

SUBAQUA

JANUARY/FEBRUARY 1995 VOL. 5, NO. 1

JOURNAL

\$6.95



ARTIFACTS

Dive Planning Redefined

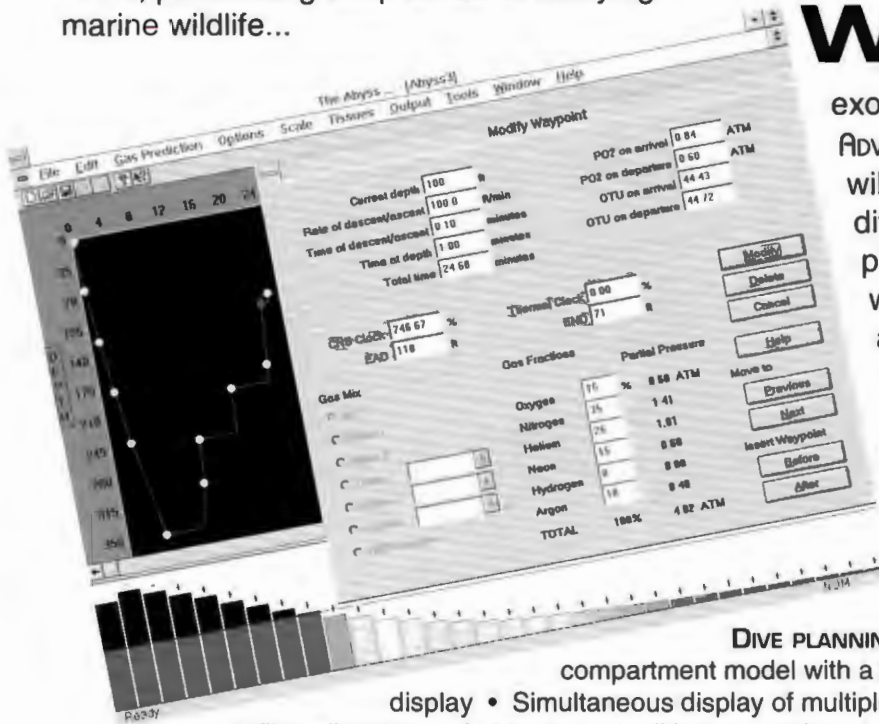
Abyss™

ADVANCED DIVE PLANNING SOFTWARE

Finally there's a tool to help you plan, log, and analyze every aspect of your dive. Whether you prefer leisurely Caribbean diving, exploring the Andrea Doria, penetrating deep caves or studying marine wildlife...

Whether you like to breathe air, nitrox or exotic mixed gases... **Abyss** ADVANCED DIVE PLANNING SOFTWARE will let you spend more time diving and less time planning. And provide you with extensive dive logging and expedition record-keeping in the bargain.

Once you begin to dive with **Abyss** you'll wonder how you ever got along without it!



DIVE PLANNING TOOLS: Advanced 32 compartment model with a 256 color, graphical tissue display • Simultaneous display of multiple dive profiles • Fully editable profiles allow forward or backward editing at any time • Multi-day profiles by linking individual dives together. • On-Line help & glossary with hundreds of diving & hyperbaric terms • 800+ User Definable Defaults • Multiple diving algorithms • Initial surface altitude. 0-14,000ft. • Alarms: PPO2, CNS Tox & Narcosis. • Descent & Ascent Rates (0-150f/m) • Imperial or Metric units • Workload and Gas Consumption.

AUTOMATIC STATUS TRACKING: Current depth, Time to next depth, Time at depth, Total dive time, Arriving & Departing PPO2, OTUs, EAD, END and CNS Toxicity for each waypoint.

EXTENSIVE DIVE LOGS AND RECORD-KEEPING: Equipment maintenance scheduler • Boat Log • Buddy Log • Dive Site Log • Dive Center Log • Equipment Used • Equipment Inventory • Dive History • Dive Training (student & instructor)

SPECIALIZED WRECK & CAVE SECTIONS • **INTERNATIONAL RESORT & STORE LISTINGS.** • **A/V INTERFACE FOR STILL & VIDEO IMAGES.** • **POWERFUL DIVER TOOLS:** CNS, OTUs, EAD and END calculator • Partial Pressures • Gas Mixing • Gas Consumption • Unit Conversions

RECREATIONAL, TECH/NITROX AND MIXED-GAS VERSIONS

FREE!
Demonstration
Software

Abysmal Diving Inc.

1-800-55-Abyss

FAX (303)-530-2808

e-mail: chris@abysmal.com or CIS 72233,457

SUB AQUA

175 Fordham Street City Island, NY 10464
Voice 718 / 885-3332 Fax 885-9002
CompuServe 72650,220

Publisher / Editor
Joel D. Silverstein

Associate Publisher
James F. Cleary

Managing Editor
Jeffrey J. Silverstein

Senior Editors
Daniel Berg, Bill Bleyer, Hugh Fletcher,
Capt. Hank Garvin, Capt. Roger Huffman,
Kirby Kurkomelis, Barb Lander,
Shannon Sikes, Capt. Eric Takakjian

Medical Editor
Stephen J. Lombardo, M.D.

Writers & Photographers
Tom Baker, Capt. Stephen Bielenda,
Dr. Jolie Bookspan, Glenn Butler,
Dr. Jennifer A. Flynn, John T. Crea,
Rod Farb, Gary Gentile, Bret Gilliam,
Les Glick, Peter E. Hess, Jozef Koppelman,
Capt. John Lachenmeyer, Dave Morton,
Bob Raimo, Bradley Sheard, Brian Skerry,
Hillary Vidars, Capt. Kathy Weydig,
Andrea Zaferes

ADVERTISING SALES
Ron Brown — 718 / 885-3332

Sub Aqua welcomes unsolicited materials, both written and photographic. Request our contributors guidelines. Submissions and queries should be accompanied by a self-addressed envelope to insure their return. All material published is subject to editing. Mail editorial correspondence and photographs to the editor.

Diving is a potentially dangerous activity. Persons engaging in this activity should be certified by a reputable training agency. Once certified you should dive within your training and experience. Information published in the Sub Aqua is not a substitute for education or training. Sub Aqua is not responsible for the contents of any information, advertisements or recommendations published herein.

Sub Aqua is published by SAJ Publishing Inc. Subscription rate for 1 year (6 issues) \$39.00. Subscription outside of U.S. add \$20.00 postage. Paid orders U.S. funds only. Send requests to the circulation department. Postage paid at Appleton, WI and other locations. POSTMASTER: send address changes to Sub Aqua, 175 Fordham Street City Island, NY 10464. All address changes and renewals are to be in writing.

Entire contents Copyright © 1995 by: SAJ Publishing Inc. All rights reserved. No portion of this publication, including advertisements created by SAJ Publishing Inc. may be reproduced without the express written permission of the publisher.

Objects of Desire

Artifacts. From that first rusty spike to those fabulous *Doria* dishes - they drive many of the most adventurous wreck divers. Each diver in their own way goes on a hero's journey for some holy grail entombed in the ocean. Some hunters are cool and measured. Others possessed. Outsiders have never seen more grown, presumably adult divers, so excited about china and glassware since their fiances dragged them to pick patterns. But once the gold lust takes over - it's like *Treasure of the Sierra Madre*.

I want to put in yet another plug for safe diving. No object is worth your life. The divers who've recovered some of the gems in this issue have thousands of dives under their weight belts. Some make it sound easy. But remember that a novice artifact hunter should *already* be a seasoned diver.

Also a plug for responsible artifacting. As our special feature on the debate shows, there are forces who don't want artifacts taken at all. There are valid points on both sides of the controversy. Do your best to respect restricted wrecks and the ocean. No haul is worth damaging the environment.

Around the SUB AQUA office we have a joke about a busload of dolphins driving around New York and ripping toilets out of bombed-out buildings and stripping junked Buicks. Is that what we wreck divers would look like to an evolved intelligence?

Joel D. Silverstein, Editor

FEATURES

Stevie's Wonders	5
Artifact Hunting by Daniel Berg	6
Artifact Debate by Bill Bleyer	9
R.M.S. Rhone by Hugh Fletcher	12
Cave Training by Shannon Sikes	14
Capt. George Hoffman an interview by Jeffrey Silverstein	16
How to Prevent the Bends by Stephen J. Lombardo, MD	21
Dishing the Proteus by Capt. Roger Huffman	22
The Wm. B. Cowin by Capt. Eric Takakjian	24

DEPARTMENTS

The Hang Line	4
Happenings	5
Advertiser's Index	28
Diver's Directorles	30

ON THE COVER - Rare artifacts from the Bielenda Collection. Shot with a Hasselblad 500C, 150 mm Sonar lens at F22 on Kodak Plus-X pan film by Joel Silverstein.

Hamilton Joins Abysmal Diving

Since 1993 Hamilton Research Ltd. and Abysmal Diving Inc. have pursued the goal of creating the finest Hyperbaric and Diving software package possible. As a result of these joint efforts Abysmal Diving Inc. is pleased to announce the acquisition of DCAP (Decompression Computation and Analysis Program) from Hamilton Research Ltd. The availability of DCAP will allow Abysmal Diving to begin incorporating the powerful DCAP technology directly into its chief program **Abysmal Advanced Dive Planning Software**. The addition of this technology to Abysmal will complete the goal of both companies to create the premiere diving and hyperbaric software program available in the world.

Abysmal is the comprehensive and easy-to-use software package that operates under Microsoft Windows with components for all levels of recreational and technical diving.

DCAP is a computational program for calculating and analyzing decompression tables and profiles developed over the last



J. Silverstein

20-plus years by R.W. Bill Hamilton, PhD and David J. Kenyon. Conceived for laboratory use, DCAP uses any of several contemporary computational methods and has produced decompression tables for commercial, scientific, and specialized military diving; it has accomplished an impressive track record of diversified and successful applications. More recently DCAP has been instrumental in the development of the concept of technical diving and has been used for development of diving tables for the most famous of diving expeditions including: *USS Kendrick* (320 fsw), *Wilkes Barre* (250 fsw), *El Cazador* (270 fsw), and the *SS Republic* (265 fsw).

The new entity will combine the

Windows diversity and the developments of Abysmal with the extensive experience that has gone into DCAP. Dr. Hamilton and Mr. Kenyon will continue to work with DCAP, and Hamilton will act as consultant to Abysmal Diving, Inc. A full amalgamation of these two diversified and sophisticated technologies will take some time, but major aspects of DCAP philosophy and experience will soon be seen in revisions of Abysmal. Present users of both systems will continue to be supported. ■

Ballard to move to Mystic Seaport

The State of Connecticut recently allocated \$15 million dollars to move Dr. Bob Ballard's research center from the Woods Hole Oceanographic Institute in Woods Hole, Massachusetts to The Mystic Seaport. Connecticut is banking on Ballard's fame to bring more visitors to the Seaport. Ballard is known for the discovery of the wreck of the *Titanic*. ■

new from
SUBSALVE USA



THE QUAD BAG™

THE QUAD BAG™ is the latest innovation introduced by SUBSALVE USA. This patented bag can be used as a LIFT BAG, a DRY BAG, a DIVE FLAG, or an UP-LINE FLOAT on a diver reel. Available in 50lb., 100 lb., and 200lb. sizes. Comes complete with a brass snap, inflation - deflation valve, velcro tie and rolls up small enough to take on every dive. Whether you're a tech diver, a wreck diver, or a newly certified diver, this accessory is a must for you!

Call or write for the name of the dealer nearest you



SUBSALVE. ENGINEERED FROM THE BOTTOM UP.

P.O. Box 9307
Providence, RI 02940
Telephones: (401) 467-6962
(800) 466-6962
Fax: (401) 521-6962



OFFICIAL U.S. NAVY SEALS DIVE WATCH



- * 100% Swiss Made
 - * Waterproof to 200M
 - * Military Spec Construction
 - * Unidirectional Bezel
 - * 100 times brighter than conventional luminous watches
 - * 10 Year Warranty on Illumination
- Special value \$168.95** ←
Plus \$4.50 shipping and handling
N.Y. State resident add 8.25% sales tax
Call (718) 967-5306

Mail check or money order to
Envirotech Industries LTD
35 Stern Ct.
Staten Island, N.Y. 10308



Train with
Tom Mount

Demand the best in technical education

Benefit from 35 yrs of experience

- | | |
|-----------------------------------|------------------------------------|
| 11,000+ LOGGED DIVES INCLUDING: | AUTHOR OF SEVERAL TEXTS INCLUDING: |
| • 2300+ cave dives | • Safe Cave Diving, |
| • 1100+ wreck dives | • Practical Diving and |
| • 2200+ dives deeper than 200 FSW | • Mixed Gas Diving |
| • experienced saturation diver | |

Quality Diver Education

- | | |
|---|-----------------------------|
| • IANTD Certification and Instructor Training | • Technical Deep Air |
| • Nitrox/Advanced Nitrox/Technical Nitrox | • Trimix |
| • Deep Air/Advanced Deep Air | • Cave |
| | • Wreck Penetration |
| | • Photography |
| | • Modeling with Patti Mount |

1545 NE 104 St. Miami Shores, FL 33138 USA

305-754-1027

JANUARY

'95 tek - The Dive Technologies Conference & Exhibition - 21-24

This year there will be hot happenings at tek. Rebreathers - talk to the people from Cis-Lunar, Prism, Oceanic, Sea Pro, Dräger, Carlton Tech and the US Navy. Plus - Underwater Imaging - talk with U/W image specialists Chris Newbert, Marty Snyderman, Howard Hall and others. Discover laser imaging, the inner workings of the IMAX camera.

