large stones, unless some descendants of the buried chief are there.
6. A modern chief might take on the name of an older, respected, deceased chief. To do this, he must sacrifice pigs with circular tusks, in a custom ceremony.

#end of interview#

Interview with Davidson Simeon

Date: 19 Dec 2012

Location: E. Ambae, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Stone moving ceremonies

Est. Age of Respondent: 33

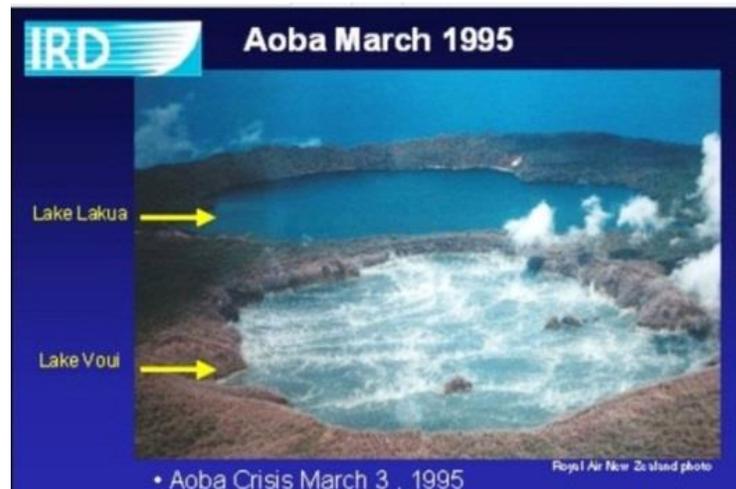
Davidson Simeon stated the following.

1. He has seen actual stone moving ceremonies.
2. The “ropes” used to pull the stone are actually jungle vines. They are often very large, 6-8 inches in circumference. The largest vines are as big as a breadfruit. The movers wrap the stone until it is about ½ covered in vines. Korovatu is the name of the vine.
3. No sledges or roller are used in moving the stones. Rather, the vines cover up some of the irregularities in the stones, making it a bit easier to move.
4. Last year he saw a stone moved in south Ambae. It was moved about 6 km. The move took all day, by a team of about 20 men. Larger stones take about 30-60 men.

#end of interview#

Note: see also interview with Alban Tari under pig killing for some info on stone moving

Annex 5: Interviews re volcano threat and emergency evacuation plans for Ambae



**The Ambae/Aoba eruption of 1995:
largely a false alarm**

Interview with Meteo Staff

Date: 26 Oct 2012

Location: Meteo Office (i.e., HQ of the Vanuatu Meteorological and Geohazards Dept.)

Interviewer: Lew Toulmin, with Jethro Webston of OGCI (Office of the Government Chief Information Officer)

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: Volcano threat

Respondents: Sylvain Todman, Meteo Volcanologist; Patricia Maweï, Meteo Staff

Mr. Todman, who has studied Ambae carefully, stated the following:

1. Vanuatu has six above-ground volcanos. The volcano on Ambae is one of the most dangerous, due to its explosive potential. In fact it is one of the most dangerous volcanos in the world, probably in the top ten.
2. Ambae is built up as a long fragile ridge, with spatter cones and vents along and just below the crest. A tomographic survey has not been done of the magma chamber below the main central crater, to determine its size, and crucially how far the lake above is from the magma chamber below. Such a survey is probably not practical, due to the terrain. Hence no one knows the vertical distance between the magma and the large lakes above; it could be a few meters of rock or hundreds and hundreds of meters. This is crucial, because if the magma and water come in direct contact, a massive explosion is possible, perhaps as big as half the size of Krakatoa, or larger. This explosion would be caused by the millions of tons of water in the lakes instantly exploding into its components of hydrogen and oxygen.
3. The volcano at Ambae, Mt. Manaro, and the entire island is so fragile, that it is not advisable to use dynamite anywhere on the island. This includes in the Lolowai area, which is an old maar filled with seawater, and the only potentially good harbor on the island. There is a coral reef blocking the entrance, and plans are to excavate or blow up the reef, to allow vessels with deeper draft into the harbor (only shallow draft vessels and boats can come in now). Meteo advises against using dynamite for this purpose.
4. There are five or six maars on each end of Ambae – shallow but wide (1-2 km) explosion craters. If a maar acts up again, the so-called “green” or “safe for evacuees” zones on either end of the island could be much more dangerous than the central “red” zone. Hence the source of the problem must be carefully identified.
5. Each of the six volcanos in Vanuatu should have about six monitoring stations. This would allow triangulation of the source of any magma movement or eruption. In fact Ambae has only one station, above Luvenvili village in east Ambae. [It was later learned that another station was added at the NE wharf

area.] Each volcanic island should have a team of 5-6 staff to analyze and maintain the output of the monitoring stations. In fact Ambae now has no such staff, and the data are transmitted to Port Vila in near real time, using the iGov Government Broadband Network (GBN) supplied by the Office of the Government Chief Information Officer (OGCIO). The data from the existing station has only been coming in for a few months. To install a new monitoring station takes 2-3 days, because it must be carefully located and a very solid foundation installed.

6. Meteo is not planning any expeditions to the volcano, since a one-time sampling of the water in the lakes is not very valuable, except during an eruption period. Rather what is needed is a long series of data from multiple monitoring stations. However, if the volcano starts to erupt again, a visit by Meteo may be warranted.
7. There is a ten year plan to install the required number of monitoring stations on Ambae and the other islands. Accelerating this plan is probably not realistic, due to the difficulties of construction and the lack of absorptive capacity of the country.
8. The dangers to villagers on Ambae from the volcano are numerous, and include: lahars, venting of SO₂, erupting maars, eruption of the central volcano, explosion of the central volcano, magma flows, pyroclastic flows and ash falls.
9. The lake at the top of the crater changes color, likely due to minerals entering from below. Red is brought on by iron infusing in the water, which leads to algae formation, which has a red bloom. Eventually gas entering the water kills the algae, causing a new change in the color.

#end of interview#



The “port” of Ndui Ndui, really an indentation on the rocky north coast. One of the concentration points for the possible evacuation of Ambae.

Interview with NDMO Staff

Date: 26 Oct 2012

Location: NDMO Office (i.e., HQ of the National Disaster Management Office, Port Vila, Vanuatu)

Interviewer: Lew Toulmin, with Jethro Webston of OGCI

Interview conducted in: English

Quality and understandability of conversation: Good to fair

Topic: Volcano threat on Ambae

Respondent: Gideon Maen, Senior Staffer of NDMO

Mr. Maen, who is familiar with Ambae, stated the following:

1. The UN has rated Vanuatu as the most threatened and disaster-prone country on earth, since it is subject to almost every major disaster known to man, including cyclones, earthquakes, volcanic eruption, flooding, rising sea levels, occasional droughts, etc.
2. The basic structure of emergency management in Vanuatu is the NDMO, which is above the Provincial Disaster Committee (PDC), which is above the Area Council (there are six area councils in Penama Province, which contains Ambae); which is above the Community Disaster Committees (CDCs) (of which there are about 20 on Ambae).
3. The NDMO has done absolutely no work in Penama Province for many years, since the 2005 eruption of the Ambae volcano, because it has few resources and is focused on the more immediate dangers presented by the Ambrym volcano and threats in the South.
4. When the NDMO was established, and took over emergency management from the Police, many documents were lost, including any recent emergency plan. [At this juncture he looked for a recent plan and was unable to find any plan more recent or extensive than a 1997 document of about 22 pages.]
5. If Ambae residents had to be evacuated off the island, the main locations would be Santo, Pentecost and Maewo. If a major eruption threatened, the French Navy would likely supply a naval vessel from nearby New Caledonia. This would be a major asset in evacuation, communications, medical support and emergency management. The vessel that would be sent has several helicopters, which could be used for emergency and medical evacuation. [Note: since NC may become an independent country in 2014, depending on a referendum, this source of support

may disappear. Vanuatu does not have a navy, only one fisheries patrol vessel about 30 meters long, donated by Australia.]

6. There is no tsunami plan for Ambae, and probably none is needed, since much of the island has few beaches, and has many cliffs which face north and west, facing the main tsunami threat.
7. Rising sea levels are a threat to Ambae, especially in the northeast, and ideally a large berm or seawall should be erected there.

#end of interview#



Lolowai harbor, East Ambae, a large maar now open to the sea

Interview with Manson Tari, Senior Training Officer, Penama Province

Date: 18 Dec 2012

Location: Penama Provincial headquarters, Saratamata, East Ambae, Vanuatu

Interviewer: Lew Toulmin, with Alban Tari of East Ambae

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: Volcano threat on Ambae

Est. Age of respondent: 38

Note: no close relation to the other "Tari" persons interviewed or present

Mr. Tari, who is familiar with Mt. Manaro and Ambae, stated the following:

1. There is little or no planning in place for volcanic evacuation on Ambae
2. Instead, the current focus is climate change. While much of Ambae is surrounded by cliffs, the north eastern shore is low with volcanic rock beaches. This side is vulnerable to rising sea levels, and the ideal protection would be to build a (very expensive) berm along the entire northeastern shore and around Lolowai harbor. Since there is no adequate road around the island, building a massive berm or dyke seems unlikely.
3. Last month, a climate change workshop was held in Santo and good ideas shared, and last year the UNDP/UNICEF provided an officer in this area.
4. There is a Red Cross disaster officer on climate change.
5. Tari estimates that this year alone the sea has risen 50 centimeters around Ambae. [Sic: this estimate seems wildly high.]
6. Trees on the east coast have been killed by the rising tides.
7. Re the volcano, there was a plan in 2005, and it was used in that evacuation. There were 10 evacuation centers around the coast. The government provided transport by sea, which was very expensive, involving the hiring of many vessels and providing food rations.
8. The evacuation centers were usually schools, clinics and community centers.
9. There are still many problems with provincial government. For example, the headquarters building in which we are sitting has no power and light, and has had none for two months [!].
10. If there was an evacuation tomorrow, it would probably use the same approach as in 2005.
11. There is one part time person, the Provincial Planner, who does emergency management work for the Province. He is not here now.
12. Communications were a challenge in 2005. They would be much better now, since most of Ambae has cell coverage and many families have at least one cell phone.

13. If evacuation off island was needed, the majority of people would go to Maewo and Espiritu Santo. Pentecost is too crowded already.
14. The three islands of Penama Province (Pentecost, Ambae and Maewo) have ten area councils. There is a Provincial Disaster Committee, chaired by the Provincial Planner. There are four area councils on Ambae, one for each compass quadrant of the island. There is no activity in disaster planning or activities at the community level.
15. He has never heard of an "Ambae Disaster Trust Fund" or similar.
16. Re telecoms, the iGov program [the Integrated Government or "e-government" program] has had a lot of positive impact. It reduces cost and improves communications with Port Vila. It needs more expansion and improvement, however.
17. The iGov telecom link now goes to this HQ building and to the nearby Department of Public Works HQ. Hospitals, NGOs, schools, and other government departments do not have any iGov network access.
18. When this HQ building has power, then the iGov network is reliable. But without power, it does not work at all. All Provincial staff trek over to DPW to send emails via the iGov network. They use a conference room there, where the terminal is located. There is also a wireless WiFi network there. Service is free.
19. At the Lolowai Hospital, service is available but one must pay 300 Vatu (about \$USD 3.30) for each session.
20. The reason for the lack of power here is that a modern Australian generator was installed, made by Stanford and Willson. This failed and no parts were locally available. A vessel is on its way, reportedly bringing the parts. An EU donor project will pay for the parts.
21. Re cell phone coverage in Ambae, there are a number of towers around the island. These provide fair to good coverage in the areas where the around-island "road" is present. [There is a road shaped like a "C" that goes around all of the island except the north center, where there is only a trail. However, all of this road is dirt and gravel, and the southern parts are so rough as to be largely impassable. Even 4WD Land Rovers are quickly destroyed by this road.] The two areas of the island where there is little or no cell coverage are in the north center in the walking track area, and in the center near and in the caldera. The TVL cell provider also has poor service in the south near the coast. The Digicel provider's coverage in the west and far southwest is also spotty.
22. The Provincial government has pushed for building a road up to the volcano rim, to encourage tourism. It is not clear if the road would come in from the north, south or west. A feasibility engineering study is needed.
23. Supposedly, by 2015 an AusAID-funded road will rebuild and improve the C-shaped road, although the northern track will not be converted to a road.
24. No other Provincial officers are available for interview today.

#end of interview#



Provincial government headquarters in the tiny provincial capital of Saratamata, east Ambae

Interview with Chief Isaac Bani

Date: 19 Dec 2012

Location: Loganvili Village, E. Ambae, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Volcano threat

Est. Age of Respondent: 55

Chief Bani stated the following:

1. He is a Teve Teve chief, the middle level of a five grade system in his area of east Ambae.
2. He represents Ambae at the National Council of Chiefs, which meets in the capital, Port Vila, but he lives in east Ambae. The Council is asked by the Government to discuss matters such as custom lands, upcoming bills in Parliament, and spending priorities.
3. In 2005 during the volcano threat evacuation, the Provincial Government (PG) played the leading role in planning and executing the evacuation. The PG worked mainly through the chiefs, since that is the best way to reach the people and get them to do what is needed.
4. There is a provincial disaster officer located at the provincial capital of Saratamata on east Ambae.
5. There are no active Community Disaster Committees on Ambae that he is aware of. Since the eruption of 2005, the CDCs have fallen into disuse. Any future evacuation or emergency would be run through the chiefs, at the direction of the PG and the National Government (NG).
6. Funding for evacuation costs would come from the PG and NG. He has not heard of any Ambae Disaster Trust Fund. [I asked about this because it was mentioned in the literature of the evacuation.] He thinks if there was such a fund then it was diverted to other more pressing needs.
7. I asked if the latest disaster plan for Ambae's volcanic evacuation was 1997, the only document I had been able to find at NDMO. He stated that he thought there was a later one, but wasn't sure.
8. He went up to the top of Mt. Manaro about a year ago, when villagers heard a big noise and a team was sent to investigate. It took about 4 hours of walking and climbing. The scientists on the team told them all to not stay longer than about 15-30 minutes beside the crater lake, because they were concerned that the lake might explode. The water in the middle of the lake was boiling.
9. Monitoring machines have been left beside the lakes at the crater, but they have been destroyed, perhaps by the "wise men of the volcano," who got angry at the intrusion.

10. There is now a monitoring station at his village of Lughavili, in east Ambae, and it is only a few months old. Villagers are paid to keep it clean and brush free.
11. You can take a truck up to Ambanga village north of the volcano. From there you must walk and climb about three hours to the crater rim, then another hour down into the caldera beside the three lakes.
12. The color of the lake [Lake Vui?] was light blue when he last saw it in January or February of 2012, on the monitoring visit.
13. The group that went up included police, chiefs, environmental officers and health officers. Around the top of the crater rim, all the green vegetation was dry, black and covered with grit, and smelled like sulphur. [This indicated that an explosion or SO₂ emission had taken place.] This seemed to confirm the report from the Ambanga villagers that an explosive noise was heard.
14. The best times to visit the caldera are in June, July and August.
15. NDMO uses helicopters to visit the crater during an emergency.

#end of interview#



**Smoke rising from Lake Vui in the caldera of
Mt. Manaro in the 2005 eruption**

Interview with Jabbet Favaof East Ambae

Date: 11 Jan 2013

Location: Vusnavagika village, E. Ambae, Vanuatu (he is not a resident of this village, but was visiting to see the pig-killing ceremony)

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Volcano threat, stone moving, history of Ambae

Est. Age of Respondent: 35

Jabbet Fava stated the following.

1. He is from the north side of Ambae, west of this village.
2. He was in his village in 2005, when a monitoring machine in Port Vila said the volcano was having a problem. The villagers were contacted by cell phone and some of those to the north and south of the volcano were evacuated. They went to the eastern and western parts of the island.
3. The monitoring stations did not indicate that the maars on either end of the island were dangerous at this point – it was the central volcano that was the threat.
4. Thick black smoke could be seen coming up from Mt. Manaro. There was no earthquake.
5. Black ash and sand rained down from the sky.
6. In Port Vila there is a national disaster committee, which sent experts during the 2005 eruption to Ambae. Some of the experts said that if the magma below the lake interacted with the lake, the lake could explode and the island could break in two. So evacuation to the ends of the island is necessary.
7. Cell phone coverage at the north side of the island where the trail is, and no road exists, is poor to non-existent. It may be possible to get a signal if one walks to the seaside, and a signal is acquired from towers on Pentecost.
8. It took a week to evacuate the threatened villages below the volcano. The evacuation started with the villagers closest to the volcano. No villagers were evacuated to Espiritu Santo or Maewo or other islands.
9. Some older villagers and some families refused to evacuate. But a very low percentage of the total population that was told to leave refused to do so. There was no forcible relocation.
10. He evacuated. He had to walk to a concentration point. The officials fed him and other refugees, and gave them water. The local Member of Parliament was there, handing out sacks of rice and beef.
11. Most of the evacuees stayed in schools. The schools were generally closed anyway, and were thus available for using as shelters.

12. Lessons learned were: better and more accommodations were needed; and active disaster committees were needed to help plan and be responsible for arrangements; chiefs need to be the leaders of the committees.
13. There are no real Community Disaster Committees on Ambae now.
14. There was an Ambae Disaster Trust Fund set up in 2005, but he has heard nothing of it since.
15. In some of the schools, a program of NDMO was put on telling children what to do in emergencies and where to go. A school at Epule on north Efate put together a documentary on TV on disasters.
16. There is a weekly program on Radio Vanuatu, one hour long, on disasters, that discusses preparedness, often for cyclones.

