TACHIKAZE/MORTLOCK EXPEDITION  AUGUST, 2009  EXPLORER CLUB FLAG #189

TEAM LEADER – Chip Lambert (MN’01, Inactive), chippamlam@aol.com and www.fossilfuelsbrewingco.com

SPONSER: Judy Schrafft (FN’83)

TEAM MEMBERS - Pam Lambert (MN’01, Inactive), Dr. Mike and Peggy Day, Rich and Diana Lackey, Lee Walker and Mimi Rodes, Bruce Latimer, Eric Musick, Brain Beltz, Peter Ording, Luke Twyman, Dave Buller, Mike Zinsley, Andy Campbell, Steve Hudson, Bruce King and Frank Tidikis

EXPEDITION DATES – Los Angeles, CA on August 12, 2009 to Los Angeles, CA on August 30, 2009

OBJECTIVES –

- Find the Japanese destroyer IJN Tachikaze that was on sunken February 17, 1944 while aground at Kuop Atoll during Operation Hailstone. For a number of reasons the location of the Tachikaze sinking has remained unsolved due to a variety of imprecise coordinates of the sinking site, the precipitous topography of the Kuop Atoll and the remoteness of the atoll.

- Conduct a survey of Satowan Island in Satowan Atoll, Mortlock Islands for WWII land and sea artifacts. The Mortlock Islands are a remote group of atolls occupied by the Japanese after WWI and the site of an airbase guarding the southern approach to Pohnpei that was destroyed by the U.S. Navy on April 30, 1944.

- Conduct research on a unique disease manifestation, “Spam Disease”, known to date only on Satowan Island. The research will include taking biopsies and case histories to aid in determining the disease’s causative agent, documentation of patient’s responses to recently employed empirical therapy and to further investigate possible sources and distribution of the disease. Similar studies will be conducted on Lukunor Island, Lukunor Atoll, Mortlock Islands.

- Provide some basic supplies for the schools on Satowan and Lukunor.

- Survey the virgin reefs of Kuop and the Mortlock’s for unusual or novel vertebrate and invertebrate life forms.

A self-funded team with mutual diving interests gathered from around the world in Chuuk State, Federated States of Micronesia, and headed southeast on the SS Thorfinn under Capt. Lance Higgs for Kuop Atoll and the Mortlock Islands, in an effort to achieve these goals.
IJN Tachikaze-

The World War II shipwrecks scattered across Truk Lagoon (Chuuk State) make it one of the world’s most popular wreck diving destinations. Most of the larger Japanese ships sunk during the American attack designated “Operation Hailstone” in February, 1944 have been found, including the recently (2003-4) located Katsuragisan and Sapporo Maru. A few of over 30 Japanese ships, lost outside the lagoon in extreme open water depths, remain undetected as they are at depths beyond the technical limitations of most wreck divers. However, one feisty but unfortunate destroyer, the IJN Tachikaze, possibly lost in shallow waters, remains hidden somewhere among the reefs of Kuop Atoll, an atoll 25 miles southeast of Truk Lagoon, and is one of our objectives.

History of Minekaze-class destroyers and Tachikaze –

The IJN Tachikaze’s keel was laid down at Japan’s Maizuru Navy Yard on August 18, 1920, the eleventh ship of the Minekaze-class destroyer design. Six Minekaze-class destroyers were ordered just prior to the end of WWI and were Japan’s first exclusively designed and built destroyers. The Minekaze class boats were large, heavy and fast for their time. Approximately 339’ length (OA) x 30’ abeam and displacing 1650 tons, the Tachikaze’s four boilers and two turbines pushed it to 39 knots. The armament consisted of 4 x 4.7”/45 cal. S.P. guns, six torpedo tubes, sea mines and 7.7 mm antiaircraft machine guns. The machine guns on all the Minekaze class destroyers were upgraded to 25mm rapid fire guns in the late 1930’s.

