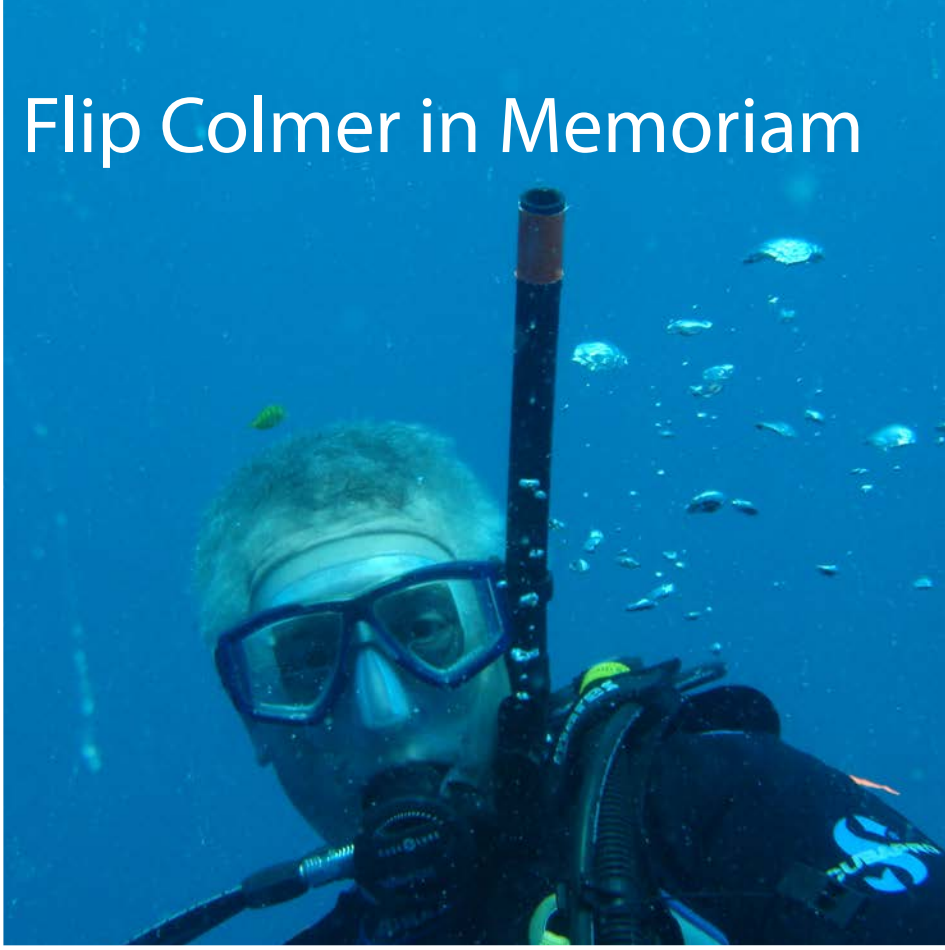
PROJECT RECOVER

2019 Annual Report

Flip Colmer in Memoriam



Project Recover is saddened to announce that Flip Colmer, team member since 2002, died August 20, 2019 in an aviation accident. A retired US Naval Aviator and active Delta Airlines pilot, Flip dedicated much of his free time toward building Project Recover. Flip participated in many field search and documentation missions, both in jungles and underwater. As a member of our board, Flip also played a major role in Project Recover's strategic directions. Flip's loss is deeply felt throughout the entire organization and we will miss Flip greatly.

For more than a quarter century, Project Recover has been searching for and locating Americans missing in action. What started as a grassroots effort conducting small scale missions in the jungles and waters of Palau, has grown into a worldwide mission that employs some of the most advanced science and technologies.

Our capabilities and global footprint continue to grow. We are excited to share with you the incredible impact our team made in 2019 through this annual report. Ultimately, we conduct the work we do to provide answers and some form of closure to Gold Star families. Additionally, our work has significant impacts outside of our primary mission that positively contributes to the greater community. You will find these contributions highlighted throughout this report. The readers of this report will walk away with a greater understanding of Project Recover's:

- Organization
- Planning and Execution Process
- Overview and Results of 2019 Missions
- Activities to Expand Visibility
- Commitment to Youth Education
- Commitment to Gold Star Families
- Cumulative Record

In 2019, Project Recover executed 14 field missions to nine different countries. On these missions, we located and documented nine American aircraft associated with as many as 33 missing Americans. Of note, Project Recover located three aircraft in Chuuk Lagoon associated with seven MIAs. These are the first American aircraft located in Chuuk Lagoon. Additionally, we collaborated for the first time with Vulcan Inc. Research Vessel Petrel, which resulted in the location of a World War II Navy Avenger associated with three MIAs. We conducted our first multination mission to Portugal, Croatia, and Italy. Sponsorship of Project Recover's missions grew to include support from the National Navy SEAL Museum. Lastly, in partnership with Air Force Heritage Flight Foundation, Project Recover launched a formal multidisciplinary education program for high school students. We were proud to have more than 120 students participate in this pilot program.

As Project Recover moves into 2020, we are excited about the expansion of our global footprint to include work in countries where we have yet to have a presence. Additionally, our official relationship with DPAA is growing which will result in further expansion of our mission to include recovery operations. Our first recovery mission is planned to take place in the first part of 2021.

Tragically, Project Recover lost longtime member and Board of Directors member, Flip Colmer, on August 20, 2019. We dedicate this annual report to our dear friend, Flip.

Derek Abbey, Ph.D.
President and CEO
Project Recover

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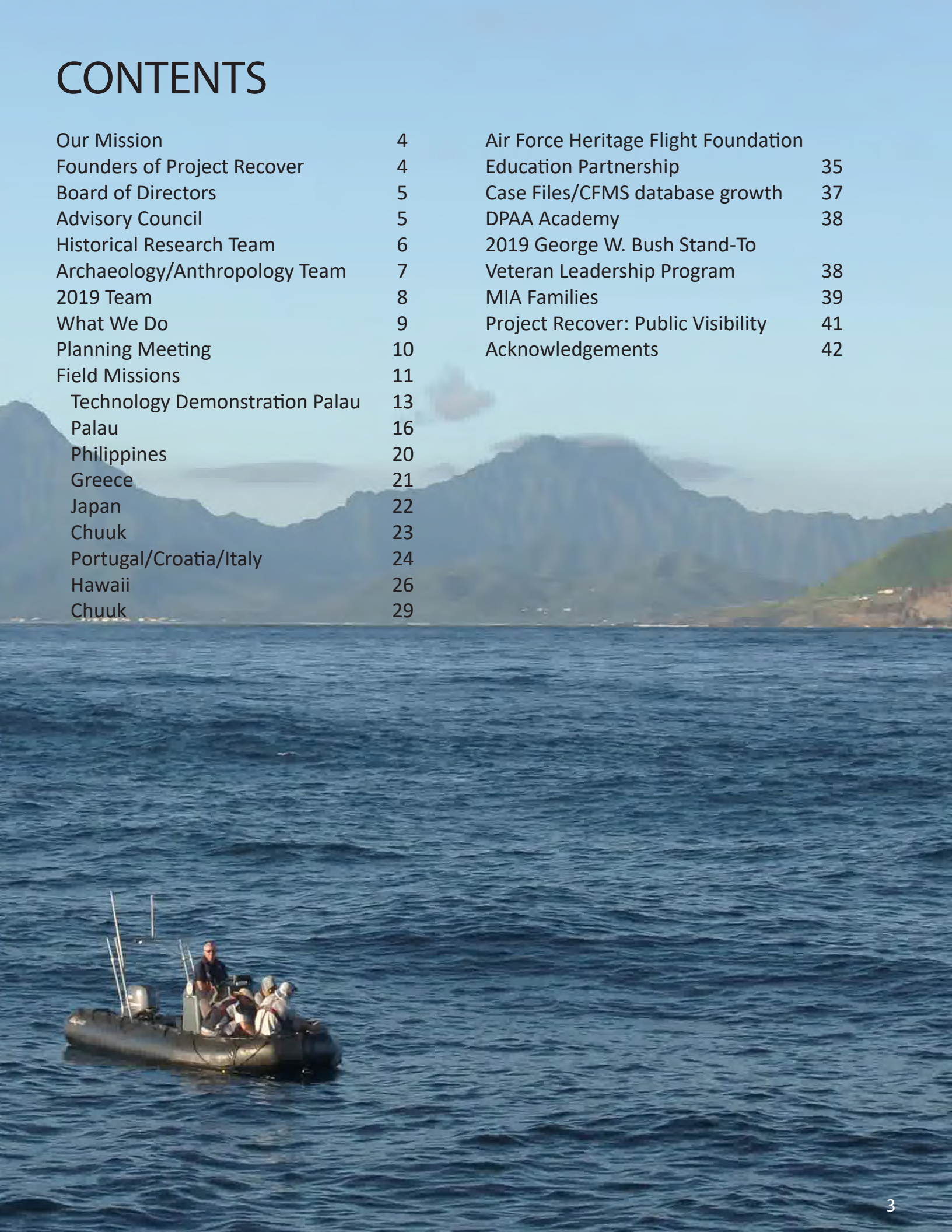


Our Mission

Project Recover is a collaborative effort to enlist 21st-century science and technology in a quest to find and repatriate Americans missing in action since World War II, in order to provide recognition and closure for families and the Nation.

Founders of Project Recover

Mark Moline, Ph.D.
Dr. Moline received his B.A. from St. Olaf College, MN and a Ph.D. from the University of California, Santa Barbara. Dr. Moline currently serves as the Director of the School of Marine Science and Policy at the University of Delaware. Dr. Moline has authored over 160 peer-reviewed articles on topics including biology, optics, imagery, modeling, underwater robotics, survey and autonomy. Since 2012, Dr. Moline has applied a multifaceted underwater technology suit towards locating and documenting aircraft wreckage associated with US service members missing in action.

Patrick J. Scannon, M.D, Ph.D.
Dr. Scannon founded The BentProp Project in 1993 and, in 2018, transitioned it to the 501(c)(3) organization Project Recover, Inc., as co-founder and president. Over the past 27 years, Dr. Scannon has led numerous MIA missions on land and underwater in 13 countries. Dr. Scannon received his Ph.D. in organic chemistry from UC Berkeley and his M.D. from the Medical College of Georgia. He completed his residency and board certification in internal medicine while on active duty in the US Army. He founded and was chief scientist of a biotech company, XOMA, retiring after 35 years; he continues to work with start-up companies.

Eric Terrill, Ph.D.
Dr. Terrill is an oceanographer with 28 years of experience leading basic and applied research programs around the globe. In 2003, he established a R&D Center within the Marine Physical Laboratory at Scripps to rapidly field new technologies and conduct exploratory and expeditionary research. Dr. Terrill has a B.S. (magna cum laude) degree in Applied Mechanics and Engineering Sciences from the University of California, San Diego and a Ph.D. in Physical Oceanography-Applied Ocean Sciences from Scripps Institution of Oceanography that was supported by DOD fellowships. Dr. Terrill has 34 years diving and undersea experience.

Board of Directors

The Board of Directors maintain a fiduciary responsibility to the stakeholders. They consult with the organization regarding strategic and operational direction of the company and monitor the organizations performance. Dan Friedkin and Derek Abbey assumed their roles in August of 2019.

Dan Friedkin
Chair

Derek Abbey, Ph.D.
President and CEO

Pat Scannon, M.D. Ph.D.
President Emeritus

Daniel T. O'Brien
Treasurer

Val Thal-Slocum
Secretary

Flip Colmer

Advisory Council

The Project Recover Advisory Council is drawn together through their mutual commitment to the return of Americans lost from our nation's previous conflicts. They each bring a wealth of experience and knowledge in the areas of aviation, donor development, military and defense, business, government, and more.