STONEMOVING:

17. The burial stones for Chief Rupert were mostly dragged to his site, although some were brought by truck.
18. One two meter high stone was dragged by a team of 20 men. No sledge or rollers were used.
19. My father is a chief but he may not get a stone moving ceremony, since he may not have a high enough rank.
20. Even the Paramount Chief of Ambae may not get a stone moving ceremony, because he does not really live on Ambae anymore, lives in Port Vila, and is rather Westernized.

OTHER MATTERS

21. Ambae had a French presence before and during WW II.
22. There was a mission school and church at Nangire and Lolopuepue.
23. French nuns and priests ran these schools.
24. The only French hospital in the area was on Pentecost.
25. Men on Pentecost, Tanna and Malekula wore penis sheaths, while no men ever wore penis sheaths on Ambae. On Malekula the Big Nambas and the Little Nambas wore the penis sheaths.

#end interview#

Interview with World Vision staff

Date: 8 Mar 2013

Location: World Vision HQ, Port Vila, Vanuatu (interview by phone)

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: World Vision activities re disaster response on Ambae and elsewhere

Respondent: Simon Boys, World Vision

Mr. Boys stated the following:

1. World Vision (WV) is an NGO. It is active in disaster preparedness only on south Espiritu Santo, mainly on Malo island. It has no disaster activities on Ambae.
2. On Malo WV is doing disaster awareness, focusing on cyclones and flooding, identifying safe locations for evacuation, and setting up a community disaster center.
3. On south Santo WV has picked 15 communities for training and assistance.
4. WV needs more funding to expand this activity out to Ambae and other islands, and to expand into climate change work.
5. Communications with the affected area(s) of a disaster is a problem, and there is never enough bandwidth and often no real communications at all. However, the NDMO has successfully trialed a system of coded messages to be sent via SMS over mobile phones. This code is a very short number code, such as "123" means "send food and water immediately."
6. He recommended speaking to Alex at Oxfam about this system.
7. He agrees that a major problem will be bandwidth and comms during the response phase of a major disaster, as help, goods, teams, ships and aircraft flood in, and all demand bandwidth to coordinate.

#end interview#

Interview with Oxfam staff

Date: 8 Mar 2013

Location: Oxfam HQ, Port Vila, Vanuatu (interview by phone)

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: Oxfam activities re disaster response on Ambae and elsewhere

Respondent: Alex ??, Oxfam

Alex stated the following:

1. Oxfam is an NGO. It has two staffers placed inside the NDMO. One of these, Jennifer Worthington, is familiar with the SMS coded communications system recently developed. A simulation test of the system was recently conducted and it worked well.
2. Oxfam is not active in DRR (Disaster Risk Reduction) on Ambae. Save the Children is.
3. Oxfam is active in the Vanuatu Humanitarian Team (VHT), a group of NGOs that coordinates disaster preparedness. The Red Cross is a member of VHT.

#end interview#

Phone Interview with Save the Children staff

Date: 8 Mar 2013

Location: Save the Children HQ, Port Vila, Vanuatu (interview by phone)

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: Save the Children activities re disaster response on Ambae and elsewhere

Respondent: Mifhael Taraelulu, Save the Children staff

Taraelulu stated the following:

1. Save the Children (SC) is an NGO.
2. SC is active in DRR (Disaster Risk Reduction) on Ambae. The focus is on educating children, especially in the 4-5-6 grades, on DRR and climate change. SC has helped develop School Safety plans, so the kids and teachers know what to do in an emergency. This was done in cooperation with the Provincial Education Officer (PEO). A secondary focus was linking this to the community, so children would lobby their parents to work on disaster preparedness.
3. SC has set up two offices on Ambae, and there has created Youth Clubs, which focus on reproductive health and responsible sexual activity, and disaster preparedness.
4. SC works with Community Disaster Committees, where they exist, and wants to encourage setting up CDCs. But it is the Red Cross and NDMO that actually set up the CDCs.

#end interview#

In-Person Interview with Save the Children staff

Date: 14 Mar 2013

Location: Save the Children HQ, Port Vila, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: Oxfam activities re disaster response on Ambae and elsewhere

Respondent: Geoff Robinson and Mishael Garaelulu, Save the Children staff

Robinson stated the following:

1. Save the Children (SC) is focused on Disaster Risk Reduction (DRR), emergency education, and emergency preparation.
2. All of these activities are in the education sector, and SC works closely with the Ministry of Education (MoE).
3. Areas of focus include minimizing the impact of disasters and restoring normal education as quickly as possible. This involves policy development, HR capacity building, systems development, and working directly with schools in safety planning.
4. DRR is being integrated directly into safety planning. This is being piloted in Efate in 10 schools and in Ambae in 27 schools, as well as in some schools in Sola in TORBA province.
5. Climate change adaption curriculum has been developed and put into the schools, and is increasing awareness. The material has been tested in classrooms and has been used in planning.
6. Grade 4-6 are the targets, with the focus being on integrating the material into arts, policy, science and math instruction.
7. On Ambae 100% of the primary schools are covered, with both French and English primary schools having the material.
8. Positive evaluations of the materials have been received.
9. The material needs to be "scaled" out to many more schools on other islands, and utilized more by MoE and GoV in disaster planning.
10. CDCs are not present much or at least not active on Ambae, at present.
11. CARE and Red Cross are active on Ambae. During recent cyclones, their on-island representatives did a good assessment and had it ready, even before the off-island team could arrive. The on-island team presented their report on a flash drive to the incoming off-island team. This demonstrates considerable on-island capacity.
12. In a mega-disaster, NDMO has the lead. SC would focus on the education sector, especially on fund-raising and direct support. This latter would be on providing reinstated educational facilities, and child-safe and child-friendly locations.
13. Cyclones, if they come, often arrive over the Christmas break. This is good, because the schools are empty, the boarding schools can be used for shelters, and facilities are not immediately needed for education.

14. Usually one entire community would be relocated to one or two boarding schools, thus preserving the community intact.
15. In the 2005 evacuation, about 1.5% of the population of Ambae refused to evacuate, when ordered to do so. Two elderly ladies died as a consequence. Police told residents that they must evacuate, or would be arrested, but some refused anyway. Evacuations were done to the “green” safe areas on the east and west ends of Ambae. No discussions were heard about the maars at those locations.
16. During the evacuation, the population was confused by the messages. The chiefs organized meetings to explain what was needed. The elderly and sick were evacuated first. Trucks were used but the poor roads hampered progress.
17. The establishment of the Vanuatu Humanitarian Team (VHT) has helped with disaster planning. In 2011 cyclones Vania and Atu were problematic, and it took four weeks to do a damage assessment. In the later cyclone Jasmine, after the VHT was created, a similar damage assessment was done in only two days.

#end interview#

Interview with Vanuatu Red Cross staff

Date: 12 Mar 2013

Location: Vanuatu Red Cross HQ, Numbatu area, Port Vila, Vanuatu (in person interview)

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Excellent

Topic: Red Cross activities re disaster response on Ambae and elsewhere

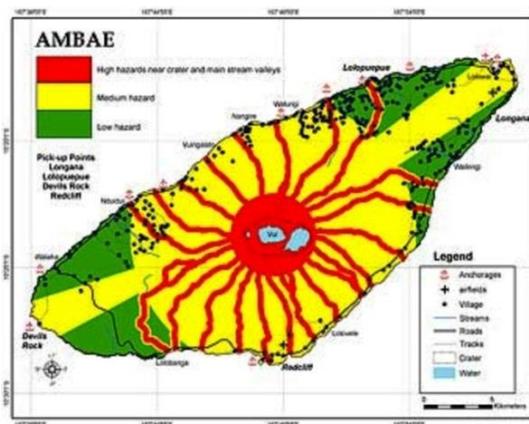
Respondents: Jacqueline DeRoin de Gailland, Director; and Augustine Garae, Red Cross preparedness expert (note: this is not the same Augustine Garae as the chief interviewed on Ambae)

The Vanuatu Red Cross (VRC) staff stated the following:

1. VRC is an NGO.
2. VRC has more resources, better staff training, and less staff turnover than NDMO, hence VRC often effectively takes the lead in disaster risk reduction (DRR) and response.
3. Augustine Garae is a good example of a well-trained ni-Van expert in disaster; he has more experience and training than anyone at NDMO.
4. VRC has some funding from OFDA (Office of Foreign Disaster Assistance, USAID), although the biggest donors are AusAID and NZ Aid.
5. After the 2011 Cyclone Vania, to which the response was slow and not very effective, and could even be called “a nightmare,” OFDA and the US Embassy in PNG paid for a newly built VRC center in the affected area of Torba province. Benjamin Hemingway of OFDA’s Bangkok office was the contact person.
6. The Vanuatu Humanitarian Team (VHT) was created after the ineffective response to Cyclone Vania. VHT is supposed to have a quick response capability. VRC is on the VHT, as are most other major NGOs. The VHT has a number of NGOs which really have no disaster role, but wanted to be involved because they are “humanitarian.” This leads to a bit too much “tok tok” and not enough action. VHT meets on average about once a month. Jacqueline will ensure that I get invited to the next meeting as an observer.
7. The VRC director is on the NDMO National Disaster Committee.
8. Turning to communications, VRC has 6 sat-phones (Iridiums) and various HF radios.
9. METEO has recently demo-ed a new SMS system which sends out short mobile phone messages to phone users, re impending tsunamis or other hazards. It apparently works well but VRC does not yet have all the details.
10. There is a national disaster response plan. It is in draft form, and is under review. A copy was not readily available at the VRC office. SOPAC is involved in the re-drafting. The national plan is all hazard and rather high level and general. It is planned in the future to have particular “contingency plans” which are scenario and island based, and much more specific. A detailed Ambae volcano response and evacuation plan falls into this “contingency plan” category, and is not yet drafted, although it is understood that it is needed.

11. VRC has two offices on Ambae, with storage of supplies, logistics training, and DRR activities. During the eruption of 2006 on Ambae, VRC played a major role and worked closely with NDMO. VRC did damage assessments, registered evacuees, and managed the evacuation camps.
12. There is an Ambae Volcano Support Plan more recent than the 1997 plan I found at the NDMO. However, it is in draft form and is under review, and no copy is readily available at the VRC office. Augustine Garae will try to locate a copy for me.
13. VRC staff have not heard of the “Ambae Volcano Disaster Trust Fund” or similar, mentioned in the academic literature.
14. The Community Disaster Committees (CDCs) that were active after the 2005 evacuation on Ambae have now pretty much disappeared, although it is VRC’s goal to re-activate them.
15. Mt. Manaro is still at Level 1 of hazard, and has not gone back down to Level 0. Level 2 means “be ready for imminent evacuation,” and Level 3 means “you should now be at the Green Zone safe areas, to avoid volcanic hazards and flows, and for possible pickup and evacuation to other islands.”
16. Daily flights to and from Ambae by Air Vanuatu often provide updates on volcanic activity in the caldera. Village volunteers also provide information, as do the METEO monitoring stations on the volcano.
17. I should talk to METEO/Geohazards about whether a visit to the caldera lakes is warranted.
18. VRC understands that some of the Green Zones could in fact be very hazardous if the volcanic activity was centered on the maars at the extremities of the island.
19. The Green Zone map of Ambae [see below] was done many years ago, is not digital, not up to date, and needs to be re-done using modern computerized techniques. A good modern map has been recently completed for the Ambrym island and volcano, but making a similar map for Ambae and other hazardous islands is perhaps 2-4 years away, and depends on securing funds.

#end interview#



Ambae and its green (“safe”), yellow and red (danger) volcanic zones



SARATAMATA, PENAMA PROVINCE - Branch building contains emergency relief items and provides a hub for services.

Photo courtesy of Vanuatu Red Cross

Statement from Meteo Describing Minor Eruption of Mt. Manaro That Occurred During the Bali-ha'i Expedition Period



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National Geophysical Observatory



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Bulletin blong Alert blong volkeno /Volcano Alert Bulletin /
Bulletin d'Alerte Volcanique

Bulletin N°1, 07 February 2013

Lombenben volcano activity, Manaro, Ambae island, "15°40'0"S 167°83'0"E, Summit (1496 m)

According to reports by the Ambanga villagers to the Observatory, the Lombenben volcano entered a phase of minor activity since December 2012. The site observations made by the Geohazards team from 30th January to 2nd February 2013 confirmed that the activity of Lombenben has changed significantly (See Fig 1 and Fig 2). The OMI satellite images of January show that the volcano was strongly degassing during the day of 18th and 25th January 2013 and it is still continuing slightly. The analysis of data retrieved from the respective volcano monitoring station confirms that the volcanic activity has not ceased.

These observations confirm that the Volcanic Alert Level of Lombenben volcano remains at Level 1, the area of risk remains near the Manaro Voui crater. This volcano activity may remain as it is and decrease but there is a low probability of neglecting the gradual increase of the alert in the coming months

The Vanuatu Meteorology and Geohazards Department continues to closely monitor the volcanic activity of Lombenben and it is highly recommended for all visitors and travel agents to consider this information until the next Alert is issued by the end of February 2013.

A Non-comprehensive Annotated Bibliography of Items Relating to Volcanism and Emergency Management on Ambae

Maud R. Goud Collins, "Volcaniclastic Sediments of the North Aoba Basin," Chapter 7 in H.G. Greene et al., *1994 Proceedings of the Ocean Drilling Program, Scientific Results*, Vol. 134: Two drill sites in the basin between Ambae and Maewo revealed volcanic deposit layers as much as 42 meters thick, dating back to the late Miocene period. Tephra falls interbedded with hemipelagic sediments have dominated recent sedimentation.

Shane J. Cronin et al., "Community Emergency Management Put to the Test: the 2005 Ambae Eruption, Vanuatu, Southwest Pacific," *Research Materials, Vanuatu Community Emergency Management Evaluation*: the 2005 evacuation of about 3300 persons to refugee centers in two parts of the island in just eight days was "remarkable" and "astonishing." Only low levels of unrest in a few of the centers occurred.

Shane J. Cronin et al., "Participatory methods of incorporating scientific with traditional knowledge for volcanic hazard management on Ambae Island, Vanuatu," *The Bulletin of Volcanology*, 2004, Vol. 66, pp. 652-668: gender-separated Participatory Rural Approaches to combining and communicating science appeared to work, and were more accepted by two local test communities than "top down" science lectures.

Shane J. Cronin et al., "The Day Mount Manaro Stirred," *Horizon: A World of Science*, Vol. 5, No. 4, Oct.-Dec. 2007: A relatively upbeat account of the 2005 eruption and evacuation, stating that the emergency response and evacuation was more successful in 2005 than in 1997, due to participatory emergency management workshops and training. States that Mt. Manaro is rated as one of the ten most dangerous volcanos on the planet.

National Disaster Management Committee, *Vanuatu Operational Support Plan: Ambae* (Port Vila: NDMC, 1997): most recent emergency management or evacuation plan relating to Ambae that was found in numerous interviews; quite outdated and now irrelevant.

Karoly Nemeth and Shane J. Cronin, "Phreatomagmatic volcanic hazards where rift systems meet the sea, a study from Ambae Island, Vanuatu," *Journal of Volcanology and Geothermal Research*, 2008: the eruption in 2005 initially focused attention on the crater, and the dangerous maars on either end of the island, which had erupted as recently as 300 to 500 years ago, were ignored. These areas should not be considered as safe zones, since they are subject to possible major explosions and eruptions.

Karoly Nemeth and Shane J. Cronin, "Surtseyan style eruption in the Ambae (Vanuatu, New Hebrides) in 2005 December and its implication to volcanic hazards and emergency management on an ocean island," *Volcano International Conference, Canary Islands*, 2006:

explosions in 2005 through Lake Vui built a new central island 140 meters high within the lake in just eight days, on top of the previous island, and threatened to cause the lake to overflow, thus causing deadly lahars to flow down the sides of the volcano. Previous eruptions have been documented in 1575, 1670 and 1870.

Patrick D. Nunn et al., "Vanished Islands in Vanuatu: New Research and a Preliminary Geohazard Assessment," *Journal of the Royal Society of New Zealand*, Vol. 36, No. 1, March 2006, pp. 37-50: volcanic activity near and on Ambae is so substantial that entire islands have risen and sunk at either end of Ambae. The island to the west disappeared about 300 years ago, and its surviving residents moved to Ambae. The island to the east disappeared before 1872, perhaps in the 1700s, and its few surviving residents moved to Maewo. Local legends about disappearing islands in Vanuatu have now been verified by science. It is possible that rapid disappearances of islands, due to "island flank collapses," could cause catastrophic tsunamis. Caldera activity on top of Mt. Manaro caused the destruction of villages in south Ambae, via lahars (mud flows from the crater lakes) as recently as 100 years ago.

