

# MICRONESIAN

JOURNAL OF THE HUMANITIES AND SOCIAL SCIENCES

Vol. 5, n° 1/2

Combined Issue

November 2006

## A CRM APPROACH IN INVESTIGATING THE SUBMERGED WORLD WAR II SITES IN CHUUK LAGOON

William Jeffery

*James Cook University, Townsville, Australia*

In February, 1944 Japan suffered its greatest monthly loss of merchant ships during World War II up to that time, at Truk Lagoon. The USA implemented an attack of the strategic base beginning on the 17<sup>th</sup> February 1944 neutralizing the five airfields contained in the base, destroying many land based military facilities and sinking over 50 ships.

In 1969, Jacques Cousteau's team was one of first to dive the shipwrecks, recovering many artefacts and alerting the diving fraternity to the value of the shipwrecks as diving destinations. Early the 1970s, divers found the only Japanese submarine lost at the base—with all hands—and which the Japanese government are keen to see left untouched as a war grave.

Today the submerged military remains are a major tourist attraction for Chuuk and its major money earning industry. This article provides historical and archaeological documentation on the nature of the ship and aircraft remains and considers some of the management issues that confront the sites and could lead to their demise. The article is part of a larger cultural resource management investigation into the submerged sites and an investigation of their social significance with emphasis on their value to the Chuukese community.

During World War II, Chuuk<sup>1</sup>, or as it was known then Truk, was a strategic advance base for the Japanese supplying ships, aircraft, stores and military personnel for the Japanese south east expansion as well as a major communication centre for this region. The USA considered Chuuk the strongest naval base in the Pacific with the exception of Pearl Harbor. A Japanese population of 40,000 consumed all the useable land on the 14 volcanic islands (with a total land mass of 91 km<sup>2</sup>) in one of the world's largest lagoons (Chuuk Lagoon) and changed forever the lives of the 10,000 indigenous inhabitants.

During the 17<sup>th</sup> and 18<sup>th</sup> February, 1944, the USA attacked the base with hundreds of aircraft launched from a fleet of carriers. A further carrier attack in April/May 1944 and the

continual bombing of the base with B-24 and B-29 aircraft dropping over 6,000 tons of bombs kept the base out of the war, without any amphibious assault and major loss of life from the American side. Over 50 major ships and 400 aircraft were sunk or destroyed and a majority of the land military facilities including its five airfields were rendered useless and the US military considered this as a pay-back to the Japanese attack of Pearl Harbor. The air raids killed 4,000 Japanese and 120 Chuukese and other Pacific Islanders. At one stage the USA military considered dropping an atomic bomb on the Japanese fleet in Chuuk

Today the submerged military remains are a major tourist attraction for Chuuk and one of its major money earning industries. To the Japanese, they are graves of the sailors and soldiers who were killed during the bombing and

This is a peer reviewed contribution. *Received:* 11 Nov 2006; *Revised:* 5 Dec 2006 *Accepted:* 15 Dec 2006

© *Micronesian Journal of the Humanities and Social Sciences* ISSN 1449-7336

HeritageFutures™ International, PO Box 3440, Albury NSW 2640, Australia

Persistent identifier: <http://www.nla.gov.au/nla.arc-65664>

every 17<sup>th</sup> February, Japanese war veterans and family members come to pay their respects. To some Chuukese, the shipwrecks are valuable caches of bombs from which some fishers make dynamite bombs and use for dynamite fishing on the shipwrecks and on the reefs. This conflict in the values of the submerged military remains is reflected in the management of the sites to the extent that the USA National Park Service (the Japanese fleet in Chuuk Lagoon is one of the 2300 USA National Historic Landmarks and seen of great historic significance) has given them a 'threatened status'.

### **A CULTURAL RESOURCE MANAGEMENT (CRM) APPROACH**

This article provides information on the extent and nature of the submerged World War II sites in Chuuk Lagoon, from a historical perspective, as well as a descriptive perspective through a survey of some of the sites. I investigated a number of primary historical documents and a few secondary historical sources to provide a comprehensive assessment of the World War II shipwrecks and aircraft located in and around Chuuk Lagoon. The results of this historical research were compared with site surveys that I carried out and existing surveys by other researchers. One of the existing surveys was carried out by Bailey (2000), who provides a comprehensive summary of sites surveyed over a 20 year period in Chuuk Lagoon and contained in his 518 page book *World War II Wrecks of the Truk Lagoon*. My surveys were guided by two Chuukese ex dive guides Arimichy Rudolph and Anerit Mailo, now archaeological field assistants with Chuuk Historic Preservation Office (HPO) who guided a side scan sonar survey of sites, supplemented with oral histories and surveys from other Chuukese individuals, Dive Shop proprietors and to some extent from Dan Bailey, in person.

This article is a part of a larger research topic which is aimed at investigating the conflicts in the values and heritage management of the submerged sites and if this provides a post-colonial perspective of Chuuk. The information contained in this article needs to be seen in this context rather in providing substantive

information for intensive research on any one particular aspect, such as the types of weapons and equipment used and found on the ships and the nature of the damage inflicted by the American aircraft. Bailey (2000) already provides much of this information in a very comprehensive manner. My research was also not intended to look at any aspects from within a processual archaeological viewpoint such as the behavior of the Japanese in equipping and using these ships and the Chuuk base.

The collection of the historical data and implementation of the site surveys were approached from the point of view of establishing the general nature of the underwater sites, their identification, condition and impacts and to the degree that would fulfill the CRM objectives explicit in my overall research. While some primary records were researched and used to document the sites, some were not. References to these documents can be found in Bailey (2000: 496-499) and include; the USA 4<sup>th</sup> February 1944 Truk reconnaissance photographic data; the many action reports from USA aircraft that sunk the Japanese ships; the various historical details on the Japanese ships through Lloyd's Registers; and communication and intelligence data from Chuuk and the various ships. However, it was considered that some research into primary documents was needed in part to establish what I considered were the ships and aircraft located in Chuuk Lagoon as well as to check the veracity of the secondary sources.

While I implemented a number of site surveys, they were not exhaustive or intensive surveys. One of the factors for this was because many of the sites are located in deep water and beyond the limits of Scientific/Occupational Diving Policies (with the limited facilities at my disposal) and which would not allow for intensive surveys of the deeper sites. The other factor in governing the nature of my research was that this work was seen as a first step in utilising a post-processual/post colonial/CRM approach. A more general survey was all that was required as it was only one of the investigations required to fulfill this approach, the others including an investigation of Chuukese, Japanese and American concepts of heritage value; and

how past colonial regimes have influenced Chuukese ways of life, amongst other things.

The submerged military remains, like the terrestrial military sites are a substantial part of the Chuukese landscape. Some still contain human remains; many contain remains of the equipment being used during the war; they still show the scars of the bombs that sunk the vessels; and in one sense they could be interpreted as ‘time capsules’, as underwater museums of the war. However, time capsules are not how they have been viewed in my research as it doesn’t allow a view of how they have been valued and treated after the war—from storms, salvagers, dynamite fishers, diving tourists, local and foreign communities. From a CRM concept, these issues are very important and I address these issues in other parts of my research. Some researchers view the sites as time capsules, this is valid approach to historical particularistic studies but then the site surveys would need to be more intensive than I have done.

### SHIPS SUNK IN CHUUK LAGOON

The USA reconnaissance photographic flight over Chuuk was implemented on the 4<sup>th</sup> February 1944. The subsequent JICPOA (1944:1-2) report identified three main anchorage areas for vessels and made the following comments on vessels using the base:

The Truk Islands, pivotal point for the Japanese defense of the Central and West Caroline Islands, have unlimited fleet anchorage, three airfields and large supply facilities....However Truk is not believed to be well adopted for the repair or maintenance of large vessels. Terminal facilities are on a minor scale. No wharves at which a ship larger than a destroyer can tie up to have been reported. ...A 390 foot floating drydock was photographed January 1942, off the southwest shore of Dublon [Tonoas] Island....A recent report states

that a 30-ton floating crane has been installed in Truk....There is no evidence that docks for large vessels exist at Truk. The largest vessel known to have docked directly at a wharf is 2,000 ton DD [Destroyer]. Major unloading facilities are not believed to be present A capture Japanese report of 1942 referred to the use of lighters for unloading ships.