Darcy Anderson
Vice Chairman,
Hillwood Management

Matt Byrd
Colonel,USAF (ret.),
President and CEO,
Hillwood Aviation

T.M. Moseley
General, USAF (ret.)
Former Chief of Staff
of the US Air Force

Tom Henricks
Colonel, USAF (ret.)
and former US
Astronaut

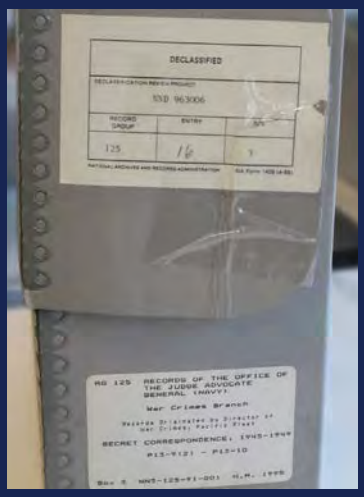
Amanda Hughes
Director, The
Friedkin Foundation

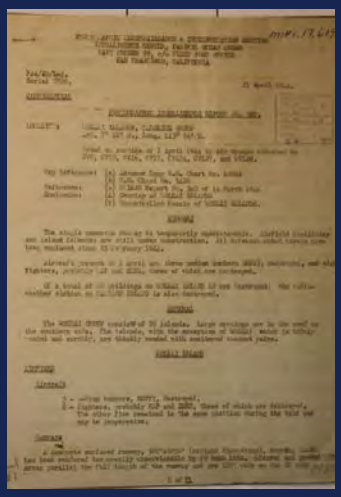
Eric Williamson
President,
Friedkin Aviation
Vice President,
The Friedkin Business
Development Group

Historical Research Team

Project Recover's historical research team assembles information from a host of sources to develop and/or improve POW/MIA case files and informs avenues for additional research. It is also vitally important on the assessment of cases and Project Recover's process for prioritizing cases. Augmentation of the information sources has been particularly helpful in the global footprint Project Recover now enjoys. In 2019, the Project Recover history team expanded its archival reach, especially outside of the continental United States. This year, the history team continued development of the reference library and both long and short-term research projects for MIA cases related to (Chuuk) Truk Lagoon, Solomon Islands, Philippines, Japan, Palau, Croatia, Italy, and Portugal. Lead historian Dr. Colin Colbourn and volunteers analyzed historic loss information for over 50 new cases added to the CFMS, pushing our total number of potential MIAs to nearly 2,400.

In 2019 the team worked in Japan and also conducted research at the Bernice Pauahi Bishop Museum in Honolulu, Hawaii, where photographs that were abandoned by the US Navy are currently stored, and which have been integral to investigations of MIAs from the Pacific Theater. The Project Recover history team attended the reunions of the 307th Bomb Group, as well as the 8th Air Force Historical Society, connecting with veterans from several bomb groups, including the 398th Bomb Group, which invited historian Colin Colbourn to give a talk about Project Recover's work.





Colin Colbourn, Ph.D.
Lead Historian for Project Recover

Dr. Colin Colbourn is a Postdoctoral Research Fellow at the University of Delaware and Lead Historian for Project Recover. Colin received his M.A. in War and Society and Ph.D. in History at the University of Southern Mississippi. In 2013, Colin joined the Defense POW/MIA Accounting Agency as a Historian and ORISE Fellow. In 2015, Colin served as a Historian and Associate Editor with Rowan Technology, where he helped build and manage West Point's fully digital and interactive publication, The West Point History of Warfare, the text used by all cadets in the "History of the Military Art" course.

Archaeology/Anthropology Team

Dan Davis, Ph.D.
Marine Archaeologist

Colonel Laura A. Regan, Ph.D.
Forensic Anthropologist

Megan Lickliter-Mundon, Ph.D.
Underwater Aviation Archaeologist

Dr. Jolie Liston, Ph.D.
Terrestrial Archaeologist

In addition to expanding our scope to a global mission, Project Recover has also expanded its capabilities to include historical research, site discovery/ documentation, and recovery operations. Our needs require expertise in both underwater and terrestrial domains. Led by Dr. Andrew Pietruszka, we have been fortunate to bring together a team that both meets our current requirements and is also poised to grow as Project Recover does.

Our archaeologists work with host nation governments to ensure that all field operations are sanctioned, issued all required permits, and follow local, state, national, and international regulations. In the field, Project Recover archaeologists serve as the team's forensic and archaeological subject matter experts and much of their effort is focused on site documentation. All data collected by Project Recover is shared with the US government who will take that information and evaluate the site as to whether or not it should be excavated in the hopes of recovering the remains of US personnel that may still be present on the site. DPAA requires that a certified professional archaeologist oversees all field projects conducted in partnership with the agency. Once back from the field, Project Recover archaeologists are tasked with analyzing the data and writing reports. Project Recover archaeologists spend days analyzing videos and images of wreckage collected in the field to interpret crash sites with an emphasis on identifying the aircraft, correlating it to a particular loss associated with known MIAs, and defining the areas of a crash site most likely to be associated with the physical remains of those MIAs. All this information is critical to the US government's decision to excavate as well as planning how they will excavate. At present, Project Recover has reported Site Surveys to DPAA associated with approximately 87 MIAs.

Dr. Andrew Pietruszka is an underwater archaeologist at Scripps Institution of Oceanography and serves as the lead archaeologist for Project Recover. He received an M.A. in Underwater Archaeology/ Maritime Studies from East Carolina University and a Ph.D. in Anthropology from Syracuse University. He has over 17 years of experience conducting underwater archaeological research around the world. In 2011, he joined DPAA as a forensic archaeologist overseeing global underwater recovery operations. While at DPAA, Dr. Pietruszka successfully completed 2nd Class Diver training at the U.S. Naval Diving and Salvage Training Center, Panama City, Florida.

Andrew Pietruszka, Ph.D.
Lead Archaeologist for Project Recover

The 2019 Team

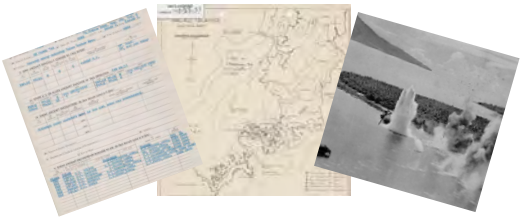
Scott Althaus, Project Recover Member
Heidi Batchelor, GIS Analyst, SIO
Matthew Breece, Ph.D. Post-doc, UD
Dave Bavencoff, Project Recover Member
Kees Beemster-Leverentz, GUE diver
Charlie Brown, Project Recover Member
Mark Chidichimo, Geneaology Expert
Josh Costa, Technician, SIO
Aldo Costigliolo, Project Recover Member
Glenn Frano, GIS Specialist
Eric Gallimore, Ph.D. Research Engineer
Gannon Gesireich, Engineer, SIO
Adam Gray, Project Recover Member
Maurizio Grbac, GUE diver
Bob Hess, Engineer, SIO
Mike Jilka, Technician, SIO
Brian Kim, Programmer, SIO
Joe Maldangesang , Project Recover Member
Kyle McBurnie, Diatom Studios
Andy Nager, Engineer, SIO
Giulia Napolitano, Ph.D., Italy Logistics
Marcus Newbold, GUE diver
Luca Palezza, GUE diver
Harry Parker, Digital Asset Manager
Mike Raible, Project Recover Member
Travis Schramek, Ph.D. SIO
Lauren Trecosta, Media team
Erik White, Engineer, UD
David Zhang, J.D.

What We Do

Project Recover's overall mission is to repatriate the missing from past conflicts. In order to do this effectively, Project Recover has established a robust and efficient sequence of activities. Project Recover is actively involved in nearly all steps of the process, starting with Research.

Performed by Project Recover Team

Historical Research



Historical documents of the events related to MIA servicemen are identified and organized by case in Project Recover's uniquely designed database system.

Planning

Prioritization of cases and locations are made by consideration of the research, logistics, related cases and a host of other factors.

Search

Searches are conducted in areas informed by the research and use of novel approaches and technologies.

Documentation

Once located, sites associated with MIA losses are formally documented and a ceremony is conducted over the site. A US flag is folded for each MIA and held until the Memorial or until the flag can be presented to the MIA's family.

Recovery

In coordination with DPAA and host countries, remains of MIA servicemen are retrieved from the site and turned over to DPAA.

Performed by DPAA

Identification/ Notification

DPAA conducts forensic analysis of the remains and extracts DNA samples. These samples are compared to those of family members. Once confirmed the family is notified.

Memorial

In accordance with family wishes, the DOD conducts a formal interment ceremony. Project Recover shares the story with the family and presents the flag from the ceremony conducted over the MIA site.

2019 Planning Meeting

At least once a year, key team members from Project Recover, University of Delaware and Scripps Institution of Oceanography meet to discuss such topics as recently acquired archival and historical information, planning and prioritization of future missions and findings and lessons learned from prior missions. We also discuss other topics such as our interactions with MIA families and with the Defense POW/MIA Accounting Agency (DPAA), as well as team administrative and Project Recover 501(c)(3) updates. Previous joint team meetings have taken place in Santa Monica, Ca. and San Diego, Ca.

During this year's meeting, the team reviewed historical data and considered possible MIA and POW cases for future search and documentation missions.

Considerations in prioritization include many factors such as mission type (e.g., investigative, wide-area search, documentation of a discovered site), land vs water, safety planning, anticipated equipment load-outs, weather, cultural factors, host governments notification and permitting, team size and logistics and implications of missions in remote sites.

As a result of this meeting, a draft of the prioritized potential missions was created. This draft in conjunction with new information throughout the year is used to plan and execute missions throughout the year and coming years. Teams from Project Recover, University of Delaware and Scripps Institution of Oceanography conducted missions in 2019 in Chuuk, Croatia, Greece, Italy, Japan, Palau, Philippines, Portugal and the United States (Hawaii). In addition, the joint team reviewed both mission and strategic planning for 2020.

Map showing the nearly 500 cases in the Project Recover database system. A selection of cases for field work are chosen from our database at the Planning Meeting each year.