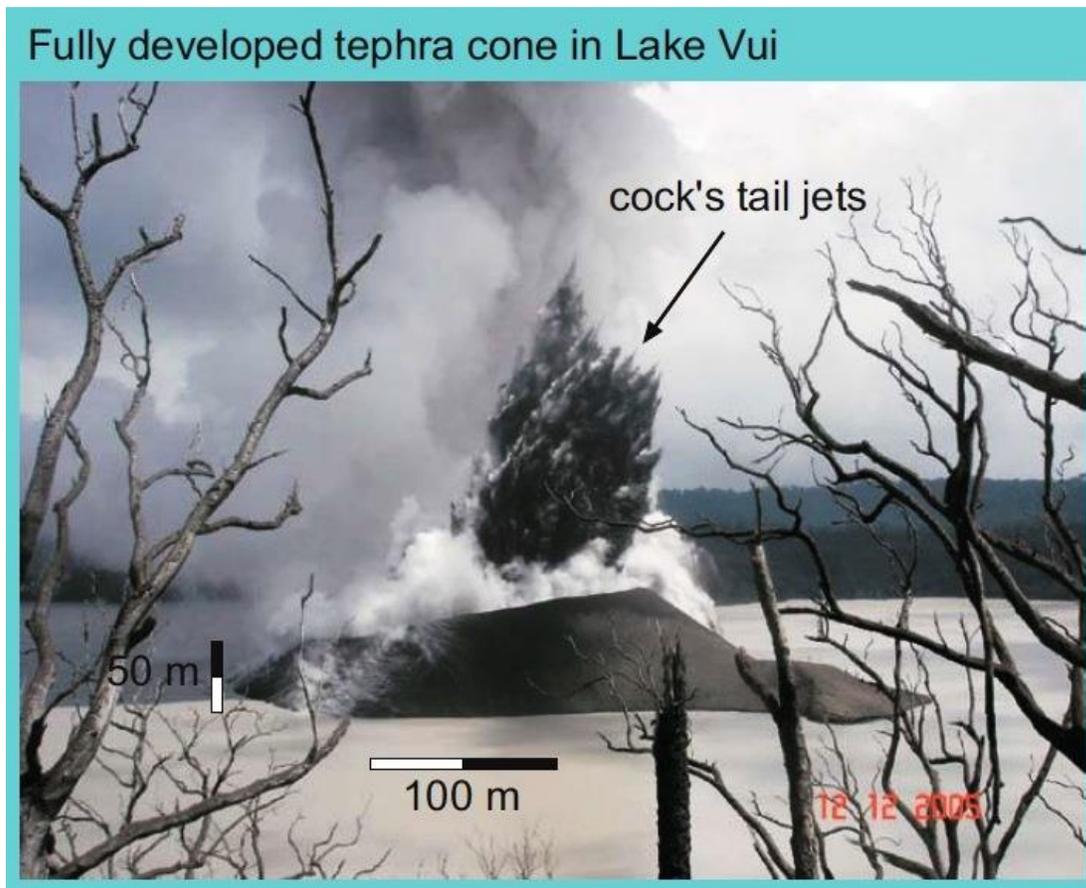


Photo of Lake Vui erupting in 2005, from Nemeth and Cronin, 2006



Lake Vui on top of Mt. Manaro has turned from blue to red to grey at various times. The change can happen in just a month. The lake beside Lake Vui, to the left, is a normal fresh water lake.

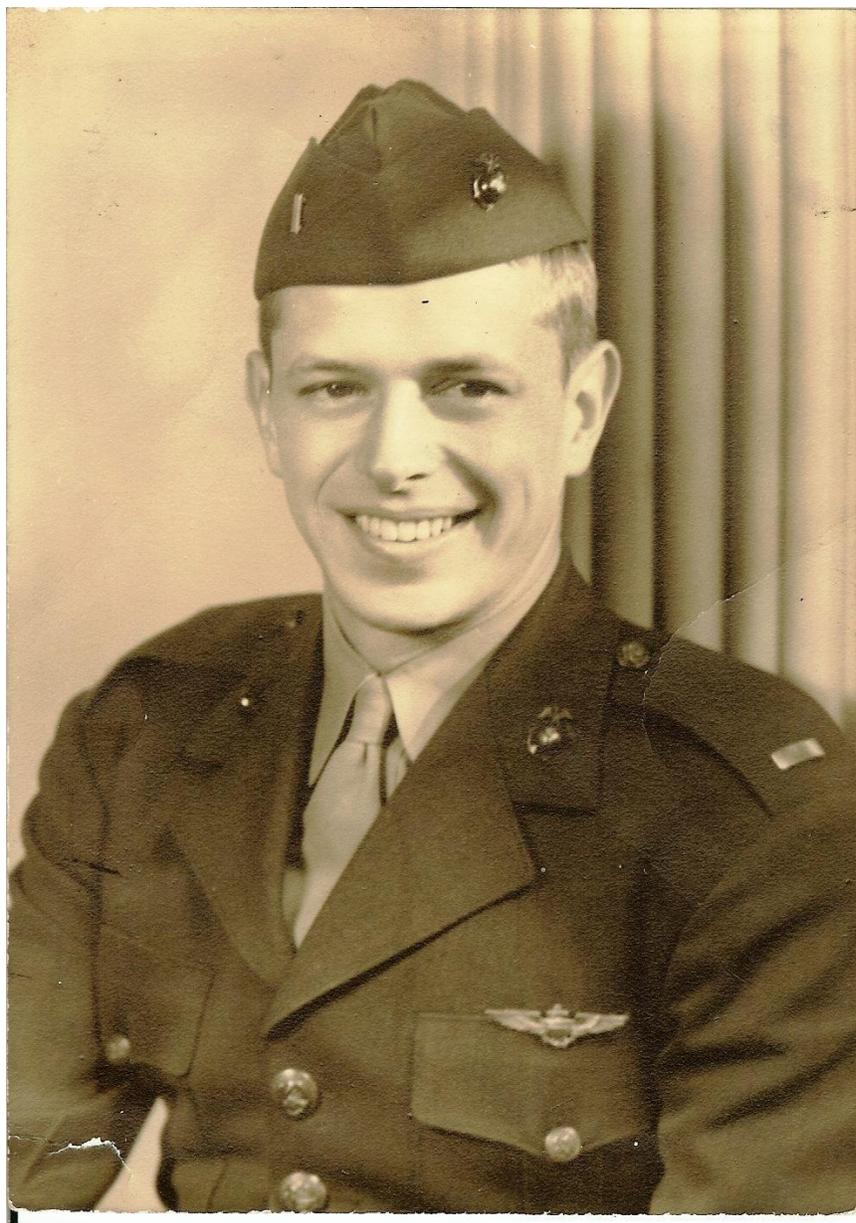
Annex 6: Observations, items and interviews re aircraft and other wrecks on or near Ambae



The author is co-founder and Research Director of the Missing Aircraft Search Team, which participated in researching and attempting to identify the Nanako plane

- **Items re the Non-fatal Crash of Lt. John E. Date, Jr. on Aoba (Ambae)**
- **Information and Pictures on Parts and Part Numbers of Plane Wreckage in Nanako Village, West Ambae; Now Proven to be the Lt. Date F4U-1 Corsair**
- **Photos of the Corsair Being Re-created at the Classic Jets Fighter Museum**
- **Information re the Death of Lt. John E. Date, Jr.**
- **Information Re the Fatal Crash of Lt. Leonard E. Kinnan Near the Center of Aoba Island, 10 Jan 1944 In His SBD Dauntless Dive Bomber**

**Items re the Non-Fatal Crash of Lt. John E. Date, Jr. USMCR
on or near Aoba, on May 17, 1944**

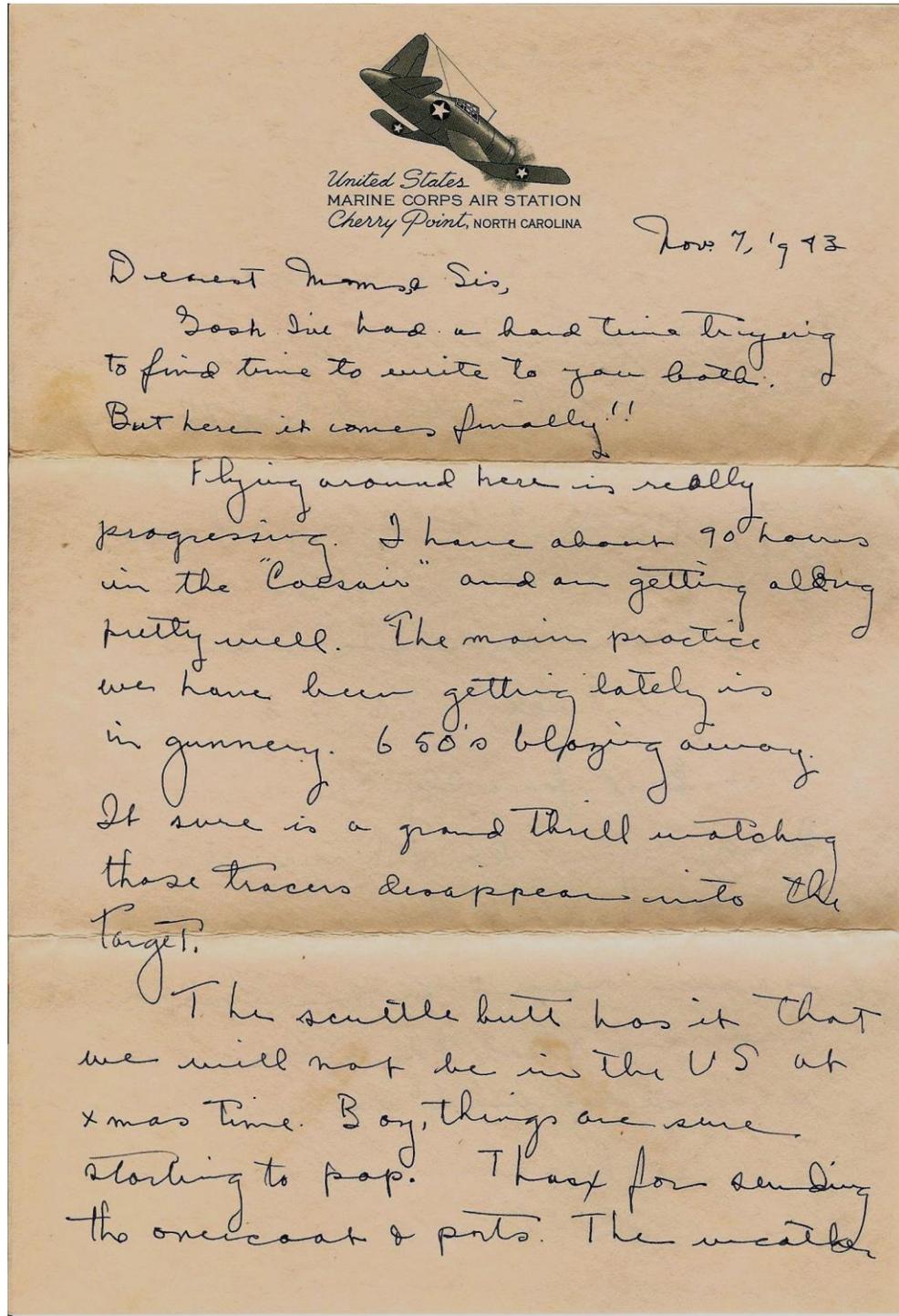


Lt. John E. Date, Jr., USMCR



Six Marines from the Twin Cities area now serving with the same air group at an advanced base in the Pacific are pictured here. Front row, left to right, Second Lieutenant Paul J. Aurelius, 418 Jenks avenue, St. Paul; First Lieutenant Walter W. Laidlaw, 4138 York avenue, Minneapolis; Captain J.E. McDonald, 232 Amherst avenue, St. Paul. Back row, Captain Lawrence O. Larson, 511 Wilson avenue, St. Cloud; Second Lieutenant George S. Pillsbury, of Minnetonka, and First Lieutenant John E. Date Jr., 3747 Bryant avenue, Minneapolis.

(Below) Two Pages from Lt. Date Letter Showing Corsair Image and That He Has "90 Hours in the Corsair"



going to the Duke: No Carolina
game next weekend. That
will change the monetary
a little!

Will jump it's @ 2130
and time for the bid to hit
the sack.

Love of Love & X's
John

P.S. Let me know when
you hear from Bill.

(Below) Selected Pages from John E. Date Jr. War Letter Showing He Has 200 Hours in Corsairs, is Shipping Out to the New Hebrides, is "Aching to get a crack at the Zeros," and Brought an F4U Corsair in via a Dead Stick (No Engine) Landing "Without Much Trouble"

U. S. GRANT HOTEL

BARON LONG
PRESIDENT

HOWARD WILLIAMS
MANAGER

BUILT BY U. S. GRANT JR.
IN HONOR OF HIS DISTINGUISHED FATHER

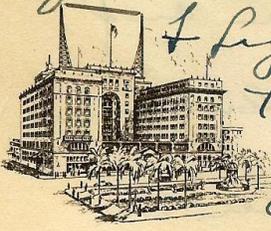
SAN DIEGO, CALIFORNIA

FEB 14, 1944
0210

Dear Dad,

Received your letter and figured it is just about time that your smoothless son dropped you a line. I was awfully sorry that you haven't been feeling well lately, but I know you will snap out of it.

Dad had I hardly know where to start. I am glad that you liked the fountain pen and pencil set. Also the ties, I don't know whether you appreciated them but I figured you would like them. My own choice you know 😊



ASSOCIATED HOTEL-BILTMORE-LOS ANGELES, CALIFORNIA

Right now I am in the
mess of said hotel waiting
for Bill Rutherford to show
up and give me a ride
back to the base. Our

squadron has practically
been disbanded. Thirty of us
have received orders to
combat as replacements.

I imagine that by the time
you get this I will
be riding the waves on
my way to the New Hebrides
to join a squadron and
from there to an advance
base somewhere further on.

U.S. GRANT
HOTEL



BARON LONG
PRESIDENT

HOWARD WILLIAMS
MANAGER

SAN DIEGO, CALIFORNIA

BUILT BY U.S. GRANT JR.
IN HONOR OF HIS DISTINGUISHED FATHER

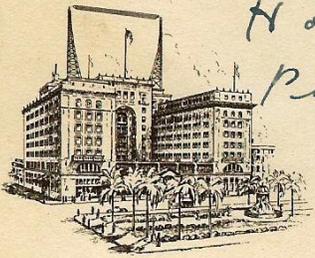
A
we will get ^A an file of
it when we get to the
islands. I have all
the confidence in the world
in the F4U and I know
it will bring me back to
the states with a whaleskin.

I had one cut gum in
it at 2000 feet over
El Centro field and
brought it in dead steady
without much trouble.

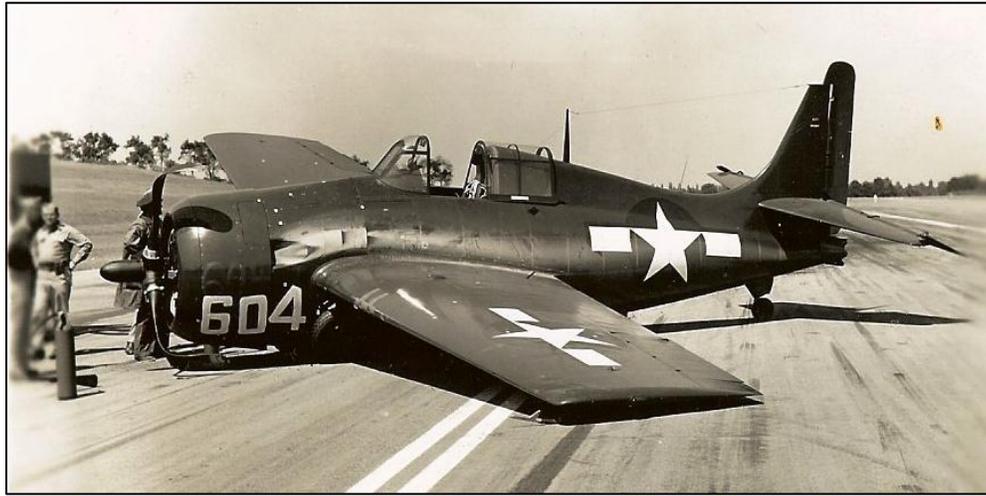
went to "Jane Eyre" with
Joan Fontaine the other site
of Grouman's Chinese in
Hollywood. Marvellous
Picture, don't miss it.

Well dad ol' boy have to
sign off.

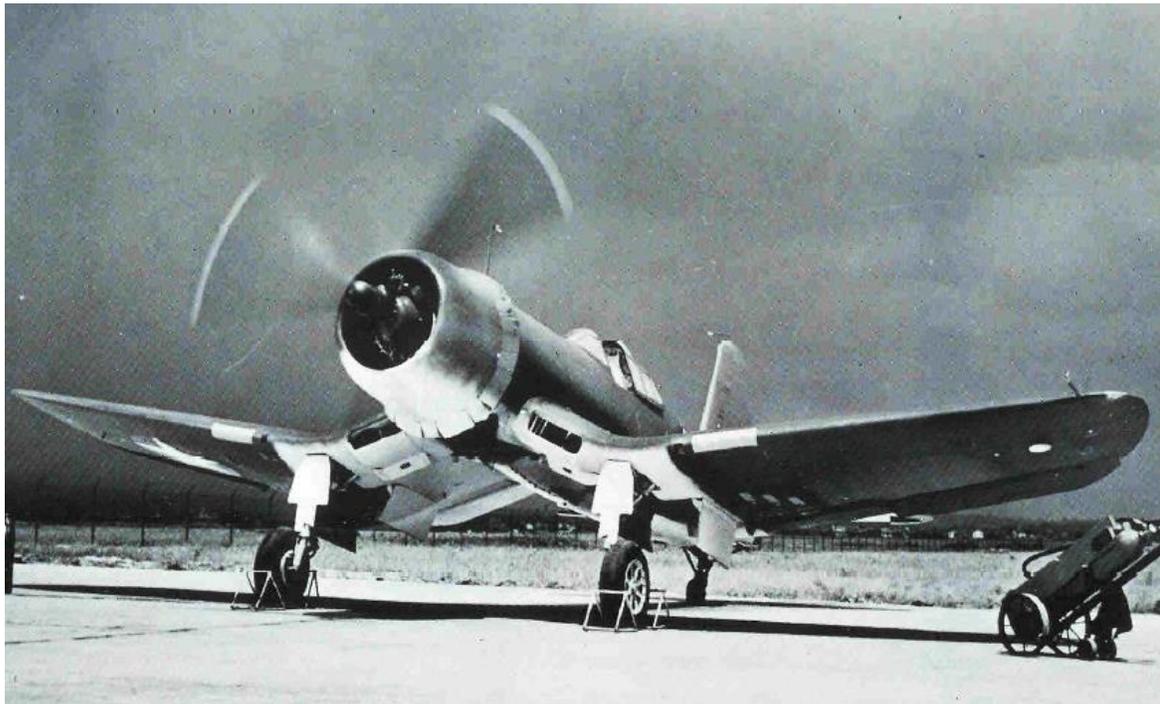
Love you
your affec.
son.



