

# IN THE WAKE OF THE QUEST



It's hard to believe another year has passed and the holidays are almost upon us. All of us here at Quest Marine Services hope our friends and colleagues



have had a successful and productive year. It certainly has been an eventful one for us. Particularly for our shipwreck exploration projects! Much more on that later...

All of us at Quest Marine Services would like to wish our friends and colleagues a wonderful holiday season and all the best for the coming year!

The year started out with with two unusual projects, the first involving an inductive modem test and the second a series of tests of a very large marine satellite communication antenna. The inductive modem test involved spooling out approximately a mile of wire on the bottom of Buzzards Bay and then retrieving it after the test. For this project we used our new winch which has a capacity of 7,000 meters of 6mm wire. The test proved very successful and all systems worked as planned.

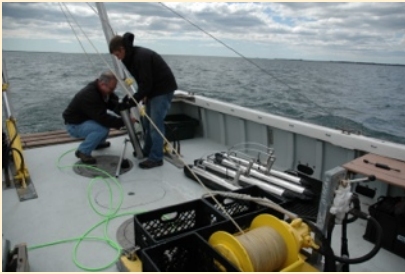
For the antenna test we mounted a parabolic dish antenna in an enclosed dome on the roof of the Quest approximately 2 meters high and a meter in diameter and then drove around Buzzards Bay in some rough sea conditions while maintaining communications with the satellite. These tests also went as planned and follow on tests were conducted this fall.



*Captain Lori guiding the inductive modem wire onto the new winch. This process took approximately two hours to complete. It was important to insure the wire was spooled onto the winch neatly so as not to compromise any of the conductors.*



*Satellite communications antenna on the roof of R/v Quest [www.kvh.com](http://www.kvh.com)*



**Above:**  
*Rob Morris of Edge Tech attaches the tow cable to an Edge Tech 4125 side scan sonar.*  
[www.edgetech.com](http://www.edgetech.com)

**Below:**  
*Straud Armstrong of Teledyne Benthos installs the GPS antenna on the top of the turret mount spar. A Teledyne Benthos C3D lightweight pole mount side scan system is mounted to the bottom of the spar.*  
[www.teledynebenthos.com](http://www.teledynebenthos.com)

This spring we spent a number of days working with Rob Morris of Edge Tech Inc. testing their 4200 and 4125 model side scan sonars in Buzzards bay. We also spent some time working with Straud Armstrong of Teledyne Benthos Inc testing their C3D LWPM side scan sonar system.

Buzzards Bay and the waters close to New Bedford harbor are ideal for underwater acoustic development, both for sonar and sub bottom profilers. The area is rich in targets both large and small for both side scan sonar and sub bottom applications. Many of these sub sea features have been identified by Quest Marine Services and stored in our data base for repeated use as sonar and sub bottom targets. One of these targets probably holds the record as the most acoustically imaged shipwreck in the world. This would be the wreck of the USS Yankee, located approximately 5 miles south of New Bedford harbor in Buzzards bay. This 400' long ship

has been the subject of sonar testing going all the way back to the very first days of sonar development when Dr. Harold Edgerton of MIT first invented side scan sonar and performed the first tests in Buzzards Bay in 1963. The very first test of Dr. Edgerton's sonar was done at the entrance to Buzzards Bay and resulted in the location of the Vineyard Sound

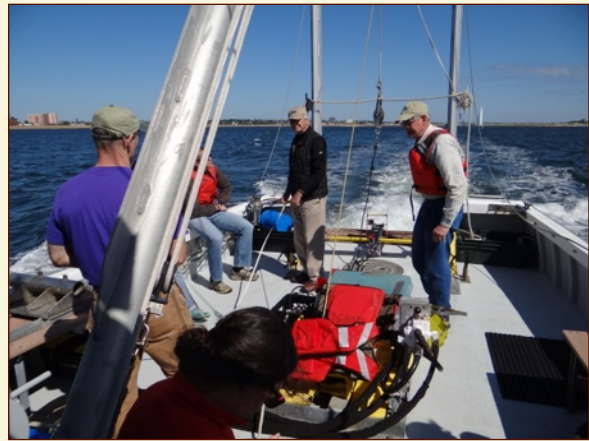


Lightship, which had sunk in the September hurricane of 1944. The USS Yankee became the subject of further tests of Dr. Edgerton's new sonar. Since that time many of the companies who have developed side scan sonar systems have done their research and development work in the waters of Buzzards Bay with the USS Yankee being the favored test subject. For the sake of oceanographic trivia, some of these companies have included; Applied Signal Technologies, Benthos, Datasonics, Edge Tech, EG&G and Farsounder.