Field Missions

Europe 2019

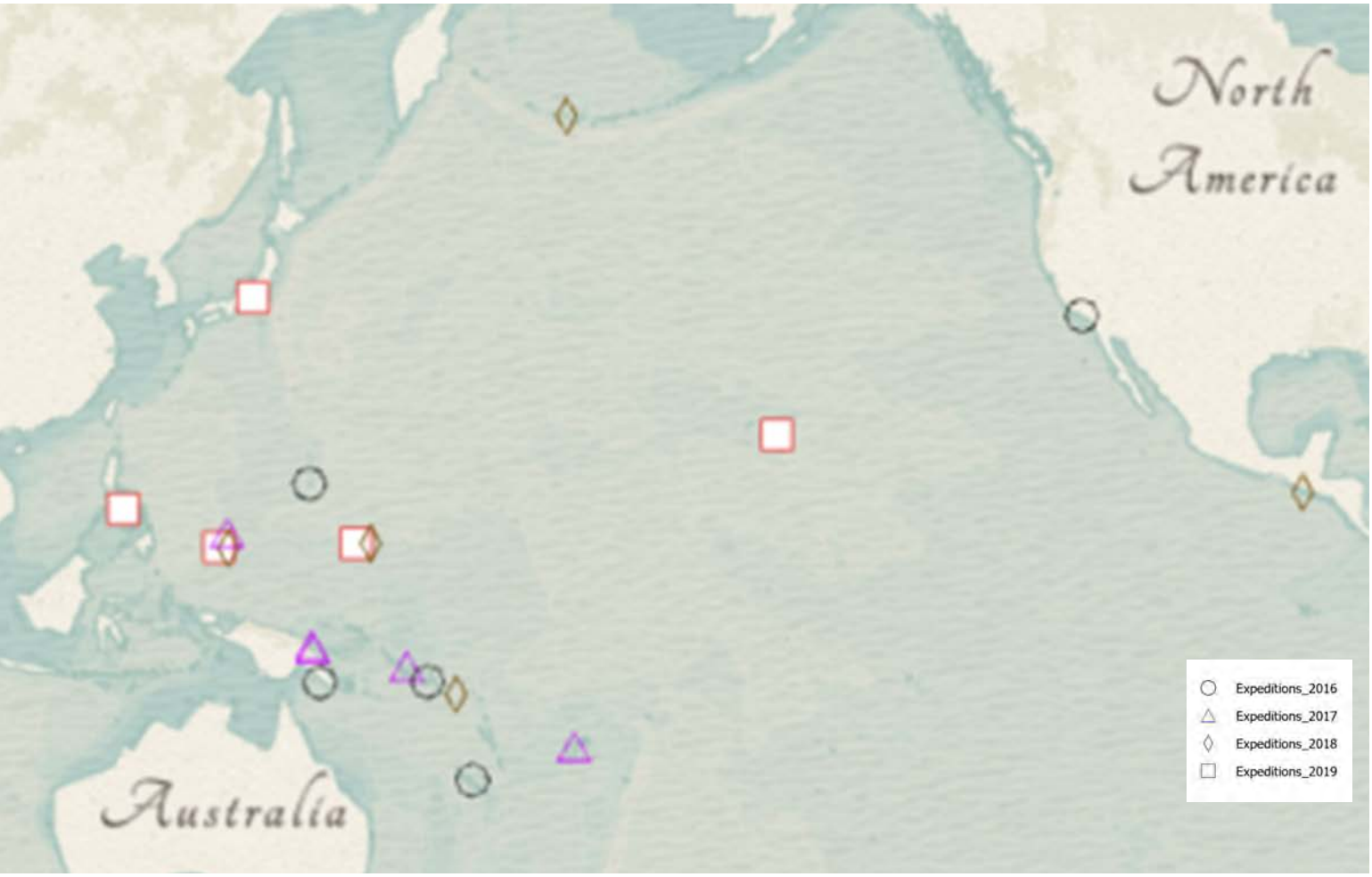
Greece

Portugal

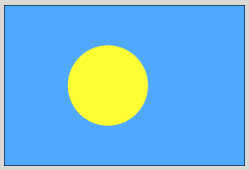
Croatia

Italy

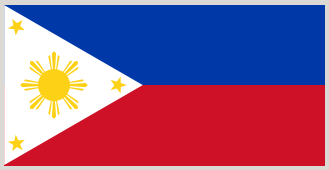
Pacific 2019



Palau



Philippines



Japan

Chuuk

USA

Technology Demonstration, Palau

14 to 31 January

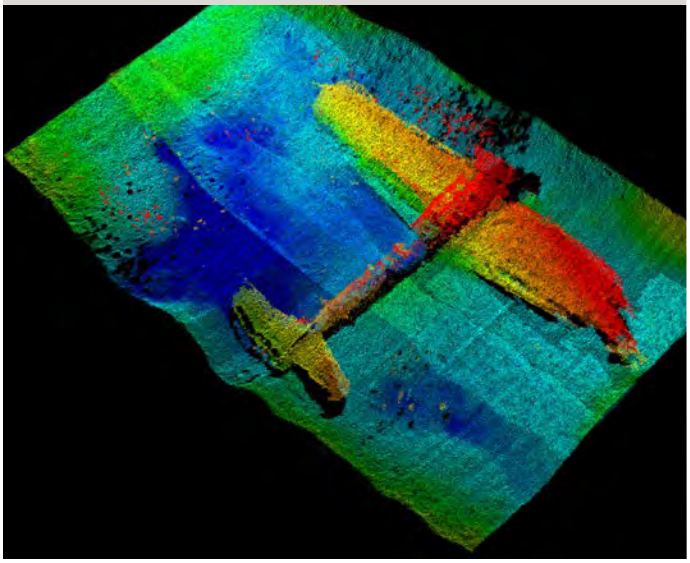
Region: Malakal Harbor
Missing in Action: 14
Team Size: 13

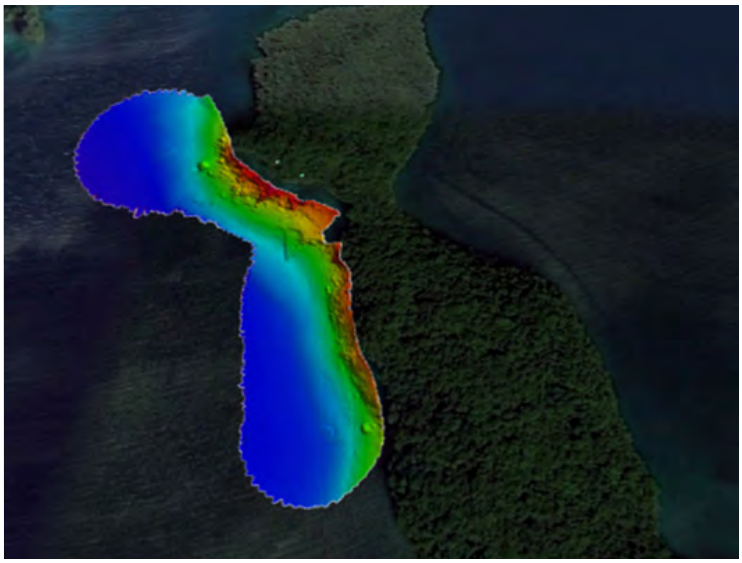
Equipment:
5 REMUS 100
REMUS 100 low light imager
REMUS 100 magnetometer
REMUS 100 multibeam sonar
T-50 Multi-beam Sonar
Shark Marine Barracuda 300m ROV
Shark Marine Navigator
Gateway Buoy

Summary of Results:
Technology Demonstration Completed
Surveyed 21+ km^2 in a single day
Find, fix, finish targets
Found torpedo dump site
Surveyed: 42.8 sq. km

Project Recover team members from SIO and UD showcased the results of a muti-year program sponsored by The Office of the Secretary of Defense (OSD) Rapid Innovation Fund in support of the Defense POW/MIA Accounting Agency's mission. The "Technology Testbed for Finding and Characterizing Long Term Underwater Aircraft Wreckage" was a cooperative agreement in support of DPAA. During this mission Project Recover had several objectives to demonstrate technological advancements with the overarching goal of accelerating or enhancing underwater discovery and ultimate recovery of Americans MIAs. Palau was chosen as the remote test site as it is of historic significance to Project Recover and the fact that there are at least five cases associated with MIAs that have not yet been found in our testing area.

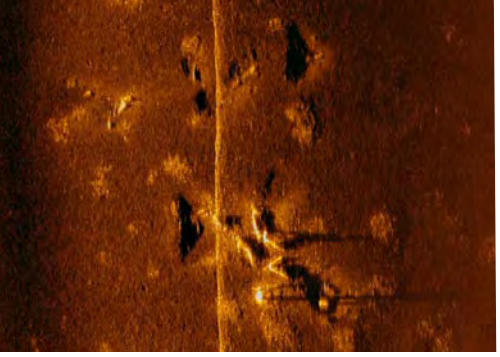
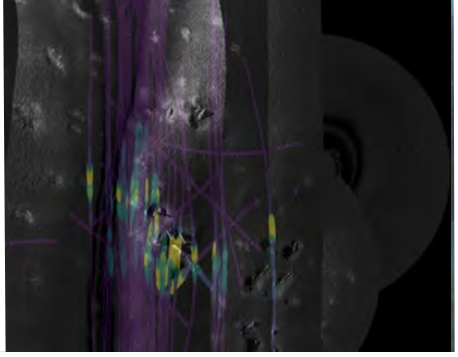
A fleet of REMUS 100 vehicles were used as the platform for low-frequency side scan sonar, a high-frequency side scan sonar, a magnetometer, a multibeam sonar, and a low light imaging camera. Additionally, a multibeam sonar was deployed on a small vessel. An ROV was utilized to document findings in deep waters while SCUBA divers with a digital camera system





and a dive navigator conducted investigations in shallower depths.

The most daunting objective of the demonstration was a large area search that was to cover at least 16 km^2 in a single day with four REMUS 100 vehicles. To accomplish this task the engineers and scientists worked together to maximize coverage area, vehicle speed and efficiency. Strategic mission planning played a vital role to avoid any hazards that would cause vehicle downtime and ensure effort was not duplicated between vehicles. After a long day on the water monitoring vehicles performing the large area searches, the team returned to download the data and review the files. When the tally was in the team learned they had covered over 21 km^2 with the 4 vehicles and plenty of battery but no daylight to spare, far outperforming expectations.


With the major objectives accomplished, the team quickly turned its focus back on the search for individual cases. The first case was a missing B-24 shot down by a Japanese Zero after a bombing run in Palau's western lagoon in August of 1944, where there are reported to be 8 MIAs on board. The second case was an SB2C that was last seen crashing into Malakal Harbor on fire after releasing its bomb on a Japanese Ship in September of 1944. Two F6F-3 Hellcats were also shot down in Palau's western lagoon, one attacking anti-aircraft emplacements in Koror in September 1944 and the other making an attack on Peleliu Airfield in March of 1944. The final case for this field campaign was a TBM Avenger from USS Lexington lost East of Urukthapel but could be in deep water as there is a steep slope to the East of Palau.

From the 42.8 km^2 area searched 27 possible aviation targets were discovered that warranted further investigation. The team utilized a suite of techniques to gain more insight into these targets. The main tools of choice were the AUV based magnetometer and high -esolution (1200-1800 kHz) side scan sonar along with a lowlight AUV imager. From the AUV missions six targets were of extreme interest to the team and divers were deployed on five of them and the Shark Marine Barracuda was deployed on the sixth. The divers verified all but one of the targets were non-aviation with the one target that was aviation linked, was a TBM-1C previously discovered by Project Recover in 2016 that is associated with three MIAs. The target investigated by the ROV turned out to be a pile of US torpedoes disposed of after the war.

While no new MIA associated aircraft were discovered during this field campaign, this mission was deemed a complete success. The demonstration mission gave Project Recover the incentive and opportunity to push search and documentation technologies to their limits and expose new techniques and equipment that will aid in future missions all over the world. Some of the results from this Palau mission have already helped lead to successful findings of aircraft in Chuuk and Hawaii as highlighted in this document. Palau still remains a high priority area for Project Recover as there are several missing aircraft still unaccounted for with significant chances for recovery.

Palau

30 March to 25 April
11 to 23 November

Region: Ngeremlengui State, Ngatpang State, Aimeliik State, Koror State

Missing in Action/Prisoners of War: 13-30
Team Size: 7 and 8

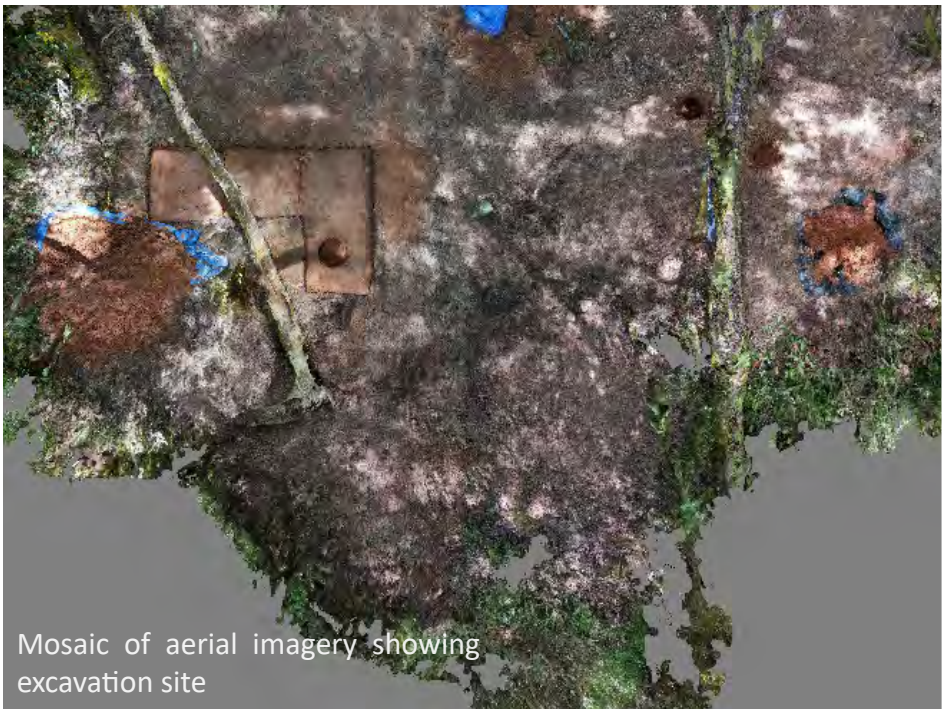
Equipment:
Drone with Video, Metal Detector
Archaeological Equipment
GPS
Photography Gear

Summary of Results:
Reviewed 3 MIA crash sites for potential recovery, conducted preliminary test digs at 3 sites and documented one cemetary with possible WWII-era unmarked graves

In Ngatpang, the team has been searching for up to 20 POWs known to be executed in this area. Based on new field findings, the team conducted three jungle digs, one in Area M, two in Area S. We dug a test trench and multiple test holes in Area M in the vicinity to three suspected non-natural mounds with negative findings for burial activity. In Area S, we located/identified ~40 artifacts consistent with WWII-era civilian and military use but after digging multiple test holes in two areas of interest, we found no evidence of burial activity. We are reassessing our search for these executed POWs based on these findings.