Launched in 1921, the Tachikaze patrolled the China coast during Second Sino-Japanese war (1938-1939). In 1940, it supported Japan’s invasion of French Indochina. Though considered obsolete, in 1941 it was assigned to Destroyer Division 34, Eleventh Air Fleet for secondary operations as an escort vessel. Patrolling much of the western Pacific, including sorties between Truk and Satowan, it was damaged four times by air attacks. During one encounter off Rabaul on December 27, 1942 it was heavily damaged and its first captain, Lt. Cdr. Yasumi Hirasata was killed.

Refitted by mid-1943, the Tachikaze was reassigned to Truk, patrolling and escorting cargo and troop ships between Rabaul, Palau and the Mortlock’s. While returning to Truk from a routine supply sortie to Rabaul and the Mortlock’s under Lt. Cmdr. Yokota Yasuteru, it ran hard aground on Kuop Atoll during the pre-dawn hours of February 4, 1944. Despite intense efforts, the Japanese were unable to refloat the ship before the U.S. launched “Operation Hailstone” on February 17, 1944. Targeting the fleet and shore facilities of Truk Lagoon, aircraft from the carriers Enterprise, Essex, Bunker Hill, Intrepid and Cowpens spent two days devastating the trapped Japanese ships and their supply base.

Quickly spotted south of the lagoon and unable to maneuver, the Tachikaze became a choice objective for the well-armed carrier planes. The ship’s gun-crews briefly kept these strafing aircraft at bay, putting up an intense and accurate umbrella of AA fire. There are claims three US planes were lost during the six separate attacks on the stranded destroyer; however, after-action reports from these sorties do not list any downed aircraft.
After the initial attacks, the Japanese attempted to remove a number of redundant crewmen from the stuck destroyer. A 300 ton transport (AK) and a sub-chaser (PC) spotted in the area, both of which could have picked up some of the *Tachikaze* crew, were repeatedly strafed on the 17th and strafed, bombed and sunk on the 18th, with the loss of all personnel. Two additional ships, the *Kokko Maru* and *Kimpo Maru* No.1, appeared to have successfully removed other crewmembers, including the captain, Lt. Cdr. Yokota Yasuteru. Yokota was immediately reassigned as captain of the *Urakaze*. Eventually his luck ran out on November 21, 1944 when both the battleship *Kongo* and *Urakaze* were sunk with the loss of all personnel by a single spread of torpedoes from the USS *Sealion*.

Early in the morning of February 18, two bombs dropped by SBD dive bombers from Strike Group 1BE, comprised of SBD’s and TBF’s primarily from the *Enterprise*, blew apart a large section of the *Tachikaze’s* bow. One SBD, when flying through the bomb blast at just 230’ over the ship, was severely damaged but made it back to the carrier. Moments later, a torpedo from a TBF torpedo bomber blew off the stern and the *Tachikaze* slowly slid slowly off the reef into obscurity.

**The search**

Previous search attempts to locate this shipwreck have been futile, most likely because the coordinates of its final location reported in historical documents are vague and inaccurate, and the Kuop reef is so precipitous that the ship may have slid to a depth beyond the sensitivity of most common detection instruments. Deciding to enter the hunt, we used Google Earth images of Kuop Atoll and some recently acquired aerial attack photographs of the grounded ship. Comparing the reef segments found in some 65 year-old photos and recent satellite scans of the reef structures, it was possible to move the pictures around like a jigsaw puzzle and align the images. Carefully matching them, the precise GPS coordinates of the Tachikaze’s last position could be derived from the Google Earth software. We were fairly confident we could now find the location of the *Tachikaze* sinking and, hopefully, the ship.

**What did we expect to find**

If the destroyer came to rest at a depth within technical scuba diving range, depending on its condition, it could have the potential of becoming one of the more important WWII wrecks in the world. Currently, scuba enthusiasts can only reach a few Japanese WW II destroyers, including two famous wrecks, the *Fumitsuki* and the *Oite*, in the shallower areas within Truk Lagoon. Based on aerial photographs taken during the attacks on the ship, the *Tachikaze’s* torpedo launchers, the huge deck guns, the AA guns and the depth charge apparatus were all intact when sunk. The superstructure appeared damaged but the holes would allow penetration into the bridge and examination of the navigational gear, the crew’s quarters with personal artifacts, and the mess where ovens, cookware and china should be visible. The hull, damaged from two bombs and a torpedo, might provide access to the ship’s engines and associated apparatus. The stern section may be missing. There most likely would be a large number of human remains aboard, as approximately 140 crewmembers remained aboard and continued to man the guns during the attacks, none of whom survived.

