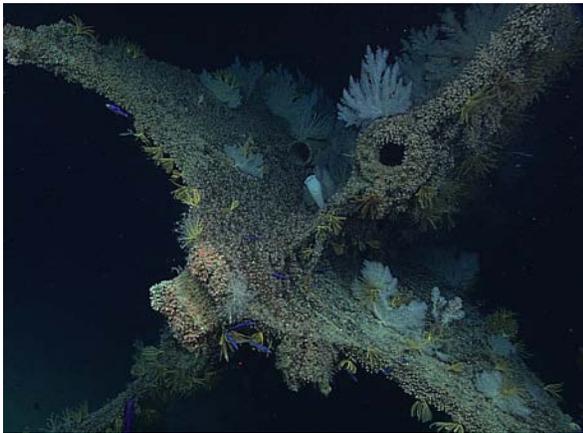
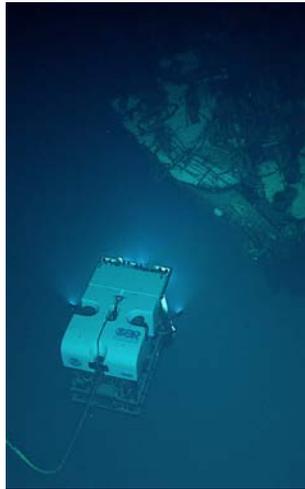




# 28<sup>th</sup> ANNUAL SYMPOSIUM ON THE MARITIME ARCHAEOLOGY AND HISTORY OF HAWAII AND THE PACIFIC



## “Early Watercraft and Maps: Voyaging, Visualizing and Revitalizing”

February 18-19, 2017  
Symposium Program

## **Public and Professionals Welcome!**

### **28<sup>th</sup> Annual Symposium: *Early Watercraft and Maps: Voyaging, Visualizing and Revitalizing***

#### **Keynote Speaker: David J. Herdrich ASHPO**



David J. Herdrich is currently the historic preservation officer of the American Samoa Historic Preservation Office and President of the Micronesian Endowment for Historic Preservation. He is also the Secretary of the American Samoa Renewable Energy Committee and a board member of the American Samoa Project Notification Review System Board that is part of American Samoa Coastal Management Program. In addition, he served as a board member of South Pacific Academy's Executive Board and was the President of the American Samoa Swimming Association. He has lived and worked in American Samoa for over 20 years and was American Samoa's first Territorial Archaeologist, a position he took 1989. His background includes a B.A. and M.A. in anthropology with a specialization in archaeology and cognitive anthropology. He has conducted numerous archaeological surveys and historic preservation projects, including historic building and historic site restoration projects such as the restoration of the American Samoa Jean P. Haydon Museum and the World War II Era National Historic Landmark Blunts Point Naval Guns. He has also reviewed hundreds of federally funded project for compliance with historic preservation laws. He has published articles in subjects ranging from Samoan "star mounds" to Samoan spatial concepts and has authored National Register Nominations for historic properties in American Samoa. Most recently (2013) he participated in a maritime heritage resources survey of Swains Island, leading the terrestrial archaeology aspect of that survey.

**Saturday February 18: 9:45-10:30 AM David J. Herdrich's public keynote address (open and free to all, at the University of Hawai'i Mānoa BusAd building rm A101)**

#### **A History of the Development and Use of the Samoan *Fautasi***

This presentation examines the origin, development and use of the Samoan *fautasi* (pulling long boats) with special reference to the *tuamualua* (two bowed paddling war canoes) that preceded them, describing the traditional Samoan boats and the popular racing events that have grown around them in the context of hybrid nautical design, Western colonialism and modern globalization. Previous descriptions of the development of the *fautasi* in the anthropological literature are, in some cases, oversimplified. Rather than simply replacing the *tuamualua* when Samoan warfare ended, *fautasi* were developed (1894) because of their superior speed, a clear benefit in numerous functions including use as war boats, cargo and passenger boats, V.I.P boats, and racing boats. Over a period of 127 years all of these functions, except the popular sport of *fautasi* racing, fell away due to the adoption of motorized vessels. Today the annual *fautasi* race may be the single largest cultural event in American Samoa.

