USS R-12 (SS-89)
Archeological Documentation WWII submarine

Flag #80 Report
USS R-12
Summer 2012

Expedition to capture first of its kin footage and base line archeological documentation of the R-Class submarine built in 1918 and sunk in 1943 with 42 sailors entombed.

Introduction and background

Discovered and fully photographed in October 2010 by Tim Taylor. The return expedition is taken to launch a ROV (Remotely Operated Vehicle) to film and map the archeological site.

The Expedition departed out of Key West Florida working offshore in approximately 600 feet of water. This mission took place as a follow up to Tim Taylor’s FN 04 successful Fall expedition of 2010 in which he utilized a state of the art autonomous robot (AUV) launched from the research vessel Tiburon. The AUV was used to locate and photograph the WWII wreck of the R-12 submarine, lost since her sinking in June of 1943. This stage of the mission will focus on returning to the site with manned submersibles to further collect detail archeological imagery and base line data as well as possible clues to what caused the sinking. Since the discovery of the wreck Tim and his team have been collaborating with the Underwater Archeological Branch(UAB) of the Navy. This return expeditions is committed to maintaining the site as a protected war grave. that still entombs 42 sailors while adding to the historical record of this lost sub. It is to date the 6th found US Submarine of the 52 missing/lost during WW2.It is the 2nd submarine to be found in US waters and the only sub to be located this close to the US mainland.

Objectives:

Project Summary

An exploration team led by Tim Taylor aboard the expedition vessel "RV Tiburon" has located and is documenting the wreck of the WWII submarine USS R-12.

The R-12 was lost on June 12,1943 in 600 feet of water, sinking in less than 15 seconds. She sank nearly 70 years
ago taking 42 US servicemen to their deaths off the Keys, USA. The reason for her loss remains unknown and one of the goals of this expedition is to uncover new information that can lead to answering why she sank.

R-12 began its career as a World War I era sub that was re-commissioned for service in World War II. At the time of the sinking R-12 was engaged in war time patrol operations near Key West. Only two officers and 3 enlisted men survived the disaster that claimed 42 lives. In making the discovery, the team deployed a state of the art autonomous underwater robot which collected first ever imagery of the remains of R-12. They are collaborating and sharing their findings with the US Navy.

This return expedition was successful in acquiring video imaging utilizing newly built ROV system with high Definition cameras to capture high definition video. This new information is being used to ascertain the cause of the sinking as well as create a base line record of the archeological site as well as plan continuing expeditions.

A multi year project is being developed to return to site and fully map and evaluate the current condition of the site and work with the National Marine Sanctuary to effect policies to protect this site for posterity.
Geographic Region:

Geographic Region:
Straights of Florida USA

Ultimate Destination:
Open Ocean South of Key West Florida
Latitude N 24.24.000
Longitude W 081.40.000

Country/Countries of Destination:
USA

Description:

Accomplishments:
The team was successful in undertaking the first ever filming expedition with aims at research the and collecting initial baseline data. Utilizing 600m DOER marine Spectre ROV system, HD Cameras, multi-beam forward looking sonar at depths ranging from 550 to 600 feet they accomplished the following:

- Return to R-12 location collect Video and sonar imagery
- Compare and analyze still mosaic form 2010 to video imagery
- Plan ongoing archeological missions based on findings
- Create foundation for ongoing exploration and documentation of unique and histories site

Flag Expedition Members:

Captain Tim Taylor FN04 Expedition Leader

Tim Taylor is an accomplished ocean explorer, adventurer and naturalist. He has been diving throughout the world for over 25 years. He is President of RV Tiburon Inc, an ocean research, exploration and expedition corporation based in Key West, Florida. Tim lectures on marine issues and is the founder of Ocean Outreach, a nonprofit with a strong focus on educational awareness programs for children, our next generation of explorers.