Later in the season we teamed up with our friend Matt Zimmerman from Farsounder for some live diver detection tests of their 3D sonar systems. For these series of tests Matt and our friend and fellow Boston Sea Rover Rick Simon made repeated dives swimming between some rocks towards the anchored R/V Quest while being detected by the Farsounder sonar system. It was an impressive display of the technology that Matt and his team have developed over the years. [www.farsounder.com](http://www.farsounder.com)

Over the summer we had the pleasure of again working with Chris and Dirk Casagrande from Sea Sciences. Chris and Dirk were training a group of scientists from the University of Alaska Fairbanks in the use of the Acrobat tow body. [www.seasciences.com](http://www.seasciences.com)

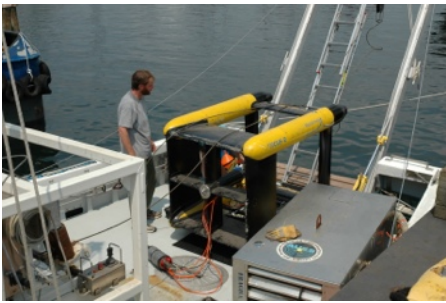
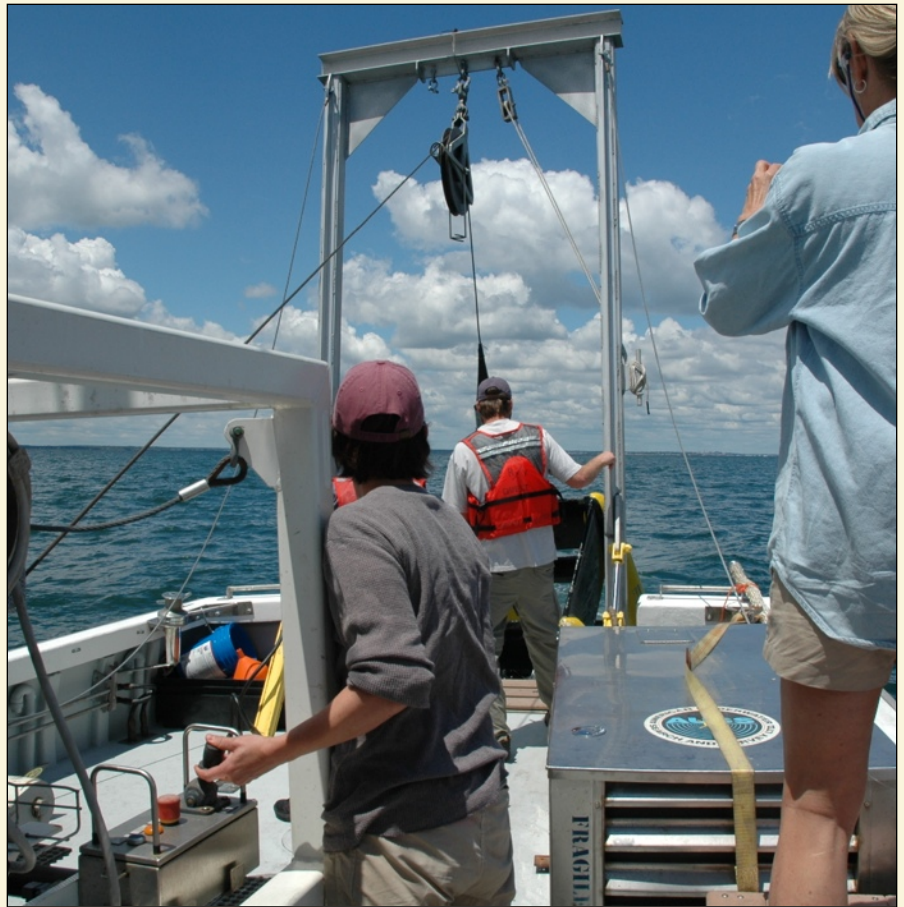
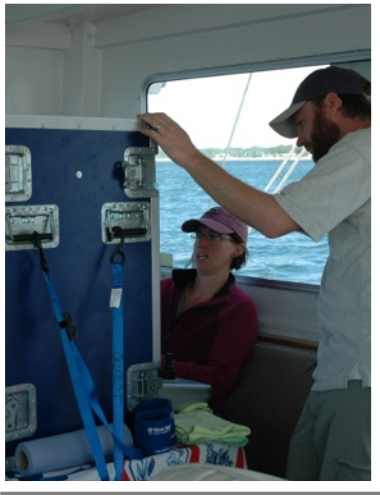


