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10th
Sixth Annual Clean-up Dive
Location: Long Lake, St. Paul, MN
Contact: Scott and Tracy
Phone: 651.482.0977
Email: info@airdownthere.com
Website: www.airdownthere.com

31st
Annual Midwest Diver for DAN
Location: Mendota County Park, Madison, WI
Contact: Randy Lee
Phone: 608.243.8359
Email: divefordan@fourlakesscubaclub.org
Website: www.fourlakesscubaclub.org

June

1st
Annual Scuba Clean-Up
Location: Nelson Ledges Quarry, Garrettsville, OH
Contact: Elizabeth Sul-Celline
Email: mselizann@hotmail.com
Website: www.nlqp.com

6th - 8th
Dive Equipment Flea Market
Location: Haigh Quarry, Kankakee, IL
Contact: Tina Haigh
Phone: 815.939.7797
Email: dive@haighquarry.com
Website: www.haighquarry.com

7th
Bonne Terre Mine Treasure Hunt
First dive for chips in the mine. Later bid on donated products. Over $15,000 in donated products
Location: Bridgeton, MO
Website: www.2dive.com

July

19th - 20th
DAN Barbecue
Location: Portage Quarry, Bowling Green, OH
Contact: Rich Lauer or Jeff Rice
Phone: 614.864.1235 or 419.352.9203
Email: quarryman@portagequarry.com
Website: www.subaquatics.com

20th
Jim Haigh Memorial Dive and Diver Appreciation Day
Location: Haigh Quarry, Kankakee, IL
Contact: Tina Haigh
Phone: 815.939.7797
Email: dive@haighquarry.com
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Do you have an upcoming event you would like to include in Midwest Scuba Diving Magazine? Send an email to events@midwestscubadiving.com or call us at 773.732.8972.
This issue of Midwest Scuba Diving Magazine completes our second year of publication. While on the website today, I noticed that Brian Pautsch and I first logged on in January of 2006. We first talked about the magazine and interactive website forum at a dinner meeting held at Maggiano’s in Schaumburg, Illinois. The magazine and website was an idea that I had been toying with for a few years. Brian was a relatively new diver who had taken my course of instruction along with his wife Tracy. Both of them were young and fit and jumped head first into the NAUI curriculum, which took them through advanced training and nitrox certification. They both traveled with me several times to Florida for “Dive Training Weekends” and honed their skills. I found it quite humorous that while traveling in Florida Brian and his wife both had bouts with seasickness. I have some pretty funny photos of Brian, along with other students “hanging over the rail” as we all have. They both got over their seasickness and became excellent divers. Brian and Tracy now have two children and don’t have the opportunity to travel with me as much as we’d all like and I am sad about that. When I first met Brian, he was on his own as an independent software consultant. He offered to design and build my personal website at www.divemaxscuba.com and we entered into a business relationship. The website was constructed beyond my expectations. As most of you know, Brian is the webmaster for www.midwestscubadiving.com and he is an excellent graphic designer as well (although he won’t admit to it). Brian does the layout for each publication, solo. He now co-owns KeyLimeTie, a web design and software consulting firm, along with his brother Chris, who I also trained as a NAUI diver. Brian also helps the local dive industry with ScubaCMS (http://www.scubacms.com, see ad on page 10), putting together websites and marketing plans for businesses involved in recreational diving. Over the last four years, Brian, Tracy and I have become close friends and business partners. Our relationship has flourished because of a common interest in a sport we all love. As businessmen, we sometimes forget that diving is REALLY about, the training, the travel, the relationships and the FUN!

For 30 years I have dedicated myself to the NAUI training philosophy. I am very proud to be a NAUI Instructor Trainer. In this day and age, every other agency seems to provide dive training faster, cheaper and easier. Certifications are no longer “performance based.” I guess the public wants it that way. Everyone wants to take the path of least resistance. I believe that inadequate entry-level training is the reason for a 90% drop out rate after the first year of involvement. NAUI has always encouraged their instructors to provide the most comprehensive curriculum available in the industry. They allow their instructors the freedom to teach, and not follow a “cookie cutter” curriculum. This enables the instructor to be an educator and not facilitator. NAUI truly represents the “Quality Difference” in dive training, and the focus of this issue is the NAUI organization.