NOAA's Office of National Marine Sanctuaries  
Maritime Archaeology and History of the Hawaiian Islands Foundation  
University of Hawai'i Marine Option Program



# Program and Abstracts

Saturday February 18<sup>th</sup>, 2017

University of Hawai'i at Mānoa Business Administration Building (BusAd) rm A101

9:00 AM	Registration and Continental Breakfast
9:30 AM	Welcome on behalf of the University of Hawai'i's Marine Option Program (Cynthia Hunter), NOAA's Office of National Marine Sanctuaries (Hans Van Tilburg), and the Maritime Archaeology and History of the Hawaiian Islands Foundation (Suzanne Finney).  Notes:

Session: *Early Watercraft*

Chair: Hans K. Van Tilburg

Time                      Presentation

9:45 AM	<p>KEYNOTE: A HISTORY OF THE DEVELOPMENT AND USE OF THE SAMOAN <i>FAUTASI</i></p> <p>David J. Herdrich, American Samoa Historic Preservation Officer; President of the Micronesian Endowment for Historic Preservation</p> <p>with:</p> <p>Hans K. Van Tilburg, maritime archaeologist/historian NOAA ONMS Maritime Heritage Program Michaela Howells, assistant professor biological anthropology, University of North Carolina Wilmington Michael David Coszalter, student anthropology department, University of North Carolina Wilmington</p> <p>Tavita22[at]yahoo.com hans.vantilburg[at]noaa.gov howellsm[at]uncw.edu mdc6712[at]uncw.edu</p> <p>This presentation examines the origin, development and use of the Samoan <i>fautasi</i> (pulling long boats) with special reference to the <i>tuamualua</i> (two bowed paddling war canoes) that preceded them, describing the traditional Samoan boats and the popular racing events that have grown around them in the context of hybrid nautical design, Western colonialism and modern globalization. Previous descriptions of the development of the <i>fautasi</i> in the anthropological literature are, in some cases, oversimplified. Rather than simply replacing the <i>tuamualua</i> when Samoan warfare ended, <i>fautasi</i> were developed (1894) because of their superior speed, a clear benefit in numerous functions including use as war boats, cargo and passenger boats, V.I.P boats, and racing boats. Over a period of 127 years all of these functions, except the popular sport of <i>fautasi</i> racing, fell away due to the adoption of motorized vessels. Today the annual <i>fautasi</i> race may be the single largest cultural event in American Samoa.</p> <p>Notes:</p>
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Time	Presentation
10:15 AM	<p data-bbox="420 197 1281 224">GOING FISHING: A PALAGI TRIES HIS HAND AT SAMOAN <i>FAUTASI</i> RACING</p> <p data-bbox="375 256 1511 315">David J. Herdrich, American Samoa Historic Preservation Officer; President of the Micronesian Endowment for Historic Preservation</p> <p data-bbox="375 346 618 373">Tavita22[at]yahoo.com</p> <p data-bbox="375 405 1500 464">Informal first-hand observations of the experience of training for and participating in Samoan <i>fautasi</i> racing in American Samoa.</p> <p data-bbox="375 495 448 522">Notes:</p>
10:35 AM	<p data-bbox="407 1005 1083 1033">VIDEO EXCERPT: FAUTASI RACE AMERICAN SAMOA 2016</p> <p data-bbox="375 1064 1468 1123">David Herdrich, American Samoa Historic Preservation Officer; President of the Micronesian Endowment for Historic Preservation</p> <p data-bbox="375 1155 651 1182">Tavita22[at]yahoo.com</p> <p data-bbox="375 1213 1252 1241">Highlights of the April 17<sup>th</sup> 2016 Flag Day <i>Fautasi</i> race in American Samoa.</p> <p data-bbox="375 1272 448 1299">Notes:</p>
10:55 PM	Break

