We all paused a moment—all of us caught by the sudden seriousness of what we were now doing. With this find, we were sure that this was the Soviet submarine S8—missing since October 1941

S8 lies on 55 m depth. At first, there was doubt about the identity, but divers have confirmed that the brass number on the conning tower says C8 (= S8)

The Soviet submarine *S8* was of the Stalinet's type. She left base in the Finnish Bay on 11 October 1941 and believed mined and sunk off Suursaari between 12-14 October 1941. She was discovered in 1991 in a location near Öland (see map page 30) by Marcus Runeson, Mats Karlsson, Stefan Fransson and Sture Hultqvist using a side scan sonar

A Soviet Submarine is Missing in Action ... somewhere in the Baltic

The Hunt For *S8*

Below some ragged pieces of wreckage lying on the bottom beside the hull, I see something a little out of place. It's more polished and more regular in its outline. I carefully descend and remove the pieces of metal that hide it. My colleague, Marcus Runesson, is above me providing ample light, making my task much easier. With the debris removed, I see that it is a brass plate shaped like the number eight—matching the letter "C" we earlier found up on the submarine's tower. I hold the eight up to show Marcus, and we share that moment of joy of having found another piece of the puzzle that is the wreck of this Soviet submarine just off the Swedish island of Öland.

Text by Carl Douglas
Photos courtesy of Deep Sea Productions

Together, we lifted the heavy plate and placed it beside the C on the deck of the hull, beside the submarine's fin. Marcus and one of the other divers of our team, Johan Alexandersson, carefully, positioned them as they once were placed by the proud crew. We all paused a moment—all of us caught by the sudden seriousness of what we were now doing. With this find, we were sure that this was the Soviet submarine *S8*—missing since October 1941. Yet another of the many Soviet submarines lost in the depths of the Baltic is found and identified. More families may now know the fate of their relatives, previously only listed as missing somewhere in the Baltic.

S8 background

The submarine *S8* was built in the town of Gorkiy—today, called by its old name of Nishniy-Novgorod—at the Krasnoje Sormovo-yard between December of 1936 and April of 1937. She belonged to a large class of submarines known as the S-class—meaning Srednaja or "medium". (Western observers initially, erroneously, reported the S to stand for *Stalinets*). The design of the class was of German origin.

Although Germany was prohibited from owning or developing submarines after WWI, development did indeed continue—the yards simply moved their engineer-

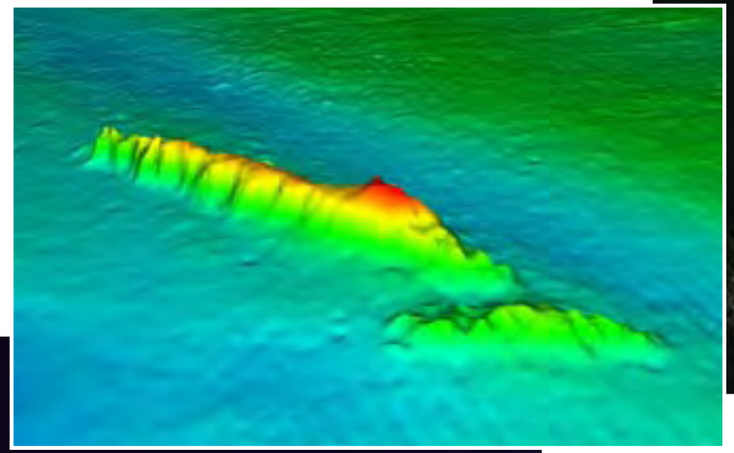
ing departments to Holland. Several countries, in addition to the Soviet Union, purchased designs from the joint firm, among them Sweden, Finland, Spain and Holland. The German engineers further refined the design, eventually resulting in the long-distance Type IX class for the German Navy.

The *S8* was commissioned into the Soviet Navy's Baltic Fleet on June 30, 1940. The first year was spent working up the crew and preparing for the war that loomed.

When Nazi-Germany attacked on June 22, 1941, the *S8* was based at the large submarine base at Ust-Dvinsk—today's Daugavgriva—just north of Riga, Latvia. Along with seven other submarines, she belonged to the 1st Division of the 1st Brigade of the Baltic Fleet. Shortly after the outbreak of war, the *S8* was sent to sea along with those submarines that were serviceable.

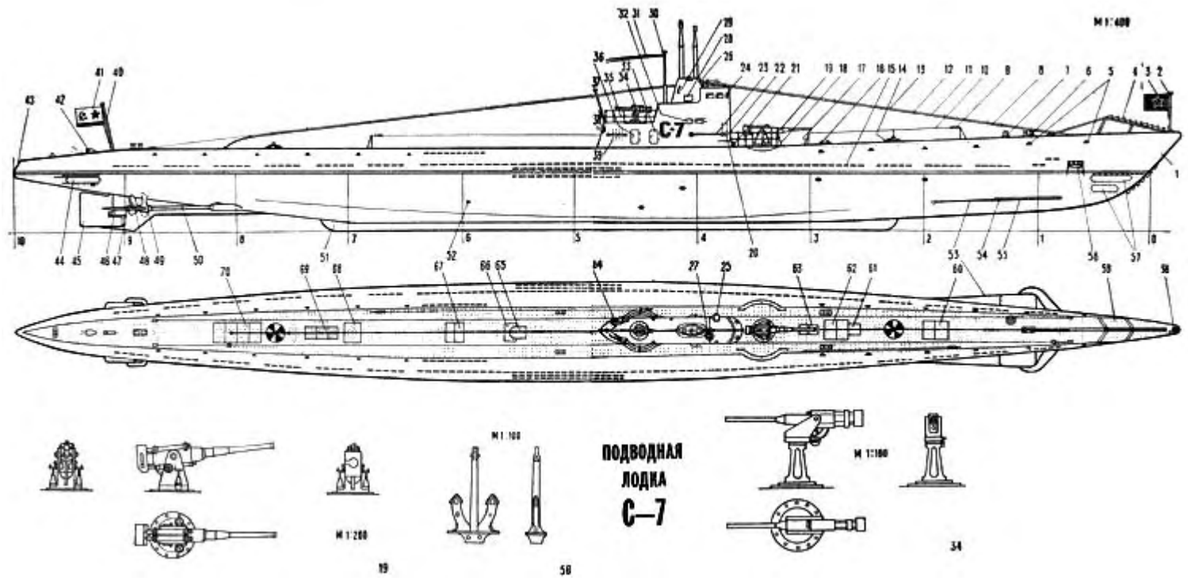
As the Nazis advanced, the Soviet submarines were forced back, first to Tallinn in Estonia and finally to the bases around Leningrad—today's St. Petersburg— at the end of August. It was not until early October 1941 that the *S8* could be dispatched for a full combat patrol, together with three other boats of the smaller SHCH-class.

The force was tasked with interdicting the shipping carrying iron-ore from neutral Sweden to Nazi-Germany in the area between Norrköping and the island of Öland.



The cannon on the foredeck, in front of the tower

The dial on the rudderindicator



Design of the identical sister-vessel *S7*

Baltic Wrecks

Just one of the four boats survived its mission and returned to its base.

On October 11, 1941, Captain Ilia Braun of the *S8* radioed what was to be his final report. He stated that he had reached a position just north of the Estonian island of Dagö in the Bay of Finland. After the *S8* became overdue from her patrol, it was assumed that she had been lost just after her last report, either from one of the thousands of mines Finland and Germany had sowed in the Gulf of Finland, or possibly sunk by another submarine (as had her sister ship the *S7* was later to be sunk by the Finnish submarine, *Vesihiisi*). Her crew joined the many millions of Soviet soldiers reported missing in action during WWII.

