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COLUMBIA'S PACIFIC COAST

# DIRECTORY

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Large school of trevally, Malpelo, Columbia. Photo by Wolfgang Pölzer



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## Much ado about Tech

X-RAY MAG is intended for all ocean-loving adventurers and divers, the vast majority of which are recreational sports divers who will never become technical divers. So, the now substantial and increasing amount of articles about technical diving in the magazine probably warrants a little explanation.

While we strive for including articles that would be of interest and use for 'tekkies' who have a considerable weight of advanced training and experience behind them, the primary purpose of our coverage of technical diving is to disseminate useful knowledge and insights for the benefit of all divers, regardless of level of training or ambition.

No matter how long we have been diving or how big our ambitions are, we can

all become safer and better divers. We dive because it enriches our lives in various ways. Some of us favour encounters with majestic wildlife or pointing our cameras at spiky critters with psychedelic colours, or exploring wrecks or caves, or searching for treasure—or just having a great time with family and friends.

The safety measures now built into modern cars, such as ABS, was first developed in racing, which is also used by many manufacturers to develop, test and refine new technologies. Airlines are getting safer and better thanks in great part to development first spearheaded by the military and accident investigations.

In the same manner, technical diving is where we find much, if not most, of the development and know how that will

ultimately percolate down to the lower rungs of the ladder and benefit all divers. We are here to facilitate this process.

We need not be twin tank divers or owners of expensive rebreathers to adopt and adhere to the same safety culture as tekkies honor, or to pick up on numerous useful small tips and tricks that make diving life safer, such as streamlining your equipment configuration.

What better way to enjoy your dive even more so than before than with the added benefit and peace of mind of safety first?

Go on, dive, be free—be safe!

— The X-RAY MAG crew

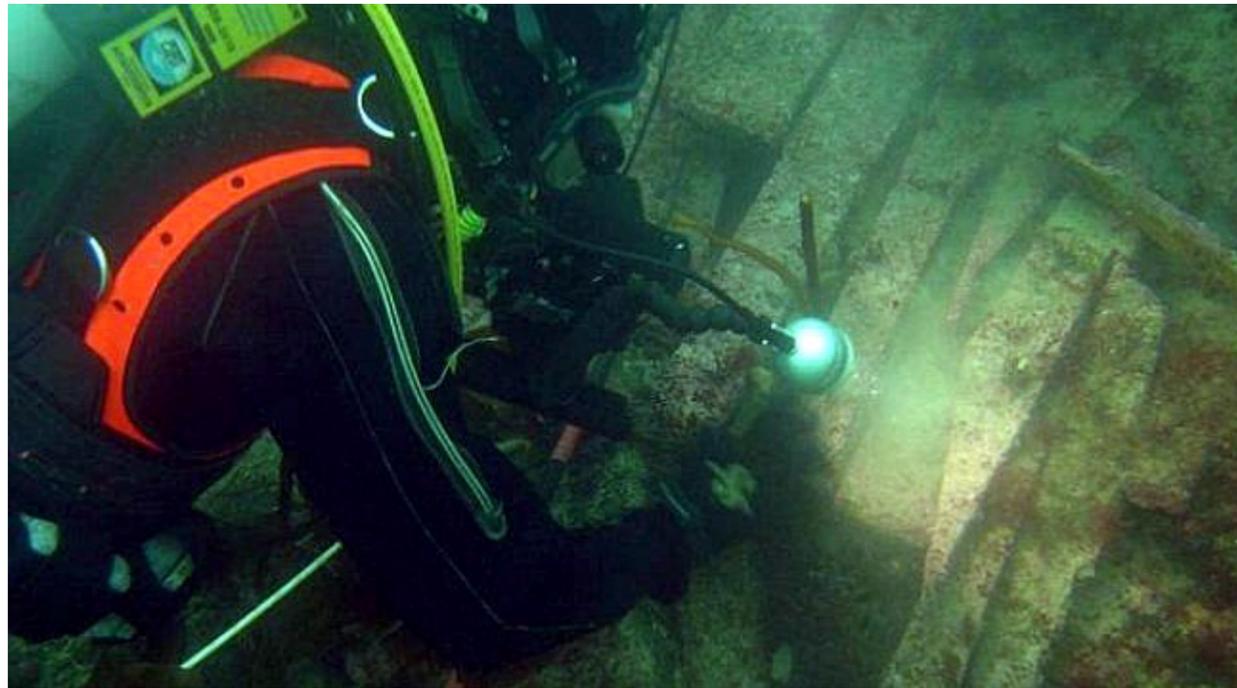


X-ray mag

News edited  
by Peter Symes

from the deep  
**NEWS**

# Divers find remains of 'Britain's Atlantis'



Divers from St Andrews University find remains of Doggerland, the underwater country dubbed 'Britain's Atlantis'

**Doggerland, an underwater world that was swallowed by the North Sea between 18,000 and 5,500 BCE, has been discovered by divers.**

The research suggests that the populations of these drowned lands could have been tens of thousands, living in an area that stretched from Northern Scotland across to Denmark and down the English Channel as far as the Channel Islands. The now submerged area of the North Sea was once the 'real heartland' of Europe and was larger

than many modern European countries.

"The name was coined for Dogger Bank, but it applies to any of several periods when the North Sea was land," said Richard Bates of the University of St. Andrews.

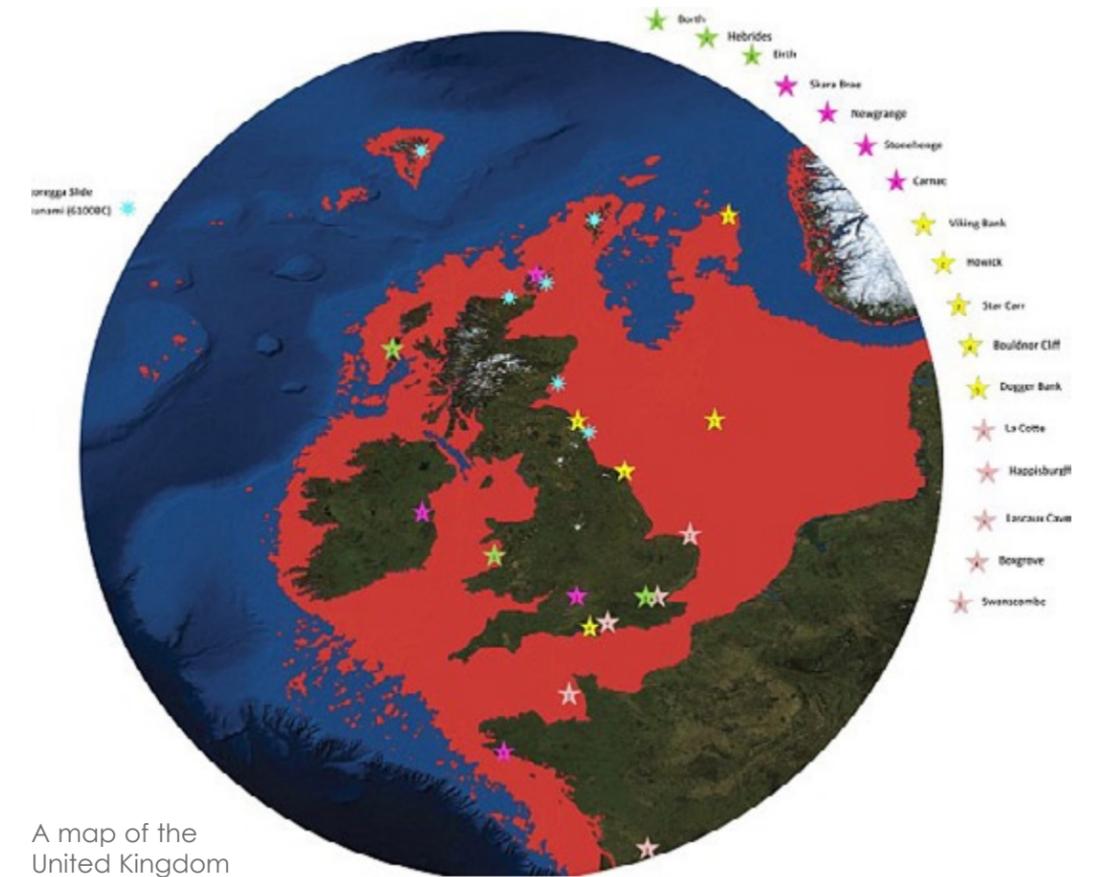
Rediscovering the land through pioneering scientific research, the research reveals a story of a dramatic past that featured mas-

sive climate change. The public exhibit at the Royal Society Summer Science Exhibition brings back to life the Mesolithic populations of Doggerland through artefacts discovered deep within the sea bed.

The research, a result of a painstaking 15 years of fieldwork around the murky waters of the United Kingdom, is one of the highlights of the London event. The interactive display examines the lost landscape of Doggerland and includes artefacts from various times represented by the exhibit—from pieces of flint used by humans as tools to the animals that also inhabited these lands.

Using a combination of geophysical modelling of data obtained from oil and gas companies and direct evidence from material recovered from the seafloor, the research team was able to build up a reconstruction of the lost land.