Other special highlights include the NEWTSUIT - a 100 meter suit that weighs under 100 pounds, the US Navy heads-up display, Graham Hawk's 12 knot Deep Flight, plus much more.

Moscone Center, San Francisco, CA call aquaCorps at 800-365-2655.

DEMA XIX - 26-29

The 19th Annual Diving Equipment and Marketing Association convention will be held at the Moscone Center in San Francisco. This event is open to manufacturers, retailers, travel destinations and dive professionals only. Contact: 714-890-9915.

MARCH

Boston Sea Rovers Clinic - 11-12

41st Annual Dive Show at the Copely Plaza Hotel, Boston. For tickets contact: Sea Rovers Hotline 617-424-9899

Beneath the Sea- 24-26

The country's largest consumer dive symposium will be held at the Westchester County Convention Center. Three days of workshops and seminars on everything from dry suit repair, to beach diving in the Caribbean, to wreck diving in the Atlantic, to accident prevention and safety. Over 200 exhibits from manufacturers, suppliers, training agencies and travel destinations. This is one show you don't want to miss. Contact BTS - 914-793-4469

International Conference on Underwater Education (IQ 95). 30 - April 2. The NAUI ICUE will be held this year at the Hyatt Regency O'Hare - Chicago. Contact: NAUI - 1-800-553-NAUI



STEVIE'S WONDERS

Captain Steve Bielenda gave us a stern look as we carefully packed up his fragile treasures to take to our photo studio. We knew they had to come back as perfectly as they left. It's a special privilege for SUB AQUA readers to see some of the rarest of the rare.

WHITE STAR LINER REPUBLIC - First Class blue and white floral pattern china dinner plate. Steve says this looks exactly the same as *Titanic* china, also on the White Star line - the ships sunk only three years apart.

GUION LINE SS OREGON - First Class green and white sea fauna pattern demitasse cup.

ITALIA LINE ANDREA DORIA - Cabin Class gold, blue, and white demitasse cup and saucer set, with enamelized silver-plated souvenir spoon from on-board gift shop. Other than the ship's bell, this spoon is the only object which says "Andrea Doria." All other objects say "Italia."

ITALIA LINE ANDREA DORIA - First Class hand-painted porcelain teacup and saucer. Part of a dessert set, depicting a Venetian gondola scene - often misinterpreted as Oriental. Ultra rare, because of fragility, small number produced, and because they were often stolen off the ship by passengers as souvenirs.

GUION LINE SS OREGON - First Class crystal wine decanter and stopper. These were numbered on the top lip to correspond to dining room tables.

ITALIA LINE ANDREA DORIA - Cabin Class gold, blue, and white china dinner plate. These are often called "Second Class." Third class are similar, but without the gold. First Class is red with gold trim.

WHITE STAR LINER REPUBLIC - Crystal wine decanter with star logo etched.

AIKOKU MARU - Japanese porcelain sake bottle and rice bowl. Recovered in Truk Lagoon, they were used by Japanese Officers on a merchant cruiser sunk by the US in 1944. They are extraordinarily rare.

ARTIFACT HUNTING

by Daniel Berg

Many wreck divers are motivated by the quest for artifacts. These can range from a brass spike to fine china, decaying, and even the occasional porthole. The secrets of success when searching for artifacts are very simple — experience and persistence. Next time you're on a charter boat note which divers are consistently finding beautiful pieces of silverware or recovering china. It's usually the same divers who time and again surface with beautiful antiques to add to their collections. These divers know the tricks of the trade. They know where to look, and what to look for. They also know which wrecks are productive artifact wrecks. With a little practice and some of these tips, you too can become a successful artifact hunter.

DAN'S FOUR BASIC RULES

1 - Use Information to your Advantage. Talk to other divers. Find out what type of artifacts have been found on the site you are going to visit. Where exactly were they found on the wreck? You will be surprised at how much information can be gained by asking only a few questions. Research also falls into this category. While researching the wreck you should also be familiarizing yourself with the wreck's layout. This may mean just looking at an underwater sketch or it could mean spending many dives learning the layout of the site. In time you will learn the most productive areas of each shipwreck. This past summer we raised a huge fluted anchor from the *Black Warrior*. After chipping away some conglomerate we found a perfectly intact silver spoon with "Black Warrior" inscribed on the handle. Mike McMeekin and I looked at this spoon not as a lucky find but as a clue. We immediately went back to the site and by digging where the anchor had been, found several more pieces of silverware and bottles.



2 - Pay Careful Attention to Details. You should learn what type of objects to look for in each area of the vessel and look not only for shapes but for color as well. Two years ago while diving the *Oregon I* found a broken knife handle. This clue led me to return to the same spot a week later. By digging, we recovered over 250 pieces of silverware and china.

3 - Have the Right Tools. Many divers have learned that it's more productive to sit down and dig rather than to swim aimlessly looking for an artifact sitting exposed in the open. The right tools can mean anything from a crow bar to massive wrenches, Broco torches, and hydraulic grinders. The right tool can also mean just *thinking* out the situation. Ten years ago I found a porthole on the *Oregon*. I tried banging it out with the four pound hammer I carry on every dive, but it wouldn't budge. The next week I was back with every possible tool for the situation. A twelve pound sledge quickly popped the porthole free. Unfortunately the artifact was still wedged under a steel hull plate. No problem - I had brought a car scissor jack and quickly started to jack up the hull plate. To make a long story short, the jack was not strong enough so the porthole stayed on the bottom. The next week, when I returned, the porthole was gone. Captain Frank Persico, of the *Sea Hawk*, had found the porthole, looked over the situation, then simply turned it 180 degrees so that its dogs would slide past a lip in the hull plate. Frank had proved that

using your brain is a much more powerful tool than brawn alone.

Artifact hunters have utilized a variety of specialized tools in their quest for relics. One of the most popular is the scooter. The underwater propulsion device is not used for towing or propelling a diver, but rather is carefully held backwards and used to blow away sand, unearthing buried artifacts. Digging with a scooter does require some skill. But when everything works, it's a great way for a team of divers to move a lot of sand. You may remember that treasure hunter, Mel Fisher uncovered the Spanish galleon *Atocha* and its tons of silver, gold and emeralds by blowing away the sand too. He used the propellers from his boats fitted with a device called a "mail box." Other tools often used are sledge hammers, chisels, and crow bars.

Used together these tools can be used to recover most artifacts. Of course you won't want to just put these heavy tools in a bag before jumping in. Put some thought into how they should be carried. Reduce the amount of lead in your weight belt to compensate for the additional weight of the tools. Look at how other divers rig and carry their tools.

4 - Never Give Up. Most times only persistence and stubbornness are the keys that make one diver more productive than another. I have found portholes that required over 14 divers to recover. One helm that Hank Garvin and I worked on took almost 30 dives. Remember that many artifacts are not found and recovered in the same dive



Mike McMeekin suited up to look for gold.

but rather are projects that require several trips to be successfully recovered. As many of you already know, finding an artifact is sometimes the easy part — recovering it can at times be a little tricky.

Metal Detecting. Many divers bitten by the artifact bug have found that it can be a year round obsession. After the wreck diving season dies down for the winter and the charter boats stop running, many divers start beach diving. There are several excellent bottling areas where divers can find old blob top bottles dating back to the 1800's. Another interesting and rewarding hobby that only a handful of divers take advantage of is metal detecting. Searching for lost jewelry on scuba is a great winter pastime. Of course a dry suit is highly recommended, but the only piece of non-standard equipment is the metal detector. Recently, Mike McMeekin and I were metal detecting in six to eight feet of water on the North Shore of Long Island. We found loads of sinkers and assorted junk, a good assortment of silver coins, ranging from Mercury Dimes and Buffalo Nickels to a Walking Liberty half Dollar. We also found a total of six gold rings. That's right - six gold rings!



Preservation. The last topic I want to discuss is preservation. Please only recover objects that you will devote the time needed to preserve. Preservation does not mean shining up a piece of brass. Proper preservation prevents artifacts from deteriorating. This is especially important for wooden and iron objects. Preservation techniques can be looked up in any good wreck diving or treasure hunting book.

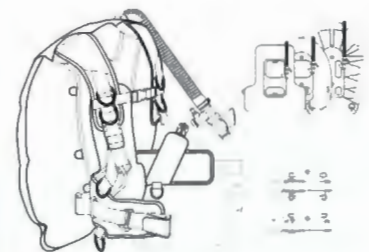
Expand Your Horizons A true artifact collector goes where the artifacts are. That does not necessarily mean diving the deeper wrecks. Some of the most productive sites off New Jersey are in only 80 feet of water [see George Hoffman interview]. There are several excellent 35 foot wreck dives off Long Island too. Pick up a few shipwreck books and read about each wreck. Most books are quite detailed in their description of artifacts recovered. Remember, the more you know about a site the more productive an artifact hunter you will become. A true artifact hunter doesn't descend to sightsee on great visibility days. You'll find the productive hunters in a cloud of silt as they dig deeper and deeper in search of a piece of history. ■

Dan Berg is author of over ten books on shipwrecks, a popular speaker and producer of the Dive Wreck Valley Television series.

Dive Rite Transpac The Most Versatile BC Ever



- **Interchangeable air cells**—Choose from 30, 45 or 85 pound lift capacities
- **No sagging or shifting**—Carry heavy-weight singles or doubles with ease
- **Mount lights, reels or pony bottles wherever you want**—14 accessory rings



For the dealer nearest you, contact

Dive Rite Manufacturing
117 West Washington Street
Lake City, Florida 32055
Phone (904) 752-1087
Fax (904) 755-0613



MEL FISHER

ON TREASURE HUNTING

"When all the kids ask me about how they become a treasure hunter, I tell them that I had to go through college first and that every course I took I am using treasure hunting."

"It's hard to find treasure — there's a really big ocean out there."

"We don't have any emerald detectors, except maybe pretty girls. The girls that dive with me seem to find more emeralds than the guys do. I guess they got an eye for them. If it wasn't for those pretty girls they wouldn't be worth near so much."

"It's just a grandiose hobby for me, I don't need any more money or gold or silver or emeralds; I have always been fascinated by it. . . I enjoy it and it is fascinating and exciting and romantic and very adventurous."

"Go for it!, it's very exciting and rewarding — do your thing!"

My motto is —
"Today's the day!"

Mel Fisher, world renowned discoverer of the gold-laden Spanish galleon - Nuestra Senora de Atocha was interviewed in the November 1993 issue of SUB AQUA.

I.A.N.T.D. LEADERSHIP

- **The International Association of Nitrox and Technical Divers.** The World Wide Authority for Nitrox, Mixed Gas and Technical Training in ALL Diving Communities... Over 10,000 trained Recreational, Scientific, Government and Military!
- **We have the Training Programs to get YOU there.** Nitrox keeps you down longer and safer. Trimix helps you go deeper. Overhead Environment provides the know-how to safely penetrate Caves or Wrecks. We even train you in the latest Blending Technology!
- **THE I.A.N.T.D. JOURNAL** gives you the latest product info, training ideas and shares the adventures of Technical Divers Worldwide. The quarterly subscription is still only \$40 US/Yr. (& Int'l. is \$50). • Send U.S. CHECK, M.O. or VISA/MC to 9628 NE 2nd Ave. Suite D, Miami Shores, FL 33138 USA

Ph 305-751-4873 • Fax 305-751-3958

TYPHOON®

Drysuits Since 1947



Ballistic Grade Nylon

Superior Abrasion & Tear Resistant

Lightweight

Comfort and Manuverability

Thermal Boots

Neoprene Lined for Warmth

Front Entry

Easy On / Easy Off

Typhoon Water Wares

1106 Market St.

Pocomoke City, Md. 21851

P 410-957-4414 F 410-957-4415

DEBATE ESCALATES OVER ARTIFACT REMOVAL

by Bill Bleyer

Q: You're a sport diver exploring the wreck of a tanker sunk during World War II off the East Coast and you come across a porcelain pitcher. If you put it in your bag and take it home, that makes you...

1. A preserver of history who has prevented an irreplaceable artifact from being destroyed by stormy seas or the ultimate collapse of the wreck.

2. A looter who's breaking the law, obliterating the historical context of a historical relic and depriving future visitors from enjoying an undisturbed site.

If you chose "1" you are probably a sport wreck diver. And if you chose "2" you are either an archaeologist or someone who thinks like one.

The debate about the legal and ethical propriety of removing artifacts from shipwrecks is a relatively modern phenomenon. Until the advent of scuba equipment, salvage was the realm of professional hardhat divers. And until the field of marine archaeology fully developed, there wasn't any organized group to complain that what the scuba divers were doing was wrong.