The map accompanying the report identifies three anchorages, one to the west/southwest of Moen (Weno), another to the southeast of Moen and a third to the south of Dublon (Tonoas) (see figure 1). Bailey (2000: 98-102) used the reconnaissance photographs taken on the 4<sup>th</sup> February to assist in the identification of 49 of the vessels including the 62, 315 ton flagship *Musashi*.

The 1944 Photographic Intelligence Summary provided in most cases only a general class for each of the vessels, a few wrong vessel identifications (including the *Yamato* instead of its sister ship *Musashi*) and two correct identifications, the Submarine Tender *Heian Maru* and the Fuel Oil Tanker *Tonan Maru* (Bailey 2000:101-102).

The USA Joint Army-Navy Assessment Committee (JANAC, 1947) prepared a list of Japanese ships lost during World War II and which numbered 3,032 (10,583,755 tons) Merchant Vessels (over 500 tons) and all Naval Vessels, and this document is very useful primary data on the shipwrecks located in Chuuk Lagoon. The ships are arranged chronologically providing longitude and latitude for each loss where known. The two most important dates for the sinking of the ships in Chuuk were the 17<sup>th</sup> and 18<sup>th</sup> February and the 30<sup>th</sup> April / 1<sup>st</sup> May 1944, therefore the majority of the ships sunk in Chuuk can be easily found in this document. This list does not include vessels damaged, only vessels sunk.

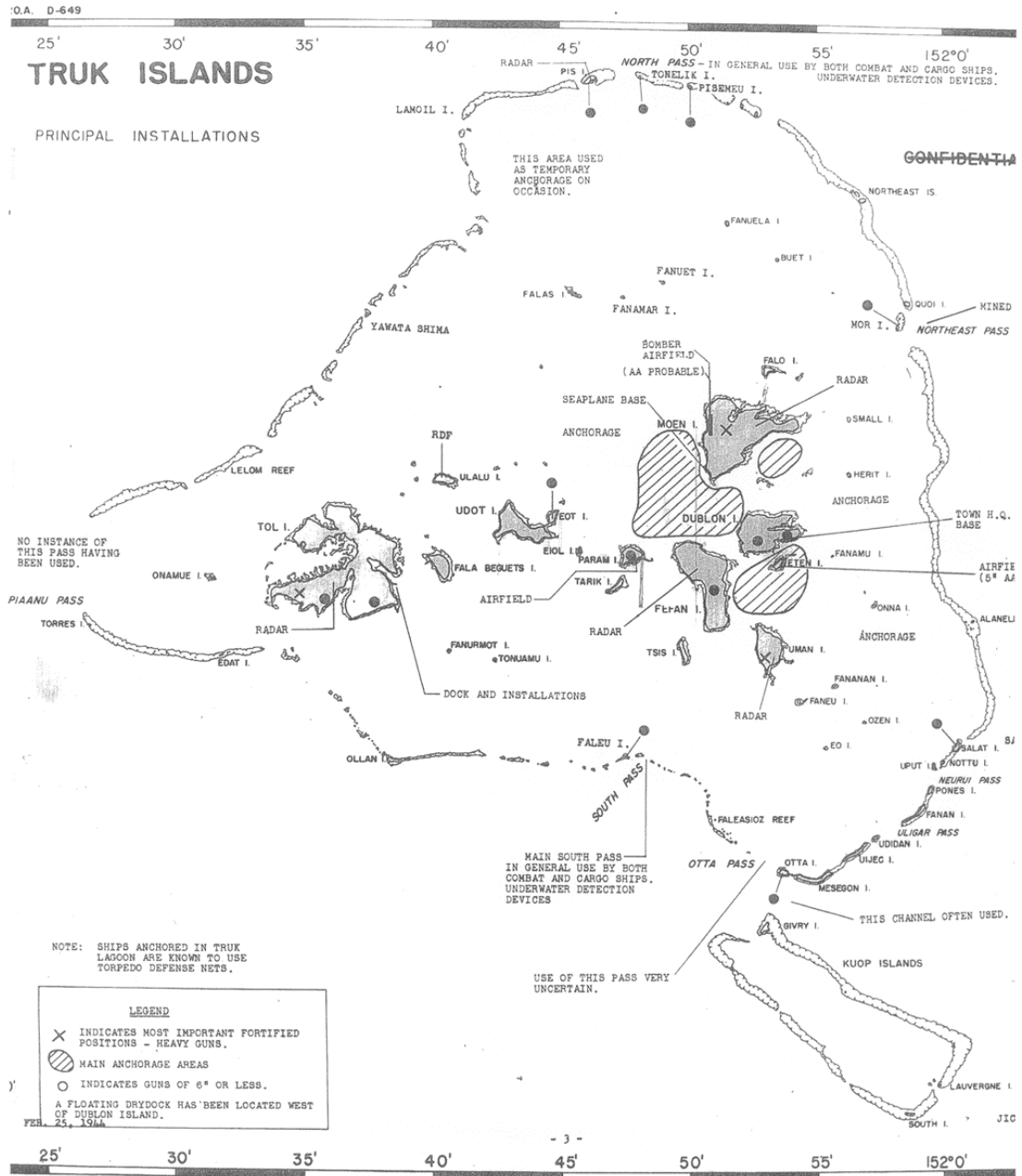


Figure 1: Chuuk Lagoon showing the three main anchorage areas for Japanese ships (from JICPOA 1944:1-2)

The USA Naval Analysis Division's document titled *The Reduction of Truk* (USSBS, 1947) also provides some useful general information about some of the ships sunk; it states that 'all naval ships and 31 merchant ships wiped out' in 17<sup>th</sup>/18<sup>th</sup> February attack and more than 20 craft in the 30<sup>th</sup> April/1<sup>st</sup> May attack, but only names a few ships.

The Japanese Monograph # 116 includes lists of combatant and non-combatant vessels lost at various stages during the war that were prepared by Japanese Government (USA MHS, 1952a). The Japanese Monograph series, a compilation of interviews, histories, facts and figures and which was initiated in October 1945 at the USA General Headquarters, Far

East Command was planned as a 'complete history of the war in the Pacific by the Japanese government.' Beginning in 1955, the series was edited and rewritten after intensive research. Japanese Monograph # 173 also provides a list of ships sunk on the 17<sup>th</sup> and 18<sup>th</sup> February 1944 (USA MHS 1952b). I prepared a database of vessels lost in or near Chuuk from these four primary sources.

The US Navy through the Aircraft Carrier attacks sunk the majority of the ships in Chuuk Lagoon. However, some ships were damaged/sunk by USA land based B24 and B29 aircraft from March 1944 through to August 1945 although many of these were the smaller merchant vessels of less than 500 tons. Documentation on the sinking of some of these vessels can be found in USA 7<sup>th</sup> Air Force Mission Reports which were not consulted in my research but a synopsis of these reports can be found in Bailey (2000, 172-173 & 249-252).

## **SECONDARY SOURCES ON CHUUK LAGOON SHIPWRECKS**

The following secondary historical sources were investigated; Bailey (2000), Lindemann (1982) and supplement (1990), Carrell (1991) and a further report from the Submerged Cultural Resource Unit (SCRU) (Lenihan, 1992), Hezel and Graham (1997), Stewart (1989) and Earle and Giddings (1976).

Bailey (2000) is the latest and arguably the most comprehensive researched text on the Chuuk Lagoon shipwrecks being a 518 page volume comprising primary historical data and site surveys. Bailey (2000:265-266) opens his account of the shipwrecks with a few notes on a 1969 Cousteau expedition to Chuuk Lagoon during which time 30 shipwrecks were dived, a documentary film, 'Lagoon of Lost Ships' was produced, and 'tons of arti[e]facts' were recovered from the shipwrecks and shipped back to France, but could not be re-located by Bailey. A list of the shipwrecks Cousteau's team dived were interpreted by Bailey (2000:265) from the film and the original chart used by Cousteau. Bailey (2000) also provides a good detailed historical background on the war in Chuuk; histories, site identifications, descriptions and

good site plans/drawings of 47 shipwreck sites (in and outside of the lagoon); details on a number of the aircraft sunk; and numerous other details about the results of the USA bombing in Truk.