ASSOCIATED HOTEL-BILTMORE-LOS ANGELES, CALIFORNIA



**Picture of a plane Lt. Date reportedly crashed;
This is not the dead stick Corsair nor the Ambae aircraft**



Corsair on the ground, from the F4U training manual; note the unusual inverted "gull" wing shape.

War Diary Information on Lt. Date's Crash at
Aoba, New Hebrides, 17 May 1944

CONFIDENTIAL

UNITED STATES MARINE CORPS
MARINE FIGHTING SQUADRON 211, MARINE AIRCRAFT GROUP TWELVE
PMAW, FMP, c/o FPO, SAN FRANCISCO, CALIFORNIA

1 June, 1944

From: The Commanding Officer.
To: The Commandant, U. S. Marine Corps.
Subject: War Diary, Submission of.
Reference: (a) CMC Ltr 1975-50, AO - 96 - nsh, dated 10 May 43.
(b) MarAirWingsPac G. O. 9-1943.
(c) MarAirSoPac G. O. 3-1944.
Enclosure: (A) War Diary of VMP-211, MAG-12, PMAW, for month
of May, 1944.

1. In compliance with the above references, the War
Diary of Marine Fighting Squadron Two Eleven, Marine Aircraft Group
Twelve, First Marine Aircraft Wing, for the period 1 May, to 31
May, 1944, is hereby submitted.

T. P. WOJCIK

Copies to: The Commandant, U. S. Marine Corps.
The Commander in Chief, U. S. Fleet.
The Commander in Chief, Pacific Fleet.
The Commanding General, Marine Air Wings Pacific.
File.

79339

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MAY 8-12

Dummy gunnery problems.

MAY 13

Dummy gunnery and strafing problems.

MAY 14

Search problems.

MAY 15

Dummy gunnery and strafing problems.

MAY 16

Escort, strafing, and dummy gunnery problems.

MAY 17

Practiced pre-dawn take-off.

2nd Lt. John E. DATE, Jr, was forced to bail out near Aoba Island when his plane developed engine trouble and finally failed. P4U-1, Bureau No. 56076, was not recovered. Lt. Date was picked up, uninjured, by the crash crew.

MAY 18

Gunnery, division tactics, and interception problems.

MAY 19

Escort, interception, and division tactics problems.

The following members of the squadron returned from Rest and Recreation tour to duty:

1st Lt. Harold D. BUCK
1st Lt. Cleveland I. COBB, Jr
1st Lt. Robert E. LEE
1st Lt. Frederick S. LOSCH
2nd Lt. Robert L. STIGALL
1st Lt. James N. WATSON

MAY 20

Strafing, interception, and division tactics problems.

MAY 21-23

Practice dive bombing.

MAY 24-25

Fixed gunnery and dive bombing problems.

CONFIDENTIAL 5

CONFIDENTIAL

MAY 26-29

No flying.

MAY 30-31

Enroute from STAD, MAG-11, MASP, Espiritu Santo, to station, MAG-12, FMAW, Emirau Island, for duty.

No contacts with enemy aircraft or shipping during the month.

FRIENDLY LOSSES

<u>Date</u>	<u>Type Plane</u>	<u>Cause</u>	<u>Status of Pilot</u>	<u>Comment</u>
17May44	F4U-1	Engine failure	Uninjured	off Aoba Island, picked up by crash crew.

A. R. OLSON
1st Lt., USMCR,
Intelligence Officer.

Approved:

T. P. WOJCIK
Major, USMCR,
Commanding.

CONFIDENTIAL 6

OVER TO 19 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31		UNITS		TENS		HAY		UNITS		TENS		UNITS		TENS		UNITS		TENS		UNITS	
FLYING EXPERIENCE 44 11 26		17 May 1944		PILOT'S NAME DATE, John E., Lt., 2nd Lt.		LOCATION Espiritu		PURPOSE OF FLIGHT Not combat mission		FLYING OR LANDING CONDITIONS X - 1 pp Und		ANALYSIS		NAME AND RANK OF OTHER PERSONNEL		INJ.		FORCED TO BAIL OUT NEAR Aoba Island when his plane developed engine trouble and finally failed. Plane not recovered. Pilot picked up by crash crew.		REMARKS	
NAME AND RANK OF PILOT		ORGANIZATION VMF-211		DATE OF PILOT RATING		FLYING EXPERIENCE YEARS		TOTAL HOURS		PREVIOUS ACCIDENT RECORD		INJURIES JUMPED		NAME AND RANK OF OTHER PERSONNEL		INJ.		FORCED TO BAIL OUT NEAR Aoba Island when his plane developed engine trouble and finally failed. Plane not recovered. Pilot picked up by crash crew.		REMARKS	
AIRCRAFT CLASS F4U-1 #56076		DAMAGE		REMARKS Strike.		NATURE OF ACCIDENT		PERCENTAGE EACH CAUSE		U.S. NAVY BUREAU OF AERONAUTICS FORM N. 489, 200 A		AIRCRAFT TROUBLE ANALYSIS		NAME		SERIES		SERIALIZED		INDEXED	

VMF 211 War Diary Information on Lt. Date, after his Crash on Aoba, During the Month of June 1944⁶

CONFIDENTIAL

June 10 (cont.)
 0800, Haberman, Rockefeller, Reisner, Mitchell, off to escort an SBD strike. All planes returned early because of bad weather. Pancaked 0900.
 1040, O'Hara, Duskin, off to patrol and bomb Kavieng. Both bombs dropped on Kavieng strip with unobserved results. Pancaked 1350.
 1440, Losch, Date, off to patrol and bomb Kavieng. Both bombs dropped over Kavieng town, results unobserved because of cloud cover. Sighted 2 PT's, ten miles, 120 degrees from base, on course 130 degrees. Pancaked 1720.

⁶ Note that "pancaked" means landed, re-fueled, and re-armed. It does not mean crashed.

June 18

0430, Catlin, Thompson, off to patrol and bomb Kavieng strip. Results unobserved. Pancaked 0700.

0530, Losch, Date, off on anti-submarine patrol. Negative. Pancaked 0745.

0720, Witomski, Bishop, off to patrol and bomb Kavieng. Both bombs dropped on Kavieng strip, one hit about 500 yards from a revetment area, the other was unobserved. Pancaked 1020.

1130, Losch, Date, off to patrol and bomb Kavieng. Both bombs dropped on Kavieng strip, one hitting the south corner of the strip, and the other hitting some buildings south of the strip. Pancaked 1430.

June 20

0500, O'hara, Duskin, off to patrol and bomb Kavieng. The flight returned early because of bad weather. Pancaked 0525.

0715, Witomski, Bishop, Losch, Date, off to escort SBD strike to Rapopo. No contacts. Pancaked 1050.

June 22 (cont.)

1200, Buck, Evans, off to patrol and bomb New Hanover and New Ireland. One bomb was seen to hit on the southeast end of the strip, the other dropped on the north corner with unobserved results. Pancaked 1440.

1540, Losch, Date, off to patrol and bomb Kavieng. One bomb dropped near the Kavieng strip with unobserved results; the other failed to release. Pancaked 1820.

June 26

0530, Bohland, Kamp, off on anti-submarine patrol. Lt. Bohland accidentally dropped his bomb while circling a crash boat northwest of Tench Island. It was not armed or fused. Pancaked 0730.

0720, Buck, Evans, off to patrol and bomb Kavieng. Both bombs dropped on the strip, but only one was observed to explode. Pancaked 1030.

0750, Date, Losch, O'Hara, Duskin, Witomski, Bishop, Catlin, Thompson, off on strike, carrying 1000 pound bombs, to Nordup 76. The primary target was closed so the run was made on the secondary target, Rapopo E. Two large areas of fire were observed after the bombing, with both areas emitting black smoke. Pancaked 1040.

June 28

0600, Witomski, Bishop, off to patrol and bomb Kavieng. One bomb was seen to explode in the trees on the eastern end of Kavieng town, the other dropped on the strip with unobserved results. Pancaked 0830.

1030, Haberman, Rockefeller, Reisner, Mitchell, Lee, Van Ellis, Stewart, Wilker, off on strike to Rabaul, target "George". Flight took-off at 0845, but because of bad weather was called back to base at 0930, taking off again at 1050. Six bombs were dropped in the target area, one returned to base, and one jettisoned when it failed to release. Of the six, three were reported as on an AA position, with the other three landing in adjacent gardens. Some heavy, automatic, and machine gun AA was received. The area was strafed, and the only observation was a large fire emitting black smoke at the location of one reported hit on an AA position. Pancaked 1330.

1100, O'Hara, Duskin, off to escort Dumbo. Negative. Pancaked 1615.

1400, Losch, Date, off to cover SBD's on shipping reconnaissance. Negative. Pancaked 1650.

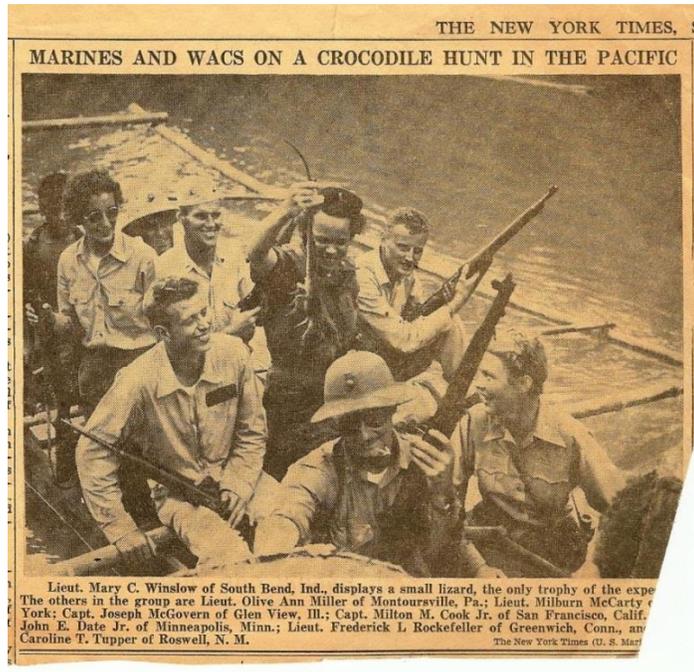
June 30

0820, Haberman, Rockefeller, off to patrol and bomb Kavieng. Results unobserved. Pancaked 1120.

0905, Buck, Evans, Bohland, Kamp, Losch, Date, O'Hara, Duskin, off on strike to Fangelawa plantation. Of eight planes assigned the strike, six were over the target and five dropped. Three bombs were returned to base. Some smoke was observed to come from the bombed area following the strike, but no fires were observed. Lt. Buck dropped his bomb on a 40mm AA position and, although he did not see the hit, fire ceased. Pancaked 1140.

1245, Haberman, Rockefeller, off to escort SBD to Green

Other Information on Lt. Date



REGISTRATION CERTIFICATE
 This is to certify that in accordance with the
 Selective Service Proclamation of the President of the United States

John - Esterbrook - Tate
 (First name) (Middle name) (Last name)

Andrew Hotel Myer Minn
 (Place of residence)
 (This will be identical with line 2 of the Registration Card)

has been duly registered this *27* day of *April*, 19*44*

D. H. [Signature]
 (Signature of registrar)

Registrar for Local Board *21* (Number) *Myer Minn* (City or county) (State)

**THE LAW REQUIRES YOU TO HAVE THIS CARD IN YOUR
 PERSONAL POSSESSION AT ALL TIMES**

D. S. S. Form 2 (Revised 6/9/41) 16-21631

(Registrar must sign here)

John - Esterbrook - Tate

DESCRIPTION OF REGISTRANT

RACE	HEIGHT (Approx.)		WEIGHT (Approx.)		COMPLEXION	
White	<i>5' 8 1/2"</i>		<i>150</i>		Sallow	
	EYES		HAIR		Light	<input checked="" type="checkbox"/>
Negro	Blue	<input checked="" type="checkbox"/>	Blonde		Ruddy	
	Gray		Red		Dark	
Oriental	Hazel		Brown		Freckled	
	Brown		Black		Light brown	
Indian	Black		Gray	<input checked="" type="checkbox"/>	Dark brown	
			Bald		Black	
Filipino						

Other obvious physical characteristics that will aid in identification *None*

U. S. GOVERNMENT PRINTING OFFICE 16-21631

**Information and Pictures on Parts and Part Numbers of Plane Wreckage
In Nanako Village, West Ambae, Shown to be
the Lt. Date F4U-1 Corsair**

Collected 19 Dec 2012 by Lew Toulmin

<u>LIST OF PART NUMBERS ON AMBAE PLANE WRECK</u>				
		Nanako Village		
<u>PIC #</u>	<u>PLANE PART</u>	<u>LOCATION</u>	<u>NUMBERS</u>	<u>COMMENTS</u>
4668	1st wing root, furthest east	on round part	1C535-2	this is the only # shown in pic
			157	this # in a box
			A	the "A 228" is all in one box, with A on the first line
			228	
4713	Engine; 2nd eastern- most lump	near cylinder	231397	
			BAH 2907	The "BAH" is very hard to read and could be PAH or many other letters
4716	ditto	ditto	228909	
			?AG 5284	unclear what the first letter is
4722	ditto	ditto	230687	could be 230637
			BAH 1028	letters unclear; last number unclear

4741	Transmission or gearbox; 4th lump in E-W line		213730	last 2-3 numbers unclear
			R510V R15 8 2	numbers "8" and "2" outside and to the right of the box that encloses the other numbers
			CHANCE U	could be "CHANGE"; CHANCE might be indication of Chance-Vought a/c
			233841 1 Q	
4745	ditto		OIL INLET	
			ITAZL 2	"ITAZL" very hard to read; could be something else entirely; is inside a flattened diamond
			87124-8592	"8592" could be 8598
			B	
4746	ditto		OIL OUTLET	
4749	ditto		52691	turn pic upside down to see better
			859	
			22??03?4	in a raised box
			18590???	in a raised box
4756	ditto		2	
			52694-859	
			CHGF	could be "CHGE"
			HF967L	upside down from other numbers; hard to read; in a box

On 14 June 2013 I re-inspected the wreckage in the yard of the Toa Palms Guesthouse, and concluded that the readable items, each only about two millimeters high, on the right hand portion of the wreckage were:

- 16280-2

- CV296 (with the “V” in the CV being on its side and larger; likely standing for Chance-Vought)
- CVC137 (CVC stands for Chance Vought Corp.)
- USN (with these three letters overlapping), meaning US Navy
- H in a circle

See the photo below. These numbers were on a transverse stiffening piece, in the tail area.



The number shown above, of 16280-2, matches the part number of VS 16280-2 shown in *Aircraft Parts Catalog, Navy Models F4U-1...* (Washington, DC: Army Air Force, Publication AN 01 45HA-4, 1 December 1945) pp. 630-631, which shows and describes a horizontal stiffener in the tail section.

Similarly, the number 10535-2 was found on a ring in the supporting structure for the machine guns in the wing, in the eastern-most wreck portion in Nanako. (This number was initially mis-read as 1C535-2.) This number matches part number VS 10535-2 in the *Aircraft Parts Catalog*, pp. 98-99, which describes and sketches a ring in the machine gun tube assembly.

These two matching part numbers are highly conclusive evidence that the Nanako plane is a Corsair, and is the F4U-1 flown by Lt. Date.

See the photo below for the machine gun ring assembly part number.



On 14 June I also re-inspected the “gearbox” which I have now concluded is a supercharger, at the westernmost part of the village. Additional numbers identified include:

10-32-42
52634G-F
54695D
1083
22041600

Below are pictures taken by the author of typical numbers found on the plane wreck, and pictures of the large pieces of wreckage in the village. (Captions are below the relevant pictures.)



"Chance" or "Change" and numbers, on the supercharger



Easternmost portion of Nanako wreck, including the machine gun support ring, seen in the lower left as a round ring with a round hole in it. This part had a number matching the parts manual.



**Second easternmost plane wreck part, with one yard tape measure;
This is the starboard inner wing, according to Bob Jarrett of the Classic Jets Fighter Museum**



Rear of radial engine in Nanako



Top of engine with tape measure, showing double row of cylinders



Three bladed-propeller hub on Nanako plane



Supercharger of the plane in Nanako, the most westerly part in original wreck area



Western-most wreck part in Nanako, moved from the original wreck site to the front yard of the Toa Palms Bungalow. This wreckage had a number which matched the F4U-1 parts manual. This is the tail section of the plane, with the upper portion on the left. The protruding part at left led up to the tail rudder.



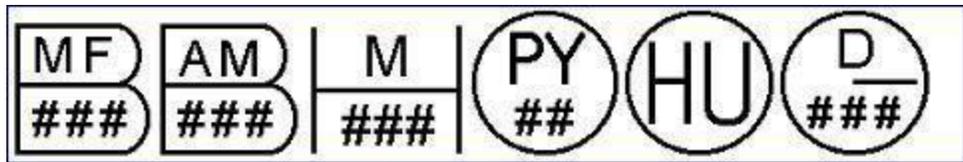
Sign to the Toa Palms Bungalow, Nanako Village, West Ambae



Part numbers on cylinder of engine in Nanako

Stamps on the F4U-1

According to an expert in aircraft identification and fellow member of the Missing Aircraft Search Team, an F4U-1 Corsair should have some of the following inspection stamps on it.