Time	Presentation
11:10 AM	<p data-bbox="404 191 1227 216">THE JUNKMAN COMETH: LEGACY OF THE FORREST H. WELLS COLLECTION</p> <p data-bbox="375 249 995 275">Hans K. Van Tilburg, NOAA ONMS Maritime Heritage Program</p> <p data-bbox="375 308 654 333">Hans.vantilburg[at]noaa.gov</p> <p data-bbox="375 367 1487 682">During his several tours of duty in East Asia (1922-1932), Lieutenant Forrest H Wells USN became fascinated with Chinese sailing craft. Subsequently, he took thousands of photographs of Chinese sailing junks, and collected numerous wooden models from shipwrights and other sources. Later in his life he wrote several scholarly articles on the subject and came to be regarded as a prominent US expert in Chinese nautical historical development. Following his death, his rare model collection passed to his daughter, Kathryn Mears of Columbia, Missouri. Many of the models are extremely detailed and accurate representations and contain a wealth of technical and cultural information. In 2009 Ms. Mears contacted Dr. Hans Van Tilburg, giving to him her father's photo collection, and requesting assistance in finding a home for the large model collection. Many of the traditional Chinese working craft depicted by the models and in the photographs no longer exist; they are glimpses of a vanished past. The photographs are currently being scanned, and the entire model collection is now owned and curated by Texas A&amp;M's ship model laboratory at College Station.</p> <p data-bbox="370 743 440 768">Notes:</p>
<p data-bbox="180 1026 711 1056">Session: <i>Local and International Projects</i></p> <p data-bbox="1089 1026 1336 1056">Chair: Don Froning</p>	
11:30 AM	<p data-bbox="417 1106 1484 1161">VISUALIZING A DEEPLY SUBMERGED WWII B-29 USING A NOAA ROV: EXPLORING THE POTENTIAL FOR USING THIS TOOL IN FULFILLING DPAA'S MISSION</p> <p data-bbox="375 1194 935 1220">Wendy M. Coble, Defense POW/MIA Accounting Agency</p> <p data-bbox="375 1253 670 1278">Wendy.m.coble.civ[at]mail.mil</p> <p data-bbox="375 1312 1498 1627">On July 9<sup>th</sup> 2016, NOAA's Office of Ocean Exploration, in collaboration with NOAA's Office of National Marine Sanctuaries and the Defense POW/MIA Accounting Agency, conducted a non-invasive live dive ROV event, combining internet outreach and maritime archaeological survey. The remotely operated vehicle <i>Deep Discoverer</i> (D2) landed near the intact wing of a B-29 Superfortress resting on the seafloor upside down with landing gear and three of the four engines still attached, near the former WWII air field on Tinian Island, Northern Marianas. This was the first crash site discovered of over a dozen American B-29s lost in the area while flying missions during the war. All of the wreckage and debris seems to represent one aircraft, although portions of the forward and aft sections of the fuselage were not found. The discovery represents an important symbol of America's final push to end the war, an historically significant time in U.S. history, and is of interest to multiple management groups as well as several universities and foundations working to identify crash sites for the families of lost servicemen.</p> <p data-bbox="370 1688 440 1713">Notes:</p>
11:50 AM	Lunch on-your-own

Time	Presentation
1:00 PM	<p data-bbox="375 254 1479 310">REDUCING A THREAT: ENVIRONMENTAL SIGNIFICANCE OF THE WRECK OF USNS <i>MISSION SAN MIGUEL</i></p> <p data-bbox="375 344 1208 453">Kelly Keogh, NOAA ONMS Papahānaumokuākea Marine National Monument Jason Raupp, program archaeologist East Carolina University Melissa Price, senior archaeologist Florida Bureau of Archaeological Research John Burns, lecturer and diving safety officer University of Hawai'i Hilo</p> <p data-bbox="375 483 634 592">Kelly.keogh[at]noaa.gov Rauppj14[at]ecu.edu Price2m[at]gmail.com Johnhr[at]Hawaii.edu</p> <p data-bbox="370 621 1487 877">The 2015 documentation of a wrecked tanker at Maro Reef and its subsequent identification as that of the United States Naval Ship <i>Mission San Miguel</i> makes an important contribution to both the maritime heritage and ecology of the Northwestern Hawaiian Islands. Despite the fact that the American military's critical need for petroleum led to the construction of scores of tankers, this site represents one of the few extant examples of this important vessel type. These unglamorous, yet hardworking ships played an important role in US maritime history and this wreck serves as a reminder of the frantic race to match wartime service demands and highlights the resulting infrastructure that emerged to support them. This presentation provides details of the ship's construction and decorated military career, efforts to document and interpret its massive and well preserved structure, and the environmental significance of its discovery.</p> <p data-bbox="370 940 440 961">Notes:</p>
1:20 PM	<p data-bbox="402 1150 1019 1171">THE WAKE ISLAND SURPRISE: <i>AMAKASU MARU NO 1</i></p> <p data-bbox="375 1209 1040 1230">Hans K. Van Tilburg, NOAA ONMS Maritime Heritage Program</p> <p data-bbox="375 1268 675 1289">Hans.vantilburg[at]noaa.gov</p> <p data-bbox="375 1327 1511 1818">On August 10<sup>th</sup> 2016 NOAA ship <i>Okeanos Explorer</i>, operated by the Office of Ocean Exploration and Research, deployed its remotely operated vehicle system to survey a sonar target near Wake Island, an anomaly suspected to be the Japanese destroyer <i>Hayate</i>, sunk by shore side gunnery during the Battle of Wake Island on December 11<sup>th</sup> 1941. The archaeological survey was directed by NOAA's Maritime Heritage Program staff at the Daniel K. Inouye Regional Center on Ford Island, Honolulu. The ROV's tasks included confirming the ID of the wreck, completing a perimeter survey of major features, noting battle damage, and assessing the status of deterioration. The target, though, was not the expected destroyer but the Japanese peace-time converted merchant vessel <i>Amakasu Maru No. 1</i>. The <i>Amakasu Maru</i>, launched in August 1939, was a 1,913-ton, 271-foot long, 40-foot beam, Type D merchant vessel, the first of her class of 40 similar vessels built prior to the war. On December 24<sup>th</sup> 1942, soon after departing from the Japanese garrison on Wake Island, the <i>Amakasu Maru</i> was torpedoed by the USS <i>Triton</i> SS-201, going down with 12 of her crew. Diagnostic features confirmed the identity of the merchant ship, sitting upright on sand with a slight list to starboard. Large steel rectangular containers in the hold and valve connections on deck correspond to the ship's role during the war, water carrier for the Japanese fleet and supply vessel for the distant outposts and wartime garrisons in the Marshall Islands. Though not associated with the famous battle, this new discovery highlights the often overlooked reality for navies of the world, the critical role of the auxiliary supply train.</p> <p data-bbox="370 1856 440 1877">Notes:</p>