The discovery

In June, our group from Kalmar's Scubasport dive store left port to make side scan images of two previously located wrecks—the *Nicomedia* (one of four ships sunk by the Royal Navy submarine *E19* on October 11, 1915 and the *Emmy Haase*.

Along for the ride was also Sture Hultqvist with his homemade "lucky" side scan sonar. This equipment had previously located both the so-called "champagne wreck", *Jönköping,* where some 1,600 bottles of 1906 Heidsieck champagne were salvaged, and the Soviet submarine *S7*.

After completing the imagery and diving the *Emmy Haase,* the vessel headed south toward the other wrecks. The sea was very rough, and only Marcus and the young son of the skipper were not seasick.

Marcus consulted his charts and asked that a small detour be made, so that he could check a position, which some local fishermen had given one of our project leaders, Mats Karlsson. They had reported retrieving aluminium-parts from their trawls—most likely from the wreck of an aircraft.

Marcus picked up the story: "It was between nine and ten in the evening, and the sun was just setting. Stefan [Fransson], was at the helm, and I manned the side scan sonar. After just 15 minutes of searching around the position we had been given, there was a very clear wreck on the screen. I screamed out loud and ran down to get the others, lying below and being seasick."

They were a bit slow to make their way up to the bridge—Mats thought Marcus was joking with them. But after a while, both Mats and another of the group, Sture, made the effort to come up to see what they had found.

What they saw on the screen was an elongated cigar-shaped object. What could it be? An airplane or some unknown mystery-ship? A torpedo boat or another type of long and narrow vessel? After doing another few turns over the position of the wreck, the group decided to head south to the wreck of the *Nicomedia* to get the side scan images they needed, and then return to dive the mystery-wreck in the morning.

ABOVE: Author and team member Carl Douglas
FAR LEFT: Latern on the port side of the turret

Hatch

The first dive

At six in the morning, Mats was still too seasick to dive, so Marcus and another diver in our group, Stefan Fransson, made the first dive on the new wreck. All they had was air, so the plan was to just make a very brief dive to try to ascertain what was down there.

It was at a depth of 45m where Marcus first saw an outline of a hull on the bottom. Lit up by his torch light, he saw an anchor, some sort of hand rail and a half moon-shaped porthole without glass. Although affected by nitrogen-narcosis, Marcus and Stefan spent another ten minutes on what they agreed was the bow of some sort of ship before ascending.

How did it look? We haven't been able to find an image of the *S-8*, but this is the *S-9*

UBOAT.NET

Baltic Wrecks

On the surface, the rest of the gang waited anxiously. Sture was using Photoshop to make the side scan images more clear. When the divers reached the boat, Mats called out the question on everyone's mind, "Was it an airplane?" and Stefan answered with irony, "Do airplanes have anchors?" After listening to the divers' report and analysing Sture's images, the group arrived at the startling conclusion that they had probably found a submarine.

Back in Kalmar, they contacted the maritime historian, Björn Åkerlund, who started searching for clues in the available literature. Nowhere was there any indication of a submarine sunk in the area where the wreck was found. As the research continued, they focused more and more on submarines lost during the First World War. The main reason behind this was that due to the improvements in communications during the interwar years, more is known about where submarines were lost during the Second World War. In the earlier war, the very primitive radios available meant that very little could be known about how and where many submarines were lost.

The group arrived at a list of possible submarines that could be the one they had located. The most likely candidate was the Russian submarine *Lvitsa* (lioness) lost on or about June 11, 1917, somewhere south of the island of Gotland. Other possible choices were the British Royal Navy submarine *E18*, the sister boat of *Lvitsa* called *Gepard* or possibly some unknown German boat.

Mission: Identify and Document

Immediately after coming ashore after finding the wreck, Marcus called the undersigned and wanted me to come document the wreck and, naturally, try to identify it. The group also informed the media of their find, which led to a lot of speculation as to what it was they had found. On the Russian side, there was great scepticism as to the possibility that it could be the *Lvitsa*.

Finally, one month after the initial discovery—after a number of aborted attempts on account of weather—we left port on July 29 to try to ascertain which submarine it could be. On the way out, I went over with the group the various details on the hull for which we would be looking in order to try to at least narrow down the number of possibilities. I went over such things as the shape of the fin, the shape of the conning tower, the placement of the rudders, anchor and hatches, the hull cross section and measurements, the types and placement of any deck-guns, and the number of torpedo

S8 Data

Crew: 46 men
Length 77,75 meter
Width: 6,4 meter
Draft: 4,06 meter
Displacement: 1,090 ton submerged
Maximum diving depth: 100 meter

Armament: One 100mm cannon gun with about 200 rounds). One 45mm cannonwith about 500 rounds). Six 21-inch (533mm) torpedotubes (4 in the bow and 2 in the stern) with a total of 12 torpedoes.

Propulsion: Two Kolomna diesel-engines (with a total of 4,000 shaft horsepower). Two electric motors (with a total of 1,100 shaft horsepower). Two axles with two three-bladed propellers.

Maximum speed: 19,5 knots surfaced and 9 knots submerged using the electric motors.
Fuel: about 100 tons

Range:
9,500 nautical miles at 10 knots.
3,380 nautical miles at full speed
9 nautical miles at full speed submerged. 148 nautical miles at 3knots submerged

LEFT: Map of the Baltic Sea region
BELOW: Propellor of the wreck

Baltic Wrecks

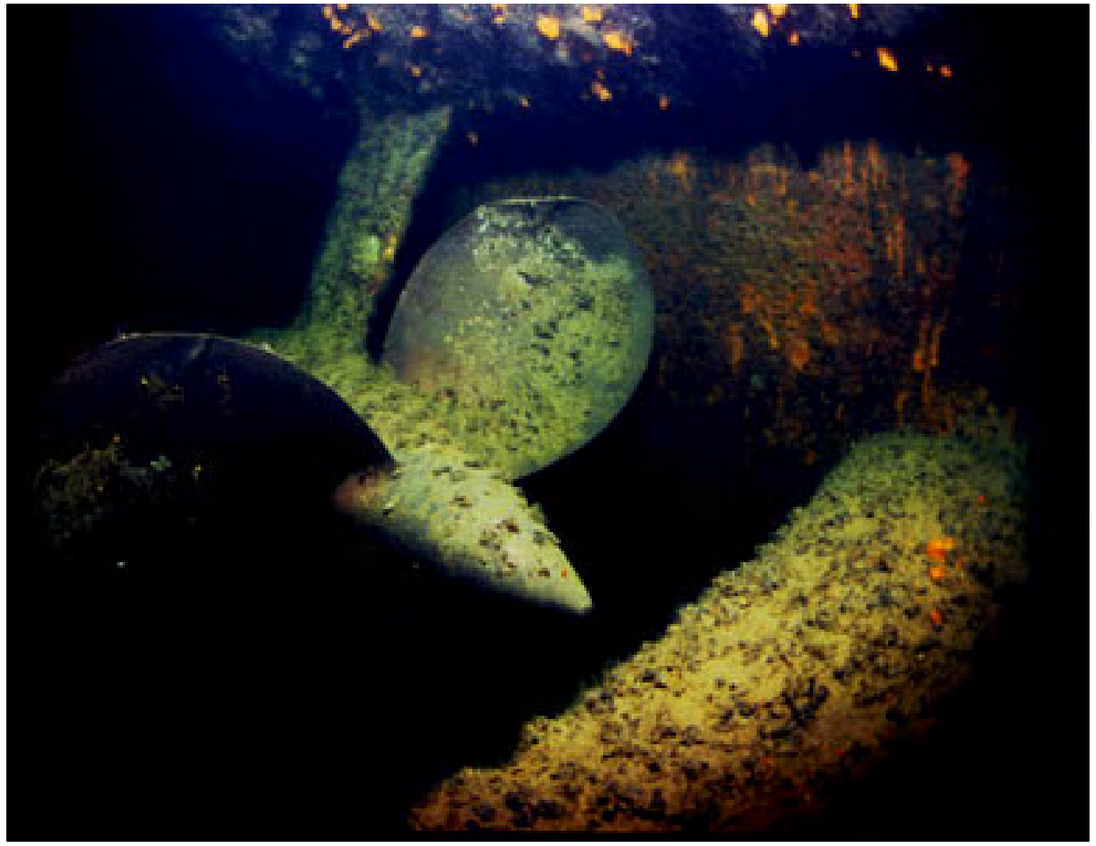
tubes. For this dive, we would keep the number of questions pretty basic.