**Chris and Dirk Casagrande of Sea Sciences brief the University of Alaska crew on the operation of the Acrobat system.**



### **Massachusetts Division of Marine Fisheries and U Mass Dartmouth School for Marine Science and Technology Team up aboard the R/V Quest**

The R/V Quest hosted science teams from Mass Division of Marine Fisheries lead by Dr. Kathryn Ford and U Mass Dartmouth SMAST lead by Dr. Cindy Pilskaln this summer. The multi day project involved deploying the DMF Focus II TUV with water quality and camera systems for sampling in Buzzards Bay and Vineyard Sound. Dr. Kathryn Ford is an expert in the operation of the Focus II TUV system, which has been mobilized aboard the R/V Quest many times in the past. This was the first opportunity for the SMAST team to use the Focus II.



**Above:**

*Dr. Ford controls the winch while the crew assists in launching the Focus II TUV*

**Right:**

*Captain Bob Wallace aboard the Quest.*



## Ocean Exploration Projects

This season has truly been an amazing one for us. Everything seemed to fall into place from the late spring right thru the fall.

Offshore weather conditions which usually present our biggest obstacle in accessing our more remote sites, were excellent for most of the season.

We have been working closely with a group of friends and colleagues over many years conducting research on shipwrecks both in New England waters and abroad. This season, two long standing maritime mysteries were solved. The final resting places of the German submarine U550, lost in combat in 1944, and the Norwegian steamship SS Sagaland lost in a collision in 1927 were located.

## The U-550 Discovery

On July 23rd, after almost two decades of hard work, research and multiple field searches, the final resting place of the World War II era German submarine U-550 was finally discovered. The U-Boat was located utilizing side scan sonar and advanced imaging technology offshore of Nantucket Island, where the sub was reported sunk in 1944.

The U-550 was found resting upright on the sea floor with a slight list to port in approximately 100 meters of water. Side scan sonar was used to identify the wreck site as that of a submarine. Advanced imaging technology was used to confirm the wreck as that of the U-550. Members of the discovery team (in alphabetical order) are: Steve Gatto, Garry Kozak, Joe Mazraani, Tom Packer, Brad Sheard, Eric Takakjian and Anthony Tedeschi. The search and discovery expeditions as well as the follow up diving expedition were conducted from the R/V Tenacious, based in Point Pleasant New Jersey.

## U-550 Historical Background

On the morning of April 16th, 1944, the German submarine U-550, a type IXC / 40 long-range U-Boat under the command of Kapitänleutnant Klaus Hannert, torpedoed the US flag tanker Pan Pennsylvania. The tanker was part of a convoy of merchant ships which had departed New York bound for England with much needed war supplies. The Pan Pennsylvania was carrying a cargo of 140,000 barrels of gasoline. Following the torpedo explosion the

ship took on an immediate list to port and settled by the stern. A fire broke out shortly thereafter in the ship's engine room and rapidly spread forward. The Pan Pennsylvania's crew of 81 managed to abandon ship in rafts and some of the lifeboats still serviceable after the attack. US Navy and Coast Guard destroyer escorts, escorting the convoy picked up 56 survivors, leaving 25 men missing.

After recovering survivors from the Pan Pennsylvania the USS Joyce obtained a sound contact on the submerged submarine and commenced a depth charge run. Two other DE's the USS Gandy and USS Peterson also assisted in tracking the U-550 which at this point was attempting to evade detection and escape the scene undetected. Depth charges from the Joyce forced the submarine to the surface. As the sub surfaced it found itself ahead of and slightly to starboard of the USS Gandy. The Gandy promptly went to flank speed with the rudder hard over and rammed the sub just aft of the conning tower. While this was taking place all three DE's and the U-550 were exchanging fire from all available weapons.