Time	Presentation
1:40 PM	<p data-bbox="402 254 915 281">THE MARITIME ARCHAEOLOGICAL SOCIETY</p> <p data-bbox="370 342 967 369">Chris Dewey, President Maritime Archaeological Society</p> <p data-bbox="370 396 732 424">Info[at]maritimearchaeological.org</p> <p data-bbox="370 451 1484 724">The Maritime Archaeological Society, based in Astoria, Washington, was created as a 501(c)3 non-profit organization to help document shipwrecks and other submerged archaeological sites, and to assist with the conservation of artifacts. Sharing a passion for maritime heritage with the public, the M.A.S. promotes awareness in the importance of maritime archaeology through community outreach and educational programs. Internal training programs are producing qualified volunteers to assist with fieldwork and research opportunities. Projects undertaken to date include the Oregon Coastal Survey Project, The Beeswax Wreck Project and The Big Anchor Project. M.A.S. has received grants to develop, design and deploy a remotely operated submersible vehicle, which has already recorded data on a 19th century shipwreck in the Lower Columbia River. While based in the Pacific Northwest, M.A.S. hopes to serve a greater area on the West Coast before expanding operations into the central Pacific.</p> <p data-bbox="370 783 440 810">Notes:</p>
2:00 PM	<p data-bbox="415 1056 1016 1083">IN SEARCH OF LOST SUBS: THE S-19 AND THE S-28</p> <p data-bbox="375 1115 1044 1142">Hans K. Van Tilburg, NOAA ONMS Maritime Heritage Program</p> <p data-bbox="375 1169 675 1197">Hans.vantilburg[at]noaa.gov</p> <p data-bbox="375 1224 1511 1661">S-28 was an early S-class American submarine, one of a fleet of 51 such boats which were to achieve iconic status in the minds of the public, the first "Silent Service." S-28, old by the time World War II began, conducted seven war patrols in the Aleutian Islands and the far north. The Aleutian Campaign has been called the "Forgotten Battle," a difficult contest between adversaries at the far end of the island chain in Alaska, and a battle with the weather, terrain, and remote distances along the Bering Sea. Finally, in November 1943, S-28 escaped the storms and the cold and headed south, commencing training operations in Hawaiian waters. On July 4<sup>th</sup> 1944 S-28 was completing the second day of torpedo exercises with her escort Coast Guard Cutter <i>Reliance</i> (WPC-150) southwest of Barber's Point, when her surface escort lost all communication with the sub. The 22-year old boat never resurfaced. Oil slicks soon appeared in the vicinity of sub's loss. NOAA and partner agencies have been collaborating on plans to locate and survey the wreck, and attempt to answer some of the questions surrounding how this boat was lost with her crew of 49 sailors. On September 3<sup>rd</sup> 2015 biologists and archaeologists conducted a joint opportunistic survey of one of S-28's sister subs, the S-19 (previously discovered by the Hawaii Undersea Research Lab in 2005). S-19 was not lost accidentally, but stripped and intentionally disposed in response to international arms limitations in 1938. Survey of the site may provide some clues as to what to expect from the pending S-28 discovery.</p> <p data-bbox="375 1688 444 1715">Notes:</p>

2:20 PM

VOYAGE INTO THE DEPTHS OF KANALOA

Bonnie Kahape`a-Tanner Executive Director/Captain  
Kānehūnāmoku Voyaging Academy

Info[at]kanehunamoku.org

Outreach video: Kānehūnāmoku Voyaging Academy (KVA) is a nonprofit, Hawaii based, 501(c)3 organization. Kānehūnāmoku, a 29ft double hull sailing canoe, is a hands-on, dynamic, and living classroom for students of all ages. Based at Ka`alaea in Kāne`ohe bay, students become crew and learn all aspects of sailing the canoe, including maritime skills, non-instrumental navigation, elemental observations, teamwork and communication.