After 2 years of business, some thanks are in order: Jim Bram and Elizabeth Travis at NAUI, Tina Haigh and family from Haigh Quarry in Kankakee, Illinois, Pat Hammer from Scuba Emporium in Orland Park, Illinois, Beth Oliveira from Blackbeard’s Cruises and Christine McTaggart from DAN are the glue that binds this publication. Thank you!

Dive safely,


Snapshot: Captain Darrick Lorenzen

Career Highlights: Captain Darrick Lorenzen has over 30 years experience as a recreational and commercial diver. He is a graduate of Florida Institute of Technology with a degree in Underwater Technology. He was an instructor to commercial oilfield divers in saturation; mixed gas and bell bounce techniques. Captain Darrick is a United States Merchant Marine Officer and was awarded the U.S. Public Service Commendation for personal courage and selfless initiative.

Captain Darrick’s deepest dive was a 10-day saturation to 550-feet with a team of 6 divers. The mission focused on the repair of a severed 8-inch gas pipeline in the Gulf of Mexico.

Captain Darrick is passionate about deep wreck diving, photography and the Great Lakes.
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The islands of Palau have for many years now been known as a diving paradise. This island nation offers almost everything the diver could want – wrecks, over 1400 species of colorful fish, hard and soft corals, big animal encounters and warm, clear water. In fact, the ocean waters average 80 to 84 degrees Fahrenheit year round. It has only been during the past 30+ years that Palau has become a world class dive destination. Jacques Cousteau visited Palau in the 1960’s, and the outside world saw this beautiful island archipelago; giving rise to a new diving community, with the first dive shop opening in 1972.

**Dive sites in Palau**

There are literally dozens of dive sites in Palau. Almost all of them are marked by buoys for dive boats to tie off on. This is wonderful, as it prevents damage to the reefs. Drift diving and wall diving is the norm in Palau, so you should be comfortable with this type of diving. The boat will tie up to one of the marker buoys, and the divemaster will give the group a briefing of the dive plan. There will usually be a current running along the wall at the dive site, so the dive will be conducted as a drift dive.

**Blue Corner**

Blue Corner is probably the signature dive site of Palau. This consists of a point along the wall where the current is usually flowing from the open ocean, up and over the wall. There is usually a pretty decent current running here, depending on the tidal conditions. The dive site is another wall dive, where the reef forms a virtual right angle. You enter up current, swim along the wall to the “corner” and then attach yourself to the top of the wall using a “reef hook” – which is basically a big fish hook (shark sized) with the sharp point filed down. The hook is attached to a line about 5 feet long. You gently attach the fish hook onto the reef, then hold the handle or clip the end onto your BC. Then you put a bit of air in your BC, so you rise up off the reef and “hang” in the current – like a human kite. This is great fun. There are usually sharks, lots of big fish, and sometimes rays. The animals also hang in the current to feed, so this is a good dive for fish and shark viewing and photos. After hanging in the current for awhile (10-20 minutes), everyone detaches and floats over the reef back from the wall. There are more fish and sharks here, and usually a local big and friendly bumphead wrasse, maybe a moray eel, and some barracuda. An excellent dive.

**Wreck diving**

If you like wreck diving Palau will keep you occupied. The islands of Palau actually have more World War 2 wrecks than Truk, although they are a lot more spread out in Palau. There are over 30 documented WWII Japanese wrecks. Some of the popular wrecks, such as the “Helmet” wreck, the Chuyo Maru, and the Teshio Maru, are visited on a regular basis by the local diving tours. However, there is another way to explore these historical relics. We hired one of the dive shop’s boats, for the entire day, for about $230 per person. We were taken to wrecks in pristine condition at “secret” locations, unvisited by the local dive shop crowds.

**Chandelier Cave**

This is an interesting dive, close to the harbor. As the Palau Rock Islands are composed entirely of limestone, there are many caves and tunnels. Millions of years ago, Chandelier Cave was obviously above water. There are stalactites and stalagmites in the cave, which is now mostly underwater. The entrance is 10-15 feet underwater. The good sized entrance
is wide enough to accommodate several divers side-by-side, as you swim up into the first chamber.