In Aimeliik, the team conducted searches for the possible burial of a reported execution of a US aviator based on Palauan interviews. A series of test holes were dug in suspect mounds and ditches, as well as a thorough examination of on-site crevasses. The team found no evidence of human remains or burial activity, although we identified numerous US and Japanese military artifacts (eg, expended 0.50 cal shell casings). Further work in this area will need additional intelligence.

In Ngeremlengui we reconnoitered three routes for carrying excavation gear to this remote jungle Marine Corsair crash site. We completed a preliminary series of test pits in the immediate vicinity of the crash site with no findings of burial activity. However, based on prior information, we are recommending this site to DPAA for recovery operations.

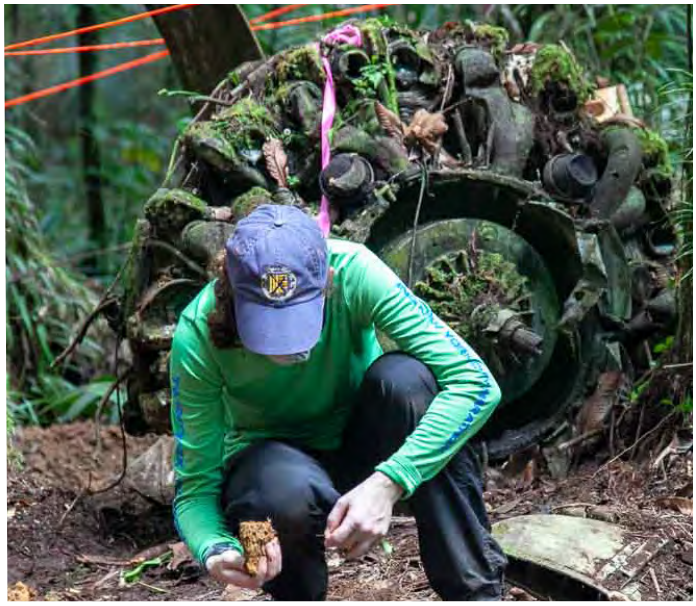


Mosaic of aerial imagery showing excavation site

Artifacts were left in place, including this 1 Sen Japanese coin from 1941.

In addition to these mission goals, we also conducted interviews in Koror regarding the possible executions of one or more American POWs and burials in the Koror area. We located a Palauan cemetery with a series of ~ 20 well organized and uniform unmarked graves of unknown origin to local authorities, which will be the focus of a later mission.

In anticipation of the 75th anniversary of the Battle of Peleliu (15 September 1944), the team gathered on Peleliu overlooking battle area of Horseshoe Valley with a group of active military and veterans to honor those who fought and died in defense of both our country and Palau.



Inspecting unmarked graves

Project Recover Team at Peleliu Memorial Service

Tasks for the November mission consisted of 1) hiking into interior Ngaremlengui and Aimeliik to re-locate three MIA crash sites to develop logistics plans for potential recovery operations, 2) searches of historic documents in the Belau National Museum and the National Archives for relevant WWII and post WWII records, and 3) additional surface survey and oral history collection concerning the unmarked graves in the Koror cemetery as part of an ongoing evaluation for American MIAs believed captured and executed during WWII. No excavation occurred during this mission.

Logistics planning took place concerning three MIA crash sites. All three crash sites have had detailed Site Survey Forms prepared by Project Recover. All three involved crashes of USMC single-seat Corsairs, each with the Marine aviator remaining MIA. Because the sites are each remote, unique planning to deliver necessary staff and equipment to these sites is required to complete the recovery proposals to DPAA.

The potential exists that some of the aircraft may be located under an impassible growth of ito fern and clearing the area was discussed.

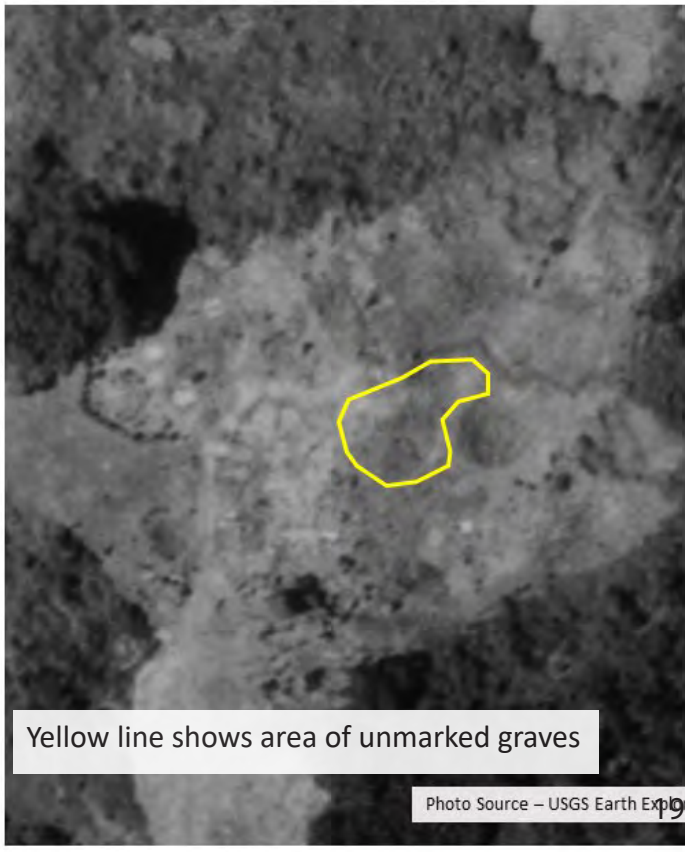
A previous mission investigated three different paths to the Ngeremlengui jungle Corsair site. The return to this area was to investigate the trail for the feasibility of using all terrain vehicles to permit more time on site. We documented the trail with video and detailed GPS and found that we would need to build a small number of temporary bridges across creeks draining these jungles.


We received invitations to visit the Belau National Museum and the Palau National Archives to search for additional WWII records and photos. The Palau National Archives is currently organizing many of its records and we decided that a later visit would be most appropriate. The Belau National Museum has some records that we found and, with permission, made photographic copies for our files.

As a follow-up to the unmarked graves in the Koror cemetery located during the April mission, the team did a more detailed land survey of the area, including additional drone images. We discovered that there may be additional unmarked graves, fewer in number, which would have been somewhat more remote from the main area of ~ 20 unmarked graves. Further comparative photographic analysis conducted by team member Glenn Frano suggests this area of unmarked graves appears to have been begun in the 1944-45 time frame. The team received the help of a local Palaun historian who provided a list of potential interviewees. The team contacted, received permission and conducted seven Palaun interviews, all except one with Joe Maldangesang as translator. Of the seven, one clearly recalls stories of Americans being buried in a Koror cemetery and one other felt the unmarked graves are not Palauan. The other five provided no additional information. The team is now assembling a report combining the field work, all interviews, and the comparative photo analysis to determine the next steps. Given the cultural and legal concerns in proposing potential exhumations, great care must be taken to determine the provenience of these unmarked graves.

Aerial (drone) View of Cemetery in April 2019

March 16, 1969



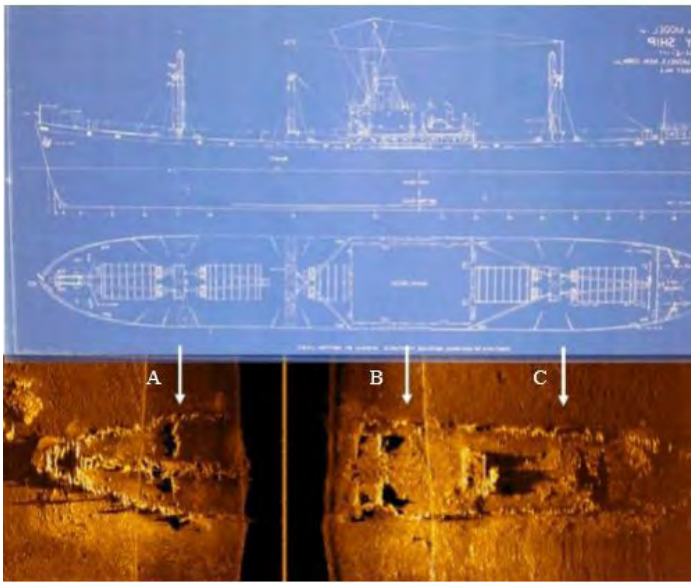
Philippines

24 to 29 April

Region: Occidental Mindoro
Missing in Action: 20
Team Size: 5 and the crew of R/V Petrel

Equipment:
REMUS 100
Petrel 6000m ROV

Summary of Results:
Surveyed 12 sq. km



Project Recover and R/V Petrel conducted a remote-sensing hydrographic survey and diver investigation of targets off San Jose, Philippines. R/V Petrel is a 250-foot research and exploration vessel owned and operated by Vulcan Inc. Purchased in 2016 and commissioned by the late Paul G. Allen, it employs the latest advanced technology in exploration, survey systems, remote sensing and deep diving equipment to 6,000 meters. Petrel's mission is to explore historically significant archaeological sites, unique marine ecosystems, and participate in scientific expeditions through academic and governmental partnerships.

The objective was to locate and document 4 aircraft crash sites associated with US MIAs, and correlate sites to known historic losses. The research was a hands-off, non-intrusive survey using an autonomous underwater vehicle equipped with side-scan sonar. No site was disturbed, and no artifacts were collected.

Over the course of four days, approximately 9 km^2 were surveyed via multibeam sonar, 4.75 km^2 were surveyed by a REMUS 100, and nearly 2.5 km^2 were surveyed with R/V Petrel's Bluefin AUV. Survey data was reviewed after each survey. The team in the field identified 117 acoustic anomalies in the data. The majority of these did not exhibit characteristics consistent with aircraft wreckage and did not warrant further investigation. Due to time constraints, only a limited number of targets exhibiting characteristics most common of man-made objects were investigated. Target interrogation occurred either by divers using a Shark Marine Navigator with a 900 kHz forward facing Blueview sonar, or by the Argus 6000 ROV onboard R/V Petrel. The team dove on 7 targets, none of which proved to be associated with aircraft wreckage.

Greece

16 to 25 May

Region: Elefsina
Missing in Action: 4
Team Size: 4

Equipment:
Humminbird Solix-10
Shark Marine Navigator

Summary of Results:
Identified previously located target as maritime
Visually Inspected 3 potential aviation targets, verified non-aviation
Surveyed 8.7 sq. km

With the support of DPAA, four Project Recover team members went to Elefsina, Greece to follow up on a previous mission's side scan sonar target, which could be associated with a missing B-25C. After meeting with the Elefsina Port Authority for permission to dive in the harbor, two team members got in the water to document the findings. Unfortunately, the debris pile was not from an aircraft but likely maritime. There were several local leads of "US Aircraft" but none were able to be located after extensive searching. Utilizing the help of The Greek Ephorate of Underwater Antiquities, members took a land based approach to locate MIAs associated with this loss that may have been buried in local cemeteries. Working with the only cemetery in Elefsina and a local church, burial records were searched but no possible American graves were revealed.

The team found Elefsina Harbor to be very disturbed due to all of the industrial activity and any aircraft wreckage would have likely been extensively scattered from dredging and large anchors. The Greek people and officials were very accommodating and willing to assist in our efforts and the team was given leads to investigate for this case as well as several others. Given the number of cases and ease of access future missions to Greece, albeit in less degraded areas, could prove to be fruitful.

Japan
31 July to 4 August

Region: Tokyo
Missing in Action: > 30 POWs
Team Size: 2

Summary of Results:
Update on latest findings in Japanese WWII Archives concerning US Airmen captured behind enemy lines in Chuuk and Palau

Project Recover members Pat Scannon and Colin Colbourn traveled to Tokyo, Japan to work with our long-term Japanese historian and researcher, Minoru Kamada. The purpose of this trip was to discuss Mr. Kamada's ongoing research related to Palau POWs and an update on his research into any Japanese records related to Chuuk Lagoon. We also discussed with Mr. Kamada the potential of future Project Recover missions to Japan, with special interest in potential reconnaissance missions to Kyushu, where Project Recover has several cases of interest, including five aircraft.