Notes:

3:30-6:00 PM

Conference reception, refreshments outside BusAd A101

4:00-6:00 PM

Pop Up Museum outside BusAd A101 (see event flyer) sharing all items and stories relevant to the maritime theme, maps, models, photographs, clippings etc.

SUNDAY February 19<sup>th</sup>, 2017

University of Hawai'i at Mānoa Business Administration Building (BusAd) rm A101

9:00 AM Registration and Continental Breakfast

Session: *Revitalizing Voyaging pt 2*

Chair: Suzanne Finney

Time Presentation

9:30 AM

WHAT DOES A SWELL PATTERN USED BY POLYNESIAN VOYAGERS EXPLAIN ABOUT THE SPINES BETWEEN ISLANDS IN MARSHALLESE STICK CHARTS?

Marianne George, Pacific Traditions Society

vakataumako[at]gmail.com

Joe Genz researched traditional Marshallese knowledge of swell patterns and the imagery of them known as "stick charts" (2009, 2016). Genz and his Marshallese collaborators strived to experience and identify swell patterns during inter-island voyages, but were challenged to sense or understand, the 'stick chart' modeling of direct lines between islands, called *dilep*—"backbones" or "spines." Although satellite imagery shows refracted and reflected swell lines between many islands, there is little evidence of such "spines" between islands. The late Polynesian Wayfinder, Koloso Kaveia of Taumako, used a particular swell pattern between the Duff Islands Group and the Reef/Outer Reef Islands Group. The biggest feature of the pattern is an elliptical shape formed by the combination of two opposed, refracted swells. Some remnant energy of the two swells moves a weakened version of them into the interior space of the ellipse. There the opposed swells cross each other. Additionally, the steep, short, reflected swells cross through the two weak refracted swells. The crossing of these three swells forms a line of peaky nodes. Kaveia described how raised liquid ridge line along the top of swell lines form liquid bumps, or nodes, when swells cross through each other. I hypothesize that for those who can sense the pattern, a line of these nodes may be the "spine" between islands that Marshallese call *dilep*. I note that Taumako wayfinders correlate and calibrate swell patterns with other phenomena, that may help us understand *dilep*. I also note that it takes a lot of experience and focus to recognize such patterns at sea, and the guidance of someone who has mastered that ancient wayfinding art is extremely helpful.

Notes:

Session: *Mapping the Landscapes of the Pacific*

Chair: Cindy Hunter

9:50 AM

INITIAL ARCHAEOLOGICAL SURVEY OF KAHO'OLAWE, HAWAII

Richard Gould, Professor (Emeritus), Anthropology, Brown University, Providence, RI

Rgould49[at]gmail.com

In 1980 I was invited by Dr. Maury Morgenstein to participate in the first-ever archaeological survey of Kaho'olawe, conducted under the oversight and with the support of the U.S. Marine Corps, Kaneohe Bay. The survey was brief -- about 2 1/2 weeks -- and preliminary, but our findings led to more intensive and longer-term surveys there by Dr. Patrick McCoy, head of Alpine Archaeology, Inc. In spite of generally poor weather and massive amounts of unexploded ordnance from the use of the island as a target by the Navy and Marines since the start of World War II, we were able establish some initial findings:

--- The island showed extensive signs of human habitation prior to the arrival of Captain Cook.

--- Habitation sites tended to be ephemeral but contained portable stone artifacts generally not seen from sites on the major Hawaiian Islands. Many of these were impromptu or "instant" tools.

--- The island had at least one major heiau as well as one task-specific shrine.

--- Attention focused on the large basalt quarry and workshop near the center of the island, which has since come to play an important role in identifying prehistoric contact between different island groups through widespread return voyaging.

--- In 1980 the island was dry and uninhabited, and the question remains as to whether the loss of the water table there was pre- or post-European.