Lindemann (1982) in his work 'Hailstorm over Truk' also provides some useful background history and archival and shipwreck documentation on 38 shipwrecks and has supplemented this with further information and previously un-located wrecks (Lindemann, 1990). The author worked closely with Kimiuo Aisek, who as a young Chuukese man was in Chuuk during the war (Lindemann 1982:159-212). With American help, Aisek later instigated the dive tourism industry and established the first dive shop in Chuuk, the Blue Lagoon Dive Shop. Carrell (1991), in the work of the Submerged Cultural Resource Unit (SCRU) of the USA National Park Service, provides a summary list of all the World War II shipwrecks located in Micronesia, including 75 for Chuuk (some of which are outside the lagoon). In relation to the survey SCRU carried out in Chuuk, Carrell (1991: 460) states that 'SCRU visited only some of the sites [in Chuuk] briefly over a 3-day period in 1981 and cannot meaningfully add to the body of information presently available in other forms.'

Clark Graham, former Peace Corp Volunteer and Dive Shop Proprietor in Chuuk, provides in his publication (Hezel and Graham, 1997) some background history and a basic list of 40 shipwrecks located inside the lagoon and 20 located outside. The publication extends other work in that it goes into more detail about some issues on the conservation and management of the shipwrecks.

Bailey, Lindemann and Graham used their numerous years of having conducted many site surveys in compiling their lists. I prepared a database of these four secondary sources and compared them with the four primary historical sources. I am aware that Bailey (2000:496-497) used three of these particular primary historical sources (and others); Lindemann (1982:361) used only one; and Graham (1997:43) two.

Table 1: A list of shipwrecks located inside Chuuk Lagoon

Site Name	Site No.	Location	Ship type during war	Ship size (GRT)	Located by Side Scan Sonar
<i>Aikoku Maru</i>	1	E of Tonoas	Armed transport	10438	Yes
<i>Amagisan Maru</i>	2	SW of Uman	Armed transport	7620	Yes
CHA 29	3	N of Weno (NF)	No. 28 class Submarine chaser	420	NF
CHA 46	4	E of Weno (NF)	No. 1 class Submarine chaser	130	NF
CHA 66	5	S of Weno (NF)	No. 1 class Submarine chaser	130	NF
<i>Ei-sen</i> No. 761*	6	W of Tonoas	Tug	300	Yes
<i>Fujikawa Maru</i>	7	S of Etten	Armed transport	6938	Yes
<i>Fujisan Maru</i>	8	E of Weno	Tanker	9524	No
<i>Fumitzuki</i>	9	N of Udot	Fast transport destroyer	1590	Yes
<i>Futagami</i>	10	W of Tonoas	Ocean tug	625	Yes
<i>Gosei Maru</i>	11	NE of Uman	Transport	1931	Yes
<i>Hanakawa Maru</i>	12	E of Tol	Armed special transport	4739	No
<i>Heian Maru</i>	13	W of Tonoas	Submarine Tender	11614	Yes
<i>Hino Maru</i> No. 2	14	W of Uman	Gunboat	998	Yes
<i>Hoki Maru</i>	15	E of Tonoas	Transport	7112	Yes
<i>Hokuyo Maru</i>	16	E of Tonoas	Transport	4217	Yes
<i>Hoyo Maru</i>	17	W of Tonoas	Tanker	8691	Yes
<i>I-169</i>	18	W of Tonoas	Submarine B (1) type	1785	Yes
<i>Katsurigan Maru</i>	19	NE of Weno	Transport	2427	No
<i>Kensho Maru</i>	20	W of Tonoas	Transport	4862	Yes
<i>Kikukawa Maru</i>	21	E of Tonoas	Ammunition supply	3833	Yes
<i>Kiyosumi Maru</i>	22	W of Tonoas	Armed transport	8614	Yes
<i>Kotobira Maru</i>	23	Broken up?	Picket boat	?30	NF
<i>Minsei</i>	24	N of Weno	Converted minelayer	378	No
<i>Momokawa Maru</i>	25	E of Tonoas	Transport	3829	Yes
<i>Muraki Maru</i>	26	N of Fanan	Tug?	15	NF
<i>Nagano Maru</i>	27	E of Tonoas	Transport	3824	Yes
<i>Nippo Maru</i>	28	E of Tonoas	Transport	3764	Yes
<i>Oite</i>	29	N of Weno	Destroyer (Kamikaze Class)	1523	No
<i>Ojima</i>	30	E of Tonoas	Salvage tug	812	Yes
<i>Reiyo Maru</i>	31	E of Tonoas	Transport	5446	Yes
<i>Rio de Janeiro Maru</i>	32	E of Uman	Submarine Tender	9626	Yes
<i>San Francisco Maru</i>	33	E of Tonoas	Transport	5831	Yes
<i>Sapporo Maru</i>	34	E of Fefan	Provision/store ship	361	Yes
<i>Seiko Maru</i>	35	E of Tonoas	Armed transport	5385	Yes
<i>Shinkoku Maru</i>	36	NW of Param	Armed Oil tanker	10020	Yes
<i>Shotan Maru</i>	37	E of Tonoas	Armed transport	2829	Yes
<i>Susuki</i>	38	W of Tonoas	Patrol Boat No. 34	935	Yes
<i>Tachi Maru</i>	39	N of Fefan	Transport	1891	NF
<i>Taibo Maru</i>	40	S of Fefan	Armed transport	2827	NF
<i>Taijun Maru</i>	41	Not known	Transport	1278	NF
Tonan Maru No. 3	42	N of Fefan*)	Oil Tanker	19209	NF
<i>Unkai Maru</i> No. 6	43	N of Uman	Armed transport	3220	Yes
Unknown A	44	W of Tonoas	Four landing craft		Yes

Site Name	Site No.	Location	Ship type during war	Ship size (GRT)	Located by Side Scan Sonar
Unknown B	45	NW of Tonoas	Gunboat	?30	No
Unknown C	46	E of Tonoas	??		Yes
Unknown D	47	W of Uman	Lighter/water transport	350?	No
Unknown E	48	W of Uman	Picket boat/Submarine chaser		No
Unknown F	49	W of Uman	Transport/Inter-Island Supply	90	No
<i>Yamagiri Maru</i>	50	N of Fefan	Armed Transport	6438	Yes
<i>Yamakisan Maru</i> ( <i>Sankisan Maru</i> )	51	W of Uman	Special Transport	4776	Yes
<i>Yubae Maru</i>	52	W of Uman	Transport	3217	Yes

Notes: NF= Not found—\*) Refloated

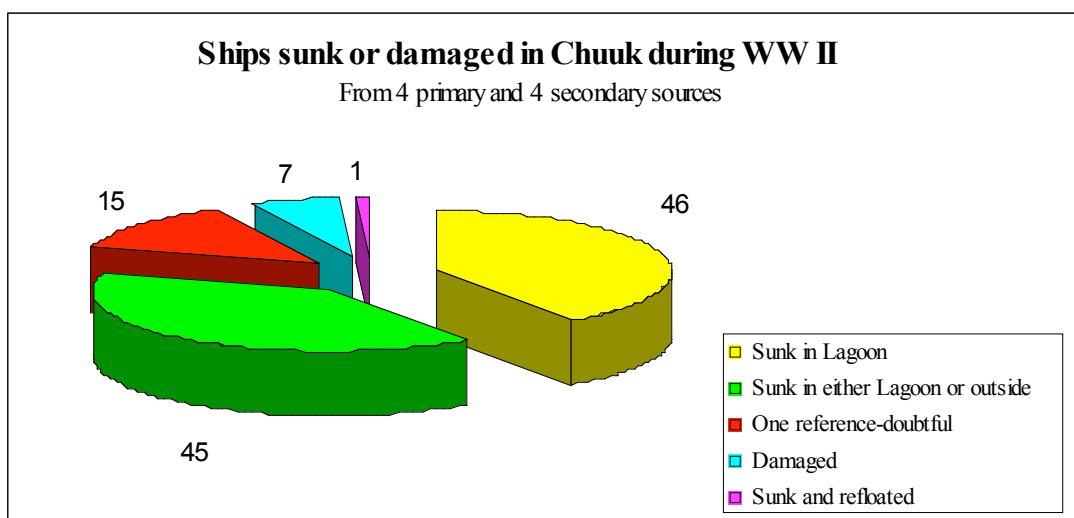


Figure 2: Pie chart of shipwrecks in and around Chuuk Lagoon

From the one database which comprised the four primary historical sources and the four secondary sources it was found that a total of 114 Japanese ships (using no name duplication) were sunk or damaged in and around Chuuk Lagoon. Figure 2 provides information on where and how many vessels were sunk according to these sources.