The findings suggest a picture of a land with hills and valleys, large swamps and lakes with major rivers dissecting a convoluted coastline. As the sea rose the hills would have become an isolated archipelago of low islands. By examining the fossil record (such as pollen grains, microfauna and macrofauna) the researchers can tell what kind of vegetation grew in Doggerland and what animals roamed there. Using this information, they were able to build up a model of the 'carrying capacity' of the land and work out roughly how many humans could have lived there. ■



A map of the United Kingdom with Doggerland marked as red

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## Fishing for plastic to save our seas

Fishermen will be paid to catch plastic, rather than fish, under bold new plans from the European Union's fisheries chief, aimed at providing fleets with an alternative source of income to reduce pressure on dwindling fish stocks.

Maria Damanaki, commissioner for fisheries, will unveil a trial project in the Mediterranean that will see fishermen equipped with nets to round up the plastic detritus that is threatening marine life, and send it for recycling.

Fishermen who clear plastic will be subsidised initially by European Union member states. But in the future, the scheme could turn into a self-sustaining profitable enterprise, as fleets cash in on the increasing value of recycled plastics. Cleaning up the rubbish will also improve the prospects for fish, seabirds and other marine species, which frequently choke or suffer internal damage from ingesting small pieces of non-biodegradable packaging.

There is already a voluntary scheme, **Fishing for Litter**, in

place in Scotland with participation of all major ports, which provides collection facilities at ports where rubbish caught can be disposed of rather than thrown back over the side.

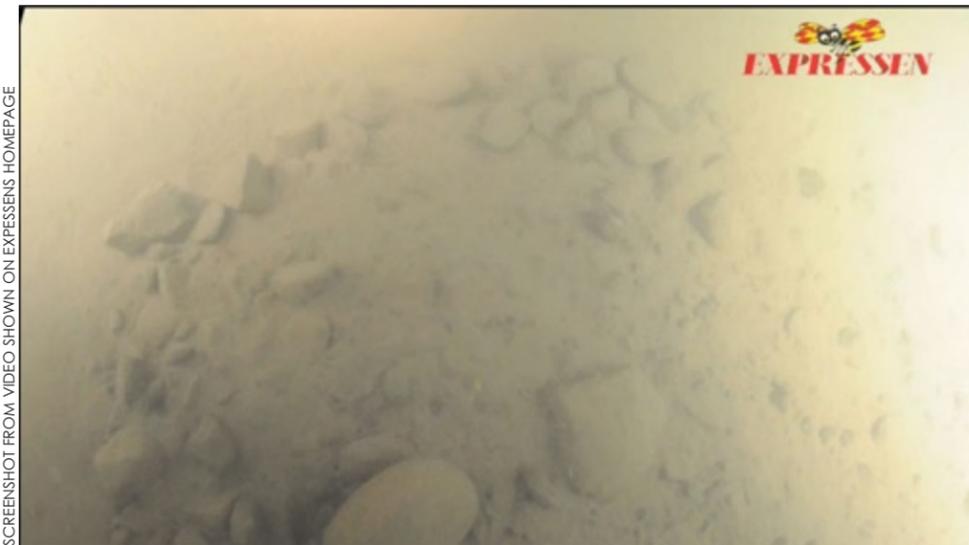
Since the Scottish project launched in 2005, the number of harbours and fishermen involved have steadily increased as word spread about how simple yet effective the project could be run.

The initiative not only involves the direct removal of litter from the sea, but also raises awareness of the significance of the problem amongst each community. This pioneering project has expanded from an original pilot scheme in the Netherlands to now be a highly recognisable initiative in the United Kingdom and beyond. ■

NOAA ILLUSTRATION / PUBLIC DOMAIN

## Mystery object on the bottom of the Baltic still a mystery

Swedish daily *Expressen* publishes first video from the mysterious object on the bottom of the Baltic, which was first discovered a year ago.



SCREENSHOT FROM VIDEO SHOWN ON EXPRESSENS HOMEPAGE

"We were there to find answers, but only got even more issues," said Stefan Hogeborn, 47, one of the divers from Ocean X Team, which investigated the circle on the bottom of the Baltic.

On June 11 last year, nine divers and wreck hunters went searching for shipwrecks in the Baltic Sea off the Swedish east coast. The divers sailed in zigzag pattern back and forth over a large area to search for a number of specific wrecks when a large, round formation showed up on their scanner screen. They examined the object closely, and what they found puzzled the whole world.

The strange object defied explanation and none of the experts could figure out what the big object was.

Stefan Hogeborn, who has contributed to *X-RAY MAG* in the recent past, described the first dive at the world famous circle in the Baltic Sea:

"The first thing we saw was some kind of rock formation that looked to be cast in cement," he said. When they swam further, they saw several rock formations. It looked almost like a pearl necklace or that someone had tried to make a fireplace with inch-sized rocks on the ocean floor.

*I have never, ever, ever, seen anything like it*

—Stefan Hogeborn

On the next dive, the team brought a sledgehammer to dislodge a piece of material for sampling. Hogeborn described the sample as being a kind of carbonized material. During the last dive, divers discovered an oblong hole one and a half times the size of the six-inch rocks that formed the circle.

*Expressen* let Martin Jakobsson, a professor of marine geology and geophysics at the University of Stockholm, see an image from the dive. "There is probably some kind of sandstone. When you look at the structure, it looks like it," he said.

The samples from the discovery in the Baltic Sea have been sent for analysis.

"Since we did not get any answers to the questions we asked ourselves, we have brought this to the experts who may be looking at the pieces we brought up," said Hogeborn. ■

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## First to dive across the English Channel

**Eight hours in darkness and cold water, combing a distance of around 55 kilometers through waters with strong currents in one of the busiest shipping lanes in the world is the challenge Achim Schloeffel mastered.**

A complex interaction of state-of-the-art dive equipment, a logistical masterpiece by the project team regarding the planning of currents, navigation and nautics, and last but not least, the courage and stamina of the professional diver led the ambitious project to its successful completion.

The new world record holder is very satisfied with the result: "A number of divers have failed to

dive through the English Channel. With our successful mission today we have delivered the proof, that the technology for ambitious exploration dives has matured, yet a strong team capable in project planning and logistics and most importantly physical and mental fitness is crucial for success."

The issues Schloeffel was facing during the dive—as expected—included low visibility that in the beginning was far less than one metre, along with the noise from freighters and tankers that passed over when he crossed the shipping lane: "It is already very exhausting if you can hardly see your own hand in front of your face underwater and cannot afford to lose concentration for even a second. If you then add a noise level comparable to a jet landing right next to your head,

it becomes unbearable. Hence, I am happy to be done with this dive. I was able to feel myself how the very sensible acoustic systems of whales and dolphins, who communicate via sonography are tremendously affected, and I can re-assure you that you would not want to experience this for yourself."

Being a project ambassador for the international whale and dolphin conservation society (WDCS), the professional diver uses the dive to raise awareness about the increasing noise and waste pollution of the oceans and is raising funds for the last dolphins in the North Sea.

More information about the dive record is available at: [www.xploreyourlimits.de](http://www.xploreyourlimits.de) ■

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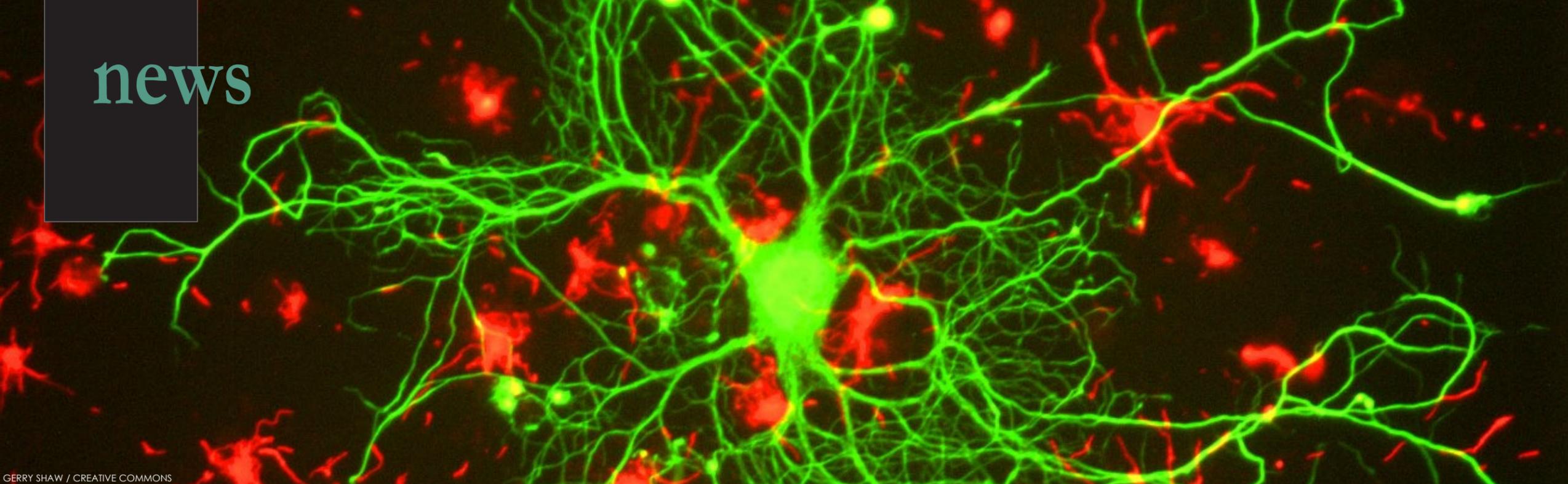
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# Diving may revive dormant brain cells

**Simulation of dives to 14 meters in a hyperbaric chamber revives damaged brain cells, first studies of hyperbaric treatment effect on brain damage at the Danish National Hospital, Rigshospitalet, finds. The preliminary results are good news for patients with severe brain damage or brain cancer.**

Hyperbaric chambers, like the ones used to treat decompression sickness in divers, may also be useful in treating severe brain damage such as the lesions caused by traffic accidents or following brain surgery. The therapy consists of a series of treatments in the hyperbaric chamber. Preliminary results suggest that it stimulates brain cells, which otherwise had ceased to function.