On the shallow reef, there should be some wreckage and artifacts from both the attacks and the attempts to lighten the ship in an effort to refloat her. Even if the *Tachikaze* sunk to a depth beyond our diving capabilities, there should be sufficient debris on the reef and at shallower depths to confirm her location and identity.
What we found

We were hoping to find a ship waiting for us, 20' below the surface and in perfect condition. It didn't happen. The first afternoon, the entire group surveyed the reef at various depths around the predetermined GPS coordinates and found nothing. The next morning, some of the group dove at the location and a couple of us worked the top of the reef at low tide. Eric Musick spotted some machinery, which turned out to be a coral-encrusted winch most likely used to try to get the Tachikaze off the reef. Using the location of the winch and other artifacts we found on the reef, we realigned the ground level observations with those from space and were able to identify where the ship’s bow rested aground on the reef. A series of bomb craters adjacent to this area helped delineate the ship’s orientation at the time of sinking. Diving below that, we found a huge furrow in the coral starting at about 80' and continuing to unknown depths. The reef appeared to be gouged by a sliding destroyer; it had the shape, including the keel, and size of the Tachikaze's hull. Descending along the furrow, Tomo, one of the dive guides, found the first underwater artifact, a 25mm shell with a manufacturing mark and S 17 on the base plate (see photo). Again, the ship’s original anti-aircraft armaments were 7.7 mm machine guns but all Minekaze-class destroyers were upgraded to 10 x 25mm guns in the late ‘30s.

Diving over the next two days between depths of 160’ and 225’, many artifacts were collected. We had helium but the hose fittings on the boat were not compatible with our tanks, so our $2000 helium investment (two tanks) stayed on the deck and we were limited to air depths, except for one bounce dive down the furrow to 300' to confirm the ship wasn't within our potential diving limits. The artifacts included a number of electrical box covers with kanji plates. They appear to be from the sea mine launcher mechanisms (Tachikaze carried 16 mines). A 25mm gun barrel was found imbedded in the coral at 160’. Other artifacts recovered by Peter Ording, Brian Beltz, Andy Campbell, Mike Zinsley, Dave Buller and Pam Lambert included hatch dogs, cooling coils, a variety of brass fittings, an alarm bell case, davit pulleys and a pressure gauge with its protective cover intact. When the cover was removed, we found the paint on the face of the gauge had bubbled off and the glass faceplate was frosted, most likely from the heat of the burning ship.

Dave Buller and Bruce King surveyed the wreck location using a magnetometer with sensitivity to 1000’ and did not detect any anomalies indicative of the ship. Our bottom-finder images revealed an almost vertical reef face straight down to its detection limit (600’) with no indication of either a ledge or a ship in the area of the sinking.

While the ship itself was not found, we feel the furrow cut in the reef that continues to a depth beyond our diving and search capabilities leads to the Tachikaze. The recovered artifacts are consistent with a Japanese destroyer, the only warship known to have been sunk in this unique location. While not locating the hull, we are confident we have established the precise location for the Tachikaze’s sinking as 7° 02' 30" N, 151° 54' 03" E.
The Tachikaze Plates

Translation by Miyo Inoue

Photographs enhanced for translation by Ed Loeb

All photographs by Chip Lambert unless otherwise indicated

The first plate

The plate reads:

電路 接続 筐
水雷 発射 用

Word by word:

電路 means electrical circuit. 用 means for the purpose of.
接続 means connection. 発射 means to launch.
筐 means box or case. 水雷 means sea mine.

So this plate should read: **Electrical circuit connection box for launching sea mine**
The plate reads:

水 雷 号 令 接 續 筐
自. 艦 橋 水 雷 指 揮 所
至. 一 番 聯 管

Word by word:

水雷 means sea mine.
号令 means order or command.
接續 means connection.
筐 means box or case.
自 means from.
艦橋 means bridge on a warship.
水雷 means sea mine.
指揮 means command or direction.
所 means place.
至 means to.