The purpose of this research was to establish with some degree of certainty through an interrogation of the eight different sources, which ships were sunk inside Chuuk Lagoon and list of the vessel names and dates sunk was produced. What can be stated with a fair degree of certainty that 46 vessels of 500 or more tons were sunk in Chuuk Lagoon. The three most informative records, the (USA) Joint

Army-Navy Assessment Committee (JANAC 1947) list, the list found in Japanese Monograph 116, and Bailey (2000) record a further six, eleven and ten vessels respectively to have been sunk in the lagoon with the following vessels on at least one of the historical records and in Bailey (2000), being: *CH 29 Submarine Chaser*, *CHA 20 Auxiliary Submarine Chaser*, *Katsurigisan Maru*, *Oite* and *Shinkoku Maru*. Bailey’s (2000) is the only one of these three source to have combined site surveys with historical records and he places an additional five vessels inside the lagoon, being: *CH 24 Submarine Chaser*, *Shonan Maru No. 15*, *Tachikaze* and two unknown lighters/supply vessels (most likely under 500 tons). Taking these additional ves-

sels into account the total would be 57 vessels sunk inside Chuuk Lagoon.

At least three anomalies were found when comparing the historical records (where no site surveys verified the losses) with those of Bailey (2000) and Lindemann (1982) which incorporated site surveys. For example the *Oite* and *Katsurigisan Maru*, reported to have been lost outside the lagoon have since been identified and located inside the lagoon. The *Tachi Maru* is quoted by Bailey (2000: 458) to be of 1891 tons and reportedly sunk in Chuuk on the 17<sup>th</sup> February, 1944. The USA Joint Army-Navy Assessment Committee (JANAC 1947:59) states the *Tachi Maru* of a similar tonnage was sunk on 24<sup>th</sup> May, 1944 and located at 30°N; 116°48'E which places it about 100 km from the coastline inside mainland China.

### Capture Japanese Document--'Eastern Branch Office 1944-45'

Further documentary information on the ships lost in Chuuk during the war was found in a document labeled 'East Branch Office 1944-45.' During research in the USA National Archives in San Francisco, I located this document which had been filed as a 'Captured Japanese Document' from Chuuk and which I had translated. The document is a list of 136 smaller merchant ships (a few hundred tons to a few thousand) registered at Chuuk (Eastern Office) during 1944/45 with a number of the ships being crossed out, and a note indicating what happened to it, e.g. bombed February 17, 1944. A number of the ships (c.80) have not been crossed out and they were translated into English by the Americans in 1945, and this list was attached to the 'Captured Japanese Document'. These were ships that in 1945 were operable. From the translations, I attempted to match the names of these ships noted as being bombed on a certain day, with the known shipwrecks in Chuuk Lagoon, and I have found that none matched.

The Eastern Branch Office was the designation for the Chuuk military office that administered the Eastern Micronesian region including Pohnpei, Kosrae and the Marshall Islands from November 1943. The 56 ships that have been crossed out on this list could

have been sunk or destroyed anywhere in this region, including the Marshalls but with Chuuk being the most likely (pers.comm. F. Hezel, 2004).

The supposition that ships in addition to those contained in my research from the four primary and four secondary sources are located in Chuuk Lagoon is supported by the finding of another captured Japanese document. This document was also located in the San Francisco National Archives. It refers to a vessel called the *Muraki Maru* that sunk near Fanan Island (on the southern edge of the Chuuk Lagoon barrier reef) in March 1944. This vessel was towing two lighters to Fanan Island to pick up coconut trunks when a bomb from a 'American heavy bomber' hit the water about 15 metres behind the stern, killing three men and sinking the ship and the lighters. This 15 ton ship does not appear in any other known historic documents. Bailey stated that he considered that all the major shipwrecks are known (pers.comm. Dan Bailey, 20 February, 2004); he stated in his publication (ibid:247) that 'a number of small craft were claimed as sunk' and their locations may never be known or they may be revealed through other documents yet to be found.



Figure 3: Attacks being carried out on Tonoas (Dublon) February 17th, 1944. (Courtesy National Archives, Washington)

### AIRCRAFT DESTROYED IN CHUUK LAGOON

I would also like to briefly provide some details about the numbers and types of aircraft lost at Chuuk during the war. The *Reduction of Truk*



prepared by the Naval Analysis Division after the war is currently the most useful source of primary information about the aircraft lost during World War II and based at Chuuk (USSBS 1947:5-11). The document provides five tables on the number of aircraft based at Chuuk prior to February 17<sup>th</sup>, 1944 and at the war's end. The tables were prepared from information supplied by Rear Admiral Michio Sumikawa, Commander, 22<sup>nd</sup> Air Flotilla until January 1944 when he was appointed Naval Chief of Staff to the Commander, Fourth Fleet and based at Chuuk; and other informants based at Chuuk.

Table 2. *The number of Japanese, American and British aircraft losses at Chuuk.*

Type of Aircraft (using American code)	No. of Japanese losses (on ground)	No. of Japanese losses (in the air)	No. of American losses	No. of British losses
Rufe	?	c. 6		
Pete	c. 4	c. 3		
Zeke (Zero)	c. 200	c. 100		
Kate	c. 20	c. 20		
Irving	c. 20	c. 2		
Betty	c. 6	c. 1		
Judy	c. 6	c. 1		
Jake	c. 4	?		
Seaplane (Emily)	c. 14	c. 1		
Myrt	?	c. 2		
Mavis	?	?		
Jill	?	c. 2		
Avenger			8	
Dauntless			3	
Hellcat			7	
Helldiver			6	
Kingfisher			2	
B 24			9	
Spitfire				1-4
<i>Total</i>	<i>c. 274</i>	<i>c. 138</i>	<i>37</i>	<i>1-4</i>

The *Reduction of Truk* (USSBS 1947:13-14) also provides an estimate of Japanese losses from American pilots and this number could be as high as 454 (including B24 and B29). In trying to reconcile the total figures for Japanese aircraft losses, it would seem to be in the range of 352 (Japanese estimate) although this figure

does not account for losses after 1<sup>st</sup> May 1944, which could total at least another 37 aircraft, to a total of 454 (American estimate). The Naval Analysis Division (USSBS 1947:16) state that 'During the entire campaign more than 416 aircraft were destroyed.' No distinction is made between Japanese or American or British aircraft.<sup>2</sup> The following table has interpreted the various archival data on aircraft losses to be 412, on the ground and airborne and which could remain in Chuuk today. Many of the air losses will be over the lagoon and/or islands, and therefore the remains could be expected to be located in the lagoon waters or on land. Some of the aircraft losses are possibly outside of the lagoon and it is unsure what percentage of the number of Japanese air losses and American and British losses would be located inside the lagoon.

A total of 26 American aircraft are listed as lost in Chuuk and which tallies with the database maintained by the US Navy Historical Section of the US Navy and the USSBS (1947). This database does not include the nine American B24s lost, presumably as it only relates to Naval aircraft and the B24s were operated by the US Air Force.

### SURVEY OF WORLD WAR II SHIPWRECKS

The next step in documenting the shipwrecks and aircraft was to implement a number of site inspections. The survey was limited to inside the lagoon given the depth of water outside the lagoon is unrealistic for this type of survey. The aims of the inspections were to locate and inspect a number of the sites to obtain the following information:

- the nature and condition of the site, including the vessel and its cargo;
- confirmation of the identity of the site;
- a GPS location of each site;
- an indication of impacts from tourism, natural forces, dynamite fishing.

Given logistical considerations (boat and dive buddy availability) and the restrictions in diving depth, a cross section of the 50+ shipwrecks and aircraft were investigated. This cross section included sites located in water of 3 metres depth to 40 metres (to the seabed); different site types, from armed transport, oil

tankers to military craft; sites that are heavily dived by tourists; and those that are not (see figure 4 for an example of the predominant type of ship sunk in the lagoon).