The first of our team in the water would be Johan Alexandersson and Jonas Dahm, with the task of photographing the wreck and any discernible details from my list. The second group would be the video team, consisting of Marcus, Lena Cloffe, Robert Westerberg and myself.

After giving the lead team a half hour of lead time, we jumped in, formed up, and descended into the darkness. Halfway down, we encountered Johan and Jonas, well into their decompression. They appeared content with their dive and signalled us to go on.

We proceeded down the line. It got darker and darker. Suddenly, I was on the wreck. I landed on the deck just aft of the fin and quickly adjusted the camera and lights. Visibility was very good—between 10 and 15 meters. The hull appeared to be in good shape, very little marine growth was visible on it.

What I saw around me, however, didn't look right at all. It was much too clean and streamlined in relation to the pictures I'd memorized of the *Lvitsa*, the *E18*, the *Gepard*, and the other possible candidates from WWI.



When I swam over toward the fin, I noted that the shape of the rear part for the fin and the little platform with its anti-aircraft cannon looked vaguely familiar. I took in the aft lantern, the railing around the platform, the shape of the actual gun, and the housing for the periscopes just forward of the gun. I tried to keep some healthy doubt and not fall

Historical Background to the Submarine War in the Baltic

In the autumn of 1941, the situation in Russia was desperate. The very existence of the country was being threatened. Nazi-Germany unleashed its blitzkrieg against the Soviet Union on June 22, and after only a few months, the situation was nothing short of catastrophic. The extremely rapid advance of the Nazi armies meant that Leningrad (today's St. Petersburg) was already encircled in September 1941, and Moscow itself very nearly lost. During the first five months, the Red Army is said to have lost some five million men killed, wounded, missing or captured – equalling its entire strength when the war started. No international aid was forthcoming, other than a trickle from an equally weak England. Nazi Germany, in the late fall of 1941, appeared invincible.

This was not a situation where the Soviet Union could ill-afford being careful. Unrestricted submarine warfare was ordered against all shipping in the Baltic. Neutral Sweden was desperately trying to stay out of the war, currying favor with both sides, exporting vital goods and materials to both sides. Swedish iron-ore from the far northern mines had flowed south to the hungry German industries of the Ruhr. During WWI as well, the Allies had tried to inderdict these supplies.

The Soviet Navy's Baltic fleet lost over 40 submarines during WWII During the first week after the German surprise attack alone, some 12 were lost. Most of the submarines lost were sunk in the

The Soviet Navy's Baltic Fleet lost over 40 submarines during WW2.. Most of the submarines lost were sunk in the minefields of the Bay of Finland

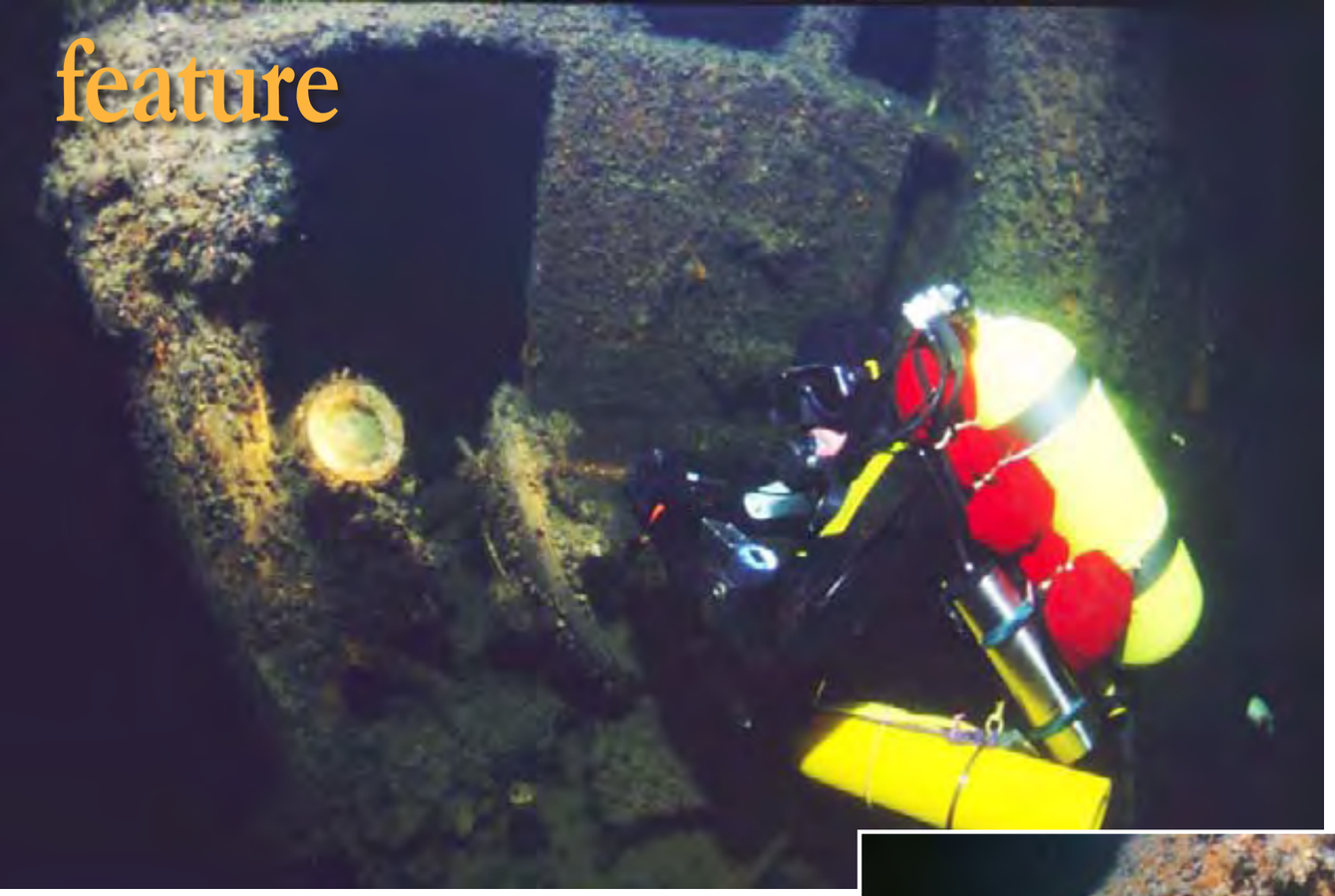
ABOVE: Position of the S-8. In 1941 the Soviet Union ordered unrestricted submarine warfare against all shipping in the Baltic. In an effort to bottle up the Soviet naval units in their bases in their surrounded fortresses at Leningrad the Germans and their Finnish allies planted arrays of minelines and minefields across the bay of Finlald with thousand of mines. In light of all this, for a Soviet vessel just to break out into the Baltic was a major achievement in itself.