"These kinds of injuries leave some brain cells in a state where they are not dead, but are not working as they should. By providing oxygen under higher pressure, we are able to supply more oxygen to these cells. Apparently, this gets them to

work again," explained Dr Erik Jansen of Rigshospitalet, the Danish National Hospital, who is one of the physicians behind the research.

"This type of treatment is already known in the United States and Russia where it has been used in connection with a variety of therapies, but the effect has never been clinically proven," said Jansen.

A number of wounded soldiers have been treated in the hyperbaric chamber, and the results suggest that the method provides improvements in brain functions, which can lead to both greater independence for the patient and ultimately lower costs to the public health system.

"Even a tiny improvement in an individual patient is very important, as it may enable that person to handle more daily tasks on their own, both for the individual's self esteem and to reduce the need for society to take care of the patient," said Jansen.

"Consider, for example, young people who are diagnosed with brain cancer. Brain surgery and radiotherapy mean that the patient survives, but there is a risk of disability. These patients could be helped to a

better life through hyperbaric therapy."

Brain surgery and subsequent chemotherapy can cause groups of brain cells to enter a dormant state, as seen in patients who have suffered severe brain trauma for example following traffic accidents.

## 30 times to 14 meters

During the preliminary trials, the hospital performed a range of neurological and physio-therapeutic tests on the patients, including PET scans of their brains, and asked them to describe their condition in their own words. Next, they were given a total 30 hyperbaric treatments in the pressure chamber, where they were subjected to 2.4 bars of oxygen at partial pressure. This is equal to breathing pure oxygen at the depth of 14 meters. (Pure oxygen is provided through masks to avoid having 100 percent oxygen in the whole chamber, which would be very risky.)

Throughout the treatment, a series of measurements are taken, and at the end,

the patient undergoes the same tests as before the treatments began. This has demonstrated an improvement—especially in the patients' description of their condition, but also neurologically, things have changed for the better.

"Aside from improving the flow of oxygen to the cells, we think that new blood vessels are also formed in the brain. American studies have shown that after about 20 treatments, there is a large increase in the number of stem cells. One can assume that the stem cells have a positive impact on the brain's capacity," said Jansen.

"Brain tissue in the traumatized area is often inflamed. During inflammation, there is a tendency for white blood cells to get clogged in the area, which is probably also counteracted by hyperbaric treatment," Jansen said. ■



(Top image: Cortical neuron. Inset: Sketch of brain by Andreas Vesalius, c. 1543)

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# Resande Man

## *The Traveling Man*

Text by Millis Keegan  
Photos by Peter Jademyr

**For decades, the small war vessel *Resande Man* (Swedish for *The Traveling Man*) has been on the mind of every true wreck diver in Sweden. They each have nursed the dream of being the one to find her, and many have spent endless hours in the archives trying to dig up more information on where she could be hiding her remains.**

Rumour had it, she carried a treasure, a rich amount of gifts meant to ease the way in negotiations with Poland to create a treaty against Russia. Count von Schlippenbach led the mission, but even before the ship left the southern part of the Stockholm archipelago, a storm intervened and sank the ship, taking the count himself and 36 of the crew members down with it. The month was November, the year, 1660. November storms are still known to be the nasty ones.

According to the records, around 20 men made it ashore in the longboat. The day after,

another seven men were found sitting in the crows nest on the main mast just above the surface, holding on for dear life. Five of them survived, the others froze to death. Anyone who wants to dig into the archives and the dusty paper trail at the Maritime Museum of Sweden can confirm that this was the case.

This little piece of information—that the main mast was sticking up above the surface—told divers in the know that the wreck sank within sport diving depth and could be found, in theory, by anyone. In reality, it was not so simple, even though the position was mentioned in the archives.

Hans Albrecht von Treileben, a salvager who is famous for recovering most of the canons of the *Vasa* when she sank, also salvaged part of *Resande Man's* cargo and canons in 1661. Somewhere between then and now, the wreck got lost, and a myth was born.

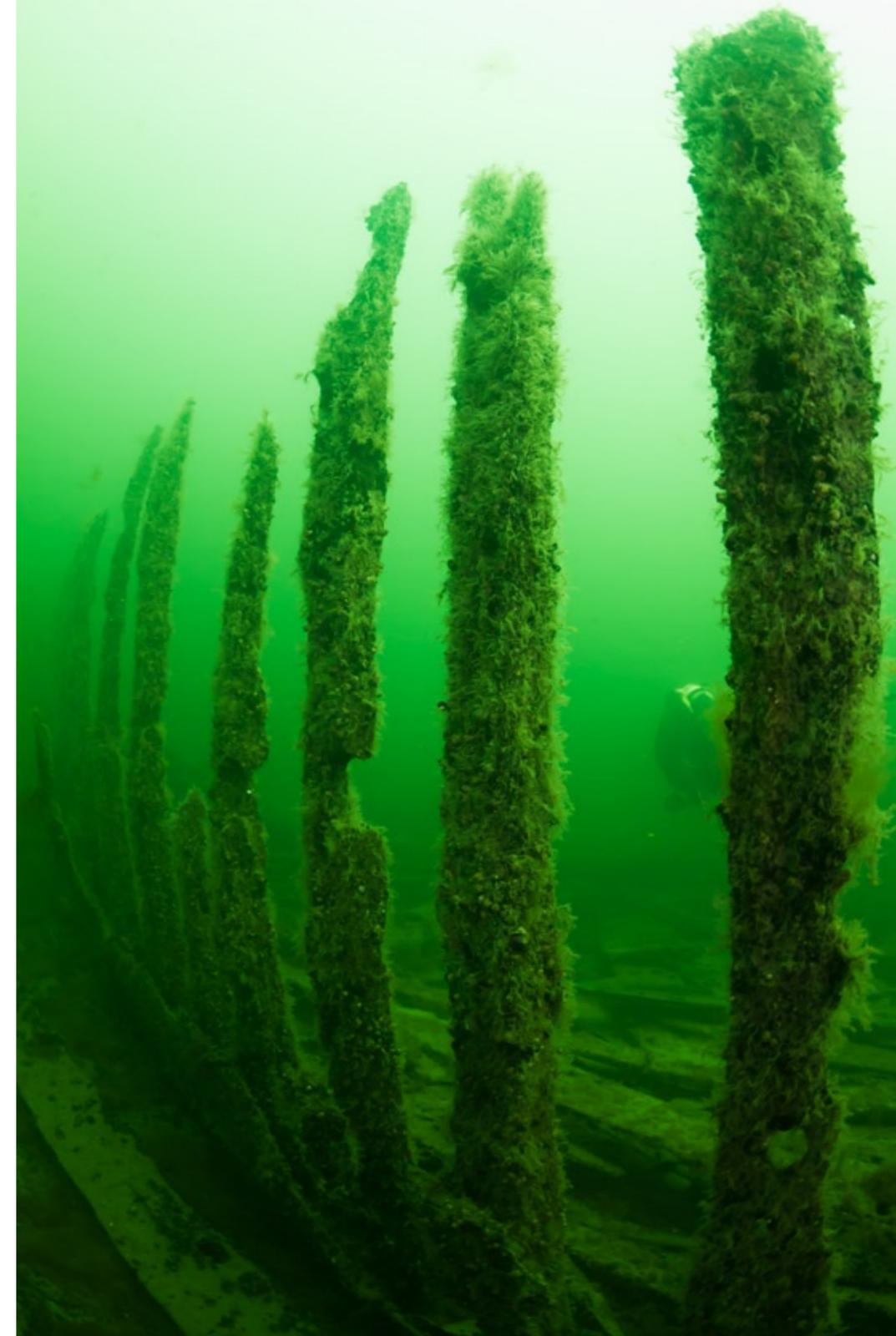
Over the years, many have claimed to have found the vessel, but there was never enough evidence to prove it, or evidence proved that these finds were other wrecks. Needless to say, when yet another group