As technology has increased the possibility of finding and removing relics from wrecks such as the *Titanic*, ironclad *USS Monitor* and gold-laden Spanish treasure galleons, the debate has intensified. And the battle lines were clearly delineated in 1987 when the Council of American Maritime Museums, an association of 48 North American maritime museums, passed a bylaw stating the museums should no longer accept relics unless they were acquired following strict archaeological guidelines.

"From the late 1960's to the mid-1980's maritime museums around the world

cheerfully acquired objects ranging in type from wet, rusty anchors from unidentified wrecks in local harbors to coral encrusted ancient Mediterranean amphoras, Caribbean cannons and gold and silver objects from Spanish treasure galleons," Paul Johnston, curator of maritime history at the Smithsonian's National Museum of American History and the leader of the leave-the-artifacts-alone movement, wrote last year in the *International Journal of Nautical Archaeology*. "All that changed," he says, after CAMM formed an archaeology committee, which spent more than a year developing the bylaw.

It would be hard to find a sport diver willing to publicly disagree with Johnston when it comes to taking artifacts off *clearly* historic and legally protected wrecks like the *Monitor* or British man-of-war *Culloden* for display in someone's den. But the situation gets a lot murkier when the items are destined for public display, the wreck more

modern or its history less compelling.

"There's a difference between shipwrecks and historical shipwrecks," contends Henry Keatts, founder of the American Society of Oceanographers and author of several books on wreck diving. "When the state designates a specific wreck such as the *HMS Culloden* out in Montauk, NY, as a protected site, then divers should honor that."

"There are some wrecks which are extremely historic and have real archeological significance where a trained archaeologist should do the survey of the wreck and remove all artifacts," adds Captain Howard Klein, the owner of the Long Island dive boat *Eagle's Nest* who founded the American Sport Divers Association to fight increased government control over wrecks. "There are other wrecks that are not as important and have no *real* historical significance where artifacts should be taken or lost."

Daniel Berg, author of several books on wreck diving, says, "Many people are under the misconception that wrecks are perfect time capsules. Unfortunately that's not the case. In a deep, cold freshwater lake, those wrecks are very well preserved. Saltwater and stormy conditions rip wrecks apart. My feeling is it's better to remove and preserve the artifacts rather than let them get destroyed. We've seen portholes on the *San Diego* that we weren't able to recover and the next year a hull plate would fall on them and crack them. I've seen china destroyed on the *Oregon* in the same situation."

Berg, who like the other sport divers would like to work with the archaeologists, calls the CAMM position "absolutely ludicrous. Archaeologists alone have never, ever, discovered a shipwreck. All the wrecks they are working were either found by treasure hunters, sport divers or fishermen. But then they get on the site and they want to exclude everyone else."

Within the marine archaeology community, about the only unresolved issue still being debated is whether even trained researchers should be removing objects from wrecks for display in museums. There is unanimity in the condemnation of sport divers removing objects that won't see the light of display. They call the sport divers' save-it-or-lose-it argument a rationalization.

SOUTHERN CROSS DIVE CHARTERS

Dive the Shipwrecks of Long Island

Charters available to wrecks in 30 to 150 feet of water.
Call: 516-587-3625 for a free brochure



Don't get lost at sea; be found with Dive-Alert, the surface signaling device that emits a loud blast heard up to a mile away. Quick disconnect fittings allow easy integration with most power inflators and low pressure hoses. Models now available for SeaQuest® AirSource and Scubapro® A.I.R. 2.

Ideations • 800 275 4332
206 281 0067 • FAX 206 285 6897
U.S. Patent No. 4950107
and foreign patents

"All these people are doing is quickly destroying what the ocean is slowly destroying, and they do it for very selfish personal reasons," says Warren Riess, underwater archaeologist with the University of Maine's Darling Marine Center.

"At the rate we're going, most of the worthwhile wrecks will be stripped within a man's lifetime," says William Dudley, senior historian at the Naval Historical Center at Washington Navy Yard, the repository for the Navy's historical records and artifacts. "They'll be almost nothing left for recreational divers to appreciate. All the interesting stuff will be on someone's mantelpiece."

Dudley is a hardliner on removing relics from any wreck considered remotely historic. "I don't even think archaeologists should be taking artifacts off shipwrecks," he says. It's better to leave artifacts alone, even if they are ultimately destroyed on site. "The wrecks are there to be appreciated by recreational divers." He says officials should set up underwater preserves and publicize the wrecks so divers can see them without plundering them. This is a step Keatts and other sport diver/researchers recommend only for the most historic wrecks.

The adoption of the CAMM bylaw has not resolved entirely the issue of whether museums should be accepting relics from nonarchaeologists.

The American Merchant Marine Museum at Kings Point accepted shipwreck material until it recently decided to abide by the CAMM bylaw. Says the museum's executive director, Capt. Charles Renick: "I've seen some of their films where they go down to German submarines and other wrecks and just strip them and tear them apart to get things out. They're souvenir collectors. They're not doing anything for science or history."

Capt. Allan Lonschein, executive vice president of the Maritime Industry Museum at Fort Schuyler, feels strongly that historic shipwrecks, especially where the ship became a tomb for passengers or crew, should be untouched as a memorial. In the case of a *Titanic*, "You don't strip a grave so why strip a ship that sunk? It should be a memorial." But for more mundane vessels, he says, "I don't see why certain types of artifacts cannot be removed. I would object to disturbing human remains or personal effects of anybody, but a ship is an inanimate object and I think to bring up some articles from that vessel is perfectly right. I think people should be able to see them in a museum. They take artifacts from the tombs in Egypt and they go in museums. What is the difference between an Egyptian tomb and a ship on the bottom of the ocean? How many people in a population of 240 million will actually go down to the bottom of the ocean to view something?"



NEW DESIGN

BLIZZARD
REGULATOR
IMPROVED COMFORT AND BREATHABILITY

- Lighter, Sleeker
- Comfort Mouthpiece
- Superior Cold Water Performance
- Exhaust Tee Directs Bubbles Away From Face
- Easier to Service

SHERWOOD SCUBA
Sherwood, Harsco Corp.
120 Church St.,
Lockport, NY 14094-2889

See your authorized Sherwood dealer for Details

Diver certification agencies have decided to side with the archaeologists. Professional Association of Diving Instructors spokesman Scott Jones said PADI and the other certification groups are supporting preservation of wrecks because "if there are no regulations to protect underwater treasures, that's something that's going to hurt diving. There'll be nothing down there for people to see."

"The whole question comes down to What is a shipwreck of historical significance?" Keatts says. The dive community and archaeologists use different yardsticks.

Sport divers generally feel that any wreck not listed on the National Register of Historic Places or part of a government preserve should be fair game. "Most of the wrecks that we have out here were lost either due to collisions at sea or fell victim to submarines during World War II," Klein says. "Those types of wrecks were documented at the time they were built and the records still exist. It's not like some ship that was built in 21 BC."

The archaeologists generally consider a wreck historic if it is more than 50 years old, the minimum age for National Register eligibility. But they consider more recent wrecks historic if they were involved in a naval battle or collision or if the cargo was unusual. "I think almost every shipwreck has something historic about it," Dudley says.

Riess, who started out as a sport diver and became an archaeologist after volunteering on several scientific wreck explorations, says, "My feelings are if it's a site that we can learn something from because there are no records of the way the ship was built or the way people lived on the ship then divers should leave it alone. Typically you don't find good plans of ships until about the time of the Civil War, basically when iron and steel come in."

Post-Civil War wrecks are a gray area. "Divers have to realize they are destroying the resource that they're interested in even if archaeology says there's not much to learn," Riess says. "If you take it home it's going to fall apart unless you're willing to spend hundreds of dollars on proper conservation."

Berg, who has written about preservation techniques to keep recovered artifacts from crumbling, says he has been barred from some museums where officials label him a treasure hunter, yet they fail to properly conserve items to the point that they are disintegrating.

Sometimes lost in the ethical debate are the laws covering artifact removal. "If it's a historical shipwreck and in state waters, it's subject to the Abandoned Shipwreck Act, in which case the state can choose what it does with it," says Kevin Foster, National Park Service maritime historian. "Some states

Should the artifacts be left to deteriorate, or do they belong on display?

have very restrictive laws and believe that the best use of one-of-a-kind unreplacable shipwreck is to hold them for study by the most careful process available. Other states consider that immediate gratification of sport divers who want to carry off bright shiny things may be the answer. Some states don't have a process at all so there's no guidance for divers. Most states have a balance. They pick some sites that should be protected and excavate under the greatest care and other sites that should be available for divers to visit and possibly perform some salvage on.

"If it's a recent shipwreck, it's subject to the laws of admiralty and salvage," Foster continues. "If they're taking something from a modern shipwreck, and they don't have permission from the state, if it's in state waters, or the owners, if it's in international waters, then they're still stealing." Divers have lost their boats, cars, and even their homes if illegally recovered items were transported in them, he adds.

The legal situation can't help but confuse divers. "Each state drafts its own shipwreck law. Now you've got 50 different laws in 50 different states," comments Klein, who says artifact collecting spurs interest in diving as well as in history.

Enforcement is spotty at best, but that doesn't mean it's acceptable to take something because the Coast Guard isn't sitting on top of the wreck, Dudley says.

Naval vessels are a special case. By international agreement, warships have "sovereign immunity," remaining the property of their government.

For that reason, the archaeologists say those bringing up bullets, china or brass from the World War I cruiser *San Diego* are looting. The divers disagree.

"The *USS San Diego* was not only decommissioned and struck from the rolls [of the Navy], it was also sold for scrap and salvage," says Captain Stephen Bielenda, owner of the Long Island dive boat *R/V Wahoo* and president of the Eastern Dive Boat Association. "So there's no way they can justify keeping it as a war memorial. They've abandoned it. This was in 1959."

"The scrap dealer decided salvage was not going to be profitable and let his claim lapse," Bielenda says.

As for nonmilitary vessels, Bielenda says, "When something sinks and they [the owners] don't put any effort to salvage it or mark it to let people know that it's theirs, that's called abandonment. You can take stuff off any wreck that's abandoned. Unless it's on the National Register, it's considered an abandoned wreck."

"If they [the government] were going to do something with the wrecks, fine," Bielenda says. "But they don't have any plans to do anything for the next 100 years. If they had some kind of plan, they would find all the divers getting on the bandwagon."

While the dive community protests increasing government regulation, it may ultimately create the bandwagon to bring the sport divers and archaeologists together. "The trend is for more and more protection of historic wrecks, particularly now that the technology is making it so much easier for anyone with the available technology to destroy something highly valuable," Foster said.

An increasing number of states are setting up underwater preserves where divers can look at wrecks but not touch them. Florida, Michigan, Vermont, New York, North Carolina and Maryland have already taken that step. And most states are working with dive organizations and archaeologists to set up the preserve system.

David Cooper, Wisconsin's state underwater archaeologist, says his state is starting an underwater preserve program for wrecks sunk at least 50 years ago in Lake Superior, Lake Michigan and the Mississippi River. The state council that is planning the system includes divers, historians, archaeologists and state officials, and a lot of the research of the wrecks is carried out by volunteer sport divers.

"What we saw in Wisconsin was a lot of sport diver interest and concern for the future of wreck diving," says Cooper, who started out as a sport diver. "This evolved from divers visiting wrecks and coming back in five or 10 years and realizing 'Hey man, this site isn't what it was like when we first found it. It's the same kind of thing you see in a lot of sports, everything from snowmobiling, catch-and-release programs in fishing. You find users of a resource starting to realize that they're going to have to work together to cooperatively protect it and develop a set of user ethics.'" ■

Bill Bleyer is a columnist for New York Newsday. His column On The Water focuses on diving, fishing and environmental matters of Long Island.

The Wreck of the R.M.S. Rhone

by Hugh Fletcher

Caribbean wreck diving may be looked down upon by some. Unlike diving in the northern latitudes, visibility generally isn't a problem. Almost all are free of monofilament entanglements. Conditions are typically sunny and warm with mild seas. Some are so shallow they can even be snorkeled. For me, however, wreck diving in the Caribbean isn't a matter of better or worse. It's purely a matter of history, sport, and enjoyment. Having recently returned from a week's diving in and around the island of Tortola, I had the opportunity to dive on the most well known Caribbean wreck of them all - the *R.M.S. Rhone*.

On February 11, 1865, the Royal Mail Steam Packet Company launched what was considered one of the handsomest ships of her time. Built by Millwall Iron Works of England, she was known for her fine lines and advanced superstructure. She was a sleek ship measuring 310 feet in length with a 40 foot beam. Passenger accommodation included 253 first-class, 30 second-class, and 30 third-class cabins. The *Rhone* set out on her maiden voyage to Brazil under the command of Captain Robert Woodward in early October later that year.

For the next two years the *Rhone* made regular trips from England to South America with stops in the Virgin Islands for re-coaling and distribution of goods to smaller ships that would carry the cargo to the islands in Jamaica, Honduras and Cuba. Although St. Thomas was the port of choice during the mid 1800's a scourge of yellow fever had swept St. Thomas Harbour. The large trans-Atlantic ships would use Road Harbour in Tortola instead.