Note: two .50 caliber bullet holes
一番 means first.

聯管 means pipe joint.

So this plate should read:

**Sea mine control connection box**

**From the main bridge sea mine control**

**To the first pipe joint (or launching tube)**
The third plate

東京 共立電機株式會社 昭和3年12月

東京 means “Tokyo.”

共立電機株式會社 means “Kyoritsu Electric Company Ltd.,” the name of company.

昭和 is the name of an era, so 昭和3年 is “the year Showa 3” or “1928.”

12月 means “December.” So the meaning should be something like,

“Tokyo

“Kyoritsu Electric Company Ltd.,

“December, 1928

“No. 12”
25 mm anti-aircraft shell recovered at 200’, Kuop Atoll

Winch on Kuop reef where Tachikaze was aground

Pressure gauge recovered at 190’, Kuop Atoll

Kuop reef’s vertical face
Chip and Pam Lambert following furrow past 225’
Exploring the Mortlock Island Group (Outer Island’s of Chuuk State, FSM, 5° 30’ N, 153° 35’ E)

The Mortlock Islands, now politically part of the outer island sphere of Chuuk state, were first seen by European sailors in 1795 when Captain James Mortlock happened by the uncharted atolls during a voyage between Port Jackson and Whampoa. The islands were left relatively undisturbed until 1885 when a Spanish missionary arrived from the Philippines to begin the conversion of the natives to Christianity. The German occupation of Micronesia followed (1899-1920) with only the presence of a still-active Lutheran church on both Satowan and Lukunor indicating some level of lasting influence.

In 1921, after WWI, the League of Nations granted Japanese ownership of the atolls and the Catholic Church on Lukunor was promptly torn down. The coral blocks hewn for the church were floated to Satowan for construction of a new airbase facility. The Japanese installations and airbase on Satowan Island, the largest island in the largest atoll, were built to guard the southern approach to Japan’s administrative headquarters located on Ponape (Pohnpei). During WWII, although the isolated Japanese base had little military value for the U.S., it was bombed numerous times as target practice for the Army Air Force’s B-17 and B-24 bombers. In late April 1944, Rear Admiral Jesse Oldendorf, with orders to “bombard airstrip and destroy grounded aircraft, facilities and shipping in order to prevent effective use of field by enemy in opposing further operations” lead Task Group 58.2 to Satowan and accomplished the task. The ships, consisting of the cruisers Louisville, Portland, Wichita, Baltimore, Boston, HMAS Canberra, New Orleans, Minneapolis and San Francisco, accompanied by 8 destroyers, lofted more than 800 8” and 5” shells onto an approximately one square mile spot of land, Satowan Island. Concrete building shells, rusting tanks and skinless aircraft frames are all that remain in the jungle as evidence of the raids success. Local knowledge and a photograph published as part of a July, 1948 National Geographic article on Micronesia indicate there were also sea planes and small ships sunk in the lagoon during the attack. Little else has been published regarding either the Japanese occupation or Oldendorf’s bombardment.

After Japan’s surrender in 1945, the United Nations (1947) assigned these islands to the U.S. as part of the “Trust Territory of the Pacific Islands”, a unique arrangement where the Navy administered the islands, allowing no civilian visitors. However, in 1951 it reverted to civilian control administered by the Department of Interior. The Federated States of Micronesia (FSM) and, consequentially, the Mortlock’s were granted independence in 1978. FSM remains economically tied to the US by the Compact of Free Association, which expires in 2023. The remoteness, sparse population and lack of significant exports have relegated the Mortlock Islands to relative obscurity with virtually no information regarding post-war culture available in the literature.

Our intent was to document any remaining surface WWII artifacts, survey the lagoon in an effort to locate WWII targets and record as much WWII oral history as possible. We anticipated our Chuuk contacts would provide us with the names of key Mortlockese dignitaries and alert them of our arrival. As with most remote Pacific locations, all the reefs and waters are privately owned, and the owners usually require permission and fees from visitors to dive or walk on their property. We anticipated that after gaining permission from the traditional chiefs to visit the islands and paying our fees, the locals would provide us guides to the Japanese war artifacts and other areas of interest. Similarly, information from fishermen
regarding unusual and productive fishing spots within the lagoons would hopefully guide us to sunken aircraft or shipwrecks in the lagoons.