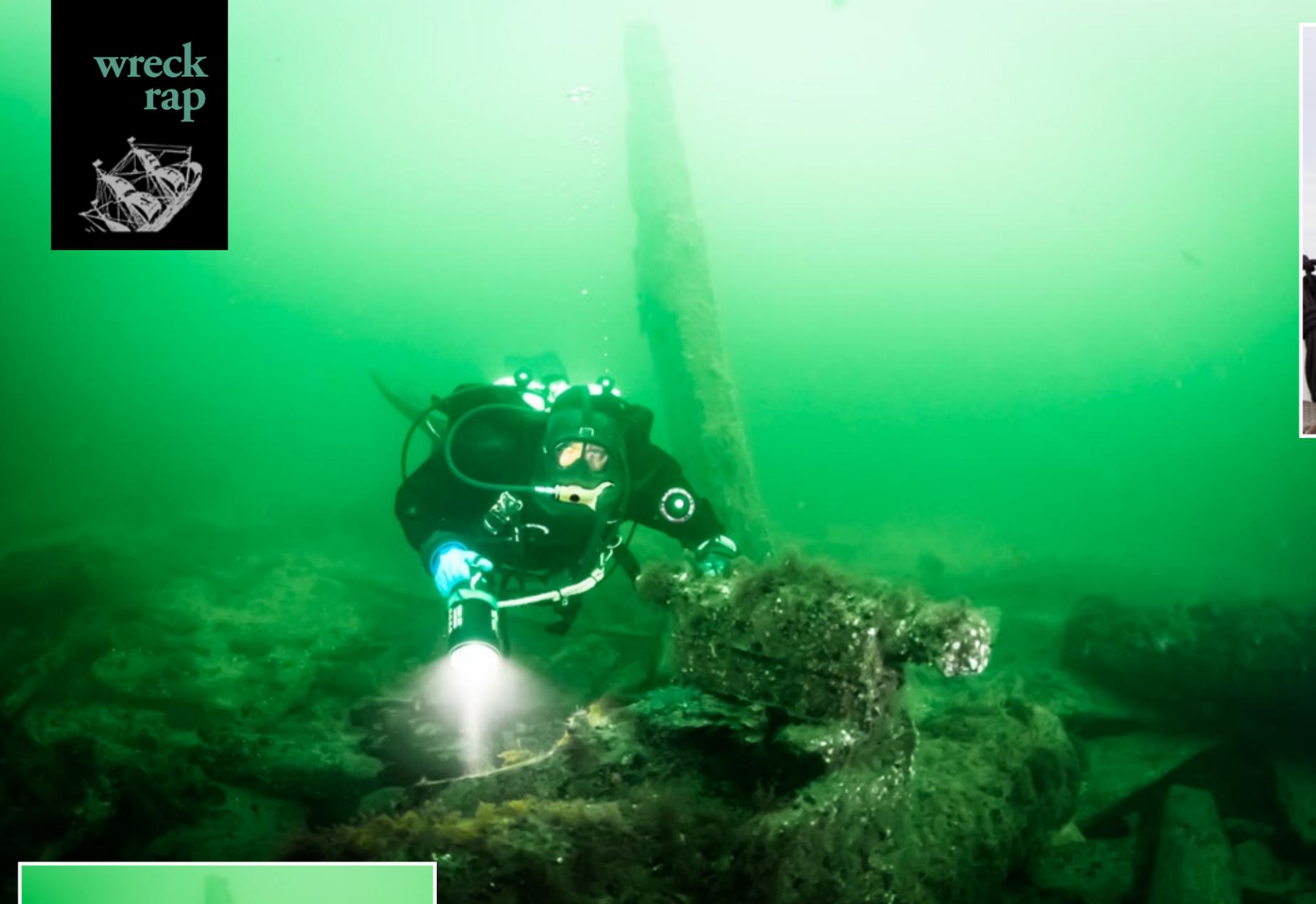
of experienced divers, albeit amateur marine archaeologists, reported the finding of *Resande Man*, there was some scepticism.

After the marine archaeologists and researchers from the Maritime Museum and

Södertörns University research group MARIS inspected the wreck, they came to the conclusion that it seemed highly likely that the amateur Marine Archaeological Society from Grebbestad might actually have found *Resande Man*.

THIS PAGE:  
Diver explores  
the wreck of  
*Resande Man*



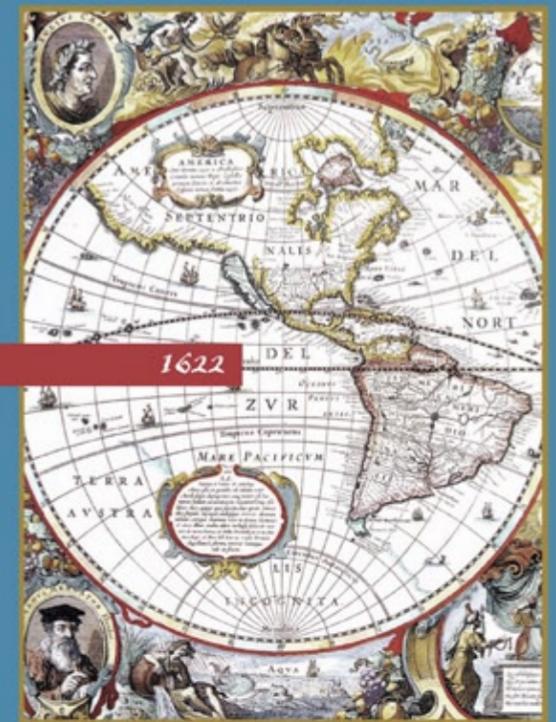


Dive team of the Marine Archeological Society of Grebbestad, Sweden

Maritime Museums in Sweden, the MARIS research institute, and of course, every wreck diver in Sweden, have been following the seemingly never-ending search for the *Resande Man*.

The wreck was recently placed under protection, which means no diving or anchoring on the site. "We will research and salvage some of the items from the wreck. Our goal is to investigate the facts, and hopefully, we will be able to release the wreck to the diving community again in the future," the authorities said. ■

## Treasure Coins of the *Nuestra Señora de Atocha* & the *Santa Margarita*



Carol Tedesco

In 40 succinct pages, *Treasure Coins of the Nuestra Señora de Atocha & the Santa Margarita* answers all the most frequently asked questions, including what the coins look like when first discovered, the meaning of the various markings, how they are cleaned, conserved and graded, what they were worth in the 17th century, and the most up-to-date information on the names and periods of office of the men who made them. Of particular interest to 1622 fleet coin enthusiasts is a section devoted to the exceedingly rare Old World minted coins discovered on the *Atocha* and the *Santa Margarita*.

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THIS PAGE: Scenes from the wreck of *Resende Man*

"It is a very fragile wreck. A coin was found on board that is from 1650, and that is a good indication that it is from the right era, but further research must be made before we can say anything with certainty," said Patrik Höglund from the Maritime Museums. "But we are highly optimistic."

"Even though most of the cargo was salvaged in 1661, and possibly also later by illegal treasure hunters over the years, there are still a number of historical finds of importance to explore and document on the wreck, whether it is *Resande Man* or not," he said.

The war vessel was equipped with 22 canons, but since the famous von Treileben already in 1661 dove and salvaged items on the wreck, it was believed that there were none left aboard. The dive team that found the wreck beg to differ, "We believe there are both coins and canons still at the site, and we hope to be able to continue to dive on her as part of a research team in the future."

Many are interested in finding out the truth about this mythical ship, which on average has been 'found' every third year by sport divers. Authorities like the National



## wreck rap



*She's still got her propellers, she has her guns and even the life rafts are back on board. You have never, ever, ever seen an artificial reef looking like this, it is magnificent."*

—Joe Weatherby, the Reefmakers

## USS Mohawk becomes new artificial reef in Southwest Florida

The former U.S. Coast Guard cutter sank in only minutes, once the explosives detonated, to become the first artificial reef in Southwest Florida and the first official memorial reef dedicated to all U.S. veterans. She now rests approximately 27m (90ft) under the surface, some 28 nautical miles from Sanibel Island. The 165-foot *Mohawk* is the last remaining ship from the Battle of the Atlantic.

In recent years, the vessel was docked as a Memorial Museum in Key West, to be enjoyed by visitors. It is fair to say that the *Mohawk* had a bit of an adventure before she was towed to her last resting place.

Prior to her days as museum, she spent more than 15 years rusting in a scrap yard in Staten Island. Frans Boetes, who became president of

the *USS Mohawk* CGC Memorial Museum, found her. She was in need for repairs before she could be towed down to Florida, where she underwent further repairs once she was tied at the old Navy Pier in Key West. The *Mohawk* was then chosen to become an artificial reef to be placed off the Southwest coast of Florida. ■

► **Video of Mohawk sinking**



## The Definitive Guide to the Wrecks of Scapa Flow

A new website dedicated to the historical wreck diving site of Scapa Flow has been launched with stunning 3D interpretations of the German High Seas Fleet, incorporating cutting-edge web technology and in-depth information about the history and archaeology of the region, written by true experts in their field. [www.scapafloowrecks.com](http://www.scapafloowrecks.com) is intended to be the definitive guide to the exciting maritime archaeology and history of the region; the result of a collaborative project commissioned by the Scapa Flow Landscape Partnership Scheme, in which divers, instructors, dive boat operators, maritime archaeologists and historians from Orkney offered their expertise to ensure that the site is as accurate and

useful as possible.

The wrecks of Scapa Flow, are for many, among the top wreck diving destinations of the world, alongside Truk Lagoon, Bikini Atoll, and the Graveyard of the Atlantic off the US East Coast to name but a few. The common misconception that they are dark, deep and often the preserve of technical divers, could not be further from the truth. These wrecks offer a fantastic introduction to wreck diving as well as a challenge for more advanced divers, together with world-class facilities.

The project was completed by 3deep Media (part of the Fourth Element Group) using its unique web technology to produce interactive 3D tours of each of the seven High Seas Fleet wrecks.