While in Tokyo, Mr. Kamada introduced us to the Japanese Military Archives at the National Institute of Defense Studies. Our visit to the Japanese military archives represents a significant step forward toward better access to foreign archives. At the military archives, we captured several documents related to Palau which were written by veterans of the conflict after the war. Since most of the documents at both Palau and Chuuk were destroyed in the period of time between the end of the war and the American occupation, these are valuable depictions of a time for which there is little to no official record. We hope to return to the Japanese archives in 2020 to continue our research there into Project Recover's cases throughout the Pacific.

Our two-man team was in Chuuk to search for burial sites of POW executions as well as aircraft losses in the lagoon. This Chuuk investigation was following up on leads from historical research and analysis conducted by the Project Recover History Team. The primary focus of this fourth land mission to Chuuk was to broaden our network of local leaders and elders throughout the lagoon to gain local knowledge of aircraft wrecks in the lagoon, as well as the potential burial areas of captured American airmen.

In addition to our ongoing investigations on Weno (Moen), Tonowas (Dublon), and Faleu islands, the team visited Udot, Fefen, Parem, Tol (reportedly a difficult island for foreigners to visit) and Feret.

Chuuk

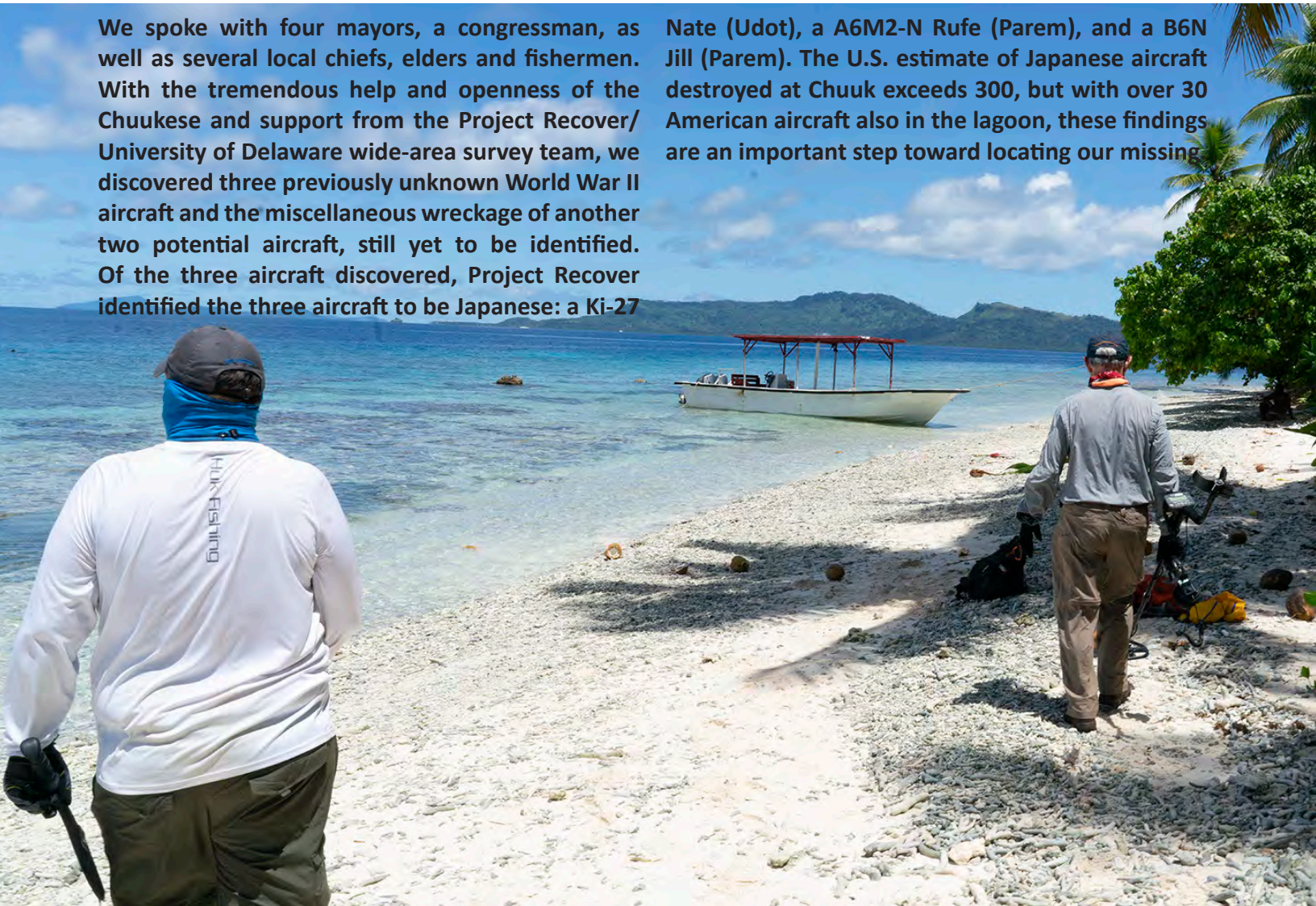
4 to 15 August

Region: Chuuk Lagoon
Missing in Action: 141
Team Size: 2

Equipment:
Metal Detector
GPS
Photography

Summary of Results:
Islands visitied: 7
Oral Histories: 9
Intel for 3 new aircraft (found to be Japanese)

We spoke with four mayors, a congressman, as well as several local chiefs, elders and fishermen. With the tremendous help and openness of the Chuukese and support from the Project Recover/ University of Delaware wide-area survey team, we discovered three previously unknown World War II aircraft and the miscellaneous wreckage of another two potential aircraft, still yet to be identified. Of the three aircraft discovered, Project Recover identified the three aircraft to be Japanese: a Ki-27 Nate (Udot), a A6M2-N Rufe (Parem), and a B6N Jill (Parem). The U.S. estimate of Japanese aircraft destroyed at Chuuk exceeds 300, but with over 30 American aircraft also in the lagoon, these findings are an important step toward locating our missing



Portugal/ Croatia/Italy

21 September to 12 October

Missing in Action: 13
Team Size: 11

Equipment:
Shark Marine Navigator
Humminbird side scanning sonar/ depth finder)
Drone for photography
GoPro units for underwater photogrammetry

Summary of Results:
Completed preliminary photo and video documentation of 1 USN PB4Y and two USAAF B-24 bombers. Two previously located sites found to be negative for aircraft debris.

In September and October 2019, Project Recover team members executed a three-country reconnaissance mission in Portugal, Croatia and Italy, a first for Project Recover. The mission goals included gaining local intel on known underwater WWII aircraft crash sites in Portugal and Croatia, as well as performing drop dives in Italy on sonar targets acquired during a 2018 mission. Project Recover archaeologists and dive team members employed modern technology and imaging techniques to assist in solving these decades-old mysteries. Two of the visited aircraft wrecks, Consolidated B-24 Liberators at 90 m and 110 m, were the deepest targets attempted by Project Recover-led divers in its 27 years of operations. Our team conducted their research and mapping of aircraft wrecks in accordance with DPAA procedures and protocols with the ultimate goal of MIA crew recovery and repatriation.

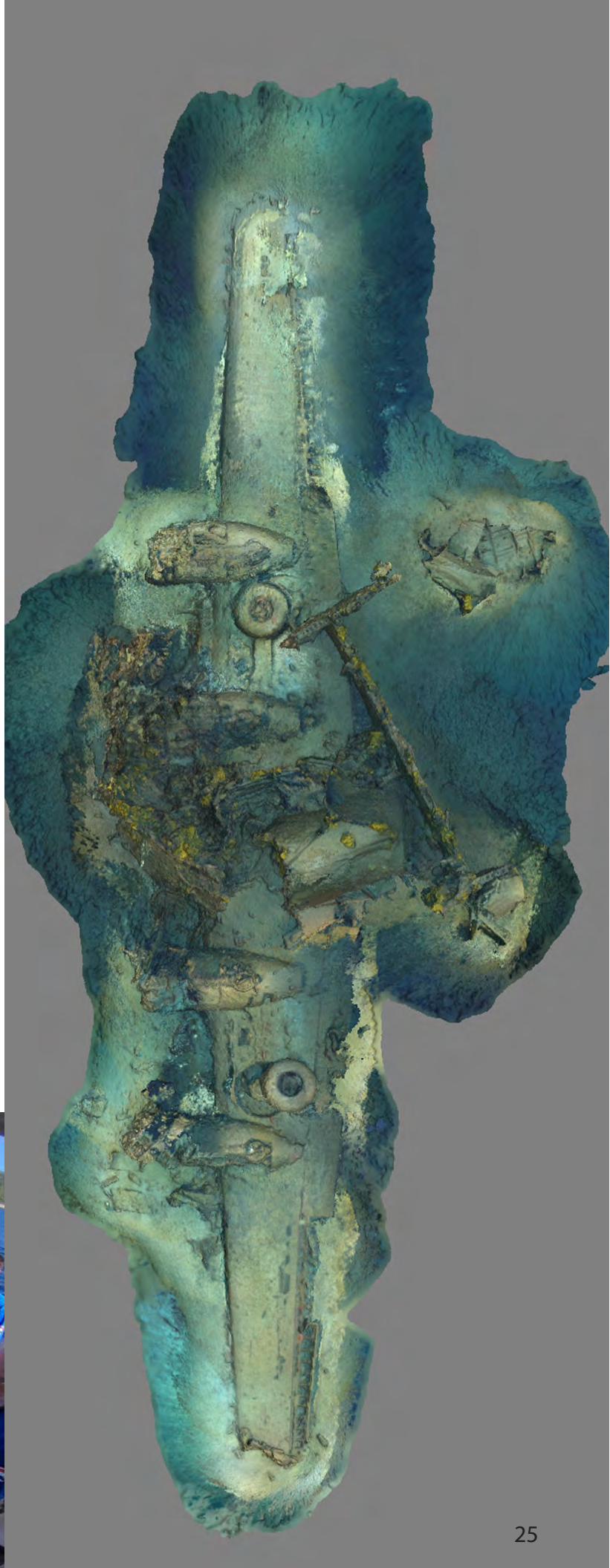
Portugal: Crash Site Assessment
During WWII, US Navy long range bombing squadrons based in Morocco sent PB4Y-1 Liberator-type aircraft on patrol missions around the Straits of Gibraltar and off its waters to the west, primarily to watch for submarines and protect supply ships. Partial wreckage from a PB4Y-1 lies near the coast of Faro, and is a known dive site presumed to be an aircraft lost in 1943 from Navy VB-112 associated with 5 MIAs. The team's assessment is that this crash site is consistent with an attempted but difficult ditch, or low speed controlled crash. In order to view the site as a whole, which was not possible due to poor visibility, divers took photos of the wreck and processed them in a 3D modeling program. The dive team used a hand-held sonar to search in the area for more wreckage, locating an engine, propeller, and parts of the tail section.

Croatia: Identifying Unknown Aircraft Sites
The island of Vis, Croatia is in the Adriatic Sea southwest of Split. During WWII Vis was home to an Allied airfield that served as the last stopover for hundreds of combat-damaged aircraft returning to Italy from raids on the mainland. Today, dozens of US and other WWII aircraft wrecks potentially litter the seafloor around the island and at least seven US heavy bombers have been found.

Project Recover visited Vis to identify and determine survey viability for 2 known B-24 wrecks in deep water, found in 2016-2018 by local Croatian divers. It takes a highly-specialized diver to descend to the depths required for these aircraft sites, one at 90 m and one at 110 m, so Project Recover enlisted the help of Global Underwater Explorers instructor and rebreather diver Kees Beemster-Leverenz. Beemster-Leverenz led a team of three focused on obtaining video footage of both wrecks. Not only were these dives the deepest Project Recover-led dives, they are among the deepest ever made to search for WWII MIA crews.

Deep diving not only limits how much time a diver can look at an underwater aircraft, but also their ability to see the wreckage due to the absence of surface light. Beemster-Leverenz coordinated and directed the use of advanced lighting rigs to illuminate larger areas of wreckage. Combining the lighting with a specialized videoing pattern allowed for Project Recover to obtain the first comprehensive documentation of the two sites, as well as make 3D models.