Tim works with innovative diving technology and operations, specializing in exploring new locations and sharing them with the scientific community and the general public. He has discovered and explored numerous reefs, including Sherwood Forest Reef, considered the
centerpiece of the Tortugas Ecological Reserve, Pulley Ridge, the deepest hermatipic coral reef in the world and black forest reef, the largest black coral tract in the United States. He was the first to discover the wreck of the Araby Maid, a Barc rigged schooner built in 1868 and sunk in 1903 in the Dry Tortugas. Ongoing archaeological projects include the mapping and exploration of HMS Surprise, a mid-to-late 1800s merchant sailing ship.

Tim is a Fellow in the famed Explorers Club and is recognized for his expertise and documented contributions to the world of scientific underwater exploration. In 2008 he was awarded the clubs prestigious Citation of Merit in recognition of his explorations. He has hosted expeditions for noted marine specialists, which include Dr. Sylvia Earle, Dr. Eugenie Clark, Wes Pratt, Frank Goddio, Dr. Robert Ginsburg, Dr. Samuel Gruber, Dr. Sue Hendrickson, Wes Skiles, Jill Heinerth, Brian Kakuk, Dr. Jeff Carrier and Philippe Cousteau.

In addition to his research projects, Tim leads and organizes expeditions for international television film companies. He is co-owner of Aquatic Films, Inc. His filming credits include Bond movies, as well as recent filming for a TNT special on NASCAR driver Jeff Gordon cage diving with tiger sharks.

Tim’s experience includes 26 years as a US Coast Guard Captain, USCG Merchant Mariners 100 GT (gross tons) Captain’s License/Masters Certification. Tim is a technical dive instructor for TDI, IANTD certified on closed circuit rebreathers (CCR), mixed gas blender, and technical supervisor. He splits his time between NYC and Key West when not traveling.

Christine Dennison FR03: primary ROV Camera Operations

An expedition specialist. Christine has been diving for 15 years during which time she has gained experience in many different diving environments, including various parts of the Arctic, the Amazon, the Caribbean, Europe and the East Coast of the USA. Certifications include: Technical Nitrox, Technical Wreck, Cave Diver, Technical Gas Blender, Technical Supervisor and Divemaster. Very much an outdoors person, she enjoys many sports besides diving including climbing, hiking, cycling and walking her dog endlessly in Central Park. Christine speaks fluent Spanish, has traveled in over 30 countries and was involved in the years of research and set up that preceded her co-founding MAD DOG EXPEDITIONS. Prior to MDE, Christine was Head of P.R. and Marketing for a prominent Art gallery in New York. Christine was one of the first women to have dived high above the Arctic Circle and has now logged over 80 dives in this harsh environment, as well as being the first woman to dive in the Amazon rainforest amongst the giant piranhas and the pink dolphins. She has modeled and been featured in magazines that include Sports Illustrated, Cosmo, Outside and various sports and diving publications worldwide. She is a Fellow of the prestigious Explorers Club and volunteers her time as a student mentor and role model for young women.
Kourosh Mahboubian FR04: ROV
dock operations - Filming team

A Fellow in the explorers club for his early diving explorations in the Arctic and Amazon Basin Kourosh Mahboubian launched Wild Blue Inc. in 2005. Wild Blue is a company whose sole purpose is to encourage children to learn about our world by getting their fingers dirty, following their unbridled curiosity and pursuing their innate desire to explore.

Wild Blue currently offers educational consulting, field trip activities, outreach programs and afterschool programming for many public and private New York City schools. It also provides educational expedition opportunities for families. Past trips have included several marine biology voyages aboard an active research vessel and an expedition to the Canadian High Arctic, where children as young as six camped on the ice, climbed a glacier and went to an Inuit school.