There are 4 chambers that are connected underwater and you need to go underwater to get from one chamber to the next. Each chamber has a large area above water, large enough for 10-15 people to float comfortably at the surface. When you surface, make sure to keep a hand above your head, as there are a few stalactites hanging pretty low, and you don’t want to bump your head. Each chamber has some pretty neat formations. A few chambers have above water tunnel branches that go back quite a way. Some chambers have dry above water areas and benches where you can get out of the water. There are cracks in the limestone roof, so air (and of course water – to make the stalactites) filters down into the chambers. The water dripping down can taste really bad, because it filters through the plant material, soil and limestone on the surface.

The caves are pretty much in a straight line, and you can just see the faint glow from the entrance light coming in when you are underwater at the very back of the last chamber. While the depth entering the cave system is shallow, it gets fairly deep in some areas further back, down to about 45 feet deep. As in any cave, it is best to stay off the bottom to avoid stirring up the sediment and reducing the visibility. If you turn off your light, it gets dark in the cave, but you can still make out the light from the entrance. This is a nice, easy shallow dive.

Jellyfish Lake

Jellyfish Lake is a not-to-be-missed experience, a snorkel-only adventure. Grab your mask, snorkel and fins and be ready for a little bit of a “hike or climb” to Jellyfish Lake. From the dock, you need to hike up a trail, over a small ridge, and back down the other side to the lake. It is only about a 100 yard total hike, but the “trail” is quite rough and rocky. It is well marked, but climbs over the limestone rocks in the jungle. There is a rope handrail to use to pull yourself up some of the bigger steps, and down the otherside. There is a nice dock at the lake, with small fish underneath. The vast majority of the jellyfish hang out in the center of the lake, about a 100 yard swim away. As you swim out from the dock toward the center of the lake, you first encounter one, then several, then hundreds, then thousands, then eventually tens of thousands of jellyfish. These are non-stinging jellyfish, whose ancestors were trapped in this salt-water lake, many thousands of years ago. The jellyfish lost the ability to sting, and now survive by utilizing sunlight to feed the photosynthetic algae that inhabit their bodies. Swim gently, as the jellyfish are very fragile.

Enjoying the trip

There are several well-known dive operations in the Koror area, and a few others on the outlying islands. The dive boats are smaller, quite fast, usually propelled by twin outboard engines. While most of the dive sites are about 30 minutes away, the trip goes very quickly. The scenery along the way is fantastic as you travel through the rock islands. The ride is usually very calm as you motor over the crystal blue water. Some people feel that the boat rides to the dive sites in Palau are too long, but weaving among all the small islands is not to be missed. This is a time to relax, talk to your fellow divers, the divemaster and captain. You can learn a great deal during these boat rides; where to eat in the evening, favorite dive sites, what to look for, and other fun things to do topside while in Palau. The trip to the dive sites is like your very own “Jungle Cruise”. The islands are covered with lush, thick tropical vegetation. During your boat ride, be sure to watch for flying foxes or fruit bats. You might see them flying in the jungles above some of the larger rock islands. The adventurous can even try them on the menu at some of the local restaurants (not recommended!).

Lunch is usually provided by the dive operation; a surface interval of an hour or an hour and a half is normal. Sometimes you will motor to a deserted beach for lunch, or tie off at one of the buoys marking a dive site. You can do some snorkeling during your lunch/surface interval. There is always something
to see. Once, during a lunch break, we played hide-and-seek with a tiny trigger fish in 2 feet of water. Another time we marveled at the clownfish, anemones and giant clams on the shallow reef, and visited the beach where they filmed “Survivor: Palau”.

Palau should be an extremely attractive destination to US travelers, yet only about 500 US citizens a month enter the country. English is one of the official languages, currency is the US dollar, and electricity is North American. As Palau changes, more visitors will flock to this small corner of the world. But one area hasn’t changed…the underwater world of Palau…so visit soon.

**Snapshot:**
Chuck Brinkman IV

Chuck Brinkman grew up on the beaches of Southern California and became scuba certified in High School in 1975. He became a Padi and Naui Instructor in 1980, and worked in the Caribbean on Grand Cayman Island and in the Bahamas. He is a PADI Master Scuba Diver Trainer, and holds 10 different Specialty Instructor ratings. He is an accomplished land and underwater photographer, and an underwater hunter. He has been diving in many places and conditions.