Incorporating photos and videos as part of a self-guided virtual tour, each is accompanied by descriptive text written by Bob Anderson of Halton Charters and Emily Turton of Radiant Queen Charters, two of Scapa Flow's most experienced dive boat operators.

Other features include an interactive map allowing users to pinpoint the wrecks, areas of local interest and sites of historical significance, as well as being able to peruse some archival maps of the area. Scapa Flow's role throughout WW1 and WW2 also has unique treatment with an animated timeline of events and historical photos, not available anywhere else in a single online resource.

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

# Search for legendary aviator goes underwater

Text by Millis Keegan

Born on 24 July 1897, aviator Amelia Earhart was the first woman to fly solo across the Atlantic Ocean. Receiving the Distinguished Flying Cross, one of the U.S. Military's top honours, she became an international celebrity and had an amazing career as an aviator. Her fame continued, breaking one record after another, as she was writing best-selling books. Earhart was keen on promoting aviation, and in 1929, she helped found "The Ninety-Nines", an international organization of 99 female aviators. She became the first president, and today, the organization is bigger than ever before. (<http://www.ninety-nines.org/>)

Earhart was an inspiration for women on the ground as well, being a member of the Woman's Party and supporting the Equal Rights Amendment.

After 75 years, Amelia Earhart is still famous, but for more dramatic reasons. Mysteriously disappearing during an attempt to circumnavigate the globe in 1937, she was last heard from over the central Pacific Ocean near Howland Island.

On the last leg of a trip that commenced in Miami, Florida on 1 June 1937, she had only 7,000 miles to go in order to complete her journey. After stopping in Lae, New Guinea, on 29 June 1937, she and her navigator, Fred Noonan, were never seen again, with contact lost on 2 July 1937.

There are numerous theories behind her disappearance, and every now and then, a new one turns up to add fire to the rumors. Crashing into the ocean is the most popular, although a new theory suggests that the two managed to survive an emergency landing and lived on a deserted island in the South Pacific.

Relatives of Earhart claim her disappearance is a massive cover-up by the government, with the pair being captured by the Japanese and held prisoner on the island of Saipan in the northern Marianas.

## 75th anniversary takes the search underwater

TIGHARS, the International Group for Historic Aircraft Recovery,

have done several excursions to the South Pacific in an attempt to discover evidence as to what might have happened. The working theory, called the Earhart Project, is that Earhart and Noonan landed and eventually died on Gardner Island (Now known as Nikumaroro in the Republic of Kiribati).

This year, July 2 was the 75th anniversary of the disappearance, and an expedition, the Niku VII, has set out to do some high-tech deep water exploration for the wreckage of Earhart's Lockheed Model 10 Electra aircraft. With recent funding setting the project in motion, the target area is an underwater slope off Nikumaroro's west coast.

Earlier TIGHAR expeditions

revealed aircraft debris had been discovered and used by islanders in a now abandoned village. Although nothing substantial, it was tantalizing enough to plan for the Niku VII expedition.

Commencing this summer, the expedition plans to document and identify any wreckage left on the slope to a depth of 1,500 meters (4,921ft). It is hoped that solid evidence will be discovered, which will once and for all solve



TIGHAR PHOTO BY ERIC BEVINGTON. ©TIGHAR. ALL RIGHTS RESERVED. USED BY PERMISSION.



WIKIMEDIA COMMONS

Amelia Earhart

this 75-year-old mystery. Nothing will be retrieved. Findings will only be documented through HD video and photography.

The search will not be an easy one. Along with video cameras, the ROV has a sector scan sonar—although the best images are obtained when the target is on a flat surface, preferably sand. However, the search will be conducted on a sloped reef instead of a sandy bottom. If successful, a subsequent expedition will be one of recovery, which may, once and for all, lay to rest one of the great-



Search area (above)

est mysteries in aviation. Follow the results on [Thigar.org](http://Thigar.org) ■

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*SS Dago*—A British loss by a German bomber off the Portuguese coast during the WWII

Text by Jorge Russo  
Photos by Armando Ribeiro,  
Jorge Russo, José Alberto  
and Manuel Leotte

**During WWII, in the early months of 1942, both sides struggled—some to destroy as many ships as they could, others to build them. This was the battle of the Atlantic. During the war, cargo ship convoys and their military escorts were endless in the effort to supply Great Britain of food, parts, fuel and raw materials. One busy route was Liverpool-Gibraltar-Liverpool with convoys OH and HG, respectively. This was the scenario when *SS Dago*—a British 1,757-ton tramp steamer from Hull, England—departed from Liverpool February 21 on convoy OG.80 heading to Gibraltar with Lisbon as its destination.**

*SS Dago* arrived in Gibraltar on March 8. She departed the next day on an independent voyage towards Lisbon where

she arrived the same day. *SS Dago* loaded some cargo there and left to Leixões-Oporto (Portugal) on March 15 with 300 tons of general cargo where she was supposed to unload some goods and then, we believe, head back to Liverpool.

At noon, *SS Dago* left Lisbon on a fine

steamed at 10.5 knots steering 010° until 17:35 when she altered course to 352° in order to pass 2.15 miles off Cape Carvoeiro near the small fishing village of Peniche, Portugal.

At about 18:00 another plane was sighted approaching from land about three miles away, three points on the starboard bow. On sighting, the plane made a sharp turn and crossed the ship from bow to stern at 300 feet. All hands were called to battle stations.

This time, it was a German plane, a long range Focke-Wulf 200 Condor bomber<sup>2</sup>. Two P.A.C. Rockets were fired, unfortunately, too soon. Another sharp turn and the plane flew over the ship again. Every armament on board was fired against the aircraft—twin-marlins on the bridge, Holman projector, stripped Lewis and Hotchkiss aft—but even with tracers apparently hitting the plane, the bullets appeared to produce no

serious damage. We know now that the radio operator was wounded during the attack and that the plane had to return earlier to its base<sup>3</sup>.

On these two passages, the plane did not open fire or drop bombs. On a third passage from the front, it fired its cannon. But no one was wounded, because most of the shells hit the water



and hazy day when, at about 17:00, the 37-man crew including six navy gunners spotted a plane approaching from the west out of the sun. They opened fire but, fortunately, with no effect because it turned out to be a Short Sunderland Flying Boat<sup>1</sup>.

With heavy westerly swell and a southerly wind of force three, *SS Dago*

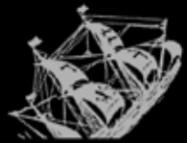
1 We believe that it belonged to the 10th squadron from RAAF (Royal Australian Air Force) stationed at Mount Batten in Plymouth, southern Britain.

2 It was the Focke-Wulf 200 Condor F8+IH from Lt. Otto Gose of 1./K.G.40 from Merignac.

3 Courtesy of Chris Goss

Steam winches (left); Scale model of *SS Dago* (below)





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THIS PAGE: Scenes from the *SS Dago*. CLOCKWISE FROM LEFT: Bow mast load; Stern; An anchor; View from the bow

or the gun shields without penetrating them.

This time, the plane also dropped a stick of three bombs: the first hitting the fore castle; the second one entered the No. 2 cargo hold, which was empty; and the third, a near miss, off the port beam abreast of the bridge.

According to Chief Officer W.G. Gill's testimony, all three bombs exploded on impact; the fore castle was completely destroyed; and the near miss off the Port side seriously damaged the emergency gear on the boat deck, which stopped the engine. So, she still had weight and was sinking at the bow very rapidly.

By this time, the water reached

amidships, probably because the only watertight door on the ship leading to the engine room was open. The damage on the empty No. 2 cargo hold must have been considerable.

Crew members ran to lower the lifeboats while the chief engineer went down to the engine room to stop the engine. The port boat was lowered with two men. But in the rush, someone accidentally let go, and the boat was up-ended. Fortunately, the two men were not thrown out. Chief Officer Gill and 15 men were on this port boat when the engineers came out of the engine room.

The propeller was rising out

of the water, and the boat was dangerously near the blades, which were fortunately not turning anymore. Suddenly the propeller came down again and fell over the boat, damaging it but not too seriously. Yet, two painters were in trouble. Crew member A.B. John Rouse, despite a broken leg, was able to assist them, so all the men were able to drift away.

The captain and another 21 men got off the sinking ship via the other lifeboat.

Accordingly to Gill's testimony, the boat sank in only five minutes

after the bombs exploded. This is consistent with the report from the Fw F8+LL of Hptm. Jope, who was also out that day. He sighted the sinking vessel at 19:15 and reported it sunk eight minutes later. He also reported that two manned lifeboats were sighted and that all aboard were likely rescued by a RN corvette at 19:35. Incredibly, only four men were injured, not seriously, by the attack.

All the confidential books were thrown overboard in weighted metal boxes, and the two lifeboats were left on their own to





CLOCKWISE FROM LEFT: Diver enters cargo hold with linoleum rolls; Inside cargo hold; Linoleum rolls; Team member Carlos Gomes measures cylinder diameter

the shot-line was set. After a brief buddy and equipment check, we started our anticipated descent. The water was deep green, and the visibility was very poor. At -12 meters, the water was milky green, and we could see no more than two meters ahead. It was very disappointing when you consider how glorious the day was. Suddenly, at about -20 meters, the water turned deep blue, and the wreck became clearly visible at -50 meters. The visibility was more than 30 meters!