Landing in Chuuk, it was immediately apparent none of these arrangements had been made and our facilitator, who claimed to have generated a list of all necessary contact names and obtained permission to explore their holdings, was not to be found. The possibility of accomplishing our objectives rapidly deteriorated.

By coincidence, Federated States of Micronesia President Manny Mori was on our flight from Guam to Chuuk. Out of desperation, I took the opportunity to introduce myself to him and Chuuk Governor Wesley. I explained the purpose of our trip and lamented the fact that none of the anticipated contacts had been made, and pleaded that only intervention from higher sources was going to save our expedition. Both the higher sources had cell phones and very quickly the elusive parties were located, pressure applied and arrangements made. The relevant island representatives were contacted by shortwave radio and a government official was assigned to travel with us to assist with the introductions. The positive relationship continued to the Mortlock’s where President Mori was travelling for a fact finding/town meeting excursion, again coincidently with our trip, and we were invited to participate in these events. Suffice it to say, through the generosity of these gentlemen, we were warmly welcomed and no fees were charged for our excursions.

On arrival at Satowan, Pam, Diana Lackey, our de facto official videographer, Joseph, the government liaison with the Mortlock’s and translator, and I went ashore to present our credentials. We met the Mayor and the Chief of the traditional Chiefs, Erick Mouafa. After a brief discussion where we explained the purpose of the visit, we were offered coconuts (a symbol of friendship) and told the lagoon and the island were available for our studies. Some of the local men, Kiapo, Dinney, Janus and Sandy volunteered to be our guides and patiently directed a number of the group to numerous plane and armament sites.

During the war, there was a large Japanese presence on Satowan, evidenced by the numerous remains of large concrete buildings at the island’s northeast corner. They are adjacent to where the current clinic, high school and a May, 1945 (date of unknown significance) Japanese monument dedicated to soldiers is located. Toward the southwest, at the other end of the former runway, is another Japanese building complex and the contemporary elementary school. Surrounding both building complexes are extensive collections of various sized and shaped bomb shelters. The low, mushroom-like shelters scattered among the post-war houses seem to be unique to the Mortlock’s. Pillboxes of various sizes are spaced about every 100 meters along the southeast, windward beach. The original runway was oriented SW to NE adjacent to the windward side of the island. It was located just interior of the pillboxes and two large coastal gun mounts, one still bearing a 14cm/50 3rd Year Type (1914) BL gun, intact, except for the missing breech.

The airstrip has been replaced by taro patches but there are still concrete remnants of the apron areas around the elementary school, where the deteriorating remains of a G4M2 “Betty” lies to the SE (one prop blade with .50 cal bullet hole). NW of the school on a concrete apron area is a bomb/torpedo loading carriage sitting next to a Yokosuka D4Y “Judy”. One blade of its three-bladed prop is buried and bent, which indicates it was turning when hit, most likely in preparation for take-off. The “Judy’s” Daimler Benz (Aichi Atsuta-21) engine remains attached to the deteriorating frame.
Close by lies a Nakajima B6N’s 4-bladed prop and Mitsubishi MK4T engine that have separated from the frame. An A6M Zero is further to the NW and appears to be off the apron area, closer to the lagoon. All the planes appear to have been incapacitated while on the ground, as each is relatively intact and pancaked onto the earth. Most of the aircraft’s aluminum coverings have been stripped from the frames, probably for use in construction and fashioning cooking utensils. Six Type 95 Ha-Go light tanks all without guns but some with intact treads, a roller and two small field guns, a Type 1 47mm anti-tank gun and Type 91 10 cm howitzer, are along the islands only road, approximately 300 yards to the NE of the Zero.

In the lagoon, we found two, what appear to be "Jill” or “Rufe” airplane engines and props and a small lighter of unknown vintage. These may be the same vessels that appeared in July, 1948 National Geographic picture of Satawan(sic). We were directed to other areas within the lagoon by locals claiming knowledge of other wrecks, but after extensive searches of each site, no other artifacts were found.