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The invention of on-demand SCUBA in 1943 by Jacques Cousteau and Emile Gagnan revolutionized diving. In earlier times underwater explorers had to hold their breath long enough to get a glimpse of the deep. Diving bells gave divers a few extra breaths under water, but without a source of fresh air there was no choice but to return to the surface after a few minutes. Why didn’t divers just attach a long hose to their boat and take it down on their dive? After all, this seems to work for movie heroes in chase scenes! They manage to hide from their pursuers, submerged in a river or lake while breathing through a reed until the bad guys move on.

Why not explore the depths with something bigger and more robust than a reed, like a long snorkel or a hose? The short answer is: you can’t do it. It’s virtually impossible to suck air through a reed, snorkel, hose or any other device no matter how wide it is, even if your chest is only a few feet below the surface. At a depth of three feet the relatively small pressure increase of 1.5 pounds per square inch [psi] is enough to constrict breathing.

Force is defined as the pressure acting over an area and we have a lot of area to deal with. As an example, let’s calculate the force caused by a pressure difference of 1.5 psi. To simplify the calculation, assume the diver has a barrel-shaped torso that measures 40 inches around. The surface area of the cylindrical part of the barrel is given by multiplying the 40 inch circumference by 20 inches, the distance from the collarbone to below the navel. This is a surface area of 800 square inches, which, when exposed to 1.5 psi has 1,200 pounds pushing against it (1.5 psi x 800 square inches). Breathing muscles are not capable of expanding against such a strong constricting force.

Getting back to the movie hero, even if the top of his head is only a foot or so beneath the surface, sucking air through a reed or a long snorkel for any period of time would exhaust him and he’d have to come out of the water. The only way to stay down for an extended period would be to breathe pressurized air. If the air pressure in a long snorkel were to be boosted 1.5 psi above atmospheric pressure, our hero could stay down as long as his air supply lasted. That’s because air, inhaled at this higher pressure, counteracts and neutralizes the inward constricting force of water pressure and allows the breathing muscles to do their work.

The important point is: in order to breathe under water, air must be delivered at a pressure very close to that of the surrounding water pressure. A long snorkel delivering air 1.5 psi above atmospheric pressure is just right at a depth of three feet, marginal at five feet and useless at 6 feet. Cousteau’s and Gagnan’s invention, the Aqua–Lung regulator, provided air on demand and automatically adjusted the air pressure to match ambient pressure in water. Today’s modern regulators are descendants of the Aqua Lung principle.
These robust and efficient devices provide nearly effortless breathing to divers up to and beyond recreational diving limits. The rest of this article explains the basics of how regulators do their job.

To repeat, a proper regulator system provides breathing gas (air, nitrox or other technical gas mixes) to a diver at ambient water pressure with enough volume to satisfy the demand under strenuous conditions. This requires precision pressure regulation with sufficiently high flow rates through rather small apertures. Most readers already know that the standard SCUBA system consists of two regulator stages: first stage and second stage. The first stage regulator’s primary function is to reduce the gas cylinder pressure, which changes throughout a dive, to an intermediate pressure that stays constant* over the course of the dive. The second stage regulator, attached by hose to one of the first stage’s intermediate pressure ports, reduces the pressure to be inhaled to equal to that of the surrounding water pressure (the ambient pressure). Some second stages have manual adjustment knobs to tune the delivery pressure more precisely for easier breathing.

Three valves separate the diver from his gas cylinder. The first valve is the manually-operated cylinder valve which, when open, delivers high pressure gas from the cylinder to the first stage regulator. The next valve is inside the first stage regulator and provides intermediate pressure to the second stage. The last valve reduces gas pressure in the second stage from intermediate pressure to a pressure equal to the surrounding water pressure, breathable on demand.

**First Stage Regulators**

The first stage operates at a wide variety of input pressures without significantly changing the intermediate pressure. As the dive progresses, cylinder pressure is reduced from three thousand psi down to hundreds of psi. If the first stage regulator is of the “unbalanced” variety, intermediate pressure will decrease to some extent as the cylinder pressure is reduced. This will make it more difficult to breathe from the second stage. “Balanced” regulators have been designed to provide an unchanging intermediate pressure of 140 psi (above ambient water pressure) even as the cylinder pressure decreases. The exact value of the intermediate pressure can vary among regulator manufacturers by a few psi, but for a given regulator model once the intermediate pressure is set it should be constant*.