SS Dago

It would be an incredible dive. On a flat bottom of white and soft sand, the incredible wreck was now clearly visible in all her



splendour. The wreck was broken in two large segments. The stern segment led to the engine room with a huge triple expansion engine standing out on a sea of debris. Two large 200-pound pressure steel boilers were still in

their original position. The effect of many years of corrosion, strong seas and fishing nets were perfectly visible on the scattered steel frames and decks. Only the reinforced superstructure still stood. Large schools of pout (*Trisopterus luscus*) swam around the wreck.

In an oblique position, the bow section almost touched the engine room. This was a very large segment that was better

try to reach the village nearby. About one hour later, one motor boat from Peniche reached the lifeboats and towed them to shore. Despite the heavy swell, with the help of search lights and local fishermen, all the men were safely taken ashore, and the injured ones were carried to the hospital.

On the next day, the crew was transported by bus to Lisbon and then back to England by sea, with the exception of two men, one of them the brave John Rouse who needed further hospital care. The crew went home with 24 bottles of brandy offered by the Peniche inhabitants, a small but comforting token to the men that were almost killed the day before.

### Sixty years later, August

At 6:00 AM, a team from XploraSub left Lisbon towards Peniche with a cargo of diving gear, Trimix and enriched air Nitrox in their green van. We had to be in the water no later than 9:00 AM to conduct the dive between tides and catch the window with no or just a light current. We had one hour to go and come back, or we would be annoyed during the deco time by the strong currents that were quite common four miles off Peniche where the wreck of the so called *SS Dago* rested.

It was a beautiful morning that day—no wind, sunny sky and a very uncommon flat sea. On the site, the wreck was clearly visible on the eco-sounder, and





LEFT TO RIGHT: Triple expansion steam engine and boilers; Team member Pedro Ivo measuring the wreck; Stern section



SS Dago



preserved than the stern segment. The cargo deck was now perpendicular to the sandy bottom. The main deck was long gone. Through the most forward hatch, it was possible to penetrate the cargo hold and look at the remains of the cargo, especially several incredibly well-preserved linoleum rolls. We entered for a brief but breathtaking moment and checked around the cargo, now mostly unrecognizable.

The bow segment was broken on the second hatchway, with the cargo mast leaning over the sand and the steam winches fallen or hanging out from the deck.

The bottom time passed quickly, and we had just a couple of minutes more to check a strange piece of wreckage we found on the most western part of the debris field.

It was now time to come back to the line, crossing the debris field once again, give a final look to the stately steam engine and twin boilers and finish this marvellous dive in Peniche. A long ascent awaited us. This was one of the best wrecks we could dive in Portugal.

### The research

Since 1996, we had information on the spot where divers and fishermen claimed

the *SS Dago* wreck was located. The images and reported details were consistent with a small cargo steamer but could belong to any of the hundreds of ships that were lost in Peniche waters during the 20th century. The research data that were made public were at a minimum vague and not at all accurate.

Knowing that only 500 meters away there was another wreck of a steamer, we asked ourselves why people claimed that a specific wreck was the *SS Dago*. We decided to start a research project on the *SS Dago*, simultaneously in situ, using mostly comparative archaeometry, and data from libraries and museums. Our main objectives were to determine if the wreck claimed to be the *SS Dago* was, in fact, the *SS Dago* and to bring to the surface the full story of the *SS Dago*.

After many months of research, we knew from local authorities that there was one British *SS Dago* steamer that was attacked and sunk by a German Focke-Wulf 200 Condor off the Peniche coast. From the Hull City Archives, Hull University, British Maritime Museum and Dundee City Council, we found out that there was an Ellerman Wilson Line *SS Dago* Steamer built in Dundee in 1902, easily traceable through Lloyds Register of Shipping records, and of course, that there was a

**SS DAGO TECHNICAL ASPECTS**  
 Built: Launched on 11 April 1902.  
 Completed in May of the same year in Dundee, Scotland, Yard 163  
 Register: On behalf of Wilson, Sons & Co. Ltd, in the port of Hull (Kingston upon Hull), England, with the official number 113645  
 Owners: Wilson Line, and Ellerman Wilson Line when she was sunk  
 Builders: Caledon Shipbuilding & Engineering, Co. Ltd.  
 Flag: British  
 Gross Tonnage: 1,653 tons when built;  
 Lengthened in 1909 to 1,757 tons  
 Length: 280 feet when built  
 Main Breadth: 37,5 feet  
 Depth from top of beam amidships to top of keel: 14.4 feet  
 Iron or Steel: Steel  
 Engine and boiler room: 42 feet.  
 One vertical reciprocate triple expansion steam engine, 154 NHP, 11.5 knots. Two steel boilers, 200 pounds of pressure. 1 single screw  
 Sunk: 15 March 1942, 4 miles off Peniche, Portugal  
 Sunk cause: Bombed by a German Focke-Wulf FW 200 Condor  
 Wreck maximum depth: -50 meters



wreck that everyone called the *SS Dago* and another steamer wreck no more than 500 meters away.

We started looking for distinctive characteristics in *SS Dago* records in order to compare them with the wreck. First things first: the engine. Lloyds and the port register told us that the *SS Dago* had a steam triple expansion engine powered by two 200-pounds pressure steel boilers. So far, so good. Fortunately, the second wreck was discarded, because we found that it had a double expansion steam engine, not a triple one.

But this was not sufficient to securely claim the wreck to be the *SS Dago*. We then went to distinctive details of the ship's measurements. We measured the hatchways' dimensions, counted the quantity of hatchways and cargo masts, and

collected some very unique details—the distance between the stern hull and the propeller shaft via the rudder and the diameter of the engine cylinders. All were a perfect match.

The fact that the wreck was broken exactly at the second hatchway was consistent with the chief officer's report and perhaps explained why the ship sank within only five minutes after the attack, according to crew testimonies. The Focke-Wulf's second bomb and the empty cargo hold must have produced critical damage in the superstructure, especially on the keel, and broke the vessel in two. That must have been why, in a water column of only 50 meters, the two segments were so far apart. It was another clue supporting the theory that this wreck and the *SS Dago* were the same ship.

However, a thorough analysis of the Lloyds Register of Shipping of the *SS Dago* raised a huge problem. In 1945, for example, the *SS Dago* was still on the records and 'our' *SS Dago* was sunk in 1942. Later, we found out that in order to deceive the German war propaganda, Lloyds continued to record ships, even those who were sunk by the axis, until the end of the war. The sunken ships were recorded separately on a specific record, the Lloyds War Losses. When we looked for *SS Dago* on those records, there she was.

The people were right. That wreck was in fact *SS Dago*, the British tramper sunk by a German long range bomber off Peniche, Portugal, a neutral country.

Now, we need to determine what ship the other nearby wreck is... and we will!

### The XploraSub

XploraSub is a group of tech divers that has existed since 6 July 2005, developing exploration and research in areas accessible only with advanced diving. Our main areas of interest are wreck and cave diving. Presently, XploraSub is developing several projects on both areas. For more information, visit: [www.xplorasub.com](http://www.xplorasub.com)

#### SS DAGO PROJECT TEAM:

*Jorge Russo (Project Coordinator), Pedro Ivo Arriegas, Paulo Carmo, Paulo Correia, Paulo Costa, Pedro Encarnação, João Pedro Freire, Carlos Gomes, Manuel Leotte, Nuno Sous, Luísa Tavares, Carlos Trindade. Invited photographer: Armando Ribeiro*



## SS Dago

CONTACTS AND LINKS  
 SS Dago Project on Facebook  
[www.facebook.com](http://www.facebook.com)  
 Jorge Russo, Project Coordinator  
[russochief@gmail.com](mailto:russochief@gmail.com)

Diver at the stern of the *SS Dago*  
 Engine and boilers (top left)

Edited by  
Peter Symes



## Rebreather Technical Training

open circuit gas supply is possibly safer than an open circuit diver needing to find their buddy for gas (alternative air).

### Required underwater time

The more complex failure analysis skill development becomes a big issue when diving beyond recreational limits or when direct 'no stop' access to the surface on open circuit bail out is no longer possible. The correct decision-making process for any given possible rebreather problem becomes an exponential risk. The real issue that must be addressed by training agencies and accepted by divers is that the minimum required time underwater diving a rebreather must be increased beyond the equivalent open circuit requirements for any depths beyond the recreational limits, and that the safety rules are to be followed at all times when using a rebreather.

### Beyond minimum standards

Rebreather divers must not be looking for the shortest route and minimum standards when looking for rebreather certification. Any course with the minimal number of hours required or experience to dive deeper than the recreational limits should be avoided and rejected as unsafe. Open circuit experience, no matter how advanced it is, will only help you with any open circuit bail out—other than that, not much more. In fact, it can even be a disadvantage, leading you to a false sense of security. Technical

*The real issue that must be addressed by training agencies and accepted by divers is that the minimum required time underwater diving a rebreather must be increased beyond the equivalent open circuit requirements for any depths beyond the recreational limits and the safety rules are to be followed at all times when using a rebreather.*

rebreather diving requires far more time underwater and development of failure analysis skills, and therefore should require more logged hours than any open circuit equivalent.