On Lukunor, we recorded a number of oral WWII histories from the local population. Prior to the war, the Japanese moved the local population off Lukunor to neighboring Piasa Island. They were brought over each day to construct the fortifications and toil the fields. Elders present during the war described a 700 man Japanese garrison on the main island. One antidotal story told of a night visit to Piasa by a US “frog” team who rowed ashore from their surfaced submarine, eluding the 30 man Japanese “guard” detachment. According to the locals, they stayed long enough to set up a radio, transmit intelligence observations and smoke Lucky Strike cigarettes. More research is needed to track down these claims.
2. Picture 2 – the tower (back)

The above tower reads (starting from the upper right),
昭和二十年五月
陸海軍部隊建立
昭和二十年 means “the year Showa 20” or “1945.”
五月 means “May.”
陸海軍部 means “army and navy.”

*陸軍 means “army” and 海軍 means “navy,” so 陸海軍部 is a combination of both.

部隊 means “unit” or “force.”
建立 means “erection.”

So the meaning should be,
“May, 1945  Erected by Army and Navy Forces”
The above tower reads,

忠霊塔

忠 means “honesty” and “loyalty.”
霊 means “soul.”
塔 means “tower.”

忠霊塔 (pronounced Chu-rei-toh) is the tower which is erected in order to enshrine the souls of those who died for the sake of loyalty.
Japanese “whale” boat found in Satowan lagoon

Bruce King and Dave Buller examine prop from a “Rufe”?

Engine and frame components from a “Rufe”? Satowan
Type 95 tank

A6M Zero

G4M2 “Betty” engine

Type(1914) BL gun

Keipo and Dinney, our guides, at the coastal defense gun

Yokosuka D4Y “Judy”
“Spam Disease”

Japan’s surrender in August, 1945 did not bring an end to the Mortlock’s WWII experience. A unique disease recently described by Lillis, et al., Clinical Infectious Diseases 2009; 48:1541–6, is attributed to the mosquito-larvae eating fish (Medaka) introduced to Satowan by the Japanese during the war. Bomb and shell craters formed during U.S. attacks filled with fresh water and became mosquito breeding sites. In an attempt to control the infestation, the Medaka fish were brought from Japan and planted in these pools. Most likely, the fish carried Mycobacterium marinum, a bacterium related to the organisms causing tuberculosis and leprosy, inoculating the organism into what became the kid’s local swimming holes. The very recent recognition of this seemingly unique disease on the Mortlock’s appears to be directly attributable to the Japanese occupation and U.S. shelling of Satowan, and an interesting way of bringing our story full circle.

In the U.S., the bacterium causes “Fish Tank Granuloma”. In the Mortlock’s, the often untreated syndrome causes severe abscesses and granulomas that have been named “Spam Disease” because the manifestation resembles the canned meat by that name. Interestingly, the causative organism remains speculative as it has not been cultured from the patients. Working with Kevin Winthrop, MD, and Joe Lillis, MD, Oregon State University Medical School, and Dr. Kino Ruben, Chuuk Department of Health, we offered to evaluate the treatment regimens that the original investigators had started two years ago but had not been able to follow up. We also proposed to examine new patients with the disease and obtain samples for culture or RNA sequencing in an attempt to identify the causative organism. Since we were going to other atolls, we offered to examine these additional populations in an attempt to understand the disease’s epidemiology.

Our medical team consisted of Dr. Mike Day, primary care physician with the University of Florida Medical School, former Marine Corps medic and critical care nurse, Eric Musick, Pharmacist Bruce Latimer and Pam Lambert and myself, clinical microbiologists. In addition, photographers, Luke Twyman and Diana Lackey photo-documented the patients and Peggy Day, Frank Tidikis and Rich Lackey took case histories.