The 3D model of one B-24, identified by tail markings by local diver and historian Danijel Frka, was confirmed by Project Recover as matching the reported crash circumstances. The deeper B-24 was fully videoed and modeled by Project Recover divers, but the aircraft has not yet been identified. The wreckage suggests a gentle ditching, and tail markings are from the 304th Bomb Wing, whose various squadrons operated out of Foggia Airfield Complex in WWII. Project Recover will continue to work with Croatian authorities to help identify and archaeologically document these wrecks.



Hawaii

28 October to 2 November

Region: Oahu
Missing in Action: 6
Team Size: 5

Equipment:
REMUS 100 AUV
R/V Petrel's 6000 m ROV

Summary of Results:
Relocated and documented TBF Avenger

On October 11, 1942, three US TBF-Avenger aircraft from squadron VT-3 collided during a training flight off Naval Air Station Kaneohe, now Marine Corps Base Hawaii. Two of the aircraft crashed into the water immediately at the time of the incident. All six crew members of these two aircraft were killed and remain missing in action. The site was first discovered in 1999 by researchers from the Hawaii Undersea Research Laboratory and was briefly revisited in 2013 by the University of Hawaii's Pisces V manned submersible during an unrelated project in the area.

Project Recover researchers led by Andrew Pietruszka, R/V Petrel, and the Hawaii Undersea Research Laboratory (HURL) used state-of-the-art technology to image the deepwater site in unprecedented detail 77 years after it was lost.

Modern oceanographic instruments were deployed to relocate and document the aircraft.

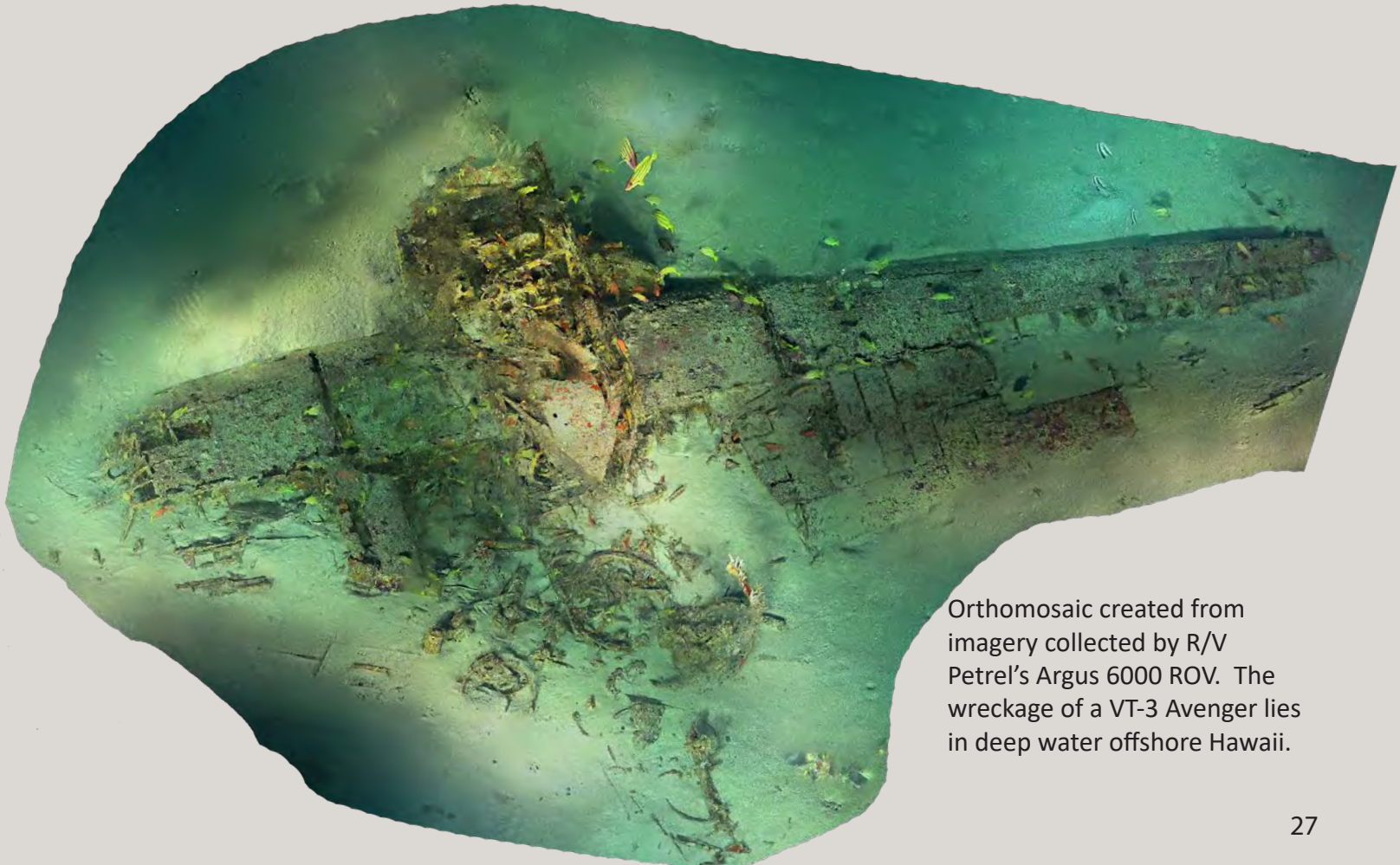
A ship-based multibeam scan of the area was performed by Rob Kraft of R/V Petrel, and very near to where the HURL team photographed an aircraft, were the signs of man-made debris. A second survey, using a REMUS 100 AUV collecting very high-resolution side scan sonar data, confirmed an object approximately the same size and shape of an aircraft on the ocean floor. To accurately map, record, and identify the wreckage, high-resolution video cameras deployed on R/V Petrel's Argus 6000 ROV recorded data over a two-day period.

High definition video was processed to obtain a series of still images of the site which were stitched together to create 2D orthomosiacs and 3D renderings of the site.

The engine rests on the seafloor about 50 meters away from the main site. There was no sign of the tail of the aircraft. The type of aircraft, location, and distribution of aircraft wreckage at the site are all consistent with the historical loss of the two VT-3 Avengers on October 11, 1942.

At this time, however, researchers are unable to determine which of the two planes the site represents.

Site details have been shared with the US Department of Defense's Defense POW/MIA Accounting Agency (DPAA) to determine feasability of possible recovery of remains. DPAA is tasked with recovery and repatriation efforts, including notification of the families of these MIAs.



Orthomosaic created from imagery collected by R/V Petrel's Argus 6000 ROV. The wreckage of a VT-3 Avenger lies in deep water offshore Hawaii.


95.53 m

Chuuk

2 to 23 August
28 September to 11 October
2 to 15 December

Region: Chuuk
Missing in Action: 103
Team Size: 8

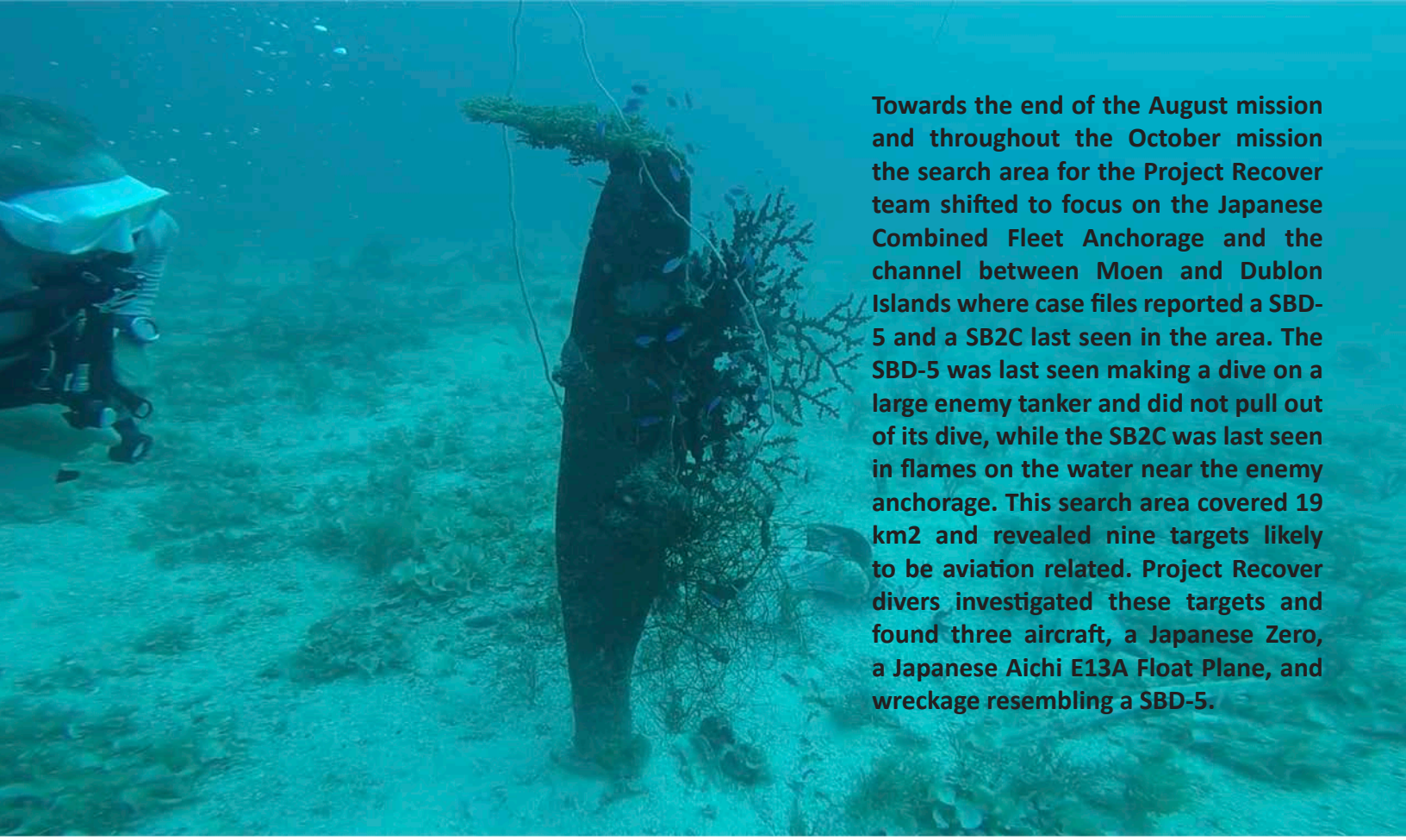
Equipment:
2 REMUS 100
2 REMUS WHOI CAM
Shark Marine Barracuda 300m ROV
Humminbird Solix-10
Light-based Osseous Detector

Summary of Results:
Found/documented SBD-5 (2 MIAs)
Found/documented SBD-5 (2 MIAs)
Found/documented TBM/F-1C (3 MIAs)
Found multiple Japanese Planes (10+) and Vessels (14+), unknown aviation debris (2)
Further investigation needed at several additional sites with positive targets
Surveyed: +65 km^2

Following up on previous missions in the Federated States of Micronesia, Project Recover returned to Chuuk three times in 2019. The start of the first mission focused on the continued search for a B-24 shot down on a night bombing raid, started in 2018. The previous mission's search revealed an anomaly that was reacquired using the side-scan sonar on the REMUS 100 and interrogated by divers to reveal a Japanese Zero. Upon exhausting the planned search area for the B-24 with the only aviation target being the Zero, the team expanded its search to the northeast.

The focus of the expanded search area was the Japanese 4th Fleet or Eten Anchorage southeast of Dublon (now Tonoas) Island. This area was targeted as there are many cases associated with this anchorage. Notably, a TBM-1C Avenger torpedo bomber caught in the tremendous explosion of the Aikoko Maru on Feb 16, 1944, a SB2C Helldiver, and a SBD-5 Dauntless dive bomber. The extensive search area, ~20 km^2, revealed several potential aviation targets.