Regulators are precisely tuned instruments composed of nuts, bolts, springs, plungers, valves, and the like. Typically, the first stage regulator uses either a piston or a diaphragm to regulate the pressure. Piston regulators have fewer moving parts but, in order to sense ambient pressure, some of the components are exposed to sea water. Diaphragm regulators sense ambient pressure via deflection of a sealed diaphragm, so no sea water enters the mechanism.

Figures 1 and 2 illustrate the basic functionality of a “balanced piston” first stage regulator. The following examples will walk the reader through the basics of how this type of regulator functions. Let’s start by preparing to dive, having just connected the first stage regulator to a cylinder. The cylinder valve isn’t open yet. Inside the regulator the piston is in its left-most position (figure 1) and the pressures in chamber A and in chamber C are equal; gas can flow freely through the hollow first stage valve stem connecting those chambers.

Next, the cylinder valve is opened and high pressure gas enters chamber C and passes through the hollow valve stem into chamber A. Very quickly the pressure in chamber A increases, pushing outward against the walls. The wall on the right of chamber A is actually a piston and the increasing pressure in A would push the piston to the right if it weren’t for a strong opposing force from the spring. Notice that in addition to the spring in chamber B, there is an inlet to allow atmospheric air (or water, when diving) into the chamber. Atmospheric air pressure (or water pressure, when diving) and the spring push the piston to the left. In order to produce the correct intermediate pressure in chamber A, the spring is designed to yield and allow the piston and valve assembly to move to the right when gas pressure in chamber C is 140 psi greater than the ambient pressure in chamber B. The motion from left to right quickly puts the stem in contact with the valve seat in chamber C (shown in figure 2), shutting off gas flow. The first stage valve is closed and chamber A is sealed off from chamber C, 140 psi above ambient air pressure. The diver is now ready to test the regulator before entering water.

As the diver inhales from the second stage the gas pressure in chamber A drops below 140 psi (above ambient pressure). Therefore the piston and stem assembly quickly move to the left to open the first stage valve; the passage between C and A through that valve stem

*These figures show the cross-section of a balanced piston first stage regulator. The regulator is shown with only the essential components required to explain its functionality. Figures 1 and 2 are identical except for the location of the piston and valve seat, shown in red. Chamber C is exposed to gas from a pressurized scuba cylinder. Chamber B is filled with water (or air when on the surface) at ambient pressure and chamber A stores gas at the intermediate pressure. Separating chamber A from chamber B is a movable piston with a hollow tube (the valve stem) attached to its center. The stem passes through a seal in the wall separating chambers B and C. A spring placed over the stem pushes the piston toward the left, as shown in figure 1. The force of ambient water (or air) pressure in chamber B assists the spring, which is designed to yield if pressure in chamber C is 140 psi or greater than ambient pressure. Once the pressure in chamber C is 140 psi above ambient pressure, the piston assembly moves toward the right and the stem presses against the valve seat, stopping further gas flow (shown in figure 2). This keeps the intermediate pressure in chamber C at 140 psi. Functionality of this regulator is explained in the body of the article.
As the diaphragm collapses, the pressure in the second stage chamber decreases and the flexible diaphragm is bowed outward, as shown in figure 3. Intermediate pressure gas rushes into the chamber, where it expands and is inhaled. As the inhalation is completed, gas continues to fill the sealed chamber until the pressure equals ambient water pressure and the diaphragm once again is bowed outward.

Finally it is time to dive. As the diver submerges, water replaces atmospheric air in chamber B and the pressure in that chamber increases with depth. As he dives deeper, the absolute intermediate pressure increases significantly. For example, at a depth of 100 feet the ambient pressure in chamber B is 4 ATA or approximately 59 psi. The absolute intermediate pressure in chamber C at that depth is therefore 199 psi but, relative to ambient water pressure, the intermediate pressure is still 140 psi.

Second Stage Regulator

The second stage reduces the intermediate pressure of the first stage to provide breathable gas at a pressure that matches surrounding water pressure. There isn’t much room for slop here. A mismatch of less than 1 psi can make the regulator free-flow if the pressure is too high or it can cause labored inhalation if the pressure is too low. Because the intermediate pressure is constantly 140 psi above ambient pressure there is less need to have a balanced second stage. The following examples, shown in figures 3 and 4, illustrate the basic functionality of an unbalanced second stage regulator. Most, if not all, second stage regulators use a diaphragm to regulate gas pressure.