Walt Stearns FN04: Photographer and ROV team

Knowledgeable in boating, sport fishing, diving and marine natural history, Walt Stearns has earned the reputation as one of the world’s most credible photo-journalists and consultants in marine-related broadcast, print and online media. Among water sport enthusiasts, he is best known for his stunning cover shots for Salt Water Sportsman and Sport Fishing, Boating Life and Power Cruising and scuba publications such as Sport Diver, Scuba Diving, Skin Diver, Discover Diving, Ocean Realm and Scuba Times Magazines, as providing imagery for the Cayman Islands Tourism Board. As an editor, contributing editor and freelancer, Walt’s writing and imagery have graced the pages of publications like Boating, Boating Life, Motor Boating, Salt Water Sportsman, Sport Fishing, Field & Stream, Marlin, Saltwater Fly Fishing, Men’s Health, Men’s Journal, Outdoor Photographer, Caribbean Travel & Life, Florida Travel & Life and Islands Magazines, as well as numerous others. The online publication, the Underwater Journal, is a collaboration of Walt’s 25 years of experience in the marine industry.

Walt has been a key participant in documentary film projects such as Wild Horizons with the British Broadcasting Corporation (BBC), Perfect Predators, African Shark Safari and Mystery of the Whale Cave for Discovery Channel, as well as many productions on national and cable networks. He has participated in a multitude of research and exploratory expeditions that have impacted fisheries science and management like protection of the lemon shark and Goliath grouper, marine endowment programs and prevention of reintroduction of fish trapping in the Gulf of Mexico. Walt managed the Greater Miami Billfish Tournament when it became the first major Florida tournament to adopt a catch and release tournament format.

A dedicated environmentalist, Walt consults and works closely with a number of conservation groups including Ocean Conservancy, Florida Wildlife Conservation Commission, Bimini Shark Lab and
Florida State University. Walt studied zoology and oceanographic science, as well as several aspects of technical diving. He is a scuba instructor, certified cave and rebreather diver and an SSI Platinum Pro5000 member.

Additional Expedition Member Profiles:

Robert Havens- ROV Engineer
David White- ROV Pilot
Tom Tafoya- ROV Tender

RV Tiburon: Support vessel and base of operations

The RV Tiburon can accommodate up to 12 passengers for your expedition. A US Coast Guard inspected vessel with 200-mile route extension.

ROV Otis: Named after Otis Barton the inventor of the bathysphere

Tiburon sixty-five foot United States Coast Guard certified passenger vessel designed for research and exploration. She is equipped with safety gear, electronic equipment, and air/nitrox compressors.

General Specifications of ROV

Dimensions: 60.0"L x 35.0"W x 33.0"H
Weight: 795 pounds
Payload: 30-75 pounds
Frame: Aluminum w/ Integrated Lift Tilt Assembly: 270° Pan - 90° Tilt Thrusters: 4 Horizontal 2 Vertrans Forward Thrust: 150 pounds Forward Speed: 2.5 knots Max Depth: 600m Power: 100-250 VAC50/60Hz 6KVA
**HD Color Camera**

Model: Mini Zeus
Manufacturer: Insite Pacific Inc.
Video Format: 1080i
Focus/Zoom: Remote Control
Focus Range: Dome/Optic-corrected
5.1mm 10x zoom
Angel of View 5.1mm 51mm
Diagonal: 100° 10.8°
Horizontal 85° 8.8°
Vertical 64° 6.6°

Equipped with fiber optic umbilical allowing for real time topside observation in HD video

**Instrumentation and Sensors**

Lights: 4 SeaLight Sphere LED lamps color 6Kw two circuits
Heading: Flux gate compass
Depth Sensing Instrument: Quartz +/.4%
Sonar: 720 kHz multi beam 120° field of view range .2m - 120m
Tracking: Ultra short baseline (USBL) Freq 20-25 kHz pitch roll compensated, range accuracy +/-2m bearing accuracy +/- extension, lateral Force 150 pounds min, range of motion
Manipulator: SeaMantis 5 Hydraulic, payload 150 pounds, full

Video scale: Video Measuring System color camera, image capture, 5 laser w/ ranging-view 2.2° - 47° in air, accuracy .1mm