Unfortunately, the wreckage was so rusted and in such poor shape that no inspection stamps were observed.

The Lt. John E. Date, Jr. plane crash report indicated that the serial number on his plane was Bureau No. 56076. This number was not observed on the Nanako village plane wreck. This plate likely did not survive the catastrophic crash, or was removed by the many parts-pickers over the years.

An interview on 11 December 2012 with Peter Fogerty at Vanuatu Wholesale Tyres indicated that a Corsair (or other similar planes) should have two serial number plates or painted-on numbers, one external near the cockpit on the right side, and one internal plate on the back of or near the pilot's seat. Fogerty is a pilot, and has found various WW II planes in Vanuatu, studied them, and brought a number of wrecks to his tyre yard in eastern Port Vila. However, Bob Jarrett of the Classic Jets Fighter Museum in Adelaide, Australia, who is restoring a Corsair, states that the serial number plate should be on the left hand side, in the cockpit, near the pilot's calf.

In any case, no serial number plates were observed on the Nanako plane wreck. An engine data plate, which should have been located on the engine, was also not found. Again, this was likely removed over the years.

The three holes in the wing in the Nanako wreck match the three gun ports per wing on the Corsair F4U-1, as shown below.



Picture of the machine gun ports on the Nanako plane wreck



Machine gun ports on an F4U-1

An analysis of the *Erection and Maintenance Manual*⁷ for the F4U-1 yielded the following information. While dimensions of many parts are provided, these are not useful in the case of the Nanako wreck, since most parts are damaged, rusted away or unrecognizable. One useful part dimension is that of the propeller, which is described as a three bladed propeller 13 feet 3 inches or 13 feet 4 inches in “nominal” diameter. (Pages 106 and 182 of 204.) By actual measurement of one blade of the Nanako propeller, the radius of the size of the circle inscribed by the remaining blade is exactly 6 feet 8 inches, or precisely half of the 13 foot 4 inches described in the manual. This is a good indication that the Nanako plane is an F4U-1 Corsair.

Other parts in Nanako which exactly match the shapes provided in sketches in the F4U-1 parts manual or erection manual include:

- Air intake
- Access ports in tail section
- Wing shapes
- Radiator.

The village of Nanako and its plane wreck are at approximately lat/long: -15.364460; 167.756821, as measured by Google Earth, which seems to be rather inaccurate at this location, at the juncture of two aerial photos which do not match well.

⁷ Vought-Sikorski Aircraft, *Erection and Maintenance Instructions, Preliminary, Model F4U-1, FG-1, F3A-1 Airplane* (Stratford, CT: Vought-Sikorski Aircraft, 9/7/1942) Report no. 5562, Form 220, 204 pages in PDF version of the manual.

**Photos of the Corsair
Being Re-created in north Adelaide, Australia at the
Classic Jets Fighter Museum**



**Partially restored interior of the Corsair,
showing the “stick” at right and pilot’s seat at left**



**Fuselage of the Corsair, with pilot’s seat in center and
separate canopy at lower left. Parts from Nanako are behind and
to the left of the pilot’s seat.**



Model of the Corsair in foreground and workman restoring the fuselage in the background. The numerous pins hold the skin in place until rivets can be installed.



Margaret and Bob Jarrett of the Classic Jets Fighter Museum, holding a restored foot pedal from the Corsair

Interview with Chief Charly Bani

Date: August 2001

Source: This interview was originally recorded in *The Most Traveled Man on Earth*, by Llewellyn M. Toulmin (Fairhope: AL: the Village Press, 2006) p. 76

Location: Nanako Village, W. Ambae, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Good

Topic: Aircraft wreck

Est. Age of Respondent: 70 in 2001 (died in about 2011)

Chief Charly Bani stated the following:

- He is the chief of the village of Nanako, just east of the port of Ndui Ndui.
- We talked about my interest in WW II and “Bali ha’i” and he smiled and asked if I wanted to see his WW II air wreck. Amazed, I immediately agreed, and he took me to see the engine and one propeller blade of a crashed plane. I took his picture standing in front of the engine, and this picture is in the book.
- He stated “I was 12 years old in 1943. The village was getting ready for a wedding when we heard the plane screaming down and crashing into the coconut trees behind my house. All hundred of us ran to the crash site where the plane was burning. Then we saw the parachute drifting down to the west. The American flier was unhurt, stayed with us one night, and was picked up the next day. He said his engine failed. Later some Australian missionaries came and buried some parts of the plane.”
- The plane’s engine was a radial engine with a three bladed propeller hub.

In my 2012/13 stay in Vanuatu, I learned from the Paramount Chief of Ambae and others that sadly, Chief Charly had passed away in about 2011.

#end interview#

Interview with Chief John Moli of Nanako Village, West Ambae

Date: 19 Dec 2012

Location: Nanako Village, west Ambae, while inspecting crashed plane parts in the village

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Fair

Topic: Crash of WW II aircraft in Nanako village

Chief John Moli states the following:

1. He is 62 now, and is the chief of the village of Nanako, where most of the wreckage of the plane still remains.
2. His father Chief John Rovo was a young man in WW II, and told his son John Moli that the plane had engine trouble, caught fire, was trailing smoke, came in from the east, headed west, first hit a breadfruit tree, then the ground, then broke into pieces. One large piece rolled 50 meters and stopped just 1.5 meters from Chief Charly Bani's grandfather's house in the village. Just a few meters more and it could have destroyed the house and perhaps killed its occupants. The villagers were preparing a feast at the time, and most of them saw the plane, the crash and the parachute, and thought they were being bombed or attacked. Most of them ran away.
3. The pilot parachuted out of the plane before the crash, and came down near the current health center, about 400 meters west of the current engine location.
4. The pilot came down in a young coconut tree, but was not hurt. He got down to the ground, rolled up his parachute, and carried it with him. He was a tall man.
5. One resident, an ex-policeman named James Viratafuti, approached the pilot, who became alarmed and pulled out his pistol and pointed it at James. The pilot was American. James was able to convince the pilot that he was not hostile, and took the pilot to the nearby white missionaries at the Church of Christ mission station, near the present Toa Palms Bungalow.
6. Chief John Moli has never heard that any of the Wilbur family approached the pilot and had the gun pulled on them. [Members of this family state that one of their ancestors approached the pilot.] Moli states that Wilbur was a white man, who lived further west than the site of the parachute landing.

7. The pilot stayed at the mission, radioed to his base on Santo, and the next day a seaplane arrived at Ndui Ndui and picked him up.
8. The pilot never came near the crash site. He intended to crash the plane in the water, and may not have realized that the plane hit the ground on the island.
9. This incident happened in the sunny season, in May, June or July, probably in 1944.
10. In about 1960 the missionary Mr. Elgin and Pastor August Ben took the tail section of the plane away from the wreck site, and moved it to the Toa Guesthouse front yard, perhaps as a tourist attraction. One man came about a year ago [about 2011], and took part of the tail's horizontal stabilizer away.
11. Moli did not see a team of three Australians investigating the wreck. [Other respondents reported this.]
12. At some point during WW II, Chief John Rovo went to Espiritu Santo and worked there for two years for the Americans in the war effort. He really enjoyed his time there, and saw things he had never seen before, such as jeeps, trucks, and planes. From Santo Chief Rovo brought back American jackets, clothes, roofing, timbers, corrugated iron and Quonset hut materials.

#end interview#

Interview with Aide Shecpira of Nanako Village, West Ambae

Date: 19 Dec 2012

Location: Nanako Village, west Ambae, while inspecting crashed plane parts in the village

Interviewer: Lew Toulmin

Interview conducted in: English

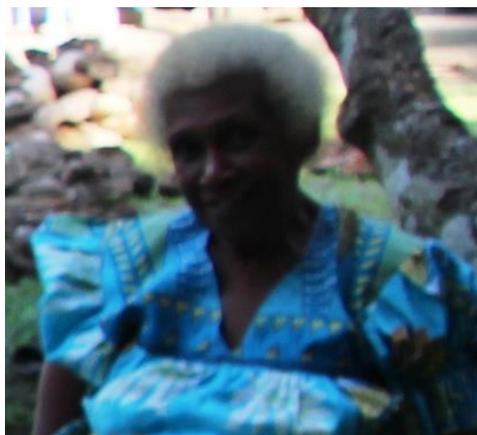
Quality and understandability of conversation: Poor

Topic: Crash of WW II aircraft in Nanako village

Aide Shecpira, an elderly lady perhaps 85 years old, states the following:

1. She does not know how old she is.
2. She was swimming near Nanako on the day of the crash. She saw the parachute come down.
3. She thinks perhaps this happened in 1944.
4. She did not see the pilot.
5. She heard the story that James Viratafuti met the pilot, and the pilot pulled out a gun on him. She did not see this happen. She does not know anything else about the wreck.

#end interview#



Aide Shecpira



**Author Lew Toulmin and guide Wesley Hambu
In Nanako Village, Ambae beside the engine and propeller of the plane wreck,
in December 2012**



**The front of a Pratt & Whitney R-2800 engine, in slightly better condition than the Nanako engine
(from Wikipedia)**



**Rear of Pratt & Whitney R-2800 engine
(from Wikipedia)**

Interview with Ganella Wilbur of East Ambae

Date: 18 Dec 2012

Location: Lolowai harbor, east Ambae, on the beach

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Fair

Topic: Crash of WW II aircraft in Nanako village

Estimated age of respondent: about 35

1. I met Ganella on the beach with her husband and son. They were waiting for a vessel to go to east Ambae and I said I was going there the next day. I asked about the wreck in Nanako and was surprised that she knew about it and could tell a story about it.
2. She stated that her father is John Wilbur, who is still alive. His father was George Wilbur, now deceased.
3. George Wilbur was a white man, not from Ambae, but living near Nanako village. He was American. He was one of only one or two white men on the island in World War II. He was walking on the round-island track when he saw the pilot from the crashed plane walking towards him.
4. The pilot had just landed by parachute and was walking away from the tree he had landed in. He was not with anyone else. The pilot was alarmed to see a white man coming towards him, and pulled out his gun and pointed it at Wilbur. Wilbur raised his hands in submission.
5. Wilbur reassured the pilot that Wilbur was friendly, then accompanied him.
6. The chances of a white pilot meeting a white man on Ambae were about 1 in 5000! The chances of both of them being Americans were astronomical.
7. She does not know any more.
8. To find out more, I should interview John or Jimmy Wilbur in Ndui Ndui, or assistant Chief August Fui in Nanako.

#end interview#



Ganella Wilbur and her son, from east Ambae



Ref. No. 1142. ENGINE DATA PLATE PRATT & WHITNEY R-2800-8. A C or Bu No. 35775 Mfg No. 200337, Contract No. NXs-414. Has US Navy stamp with anchor and the number "71". This data plate was fitted to a Corsair aircraft used by the RNZAF and almost certainly flew on operations against the Japanese. This plate was collected by an airframe mechanic, William Albert Leitch, in the 1940s who served in the RNZAF as a LAC. He collected a wide variety of plates from different engines fitted to RNZAF aircraft. These included P-40 Kittyhawk, C-47 Dakota, F4U Corsair, Lockheed Hudson, PBV Catalina, SBD Dauntless, de Havilland Mosquito, Short Singapore and a Blackburn Baffin. Leitch died in 1991.

**Engine data plate from a USN and later RNZAF Corsair.
No similar plate was found in Nanako**



**Airplane data plate from a Chance Vought F4U Corsair.
No similar plate was found in Nanako**

Interview with Pastor James Hwango

Date: 20 Dec 2012

Location: in the airstrip building, Wallaha, W. Ambae, Vanuatu

Interviewer: Lew Toulmin

Interview conducted in: English

Quality and understandability of conversation: Very good

Topic: Air crash in Nanako

Age of Respondent: 79 (born 1933)

Profession: Church pastor

Pastor Hwango stated the following:

1. He is very happy to meet an American, and said, "Thank God for the Americans. Without them we would have been overrun by the Japanese."
2. He was about 10 years old in WW II when he saw the crash of the plane at Nanako village.
3. He thinks the crash took place in about 1943. The plane was gray and had a star on the side, and the letters "US" on it.
4. He was in his bush garden [fruit and vegetable farm] in Amata, between Ndui Ndui and Wallaha. [This means he was roughly 6 km west of the crash site.] He heard a rumbling sound. He saw the plane, and it went around in a circle. It was trailing smoke and losing altitude. He thought the plane was going to go down in the sea, but later heard that it crashed in Nanako.
5. He didn't see the pilot exit the plane, nor did he see a parachute. He later heard that the pilot parachuted out.
6. He heard a loud boom from the crash.
7. He learned that there was only one crew member in the plane, the pilot.
8. He doesn't know if the American pilot was tall, but all the Americans seemed tall.
9. After the pilot parachuted down, he walked away from where he landed, and very soon ran into two local men, James Viratavuti and Mr. Saunders, an Australian. The pilot, worried, pulled a pistol on them. They raised their hands. They were able to convince the pilot that they were not hostile.
10. The next day a seaplane landed on the water at Ndui Ndui, and picked up the pilot. He (Pastor James) had never seen a seaplane before. He was a long way away and didn't see the markings on the plane. He didn't get the name, rank, or branch of service of the pilot.
11. He thinks that one later researcher was investigating the crash, and figured out who the pilot was, and obtained a photo of the pilot and plane before the crash. He does not know the name of this person. Someone in Nanako may have this photo.
12. He met another researcher, who took pictures of the plane and took away part of the plane. He does not know the name or contact details on this person, either.

#end interview#



Pastor James Hwango of west Ambae

Interview with Bob Jarrett of the Classic Jets Fighter Museum

Date: 10 Mar 2013

Location: Anderson Dr., Parafield Airport, S. Australia, near Adelaide

Interviewer: Lew Toulmin

Interview conducted in: English, by telephone

Quality and understandability of conversation: Very good

Topic: Air crash in Nanako

Age of Respondent: unknown

Profession: Museum director and aircraft restorer

Mr. Jarrett stated the following:

1. He, his wife Margaret and others from his museum have been to Nanako twice in the last several years. There they salvaged, purchased and transported a bulkhead behind the pilot's seat on the wreck, taking it to the Classic Fighter Jets Museum (CFJM). The seat was not present at the wreck.
2. About half of this bulkhead was used in restoring and re-creating an F4U-1 Corsair at the CFJM. The other half was used as a jig to reproduce the rest of the bulkhead.
3. The main parts of the restoration/recreation are coming from an F4U-1 salvaged on the north part of Efate island.
4. The F4U-1 at the CFJM is about 50% completely re-created. It will be put on static display at the upcoming air show in mid-March 2013. It is not planned to fly the plane when completely restored, since that would cost millions and the museum does not have that kind of funding. However, the goal is to make the restoration as accurate as possible, and to have it appear that it could fly. Currently the starboard wing is in place, as is power plant. It has taken 3.5 years to get this far in the restoration, and it will take another 3 years or so to fully restore the plane.
5. He was not interested in taking away the other parts of the wreck in Nanako, because they were so damaged by the crash and rust. All his activities were done in cooperation with and sanctioned by the Cultural Center in Port Vila, and he worked with museum director Abong Marcellan.
6. He heard a rumor that a wing from the wreck is now located at the west Ambae airport, but did not see it.
7. He was never able to find the serial number of the plane, which would have been located on only two spots in the plane, on a plate behind the pilot's seat, and painted near the tail on the exterior. The part numbers on the engine and elsewhere on the plane are not the same as the serial number and are not related. The data plate on the engine was also not found, and this would not have had the plane's serial number on it.
8. He is quite confident that the plane in Nanako is an F4U-1B, and the engine is a Pratt and Whitney R-2800, likely Mark 10, 17 or 18. He bases this confidence on: a. his

extensive experience in restoring aircraft, including a WW II Lightning; b. the fact that this F4U-1's bulkhead and parts are fitting exactly into the F4U-1 salvaged from north Efate and conclusively proved to be an F4U-1; c. the fact that this early model Corsair had a teardrop shaped notch in the canopy, behind the shoulder of the pilot, allowing the pilot to peer over his shoulder and look rearward. The fairing and shape of this teardrop are unique to the Corsair, model F4U-1, and are quite distinctive, and the parts he salvaged from Nanako showed this shape.

9. He had heard the story from villagers that the pilot was American, parachuted down, and was picked up the next day. Differences from the interviews recorded in this report were: he understood that the plane ran out of fuel, not that it had engine trouble, and that the pilot had his gun "taken off him" by villagers, not that the pilot pulled his gun on some villagers.
10. He expects that parts of the plane are scattered all over northern Ambae, having been removed by villagers over the years. He noticed the same five "lumps" of wreckage I did, but also saw another broken prop some way away from the engine, and spotted a navigator's chair from a B-24 or B-17 sitting in a hut at the end of the village. He also found a Japanese drop tank not too far away; this was very unusual [since the Japanese only attacked Espiritu Santo once, and never attacked Ambae].
11. He is confident that the large piece in the east side of the village is a supercharger.
12. The museum website has photos of the F4U-1 in the process of restoration.
13. The museum's F4U-1 taken from north Efate is serial number 44-02270. This is a US Army Air Corps number, and refers to 1944 (the "44"), and a low number in the production run (only 2270 out of the total production run of about 10,000). He is not that familiar with US Navy serial numbering, but is surprised that a plane wrecked in early 1944 would have a number as high as 56076, which seems to be half way through the production run.
14. Erik Tomm, on the north coast of Efate, is familiar with the F4U-1 and would be a good person to talk to.
15. He is quite interested in learning the name of the pilot and learning about the family. He is perhaps willing to give a part of the actual Nanako plane to a family representative.