Notes:

Time	Presentation
10:10 AM	<p data-bbox="402 201 1360 226">A LOOK AT TRADITIONAL HAWAIIAN PRIVATE FISHERY RIGHTS WITH EARLY MAPS</p> <p data-bbox="318 260 1016 285">Victoria S. Creed, Waihona Aina Corp. &amp; Cultural Surveys Hawai'i</p> <p data-bbox="318 319 639 344">Waihonaa001[at]hawaii.rr.com</p> <p data-bbox="318 378 1490 957">Although traditional fishery practices prior to Contact (1779) can be partly constructed from legends, etc, the 1839 Constitution devotes more space than other documents, to describing traditional fishery rights surviving at that time. Fisheries were attached to most ahupua'a (land division out to sea 1 mile or to the fringing reefs) on all the islands. Land Commissioners in the Māhele had no right to award fisheries attached to lands. But many claims are made for fisheries. We learn that fisheries were also attached to some 'ili (small sections within an ahupua'a) and to 'ili ku, divisions only responsible to the King; that the <i>konoiki</i> (chiefly land managers) had could taboo one fish for his/her private use; and with his/her fishermen, he/she could decide when spawning fish had to be totally tabooed, or alternately, the <i>konoiki</i> could take one third of all the permitted fish caught within his/her fishery; <i>ahupua'a</i> residents had the right to fish within that fishery, but no others, but would give the <i>konoiki</i> his/her share; one third of all fisheries belonged to the <i>konoiki</i>, one third to the King himself (Crown lands), and one third to the Monarchy or government. Government fisheries became open to all fishermen. Under the non-Hawaiian controlled Republic and Territorial government, fishing rights were considered feudal, and with U.S. Congress and the Organic Act of 1900, they wanted to extinguish all fisheries for private use. Congress mandated remaining fisheries be legally proclaimed (done by the rich and mostly non-Hawaiians) for two years, and those owners had to be compensated. This was problematic as no mainland or other country had a process for evaluating fisheries. Pearl Harbor fisheries were one of the few compensated, paid for by Congress. Since Hawai'i never had extra money for compensation, many were never condemned. Those in power saw that once open to everyone, fisheries were becoming overfished and the value would become moot. Remaining fisheries were never formally condemned. Today State-designated fisheries exist as conservation areas and are perhaps less than one percent of traditional fisheries.</p> <p data-bbox="318 991 386 1016">Notes:</p>
10:30 AM	Break
10:45 AM	<p data-bbox="341 1213 760 1239">ISLANDS ADRIFT ON THE SEA OF TIME</p> <p data-bbox="318 1272 954 1297">Captain Richard W. Rogers, Sandwich Islands Maritime Museum</p> <p data-bbox="318 1331 506 1356">plialoha[at]hula.net</p> <p data-bbox="318 1390 1477 1621">A look at "The General Chart", produced after Captain Cook's third voyage, shows a group of islands to the east of the "Sandwich Islands." These have long been presumed to represent earlier discoveries of the Hawaiian Islands. A review of the many, many maps and charts of the Pacific, dating to the early 16<sup>th</sup> century offers hints, possibly conclusions, about when some of these earlier discoveries took place. Looking again at the "General Chart," and subsequent 18<sup>th</sup> century maps, one will notice more islands plotted to the east, between the Hawaiian islands and the mainland, where it has long been confirmed, no islands exist. One island is depicted to the north and some charts show discoveries to the west as well. This paper will review the presumed earlier discoveries of the Hawaiian islands and contemplate the cause for placement of these other cartographical features.</p> <p data-bbox="318 1654 386 1680">Notes:</p>