On the morning of October 29, 1867 the *Rhone* lay at anchor outside Great Harbour, Peter Island while taking on cargo and provisions from the *Conway*. The beautiful Caribbean day was ripped apart when at 11 A.M. the barometer dropped, the sky blackened and a deadly hurricane blew out of the north northwest. With engines running at full bore the two ships tried to ride out the storm. By noon there was a lull in the storm and the two ships broke from each other. The *Conway* set out to reach Road Harbour but as the *Rhone* tried to weigh anchor the chain snagged in the hawse pipe and parted,



J. Silverstein

dropping the anchor and 300 feet of chain. Captain Wooley set full spread ahead to make for the open ocean where she would ride out the next storm. Having negotiated the rocky channel she was just about to round the last point when the hurricane which now blew from south southeast forced the *Rhone* onto the rocks at Salt Island. On impact the sleek steamer heeled over, broke in two and sank. Only a few crew and one passenger survived the sinking.

The hurricane that blew out of nowhere that late October morning took all the homes save 18 from Tortola, in Kingston Jamaica. Only five of the original 80 had survived. The devastation of this storm halted the growth and stability of the Virgin Islands.

Located approximately 135 yards from shore in 80 feet of water, the *Rhone* is in two major groupings. The primary section consists of the bow, a portion of the midsection, the bottom third of the mast, and the cannon. The second area consists of the remainder of the mid-section and various parts of the boiler. Since the *Rhone's* bow is the deepest part of her remains, divers wishing to do multiple dives should start there first. Mooring balls have been installed at the various dive sites throughout the area, and the *Rhone* is no exception.

Our morning's pre-dive briefing consisted of the ship's history, what the remains consisted of, and the "critters" we might encounter. Noticeably absent was the usual for-tourist commentary about ships which were scuttled after failed pot smuggling attempts. Instead, we were reminded that this was a historical landmark that was meant to be treated with dignity and respect, while leaving enough latitude to enjoy ourselves fully. Suited up with all my gear, I jumped in to see what I would find.

The *Hilma Hooker* in Bonaire and the *Oro Verde* and *Doc Paulson* in Grand Cayman share a few things in common. Even to the novice diver they are immediately recognizable as ships. In addition, they were purposely sunk to add to the enjoyment of the tourist diver. I immediately knew the difference between the *Rhone* and those "prop wrecks" once she came into view. Descending slowly, the ship's last moments seemed tangibly visible. The mid-section lay on its starboard side. The steel deck supports which once spanned her beam stretched vertically toward the surface. They appeared like columns from a Greek temple or the teeth of a prehistoric beast. Taking up position in its vacant hold, blue striped grunts schooled, scattered, and reformed as

we passed through the ship's openings. Thoroughly encrusted with corals and multi-colored sponges, the ship now supports countless forms of life.

Travelling from area to area, each part of the wreck exhibited a curious amalgam of life and death. The bow, partially intact and laying on its starboard side, formed a break in the current for the Sergeant Majors and Yellow Tail Snappers hanging in its lee. The hull plates that now cover the sandy area around the *Rhone* provide shelter for sea urchins and brittle stars. An octopus ventured out to dance a camouflaged warning to us at the entrance of its "cave." Barracuda patrolled nearby. Like junk-yard dogs, they gave a snaggle-toothed grin as we passed. A Blennie, a curious little fish that co-habitates with burrowing shrimp, made a home in the glassless remains of a porthole which sat flush with the bottom.

My next dive on the *Rhone* came the following day. This would be my first night dive on a wreck. While I had some initial trepidation concerning shipwreck diving at night, my dive partner and I felt our experience and training warranted the

experience.

The evening turned out to be beautiful. St. Thomas appeared like a cruise ship in the distance. Someone even suggested we "sink" it and gain another dive site. Road Town on Tortola was settling in for a quiet evening. Dive lights, chem sticks, and flash units were gathered while the descent line was tied in. Feeling my usual pre-night-dive jitters, I calmed myself and slowly entered the water.

I found the descent line and slowly made my way to the bottom. I immediately thought the dive boat dropped us on the wrong site - the *Rhone* hadn't looked this imposing during the day! Or perhaps, at night, it gave its true appearance. The bow seemed to loom higher. It created a cavernous home to a puffer fish which seemed larger than most groupers I had encountered. The once curious looking barracuda took a prowler's stance, waiting for something to pass within striking distance. The *Rhone* herself seemed less accommodating. Passing through the hold, our flashlights picked up nuances of her remains which I hadn't noticed during our previous dive. She had

an aura that underlined the tragedy of her last moments. Like whistling past a graveyard at night, I kept reassuring myself that whatever had happened occurred long ago. With our dive lights playing off the remains, it was easy to imagine a ghostly figure hiding somewhere in her dark recesses.

With our bottom time nearly gone, we began our ascent up the line. My thought of the *Rhone's* final moments were instantly cleared as I noticed something unusual in my lights. We were swimming through a school of squid. Like a formation of jet fighters, they flashed their bioluminescent signatures and sped off into the blackness.

Sitting on the stern with my feet on the swim platform I understood that I had only come to know the *Rhone* fleetingly. Some of the dive masters said they had done in excess of 1200 dives on the wreck. At first I thought it absurd. I asked myself how someone could keep up even a passing interest in any dive site that many times. I had been given my answer that evening. Like the storm which took her to the bottom, I learned the *Rhone* will never appear the same way twice. ■



BENEATH THE SEA

19th Annual Dive Show: March 24, 25, 26, 1995

Westchester County Center, White Plains, New York

20 minutes north of Manhattan

Write: **BTS, POB 644, Rye, NY 10580**

Call - Fax: 1-(914) 793-4469

PHOTO CONTEST PRIZE TRIP
Peter Hughes' *Sea Dancer*
Turk & Caicos Islands

FILM FESTIVAL STARS
Stan Waterman
•Rick Sammon, MC
•Michel Gilbert
•Al Hornsby Dee Scarr

TREASURE HUNT PRIZE
Dive Trip
Bay Islands Aggressor

SEMINARS, PHOTO SHOWS
Exotic Travel, Atlantic & Great
Lakes Shipwrecks
Training, Computers,
Tech Diving, Caves
Dolphins, Whales, Sharks
& Nitrox, Tech Diving

WORKSHOPS -- LEARN
Photo, Video, Computer Imaging
Medical & Hyperbarics, Archeology
& Shipwrecks,
Critters of the Sea
RE-BREATHERS, TECH DIVING

200 EXHIBITS!
Latest & Best Equipment, Dive
Shops, Great Diving - Here & the
Tropics, Dive Training, Computers,
Shipwreck Artifacts, Best Dive Clubs,
Conservation, Environment

PARTY TIME !
VIP Banquet
Divers of the Year
PADI Beach Party
Cayman Islands
Decompression Party



DEMA INDUSTRY
Management
Education Conference

**PADI Members &
Retailers Meetings**



OCEAN PALS
For Children, Families,
Teachers and Friends



Cave Training

by Shannon Sikes

The stuff you learn in four days in Cavern and Intro to Cave dramatically increases skill levels in everything from buoyancy control to kicking techniques to streamlining. . .

Once you've decided to make the commitment to get cave diving training, what's the next step? Questions abound, and decisions made at this point will greatly influence the education you receive. For example, what are the different levels of instruction, and what do they involve? Should you go straight through Cavern to Full Cave in as short a time as possible, or would it be better to spread out training over a longer time period? Ask these questions of any five people and you're likely to get a multitude of answers. Ultimately the only "correct" answers are the ones that are right for you.

The first step in cave diving is the Cavern Course. Designed as an introductory course, many divers try Cavern as a means of determining whether they are interested in pursuing Full Cave. Cavern diving can be defined as "dives limited to that portion of the cave illuminated by natural daylight." Generally the course takes a weekend to complete and requires three dives, seven hours of lecture, and land drills. Areas of focus include guideline use, air planning, modified swimming techniques and problem solving.

The next course is Introduction to Cave Diving (Intro). Intro is taught with the student on a single tank with a Y-valve, while the next two levels, Apprentice and Full, require the use of doubles. For those who know they wish to pursue Apprentice

and Full training, Intro can be taken with doubles, but no certification card will be issued after the completion of that course. Taking Intro with doubles basically obliges you to take Apprentice and Full Cave Courses. Areas of focus include sharing air and safety drills, line-following with touch-contact method, and lost-diver procedures.

Apprentice Cave Diver and Full Cave Diver both require two days of training, four varied dives for each level, lecture and land drills. A temporary certification card only is issued after completion of the Apprentice level; signing up for Apprentice assumes eventual enrollment in Full, as the information disseminated in each course is designed to complement one another. Basic surveying techniques are no longer required for completion of Full Cave, but you can certainly ask your instructor for a brief overview. One of the four required dives for Full Cave is also meant to focus, although in a limited and elementary way, on some area of specialization in cave diving such as stage diving or scooter diving. Other areas of focus for these two levels include air-sharing and touch-contact method through restrictions, "jumps," dives with minimum outflow and potentially silty conditions, and decompression diving.

8-Day Certification. While eight-day certification is possible (from Cavern through Full Cave in eight days), many people prefer to spread out their courses in two sets: Cavern to Intro and then Apprentice to Full. Think about it: Fifteen dives, plus lectures, line drills, book work and all the other activities involved in training—all in eight days? On the other hand, one can take the first two levels one week, build up time and experience at these levels in the water, and then be able to get more out of their Apprentice and Full courses at a later date. In fact as Ginnie Springs Instructor Steve Berman notes that, for wreckers, "You don't have to take Apprentice and Full Cave unless you want to be cave diving. The stuff you learn in four days in Cavern and Intro dramatically increases skill levels in everything from buoyancy control to kicking techniques to streamlining to getting rid of the 30lb weight-belt."

Another example of the merits of spreading out training can be explained in terms of the practice of line referencing. Ask new cave divers (and even many with a great deal more experience) where they went in the cave on a dive and they are likely to explain the dive to you in terms of what the

line did: "well, we went in mainline, then took a jump to the left, then went past a few more jumps, then circled back around to the mainline." Yeah, but did you see the cave? "New divers," comments NSS-CDS Conservation Coordinator Tom Morris, "generally have 80% of their mind on the line during any dive. This makes them extremely rough on the caves in terms of conservation. These divers hardly see the cave at all; they see the line." More experienced divers, however, eventually come to keep 10% of their mind on the line at all times. By spending more time at the various cave diving levels, you can get out of the "line-diving" mode and into actually seeing the cave around you while still doing your training. You will become a more alert and aware diver, and the caves will thank you.

The idea that people are running through their training too quickly has some North Florida cavers, such as Tom Morris and Paul Smith, discussing the merits of applying to cave diving the military concept of "time in grade," the idea that one must spend a certain amount of time at a particular level until one is ready for advancement. Many divers implement their own self-imposed "time in grade" while others continually go on dives beyond their abilities or take friends on dives surpassing their levels. It is one thing to be challenged, another to be foolish. Steve Berman comments, "You've got to build your base slowly and work on your knowledge so that if something hits the fan you can take care of the problem without freaking out."

Finally, many instructors are open to students doing more dives with them than are required by NSS-CDS standards. In fact, quite a few instructors use the standards only as minimums, requiring many more dives at each level from their students. Tagging along on another classes dives with permission from your instructor is a good way to get more time in the water. You also get the benefit of watching and learning from the mistakes of others (and we all make them!). After the dive, you can ask the instructor to critique your skills and comment on your diving overall. Your cave diving instruction can last as long as you want it to. For most it lasts a lifetime. As Tom Morris notes, "That's one of the beauties of cave diving. You can dive for twenty years and still get better. Those are the sports I tend to like. In cave diving you can develop basic skills as long as you dive. You can always get smoother." ■



Ten Ways a Diver Can Protect the Aquatic Realm

- 1** Dive carefully in fragile aquatic ecosystems, such as coral reefs.
- 2** Be aware of your body and equipment placement when diving.
- 3** Consider your impact on aquatic life through your interactions.
- 4** Keep your diving skills sharp with continuing education.
- 5** Understand and respect underwater life.
- 6** Resist the urge to collect souvenirs.
- 7** If you hunt and/or gather game, obey all fish and game laws.
- 8** Report environmental disturbances or destruction of your dive sites.
- 9** Be a role model for other divers in diving and non-diving interaction with the environment.
- 10** Get involved in local environmental activities and issues.

**PADI Project A.W.A.R.E. – Aquatic World Awareness,
Responsibility and Education**

For more information, contact your local PADI Dive Center or PADI International
1251 East Dyer Road, #100, Santa Ana, CA 92705-5605

GEORGE HOFFMAN: Living With History

an exclusive interview by Jeffrey J. Silverstein

A day in Captain George Hoffman's quiet suburban home is a voyage into the past. His artifacts are so beautifully displayed and preserved, it's hard to believe they represent a lifetime of diving adventure. Some very ordinary objects - recovered from extraordinary places. And priceless one-of-a-kind treasures. Lovingly collected by a man known as one of the toughest boat captains on the even tougher Jersey shore.

Tell us about the first time you went scuba diving and found things. My first dive was December 1956 on the Manasquan wreck. I went out on Kelly Stratton's boat the *Manatee*. I think the cost of the dive was \$6.00. Shortly after that I realized that I wanted to get my own boat — I started out with a 16 foot Boston Whaler. I used to go out to the *Stolt D'agali* and the *Arundo* with it. I had a friend who ran a head boat who would put a buoy on the wrecks for me. He'd fish them for an hour and then he'd get off the wreck and let me dive. In exchange I would give him lobsters cause I didn't really have the equipment to find an off-shore wreck.