The second stage is a finely tuned instrument composed of nuts, bolts, springs, a lever, a valve, a diaphragm and one large chamber. This chamber serves three functions: (1) it holds gas at ambient water pressure, (2) it receives fresh breathable gas from the first stage and delivers it on demand to the diver and (3) it vents exhaled gas to the outside.

A large, flexible diaphragm is located beneath the purge button. During exhalation or when the diver is between breaths the diaphragm is bowed outward, as shown in figure 3. As the diver inhales, pressure in the second stage chamber decreases and the flexible diaphragm bows inward (imagine sucking on an empty plastic bottle). As the diaphragm collapses inward, it forces a lever to rotate counter-clockwise. The other end of the lever pulls open the second stage valve, as shown in figure 4. Intermediate pressure gas rushes into the chamber, where it expands and is inhaled. As the inhalation is completed, gas continues to fill the sealed chamber until the pressure equals ambient water pressure and the diaphragm once again is bowed outward.

If for some reason the second stage chamber is flooded, it can be cleared by pushing the purge button. The simple manual operation of pushing the purge button forces the lever to move counter-clockwise to allow pressurized gas to enter the flooded chamber. Since the chamber is now above ambient pressure, the exhaust vent opens and the breathing gas flushes water out of the chamber much in the same way as a diver clearing his mask.

The illustrations of first and second stage regulators were simplified to help explain how regulators function. Needless to say, commercial regulators have many parts built to exacting specifications. Some regulators are specially designed to provide greater gas delivery at depth or to perform in cold water without freezing over. But the basic principles still apply. Now that you have a better appreciation of how regulators work please make sure they are well maintained with regular professional service. You wouldn’t want a seal, valve seat or any other regulator component to malfunction on your next dive.

* Constant relative to ambient pressure. The absolute intermediate depends on depth. For instance, at the surface the intermediate pressure is 155 psi absolute, while at a depth of 100 feet the intermediate pressure is 199 psi absolute. In both cases the intermediate pressure is 140 psi above ambient pressure. Note that the first stage can do its job only as long as the cylinder pressure stays somewhat above 150 psi relative to ambient pressure.

**Snapshot:**

Richard Talaga, Ph.D

Richard Talaga has a Ph.D in physics from the University of Chicago and is a Physist at the Argonne National laboratory High Energy Physics Division. Richard is a NAUI Rescue Diver, IANTD Nitrox diver, and is certified in Extended Range Recreational Diving through PSAI.
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The story of the National Association of Underwater Instructors (NAUI) is an idea evolving into a vision of how diving instruction should be. It is a vision that is shared by thousands of people for whom scuba diving is not just a recreational pastime, but a passion. Imparting safe diving skills and working in unison to preserve the world’s aquatic environments are the noble purposes shared by the pioneers who first formed NAUI. Pursuing this task has not always been easy, but it has been richly rewarding. This article chronicles the dedication, hard work and perseverance, the conflict and resolution, and ultimately, the triumph of the philosophy “Dive Safety Through Education.”

The modern diving era in North America traces its beginnings to 1948 when Jacques-Yves Cousteau convinced Rene Bussoz (of Rene’s Sporting Goods in Westwood, California) to import self-contained underwater breathing units he called Aqua-Lungs. Previously, aquatic adventurers were limited to breath-hold dives, although they too called themselves skin divers. It wasn’t until the late 1960s that the term “scuba diver” became the accepted name for Aqua-Lung users.

The Aqua-Lung would, for the first time, allow divers to stay under water much longer than they could on a single breath. Rene Bussoz imported only ten S.C.U.B.A. units, and once they were sold he believed he had saturated the market. However, several sporting goods stores across the country discovered a market for the Aqua-Lungs. The divers who bought them soon realized they didn’t need a breath-hold diver’s stamina, and they in turn convinced others to try this new, wonderful, extended, weightless experience. The number of scuba divers steadily increased and U.S. Divers Company was formed out of Rene’s Sporting Goods.