Shortly after the Gandy's bow slid off of the after deck of the submarine, the U550 surrendered and the crew abandoned ship.

Scuttling charges had been set in the submarines engine room and were heard to detonate as the sub was abandoned. Twelve survivors were recovered by the USS Joyce and 44 members of the subs crew were lost. Shortly after being abandoned the U-550 slipped stern first into the depths of the Atlantic Ocean.

The Pan Pennsylvania drifted while abandoned and on fire for another two days before being sunk with gunfire by US Navy ships.



Photos right top to bottom:  
SS Pan Pennsylvania burns while  
U-550 is abandoned.

U-550 sinking as the crew  
abandons ship.



The discovery team, left to right;  
Joe Mazraani, Eric Takakjian, Tom  
Packer, Steve Gatto, Anthony  
Tedeschi, Garry Kozak and Brad  
Sheard.

For more on this and other  
discoveries come and see us at the  
Boston Sea Rovers clinic March 9th  
& 10th 2013 in Danvers Mass.

[www.bostonsearovers.com](http://www.bostonsearovers.com)

## SS Sagaland

### Historical Background

The Norwegian freighter S.S. Sagaland was lost in a collision with the Holland America liner Veendam in dense fog South of Nantucket Island on the morning of July 15th, 1927. The Veendam which had departed Rotterdam with 176 passengers on July 5th, was bound for New York and proceeding slowly thru the fog. Suddenly the Sagaland appeared out of the mist almost directly across the larger ships bow. The 15,450 ton Veendam plowed into the starboard side of the much smaller 2,677 ton Sagaland. The blow to the smaller ship was fatal and she plunged to the bottom in less than 15 minuets. Captain Pedersen of the Sagaland had departed Manzanilla Cuba on July 7th with a cargo of sugar, bound for Boston.

The 310' Sagaland had been launched from the Charles Hill & Sons shipyard in Bristol England in 1921. Her single 242 horsepower triple expansion steam engine was built by Richardson's Westgarth & Company of Hartlepoole England.

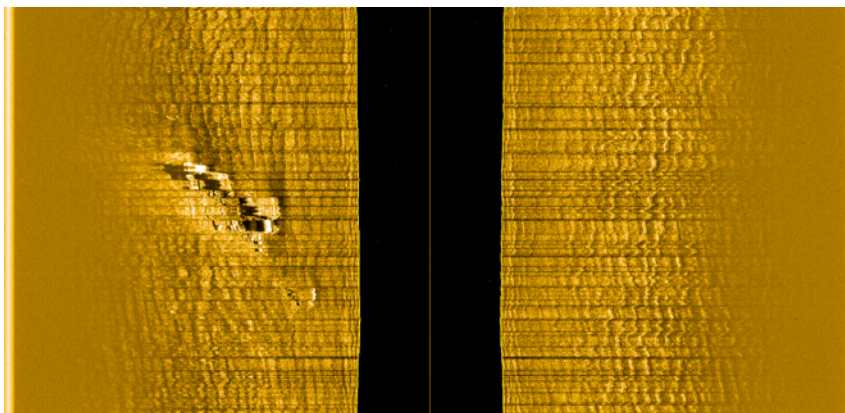
### Discovery

An exploration team aboard the R/v Quest located the wreck utilizing side scan sonar technology on August 18th of this year. The wreck site was discovered approximately 50 miles South of Nantucket Island, lying in two sections on the sea floor, 55 meters below the surface.

Dive team investigations the following day confirmed the wreck as that of the SS Sagaland.

Members of the exploration team, (in alphabetical order) are; Steve Gatto, Joe Mazraani, Tom Packer, Eric Takakjian and Scott Tomlinson.

Further exploration and photographic documentation of the wreck site is planned for next season.







Right top:  
Search operations aboard the  
R/V Quest.

Right bottom:  
Mowing the lawn with side  
scan.

Above:  
A winning combination, diver  
propulsion vehicles and side scan.

Previous page:  
Sonar image of Sagaland wreck  
site.