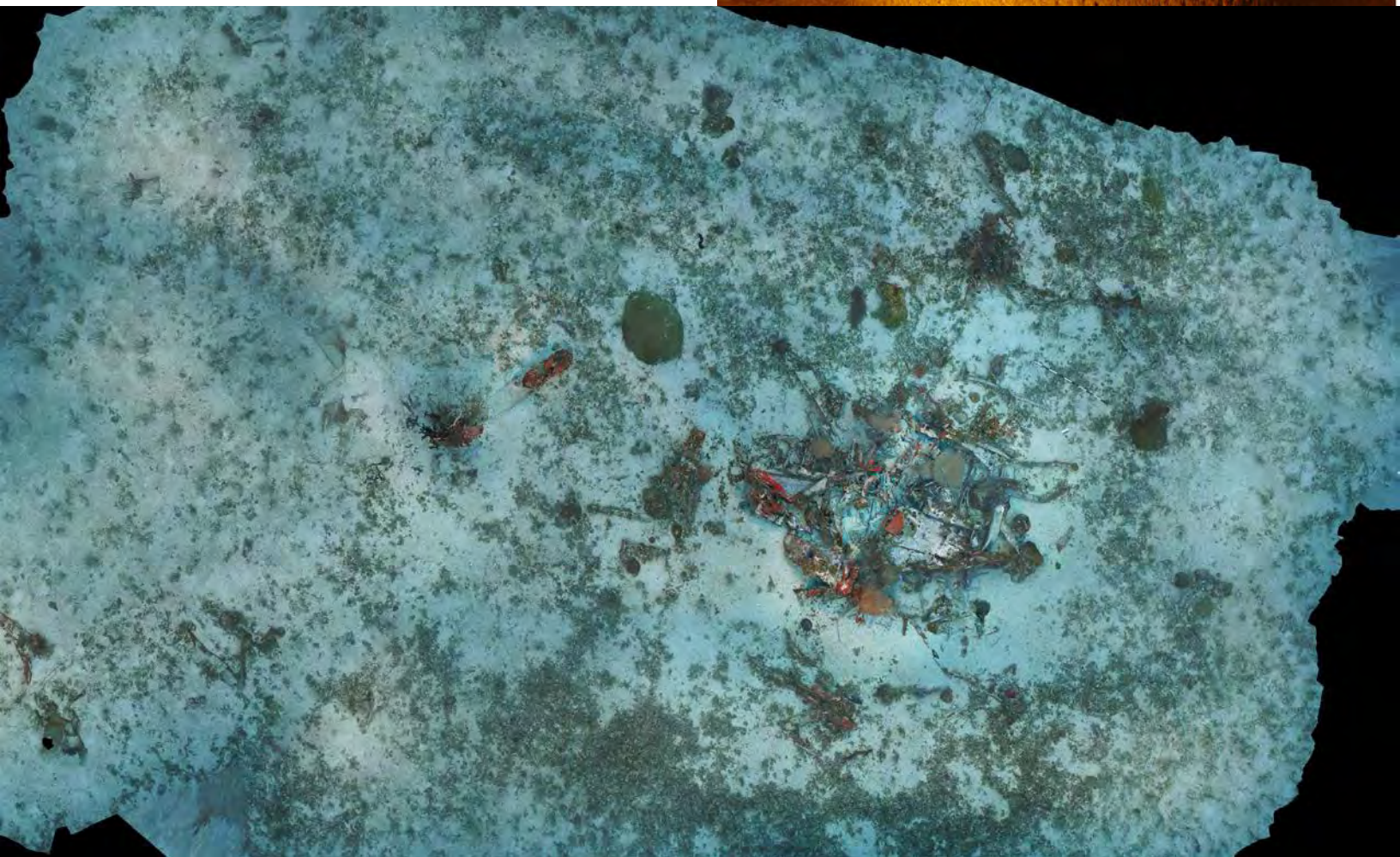
Of the targets visited by Project Recover divers, 6 were steel debris likely from Japanese ships and 4 others were aviation related. Investigation of the 4 aviation debris fields revealed that they were all from Japanese aircraft. The arrangement of the Zero debris and vicinity to other ship-based debris indicates the area may have been a dumping ground for damaged equipment. The remaining targets outside of dive limits were investigated using a REMUS 100 outfitted with high resolution 1200kHz side scan sonar and an ESC still camera with strobes. The high-resolution sonar and photographs revealed two targets to be aviation debris fields with each debris field having a propeller and one having a wing flap similar to that of an SBD dive flap.

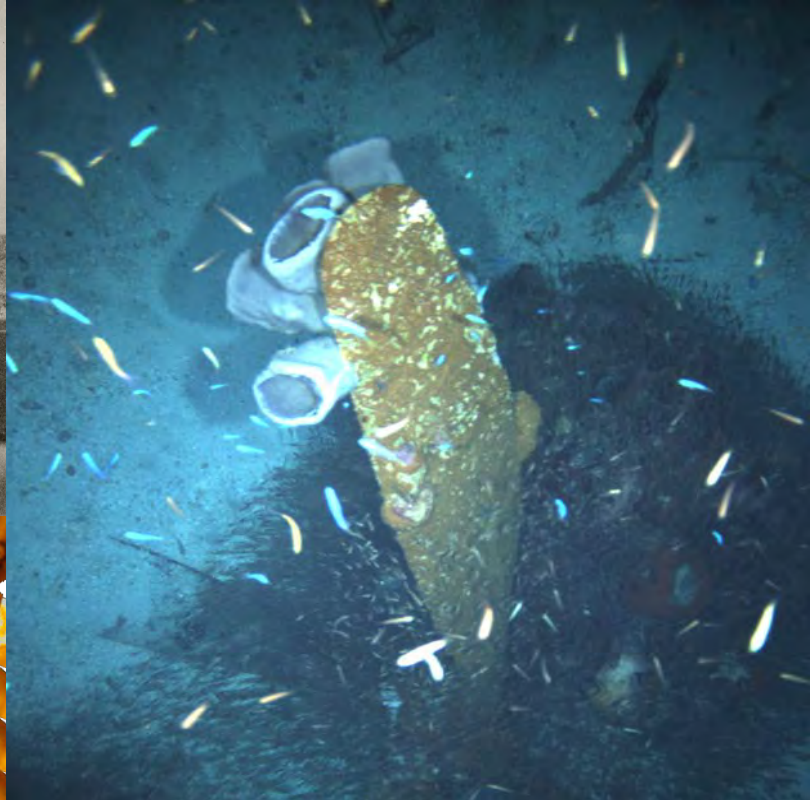


Towards the end of the August mission and throughout the October mission the search area for the Project Recover team shifted to focus on the Japanese Combined Fleet Anchorage and the channel between Moen and Dublon Islands where case files reported a SBD-5 and a SB2C last seen in the area. The SBD-5 was last seen making a dive on a large enemy tanker and did not pull out of its dive, while the SB2C was last seen in flames on the water near the enemy anchorage. This search area covered 19 km2 and revealed nine targets likely to be aviation related. Project Recover divers investigated these targets and found three aircraft, a Japanese Zero, a Japanese Aichi E13A Float Plane, and wreckage resembling a SBD-5.

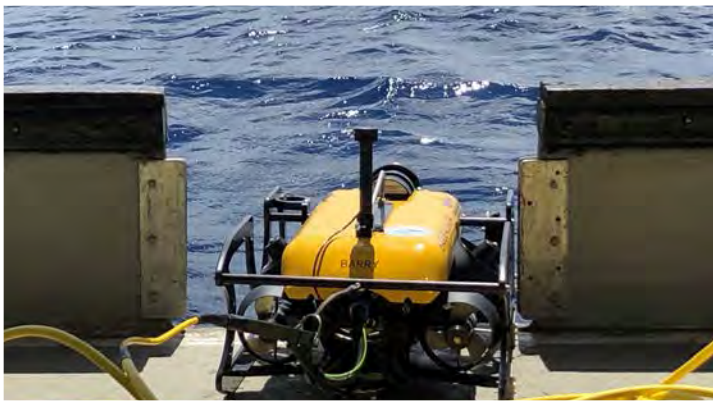
With three possible American aircraft found, the focus for the December Project Recover mission in Chuuk was the documentation and confirmation of these three aircraft with additional side scan surveys done as time and personnel allowed. A Shark Marine Barracuda 300 m ROV was flown in to document the two deeper sites and the shallower site was documented via SCUBA. The additional side scan surveys conducted to the north of the Combined fleet anchorage found a Japanese Norm floatplane, while additional surveys to the east of the 4th Fleet Anchorage found no additional aviation related debris.

The first site documented in December was in the Japanese Combined Anchorage and was verified to be an SBD-5 Dauntless dive bomber, one of two missing in the lagoon. The SBD found was from Bombing Squadron 10 of the USS Enterprise and was tasked with and succeeded in bombing a Japanese Oiler in Truk Lagoon on 17 February 1944. The SBD failed to pull out of the dive after delivering its bomb, likely as a result of being hit by anti-aircraft fire. There are two MIAs associated with this loss.





The second and third sites were beyond the SCUBA limits of Project Recover and therefore were investigated with the ROV outfitted with a High-Definition video camera with lights and a Teledyne BlueView 900kHz sonar. The first ROV site, as expected from the REMUS camera and side scan, discovered several large sections of airplane debris. Through matching of various features of the main wreckage, engine and propeller, and the rear gunner's turret with the photographic catalog in the Project Recover reference library, the aircraft was positively identified as American but definitive evidence to distinguish it between a TBM-1C and TBF-1C was not collected. Based on this knowledge, the location, and historical records of the accounts, we believe that this aircraft could be one of three TBM/F Avengers missing in Truk Lagoon.



All three of the suspected losses have three MIAs associated with them and were launched on either the 16 or 17 February 1944 as part of Operation Hailstone from one of three carriers, USS Intrepid, USS Essex, or USS Enterprise. The second ROV site revealed a more extensive debris field scattered over an area 100 x 200 m. Clearly visible in this debris field were the tail section, main fuselage, dive brakes, the engine and propeller, and various other small pieces. From these pieces of debris, the team was able to confirm this aircraft to be a SBD-5 Dauntless, the only other missing SBD in Truk Lagoon. This SBD was launched from the Bomber Squadron VB-6, Carrier Air Group off USS Intrepid. The target of this squadron was the Dublon seaplane base on the second strike of the first day of Operation Hailstone. Prior to the team's discovery, the aircraft was last seen being chased by two Japanese Oscar fighters across the lagoon. There are two MIAs associated with this loss.

The three American aircraft discovered by Project Recover are the first and only American aircraft found in Chuuk since WWII. However, Project Recover has conducted 42 REMUS missions surveying over 75 km^2 of seafloor in Truk Lagoon and there are still several uninterrogated potential targets in those surveys. Additionally, the team's historic research indicates there are at least 25 cases still to be investigated in Chuuk that are associated with over 100 MIAs. The team has made strong connections with the people of Chuuk whom are welcoming and ready to support our efforts and Project Recover hopes to have follow on missions in the near future.

Air Force Heritage Flight Foundation Education Partnership

Project Recover partnered with the Air Force Heritage Flight Foundation to pilot an education program to more than 120 High Tech High School students, hosted by USS Midway Museum on September 25 and 26, in San Diego, CA. This was in conjunction with the Miramar Air Show where the USAF F-16 demo team and Heritage Flight performed.

A panel of facilitators taught the students about the variety of expertise needed to bring missing service members home. The emphasis of the program was on the value and need for an interdisciplinary approach to attaining mission success.

The facilitators included:

- Tommy Williams; USAF Major General, retired
- Laura Regan Ph.D.; USAF Colonel
- Derek Abbey Ph.D.; USMC Major, retired
- Daniel O'Brien; team member
- Harry Parker; professional photographer
- Heidi Batchelor; SIO GIS specialist
- Mike Jilka; SIO marine tech
- Brian Kim; SIO computer programmer
- Andy Nager; SIO engineer

Students were asked to work in small groups and determine the disciplines needed to bring home a missing American service member from one of two MIA related scenarios. Working in groups of 5-6 with at least one facilitator, the students began to list the steps and types of expertise

needed. Students in conversation with facilitators grew increasingly sophisticated with their responses. In a short period of time, their discussions began referring to experts who conduct historical research at the National Archives, the use of sonar technology, and using DNA technology to help locate, document, recover, and identify MIA remains.