We got to dive all of this stuff before anyone else. On most of the wrecks I was one of the first divers on it, if not the first. It was great.

Diving was not a yet career — it was a hobby? It was a hobby that was rapidly getting out of hand. That graduated to a 26

foot boat that was half hobby, and I took a few charters. I got a license so I could take charters legally, back in '58 or '59. From there, it became a business. I'm in my 30th year of running charter boat operations strictly for diving.

I was an elevator installer. Otis Elevator was the only job I ever had. I was in charge of all of Otis's repair operations in North Jersey and after that I went into sales.

You could say the elevator business is similar to diving... you go down, and you go up. (explosive laughter) You're right! I never thought of that!

We heard that you put your kids through college with lobsters. I could generally make an extra \$100 a day. When the charter was done I would go in the water and glean the wreck. I remember catching lobsters before there were goody bags — we put 'em in an old onion bag...

What was your first artifact? I got this stoneware jug when I was still diving with

the Boston Whaler on the wreck of the *Brunett*. I used to swim from the wreck of the *Cadet* under water to the wreck of the *Brunett*. Nobody knew I was doing it. It was about 80 yards between the two wrecks. I put the charter on the *Cadet*. I'd swim over to the *Brunett* and get a bag of lobsters and say "What's the matter with you guys, you can't find lobsters?" And *this* was sticking out of the sand — it took about 5 or 6 dives to uncover and I brought up the jug. The insurance adjuster said it's quite valuable. To me, priceless. I would never sell it.

What makes an artifact special? An artifact is something that reminds you of a day on the water with friends. Something you can tie to the wreck you've been visiting. There's a lot more to diving than just going under water. Car mechanics, doctors, psychiatrists, astronauts — all have a common bond and a common goal — to have a successful day on the water. If you can bring home a memento of that day, especially if you can tie it to the wreck, *that's* an artifact.

Which artifacts can be directly tied to a wreck? Dishes are very conducive to identifying a wreck because if you can get a dish with the flag on it, right away you can tie them together. To get an intact cup off a wreck is a goody. Cups are fragile — particularly the First Class china style cup.

A wreck that gets a great deal of play here in the New Jersey area is the Clyde liner *Mohawk*, seven and half miles out of Manasquan Inlet. It sank in 1935 in a collision. When it sank it stuck out of the water. It was big and was demolished by professional divers who set explosive charges on it so that it would not be a hazard to navigation. If you dig on it and you persevere you can find ships flag china, not a whole lot of it, but the occasional piece. One of my best finds are two cups from the *Mohawk*. I have a demi-tasse cup and I have a cup and saucer. The cup and saucer were taken about 20 years apart. I got the saucer. 20 years later I got the cup.

Are there artifacts of value that are not specific to the history of the wreck?



These rose colored plates were cargo on the *Mohawk*. There's only been a handful of those rose colored come up, but the blue rose pattern... this is a rose colored mill scene. This rose colored pattern — we took about 1000 pieces of that off the wreck which was also cargo made in England. We uncovered barrels on the wreck digging. Now remember this was a full scale ocean liner. We have just found access to a lower deck on the *Mohawk*. The *Mohawk* sank in 76 foot of water, we are now working in 87 foot of water *inside* her. We have cleared some debris out of the way digging this lower deck — that's the fun of digging — we don't have any idea what we are gonna find.

You got to move stuff or you are not going to find anything. We found an old closet that was all collapsed. The closet was full of silverplate. Dishes with the Clyde Linc crest on 'em.

We have dug holes in the *Mohawk* and come up with bundles of newspapers that were going to Miami. I forget the name of the newspaper, but we were reading the 1935 Sunday funnies under water! It had all kinds of generalized cargo... a lot of automobiles, mostly Chevrolets and some Studebakers. The body work is long since gone, but the engines, the axles, and the rear ends are all over the sand as are the wheels and the tires.

What about the particularly fragile artifacts? What I like to collect, because they are so difficult to get, are the cups. A cup and a saucer to me are very worthwhile from any given wreck. My collection is not very large but I'm quite proud of what I do have. I have a cup from the Brazilian Lloyd freighter *Ayuroca* which has a Lloyd Braziliario shipping line crest on the cup. I have a cup and a saucer in perfect condition from the *R.C. Mohawk* with the inscription "United States Revenue Cutter Revenue Service" on it.

So the cup and saucer combination is really your holy grail. When you have that combination in my opinion that triples the price of the cup alone. This cup, while it looks like it has a Chinese scene on it, it's really a Venetian scene — it's First Class china from the *Andrea Doria*. That's second class china there — that little cup and saucer — and this is third class china from the *Doria*. You can see the difference in quality amongst the three pieces.

Are there dealers or antique specialists who place values on these objects? There are people who buy and sell the stuff — not that I would ever sell it. There are divers who take multiple pieces for financial gain. I have always believed in taking one of each and I am happy to see my customers get the rest. A lot of times we'll bring the stuff up and draw lots and divide everything amongst the charter.



How do you handle glass? It's handled one piece at a time. When you put it in the goody bag you hope for the best. You put it in gently. You bring the goody bag up and between finding it on the wreck and getting it on the boat you might lose a piece or two just because there is no better way to do it. It's not put in a dishwasher.

Cargo is typically less important... We've got barrels of that. It doesn't identify the wreck... Because it's not from the line. Not a great artifact but nonetheless a memento from the wreck.

Tell us about this telegraph. This is the bridge telegraph from the *Choappa*. Everything there is original. It's just been cleaned up and the white glass, which is the original glass, has been repainted. The *Choappa* sank around '42 or '43 in a collision.

What happened was they [the Navy] marshalled the ships into the northern reaches of the New Jersey mud hole. Nobody wanted to anchor during the war cause they were afraid they would be sitting ducks for a torpedo. So they would all steam around in circles crashing into each other in the fog. They did more damage than the U boats [did] to each other.

Did that tombstone in your backyard really come from the Delaware?

That it did. It sank in 1898. I used to dive it with the 16 foot boat and an outboard motor back in the 50's. This summer, some forty

years after I started diving the wreck, I dug this tombstone out of the sand of the bow. Laying right up against the hull of the wreck — it's white granite. It was apparently being transported from somewhere in the North to Florida to be put on Captain John B. Smith's grave, and obviously it never got there. It's in perfect condition because it lay face down in the sand and then it got covered up with silt and debris which protected it.

Did you use any special techniques to recover it? We were using a Tekna scooter to move sand under water. I worked a crowbar under the front edge of the tombstone and stood the damn thing up. It's about 140 pounds, a little heavy to handle under water. We put a lifting bag on it and by then I was out of time and air. The next team of divers down sent it to the surface.

You use scooters for digging... I find that most of the stuff is still in the sand and hence the scooters. I tried air lifts and water jet pumps, but I like the scooters best — they don't disturb the charter on the boat.

With the airlift you have a compressor hammering on the boat — that bothers the charter. With the scooters you can take the charter out and go digging at the same time. I've been out with my boat with ten passengers on and 8 scooters on the boat. Everybody is jumping in the water with a scooter. I've seen guys drag the scooter up to the

*For the price
of one dive ...*

**You can improve
diving safety
for yourself —
and your buddies.**

For the price of one dive, you can become a DAN member — and have DAN insurance all year long.

Divers Alert Network is *your* nonprofit diving safety organization, affiliated with Duke University Medical Center since 1980.

Your \$25 DAN annual membership supports services that benefit all divers, including a 24-hour emergency hotline, a medical/safety information line, worldwide recompression chamber assistance and diving medical research.

With DAN membership, you'll also receive a number of personal benefits including free coverage by Assist America, a worldwide medical evacuation service; a subscription to *Alert Diver*, DAN's bimonthly diving safety magazine; and the DAN *Underwater Diving Accident Manual*, which includes valuable diving first-aid information.

And for an additional \$25, you can have \$40,000 of medical insurance coverage for all in-water injuries.

For more information or to sign up, call us at

(800) 446-2671

or fax us at

(919) 490-6630.



Divers Alert Network

Box 3823 • Duke University Medical Center
Durham North Carolina 27710



anchor line because they don't want to waste the battery. They want it all for digging.

Are bells the prize of a wreck? Yeah. Usually there is only one and most generally it will be engraved. This bell is from the wreck of the *Balena*. It means whale. The *Balena* was filled to the gunwales with coal but I think it was an old whaler. I also got the bell from the *Arundo* although Evie Dudas' late husband John also worked on it and there was some controversy about who owned it. John worked on it but I brought it up.

What are the "rules" of artifact recovery? The rule has always been, the guy who brings it back to the surface is the owner. You can work on something one week and then if someone else goes in behind you and finishes it up, if he sends it up, he is the legal owner, the rule of the sea. I worked on the bell. I was the guy who sent it up. I never held the bell though, we put the bell on the diving boat that we were going out on at the time and that's where it stayed. When John and Evie got married, I said, "Let's give them the bell for a wedding gift."

How do you display small items? I like to leave things the way I find them. For example: here are some inkwells from the *Brunett*. This is the way they were found. I just picked some of the loose stuff off and painted em. The mineral that's holding them together is a combination of sand, coal dust and oxidized iron... everybody calls it conglomerate.

The *Brunett* was going from Newark, New Jersey. It had general cargo but a large portion of its cargo was tools from the Stanley Tool works in Newark, New Jersey to Olds Department Store in Philadelphia when it sank. A lot of the cargo were Stanley tools... pipe wrenches, ax heads, ax handles, door knobs, door locks.

This is a sample of the door knobs from the *Brunett*. Ceramic door knobs - they are white and this marbled color. There's some more down there. There still are a lot of pocket knives laying in the sand... All stuck together like this in the conglomerate. And you just just chisel out a chunk of them and that's the way to display them. I use that as a paperweight on my desk at work for years. All the blades are gone. The blades have rusted. The blades have added to the conglomerate. That's a perfectly working workable barrel lock... Stanley Tool works. It says Patent 1875.

These pens were from the *Emerald Wreck* and they were manufactured in Paris. I put new nibs on them just for display. The *Emerald Wreck* is 10 miles out of Manasquan Inlet and it's been dove heavily by a lot of boats. Nobody has been able to identify it.

That's from a Howe Sewing Machine that was cargo on the *Emerald Wreck*. It's a patent plate and the last date on it is 1872. It's brass with a nickel plating. That's the most recent date we can find however I think the *Emerald Wreck* was a very old ship when it sank.

Is this wheel from a wreck? That wheel is a replacement wheel but the stand is from the *William Farrell* which is a tugboat. Somebody else got the existing wheel. And I got the stand, and the stand without the wheel didn't look like much so this is a new wheel that I put on there. I can't take credit for getting the whole thing.

This is a 10 inch mortar shell that we use as an umbrella stand. These are a couple of rulers that came off the *Brunett*. The yard is divided in fractions which is very unusual. And the rulers run backwards... I'm told that these were a wall paperman's ruler. It's a little faded but you could still use it.

Tell us more...



This is a glass from the *Delaware*. The *Delaware* caught fire, burnt to the water line. So that's melted... and didn't crack. It just may have hit the right temperature and must have hardened before it chilled.

And this cane handle came from the *Money Wreck*, it's also called a *January Wreck* because they had to go there in January. The guy had some sort of affection for dragons cause I have other pieces off of this wreck with dragon heads on it. It may have had jewels for eyes... that's brass. This was cast using a lost wax cast.

This is a brass cannon that I took off the *Money Wreck*, the *Francis Perkins*. The cannon and all the brass fittings for it came off the wreck.

These ampules remind me of the ones that we saw in *The Deep*. As a matter of fact they were from Bermuda. They're from a wreck called *The Constellation*. I don't know what's in them. I have no idea. But it ain't root beer. *These* are the ones that were in the movie. These little ones right here.

Did you ever salvage for money? The *Jacob Jones* supported my family for 8 months. I was on strike and we went to *Jacob Jones* and we took a ton of copper a day off it, four of us. It was a four stack destroyer with superheated steam. I made a lot of money on that. We worked our asses off but made a lot of money.

What kind of wreck do you prefer to dive? I don't dive anything that's been sunk on purpose because that's like hunting for chickens in your backyard. I like to dive things that were sunk, that were true ships, not barges. That's where you can collect. I prefer to take my passengers to true shipwrecks, where they have a chance to find artifacts. When I dive a wreck I take the trouble to figure out where the best spots on the wreck are to dig. I make sure that I can position the boat and the anchor and hook in

the best spot. I can usually put the anchor within 25 or 50 feet of where I want it to be on any given ship wreck that I dive.

We've heard you're accurate to within two feet. Well that's an exaggeration, but I can put the anchor in the bridge of the *Arundo*. I can put the anchor in the bridge of the *Choappa* and that's a damn small target in 200 foot of water. I do that by Loran, and then when I get over the wreck, profiling the wreck on the depth recorder, a little bit of Kentucky windage, just knowing when to drop it, and feeling the wreck through my feet. I have about a 95% success ratio.