Interview with Wilson Tololo of Nanako Village, west Ambae

Date: 14 Jun 2013

Location: Nanako Village, west Ambae

Interviewer: Lew Toulmin

Interview conducted in: English and Bislama

Quality and understandability of conversation: Good

Topic: Air crash in Nanako

Age of Respondent: about 55

Wilson Tololo stated the following:

- He owns a chair that came from the Nanako plane wreck.
- He was not present at the time that the wreck occurred, and did not see the chair removed from the plane. His father took it out of the plane. There was only one chair in the plane.
- He has no other parts from the plane.
- There was a machine gun nearby that came from the plane, but he does not know where the machine gun is now.
- I stated that I thought that this chair was from a plane, but likely from a bomber, and perhaps was a navigator's chair. He felt sure the chair came from the Nanako wreck.

[Careful examination of the chair revealed no serial number or other information.]

[A picture of the chair and owner is presented below. Other villagers later stated that Mr. Tololo and his father were not from Nanako, but rather from some kilometers away, and would not have been familiar with the wreck. It seems very unlikely that this chair was from the Nanako wreck; since the back of this chair is not armored, it swivels (or once did), and it is not the type of simple seat that would be present in a fighter. If it is from a bomber, that raises the question of where did it come from and where is the bomber. It seems most likely that it was brought (like many other American items) from Million Dollar Point on Espiritu Santo.]

[Photos are also presented below of the machine gun, which was located in a house at the junction of the Toa Palms and round-the-island roads. The lady of the house stated that she thought the machine gun came from the Nanako wreck but was not sure. She did not know how it came into her possession. Alford Vatu, my driver and guide during the June effort,

stated that the lady had, for some reason, put the gun on a large fire several months before, and the shell still in the breech exploded (!) with a large bang that he heard several hundred meters away. No-one was injured.]



Wilson Tololo of Nanako and the metal aircraft chair



The aircraft chair, possibly a bomber navigator's chair. Note the clips on the side for a seat belt, the swivel mechanism, and the unusual support legs, allowing the chair to be bolted to the floor. Also note the lack of armor on the back. But – where is the plane?



Nanako village youth lift the heavy machine gun, apparently from the Nanako wreck



**Breach of the apparent .50 cal. machine gun located near and likely from the Corsair wreck,
The shell in the breech exploded when the gun was put in a fire in March 2013
– who says American made products don't last!**

Interview with August Matthew Aru of Ndui Ndui, west Ambae

Date: 14 Jun 2013

Location: Ndui Ndui, west Ambae

Interviewer: Lew Toulmin

Interview conducted in: Bislama and some English

Quality and understandability of conversation: Good

Topic: Air crash in Nanako

Age of Respondent: 79 (born late 1933)

August stated the following:

1. He was born in late 1933. He was about 11 in World War II when the incidents of interest occurred.
2. The plane crash occurred on May 17. He is certain it was May 17, because the crash was one of the most memorable events of his childhood, and he is absolutely sure of the date. [I did not prompt his statement of this date in any way.] The plane crash made him interested in planes, Americans, and WW II, and he recalls that date each year.
3. He is not sure which year the crash occurred, but he is sure of the date. The year might have been 1946 or some other year. On that day, he was cutting a new garden, clearing out bushes, and he climbed a tree. From the top of the tree he saw a plane coming from the direction of the French Mission [from the east]. The engine sounded "no good." It was sputtering.
4. The plane came west [or SW] along the coast, came over Nanako and then Ndui Ndui, swung around in a 180 degree turn, and headed back up the coast, heading northeast. At this point the pilot jumped out and parachuted down.
5. The plane was far enough out over the water that if it went straight it would have hit the water. But shortly after the pilot jumped out, the plane turned on its own to the right, inland, and did another 180 degree turn. It then started going down, and crashed in Nanako village.
6. The wind was from the north-northeast. The wind pushed the parachute on shore. [It may have been that this wind caused the final turn of the plane, also.]
7. The plane came down between some coconut trees, and hit a stand of bamboo. It almost hit a large wedding party of about 100 people who were preparing for a wedding in the village.
8. The pilot came down in a coconut tree, and got down to the ground. He landed very near the present small health center in Nanako.

9. He walked just a little way when he saw James Viravuti coming towards him. James was alone. James said, "Yu man wea? And "Mi man ples long Ambae." [Meaning "where do you come from?" and "I am from Ambae."] The pilot did not understand.
10. The pilot was alarmed and pulled out his gun. It might have been a Colt .45. James put up his hands in surrender.
11. The pilot said, "You got Japanese here?" James said, "Sori, no gat," but the pilot did not seem to understand, and asked the same question two more times. Finally the pilot understood, and the pilot put his pistol back in his holster and the two shook hands. James took him to a religious mission. The pilot called his base on Espiritu Santo via radio or walkie talkie.
12. The distance between the site of the pilot landing by parachute (near the health center) and the crash site (in Nanako village) is about 500 meters. It seems likely that the pilot could have seen the fire and smoke of the crash from his landing site. The respondent does not know if the pilot went to the wreck site.
13. The pilot had previously reached his base by radio while in the air. He had told his base that he was returning from a patrol of the Solomons, was having engine trouble or was running out of gas, and was going to have to ditch. He had told his base he was planning to ditch the plane in the sea, to avoid hurting anyone on land, but would try to parachute down onto land.
14. The next day Mr. Purdy, a store owner, and Frank Stoner took the pilot out to a US seaplane via a small boat.
15. The pilot was American. August saw the pilot. The pilot may have had a name tag and other insignia, but August does not remember what the insignia or branch of service was, except possibly some sort of stripes or chevrons or other markings on his sleeve near the shoulder. The pilot was tall, taller than me (Lew Toulmin). The pilot was a good looking man.
16. Part of the plane hit a house and cut through six thick posts, and smashed into a bed cover.
17. The plane had a star on its side, in a circle. He does not know if it had letters or other markings.
18. The plane crash caused a fire. The plane and coconuts and coconut trees caught fire. Bullets in the machine guns fired off, so no-one approached the plane.
19. He does not know what happened to the parachute.
20. In WW II, there were many Tonkinese, men, women and children, on Espiritu Santo. There were none on Ambae.
21. He does not know if the authorities hid women on Ambae during WW II.
22. Wilson Talolo is not from Nanako and does not really know where his airplane chair came from.

#end interview#



The author and August Matthew Aru of west Ambae

Interview with Sam Andre Ngwele of Ndui Ndui, west Ambae

Date: 14 Jun 2013

Location: Ndui Ndui, west Ambae

Interviewer: Lew Toulmin

Interview conducted in: Bislama and some English

Quality and understandability of conversation: Good

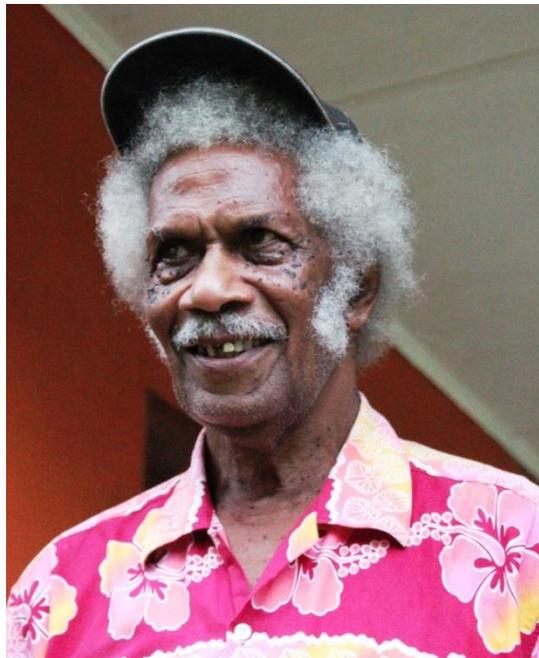
Topic: Air crash in Nanako

Age of Respondent: 71 (born 1944 – probably!)

Sam stated the following:

1. He is not sure when he was born. He has been told that he was so small when the crash occurred that until the crash he had never been held upright on his mother's shoulder, only horizontally in her hands and lower arms. But he was right in Nanako village, right at the wreck site, when the crash occurred, and in her panic to run away, his mother quickly placed him face down on her shoulder for the first time, so she could run faster.
2. He has some birth papers that say he was born in 1942. His passport says he was born in 1945. All his papers say he was born May 16.
3. He has heard that the plane was coming in from the north, swung around, and the pilot wanted to ditch the plane in the sea, to avoid hurting anyone on land. But due to a steering problem, the plane changed direction and hit the land, almost killing many people in a wedding party. There were about 100 in the wedding party.
4. The pilot parachuted down and was caught briefly in a coconut tree. James Viratafuti was Sam's grandfather, and was walking alone along the road near the tree. James approached the pilot, and the pilot drew his gun. The gun was a military style, perhaps a Colt .45. The pilot asked James if he spoke English, and James replied that he did, and that he was a local policeman. The pilot put down his gun and they talked. The pilot stated that while in the plane he had sent a distress message to his base, and that a rescue mission should arrive soon.
5. A nearby US submarine had heard the message, and came along, sent a rubber boat ashore, and picked up the pilot, and took him back in the sub to Santo.
6. At the crash site, a fire broke out, the benzene [gasoline] exploded, and bullets from the machine guns fired on their own. Everyone stayed away from the site.
7. The pilot was upset that his plane almost hurt someone, and was happy no one was killed or injured. He said he had been on a patrol of the Solomons, and was on his way back to his base on Espiritu Santo. He may have run out of gas. He dropped his bombs in the ocean, tried to steer his plane away from land, radioed his base, and jumped out. [The radio message to base, stating that he was going to ditch the plane in the ocean, may have led to the incorrect report that the plane crashed "off" Aoba.]

8. When he was a child Sam played with his friend on the plane wreck. The wreck had long narrow solid doors that opened up like a clamshell, and he would open those doors, sit on a cross piece, and pretend to fly the plane. The entire front was missing. The plane was upside down and the doors were probably bomb bay doors or doors for the wheels, or access panels.
9. After the war people used many parts of the plane, especially washers, nuts and bolts, to fix vehicles in the area, since car parts were rare and expensive. Almost anything moveable and usable has been removed.
10. On the side and wings of the plane was a star in a circle. He doesn't remember any other insignia on the plane.
11. The pilot wore a military/army style uniform.
12. [We then had a discussion about the date of the crash. At that point I had many items of proof that the crash was 17 May 1944, and told him that. He was very glad to get that date, since based on that date, he concluded that he was born just the day before, on 16 May 1944, and now he knows his birth day! Another mystery solved by the Missing Aircraft Search Team!]



**Sam Andre Ngwele, probably born the day before the crash,
almost killed by the plane!**

Information on the Death of
Lt. (later Captain) John E. Date, Jr., USMCR

Pittsburgh Post Gazette, 10 Sept 1973

Date
On Friday, Sept. 7, 1973, John E. Date, Jr. of O'Hara Township; husband of Helen (Peters) Date; father of Kirby Ann, Julia, Jennifer, John, Matthew Date. Family will receive friends 7-10 p. m. on Sunday and 2-4 and 7-10 on Monday at the LEONARD P. BURKET FUNERAL HOME, 421 Allegheny Ave., Oakmont. Memorial service on Tuesday at 2 p. m. in the Fox Chapel Episcopal Church. Interment private. Should friends desire, memorials may be sent to the American Cancer Society.



Grave marker of John E. Date, Jr., near Pittsburgh, PA, USA

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH
VITAL STATISTICS

PERMIT
FOR
BURIAL OR OTHER DISPOSITION OF A DEAD HUMAN BODY

No. _____

8-10-10C

H105.012-200M SETS REV. 10/72

FULL NAME OF DECEASED <i>John E. Date Jr.</i>		SEX <i>male</i>	RACE <i>white</i>
DATE OF DEATH <i>Sept 7 1973</i>	CAUSE OF DEATH <i>Pulmonary carcinoma</i>		AGE <i>52</i>
PLACE OF DEATH <i>Pittsburgh</i>	CITY, BOROUGH, TOWNSHIP	COUNTY <i>Allegh.</i>	

AUTHORIZED DISPOSITION (CHECK APPROPRIATE BOX)

BURIAL REMOVAL CREMATION SHIPMENT BY COMMON CARRIER DISINTERMENT REINTERMENT

NAME OF CEMETERY OR CREMATORY
The Verona Cemetery

LOCATION (TOWN, TOWNSHIP, COUNTY), STATE
Oakmont Allegh Pa

NAME OF CARRIER (IF SHIPPED)

I CERTIFY THAT I WILL COMPLY WITH THE REGULATIONS OF THE DEPARTMENT OF HEALTH RELATING TO THE TYPE OF DISPOSITION STATED HERE.

Leonard P. Burkitt - 421 Allegheny Ave - Oakmont Pa - 15139

SIGNATURE OF FUNERAL DIRECTOR ADDRESS

I CERTIFY THAT I HAVE ASCERTAINED THAT THE REGULATIONS OF THE DEPARTMENT OF HEALTH WILL BE COMPLIED WITH AND HEREBY AUTHORIZE THIS:

Burial
BURIAL, REMOVAL, CREMATION, ETC.

9-11-73
DATE ISSUED

W. Cooper
REGISTRAR'S SIGNATURE

Oakmont Pa
MAILING ADDRESS

FOR BURIAL, REMOVAL, OR CREMATION THE FUNERAL DIRECTOR SHALL DELIVER TWO COPIES OF THIS PERMIT TO THE CEMETERY OFFICIAL. THE CEMETERY OFFICIAL MUST RETURN ONE COPY TO THE LOCAL REGISTRAR OF THE DISTRICT IN WHICH THE CEMETERY IS LOCATED.

SEE REVERSE SIDE FOR REGULATIONS

Burial certificate of John E. Date, Jr.

**Information Re the Crash of Lt. Leonard E. Kinnan and his Gunner
Near the Center of Aoba Island, 10 Jan 1944
In a SBD Dauntless Dive Bomber**

CONFIDENTIAL
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BOMBING SQUADRON NINETY-EIGHT
WAR DIARY

9 January: The following 8 pilots, with their respective gunners, participated in the first dive bombing attack ever made on a Jap airfield in the Rabaul area - their target being the gun positions at and around Tobera:

<u>PILOT</u>	<u>GUNNER</u>
Lieut. LaRoe	Alexander
Lieut. Coit	Miles
Lt.(jg) Albrecht	Thomas
Lt.(jg) Alstott	Krieg
Lt.(jg) Durio	Eley
Ensign Barrett	Anderson
Lieut. Murphy	Kopeining
Lt.(jg) Beattie	Sanders

This strike, comprising 23 SBD's and 18 TBF's (with 72 fighters for cover) was led by Lieut. LaRoe. On returning from the target, Lt.(jg) Alstott, having been hit by AA fire just before his **dive**, was forced to make a water landing 20 miles Northwest of Torokina and about 17 miles offshore; he and his gunner, both uninjured, were picked up by a crash boat within one hour after landing. (See attached Survival Report of 9 January 1944)

Lt.(jg) VanGordon and his gunner Smith took off from Munda on the Tobera attack, but exchanged planes with Lieut. LaRoe at Torokina; and being unable to continue on the strike, later made a bombing attack along the Puriata River, thereafter returning to Munda. (See attached Mission Report of 9 January 1944)

At Torokina, Lts(jg) Dunlop and Snider, with their respective gunners DeLoe and Tomasko, made an attack along the Mawaraka River.

At Espiritu Santo, Lieut. Leonard E. Kinnan, A-V(N), U.S.N.R., reported for duty as Commanding Officer of Bombing Squadron NINETY-EIGHT

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CONFIDENTIAL

BOMBING SQUADRON NINETY-EIGHT
WAR DIARY

10 January: At Espiritu Santo, during a flight to Efate of 14 SBD's piloted by members of Detachment A, Lieut. Leonard E. Kinnan, Commanding Officer of VB-98, crashed on Aoba Island and was killed; his gunner, Smeyres, E. R., ARM2c, got out safely and was returned to Base Hospital No. 6 at Espiritu Santo.

YEARS MONTH DAY 10 January 1944		PILOT'S NAME KINMAN, Leonard Edward, Lt.																																																									
FLYING EXPERIENCE 44 10787		HOURS FLYING EXPERIENCE 2171.8																																																									
NAME AND RANK OF PILOT KINMAN, Leonard Edward, Lt.		LOCATION New Hebrides																																																									
SERVICE AND GROUP AVN, USNR		PURPOSE OF FLIGHT Simulated attack.																																																									
ORGANIZATION VB-9B		FLYING OR LANDING CONDITIONS Good																																																									
DATE OF PILOT RATING 6-22-38		FLYING EXPERIENCE (YEARS) 6																																																									
HRS THIS MODEL LAST 3 MOS Clear		TOTAL HOURS 2171.8																																																									
PREVIOUS ACCIDENT RECORD Clear		ANALYSIS Plane crash.																																																									
INJURIES Fatal dependent skull fracture		From Administrative Report: It is recorded in the Luganville Airfield tower flight log that the engine of plane sounded rough at take-off. The rear seat radioman-gunner who escaped from the plane after the crash stated that the engine was very hard to start, taking five or six tries; that while taxiing out to take off, he found the radio transmitter to be out of commission and so informed the pilot; that the take off was normal; and that it was not until some ten or fifteen minutes later that the engine began to run roughly. At this time the plane was flying at a low altitude in the vicinity of Aora Island. Smeayres the gunner, states that the engine slowly lost power, and almost immediately it was necessary to make a forced landing due to total loss of power. Smeayres stated that the engine did not stop completely until the crash. He believed that at the time of first engine failure, Lt. Kinnan was endeavoring to return to the field; that a water landing was impossible because of the low altitude and the rapidity of loss of power. He said that no attempt at radio communication was made. Plane crashed into a small clearing in the jungles near the center of the island where the foliage is about 15 feet high. The engine was thrown some feet ahead of the plane by the crash, and was later found with the prop,																																																									
NAME AND RANK OF OTHER PERSONNEL E. R. Smeayres, ARM2c		U. S. NAVY BUREAU OF AERONAUTICS AIRCRAFT TROUBLE ANALYSIS FORM 8, 228, 229-A																																																									
AIRCRAFT CLASS SBD-5 # 28543		AIRCRAFT CLASS SBD-5 # 28543																																																									
<table border="1"> <tr> <th>ENGINE</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>M</th> <th>REMARKS</th> </tr> <tr> <td>ENG 1</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ENG 2</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ENG 3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ENG 4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ENG 5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ENG 6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		ENGINE	A	B	C	D	E	M	REMARKS	ENG 1	X							ENG 2	X							ENG 3								ENG 4								ENG 5								ENG 6								NATURE OF ACCIDENT E1	
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PERCENTAGE EACH CAUSE 100% P.P. (Und.)		U. S. NAVY BUREAU OF AERONAUTICS AIRCRAFT TROUBLE ANALYSIS FORM 8, 228, 229-A																																																									

instrument panel and windshield, about 12 feet from wreckage. Plane apparently entered the clearing in a northerly direction, in a slightly nose-down attitude; then cart-wheeled on its nose to the right upon contact with the ground, completely reversing its direction. It cleared a path about 100 feet long and 30 feet wide.