Text by Barry Coleman

**It is widely accepted that rebreather diving has many benefits, and conversely, disadvantages, one of which is the training required to understand and implement the quite complex failure analysis during any dive.**

There is, of course, the very simple, acknowledged response to any rebreather problem, and that is to bail out to open circuit and abort the dive. This response would be the same as open circuit training, if you have a problem finding an alternative air source. One could argue that a recreational rebreather diver carrying their own



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## OCEANIC



Edited by  
Peter Symes

## Build up experience

Many Trimix open circuit divers who have crossed over to rebreather and within a short time are diving to the depths they had on open circuit are dead today. It is an unfortunate fact. Had they spent the time diving a rebreather and put in the same number of open circuit hours or more, building up on rebreather skills, they may still be alive today.

*Open circuit experience, no matter how advanced it is, will only help you with any open circuit bail out.*

The majority of fatalities are diver error. Had there been more hours underwater between courses and depth limitations, perhaps we may not have so many fatalities.

## Necessary number of hours

Training agencies need to assess the number of hours relative to depth certification and ensure they are more than the open circuit

equivalent for the respective depths. They need to implement a higher quality control to ensure training standards are maintained and monitored.

In the past, cave diving had a large fatality compared to the number of qualified cave divers, and upon investigation, many of the fatalities were unqualified cave divers and/or with little experience (time underwater in caves). This resulted in training standard amendments that had a favourable impact, reducing the



fatalities.

It is time divers make a conscious decision, not based on ego, to search out and find an agency with whom the standards

require a greater number of hours underwater between certification levels, materials that are in depth and detailed allowing one to make informed decisions. Do not simply be fooled into believing that you have mastered a rebreather after 25 hours and that you now can take the next step or course and dive to 50 or 60m when nothing less than 50 hours of recreational rebreather diving within the last say 18 months would be more acceptable.

*Rebreather divers must not be looking for the shortest route and minimum standards when looking for rebreather certification.*

## Reducing fatalities

This may be the answer to reducing the fatalities. It may not, but until such time as divers and potential divers consider that rebreather technical diving is more com-

plex and therefore take more time to learn and develop skills to dive deeper, and that they should shun the quick and easy route offered, then we will never know.

Having said this, extended time also breeds complacency, especially when nothing untoward happens to the rebreather diver. The diver then becomes lax and sloppy. This contempt for the rebreather—

because, unwittingly, this is what it becomes—will be the nail in the coffin and must be avoided at all costs.

Training will never change a person's attitude; courses cannot be selective on students' attitude. Instructors can possibly recognise attitude, although it may be so well disguised and alluring that even the best sometimes miss a potential flaw. Before they know it, the diver is a statistic. There is no definitive answer but to increase the certification prerequisite requirements relevant to the depth limits and see if this helps.

Without a doubt, the benefits of rebreather diving are certainly worth any extra effort that may be warranted. ■

*The majority of fatalities are diver error.*

Edited by  
Scott Bennett



## Simple rules to saving money on travel

In these days of increasing fares and tightening wallets, a few simple rules can help when planning your next trip. Booking online can help, as can arranging travel in advance or travelling during off season periods. However, never assume that booking through travel websites always provides the best deals, as there are some devious ways they make a little bit extra.

You might not get the lowest price listed first, as they are sometimes listed by airline or hotel chain. Preferred vendors that pay for that status may be listed first. For the lowest price, click on a tab labeled "lowest to highest". However, the good news is that the travel sites must show the final price before any purchase is finalized.

Before commencing your search, clear cookies from the browser cache. Cookies accepted by your browser can allow travel websites to monitor

previous travel purchases as well as see prices you are currently checking out. This can trigger a higher rate at some sites, so be sure to disable cookies and clear what you already have. Doing so may help reset search parameters if you have experienced a fare jump during your booking attempt.

Before accepting a bundle, do some double checking. Hotel fares are sometimes less when booked separately from the airfare. In addition, better room rates can often be found on hotel websites.

Sometimes, getting a package really is cheaper. In other cases, though, you can save by going right to the source and booking your travel a la carte. Try a couple of different scenarios to see what is truly the best deal. ■

## Humbolt Explorer newest addition to Galasam liveaboard fleet



Galasam Galapagos Scuba Diving has added the *Humbolt Explorer* to its extensive Galapagos liveaboard fleet. Trips are eight days in duration and feature the north Islands of Darwin and Wolf.

Each of the eight air-conditioned rooms comes complete with private bathroom facilities and can accommodate two passengers. A lounge area features TV, VCR and video library. A satellite telephone is also available for worldwide

emergency calls. The dive deck comes equipped with individual gear bins, large camera table, recharging station and tank racks.

Up to 17 dives are offered during the week depending on the boat and the date of departure. Operations are conducted via two large pangas or tenders.

Guests can experience large schools of hammerhead sharks, Galapagos sharks, mantas, eagle rays, turtles, sea lions, fur seals, tuna, dolphins and large whale sharks. Due to strong currents, trips are recommended for intermediate and advanced divers. Departures are available throughout the year. ■

## Girls Go Diving



—*Szilvia Gogh, aka. Miss Scuba, has travel tips for scuba girls on the go.*

More and more women are travelling to dive destinations on their own. A group of them have collected some practical advice and recommended gadgets and gear that make life and dive travel a bit easier for diving women on the go. The Travel Tips web page on Miss-Scuba.com lists tips by female divers from all around the world.

Why re-invent the wheel when someone has already been there and done that? Anything from what to pack to security to how to deal with email while you are abroad, readers can find helpful tips for any upcoming get-away.

Miss Scuba is the brainchild of diver and jewelry maker, Szilvia Gogh of Hungary now based in Los Angeles, California, USA, who fell in love with the ocean while in Greece, so much so that she pursued dive education to become the youngest female PADI course director ever to be certified.

"If I can do it, coming from a country that was formerly Communist with many poor and disadvantaged people, so can others!" said Gogh. And she wants to help other young women and disadvantaged children accomplish their goals and travel for diving.

Gogh herself has gone on dive trips

to faraway places such as Antarctica, Vietnam, Thailand and Alaska. She has also been an underwater film screen double for Drew Barrymore. Gogh wants to continue marketing group packages for dive destinations and scuba retreats to places like Mexico, Costa Rica and Italy where a villa can be rented for guests who will have the choice to do yoga in morning and scuba in the afternoon combined with site-seeing, wine-tasting, white water rafting, surfing, zip lining and bicycling. As a degreed engineer, Gogh said she could have had a job that made more money, however, she doesn't want to spend money on things but rather on travel.

For more information, visit [Miss-scuba.com](http://Miss-scuba.com). Photo courtesy of Szilvia Gogh and sister who are wearing their jewelry designs. See our feature on dive jewelry in this issue. ■

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## Airline to ditch TVs in favor of iPads

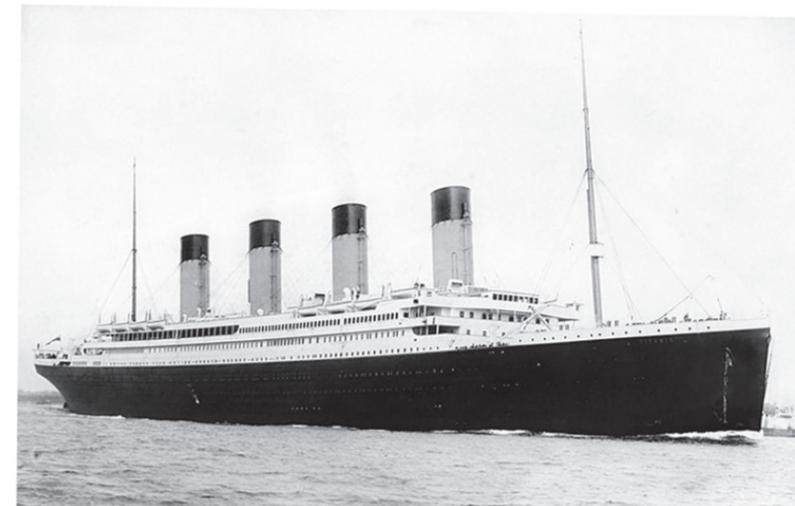
Switch to Apple tablets helps to decrease weight of planes.

As iPads appear in business with increasing frequency, one low-cost carrier has jumped on the bandwagon. Singapore Airlines subsidiary, Scoot Pte, recently launched its low-cost airline carrier, made possible in part by shedding nearly two tons of television and other video equipment in favor of Apple's 1.44-pound iPad.

By renting iPads, providing food and beverages at a cost and charging for other services, Scoot Pte hopes to offset its low ticket

prices. By removing the outdated video equipment, the airline was able to increase its seat capacity by 40 percent and still come in at a weight loss of seven percent. Weight, which directly affects the gas usage, is the biggest factor impacting ticket prices, accounting for approximately 40 percent of an airline's operating costs.

Economy class passengers will be able to rent iPads at a rate of US\$17.00 per flight. The devices will offer music, movies, games and television shows. iPads will be free to business class customers. While analysts are unsure whether the new practice will be sustainable in the long run, decreasing the weight of planes is undoubtedly a good step towards cost control. ■



## New safety policies for cruises

The global cruise industry has adopted three new safety policies, which are to be implemented with immediate effect.

The three new policies, which go beyond even the strictest of regulatory requirements, address the issues of passage planning, personnel access to the bridge and lifejackets.