Most of my divers are accomplished diggers. An accomplished digger is a guy who will get his nose in the hole and stay with it. A guy that's digging a little bit here and doesn't get anything and then goes over and digs a little bit there and doesn't get anything, his success ratio is not going to be



as good as the guy that puts his nose in the hole and stays with that hole. You have a better chance to stay in one hole because usually you got to get down about two feet before you start finding. Especially on the older wrecks you have to get down that deep with them.

What are your favorite wrecks? We have a couple of favorites here. The *Mohawk* sank in 1935. It is a gigantic junk pile under water. It's filled with artifacts. People are constantly finding things on it who are patient enough to dig and move things around under water. We have the wreck of the *Brunett*. Everything that comes off of the wreck is from the 1870's. What's there is now 120 years old — a bona fide antique. Everything that comes off the *Delaware* is a bona fide antique, a time capsule from 1898. Another favorite is the *Coffee Wreck*, that we have not been able to identify. It sank with a load of marble. I've

seen beautiful marble table tops come off of this wreck.

Everybody goes to the *Emerald Wreck* because there are a lot of concerned people who are genuinely trying to identify this wreck. We think it was a trans-Atlantic steamer. It's one of the few twin engine twin propeller steamers of fairly substantial size that is 95% in and under the sand. No matter where you dig on it you find cargo. We have a lot of cargo off it and nothing related to the ship. Very few artifacts from the ship. The part of the wreck that's above the sand is just an engine and boilers but there's a gigantic debris field around the wreck. We've had everything come off the wrecks from barrel bungs to bung starters to bottles to Howe Sewing Machines to all kinds of condiment bottles, pickax handles, pipe wrenches, you name it.

Any advice you would give to a novice wreck diver interested in artifacts? Hook up with a boat who is experienced in digging. Team up with an experienced artifact diver. On my boat, the *Sea Lion*, we send inexperienced people down with the experienced people because you can have two divers work a hole with the guy on the scooter. So you have three divers working one hole. That's the best way to get things done. I've made a lot of converts to digging with just that method. "So and so's going down with the scooter. Go down and help him." The guy with the scooter welcomes the help because the scooter is hard to manage all by yourself.

On the *Sea Lion* whatever is found is shared. If we find a lot of any one thing, everyone goes home with one. The day we got into a lot of bottles on the *Emerald Wreck* everybody went home with a bottle — a full bottle of soda.



THE WILLIAM B. COWIN

by Captain Eric J. Takakjian

When thinking of shipwrecks in New England that consistently produce impressive artifacts, several come to mind, such as the *Suffolk*, *Yankee*, *Trojan*, *Port Hunter*, and the *Mars*. But no wreck has produced nearly as many "Kodak moments" as the *Col. William B. Cowin*.

Launched as a passenger and freight steamer for the Maine Central Railroad in March of 1911, as the *Moosehead*, she was an iron hulled ship, 185' long and powered by two 1350 horsepower steam engines. The *Moosehead* served the Maine Central Railroad well for a number of years. From her homeport of Portland, she carried passengers and freight to various ports and islands along the Maine coast.

In the mid 1920's the ship was sold to a Mr. William Mills of New York, who renamed her the *Porpoise*. The *Porpoise* was placed in service on a daily run from Bridgeport, Connecticut to the Battery in New York City. During the winter of 1927-8 modifications were made to the ship while she was laid up in Newburg, New York on the Hudson River. The most notable modification was the addition of windows on both sides of the hull, extending forward to a joint just aft of the bow.

The ship was sold a third time in July of 1931, to Captain Frank Drake, also of New York. Captain Drake renamed the ship the *Mayflower* and kept her on the Bridgeport to New York run, adding a stop in Hoboken, New Jersey. Captain Drake operated the ship successfully for ten years, and the *Mayflower* became a common fixture on the New York harbor waterfront scene.

Unfortunately for Captain Drake, as the war in Europe escalated, American involvement became even more imminent. The United States government did not have enough ships to service their needs in time of war, so Uncle Sam began to look towards the private sector to fill the void. The *Mayflower* was ideally suited for use as a small troop transport ship, and was commissioned into the U.S. Army Transportation Corps on July 1, 1941. Captain Drake was paid \$125,000 for his ship, far below the appraised value of \$350,000.

Renamed the *Col. William B. Cowin*, the ship's new homeport became New London, Connecticut. Her primary duty was the transportation of men and supplies out to Fort Wainwright on Fishers Island in Long Island Sound, a task she was especially well suited for. In December of that same year the Army decided to send the *Cowin* to a shipyard in Boston to have some repairs done. Under the command of Captain William Evans, the *Cowin* departed New London on the morning of December 17, bound for Boston. Two of the ship's officers' automobiles were stowed in the forward hold. While approaching the entrance to Buzzards Bay the *Cowin* struck



Hens and Chickens Reef, the same reef that the *U.S.S. Yankee* struck thirty three years before. With a large hole in her hull, the *Cowin's* fate was sealed, thirty minutes later at approximately 7 P.M. the *Cowin* slipped beneath the waves. Fortunately, her crew of seventeen escaped unharmed, and rowed ashore at Smiths Neck in Dartmouth, Massachusetts.

Shortly after the sinking, the salvage firm of Merritt, Chapman, and Scott estimated the cost of raising the ship at 75% of her value. The government decided the cost was not justified, and abandoned all hopes of salvaging the *Cowin*. With the exception of the salvage of the ship's propellers in 1966, the wreck has lain forgotten the bottom of Buzzards Bay, until recently.

Several factors combine to make the *Cowin* one of New England's best artifact wrecks. The shallow depth, 75 fsw max, provides ample bottom time to search for and recover artifacts. Many divers dive this wreck on NITROX, and are able to make one hour-plus dives with minimal decompression penalties. The ship's hull rests upright and largely intact, with a list to port, providing unrestricted access to all of the ship's compartments. When the *Cowin* was built no expense was spared, and only the best fittings and equipment available were used in her construction. The wreck has seen a minimal number of divers, since it was first located by *Grey Eagle*

CARIBBEAN DIVING, HOW TO PREVENT THE BENDS

by Stephen J. Lombardo, MD

I remember coming back from my first Grand Cayman diving trip, excited that I had done 22 dives in 6 straight days. Firmly ingrained in my memory was my instructor's strict prohibition that I not dive on the last two days. She probably saved me from getting bent.

Now, ten years and a thousand dives later, I understand that one souvenir that you don't want to take home from vacation is a decompression hit that can effectively end, if not severely limit, your career in diving. Remembering that only about half of all bends cases are treated successfully without residual damage, the following tips represent ways in which I have changed my diving to lessen my statistical chances of getting the bends.

Be physically fit. This will increase your comfort level and decrease your carbon dioxide production at a given workload. Just as it is essential to get a good night's sleep the night before a dive, you can avoid fatigue by increasing your capacity for exercise by regular aerobic activity. Swimming, jogging or even just walking three or more times a week will increase your fitness level and decrease your chances of getting bent. However, intensive exercise just before a dive is to be avoided, since this is thought to promote bubble formation. It seems a minor request to require adequate rest before a dive, but it is surprising how significant this can be in preventing DCS.

Stay well hydrated. In the excitement of getting ready for a dive, sometimes an important piece of dive gear is forgotten: the liquid refreshment which, in addition to tasting great, will be one of the best preventions in avoiding the bends. It is a well known medical fact that bubbles are more likely to cause a problem in a dry diver than in a wet one. So drink to your heart's content, (non-alcoholic, of course) and prevent the bends. Bringing extra drinks can do more to prevent dive emergencies than all the rescue equipment in the world.

Dive within the tables. Although I usually dive with two computers, I still rely mainly on my dive slate. Plan your dive, and use the computer as a backup. Having had the unpleasant experience of a blank computer, I always write my dive plan on a slate, with contingencies, and carry a bottom



Diving the Wreck of the R.M.S. Rhone in Tortola, BVI.

J. Silverstein

timer "just in case." As an added safety factor, having reached the pivotal age of 40, I back off three pressure groups from the no-decompression limit. It is worthy of note that 57% of the 28 bends victims treated at the City Island Chamber during 1994 were divers who relied solely on a computer, and had no backup tables to use.

Ascend slowly and use a safety stop. One definite advantage of most dive computers is a rapid ascent alarm which warns of an ascent rate greater than about 33 feet per minute, the range being about 20 to 40 feet per minute. In the absence of a computer, some divers come up the line hand over hand or time their ascent in other ways, but all agree that *slower is better*. Of equal importance, is the 3 to 6 minute safety stop at 15 feet. Studies have shown that, no matter how slow the ascent rate, there is no substitute for the stop at 15 feet, which also gives you the opportunity to check your gear and control your buoyancy before the final ascent to the surface. 38% of our bends victims at City Island Chamber admitted to having made no safety stops at all on any of their dives.

Don't fly within 24 hours of diving. A significant proportion of all diving accidents involve an altitude exposure shortly after the dive. Whether it's a flight in a small plane

or even a car trip over a mountain, any altitude exposure can make a bends hit worse, as evidenced by the 29% of 28 DCS cases we saw at CIC during 1994 who flew less than 24 hours after their last dive. And if your diving is multi-day, multi-dive, or deep, wait 48 hours or more if at all possible. Considering the potential consequences, it's a small price to pay.

Act your age. Although we can't control how old we are, experience should dictate that, even though one might feel like a teenager, chances of getting the bends increases with increasing age. Sixty-seven percent of our DCS patients were 35 or older. So become more conservative with time and you'll be a safer diver.

The Diver's Alert Network reports that the 465 DCS case reports received in 1992 increased to 508 in 1993, but has jumped to 627 so far in 1994. This may be due to better reporting, and less "diver denial," but if there's one thing that all authorities can agree on, it's that prevention is better than cure. So consider the above tips as a way to help ensure future diving. The hyperbaric chambers around the world are there if you need them, but hopefully by following the above suggestions and good common sense you will not have the need to say *Take Me to City Island* unless it is for a tour. ■

AQUA EXPLORERS

DIVE BOOKS



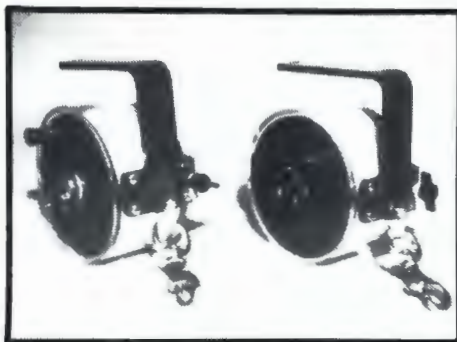
Distributors of over 150 different Dive Books and Shipwreck Videos. Aqua Explorers provides One Stop Shopping and offers the most popular titles.

The Stainless Steel #UPB ULTIMATE PONY BRACKET will attach your pony to any main cylinder or rental tank within seconds. The low profile design keeps the Pony where it should be, snug to your main tank. other benefits include Quick, Easy, Firm and Secure mounting. Your Pony bottle will be held in place with absolutely no wobble or movement! This is truly the most innovative easy, secure bracket on the market.

ULTIMATE PONY BRACKET



HEAVY DUTY REELS



ENCLOSED & TENSION Models

Our reels are uniquely constructed from anodized aluminum with all SS hardware. The spool glides on a solid delrin core with a unique locking screw location. Reels are also available in Enclosed and Tension models. These reels are heavy duty and made to stand up to the rigors of Wreck and Cave diving.



DEALER INQUIRIES WANTED
Aqua Explorers, Inc
Po Box 116
East Rockaway, NY 11518

(Call For **FREE** Color Catalog)

The Mole Man and the Cheerleader:

Dishing The Proteus

by Captain Roger Huffman

It's etched in my mind in slow motion. An ornate dish rises out of the water held in a hand soiled by decaying wreck, "gack" in divers' slang. Up the ladder comes the mole man with a grin on his face and a piece of china from the *Proteus* in his hand. As the other divers excitedly check out the dish and ask questions about the location of the find I'm checking out the mole man. He certainly couldn't make the tech diving team, not with that Honda innertube converted into a BC on his back and nasty looking black gack up to his armpits. But remember, "All that's gold doesn't not glitter." The boy can dig, and digging is why we are here. This is not your ordinary group of divers who call up and tell me they want to come to Hatteras and do some artifact hunting. These are the kind of guys you hear about who made the big score on such and such wreck. Believe me when I tell you that a lot of time, research, planning, and experience went into making those scores.

We've all heard the stories about the dive boat cruising along and bingo, it passes over a virgin wreck and everybody goes home with a porthole. Well a lot of water has passed under my keel and that hasn't happened yet. Usually it's the man with the plan who goes home with the loot, so let me share with you the story of one such group so you can see how it's done.

A couple of winters ago a group of divers called me up and booked a week in August to dig the *Proteus*. They couldn't have picked a better wreck.

1-516-868-2658



Roy Matthews and Greg Model with dishes from the *Proteus*.