What sunk the S8?

There are currently two main possible causes to the sinking of the *S8*:

1. That she hit a mine. There are several factors indicating this. Our impression is that the damage forward of the fin is more extensive on the lower parts of the hull. On the bow, there is a large section of the outer pressure hull missing, while the upper part of where the hull has been separated show rather less damage. Most metal-pieces point up — as if the explosion occurred below. On one of the sidescan-images there is something that might be a mine anchor a little distance from the wreck. It is known that the Germans planted a mine line across the Baltic to roughly this area.

2. That she was sunk by some form of cannon or rocket fire. There are a number of holes in the hull on both sides of the hull break that could be the result of shelling or rockets. Additionally, there are what might be shells from the *S8's* main 100mm deckgun — a sign that she was sunk in combat. What speaks against this theory is that there are no known reports of such an action in this area in either Swedish or German records. Possibly, the aircraft lying somewhere in the area could have been involved. ■



THIS PAGE: Scenes from the wreck in the Baltic Sea

Baltic Wrecks

immediately for the too obvious, easy answer to our questions.

I continued swimming along the deck beside the fin. A little further, I had to acquiesce to my initial gut reaction—this was a sister ship to the *S7*, the Soviet WWII submarine we had discovered the year before, north of Stockholm. I looked over to my dive buddy Robert, and we both nodded slightly. He had noticed the same things that I had.

My first thought was that this sub was not supposed to be here. In all my research, I had found no indication that any Soviet submarine had been sunk in this area. It's naturally an absurd thought—it's here, after all.

The Swedish export of iron-ore to Nazi-Germany was and is controversial. It is clear that it contributed to the Nazi war-machine.

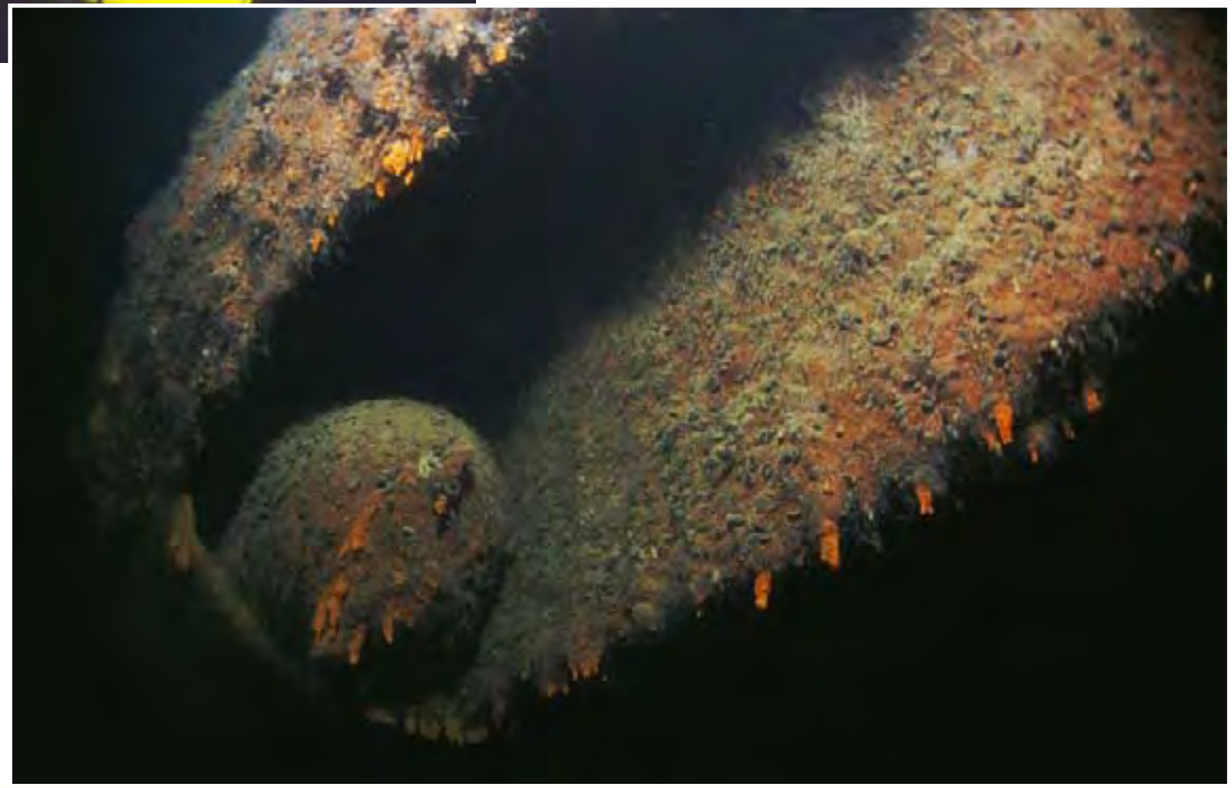
We made our way forward. Marcus and Lena swam ahead, and Robert helped me with lighting. We noticed that the forward section of the fin showed severe damage, and that the main 100mm deck gun was missing from its place in front. The explanation came a few meters later. It was as if a giant wielded an enormous axe cutting the ship in two. The cut was very clean; just a meter aft of the cut, the hull was intact.

I swam on toward Marcus' light. He had found the bow section lying on its side a few meters away to the right. We moved on and inspected the characteristic net cutter in the bow. I videoed the entire bow with stabilizers, anchor and all the details that I could find, in order to ease final identification.

Going aft again, we looked at the port side of the fin. The weather shield had been completely torn away. We looked straight in on the bridge with a rudder-indicator and opened the hatch. We peeked down and saw all the way down to the main deck inside the sub.

In the stern, we inspected the props and rudders. To my surprise, I discovered a torpedo a quarter of the way out of the port aft torpedo tube. It appeared to be stuck just outside the port of the tube. Suddenly, my lights go out, indicating that it is time to go. After 30 minutes on the wreck, we start the ascent to our first decompression stop.

Immediately after the dive, we gathered to look at the video and to discuss what we had discovered during the dive. Marcus explained that what he had seen on his first dive was actually the net cutter and anchor in the bow, thinking the former was a railing of some sort. Jonas



The aft torpedo tubes

mine fields of the Bay of Finland. In an effort to bottle up the Soviet naval units in their bases in the surrounded fortress of Leningrad, the Germans and their Finnish allies planted many thousands of mines in an array of mine lines and mine fields. In addition, there were underwater nets and cables. These were protected by scores of armed vessels and aircraft patrolling above, ready to hunt down any Soviet submarines that dared venture forth. In light of all this, for a Soviet vessel just to break out into the Baltic was a major achievement in itself.

All told, some 66 Swedish steamers were sunk in the Baltic. Two hundred and three Swedish sailors lost their lives, and some 50 suffered debilitating injuries. On the other side of the equation, 94 Swedish vessels were sunk in Allied service and some 1,379 sailors lost their lives.

The export of iron ore to Nazi-Germany was and is controversial. It is clear that it contributed to the Nazi war machine. It is also clear that the fact that the export was allowed to continue kept Sweden out of the war. Neither can the importation of vital supplies from Germany to Sweden be ignored.