Figure 4: The *Kiyosumi Maru* (8614 tons), typical of the majority of the ships sunk at Chuuk (Courtesy, National Maritime Museum, Greenwich)

This work was coordinated with the Chuuk Historic Preservation Office (HPO) which has a role in documenting and managing historic sites in Chuuk in association with the USA National Park Service, Department of the Interior.<sup>3</sup> The Chuuk HPO held little documentation of the underwater sites, and in particular not in a form that would greatly help such activities as assessing and monitoring site condition, current and future research.<sup>4</sup>

### Side Scan Sonar survey

A side scan sonar survey of the sites in Chuuk Lagoon was seen as the first step in compiling site information on the submerged military remains. The side scan sonar is an instrument that contains a sensor ‘fish’ towed behind a boat in the water and a recording device located in the boat and connected by a cable. Very simplistically, the fish emits an electronic impulse at an angle from both sides that is then reflected back from the seabed, rock, or shipwreck (whatever is located on the seabed) and is received and interpreted on board the boat through a VDU and captured into a laptop computer. It is possible to obtain a three dimensional record (where length, breadth and depth can be measured) of each submerged site and in conjunction with a Differential Global Position System (DGPS), an accurate location

for each site. The side scan sonar has the benefit of being able to cover a large area in a relatively short time. However, the definition of the site as seen on the VDU is greatly impacted by the surface of the sea. If the sea is flat calm, the fish will be steady and the definition will be much better than if its rough where the fish will be moving up and down and possibly sideways. While many of the submerged sites are known (some have buoys on them just below the surface of the water), no-where is this information in a digital or tabulated form that can be incorporated into a document.

Over a period of three weeks a total of 34 shipwrecks were surveyed with the side scan sonar and DGPS coordinates were obtained for many of the known sites as shown in the table in the Appendix.<sup>5</sup> Because the surface of the sea was frequently rough or at least contained waves of 0.5 to 1 metres in height, the site definition was not as good as expected but basic dimensions were obtained.

### Site Identity

Further work was carried out on a number of these sites to confirm their identity. The identification process used the measured length of each shipwreck site which I obtained and compared to the ship’s documented length in Lloyd’s Register. I also compared the location information from JANAC, Bailey and from what I obtained and the damage that was reported to have been inflicted to the ships and what I saw. Two sites, *Eisen No. 761* and *Futagami* were the only two sites that did not show any war damage and this was verified in JANAC as having been sunk after the war.

Site surveys including identification verification was also carried out on eight of the 12 known aircraft remains located in the lagoon but not discussed in this article.

### Sapporo Maru

As part of the side scan sonar survey implemented by Green in February 2002 (Green, 2002:119-130), a search for the *Sapporo Maru* was instigated. According to Bailey (2000:439-440) and research carried out in my research, the *Sapporo Maru* was one of the few vessels that has not been found. A search area of

about 1 square kilometre to the south west of the *Kiyosumi Maru* and north of Fefan was delineated. The search was implemented on the 12<sup>th</sup> February 2002 and toward the very end of the survey a shipwreck site of unknown origin was found with the side scan sonar. It was highly likely that this was the *Sapporo Maru*. On the following day, a dive was carried out on the site and after an examination and measuring of the site, it was concluded that the site was the *Sapporo Maru*.

The vessel was a small ship, of 145 feet in length, 361 tons, built in 1930 as a refrigerated fish carrier and used by the Japanese Navy as a deep-sea fishing trawler. It sustained some damage to its engines during the American B 24 bombings of Truk on April 5, 1944, and appears to have sunk sometime between April and May, 1944. The inspection on the 13<sup>th</sup> February 2002 found a substantially intact vessel lying over on its starboard side, with forward and stern masts in place, an intact bridge/deckhouse, refrigeration equipment in the vessel's holds, a similar deck layout to the published drawings of the vessel in Bailey (2000:440) and dimensions matching those found in Lloyd's Register (Figure 5).

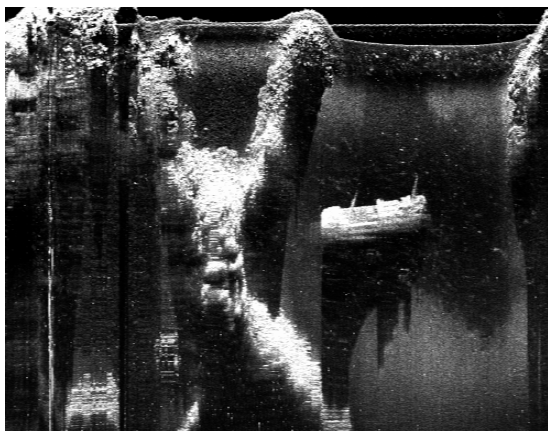


Figure 5: Side Scan Sonar survey results of the Sapporo Maru wreck site

A further inspection of the site on the 19<sup>th</sup> February with Governor Walter (the Governor of Chuuk), Dan Bailey and others, located the ship's bell in its original position on the outside of the bridge. On the next day, Arimichy Rudolph, Chuuk HPO archaeological field as-

sistant in company with Prospero (Film Production Company from Perth, Western Australia) discovered the bell had been removed. A Police investigation found a dive guide removed the bell (figure 6), initially hiding it on the wreck site and since then it has been found to be located in the Blue Lagoon Dive Shop. No charges were made against the dive guide, even though legislation prohibits this action.



Figure 6: The bell from the *Sapporo Maru* revealing the name of the vessel *Sapporo Maru* and its date of construction 'November 1930' photograph courtesy Dan Bailey

### Fujikawa Maru

One of the more detailed inspections was carried out on what is the most popular site to dive in Chuuk Lagoon, *Fujikawa Maru*. The *Fujikawa Maru* exhibits a range of attributes, including the damage inflicted during the war, the nature of the cargo carried during the war, and the impacts from divers and dynamite fishers. The *Fujikawa Maru* is arguably the most 'attractive' shipwreck in Chuuk Lagoon, the 7000 ton ship is essentially intact, sits upright in 33 metres of clear, warm water and is home to a wide range of colorful flora and fauna, making it a memorable diving experience.

The *Fujikawa Maru* was built in 1938 as the *Huzikawa Maru* in Nagasaki, Japan and operated as a passenger-cargo vessel until 1940 when it was requisitioned by the Japanese Navy to operate as an armed aircraft transport. It was of single screw diesel powered vessel of 6938 tons, 437feet x 58.5feet x 32.8feet with 2 decks (Lloyd's Register 1940). Bailey (2000:288-297)

provides a brief description of its history during the war, the vessel operated in the Aleutians, Rabaul, Yokosuka and ferrying aircraft to Saipan, the Gilbert and Marshall Islands. It was reported to have been hit twice before being sunk in Chuuk, once in the north Pacific and the second time when in the Kwajalein (Marshall) Islands on the 5 December 1943 (JM 173:102a). The vessel was then towed to Chuuk for repair, arriving 31 December 1943, after which it was to be towed to the 'Empire' for more substantial repairs Bailey (2000:288).

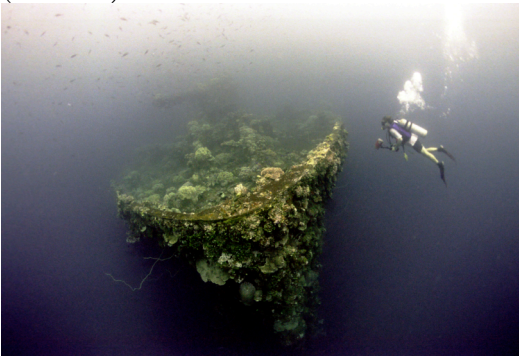


Figure 7: *Fujikawa Maru*, photograph by Greg Adams

The U.S.A. aircraft action reports over Chuuk Lagoon claimed the *Fujikawa Maru* was hit by a torpedo from a *Bunker Hill* aircraft at 1420 hours on the 17 February; by a 1,000 pound bomb on the port quarter on the 18<sup>th</sup> and possibly again on the 18<sup>th</sup> by one possibly two torpedoes, sinking after a huge explosion (ibid). The vessel was anchored about 1 km south of Etten Island which had been reclaimed and made into the main fighter strip for Chuuk. The shipwreck site had for many years after the war, two of its masts protruding above sea level but both have collapsed.

I would like to provide a brief description of this shipwreck as an example of what remains on many of the 50+ shipwreck sites. There is also a certain level of 'emotion' that is captured when diving on a site like the *Fujikawa Maru* (when thinking about how distressing the bombing must have been for the crew) and while it is difficult to describe what is es-

entially an individual quality, it would be remiss not to mention it.