The *Proteus* was built to carry passengers and freight between New York and New Orleans. She could carry over two hundred passengers which translates into a lot of knives, forks, spoons and dishes. Throw in the ornate furnishings of the ship plus the potential of some interesting items in the freight and you have the type of wreck that yields some very nice artifacts. The *Proteus* sank very quickly in 120' of water, after colliding with the *S.S. Cushing* in 1918. Apparently she managed to avoid being broken up by depth charges during WWII and has quietly decomposed on the bottom until now. When initially discovered and dove in 1983 many beautiful and treasured items were waiting in plain view for divers to recover. But those days are gone and those artifacts have been recovered so the diver who cruises the wreck hoping to spot something is going to come up empty handed. The water here is too clear for artifacts on the surface of the wreck to remain undiscovered for very long.

I like to think of the *Proteus* as a composted wreck, full of stuff waiting to be dug up. So did that group of divers from New Jersey. They were a group of diving buddies who knew each others' strong points and had decided who would be responsible for each aspect of their dive vacation. They had picked one person as their logistics man and he handled the booking, travel, room and board. Another diver took on

the research aspects. He read and deciphered everything in print that would help the team reach their goal - they were after the china. They had a scout. He's the guy you can tell to go find an artifact and he will. The scout rates special handling. Every successful team has a cheerleader to keep everyone jacked up. Then you need that most useful of divers, the guy with the scooter - to dig with of course. Last but not least is the group photographer, whose job it is to shoot lots of pictures and videos to take home and show to their buddies.

The night before this group's first dive we were gathered at the beach house, listening as the researcher gave his presentation. He had a 10 foot long

copy of the *Proteus*' inboard profile plan originally drawn on July 2, 1900 and was really enjoying showing everyone the layout of the dining area and pantry. The mole man started to pant when the historian told him how many pieces of china the *Proteus* carried. The cheerleader was working the crowd, pumping the divers up. Expectations were high. In a moment of excitement I laid claim to the first coffee cup.

The next morning was slick calm as our scout prepared to enter the water. The cheerleader had him tuned to perfection as over the side he went. An hour later the mole man returned with that first piece of china. He had marked the spot with a lift bag for the first pair of divers. The teams worked in rotation, with a new pair of divers arriving just as time ran out for the previous pair. Five days of dedicated digging produced over 90 pieces of china and a not a coffee cup in the lot. The china was beautiful. Embossed around the edge is a turquoise colored pattern of cresting waves. On the bottom could be found the insignia of the Southern Pacific Steamship Line. Silverware we have recovered also has the cresting wave pattern and *S.S. Proteus* is displayed on the handle.

Research paid off handsomely for these divers. They knew what they were after and where on the wreck they would most likely find it. Once you find the area you simply have to dig, dig, and dig. If you begin to feel discouraged remember the words of the cheerleader: "I know it's a dirty job, but just think, you get to do it." ■





What do you say to people who say you shouldn't be taking objects off wrecks? The wrecks are in the process of burying themselves. The *Emerald Wreck* is right now 95% under the sand. It won't be too many more years the wreck will be totally under the sand. How will it be found? If we don't do something with it now, by the time the technology gets around and its degree of importance gets around the wreck may be gone.

We are losing wrecks two or three a year to the scallopers and draggers who pull scallop dredges through the wrecks and destroy them. When a wreck is pulled apart it's gone for everybody. It's not there for the archaeologists and it's not there for the divers. If something truly significant is found by a diver I think that most of the divers are responsible enough to alert authorities.

Is there a particular artifact that you dream about recovering? No, none that I can imagine. I have just about one of everything. I have sometimes two of everything. I have a cannon. I have a couple of bells. I have portholes coming out my ears. I have a ship's wheel. Of course I never knew that I wanted a tombstone till I found one. There's probably something that I right now want but I'm not aware of it. When I get my hands on it, then I'll know. That's part of the fun of wreck diving. Every wreck is a time capsule. ■

IF YOU TEACH TECHNICAL LEVEL PROGRAMS YOU OWE IT TO YOURSELF TO LOOK AT TDI.

TDI was formed by a group of *full time* professionals whose *only* business is diving — every day. Our background in operations, physiology, risk management, training, hyperbarics, and facility ownership is unequalled.

Find out why more successful professionals have switched to TDI. Quality texts, manuals, visual aids, and certification materials at fair prices let you offer the best programs possible with standards that reflect a modern practical curriculum. *Plus* add the **TDI Referral System** and you will see why TDI is the right business choice.

Technical Diving International

9 Coastal Plaza, Suite 300
Bath, Maine 04530
207-442-8391 fax 9042





The Grey Eagle Dive Team - Tim Grim, Dave Morton, Mike Bernier, Lori Takajian, Pat Morton, Dave Daley, Bob Yeagle and Pat Butler with artifacts from the Cowin.

Charters in 1992.

Each trip out to the Cowin divers are filled with the anticipation of what they might find. Some divers have ongoing projects; many look forward to digging in their favorite spot. Portholes, cage lamps and various other brass fittings are commonly recovered. Large amounts of china, including dinner dishes, bowls, and large serving platters have been found near the stern. Also found in the after portion of the ship are brass door locks and knobs from the passenger cabins. Some of the most notable finds include large large ornately engraved brass steam gauges from the engine room.

As is the custom with all U.S. Army vessels, the transportation or Quartermaster Corps insignias are affixed to either side of the ship's bow. This insignia is usually cast in steel and welded in place. The Cowin was no exception to the tradition, but in the Cowin's case the insignias were made of brass and bolted to the outside of the hull. The insignia itself is an American eagle with outstretched wings, holding a wagon wheel in its claws. The wheel is crossed by a key and sword and the outside rim of the wheel in its claws. The wheel is crossed by a key and sword and the outside rim of the wheel is decorated in five point stars. The two insignias on the bow of the Cowin were recovered on May 9, 1993, by the author and Kevin Nord.

The ship's bell, and all of the bridge equipment, including the helm, binnacle, and telegraphs have not been recovered. The Col. William B. Cowin was an impressive ship in her time. Today she is no less impressive as a wreck dive. ■

Scuba Depot

When no one else seems to have it!

If it's SCUBA and someone makes it we have it. We carry the most sought after pieces of equipment in the world.

If it's TRAINING and you want to learn it we teach it. From Open Water through Instructor, Basic Nitrox to Tri-Mix to Rebreathers.

155 Jericho Turnpike
Mineola, NY
516-739-DIVE

The Undersuits FOR DRY SUIT DIVING



- ◆ Thinsulate Insulation
- for Cold Waters
- ◆ Custom Sizing
- We can fit you perfectly
- ◆ 6 Styles
- all Drysuits & Conditions
- ◆ Pile Suits
- for Warmer Waters

We Never Leave You Cold!



Andy's Undies

1106 Market St.
Pocomoke City, Md. 21851
P 410-957-4414 F 410-957-4415

GREY EAGLE Dive Charters

Dive the Shipwrecks of the New England Coastline

Charters to wrecks in 30 - 230 feet of water.
Call: 508-362-6501 for a free brochure.

NEW PRODUCTS

Zeagle SEVERE



The new TECH-50D / SEVERE regulator features an all-environment first stage and new freeze-resistant second stage. The regulator provides outstanding, high volume air delivery at any depth. The regulator far exceeds the DIN EN 250 breathing performance standards; they also comply with the U.S. Navy Experimental Diving Unit performance standards for reduced supply pressure. First and second stages are pneumatically balanced for greater reliability and reduced valve seat wear. Regulator performance is virtually unaffected by changing tank pressure.

The first stage is completely sealed against environmental contamination and freezing. A dry-seal, pressure-sensing membrane eliminates messy silicone or air bleed systems. No water enters the working mechanism. The dry seal greatly enhances reliability particularly in extremely cold water and other adverse conditions.

The first stage incorporates four diver-friendly low-pressure ports for comfort and flexibility in hose configuration. The swivel turret allows divers to move their heads without hose pull. One low-pressure port features a half-inch fitting for attaching the optional Zeagle high flow hose.

The second stage has two controls for adjusting breathing resistance for a wide variety of working conditions. Inhalation resistance is controlled with a sturdy knurled knob. Free flow is controlled with a switch that is easy to operate, even with thick gloves.

The TECH-50D is available with a special DIN-to-yoke convertor.

Contact: Zeagle Systems Inc. 813-782-5568 for an authorized dealer. ■

Seasoft WEIGHT BELTS & ANKLE BELTS

A weight belt system that's comfortable, stretchy, depth compensating, and includes an emergency ditching guarantee.

Why put **hard** lead on your body?
1 1/2 to 30 pounds, plus integral trim pouch

See your retailer for more information or contact:

WATERMARK SCUBA INC.
2809 'A' Academy Drive, Auburn, WA 98002
(800) 939-5510

SATISFACTION GUARANTEED!



Your satisfaction is guaranteed when you learn from a PDIC instructor.

These instructors take great pride in helping *you* become confident and enthusiastic divers.

Paul Korbin (203) 284-1880
Wallingford, Connecticut
Marc A. Braun (603) 448-1222
Lebanon, New Hampshire



The Professional Diving Instructors Corporation
P.O. Box 3633 Scranton PA 18505

CALL TODAY! (717) 342-9434 or FAX (717) 342-1276

COCHRAN COMMANDER



Cochran Undersea Technology, a division of Cochran Consulting, Inc. has introduced yet another feature-rich sport diving computer. Dubbed the **Commander**, this small, single piece, wrist unit offers low-cost, user-replaceable batteries, an PC interface and an operating depth to 330 feet.

Many advanced capabilities such as user-settable conservatism and depth alarm are included which allow the diver to "custom tune" the unit to his/her diving style and local conditions.

Other elements which are factored into the Haldanean-based nitrogen absorption computations include No-D temperature factor, No-D ascent rate factor, seamless automatic No-D altitude adaptation to 15,000 feet, an intelligent No-D compensation for repetitive deep dives.

Decompression stops are provided to 60 feet in ten-foot increments. A five-segment ascent-rate bar graph displays rates from 10 to 60 fpm, and the user may select either fixed or variable ascent rate warnings to trigger visual and audible alarms. Data from the past 100 dives is stored in the **Commander's** memory. The user can then upload the most recent 100 hours of this data to a PC providing comprehensive statistical and graphical profile display and a database log for each dive.

Company officials said "The **Commander** is the latest demonstration of Cochran's commitment to the recreational marketplace. The **Commander** establishes an entirely new set of standards in all respects." **Contact:** Cochran Undersea Technology at 214-644-6284 for an authorized dealer.

ABYSS

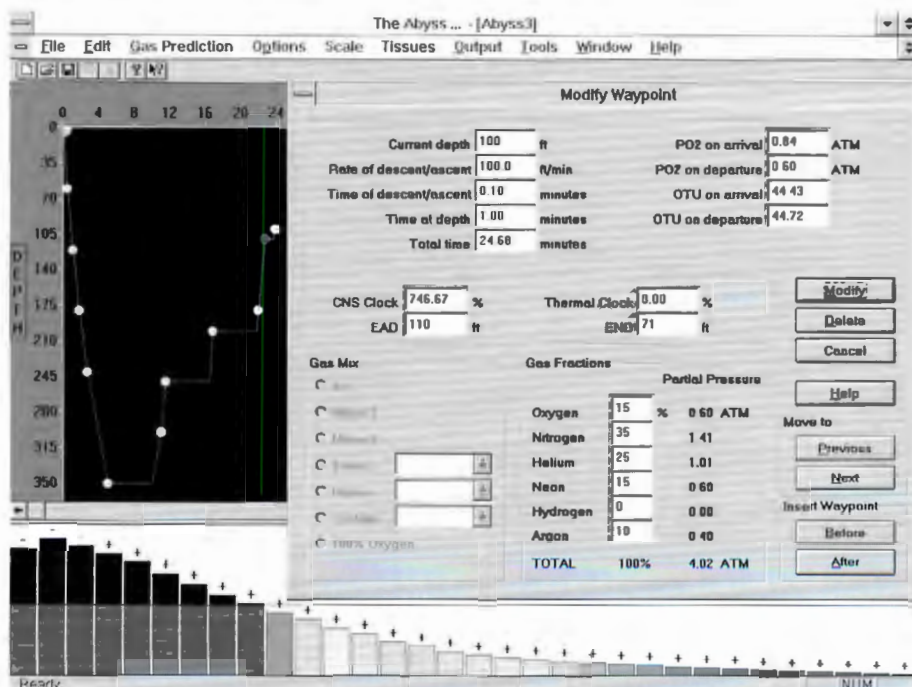
ABYSS, the latest dive planning software package, and the first full-PC MS-Windows based technical decompression management system, hit the streets in October to massive acclaim from divers the world over. **Abysmal** tells us that they have shipped over 1,000 copies worldwide in the first 60 days alone.

Colorado diver Chris Parrett, saw the need for a full dive planning and interactive data logging Windows-based package that would meet the requirements of both novice and serious technical divers. Early versions were Beta-tested by experienced divers throughout the world, linked by CompuServe's Scuba Forum.

ABYSS uses a decompression algorithm based on a 32-tissue model, and produces dive profiles that would be regarded as conservative by some. However, ABYSS also offers the experienced user the ability to program personal safety factors into the dive, as well as more detailed information about temperature, gas consumption, workload, and other physical and physiological parameters. Over 800 items customize **Abysmal** to more accurately reflect the individual diver. This level of sophistication, used properly, should generate dive profiles that offer considerably safer and far more accurate than previously available.