The Swedish government did what it could to maintain our freedom and independence—regardless of the moral questions raised then and now. Was it worth the price? Is it possible to judge in retrospect? My view is that we should study and learn from history—and not always pass judgement based on our knowledge and our morality. ■

told us about the letter C he had seen on the port side of the fin. None of us saw it, but fortunately my camera did. The letter is very obvious in the video. We take this as confirmation that it is indeed an S-class boat (in Russian the letter C is pronounced as an S).

Following some discussion and checking in some books, we decided that this sub could be any one of several—among them S2, S4, S6, S8 or S10. All of these were lost during the war in such a manner that one cannot be 100 percent sure of the exact location of the sinking. But which one was this sub? How do we figure this out?

Ever since the notorious submarine-intrusions during the 1980s, any news concerning Soviet subs have been front page news in Sweden. Somehow, the media found out that we were out diving the wreck. Immediately upon our return, journalists started hounding Marcus and the others.

It is impossible to imagine what it is like to have information that the media wants. The group from Kalmar got a quick lesson. There was enormous pressure for them to release our findings. After a few days, the news was released, making the covers of several national newspapers and the national TV newscasts on three networks.

Another attempt …

We returned on August 18th to dive the wreck of the sub again. This time, we had enlisted the help of a Russian dive buddy, Max Mikhaylov, to come with us to Öland. Normally, he is an IANTD instructor and, at the time, ran a dive center in the Maldives. But he just happened to be visiting us when we planned to dive the mystery submarine again.

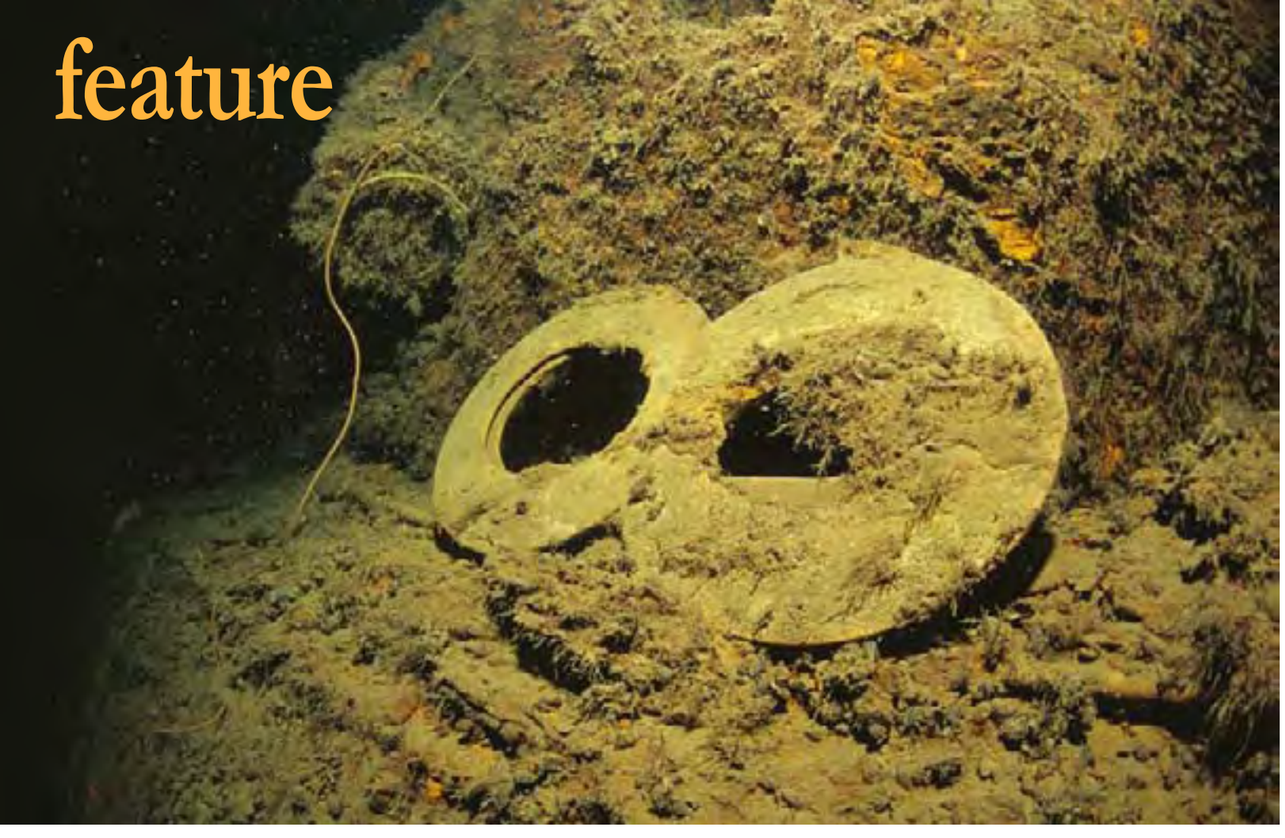
For him, the coming dive would be a deeply personal quest. He served as a diver in the Soviet Red Banner Northern Fleet in the Kola Peninsula and his father was an officer in the Navy. He naturally felt connected to the crew of the sub and was committed to helping us identify her.

The purpose of the following dive was clear to all—to attempt to ascertain which submarine we had found and to gather information as to how she came to rest where she did. We decided to focus our work around the fin and the area around where she was broken in two. We would spend more time studying these areas in detail to try to answer our questions.

This sub could be any one of several—among them S2, S4, S6, S8 or S10. All of these were lost during the war in such a manner that one cannot be 100 percent sure of the exact location of the sinking. But which one was this sub? How do we figure this out?

Again, we were lucky, and arrived on the wreck at the fin—this time, just forward of it. We began the dive on the port side of the fin. Max swam around the fin and took in the scene of the wreck. Marcus and Johan inspected the compass hanging down from the wrecked side of the fin. In front of my camera, Johan began to clean and polish the letter C also hanging there. While filming, I look around and discover the brass number 8. After documenting this find, we again move forward and examine both sides of the break in the hull.

Mostly twisted metal, it is difficult to even imagine how it might have looked 50 years ago. After ten minutes, Max signals that his suit is leaking and that he is leaving us. When Johan and I leave the bow area and swim along the starboard side of the hull, we find another set of brass C and 8.



The figure '8' of the brass identification plates for the *S8*

After examining the smaller 45mm gun, we again leave the wreck and begin our journey toward the surface.

A very content group returned to shore. After warming up the thoroughly frozen Max, we all shared our observations of the wreck. We had discovered further pieces of the puzzle that this wreck presented. We were all touched by the intense emotions felt by Max after having dived this wreck. The discussions on the way home mostly dwelt on this subject. We all considered what it really meant to dive on wrecks where people had perished.

Back ashore, Max called Alexander Nortchenko of the Russian Navy Submarine Veterans Association in St. Petersburg. He told him about our dive and about the brass figures we had found. Nortchenko was very intrigued by this—he explained that it was a common practice to use brass figures during the 1930's, but that it was strictly prohibited from about 1940. He had no information of it occurring after this period. However, he did believe that some submarine-captains did use unique marks, such as the ones we had found on the *S8*, in order to raise the morale of the crews.

Max and Nortchenko agreed that the sub we had found was the *S8*, despite that it was found in an area other than where it had been reported sunk in 1941. It couldn't really be any other ship. Nortchenko did not believe any other submarine of the S-class had any reason to be in the area.