As soon as we had explained our intentions to the chiefs and mayor on Satowan, they gathered “spam disease” patients for evaluation. The local population is acutely aware of the disfiguring syndrome and anxious to find an effective treatment. We looked at patient responses to the “spam disease” therapy regimens established by the Lillis group and observed new patients from which we obtained tissue biopsies. Two clinics were conducted on Satowan. Of the 17 patients evaluated, eight were participants in the Lillis study and nine had not been previously evaluated or treated. From this group, eight tissue biopsies were collected. Unfortunately, the preservative had been omitted from the collection supplies, necessitating rapid sample shipment to the Center for Disease Control in Atlanta, GA. Serendipitously, Federated States of Micronesia President Mori was conducting “town meetings” at Satowan coincidently with our visit and offered to carry the samples back to Chuuk for immediate shipment to the CDC in Atlanta. The last we saw of the President and the samples, they were being carried north at full speed on the FSM patrol boat for delivery to Dr. Ruben on Chuuk.

Previous observations had led us to believe the disease had not been found on Lukunor, the neighboring atoll/island to Satowan in the Lower Mortlock group. When we arrived on Lukunor, the local medical liaison, William Sana, was waiting for us with a list of patients to be examined. Not only were there a
large number of untreated patients, some who had never travelled to Satowan, but a group who Mr. Sana had tried to treat. Unfortunately, Lukunor’s doxycycline supply (the drug prescribed by the Lillis group) was/is inadequate to support the recommended three month treatment course. Most patients only received a month’s worth of the drug, which was generally ineffective. The concern is not only producing a population of uncured, chronically infected patients harboring an unknown organism with an unknown sequela but selecting a microbe that might be developing resistance to the only available effective, cheap antibiotic. We documented twenty one patients but did not obtain any tissue samples as our remaining two biopsy kits were left on Satowan.

It appears that what may be a rather obscure, unique syndrome possibly has a wider distribution than previously expected. On Satowan, it is now evident that the bomb craters pools, the water reservoirs for the taro irrigation canals, are most likely the primary source of the bacterium. However, on Lukunor, according to our guide, Simon Bunluay, only three bombs were dropped on Lukunor (one of which actually hit the elusive island) and it was never shelled. Consequently, there are no craters. We did observe fish (unidentified) in Lukunor’s shallow, fresh water wells and taro irrigation ditches. Because the island did have a large, wartime Japanese garrison, they also may have seeded these standing, fresh water sources with the Mycobacterium marinum- infected Medaka fish to help control the mosquito population. The legacy of WWII continues.

The importance of these studies should not be underestimated and minimized simply because they occur in a remote corner of the world. Recently, to reduce the potential for mosquito-borne diseases, local health departments in the U.S. have started offering mosquito-larvae eating fish to homeowners who can no longer financially maintain their swimming pools and spas. The fish are self-sustaining in these pools. There is no evidence the fish are not carriers of M. marinum. The research and quest to identify and optimally treat the causative agent is truly in the best interest of all.

Untreated “Spam” disease  
Treated “Spam” disease
Eric, Bruce and Dr. Day with Satowan “medics”

Bruce, Eric and Mike at the Satowan clinic

William Sana (rt.), head of Lukunor clinic

Lukunor’s entire formulary

Satowan taro patch irrigation canal

Satowan bomb crater pool
School Supplies

The Mortlock Islands and many other remote locations in Micronesia are becoming philosophical battlegrounds between traditional and modern lifestyles. The traditional chiefs continue to prevail with power to administer the population’s daily lives. In these almost idyllic societies, there are no police, lawyers, doctors, soldiers, or much else in the way of formal infrastructure. The 10 - 12 chiefs and their respective families each manage specific aspects of the island’s needs. One chief represents law and order; another governs use of the lagoon and fishing rights, another health care, etc., all under control of the Chief of Chiefs. Slowly, however, modern governmental administrative agencies are encroaching into these communities, bringing changes to traditional lifestyles. However, it is not unilateral. With greater exposure to the developed world, the local demands increase; more products, better health care, improved transportation, communication and a contemporary educational system. Peace Corps volunteers trained as teachers started arriving in 1966.