The first impression when diving the *Fujikawa Maru* is that it looks substantially intact and untouched by the war, divers and dynamite fishers. The clear water makes it possible to see large sections of the 133 m long vessel in a single view. The vessel sits upright with a 15° list to starboard and the central superstructure, masts and kingposts (for loading and unloading cargo) rise off the deck to within 6 m of the surface of the sea. Beginning at the bow which is located in about 10 m of water, a small telegraph is still in position on the deck, the anchor winch and bow gun is intact with ammunition in boxes next to it. The six inch breech loading bow gun is of British origin, manufactured by Elswick Ordnance Company in 1899. Many British guns were supplied to the Japanese Navy or built in Japan under license from British manufacturers in the early part of the 20<sup>th</sup> century (Spennemann 1995). On the port side just aft of the bow, a section of deck and two of the deck bits show the obvious signs of interference and reported to be from the live-aboard dive boats anchoring on a length of chain fastened to the bits (pers.comm. A. Rudolph and A. Mailo 2004).

There are three holds in the bow to mid-ship section of the ship that contain aircraft, in various sections; spare aircraft parts, propellers, fuel tanks and landing gear; fuel drums; cables; munitions; a torpedo; a small boat outboard motor and many other pieces of cargo. As a diver it is easy to sink down into the holds and get lost in wondering about all this machinery that was used in the war. Moving back up and along the deck to the central superstructure which can be entered, kitchens and bathrooms remain intact and evoke an essence of how the crew lived on-board. On the starboard side of the superstructure openings make it possible to descend and follow intact ladder-ways down to the engine room. Back up on the deck just forward of the bridge/superstructure, artefacts litter the deck adjacent to two plaques, one dedicated by his family to the memory of Kimio Aisek, 'Eyewitness to Operation Hailstone and Founder of the Chuuk Underwater Diving Industry'; the second plaque 'Dedicated

to the preservation of and respect for the remaining ships, aircraft and artifacts as a heritage for the people of Truk Lagoon.<sup>7</sup>

At the rear of the superstructure another hold is encountered which can be entered and at the bottom of the vessel, a large hole in the starboard hull where a torpedo from a US aircraft obviously caused a very large explosion and would have caused the vessel to sink. A further stern hold contains chinaware, glass bottles and cooking pots before another gun on the deck in 24 m of water completes the general view of the ship at main deck level. The very bottom of the vessel is about 10 metres below, where the ship's rudder and propeller can be seen.

Ascent to the surface is generally up the king post just behind the central superstructure and the funnel of the vessel can be seen collapsed, caused by one of the large live-aboard dive boats dropping its anchor some years before (pers.comm A. Rudolph, 2002). Various species of fish, soft-corals, sponges and various other types of animals and vegetation are prolific across many parts of the vessel except where dynamite fishers drop their home-made bombs. I started this brief description by saying how intact and dramatic the shipwreck appears. It is very obvious from the large torpedo hole on the starboard hull how the vessel sunk but it is difficult to see any impact from a 1,000lb bomb or the huge explosion as reported by USA aircrew in 1944.



Figure 8: Etten, during the war. The airstrip was built-up over a few years using intensive Chuukese labor, the only natural feature is the small hill near the middle of the island. Today it is covered in coconut palms and the surrounding stone wall still shows the scars of the American bombing

The aircraft contained in the *Fujikawa Maru* are particularly interesting. In the No. 2 hold there are the remains of at least five aircraft considered to be zeros ("Zeke") and what could be an earlier model fighter, a 'Claude'. Bailey (2000: 289) also notes the existence of an 'unknown type'. The aircraft remains are not complete, in most cases the fuselages are in two pieces and the wings are detached. The aircraft tentatively identified as a 'Claude' has its fuselage in one piece, but only short sections of its wing attached to each side of the fuselage, and an identification number "39" on its upright rear wing.

The aircraft in Chuuk are an important source of archaeological information about Japanese World War II aircraft, and those located in *Fujikawa Maru's* hold appear to represent what was required in Chuuk and Rabaul, as well as what was available in Chuuk. The existence of a 'Claude' however raises some interesting questions about the types of aircraft stationed at Chuuk; this model 'Claude' (a single-seater) was not manufactured after 1942 and there are no 'Claudes' on any of the official lists based in Chuuk. It is known that the construction of aircraft in Japan in the latter years of the war was difficult due to a shortage of materials, although the peak production period for Zeros was in 1944. Was this 'Claude' one of a few of older aircraft brought to Chuuk, because of a shortage of more modern types, or for training or for freighting to Rabaul? In an interview after the war by Vice-Admiral Fukudome, Chief of Staff, Combined Fleet from May 1943 to March 1944, stated that "some of those merchant ships were those which were engaged in sending supplies to Rabaul" (USSBS 1945:518). Fukudome had already stated "The general agreement between the Army and the Navy in the Imperial General Headquarters regarding Rabaul and that region was that the Navy should supply most of the air strength including land based planes. However, by that time we lost so heavily it became necessary to send carrier-based planes there" (USSBS 1945:517). It would seem quite likely that the *Fujikawa Maru* was loading aircraft, or had aircraft in its holds from its January visit to Japan, and was to transport them to Rabaul<sup>6</sup>.

## Site Impacts

The main issues that kept surfacing in discussion with Graham, Hezel, Bailey (pers.comm. 2002-4) and others about how the sites are being impacted / managed included: recognition of the sites as Japanese war graves; poor mooring practices; dynamite fishing; and diver impacts.

### Japanese war graves

I wanted to touch on this topic given some divers encounter human skeletal material and the different sensitivities that this material evokes in different cultures. In the 1970s, Japanese groups recovered and cremated a number of human remains. During my surveys in 2002, I only saw two human thigh bones in the tanker *Shinkoku Maru*. It is known a human skull can be found on the *Yamagiri Maru* and divers ask their dive guides to be shown the skull. A number of Japanese groups/individuals have reiterated a request for divers to respect these sites as war graves and for instance, not to enter the *I-169* submarine which was lost with all crew and which I saw in 2004 was the subject of a documentary film.

### Moorings

There is evidence and oral history on how moorings from the large live-aboard dive boats have damaged some sites, *Fujikawa Maru* and the Betty Bomber. Niall Lawlor, Skipper of the *Truk Aggressor* has stated that between the *Truk Aggressor* and *Odyssey* that during the last few years, they have spent c. \$150,000 on the moorings for the shipwrecks (pers.comm. N. Lawlor, 2004). Other sites, such as the *Yamakisan Maru* (*Sankisan Maru*) and *Gosei Maru* exhibit evidence of the impact from the smaller boat anchors. When the newly discovered *Sapporo Maru* was starting to be dived from the smaller boats in 2002, the way to find it was to drag a small boat anchor around until it hooked onto the shipwreck, which could break sections off and start-up corrosion. The deeper sites, such as the *San Francisco Maru* which has been dived for many years is still found in this way.

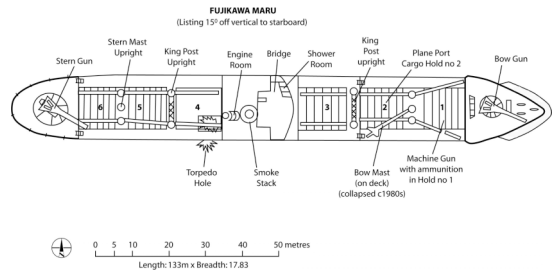


Figure 9: A plan of the Fujikawa Maru wreck site, from a survey by Chuuk HPO archaeology field assistant Anerit Mailo

### Dynamite Fishing

This is a significant issue for a number of sites which hold munitions and are therefore under pressure from the collectors of dynamite, and other sites such as the *Fujikawa Maru* which are subject to dynamite bombs being used on them, as well as the natural reefs which contain many fish. Although fishers are only after fish, the dynamite bombs kill everything in its sphere of influence and they strip the concretion that has built up on the iron/steel, reinvigorating their corrosion. It is an illegal act, not only under the legislation protecting the shipwrecks but other Chuuk Marine Resources legislation. It is taken very seriously by those involved. In 2004, a diver surfaced in less than 3 minutes after spending 24 minutes at 170 feet while attempting to retrieve some sea mines on the *San Francisco Maru* to be used to make bombs for fishing. He had to be resuscitated a number of times before he was treated successfully in the Chuuk Hyperbaric Chamber (pers.comm. L. Bruton, 2006). In another incident a Police Officer was killed when he tried to apprehend some dynamite fishers off one of the lagoon islands (pers.comm. A. Rudolph, 2006).