The *S8* today

Today, the wreck of the *S8* is a protected site. No diving, fishing, anchoring or any activity that might disturb this war grave is permitted by Swedish law. This is in accordance with the wishes of the Russian government, which takes a very active interest in these wrecks.

A memorial service similar to the one held at the site of *S7* was held on the deck of a Russian Navy destroyer. In Russia, this issue is very emotional. The incredible losses sustained by the nation during WWII means that every family lost dear ones. Thus, the war is not just history, but something that is still very much kept alive.

With one exception, the wreck is exactly as she was when she was discovered on June 19. The number 8 once again adorns the fin of the submarine, beside the letter C. No objects have been salvaged. All of us that in various ways have been involved in this project hope that she will remain intact.

Personally, I think Max described it best when he spoke of the *S8* and her ill-fated crew: "The submarine was their home. They were proud of it. The worked with it, polished it and improved it. The vessel is still their home. When we dive we visit their home. You ask permission to visit—which I think they give, if they see that you just want to visit them and show your respect."

As to her demise, I believe it is more likely that the sub hit a mine. My hypothesis is that the *S8* lost the use of her radio on October 11, but that Captain Braun decided to proceed with his mission despite this. His objective was to gain access to an area south of the island of Öland in order to hit the iron ore transports along the Swedish coast. In this area, there is no protective archipelago, and the transports are forced out into the open ocean. Braun, and the other three commanders in their group, had most likely divided their operational area between Norrköping and Öland into separate zones for each submarine, and that of *S8* was the southernmost one. The open turret hatch would indicate that the *S8* was on the surface at night, charging her batteries while carefully inching her way south.

During the summer of 1941, the German Navy had placed a number of mine lines between Klaipeda, Latvia, and the southern tip of Öland. Their objective was to prevent any Soviet naval units that might escape the battled fortress of Leningrad from reaching the southern Baltic.

The Germans wanted to protect the vital iron ore trade but also the training of their own submarine-crews. These mine lines started just outside the Swedish three-mile limit. Sweden also placed mines in the area, stopping just inside the German mines. Captain Braun was most likely trying to exploit this gap between the German and Swedish mines.

We are unlikely to ever know for certain what exactly happened, but like other mysteries in the Baltic this does not prevent us from trying to solve the question. ■

The Project

Project leaders: Stefan Fransson, Mats Karlsson and Marcus Runeson.
Sidescan operator: Sture Hultqvist
Research: Björn Åkerlund
Divers: Marcus Runeson, Stefan Fransson, Lena Cloffe, Robert Westerberg, Johan Alexandersson, Jonas Dahm, Max Rite, Johan Candert and Carl Douglas.
Crew of *KR71*: Jimmy Johansson, Peo Johansson and David Mölleberg

Dive depth: 54m at the bottom, 49m at decklevel.
Dive times: 30 minutes bottom time; between 40 and 50 minutes decompression.
Bottom gas: Trimix 18/30 (18% O2; 30% Helium)
Decompression gas: 50% Nitrox from 21m and 100% O2 from 6m.

Sources

Interviews with Björn Åkerlund, Björn Rosenlöf, Lennart Lindberg, Alexander Nortchenko and Nikolai Voukolov.

Polmar, Norman and Jurrien Noot. *Submarines of the Russian and Soviet Navies 1718 – 1990.* Annapolis: Naval Institute Press, 1990.

Meister, Jürg. *Soviet Warships of the Second World War.* London: MacDonald and Jane's, 1977.

Lundberg, Lennart. *Krigsmalmens Offer* Danderyd: SÅ-Åkeriförlaget, 1993.

Ekman, Per-Olof. *Havets Vargar: Ubåtar och Ubåtskrig i Östersjön.* Esbo: Schildts Förlag AB, 1983.

Ekman, Per-Olof. *Sjöfront: Sjökrigshändelser i Norra Östersjöområdet 1941-44.* Esbo: Schildts Förlag AB, 1982.

Trading in treasures from the past: — The illicit recovery and movement of artefacts from shipwrecks

Trading in Treasures

Text by Arnold Weisz
Photos courtesy of UNESCO, Enrico Cappeletti and Peter Symes

Today, some of the world's most important legacies of our sea-faring heritage are being looted for profit. With the technology that is available to divers today, more and more shipwrecks are becoming reachable. Not only to amateur divers, marine archaeologists, but also to treas-ure hunters.

Shipwrecks are cultural resources, but they also fall prey to trophy hunters and profeteers who trade in illegal histori-cal artefacts. Looting of shipwrecks has existed as long as there has been sea transport. There is a market for illegal antiques retrieved from shipwrecks. Over the last 20 years, as the antiquities mar-ket has exploded, looting has reached epidemic proportions, according to the Illicit Antiquities Research Centre in Cambridge, England.

This is happening all around the world.

Crude salvaging operations and delicate archeological excava-tions are not a good match

ROV's have reached further into the oceans than divers. The new technologies prove to be both a blessing and a curse for archeological artifacts resting on the bottom of the sea

A UNESCO report asserts that as early as 1974, studies showed all known wrecks off the Turkish coast had already been pilfered. Furthermore, it is estimated that at most of the approximately 600 antique wrecks, which are known to lay off the coast of France, only a mere five percent remains untouched.

Cultural heritage lost

Shipwrecks have always attracted sport divers. They are lured to wrecks by stories of silver coins, gold bars, Roman amphorae, cannons and crates of Chinese porcelain. Many are genuinely interested in a ship's history and what led to its demise. Others are just interested in collecting brass objects, bells or other artefacts. This small scale retrieval of artefacts, sometimes done by sports divers, is having an impact on historical sites.

On the other hand, the organized looting of historical shipwrecks by treasure hunters is having a far more destructive impact than the removal of random artefacts. Looters or treasure hunters have no regard for the historical and cultural valuu of the artefacts they salvage. Neither do they have any respect for the potential benefit to the public.

The artefacts illegally retrieved from shipwrecks are sold to private collectors and mostly disappear from the public view forever. Illegal treasure hunting on shipwrecks is not only dispersing historical artefacts into the homes of private collectors, but also wreaking havoc on the wrecks. Often, these treasure hunters destroy large parts of the wreck that hold no interest to them, but could prove to be invaluable to underwater archaeologists.

Deeper and deeper

The introduction of the underwater metal detector opened a new era for underwater treasure hunters. This, combined with ever improving equipment and diving techniques, has increased looting.

The last few years have seen an increase of sport divers being able to go deeper and deeper into the ocean. Diving that used to be restricted to professionals is now pursued by amateur sport divers.

The equipment needed for dives down to 100 meters is readily available at an affordable price. Mixed gas diving is no longer a hazardous activity just done by offshore divers, but an intricate part of the sport diving community. Equipment used to search for wrecks like side-scan sonar's can be bought on the Internet.

Nobody should draw the conclusion that anyone entering the water in diving equipment armed with a metal detector is an looter. Around the world, the scuba diving community has been of great assistance to many archaeologists and museums. Many displays in museums and famous findings of great historical and cultural value can be seen by the public

Who wouldn't like to uncover treasure like this? Alas, even if you did, it wouldn't be yours to keep

PETER SYMES

thanks to vigilant divers.

Archaeologists are much more concerned about the large scale commercial treasure hunters, who have done some spectacular and well publicised recovery operations over the years. Gold and silver coins and other valuable artefacts have always triggered the search for treasures under the sea.

The International Council on Monuments and Sites (ICOMOS) published their Global Report in 2000 where they pointed out that the threat of looting affects particularly underwater heritage sites as treasure hunting is facilitated by new technologies and markets. This problem is most likely due to insufficient international and national legislation protecting underwater heritage sites.