Scripps Institution of Oceanography brought in marine sonar equipment for the students to investigate. The equipment included a REMUS 100 Autonomous Underwater Vehicle, a Barracuda Remotely Operated Vehicle, and a Dive Navigator. Additional equipment on display included full face scuba masks and communication systems, and archaeology tools.

iPads with an app that enabled students to have a 360° visual experience of flying behind the pilot in an AFHFF warbird were introduced. This allowed the student to experience flying in formation with a USAF modern fighter; F-16, F-22 or F-35 as a wingman. They also had a chance to examine 3-D models of underwater WWII plane crash sites documented by Project Recover.

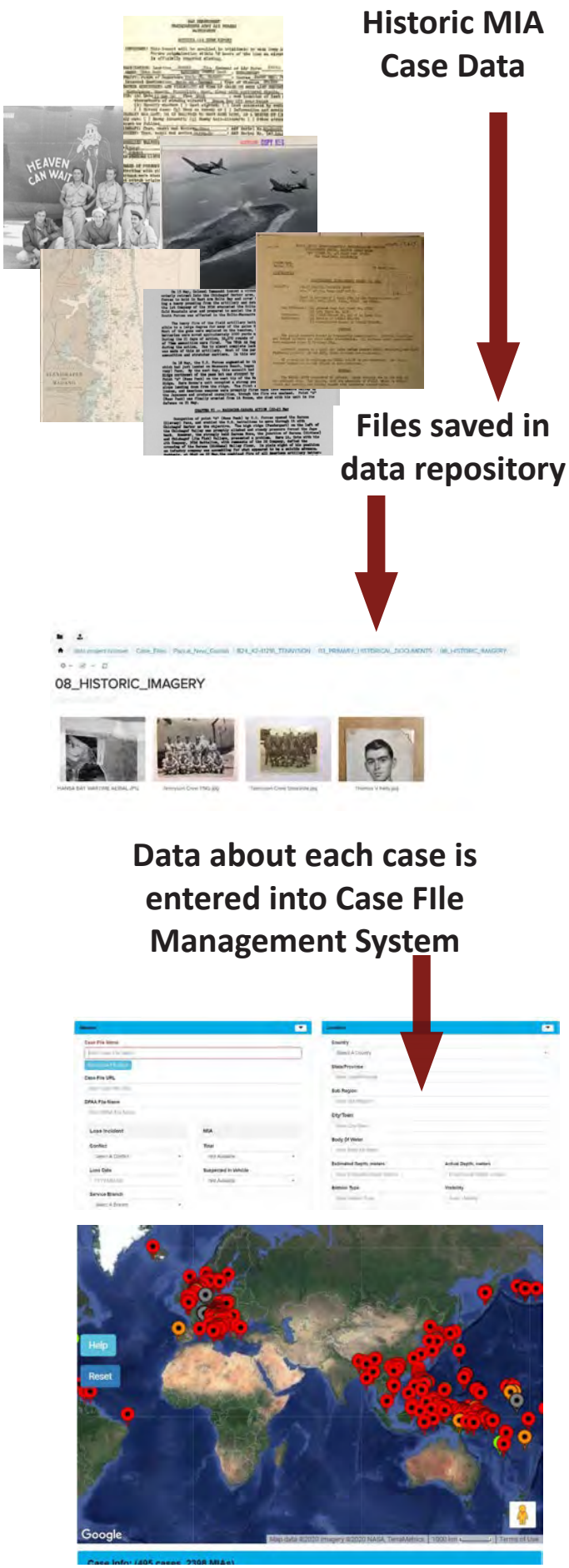
Each student was invited to be a guest at the MCAS Miramar Air Show on the following weekend. The air show allowed for more engagement with facilitators, a tour of the flight line, and a F-86 Sabre walk-around. Additionally, the USAF F-16 demo team and US Army Golden Knights visited in-between performances in order to answer questions and engage with the students.

Case Files/CFMS database growth

Project Recover manages data associated with the thousands of MIAs we seek to return home. We have two databases developed and supported by our team. A Case File Management System (CFMS) stores the metadata for each MIA Case and all of the related data files, such as historic images, war diaries, and reports are stored in our data repository. Project Recover members can add information, explore, and search the databases and data through web-based portals.

We currently have over 52,000 data files related to nearly 500 MIA cases and close to 4,000 files in our Reference Library and Archive.

The history team assembles all information about relevant case(s) and then populates the CFMS and adds data to the data repository. It is at this interface that cases are further developed and prioritized. Related, the team has also spent a significant amount of time and effort to augment prioritized cases. For example, if the group knows they are going to a particular location based on a prioritized case, the team has focused on actively searching for new cases from the area to build a cluster of cases. This serves two purposes, the first being that the likelihood of locating a wreck site increases with no additional logistical investment, and the second being that once a wreck is located, having knowledge of more cases in the area can improve our chances of positive identification of a particular wreck. Once a wreck has been positively identified, the location is shared with DPAA, and our MIAs can be brought home.



DPAA Academy

Project Recover was formally invited by the Defense POW/MIA Accounting Agency (DPAA) to take part in two training events this past year. The first was a Scientific Recover Expert Training Academy in April, where Mark Moline and Dan Davis attended this week-long training at the Joint Base Pearl Harbor-Hickam, Hawaii. Training involved learning the process and procedures required by DPAA for investigative searches and recoveries, touring the forensic laboratory, meeting the DPAA staff and leadership, and conducting field training on a local B-24 crash site from WWII.

In September 2019, Colin Colbourn, Patrick Scannon, and Dan O'Brien attended the first Partner Research Academy also at the Joint Base Pearl Harbor-Hickam, Hawaii. The Research Academy provided time for partners such as Project Recover to teach the DPAA about our own mission, capabilities, and strengths, especially in the field of research and analysis. Project Recover's participation in both of these Academies is a sign of DPAA's recognition that Project Recover is an important partner in all aspects of MIA recovery efforts.

2019 George W. Bush Stand-To Veteran Leadership Program

Since the origin of Project Recover, there has been a connection to the Bush family. Pat Scannon's first trip to Palau was to participate in a search for the Japanese trawler that then Ensign and future President George HW Bush sunk as a young Naval Aviator during World War II. It was at the conclusion of this trip that Pat made the decision to find answers related to those missing from the war. President Bush himself was interested in our work because of his friends and squadron mates that were lost and still missing. In 2016, Project Recover located the aircraft of President Bush's wingman.

The connection to the Bush family expanded this year when Project Recover's President and CEO, Derek Abbey, and member Brian Von Herbulis, were selected to be part of the 2019 George W. Bush Stand-To Veteran Leadership Program. We at Project Recover, with our long standing connection to the Bush family, are grateful for their support.

Photo by Grant Miller for the George W. Bush Presidential Center

MIA Families

In searching for and returning American MIAs we strive to serve Gold Star families. Our relationships with these families continue to grow. We maintain a connection with many of these families long after their loved one has been repatriated. Not surprisingly several of them now participate as active members of Project Recover. In the end, this is our way of providing gratitude for their ongoing sacrifice to our nation.

Dozens of MIA family members gather in recognition of their loved ones.

Project Recover : Public Visibility

In 2019, Project Recover's presence and visibility in the community continued to grow. Our social media followers grew by more than 250 percent in the last quarter alone. Additionally, breadth and depth were added to the functionality of our website which allowed for greater and continued engagement with our supporters and followers. Project Recover also initiated multiple efforts to engage the community as well as maintain and improve lines of communication with MIA family members.

Our members continue to share our message across the nation through public presentations about the ongoing work of Project Recover.

Acknowledgements

THE FRIEDKIN GROUP

HILLWOOD A PEROT COMPANY

VULCAN A Paul G. Allen Company

R/V PETREL

Office of Naval Research ONR Science & Technology

Department of Defense United States of America

National Oceanic and Atmospheric Administration NOAA U.S. Department of Commerce

Defense POW/MIA Accounting Agency

Navy SEAL Museum

Chesapeake Technology

Air Force Demo Team Heritage Flight

Coral Reef Research Foundation

Cleared Ground Demining

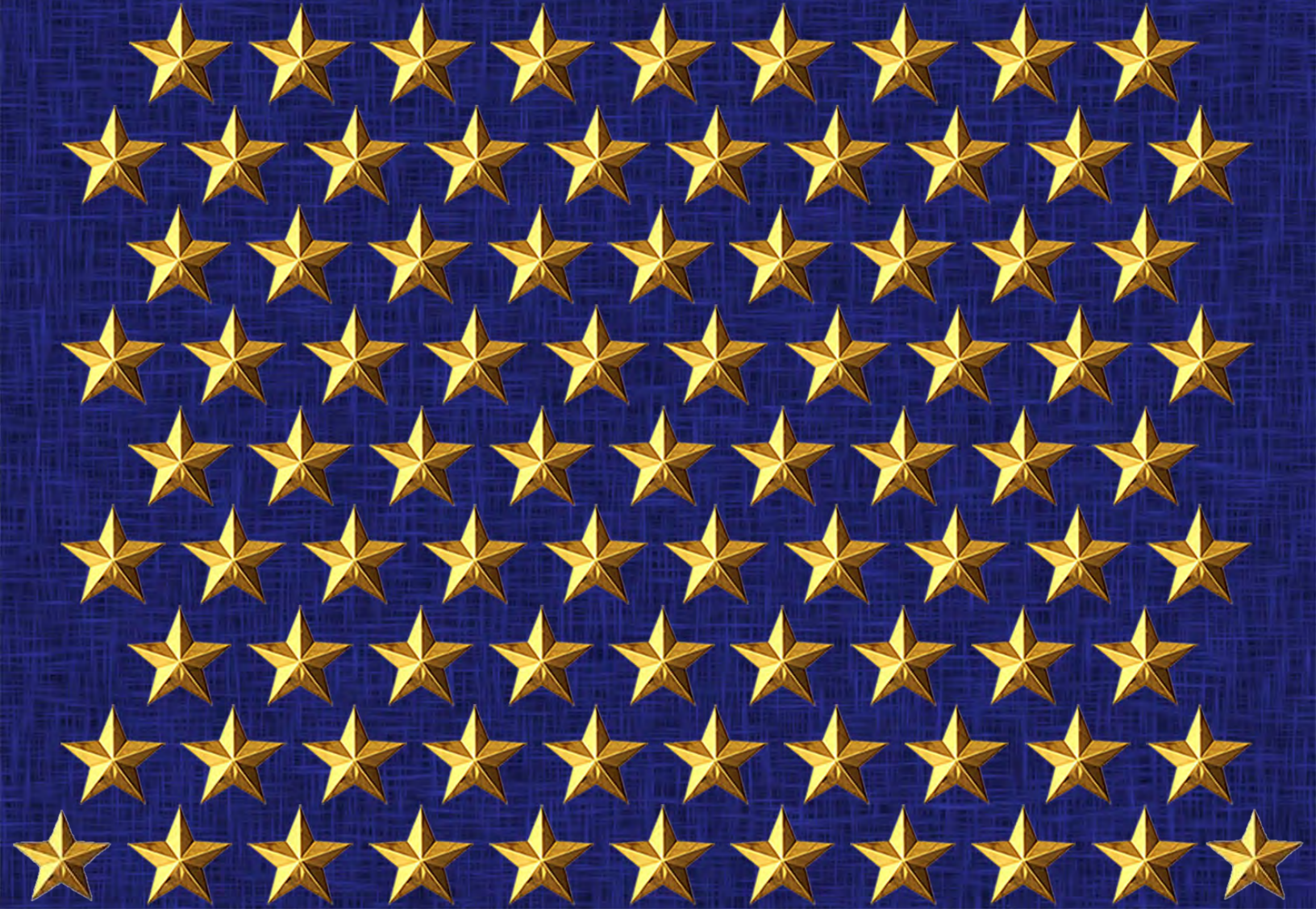
One Sixty Ninety

Truk Stop Hotel

USS Midway Museum

Global Underwater Explorers

Ed and Kalita Blessing



"At the going down of the sun and in the morning.
We will remember them."
~ Laurence Binyon

Project Recover Totals

38 Missions
17 Countries
50 American Aircraft located and/or documented
70 USS Abner Read MIA Lost at Sea
13 Repatriated MIA associated with Project Recover Efforts

PROJECT RECOVER

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443 First Street
Woodland, CA 95695

www.projectrecover.org

87 Still unrecovered MIA associated with Project Recover efforts