ABYSS's display screen, in full color, allows the user to create a dive by inserting an unlimited series of waypoints on the screen. At each of these waypoints, further information can be inserted. For example what gas the diver is breathing, what ascent or descent rates are appropriate, water temp, overhead environment, and what workload is being undertaken. A continuous real-time visual display at the base of the screen allows the user to monitor all 32 tissue saturation rates. Waypoints can be edited to see what effect different parameters have on the overall dive profile, and if the user enters information that ABYSS considers dangerous, or which exceeds user defined limits, various warning screens appear. While it is possible to make repetitive bounce dives to 500', you would have to be pretty foolish to ignore the battery of warning signs the program will repeatedly flash at you!

ABYSS is available in three levels - **Recreational**, which covers divers using air and Nitrox 32 and 36, offering limited decompression planning and a depth limit of 180/55m. **Technical**, which covers custom nitrox mixes, full decompression planning and deeper air diving to 220'/67m, - and **Mixed Gas**, which covers all breathable gases, has full decompression planning and a maximum depth limit of 500'/ 150m.



In addition to the dive planning programs there is also a comprehensive interactive logbook which allows the user to store information on dive buddies, boats, shops, equipment, training, wrecks, caves, fish and the like. Both systems contain "Tools" that provide essential conversion information, for checking partial pressures, gas requirements, and unit conversions.

A comprehensive reference section, with hundreds of entries, provides a diver's dictionary of terms and explanations, and a comprehensive well written user manual both printed and online.

Future versions of Abyss will be able to interface (via hardware) with most popular dive computers including: Bridge, Solution, Phoenix and Phoenix Nitrox, Nemesis and others.

If you only use ABYSS as a training tool, you will be richly rewarded. To go further and use it as a dive planning tool, it offers a sophisticated and complete way of examining virtually all the various parameters of a dive before entering the water. Used properly, it should help you make all your dives considerably safer and better planned.

Contact: 1-800-55-ABYSS ■

COLLECTORS BACK ISSUES

ISSUE DATE	COVER TITLE - Key Stories	Price
Nov/Dec 94	SHIPWRECKS - The Lusitania	6.95
July/Aug 94	TECHNICAL DIVING - Gary Gentile Interview	6.95
Mar/Apr 94	DIVE GEAR - Jacques Mayol Interview	6.95
Jan/Feb 94	STAN WATERMAN - DR. BILL STONE	6.95
Nov/Dec 93	MEL FISHER Treasure Hunter	6.95
Sept/Oct 93	SHIPWRECKS	9.95
July 93	USS SAN DIEGO 50th Anniversary	8.95
June 93	EVELYN DUDAS - First Girl on the Doria	9.95
May 93	ANDRE GALERNE - Fifty Years Underwater	6.95
Aug 92	DEEP WRECKS - Monitor, Ostfriesland	14.95
Jan 92	Sinking of ALGOL Rare 1st Anniversary Issue	9.95

Don't miss out on these collectors editions of SUB AQUA. Send your order in today! Send check or money order plus \$2.50 for postage and handling to:

SUB AQUA JOURNAL
175 Fordham Street - City Island NY 10464

R/V WAHOO



Full Support for Challenging Dives to:
Andrea Doria • SS Republic • U-Who
U-853 • USS San Diego • Oregon
*For complete information, brochures
 and trip dates call 516-928-3849*

ADVERTISER'S INDEX

Abysmal Diving	IFC
Andy's Undies	25
Aqua Explorers	22
Beneath the Sea	13
City Island Chamber	29
DAN	18
Dive Rite	7
Dive Alert	10
Diving Unlimited Intl.	BC
Envirotech Industries	4
Grey Eagle Charters	26
IAN TD	8
PADI	15
PDIC	26
Rapture of the Deep	
Scuba Depot	25
Seasoft Weight Belts	26
Sherwood	10
Southern Cross Charters	10
Sub Aqua Journal	31
Sub Salve	4
TDI	20
Tom Mount	4
Typhoon DrySuits	8
Wahoo	28

Take Me to City Island!

If you experience **any** of these symptoms after you have been diving you may be suffering from decompression illness (the bends) and may need medical attention.

- Disorientation
- Dizziness
- Fatigue
- Hearing Difficulties
- Muscle Pain
- Numbness
- Joint Pain
- Paralysis
- Skin Rash
- Slurred Speech
- Tingling
- Vision Problems
- Weakness

Symptoms most often show up within fifteen minutes to 24 hours after coming to the surface. If you fly after diving, symptoms can appear later.



Our multiplace hyperbaric chambers are equipped for treatments regardless of what you were breathing or how deep you were diving. We are staffed by experienced diving physicians and technicians who will help you identify your problem and recommend appropriate, quality treatment. You will be treated in a professional, compassionate environment.

The BENDS is not a dirty word here.



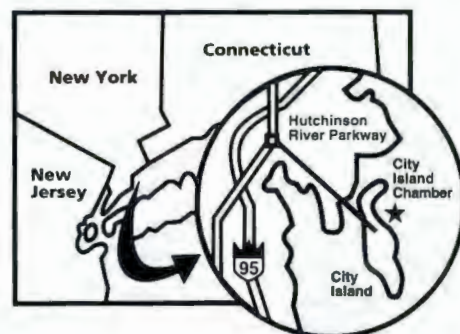
City Island Chamber
North American **Hyperbaric Center**

Chamber Hotline
(718) 885-3188

DAN Hotline
(919) 684-8111

24 Hours a Day
7 Days a Week

Helicopter accessible & convenient to all major airports and highways.



The City Island Chamber
at North American
Hyperbaric Center

222 Fordham Street
City Island, NY 10464

A not-for-profit Diver Facility
Stephen J. Lombardo, MD,
Medical Director

A Divers Alert Network
Referral Facility



DIVER'S DIRECTORY

DIVE BOATS

DIVE STORES

Connecticut

Orbit Diver II

Capt. Noel Voroba
(203) 333-DIVE
Capt. Cove Marina
Bridgeport, Ct.

Florida

Eagle's Nest

Capt. Howard Klein
(305) 294-4676
Dive Packages Nov-April
Oceanside Marina
Key West

Key West Diver

Capt. Bill Deans
"High Tech" Dive Center
(800) 873-4837
Key West, FL.

Little Fantasy

Capt. Bob Sheridan
High Tech Diving & Training
(305) 763-DIVE
Fort Lauderdale, FL.

Massachusetts

Grey Eagle

Capt.s Eric & Lori Takajian
(508) 362-6501
Vieras Marina, Buzzards Bay
Call for 1995 Schedule

Maryland

Scubapro

Capt. Ted Green
(800) 637-2102
Tidewater Aquatics
Ocean City, MD

New Jersey

Blue Fathoms

Capt. Tony Donetz
(908) 369-2260
Daily, Weekends & Night Dives
Manasquan Inlet

Deep Adventures

Capt. John Larsen
(908) 270-8888
Weekend & Night Dives
Point Pleasant

Notorious

Capt. Tony Chenko
(908) 458-3472
33' Custom 6 Pac
Wehrlen Marina - Brick NJ

Sea Lion

Capt. Geroge Hoffman
Wreck Diving Guide
Daily & Weekends, Year Round
(908) 528-6298
Brielle, NJ

Venture III

Capt. Paul Hepler
(908) 928-4519
Belmar, NJ

New York

Defiance

Capt. Mike Carew
(718) 885-1588
Dive Long Island Sound
City Island, NY

Eagle's Nest

Capt. Howard Klein
(516) 735-2254
Wreck Diving May-October
Point Lookout, LI

Jeanne II

Capt. Bill Reddan
(718) 332-9574
Afternoon & Night Dives
Winter diving every weekend
Heated Cabin & Hot Soup
Sheepshead Bay, Brooklyn

John Jack

Capt. Zero
(718) 788-2803
Fast, Deep /Technical
Overnights w/ Compressor
Staten Island

Sea Hawk

Capt. Frank Persico
(718) 278-1345
Capt. John Lachenmeyer
(516) 499-9107
Winter Diving Capt's Choice
Vidas Marina, Freeport, NY

Southern Cross

Capt. Phil Galletta
(516) 587-3625
Weekday & Weekends
Babylon Village Dock, LI
Now booking 1995 charters.

Wahoo

Capt. Steve Bielenda
Capt. Janet Bieser
(516) 928-3849
Winter Diving Every Weekend
Heated Cabins & Hot Soup
Captree Boat Basin, LI

Call for 1995 Schedule
Now Booking 1995 Special
Diving Expeditions to:
Andrea Doria, Republic,
U-Who, U-853 & Big Wreck

North Carolina

Margie II

Capt. Art Kirchner
(201) 361-3018
Accommodations / Deep Wrecks
Cape Hatteras, NC

Rapture of the Deep

Capt. Roger Huffman
(919) 441-2393
Hatteras, NC

Sea Wife IV

Capt. Buck Wilde
(919) 726-5670
Advanced & Deep Dives
Atlantic Beach/Morehead City

Virginia

Sundowner

Capt. Nike Seamans
Capt. Trueman Seamans
(804) 481-7136
Chesapeake Bay Diving
Virginia Beach

Cayman Island

Fisheye

Capt. Ed Uditis
Capt. Martin Sutton
(809) 947-4209
Resort Accommodations

EDBA DIVE BOAT LIST

The Eastern Dive Boat Association is making available to you a complete listing of all member vessels that serve the Eastern Seaboard.

EDBA keeps dive boat members informed of safety and operating regulations, and information that is specifically helpful to dive charter boats..

Write to:
Eastern Dive Boat
Association
P.O. Box 888
Miller Place, NY 11764

New Jersey

Blue Abyss Dive Ctr.

184 Columbia Turnpike
Florham Park NJ 07932
(201) 966-1312
Beuchat - Dacor - IANTD

Sea Dwellers of NJ

132 A Broadway
Hillsdale, NJ 07642
(201) 358-0009
US Divers - Sherwood - Zeagle
NAUI - IANTD

New York

Atlantic Divers

501 Kings Highway
Brooklyn, NY 11223
(718) 376-5454
Sea Quest - US Divers - Cressi
NAUI - PADI - YMCA

Dive Inc.

1 So. Central Avenue
Valley Stream, NY
(516) 872-4571
All major brands
PADI - ANDI

Harvey's Diving Center

3179 Emmons Avenue
Brooklyn, NY 11235
(718) 743-0054

East Coast Diving

1500 Hylan Blvd.
Staten Island, NY 10305
(718) 979-6056

Ocean Rock

3800 Veterans Hlghway
Bohemia, NY 11716
(516) 471-9500
Ocean Edge - O'Neil - O.S.

Scuba Depot

155 Jericho Turnpike
Mineola, NY
516-739-DIVE
All Major Brands
Dacor - Beuchat - Oceanic
PADI - IANTD

Scuba Shoppe

Route 112
Medford NY 11763
516 289-5555
Sherwood - OMS - Dive Rite
PADI - IANTD

Swim King Dive Shop

572 Route 25 A
Rocky Point, NY 11778
516 744-7707
ScubaPro - Sherwood - DUI
PADI 5 Star - NAUI

Pennsylvania

Diver Services Inc.

417 W. Ridge Pike
Conshohocken, PA 19428
(215) 828-4236
Oceanic - Cressi - Parkway
NAUI - ANDI - PDIC

Dudas Diving Duds

101 Bartram Lane
Westchester, PA 19382
(215) 436-0176
ScubaPro - Sherwood - Apollo
NAUI - IANTD - ANDI

SCUBA DIVING Business in NYC area FOR SALE

- Great Opportunity
- Priced to Sell
- Full Service: Merchandise, Lessons, Repair, Travel, Air, Rental equipment.
- Prime Location

Reply: SCUBA 34 E Main St.
Suite 325 Smithtown NY 11787

NO PRETTY FISHIES

5th
Anniversary Year

In the morass of dive mags **SUB AQUA JOURNAL** is the only magazine to focus exclusively on wreck diving and advanced dive sites.

SUB AQUA – serious insiders hang on their mailboxes for it. Each in-depth issue takes you diving on the deep, intermediate, and shallow wrecks.

Get the hottest in interviews, equipment, techniques, wrecks, caves, and treasure. Find out what's really behind the legends, or just drool over fabulous artifacts. When it's time to graduate – **SUB AQUA JOURNAL** is for you.



Subscribe now with a no-risk money back guarantee.

Black Warrior	35'
HMS Rhone	60'
USS San Diego	75'
Hilma Hooker	85'
SS Tarpon	110'
Coyote	150'
Andrea Doria	230'
USS Monitor	230'
Wilkes Barre	250'
SS Republic	265'
Lusitania	320'
Ostfriesland	338'

- One Year \$39.00 (6 Issues)
- Two Years \$69.00 (12 Issues)
- Payment Enclosed
- Bill Me (US Only)
Outside U.S. add \$30.00 per year

Send Check or Money Order to: **Sub Aqua Journal**
175 Fordham Street, City Island, NY 10464

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

***No Matter What Type Of Dry Suit
You Want, DUI Has The Material, The Style,
And The Colors You Desire***



DIVING UNLIMITED INTERNATIONAL, INC.
*For more information on our complete line of dry suits see your
local dealer, or call DUI direct at 1-800-325-8439.*