A billion dollar business

The international traffic in stolen, looted, and illegally exported art and antiquities rivals in monetary value the illegal trades in drugs or people. Trade in looted antiquities has been estimated to be in the billions of dollars.

Not only do the looters have new tools for their disposal, the traders and buyers of looted artefacts also have easy access to each other. The appearance of new ways of marketing and selling illicit cultural artefacts, such as mail-order catalogues and Internet auctions have made the access to markets a lot easier.

Internet sales in particular have opened the market to millions of potential new customers and are virtually impossible to police. Policing the traffic of antiques is very difficult, but tracking the legal trade is not that easy either. The disparity in how different countries regulate and classify their trade of antiques makes it hard to estimate even legal trading.

According to estimates by various sources, there are some three million undiscovered shipwrecks scattered across the world's oceans. Even though the number of wrecks with a known position is far less, there are still enough wrecks to make this a big business. Some of the wrecks found over the last 30 years have unveiled enormous values.

"Treasure hunting is driven by commercial logic and not by the concern for increasing our knowledge of history," explains Mounir Bouchenaki, Assistant Director-General for Culture at UNESCO.

Odyssey Marine Exploration, one of the largest recovery companies in the world, annouced in May, 2007, that they had recovered over 500,000 silver and gold coins from a shipwreck. The 17 tons of artefacts were recovered from a wreck whose name is kept secret, but code named "Black Swan".

The company states in a press release: "The work accomplished to date on this site has diligently followed archaeological protocols using advanced robotic technology, and the artifacts are now undergoing a meticulous conservation process by some of the world's most experienced coin conservators."

The company is in a legal battle with the Spanish Government over the finds. The dispute is a result from Spain's claim that it has a right to a share in a treasure if it was recovered in territorial waters or is connected to the nation's heritage in any way.

UNESCO's website says that famous wrecks such as the *Geldermalsen*, the *Nuestra Signora de Atocha* and the *Tek Sing* have been destroyed by treasures hunters.

Michael Hatcher, made a profit of about US$15 million from the sale of Chinese porcelain he found in the wreck of the Dutch ship *Geldermalsen*, which sank in the China Sea in 1752. Mike Hatcher and his Swiss partner, Max de Rham, discovered the wreck of *Geldermalsen* (or the Nanking cargo) in May, 1985, in the South China Sea.

Christie's, the world's biggest auction house, sold the pieces off for a while, but then quietly stopped, probably because of the controversy and legal problems raised. We asked the auction house how they make sure that all the items they auction through Christie's are legal.

"As a matter of policy, Christie's will not sell any lot that we know or have reason to believe is inauthentic, counterfeit, or illegally recovered. This applies to all property that we offer for sale around the world, from fine art to collectibles, from furniture to wine. We take all appropriate steps to establish authenticity and ownership, and work with the leading experts, authorities and institutions in the relevant field to research the property that we sell," said Maarten van Gijn in Christie's public relations and marketing department.

The auction house opted not to answer our questions regarding the sales of the Nanking cargo even if they have chosen to highlight this on their website: "Since it opened in 1973, Christie's Amsterdam has taken a strong lead in certain sale categories, notably sunken treasures recovered from shipwrecks... In 1986, Christie's Amsterdam sold the word-famous Nanking Cargo—a trove of more than 150,000 pieces of 18th century Chinese porcelain and gold ingots—for more than 37 million guilders."

Time capsules

The past is a part of the present and the future. Shipwrecks are time capsules that contain invaluable historical information. First of all, a shipwreck represents a moment of a bygone era. A shipwreck portrays life aboard the vessel, and how it unfolded on the ship until it sank. Artefacts and finds of human remains can tell untold stories about the people who worked and travelled on the ship. Besides the information directly linked to the ship, a wreck often holds a lot of unknown historical information about life at the time it existed. Random collecting and organized looting leaves irrepairable damage to many historical shipwrecks.

Legal protection

The legal protection of underwater cultural heritage sites such as shipwrecks, scales from non-existent to the highest standard. The disparity in the strengths of legislation between different countries on the protection of heritage sites leaves gaps in international law that enable treasure hunters to operate from a merely commercial perspective.

There have, however, been some significant steps forward taken in protecting our maritime past. It started in 1970 with UNESCO's Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property. This

Treasure

PETER SYMES

Nice mementos from a good dive. But can you keep it? It all depends. In some countries, you can apply for a permit

was the most important international convention dealing with the problem of the illicit movement of cultural heritage.

Continuing the work in 2001 came UNESCO's Convention on the Protection of the Underwater Cultural Heritage, which was adopted by the general conference in its 31st session. It aimed to encouraging states to join the convention and raise public awareness of the need to protect underwater cultural heritage sites.

Of course, not all countries follow the rules laid out by these conventions. For example, during the period of 1993-95, the Portuguese legislation allowed for the sale of artefacts of archaeological excavations. Following this legislation, at least six international treasure hunting companies set up operations in Portugal to exploit the rich underwater cultural heritage found off its coasts. The legislation was finally frozen in 1995 and repealed in 1997, allowing for a revival of scientific underwater archaeology in Portugal.

A report from the Swedish National Council for Crime Prevention states that "trade between EU member states is not subject to regular customs checks. The focus has now been shifted to goods that enter the EU from third countries. The risk of being discovered for illegally moving stolen goods within the EU is minimal. In addition, individual customs officer's knowledge of cultural objects is restricted to customs controls. Much greater expertise is needed to suspect the illegal movement or import of cultural objects."

Prosecution

Many countries have started protecting their underwater cultural heritage, through lawmaking. Many countries have laws protecting shipwrecks and regulating the ownership of shipwrecks.

On the other hand, laws alone will not render the protection of shipwrecks. It will take many more steps in action to accomplish this.

Investigating and prosecuteing looters and illegal sales of artefacts from shipwrecks is an important way to address the problem. Police forces around the world often have limited resources and have to give priority to crimes that have a more visible impact on society. Thefts of cultural objects are therefore most often regarded as a marginal problem by the police compared to other areas.

Stolen object registers are not always suitable for cultural objects. Even though there are attempts to coordinate the efforts across borders in investigating illicit movement of historical artefacts, different practises often prevent investigations from being done efficiently. In Sweden, for example, there are no photographs of the objects in the stolen goods register, which makes identification difficult. Photos are included in Danish police registers, but police working methods can cause problems. Not all objects are registered nationally and may require searches via local websites.

Jewellery recovered from the Italian wreck *Polluce*

PETER SYMES

Dutch porcelain retrieved by sportsdivers in the Baltic

We asked Pål Nymoen, who is a researcher at the Norwegian Maritime Museum in Oslo, if Norway has good enough protection of its underwater heritage. "Not at all," he said, "The legal framework, control of diving operations and and the control of export of items recovered is far too inadequate."

In recent year, there really have not been any large scale recovery operations of artefacts from any commercial operations in Norway. And according to Nymoen, looting done by amateur divers or collecters is not a great concern.

"They are a minority amongst the diving community here, but even they can inflict great damage on wreck locations. On the other hand, by far the worst offenders are the authorities, like the Norwegian Coastal Administration and the oilcompanies," said Nymoen.

Nymoen raises an important red flag here. It is not only treasure hunters and mindless collectors who destroy shipwrecks or archeological sites under water. Around the world, people and machines are taking a toll on such sites, as they work on their building projects.

One of the main responsibilities of the Norwegian Coastal Administration is improving coastal channels and constructing and maintaining fishing ports. This kind of activity often compremises archeological findings under the sea.