On previous trips, including the location of the USS Mississinewa in Ulithi Lagoon (Explorer Club flag #103), we found providing some basic school supplies was beneficial to an entire island’s population. Vinnie Linares, a PCV in the 70’s, has been very helpful in supplying us background information for the trip. Through Internet communication (during his visits to Chuuk), the current Satowan Peace Corps Volunteer, Alex Plum, provided us with information about how our group could help the schools. Donations from friends and co-workers amounted to many boxes of books, teaching manuals, calculators, pens (Lee Walker/Mimi Rodes), notebooks, and basket and soccer balls (Brian Beltz/Peter Ording). In addition, Proctor & Gamble provided Dave Buller with cases of toothbrushes and toothpaste for distribution to the kids. We anticipated that Continental Airlines would help us ship the materials to Chuuk. They did not, so we filled extra bags with a variety of the items and carried them with us.

During President Mori’s Satowan town meeting, we presented most of the school supplies to the principal of the Mortlock’s only high school, who was extremely grateful and carted the materials to the school in his wheelbarrow, as there are no motorized vehicles or even peddle bikes on the islands. In turn, we were treated to a remarkable departure ceremony that included bountiful food, speeches (translated by Joseph), stick dancing and amazing singing. The remaining supplies were distributed to the Lukunor elementary school. We left the islands, promising to find a way of shipping the extensive amount of remaining supplies we could not carry to these schools, and hopefully, collecting more.

FSM Foreign Affairs Secretary Robert and President Mori’s Press Secretary, Kester James, indicated there may be some inexpensive possibilities for shipping these items. With the help of the government and some non-profit charitable organizations, we are looking into different avenues for collecting and shipping more desperately needed educational materials to the Mortlock’s.
FSM President Mori conducting town hall meeting

FSM Cabinet responding to questions - Satowan

Pam with friends outside Satowan clinic

Satowan’s women choir singing to President Mori
Satowan elementary school

Distributing school supplies, Lukunor

Satowan High School Library
Diving and Surveying the Reefs, Coral and Fish

Probably one of the most anticipated and disappointing part of the trip was the expectation of diving pristine reefs full of fish, untouched by commercial fishing. While we dove some absolutely beautiful, healthy reefs at Kuop, Satowan and Lukunor with enormous expanses of remarkable, unbroken, unbleached coral formations, there was a decided lack of fish. From small reef fish to the top of the food chain, in beautifully clear water, the numbers were noticeably very small. It was our understanding, which was supported by the locals, that there was no commercial fishing they were aware of around the Mortlock’s. Reports from divers who visited the isolated Kuop Atoll a few years ago tell of the beauty of the reef, the coral, and the fish diversity and extremely large groupers. We saw everything but the fish.

The channels into the Mortlock lagoons we dove should have been bountiful feeding waters for the pelagics, smaller rays and reef sharks. While we saw the occasional Manta, Eagle and Sting ray, it was a rare sighting. There were a few Gray, and Silver sharks in the 4 – 6’ range, but again, very few. A school of 3’ foot barracuda was found around Kuchino Shoal at the entrance to Chamisso Harbor in Lukunor, but that was the extent of large predators. Certainly this is of some concern and seems to follow reported trends of rapidly decreasing fish populations in other Pacific regions. However, they all have been heavily fished. These lagoons are harvested using drop lines from outrigger canoes. The entire crew, most of whom have dived extensively in other locations in the Pacific and around the world, felt that these observations represent a noticeable change in vertebrate fauna density and, if truly representative of the world wide health of the ocean, is very troubling.

Sadly, we left these beautiful islands and headed back to Chuuk, but nothing was easy. Around midnight of 8/27, the loud throbbing of the Thorfinn’s steam engines came to a screeching halt. One of the main bearings was cooked. After drifting for 18 hours toward Pohnpei, the crew rebuilt the bearing and we successfully brought Explorer Club flag #189 back to Chuuk and the U.S. In two weeks, the group explored and dove essentially unvisited, little known locations on the globe. We tied together the story of the Japanese base on Satowan from the lost escort destroyer Tachikaze to the remnants of the devastating attack that destroyed the base, and the war’s lasting legacy on the innocent native population. We found a population of wonderful people that subsist solely on their local environment but who desperately need medical, educational and communication support to successfully move into the 21st-century. It was an experience none of us will forget.