Under this policy, each passage plan is to be thoroughly briefed to all bridge team members well in advance of its implementation, and it is to be drafted by a designated officer and approved by the master. To minimize unnecessary disruptions and distractions on the

bridge, access is to be limited to those with operational functions during any period of restricted manoeuvring or when increased vigilance is required. The number of additional adult lifejackets to be provided must not be less than the total number of persons berthed within the ship's most populated main vertical fire zone. This ensures that the number of lifejackets carried are far in excess of the number of persons actually on board the ship. ■

## Cheap fares can be pricey

Leading travel search site Skyscanner, which compares both 'no frills' carriers and scheduled airlines, has found that in many scenarios, low cost carriers can be more expensive than their full fare counterparts, depending on the travellers' individual needs.

Due to the complexity of the fare structures, with additional charges for check-in bags, food, seat selection, and different fees depending on how the flight is paid for, getting the cheapest flights now depends entirely on the individual's travel situation. ■

## Are Mac users being overcharged on booking engines?

Wall Street Journal reported Orbitz was steering Mac users toward higher-priced hotels than PC users, based on spending habits discovered by one of the site's algorithms.

Orbitz found Mac users on average spend US\$20 to \$30 more a night on hotels than their PC counterparts, a significant margin given the site's average nightly hotel booking is around \$100, chief scientist Wai Gen Yee told the Wall Street Journal.

CEO Barney Harford told CNN that Orbitz recommendation results are part of an attempt to pair customers with the hotel they'd probably pick. In this case, Orbitz will offer recommendations based on what other PC or other Mac users selected as their final hotel, on the assumption that spending habits are the same, he said. ■



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# Boil It, Cook It, Peel It – or Forget It

*Freshly squeezed juice? Really? Did you not read the safety rules?*

Text by Millis Keegan. Fact check by Steven Mednick, MD

**Travelling poses some real dangers, and they should not be ignored. Travellers have paid the price over and over again, many with their lives, many with lifelong suffering, and the main reason is ignorance. That's right, ignorance.**

We have listed the most common concerns, which will protect you in tourist areas. After a couple of trips, you will probably become more of a seasoned traveller, and you can start adding in common sense with the rules, which will allow you more 'freedom' with food and drinks. Travelling the road least travelled and beyond is a whole other matter and requires more preparation.

### Start at home

Be a good kid and take your medicine! Research the area you are going to and take your shots. A good web site for research is <http://wwwnc.cdc.gov/travel/destinations>.

There you can choose the country and get recommendations. Print them

out and bring them to your health care provider. Get there in good time before the trip. Some vaccines might need to be ordered, and that can take time, too.

See a health care provider at least four to six weeks before your trip to allow time for your vaccines to take effect and to start taking medicine to prevent malaria, if you need it. Do it even if you have less than four weeks before you leave.

Pack a well thought out First Aid Kit. If you will be travelling to remote areas, far away from any emergency room, ask for antibiotics—Tetracycline or Ampicillin.

### Hand hygiene is vital

Granted, we tend to

overuse anti-bacterial products in the safety of our own homes, and in the environment our bacteria is in sync with. This is different. While you travel, you are bound to go through places with lots of human traffic, like airports, train stations, buses and more, and you are in areas where your body is not adjusted to that type of bacteria. Keep your fingers away from your mouth, eyes and nose until you have sanitized them and do not drink anything that does not come out of a capped bottle. One trap is a cute child trying to sell you water bottles, chilled and tempting. If the seal is broken it has been refilled in the town well.

The risks are first and foremost traveller's diarrhea and cholera. The Peace Corps has a simple rule, easy to remember, easy to follow: Boil it, Cook it, Peel it or Forget it. At least, do that.

### The Cardinal Rules

#### Safe

**Food.** Hot and steaming is safe. Bread is safe. Marmalade, jam and syrup with high sugar content are safe. Rice and noodles if—you got it—they are cooked and served steaming hot.

Fruit is safe, if freshly peeled with your clean fingers. Citrus fruits have a high acid count, those are safe, so are cooked and steaming hot vegetables.

**Drinks.** Soda and water is fine, if in a factory-sealed bottle or a can or a tetra pack. However, you should probably wipe off the top of the can before drinking out

of it or use a straw. A neat trick is to use a wedge of citrus as a wipe around the opening. Where do you think the idea of a lemon/lime slice with a Corona came from?

Water is also safe if boiled or treated with chlorine or iodine, which can be bought off the Internet in most countries and should be in your First Aid and Preparation Kit.

#### Unsafe

**Food.** Room-temperature foods and sauces are unsafe. There are no if's, and's, or but's about it. Buffets? Well, choose carefully and follow the Safe Rules.

Previously peeled fruit, raw produce and ALL salads are off-limits. Unpeelable fruit and vegetables like tomatoes and grapes and berries are not safe in some countries where human feces is still used as fertilizer, and E-coli can be in the fruits and berries. It is not possible to rinse that off.

**Street vendors.** Avoid food and beverages from street vendors. That is part of the adventure for many though, and if you are a seasoned traveller, just use the rules and common sense, and you should be fine. But seriously, even the seasoned traveller should avoid raw and poorly cooked seafood.

**Drinks.** Avoid tap water and beverages not in factory-sealed containers and milk products, unless boiled or pasteurized. Avoid even wrapped ice cream. Use your common sense. Many

countries to which divers travel do not have a reliable power source, and money is tight. Half-melted ice cream gets refrozen, and the healthy milk bacteria can turn into a nasty cousin. Do I need to mention ice cubes specifically? Unless you freeze them yourself with bottled or boiled water, adapt and drink lukewarm sodas and consider yourself lucky if you get a fridge-cold one.

#### Paying the price

So, you forgot one of the rules, and you are paying the price. You've got traveller's diarrhea or cholera maybe. What do you do now? First, do not ignore the symptoms; do not believe that it will pass. These are serious conditions that very quickly can get very bad.

#### Traveller's diarrhea and cholera

Many things—E-Coli, Shigella, Salmonella, viruses and parasites—can cause traveller's diarrhea. The signs are usually diarrhea, with or without fever, and bloody stool. Cholera is a bit different. Rehydration is key for both. You should have been prepared and brought electrolytes in some form.

#### Signs and treatment

**Diarrhea without fever.** Take anti-diarrheal, which of course is in your First Aid/Preparation Kit. Follow the instruction on the package. If the symptoms are still there after 48 hours, get medical attention. Do not take aspirin with anti-diarrhea medication. Hydrate, hydrate and hydrate.





**Diarrhea with fever and bloody stool.** Take antibiotics. Some anti-diarrheal can be used, check before you go.

**Cholera.** Cholera must be distinguished from traveller's diarrhea. The stool is different. There is no blood, mucus or pus in the stools of cholera victims. An abrupt onset of voluminous watery diarrhea, dehydration, vomiting and muscle cramps is what you are looking for. The onset of the diarrhea is painless and explosive, and you easily lose liters (a gallon) of fluid EVERY HOUR. You will lose salt and water through the stool, and life threatening dehydration is next.

The frequent watery stools will very soon lose fecal matter and odor, and become more like rice water to its appearance. The diarrhea is not bloody, and there is no fever.

Mostly accompanied with vomiting, but not with nausea.

WITH NO TREATMENT, DEATH CAN OCCUR WITHIN HOURS. Immediately start rehydrating yourself, and head to a hospital. Simultaneously, if you can! Rehydration is the main treatment. In this case, oral rehydration solutions are essential. Using it at onset or as soon as possible have saved many lives. Drink 2-3dl (6-8 ounces) after each stool/bowel movement—or more, if you can manage, but not less.

If you can't drink, or if you loose more liquid than you can drink, you need to get to the hospital. If you are vomiting, you need to get to the hospital. If there is a delay in getting you to the hospital, like if you might be on a remote island, start taking Ciprofloxacin 750mg once daily for three days, OR Levofloxacin 500mg once daily for three days, OR Azithromycin 500mg once daily for three days. The adult dose is 250mg four times daily. This is not done instead of going to a hospital; it is to save your life while waiting for transportation. Make sure the medical staff knows what you took in preparation,

down to vitamins. The buddy system should be in the works here, your buddy should be involved from the beginning, since you might be too far gone in your own misery by now.

#### FIRST AID/PREPARATION

—What should be in your Kit

**For Rehydration.** Electrolytes in some form. If not available, you can make your own solution of salt, sugar and water.

**For Diarrhea.** Some kind of over-the-counter anti-diarrhea medicine

**Antibiotics.** Ciprofloxacin or Levofloxacin or Azithromycin

#### Simple Rehydration solution.

6 teaspoons of sugar  
1/2 teaspoon of salt  
One Liter (5 cups) of clean drinking or boiled water and then cooled. Stir the mixture until the salt and sugar dissolve. ■

EDITOR'S NOTE: ALWAYS CONSULT A PHYSICIAN BEFORE ADMINISTERING MEDICAL TREATMENT OR MEDICATION. VIEWS AND INFORMATION EXPRESSED IN THIS ARTICLE ARE GUIDELINES ONLY AND ARE NOT TO BE USED IN PLACE OF, OR AS AN ALTERNATIVE TO, MEDICAL ADVICE FROM YOUR DOCTOR OR OTHER PROFESSIONAL HEALTHCARE PROVIDER.



# „If the sharks die, the oceans will die!“

Andrew Cobb, Ambassador Sharkproject South Afrika



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