Time	Presentation
11:05 AM	<p data-bbox="365 184 1388 214">WHERE ARE THE HAWAIIAN BATTLES ON THE BIG ISLAND, AND IN THE CRM REPORTS?</p> <p data-bbox="337 273 1302 302">Tom Wolforth, Cultural Resource Manager and Tribal Liaison; Alaska Army National Guard</p> <p data-bbox="344 331 609 361">Twolforth[at]hotmail.com</p> <p data-bbox="337 390 1529 638">Have you ever driven over an ancient Hawaiian battlefield? Have you ever hiked a trail where warriors moved to engage with their enemy? Have you ever worked on a CRM project where a battle took place and didn't know it? I have. And I'm willing to bet that you have, too. Have you ever seen a feature that may have been a campsite for a contingent of warriors preparing for battle? You may have and not realized it, not having a model that accounts for that kind of feature. I can help with that. I've developed a model that helps us to think about those possibilities as we survey the landscape. I'll briefly reference the model, show some examples of possible warrior camp features, point to a new website that makes the historical data easily accessible, pitch a map that helps to locate over 100 battle locations on the island of Hawai'i, and enjoy seeing you at the symposium.</p> <p data-bbox="332 697 406 726">Notes:</p>
11:25 AM	<p data-bbox="393 966 1339 995">THE SUBMERGED MARITIME LANDSCAPE AND INVENTORY OF THE HAWAIIAN ISLANDS</p> <p data-bbox="332 1024 954 1054">Hans K. Van Tilburg, NOAA ONMS Maritime Heritage Program</p> <p data-bbox="332 1083 613 1113">Hans.vantilburg[at]noaa.gov</p> <p data-bbox="332 1142 1529 1667">Though some in the past have stated that Hawai'i "has no shipwrecks," the seafloor surrounding the islands actually contains the cultural footprint of hundreds of wreck sites. The systematic investigation of the underwater cultural heritage in Hawai'i started in 1989 under the University of Hawaii's Marine Option Program. At the same time, manned submersibles with the Hawai'i Undersea Research Lab contributed many deep water discoveries and site surveys. Today NOAA's Office of National Marine Sanctuaries continues cultural resource site assessments, in collaboration with the Office of Ocean Exploration and Research and partner agencies and programs. Public divers continue to discover more sites and share their information. Submerged shipwrecks, submarines, and aircraft reflect major parts of Hawaii's recent past, and discovery of these sites focuses public attention on the field of maritime archaeology and heritage preservation. In 2013 the Bureau of Ocean Energy Management, which reviews offshore energy development proposals, entered into a three-year agreement with NOAA for compiling and analyzing cultural resource data for the marine environment surrounding the main Hawaiian Islands. One of the three main objectives of the agreement was to develop a database of known, reported, and potential submerged cultural resources. The inventory is intended to facilitate the management and protection of these historic properties and improve the consideration of potential impacts during project reviews. The combination of existing data and the need to improve the review process during project planning, has led to the first shipwreck inventory and assessment for the Hawaiian Islands, comprised of a Microsoft Access geo-referenced database of known, reported, and potential submerged cultural resources emphasizing the use of primary sources, and the narrative report <i>The Unseen Landscape: Inventory and Assessment of Submerged Cultural Resources in Hawai'i</i>, providing cultural, environmental and historic context to the 2,114 entries within the database.</p> <p data-bbox="332 1696 406 1726">Notes:</p>

Time Presentation

11:45 AM

MAYDAY, MAYDAY, MAYDAY: THREE MYSTERIOUS UNDERWATER PLANE WRECKS OF O'AHU

Blade Shepherd-Jones, USCG reserve; diver/researcher

Razor513[at]hotmail.com

Since Hawaii's first aircraft flight on December 31, 1910, aviation has captured the imagination of residents who fantasized of traveling by air to outer islands or far off lands. With this liberation of travel, there have been accidents. In 2015, three recently discovered plane wrecks were found in the waters off Oahu. Tech divers exploring new sites off Diamond Head stumbled onto an upside down Piper PA-28R Cherokee Arrow believed to of gone down in 1972. Second, while looking for a suppose of P-40 landing gear with possible links to the Pearl Harbor attack off the old Bellows airfield, a different P-40 debris field was located, including an engine, landing gears, and prop. This wreck highlights the dangers of training in Hawaii in World War 2. Lastly, there were rumors on Scubaboard of a mysterious set of wings off Nanakuli. The wings are believed to be de Havilland DH.104 Dove, which there is no record of a crash in the area.

Notes:

12:05 PM

Lunch on-your-own

1:30 PM

UPSIDE DOWN: THE INVERTED STRATIGRAPHY OF THE BABULJAŠ ŠIPWRECK, CROATIA

Elizabeth Briggs, maritime archaeologist, graduate Cambridge University

Lisabriggs3[at]yahoo.com

The complex stratigraphy of terrestrial sites with a long history of occupation that require a Harris Matrix to discern which layers date to what period is often unnecessary on many simple and straightforward shipwreck sites. But this is not always the case. This paper explores the stratigraphy of the Babuljaš shipwreck, Croatia, and the upside-down nature of the deposits found there. A 4<sup>th</sup> century C.E. ship travelling from North Africa to Croatia, the Babuljaš ship sank on top of submerged Neolithic and Bronze Age settlement sites, and since its sinking has been covered by colluvium containing additional artefacts from the nearby islet of Babuljaš. A fascinating example of terrestrial archaeology meeting underwater archaeology, the Babuljaš shipwreck site serves as a reminder that underwater stratigraphy is not always as simple as it seems.