Immediately after the crash, the gunner crawled out of the plane and attempted to drag the body of the pilot from the front cockpit. Before he was able to do so, the plane began to burn, and forced him away. The plane then exploded and burned entirely except for the tail section and a small part of the left wing. Fire was so intense that it melted the aluminum cylinder cooling fins. The general condition of the plane when it was found was such that no conclusive evidence of reasons for engine trouble was available.

**Excerpt from the War Diary of USS SC 701,
January 1944, in the New Hebrides**

JAN 9---MOORED AS BEFORE

JAN 10---MOORED AS BEFORE. 0642 UNDERWAY AND ESCORTING S 31 WHO IS EXERCISING WITH PLANES. 1445 SECURED EXERCISES AND ENROUTE TO BASE. 1635 MOORED TO PIER #1. SECOND CHANNEL ANCHORAGE. ESPIRITU SANTO. N.H.

0800 POSITION: 15 31' S
167 11' E

1200 POSITION: 15 35' S
167 36' E

2000 POSITION: 15 31' S
167 11' E

JAN 11---MOORED AS BEFORE. 1200 ASSUMED READY DUTY.

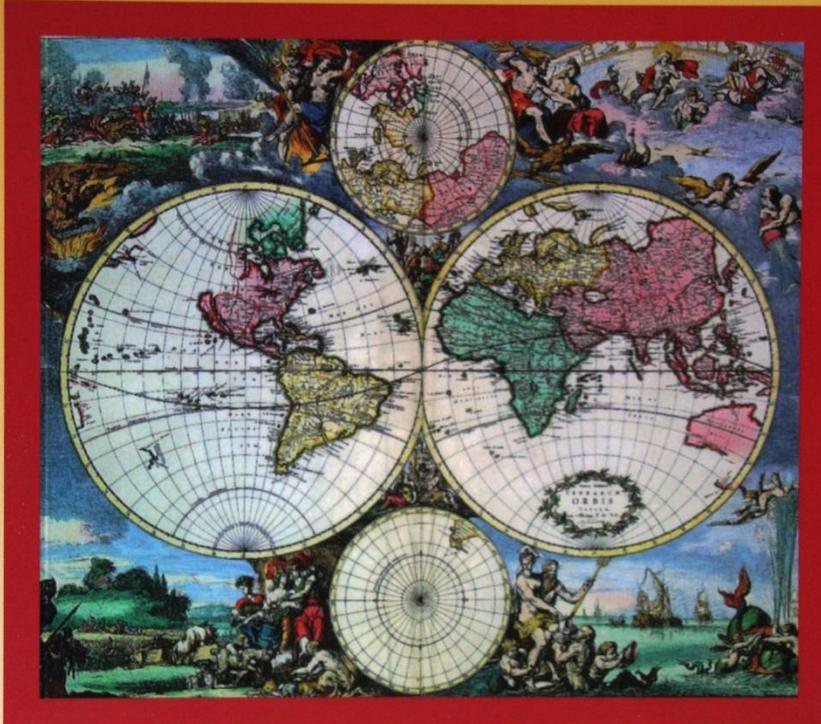
JAN 12---MOORED AS BEFORE. 0800 RELIEVED OF READY DUTY. 1009 UNDERWAY. 1120 THE BODY OF LT. LEANARD EDWARD KINNAN. USNR. AV-N 78908 WAS COMMITTED TO THE DEEP IN LATITUDE 15 35'S. 167 18' E. SERVICE HELD ABOARD THIS VESSEL BY REQUEST OF CNB. NAVY #140. 1136 UNDERWAY FOR BASE. 1240 MOORED TO PIER #1. SECOND CHANNEL ANCHORAGE. ESPIRITU SANTO. N.H.

Note, I have inquired of various respondents in east and west (but not south) Ambae about this wreck, including guides to the trails up the mountain. No one reports having seen or even heard of this wreck. Hence it seems possible that the plane is located on the south side of the volcano.

Annex 7:

- **Pages from *The Most Traveled Man on Earth*, by Llewellyn Toulmin, documenting the first Bali-ha'i Expedition, in mid-August 2001**

The Most Traveled Man on Earth

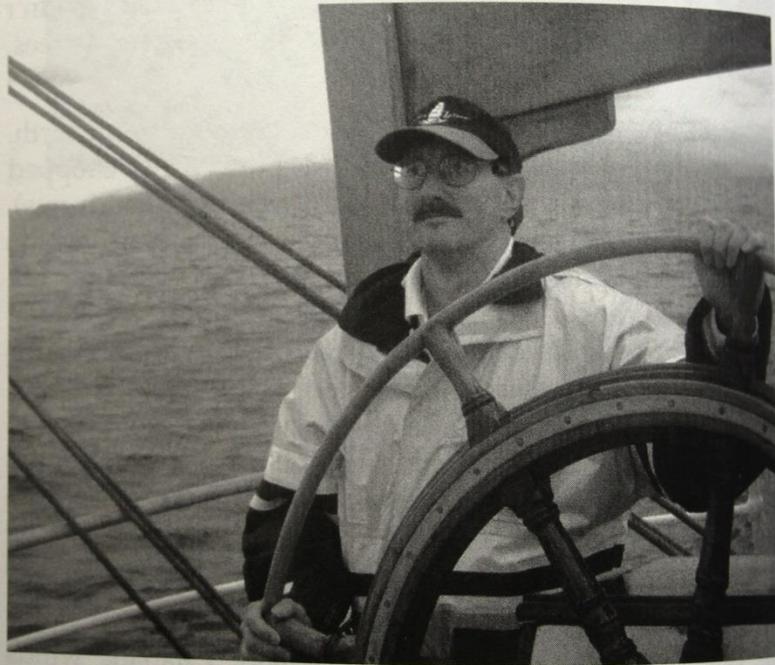


50+ true stories from every continent, including
The competition to be the Most Traveled Man
The real "Bali Hai" – found
Recruited by the KGB
The amazing story of the Knights Templar today

Llewellyn M. Toulmin

The Most Traveled Man on Earth

Finally we set sail for fascinating Ambae, which inspired Michener's Bali Ha'i. As we got closer, I first saw the huge 4,000-foot volcano which dominates the entire island. As we got closer, I was very excited to see small villages and coconut plantations on shore, hugging the lush, green, rugged coast. With the low scudding clouds and cool weather, the mountainous island looked like another line from the song: "Someday you'll see me, my head sticking up from a low flying cloud..."



Lew Toulmin steers the brigantine Søren Larsen along the coast of "Bali Hai" (Ambae), Vanuatu

I went ashore on Ambae, and was able to visit both ends of the island. I found a unique and little-known world that has hardly been explored since Michener's visits during World War II. (I could find no reference to any travel writer or explorer having visited the island.) Ambae is located in

north central Vanuatu, about 1200 miles north of New Zealand. It is lozenge shaped, about twenty-one miles long and nine miles wide. In profile it is bowl shaped. It has a few black sand beaches (which can attract sharks) and many cliffs and rocky volcanic shores. The 10,000 inhabitants live near the shore. There are no residents inland on the central volcano. The volcano features three different colored caldera lakes.

I started my explorations in east Ambae. Stephen Vusi, brother of a local chief, kindly offered to show me around in his "ute" (utility, a small pickup truck). He took me along the dirt road that circled most of the island to the government rest house at Saratamata. (There are no paved roads or hotels, but there are three grass airstrips.) Typical of the several rest houses on the island, it was clean, had a corrugated iron roof and thin wooden walls, limited cooking facilities, several narrow beds in two bedrooms, a cold water shower, and screens (with some holes), and cost 1000 Vatu (about \$7) per night.

Next Stephen organized a meeting with the friendly and accommodating Secretary General (equivalent to the Governor) of the province of Ambae, Maewo, and Pentecost islands. The Honorable Keith Andrew Mala said that, "Vanuatu got its independence in 1980, after years of joint rule by the British and French. Ambae's economy is largely subsistence, with copra and cocoa being the main cash crops. There are four native languages on Ambae, one in each corner of the island. Most people also speak Bislama (pidgin English), and many speak English. All the residents are Christians, of many denominations. There was a beautiful beach on the north shore, but it was destroyed by the rise in sea levels caused by global warming. Redcliffe in the south and Lolowai in the northeast still have good beaches."

Mala continued, "In 1995 there were some scientists' reports of a quake on Ambae, but none of us felt a thing.

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Cyclone season is November to May each year. Malaria is down substantially. There are two U.S. Peace Corps volunteers on the island, one teaching English and one mechanical skills. Almost the only tourists on Ambae are yachtsmen who sail into the one very protected harbor at Lolowai. We do get a lot of tourists in April on Pentecost island (next to Ambae) to see the land diving, where local men defy death by bungee jumping head first from bamboo towers and almost touching the ground, with vines tied to their ankles."

Mala described current local initiatives. "The big program on Ambae now is to build a soccer field at Saratamata, the provincial headquarters, to get ready for next year's national championship, which will be attended by 10,000 people. We would like to attract foreign investors to Ambae. We have set aside some land near the soccer field for them to buy, but the program and prices are not yet set."

I explained my interest in World War II, and Mala confirmed that many Ambae islanders worked for the Americans on the U.S. military bases on Espiritu Santo, thirty miles to the west.

I asked about Michener's story in *Tales of the South Pacific* that there was "a small island [Bali Ha'i or Ambae]...where the French government had sequestered all the young white, yellow and black young girls and unmarried women, protected from the inroads of [the half million] American troops." This hidden cache of women was what led the curious naval officer Michener, who had a pass to go anywhere and inspect anything, to visit Ambae from his base on Espiritu Santo. This in turn inspired Michener's immortal story, in which U.S. Navy Lieutenant Joe Cable from Espiritu Santo visits the island paradise Bali Ha'i and meets Liat, a beautiful Tonkinese girl.

Mala laughed and said he had not heard the hiding story, but the people on west Ambae were lighter than the

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rest of Vanuatu, some people there spoke French, and the women there were more attractive. So perhaps the story was true, and the French had managed to beat out the Americans, and intermarry with the locals. The Tonkinese (north Vietnamese) had been contract workers on the copra plantations. All left Vanuatu after World War II, and most went back to Vietnam.

(Thus you could have the historical irony that beautiful Liat (or any real equivalent), the lover of USN Lt. Cable, could have been back in Vietnam in time for the Vietnam war. The *Tales* state that Liat's mother, Bloody Mary, came from near Hanoi, and Michener's autobiography, *The World is My Home*, says that the real model for Bloody Mary planned to return to North Vietnam. Perhaps the children of any real Liat even fired at U.S. Navy Phantom jets over Hanoi? Strange.)

The Secretary-General kindly arranged for me to meet several World War II participants. First was Wilson Wiri, a catechist in the Anglican church. Born in 1912, he and sixty other men were ordered to leave Lolowai on Ambae in June 1942 to help the United States build five airbases and establish a supply center on Espiritu Santo. These bases supported the battle for Guadalcanal in the Solomons, six hundred miles to the northwest. Wilson's main jobs during his six months on Santo were watering down the runways to reduce dust, unloading some of the one hundred fifty ships (!) in the harbor at Luganville, and building roads by hand in the interior. He said that "air raid warnings went off frequently, but we were never bombed while I was there." During the entire campaign the Japanese dropped only one bomb on Santo—the biggest target in the Southwest Pacific—and none on Ambae. The bomb on Santo killed a cow!

Wiri said, "I was there at Santo when the USS *President Coolidge* sank. This 650-foot troop carrier and former luxury liner hit a 'friendly' mine and then was driven ashore by the

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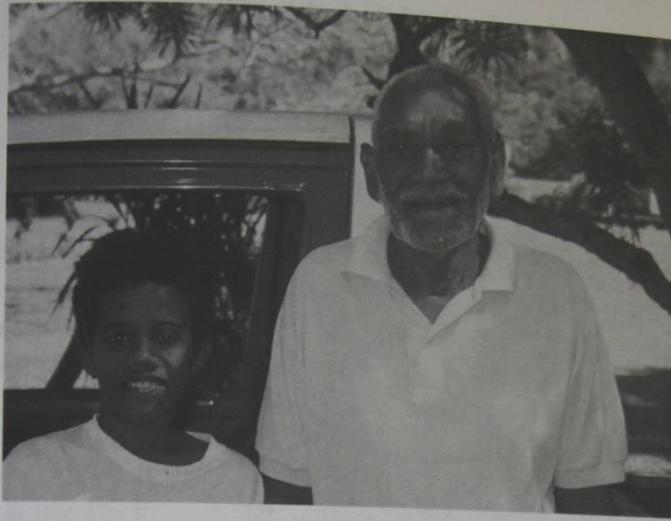
captain. Over five thousand men were saved and only two killed. I helped unload goods from the *Coolidge* before it slid back into the lagoon." (Today the *Coolidge* is one of the world's best wreck dive sites.)

Wiri said, "For recreation we saw a cinema every night." There were over forty cinemas on Santo, newly built for the troops and workers. He continued, "I was thirty years old and had never seen a movie. It was 'numbaone!'"

Later I interviewed eighty-six-year-old Chief Jacob Bue. He had been recruited for the war in a similar way and worked on Santo for six months. He said, "After the Solomons campaign, the Americans tried to sell all the remaining gear to the French at a very low price. But the French refused to pay, saying they would get it for free when the Americans left. So the Americans burned it and pushed it into the sea at 'Million Dollar Point'—trucks, jeeps, lumber, munitions, Quonset huts, beds, everything! After my service on Santo I heard about the Point. I sailed the thirty miles to Santo in my dugout canoe, picked up a large load of good hardwood there while the guards 'looked the other way,' and brought it back to Ambae. With that wood I built my house, which is still standing. Thank you, Americans!"

My guide Stephen Vusi took me to his house in the jungles of east Ambae. He told me about the amazing and bizarre pig-killing cult that is prevalent throughout the country but especially active in Ambae (and which was written up in the *Tales* in the chapter on "A Boar's Tooth"). He said, "Circular pig tusks are so important in Vanuatu that there is a tusk on our national flag. Pigs are the key to becoming a chief. On Ambae any man can become a chief if he raises and ceremonially kills enough pigs with circular tusks."

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Chief Jacob Bue and grandson, east Ambae, Vanuatu

To raise such a pig, he must knock out an upper tooth on either side of the pig's jaw. This allows the lower teeth to curve around in a five-inch circle, over a three-to-five-year period. An Ambae chief who recently died killed a thousand such pigs at the ceremony when he reached the highest, eighteenth grade of chief."

He continued, "A pig skull with circular tusks is so valuable that it is generally accepted as a down payment on a bride on Ambae. Such skulls are also generally accepted to fully compensate for a major crime, such as murder. If skull compensation is accepted by the victim's family, then the police are not involved and any criminal or civil case is closed. However, Mormons and Seventh Day Adventists won't take skulls, and will only accept cash and mats for brides or crimes. But Catholics and Anglicans are happy to take pig skulls!"

I bought two tusks from Stephen that were classified as "gole ala"—defined as circling around more than 360 degrees in a spiral shape. I paid with a \$100 bill. He was a

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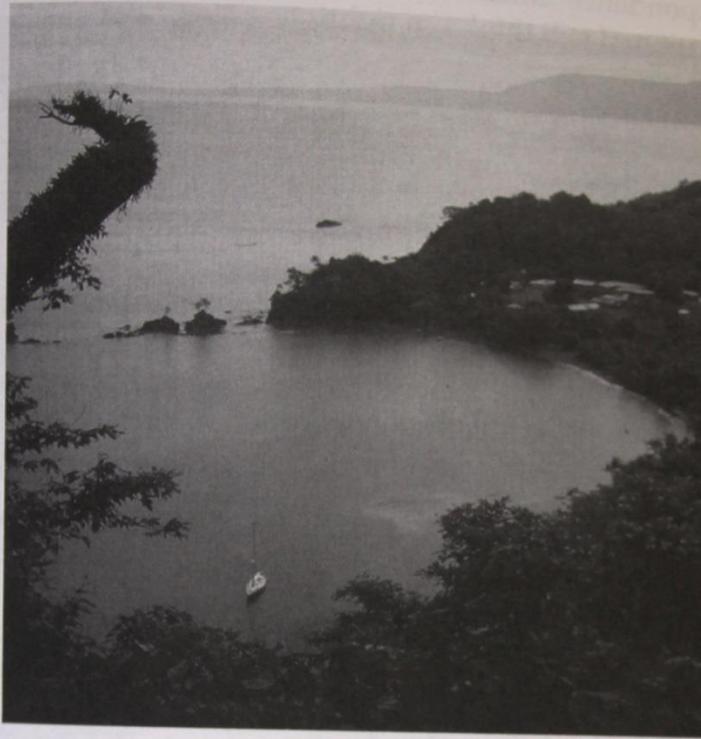
little reluctant to take the bill, holding it up and saying, "I've never seen U.S. money before." You know you're in an isolated area when someone says that!