### Diver Impacts

Divers remove material from dark cabins on many shipwrecks and place them in the light where they can be sorted for souvenirs, and/or allow for photographs to be taken. This action not only reduces the archaeological value of the artefacts as they have been taken out of their context, but it can help in their deterioration by allowing UV and other environmental factors to attack the fabric of the material, particularly

the organic materials. There is still the potential to find interesting and currently well preserved artefacts, such as the blue and white porcelain, bottles, first aid boxes, gas masks, shoes, boots, telephones, binoculars, etc. Divers, particularly in large groups, exhaust frequent and large volumes of air that in association with accidental and deliberate removal of concretions covering iron and steel that often happen when diving, corrosion rates can greatly increase.

### Stability of munitions

Another little known but potentially serious issue is the stability of the unexploded munitions on the shipwrecks. There are mixed views about whether they are stable. Bailey (2000:434) suggests they are not, due to the nature of the explosives used by the Japanese, 'picric acid' which could be very volatile after 60 years underwater. He also suggests (ibid: 289) that some dis-arming took place in the 1970s. In 1976, Sylvia Earle and Al Giddings considered that the munitions were 'not dangerous if left untouched. The picric acid now locked in the unexploded mines [on the San Francisco Maru] will seep into the sea harmlessly through gradual corrosion, but detonation of those mines would have severe impact on the lagoon. Salvage techniques are dangerous, expensive—and in this case, unnecessary' (Earle & Giddings 1976: 603). A number of people in Chuuk have alluded to incidents where munitions have exploded underwater for no apparent reason in the 1980s. If this occurred with a diver in the near vicinity it could be a serious risk and liability problem for Chuuk State, the FSM government and the USA government, given they all promote tourism on the sites.

### Corrosion Survey

The material used in the construction of the ships and aircraft in Chuuk Lagoon is iron, steel and aluminum. They are very corrosive in a marine environment and although concretion can build-up on primarily ferrous material to slow down corrosion rates, natural and human related interferences can change and accelerate it, leading to structural collapse. In addition to acquiring funds for the side scan survey of the

submerged military sites, I also arranged for a corrosion survey to be implemented by I. MacLeod (Western Australian Museum, Perth) and A. Viduka (Museum of Tropical Queensland, Townsville) in 2002 (MacLeod 2004). This was the first of its type to be carried out on the Chuuk Lagoon submerged military sites and it has become a standard approach around the world in understanding the rates of corrosion and what is contributing to the corrosion of submerged cultural sites. This information can play a part in the management of sites; research into technical and scientific aspects of the site and the surrounding environment; and in the case of the Chuuk Lagoon submerged military sites it will be possible to ascertain the stability of the sites for tourism and environmental (oil leakage) purposes. During the three week field survey, in April/May 2002, a total of ten shipwrecks and four aircraft were examined. While the results of this initial survey need further corroboration and analysis (and which is being carried out in the current Earthwatch project in Chuuk), MacLeod (2004) found:

*Based on this provisional estimate of perforation times, many of the wrecks in Chuuk Lagoon will retain their existing integrity for only the next ten to fifteen years before they begin to undergo significant collapse. This has major implications for the management of the sites and for the safety of divers undertaking penetration dives.*

*Analysis of the corrosion behaviour on the wrecks has shown up irrefutable evidence of the damaging effects of episodic changes to the microenvironment of the wrecks. Such changes are consistent with major microenvironment damage that is consistent with physical impact of either shockwaves from dynamite fishing or from massive tropical storms.*

### Flora and fauna surveys

A marine ecology/flora and fauna survey of the submerged sites also commenced in 2006 as part of the Earthwatch project. Only Earle & Giddings (1976:578-602) have made any comments on the value of the marine ecology to date:

*The sunken fleet of Truk Lagoon represents not only the world's largest collection of artificial reefs but also one whose age is precisely known. It offers invaluable clues to the growth rates and patterns of the abundant marine life that congregates around the submerged reefs. Our six weeks of work in Truk Lagoon gave us new insights into many aspects of reef ecology. A new genus and several new species of plants, records of coral growth, food chains, habits of fishes and invertebrates, and data reinforcing the significance of the substrate—all were evidence of a rewarding and productive expedition. The most significant contribution may not be single discoveries, however, but rather the overall basic documentation that can be developed in years to come.*

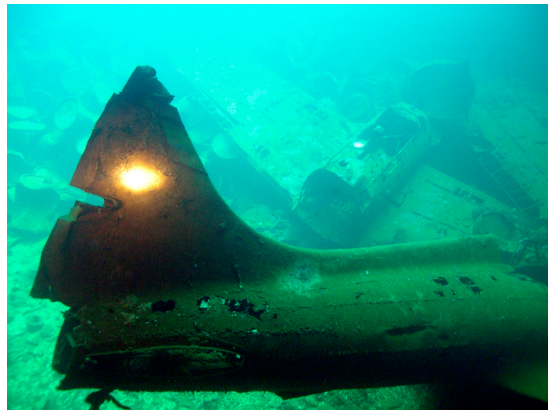
A major aim of the Earthwatch project is to use the project to encourage more, wider and ongoing participation in various aspects of sustainable management for these as well as other sites, such as indigenous sites. This project allows us to investigate whether the flora and fauna is unique or representative of the Pacific Islands; what impact diving tourists and dynamite fishing were having on the biota and the cultural fabric and how does this compare with the natural reefs; and what relationship are there between site location, environment, flora and fauna and site condition. We are also keen to record in more detail some of the ships and aircraft to provide for better analysis. The work is being performed in collaboration with Chuuk HPO and another Chuuk government agency, the Chuuk Department of Marine Resources, the agency responsible for the legislation protecting the submerged World War II sites

## CONCLUSIONS

The details on the ships and aircraft sunk in Chuuk Lagoon provide an important base from which to conduct further work on a number of issues.

There would appear to be a number of other sites of historical, technical and archaeological significance, such as the 'Claude' and other aircraft in the *Fujikawa Maru*; and the many artefacts found lying around on the shipwrecks. There is a very strong focus on diving

diving tourism as evidenced by the concentration of published material on this aspect and the Chuuk businesses centred around the diving tourism industry, that other site attributes do get overlooked. One of the worrying factors in relying on the tourism industry for economic gain is that the number of tourists can fluctuate. In figures I obtained from the Chuuk Visitors Bureau and the FSM Department of Immigration, it was found that tourist numbers have gone from 10,000 in 1996 to about 3,000 in 2002.



*Figure 10: The Claude in the hold of the Fujikawa Maru. Photograph by Bill Jeffery*

From a number of viewpoints, particularly the from a diving tourism point of view, the shipwrecks, aircraft and associated marine life are authentic, valuable and possibly unrivalled elsewhere in the world. The results of the first corrosion survey that some of the ships could start to collapse in 10-15 years is a concern from the diving tourism viewpoint and ecologically, especially if they do contain oil or gasoline.

There was a lack of oral histories from the Chuukese I met and talked to about the submerged sites and it was not just related to the fact that the ships were sunk over 60 years ago and there are too few Chuukese left to pass this information on. I recorded numerous stories and information about similar aged, World War II terrestrial sites on Tonoas where these men lived and worked every day during the bombing. Chuukese were not on the ships when they were destroyed. The terrestrial sites are equally



numerous, they are associated with them and their family members being used as slaves to construct war facilities, to clear their land and plant crops for the benefit of the Japanese during times of starvation. Land (and what grows on it) is of paramount importance to Chuukese lineages, clans and villages as it provides access to the food on adjacent reefs and sections of the barrier reef. Once the ships sunk they featured little in Chuukese lives, then only as a source of scrap metal and more recently as places from which to collect bombs for dynamite fishing or as part of the Chuuk tourism industry. From a Chuukese perspective, this ambivalence about the shipwrecks as historic sites is not surprising. It is only becomes a surprising fact if we look at it from a different perspective, for instance an American perspective, and see the shipwrecks as a pay-back for Pearl Harbor and ultimately the defeat of the Japanese. Although shortly after the war, the USA military government encouraged communities not to have regard to Japanese facilities and buildings as they did not want them to be seen as ‘memorials of Japanese rule’ (Hezel 1995:251). The war in the Pacific was essentially between the USA and Japan, not a Chuukese or Pacific Islander war and which is highlighted by a Palauan woman requesting from a United Nations inspection of Palau, shortly after the war, that they fight their war somewhere else next time (Peattie 1988:317).