Notes:

Time	Presentation
1:50 PM	<p data-bbox="381 199 1291 231" style="text-align: center;">INFLUENCE OF TEDDY TUCKER ON BERMUDA AND MARITIME ARCHAEOLOGY</p> <p data-bbox="337 262 1421 315">Emily A. Menzies, University of Hawai'i Mānoa student; research conducted under University of Rhode Island</p> <p data-bbox="337 346 592 378">emenzies[at]Hawaii.edu</p> <p data-bbox="337 409 1485 787">The island of Bermuda, although only 22 miles long, is surrounded by over 400 corpses of sunken vessels. Before the 20th century, the local people of Bermuda initially salvaged shipwrecks for equipment, supplies, materials, and dutiable goods. The most famous maritime explorer in Bermuda was Edward "Teddy" Tucker. In his time as a maritime explorer, he discovered more than 100 shipwrecks around Bermuda. In 1955, Tucker's discovery of the San Pedro, a 16th century Spanish vessel, drew the attention of archaeologist and historians around the world because of the gold and jewelry that had been discovered on it. In this paper, I look at the practices of Teddy Tucker and how they influenced Bermudian history and the evolution of maritime archaeology. By looking at the ethics of Tucker's archaeological practice and using the San Pedro as a case study, I explore how Tucker's lack of ethical methodologies in regards to artifact removal and care was a major contribution to maritime archaeology. His methodologies made historians, archaeologists, and the Bermudian government realize that there are a lot of important artifacts, cultural and economical alike, to be found and if people do not have the proper training or ethical values to work on these sites, their value will be lost.</p> <p data-bbox="337 829 414 861">Notes:</p>
2:10 PM	<p data-bbox="397 1186 1128 1218" style="text-align: center;">SOUTH O`AHU'S BOMB MUSEUM AT THE BOTTOM OF THE SEA</p> <p data-bbox="337 1249 1136 1281">Steve Price, University of Hawai'i Undersea Research Lab diver/researcher</p> <p data-bbox="337 1323 576 1354">stevenpr[at]hawaii.edu</p> <p data-bbox="337 1396 1518 1617">After World War II the US Military had a large problem. They had stockpiled a massive amount of ordnance in anticipation of the impending land invasion of Japan. Fortunately for all, the war ended before these weapons were needed. They were now tasked with what to do with this huge excess of various bombs, artillery rounds, mines, torpedoes and depth charges. They opted for the simplest and most inexpensive method available, which was to dispose of them by dumping them offshore in deep water where they thought they would never be seen again. Come along on a journey into the deep to these areas of disposed ordnance with the Hawaii Undersea Research Lab. The lab and their two Pisces submersibles have made dives into these waters for decades and has created an "Ordnance Identification Manual" to aid in the recognition of these decaying artifacts of war.</p> <p data-bbox="337 1648 414 1680">Notes:</p>

Time	Presentation
2:30 PM	<p data-bbox="367 226 1300 254"><i>MOKO HOLO HELE</i> ARTIFICIAL REEF PROJECT: HAWAII'S NEWEST SHIPWRECK?</p> <p data-bbox="334 289 932 317">Blade Shepherd-Jones, USCG reserve; diver/researcher</p> <p data-bbox="334 348 602 375">Razor513[at]hotmail.com</p> <p data-bbox="334 407 1528 705">The 162 ft <i>Moko Holo Hele</i> (YFB-87) was a U.S. Navy car ferry that traveled to and from Ford Island, Pearl Harbor. She was in service from 1970 – 1998. Once the Admiral Bernard Clarey Bridge was completed, the ferry was not needed. In 2004, the <i>Moko Holo Hele</i> was sold and being converted into a fishing barge, off Kona, Big Island. Later, the old ferry was abandon at Marisco Shipyard. In 2015, an all-volunteer effort made up of divers, volunteer organizations, and local citizens started cleaning and stripping the <i>Moko Holo Hele</i> to become an artificial reef. Planned manmade reefs can provide habitat for a variety of marine life. For this reason, artificial reefs are often popular with scuba divers. Personal effects on the ship were donated to thrift stores. Nonferrous metals were recycled for funding. Both engines and ship's components were salvaged to be repurposed at the Marisco Shipyard. Social media played a major role getting the word out about this unique opportunity. The volunteers spent a year and half of hard work preparing the ship. Now the <i>Moko Holo Hele</i> sits idle waiting on paperwork for her next duty assignment as Hawaii's newest artificial reef and dive site.</p> <p data-bbox="334 737 407 764">Notes:</p>
2:50-3:50 PM	Close of symposium; informal reception, refreshments outside BusAd A101

5:30–8:30  
PM

**Symposium Sunday informal BBQ/banquet**

**Samoa food specialties courtesy TIHATI and the Office of the Honorable Consul of Samoa**

360 Holokai Place  
Honolulu 96825  
220-4558

See map below