With Stephen's help, I hired one of the very few power boats on the island for \$60 to cruise along the north coast over to west Ambae. The boat was only nineteen feet long, with a small cuddy filled with mosquitoes, but it was the largest and best available. The coast was dramatic and lush, with a few beaches and many cliffs. Dugouts were pulled up onto the huge rocks. Villages and coconut plantations clung to the slopes. The only modern-looking buildings were the few schools and churches. Below the volcano the land was so rugged that the road was reduced to a difficult footpath. We passed the only harbor on the island, which had a rocky ledge blocking most of the entrance, allowing only yachts and small boats to enter.

As we sailed along I wondered about the one remaining literary mystery of Bali Ha'i. Michener in his autobiography said the name itself came from a poor village in the Treasury group of the Solomons. He thought the name romantic and jotted it down, then used it for the island in the novel. Later in the war he saw Moorea and Bora Bora and felt they resembled what Bali Ha'i should be. (In the movie, the simpler name of "Bali Hai," with no apostrophe, was used, so both versions are right.)

I got in touch with Michener before he died, because I felt there was more to his literary creation. In the *Tales* Bali Ha'i is described as a "tiny island" lying hidden in a bay of a much larger island, called Vanicoro. Inland on Vanicoro there is a tribe that practices cannibalism and head shrinking. Usually in the *Tales* Bali Ha'i and Vanicoro are described as east of Espiritu Santo, and once as south.

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The only harbor on Ambae island, Vanuatu

There are no small islands next to Ambae, which at twenty-one miles long is too large to meet the description of a "tiny" island. So I proposed to Michener that he had fictionally combined Ambae with one of the small islands off the north coast of Malekula. Malekula lies about thirty miles south of Santo, has seven low-lying small islands on its coast, protected by bays, and had an inland tribe of cannibals and headshrinkers, the Big Nambas. I suggested he fictionally combined Ambae's cliffs and hidden women with one of these tiny islands, injected the cannibalism and headhunting of Malekula, renamed Malekula and Ambae/Aoba, added the drama, and thus created the tiny island of Bali Ha'i and its parent Vanicoro. But in

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correspondence Michener insisted Ambae was the only inspiration. (I still think I'm right!)

The boat arrived in west Ambae, but there was no harbor, just a little indentation in the coast. I jumped into the water, holding my belongings over my head, and waded ashore through the surf and volcanic stones. Once I reached shore, a troop of children immediately appeared. They were fascinated by this visitor, and said that no foreigners had visited their village before. West Ambae appeared even poorer than east Ambae. The dirt road was more rutted, there were fewer utes, and almost all the houses were made entirely of bamboo and thatch, with no corrugated iron.

The children took me a mile along the road to Chief Charly Bani in the village of Nanako. I stayed in his guest house for 1000 Vatu. I explained my World War II interest, and he casually asked, "Would you like to see my crashed war plane?" Smiling at my eagerness, he showed me several parts of what looked like a single engine fighter with a three-bladed prop and told me his story. "I was twelve years old in 1943. The village was getting ready for a wedding when we heard the plane screaming down and crashing into the coconut trees behind my house. All hundred of us ran to the crash site, where the plane was burning. Then we saw the parachute drifting down to the west. The American flier was unhurt, stayed with us one night, and was picked up the next day. He said the engine failed. Later some Australian missionaries came and buried some parts of the plane."

Ambae has quite a bit of malaria, a disease that is one of the worst killers on the planet. So that night in the guest house, a small shack made of coconut leaves, I put in place my seven-layer defense against malarial mosquitoes. This involved:

- Covering all the numerous holes in the walls with duct tape (which I had brought).

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Chief Charly Bani, in Nanako, west Ambae, Vanuatu. Under his left hand is the large radial engine of a fighter plane; at his feet is part of the propeller

- Tracking down and killing all the mosquitoes (and spiders) in the hut.
- Spraying the hut with bug bomb (which I had brought).
- Setting alight a number of mosquito coils (which I had brought). These are spirals of a sort of incense that supposedly repel insects. I had used them in Thailand and was never impressed. I had even seen

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mosquitoes flying back and forth through the smoke, seemingly enjoying the smell. But some people swear by them. So what the hell.

- Putting oily mosquito repellent (which I had brought) all over my entire body.
- Nailing a mosquito net (which I had brought) to the ceiling and draping it over the bed.
- Taking my required dose of anti-malaria medicine (which I had brought).

Of course I was hot, miserable and airless behind my numerous defenses, the smell of all that repellent was awful, and I didn't get any sleep. But I didn't get malaria!

My last experience on Ambae was an unforgettable "taxi" ride to the grass airstrip in west Ambae. I was picked up in the island's most beat up ute. There was no passenger seat in the cab, and no seat or cushions in the truck bed. I stood in the back, holding on to the roll bar. I waved royally to the villagers, who looked at me rather bemusedly. I ducked the tree limbs, bounced over the ruts, and felt the cool wind on my face. I looked at the emerald jungle and the sparkling sea and knew I would never forget the real Bali Ha'i and its sweet, gracious people.

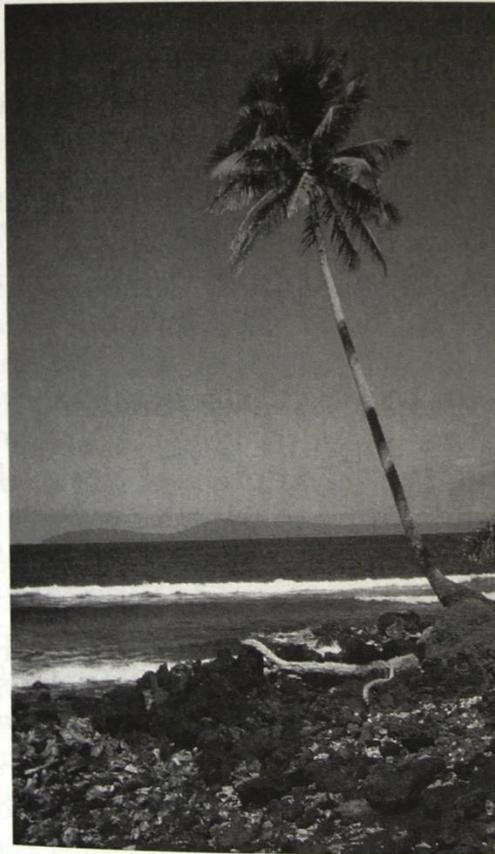
Flying on Vanair on the way home, I passed over the *Søren Larsen*, looked down, and remembered my last hour aboard that beautiful vessel. We were anchored in our final harbor, Luganville on Espiritu Santo. PCs and VCs exchanged addresses, handshakes, and hugs all around. Most of the VCs went ashore in the first Zodiac. I had one more thing to do, though. With PC Ian kindly assisting, I finally managed to climb past the second futtocks to the upper crosstrees. The view from eighty feet up was amazing. We could see for at least thirty miles in all directions. In the distance I could just make out the

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gorgeous green shore of Ambae. I was reminded of a verse in the song:

*Bali Ha'i will whisper, on the winds of the sea,
"Here am I, your special island, come to me, come to me.
Your own special hopes, your own special dreams,
Bloom on the hillsides and shine in the streams."*

Looking down at the *Søren Larsen* far below me, and at the real Bali Ha'i in the distance, I knew I had realized my own special dreams.



A typical rocky beach on Ambae

Annex 8

Accessing Mt. Manaro

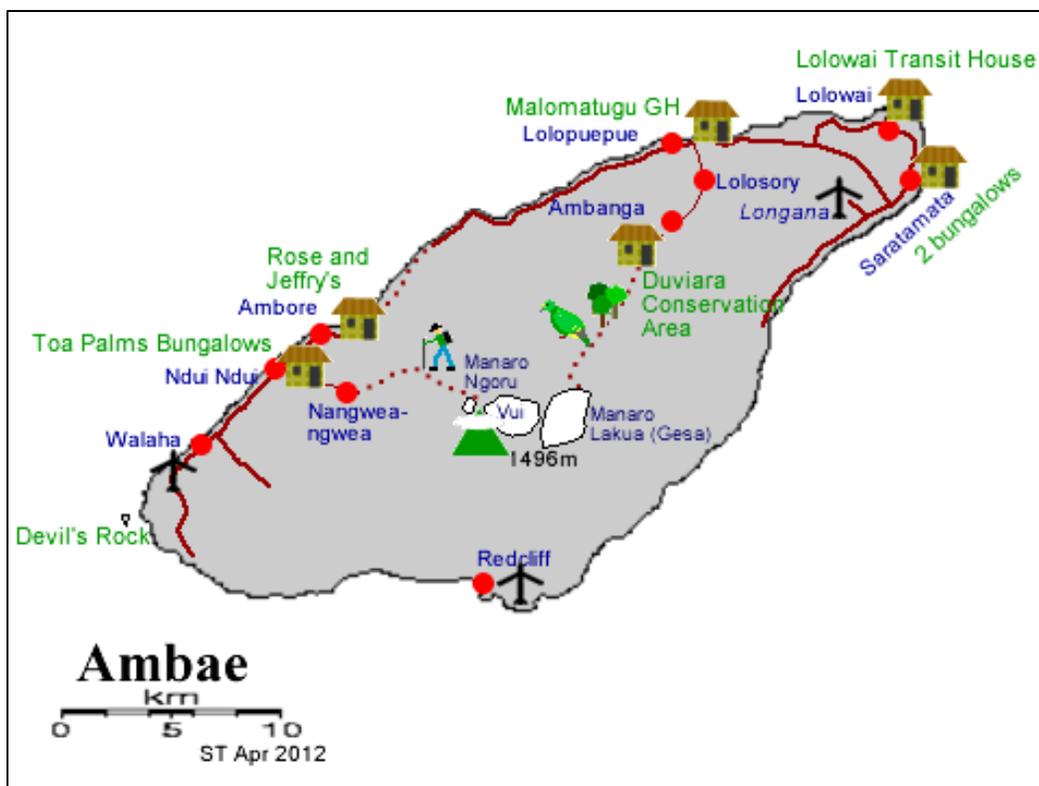
This annex discusses various aspects of accessing the caldera of the summit of Mt. Manaro. An Expedition goal was to climb this mountain, but this proved impossible due to poor weather conditions – too much rain and mud, such that guides said it was “impossible” to climb. The annex first discusses general points re routes to the summit; second, a map of the area northwest of the summit; and third, specifics of the approach from the northwest.

General Points Re Accessing the Mountain

Regarding general points on accessing Mt. Manaro, I have discovered the following:

- There are two operational airstrips on Ambae -- Wallaha in the west and Longana in the east. A third strip was operational in the south, but is now (mid-2013) closed. The two fields have service, generally from Luganville, Espiritu Santo, about 3-5 times a week, via Air Vanuatu light plane (8 passengers).
- The circumferential road around Ambae is poor, unpaved, and graded only near Saratamata (the tiny provincial capital in the NE) and parts near the airport in the west. Pickup trucks can be hired for about \$100 USD per day. Try to secure a Toyota Hi-Lux with good, recent, knobby tires.
- There is a very steep path to the crater lakes from the north central coast, heading almost due south. This was reportedly cut recently but is quite difficult.
- There is a path from Ambanga in the northeast, which is reportedly the “easiest” path. (See map below and website <http://www.thecircumference.org/mount-manaro>). This is the most common path, often used by Peace Corps Volunteers, who tend to be stationed in NE Ambae. However, one PCV reported that this path took 17 hours (!) to traverse one way, due to poor, overgrown trail conditions.
- Any expedition should ask that the trail be cleared in the week before their arrival. There will likely be no extra charge for this onerous service!
- There is reportedly a trail coming up from the south to the caldera, but there is little information on this.

- Generally locals are quite happy to direct you to guides, who will willingly take you up the mountain for a fee. It is essential to hire a guide, to avoid getting lost and to ensure that you do not violate taboos or offend landowners. All land in Ambae is owned by someone, under “kastom” rights. These rights are taken quite seriously. Do not hunt or kill any pigs or other livestock; there are no wild pigs or cattle, all are owned by someone on Ambae.
- It is not clear if the “Rose and Jeffry’s” guesthouse is still open.
- There has been talk of opening a guesthouse in Nangweangwea, west of the crater lakes, at the trail head, but no action. It may be possible to stay with a local family. It takes about ½ hour in a 4WD truck to get from the Toa Palms Bungalow to Nangweangwea. This Bungalow has bedbugs. Enjoy!



Map of Northwest Ambae



Map of the area between Ndui-Ndui (near the red spot) and the volcanic caldera lakes

The map above is located in the Peace Corps-Vanuatu HQ in Port Vila, and is the most detailed map of Ambae I have ever seen. It was apparently developed by the Government of Vanuatu. Despite its impressive appearance and detail, I believe it to have a substantial number of inaccuracies, including:

- It shows a coastal road (in black) along the entire coast. In fact, this fair to poor unpaved road ends a few kilometers NE of Ndui Ndui, and becomes a walking track, heading NE along the coast.
- It shows several roads going south (inland) from the coast around Ndui Ndui. According to respondents, there are no paved roads in this area (and indeed none on the entire island); and all the inland roads south of Ndui Ndui, except one, are so poor as to be considered impassable even in a four wheel drive pickup truck. Thus they are really walking tracks.
- The only passable road starts just east of Ndui Ndui, close to Nanako village. This road runs to Nangweangwea, then stops. Only steep tracks continue south or SE beyond Nangweangwea. On the map there is no road that meets this description.

- The map shows Nanweangwea as being almost due south of Nanako. In June 2013 I traveled by pickup along the only passable road, which starts at the Toa Palms bungalow between Ndui Ndui and Nanako. This road appeared to head in a SE to SSE direction, at right angles to the coast. The road also appeared to be much longer, and completely different in shape (being fairly straight), than indicated on the map. Furthermore, the position of Nangweangwea appears mis-placed on the map. I estimate that Nangweangwea village is actually located at about where Longwele Natakaro is located on the map, or quite possibly even further southeast.
- Even this “passable” road, when somewhat muddy, caused our Mazda 4WD pickup to get stuck, and it was only freed by seven men pushing it out.
- Nanweangwea village is at 200 meters above sea level, according to the map. This seems a little under-estimated.
- Thus just about everything about this accurate-looking map is possibly in-accurate – the distances, names and locations of villages, shape of roads, and the conditions of roads! This raises serious questions about the mapping approach, and the use of this and other maps of Ambae (and other islands?) in disaster response and other applications.

The Approach from the Northwest

The path from Nangweangwea in the northwest to the caldera rim reportedly takes 3.5 hours of hiking for a very fit person, or up to 7 hours for others. Hence it may be possible to hike up to the lakes and back in one, very long day. The trail is very overgrown, so that even when “cleared” it is likely that it will not be possible to see your feet due to overgrowth, and many vines and creepers will delay progress. (Nangweangwea is south or SE of Ndui Ndui, which is about 10 km or 30 minutes drive east of Wallaha airstrip.)

If Nangweangwea is at an elevation of about 200 meters, then the hike up to the caldera rim (at 1442 meters) has a vertical gain of about 1242 meters. However, this fairly modest gain is misleading, as there are many ridges and a difficult path.

The area near the caldera is quite damp all the time. Collecting firewood and starting a fire there is not possible. Overnight camping near the caldera rim is possible, but a tent, ground cloth, camping stove, food, water, water purification tablets and other supplies should be brought. There is only one stream on the way up to the caldera; purification methods should be used. Guides can be hired in Nangweangwea for about \$60 USD per day (for two guides). Guides can carry most or all of the gear and supplies, if desired. A small tent may be available from the Toa Bungalow in Ndui Ndui. One or preferably two hiking sticks per person should be brought, although the guides can cut local sticks that are not as

satisfactory. Good hiking boots, not just running shoes, are very desirable. The locals will be wearing flip-flops, but these are not satisfactory for western feet.

There is talk of cutting a (paved?) road up to the caldera, to develop it as a tourist destination, but this seems unlikely, given that most islands in Vanuatu have no paved roads, the dirt roads are in poor condition, and the terrain is very challenging.

Climbing should not be attempted during the wet season. Unfortunately, the dry season, normally about June, July and August, has become intermittently rainy. This is due to global climate change, according to Ambae locals.

If you reach the crater rim, it will take perhaps 30 to 45 minutes to go from lake to lake, between the three lakes. You should take high density photos of the state of Lake Vui, and provide copies to the Meteo office in Port Vila, who are eager to build up a visual time line of the lake and cone. You should not camp within the caldera rim if the volcano is active at all, since SO₂ outgassing may be dangerous.

Relevant photos are presented below.



The airstrip at Wallaha, west Ambae, taken from the cockpit of an approaching plane. Note the severe slope and curve of the strip, and the cliff below the strip with water at the cliff base.

This strip is one of the few in Vanuatu where planes must always take off in one direction – north. Since the wind is usually from the southeast, this means that takeoff is with the wind, not a desirable condition.



**Typical 8-passenger Air Vanuatu plane used to fly to Ambae, usually from Santo.
You can sometimes talk your way into the co-pilot's seat.**



4WD truck stuck in the mud gets a push, just outside Nangweangwea village



The last house at the top of Nangweangwea village



Girl from one of the last houses of Nangweangwea village, west Ambae



Start of the trail up Mt. Manaro, in Nangweangwea village, west Ambae

#End of Expedition Report#