The other point that needs to be made is that many Chuukese do not value ‘tangible’ remains as do many westerners including the Americans and the Japanese. Traditional stories, myths, legends, customs and ways of life, the ‘intangible’ heritage is more greatly valued and passed on and the material remains can to a large extent be ignored and left to deteriorate (Rainbird 2001, Spennemann 1992). This can and does include World War II sites although as a result of over 300 interviews, Poyer et al (2001) found: [Micronesians] want to preserve this history and to correct the imbalance that make Islanders nearly invisible in American and Japanese accounts of the Pacific war. Their desire to assume a more visible role in the history of the war is expressed in musings about construction of the own war memorials, though only Guam and Saipan now

preserve memorials and parks devoted to Micronesian experiences.

The CRM/Post-Processual approach to investigating the Chuuk Lagoon submerged military sites raises a number of interesting issues regarding the social values of the submerged World War II sites to today’s Chuukese community. It is in this area of relevance to present communities that I see a bright future for maritime archaeology studies.

## ENDNOTES

- <sup>1</sup> In this article, I use the traditional name for the region, ie. Chuuk, rather than the European version, Truk
- <sup>2</sup> A British aircraft carrier attack was implemented on Chuuk on the 14<sup>th</sup> & 15<sup>th</sup> June 1945 resulting in at least two British aircraft losses (Bailey, 2000: 253). The first bombing of Chuuk by the allies, was carried out by the Australians on the 15<sup>th</sup> January 1942 but no losses of aircraft or ships on any side were reported.
- <sup>3</sup> Two of Chuuk HPO’s staff, archaeological field assistants, Arimichy Rudolph and Anerit Mailo, were both ex-dive guides with two of Chuuk’s commercial diving operations. Arimichy Rudolph had been diving the shipwrecks since 1979 and had completed over an estimated 5060 dives, Anerit Mailo diving the deeper sites had accumulated over 1700 dives. Their knowledge in being able to locate and inspect the sites for their respective attributes was extremely valuable in my work. Combined with the historical information and database that I prepared, this provided a good basis to initiate site surveys.
- <sup>4</sup> In my role in the Chuuk HPO as a contract maritime archaeologist, I was in a position to apply for funds to assist in the documentation and management of the shipwreck sites. I successfully applied for three grants from the Historic Preservation Fund in partnership with the U.S. National Park Service, U.S. Department of the Interior, being: a side scan sonar survey of the sites; the first ever corrosion survey of the sites; and the production of an information booklet and interpretive signs on some of the submerged and terrestrial World War II sites. Some of this information can be seen on the Chuuk Historic Preservation Office website [www.chuukhistoric.org](http://www.chuukhistoric.org).
- <sup>5</sup> I have prepared a table as an outcome of the historical research I implemented and what is currently known from site surveys carried out by

this author and others such as Bailey and Lindemann, but which is not included here.

- <sup>6</sup> It was known that “some Claudes saw brief service against the allies, especially in the US carrier raids against bases in the Marshall Islands [1942 then 1944]; a few were based in Rabaul in the very early spring of 1942, and the Japanese light carrier *Soboro* had a mixed fighter squadron of Claudes and Zeros at the Battle of the Coral Sea [May 1942], but eventually all of them were re-

placed by Zeros and retired to second-line and training duties in the Japanese home islands. Nearly all of the remaining A5Ms and A5M4-Ks [Claudes] were expended in suicide attacks against Allied ships cruising off the coast of the home islands in the final months of the Pacific War.”

<http://www.wwiitech.net/main/japan/aircraft/a5m/index.html>.

## BIBLIOGRAPHY

- Bailey, D. E., 2000, *World War II Wrecks of the Chuuk Lagoon*. Redding
- Carrell, T., 1991, *Micronesia: Submerged Cultural Resources Assessment*. Submerged Cultural Resource Unit, National Park Service. Santa Fe
- Earle, S. A. and Giddings, A., 1976, Life springs from death in Truk Lagoon, *National Geographic*, **149**. 5
- Hezel, F.X., 1995 *Strangers in Their Own Land: A Century of Colonial Rule in the Caroline and Marshall Islands* Center for Pacific Island Studies, School of Hawaiian, Asian & Pacific Studies, University of Hawaii Press Honolulu
- Hezel, F. & Clark Graham, 1997, *Truk Underwater Archaeology*. Micronesia Resources Study. United States National Park Service. San Francisco
- JANAC, 1947, *Japanese Naval and Merchant Shipping Losses. During World War II by all causes*. Joint Army-Navy Assessment Committee US Government Printing Office. Washington, DC
- JICPOA 1944, *Truk – Air Target Folder II* Joint Intelligence Center Pacific Ocean Areas Bulletin No.11-44
- Lenihan, D., 1992, Trip Report: Submerged Cultural Resources Unit Operations in the Western Pacific and Hawaii; May through July 1992. Unpublished Report, Chuuk Historic Preservation Office
- Lindemann, K.P., 1982, *Hailstorm over Chuuk Lagoon*. Maruzen Asia. Singapore
- Lindemann, K., 1990, *Hailstorm over Truk Lagoon Supplement* Pacific Press Publication Jakarta
- MacLeod I., 2003, *Metal corrosion in Chuuk Lagoon: A survey of iron shipwrecks and aluminium aircraft*. Unpublished Report. Western Australian Museum, Perth
- Peattie, M.R., 1988 *Nanjō: The Rise and Fall of the Japanese in Micronesia, 1885-1945* Center for Pacific Islands Studies, School of Hawaiian, Asian & Pacific Studies, University of Hawaii Press. Honolulu
- Poyer, L. & S. Falgout, L. Carucci, 2001, *The Typhoon of War: Micronesian Experiences of the Pacific War* University of Hawaii Press Honolulu
- Rainbird, P., 2001 ‘Round, Black and Lustrous: A View of Encounters with Difference in Truk Lagoon, Federated States of Micronesia’ in Robin Torrence and Anne Clarke, eds., *The Archaeology of Difference: Negotiating Cross-Cultural Engagements in Oceania* Routledge London
- Spennemann, D. H. R., 1992, The Politics of Heritage: Second World War Remains on the Central Pacific Islands. In *The Pacific Review* 5 (3): 278-290.
- Spennemann, D., 1995, ‘Physical reminders of the British-Japanese Armament Trade in Micronesia’ *Journal of the Pacific Society*. **18**. 3:117-130
- Stewart, W.H., 1989, *Ghost Fleet of the Truk Lagoon* Pictorial Histories Publishing Montana
- USA MHS, 1952a, *Japanese Monograph No. 116: The Imperial Japanese Navy in World War II. A Graphic Presentation of the Japanese Naval Organization and List of Combatant and Non-Combatant Vessels Lost or Damaged in the War*. Military History Section, Special Staff, General Headquarters, Far East Command
- USA MHS, 1952b, *Japanese Monograph No. 173: Inner South Seas Islands Area Naval Operations, Part II, Defense Operations, Marshall Islands (December 1941 - February 1944)* Office of Chief of Military History, US Department of the Army, Japan
- USSBS 1945, *The Naval War in the Pacific: Interrogation of Vice Admiral Fukudome Shigeru*, Chief of Staff, Imperial Navy Combined Fleet from May 1943 to March 1944. 9th-12th December. United States Strategic Bombing Survey No.503
- USSBS, 1947 *The Reduction of Truk* The Naval Analysis Division, United States Strategic Bombing Survey No. 77

## AUTHOR BIOGRAPHY AND CONTACT

From 2001, Bill has been employed as a contract maritime archaeologist with the Federated States of Micronesia Historic Preservation Office and has

initiated projects in Chuuk, Yap and Pohnpei. From 1981 to 2001, Bill worked as the Principal Maritime Officer with Heritage South Australia, Department of Environment and Heritage where he was responsible for formulating and implementing an Historic Shipwrecks Program. His work in maritime archaeology has included sites in New Zealand, China, Finland, Sri Lanka and Hong Kong. He has written a number of articles and reports on maritime archaeology sites and issues. Currently, Bill is a PhD candidate in maritime archaeology at James Cook University in Queensland, Australia and is the Principal Investigator in an Earthwatch funded project being implemented in Chuuk. He is also a sessional lecturer in maritime archaeology at undergraduate and postgraduate level and has carried out maritime archaeology training programs for the benefit of Historic Preservation Office staff from throughout Micronesia.

Contact: William Jeffery, School of Anthropology, Archaeology and Sociology, James Cook University, Townsville, Qld 4811, Australia. E-mail: [william.jeffery1@jcu.edu.au](mailto:william.jeffery1@jcu.edu.au)