The real culprits

Who are the real culprits? The looters, the traders or the collectors? The legal issues are complex, as countries take different approaches to such issues as the private ownership of ancient cultural artefacts and the equation of illegal export with theft. The looting of cultural material will only stop when collectors, museums and dealers refuse to buy unprovenanced objects.

There is an increasing number of reports that the illicit trade of artefacts and antiques is linked to organised crime. A constantly increasing private demand for archaeological goods, the lack of scruples by people connected with the illegal trade of the objects, and the increasing involvement of international organised crime, have over the past few years given the market for artifacts and objects of art a new and extremely worrisome dimension and character. Archaeological objects and works of art are ideal for money laundering because they are fungible and easy to sell. ■

SEACAM

silver

www.seacam.com

Edited by
Arnold Weisz

THE FACTS AND VIEWPOINTS IN THIS SECTION ARE NOT NECESSARILY THE VIEWS OF X-RAY MAG. EQUIPMENT PRESENTED IN THIS SECTION HAVE NOT BEEN TESTED BY X-RAY MAG STAFF, NOR ARE THE ITEMS WARRANTEED. INFORMATION PROVIDED IS CONDENSED FROM MANUFACTURERS' DESCRIPTIONS. TEXTS ARE USUALLY EDITED FOR LENGTH, CLARITY AND STYLE. LINKS ARE ACTIVE AT THE TIME OF PUBLICATION

POINT & CLICK
ON BOLD LINKS

Gee Whiz Equipment

Diversitea Diversifies

After two years of development, Diversitea is releasing a new (and different) product line! Crystal Dolphin Bath Salts and Bath Tea are infused with Crystal and Reiki energy, then essential oils are added, which make them a unique bathing experience. Everyone who has tried them agrees that they are different from any bath product they have ever experienced. They can also be safely used in a Spa or Hot Tub. **www.diversitea.com**

Hand warmers

With a snap of the fingers, can be used to provide warmth during or after a dive. The Lava Pad is filled with a safe, non-toxic liquid. The Lava Pad is also availiable in smaller rectangular pads. To activate, snap the small metal disc inside causing the liquid to change. The Lava Pad instantly heats, up to 130 ºF / 54 ºC, with no outside power source. The Lava Pad can be used over and over again simply by boiling it in water until the contents change back to liquid form. **www.lavapads.com**

Fusion Tech

Whites now has a 1 mm neoprene skin available. This new Tech skin has a combination of 1 mm neoprene and lycra panels to ensure mobility is not compromised by the increased durability of neoprene. They have also added stylish new graphics to this skin to add fashion to diving. For those that already own a Fusion drysuit, the lycra skin can easily be removed and replaced with the new tech skin. The Fusion drysuit will be sold with the lycra skin, and the tech skin will be sold as a separate item.
www.whitesdiving.com

SV1 and SV2 Snorkels

The SV1 and SV2 streamlined snorkels are made as effective alternatives to regular snorkels on the market. Both SV1 and SV2 models are designed to make the snorkel self-draining and deliver effortless clearing. This design includes one-way valves that channel the water away from the mouthpiece allowing the user maximum comfort. The SV2 is designed with a semi-dry top with horizontal vents to defuse splashed water before it enters the barrel. Both designs feature a quick-disconnect snorkel keeper that allows 30 degree rotation, and a dial silicone mouthpiece, the same that is used with the company's regulators.
www.atomicaquatics.com/snorkel.html

Cressi Ellipse Steel / MC 5

The new regulator combining the Ellipse second stage with the brand new MC5 diaphragm first stage. According to Cressi, the performance of this regulator has been improved by a special assistance chamber that triggers off a strong Venturi effect between the central diffuser and the intermediate pressure outlets. The Ellipse is a light regulator, which has a weight—including the MC5 second stage and the yoke—of just 550 g.
www.cressi.it

Shark Radio

The radio shark connects to and is powered by USB. It can record any AM or FM radio broadcast in real time. The fin-shaped device acts as an antenna and can be positioned for best reception and recording. Any recorded broadcast can be transferred to an iPod or any other AIFF-compatible digital music player to replay on the go. The radio SHARK is shark and PC compatible. **www.griffintechnology.com**

Poseidon

The new Flexisuit from Poseidon combines the flexibility, weight and manouverability of a wet suit with the insulation of the dry suit. The suit is equipped with Kevlar reinforced socks with a thin and strong sole. The suit has a front zip. The sealing in neck and wrists are made of a special soft, stretchy neoprene. A range of accessories are available to fit the Flexisuit such as a rock boot, a hood and several types of gloves.
www2.poseidon.se

Immersion challanger

The Challanger dive watch has both an analog and a digital module, which enables the wearer to track the actual depth and temperature during their dive. The inbuilt memory tracks the maximum and minimum depths recorded as well as the maximum and minimum temperatures recorded during the dive as part of a 50-diver log memory system. The Challenger is also programmed to make real time calculations to activate a rapid ascent alarm. In poorer lighting conditions, their so.called all-day-glow lithium crystal display gives contrast and visibility, while an electro luminescent back light is also available and activated underwater via a tilt of the wrist for ease of use during dive mode.
www.immersion.it

Scubapro Bella BCD

Scubapro is introducing the Bella buoyancy compensator, specifically designed for female divers. The new Bella was developed around Scubapro's brand new wrap-around air bladder. The new full-wrap bladder retains its 360 degree cradle-like shape even when fully inflated. The result is a buoyancy compensator that actually "hugs" the diver throughout the full range of inflation. Additional Bella features include: contoured hip indents, cushioned shoulders, 3-dump deflation system, soft neoprene neck and padded backpack, fully-adjustable cummerbund, zippered cargo pockets, accessory D-rings and quick-release integrated weight system, with ergonomically-sized weight release clips. Bella is available with choice of balanced power inflator or AIR2 Alternate Inflator Regulator.
www.scubapro.com

Test RescueEAN

Matches, safety pins, zippers and pencils. Some ideas are blindingly obvious in hindsight after they have been thought out. The RescueEan pod is one such invention. It is a low-tech and easy-to-use gadget that enables divers to administer nitrox or oxygen from a scuba tank to a dive patient via a face mask. The kit is meant to fill a gap between what is the best solution—a real oxygen rescue kit, which is often not available right on the spot when and where an accident occurs—and administering basic first aid by making most of what is quite often at hand: tanks with nitrox. You simply connect one end of the pod to a low pressure inflator hose—it comes with a standard connector—such as your BCD or drysuit inflator hose and the other end to the mask and your all set. As easy as that. Twist the pod to control the gas flow rate. The little bright orange pod can easily be worn on a belt or clipped onto a BCD.

What I liked about the unit was that I was able to operate it with gloves on—and probably with stiff cold hands, too. It says on the package that it is "a lifesaving aid for *qualified divers*", and there is a cautionary note in the instruction leaflet that it is only to be used by persons who have received adequate training from qualified medical personnel. I think that is nonsense and probably just a legal precaution aimed at the litigious US market. The unit is so straight forward to use, and if someone is about to die or get injured, try and save him by all means. You can only make the situation better. The RescueEan pod is not a replacement for a real oxygen kit and can't substitute proper training, but it is a piece of very useful equipment that you can bring with you on your dive and possibly buy you very valuable minutes until professional medical attention can be provided. It is a cheap insurance. I would not be too surprised if the characteristic orange canister became a common sight on dive boats around the world. I've got one in my kit bag already. **www.rescuean.com**