During those beginning years, there were no certification requirements, and anyone who could afford it could purchase scuba equipment. That equipment pales in comparison to today’s designs. The double-hose regulators were hard breathing, and some required specialized techniques to clear water from the hoses if they flooded during the dive. Still, the only training offered by the sellers was the warning not to hold one’s breath. Training was being conducted by the military (Underwater Demolition Teams, the forerunner of the well known SEAL teams in the U.S. Navy) and by the oceanographic institutes at Scripps in Southern California and Woods Hole in New England. Dive clubs were the only resource for training available to civilian recreational divers throughout the 1950s. As the population of divers grew, the need to codify the training was also growing.

Jim Auxier and Chuck Blakeslee started a magazine called The Skin Diver (later renamed Skin Diver Magazine) in 1951. They asked Neal Hess to write and edit a column about teaching scuba called “The Instructors Corner.” It wasn’t long before Neal was reviewing course outlines submitted by others and certifying them as instructors. He started a new column called the “National Diving Patrol,” wherein he would publish the names of these new skin and scuba diving “instructors.” Al Tillman, (soon to become NAUI Instructor #1) was the director of sports for Los Angeles County Parks and Recreation during this period and established a training program sponsored by L.A. County to certify skin and scuba divers. The impetus was the growing number of divers appearing at Los Angeles area beaches and concern for their safety. As Tillman said in a 1952 letter to Parks and Recreation director Paul Gruendyke: “A new sport—skin diving—is becoming popular in the area. Recently while diving in Palos Verdes, I ran into several divers in the water with me who didn’t know what they were doing. One had one of the new underwater breathing units that allows divers to stay under for long periods of time... I propose that my department get involved in this sport and provide training classes. I believe that diving will grow in the future, and we have an obligation to make the sport as safe as possible.”

Bev Morgan, a Los Angeles County lifeguard at the time, (he would later be well known among commercial and recreational divers
The decade of the 1950s was a period of growing interest and participation in recreational scuba diving. “Sea Hunt” aired from 1958 to 1961 and starred Lloyd Bridges (NAUI’s first honorary instructor member) and Zale Parry, NAUI #A-12. “Sea Hunt” generated much of the early excitement and interest in scuba as a recreational activity. There were also early movies and books by Cousteau and Hans Hass, but neither did as much as “Mike Nelson” to focus the attention of the general public on scuba diving. Zale Parry and Al Tillman have likened the program to “an underwater Western movie” in their book ScubaAmerica: The Human History of Sport Diving.

Remarkably there was even an LP record released that purportedly taught listeners to dive. The jacket of the album carried the following explanation, and the lesson content is eerily familiar.

“The album the great actor–skin diver tells you—in what amounts to a private lesson—all he knows of the art and science of getting along in the world of the fish. It’s all sensible, all practical, all learned by years of fun and practice under water.

Bridges is the well-known aquatic star on national TV and has found a perfect way of combining his hobby and his work. He’s been an actor for many years, on Broadway first, then in movies and television. At the same time, he’s been an enthusiastic skin and scuba diver. So he jumped at the chance to star in a series which would let him act, skin dive and make money at the same time. He once was quoted as saying he would almost have paid them to let him be in the show—undoubtedly an exaggeration, but it shows you how much he loves the water. And he knows and respects it, too. On this record, he imparts his love, his knowledge and his respect.

Los Angeles County was followed by other public certifying agencies including the Broward County, Florida, the Red Cross program developed by John C. Jones, Jr. and later, in 1959, the YMCA’s national program.

In 1959 the National Diving Patrol was renamed the National Association of Underwater Instructors (NAUI) and Hess, Blakeslee, and Auxier planned to conduct a major instructor certification course the following year. In August 1960, a meeting of the Underwater Society of America was scheduled to be held in Houston, Texas. Neal Hess asked Al Tillman to organize the instructor course, and they contacted John C. Jones to work on the project. NAUI’s first Instructor Certification Course was held at the Houston’s Shamrock Hilton Hotel that August with 72 candidates. After six days of what was described as a “Hell Week,” 53 graduated, and along with their staff instructors, became the very first instructor members of the National Association of Underwater Instructors. A little over a year later, in October 1961, NAUI was incorporated in the State of California as a non-profit educational organization. Al Tillman was the first President and Neal Hess, the Executive Secretary. When asked recently why they chose a non-profit status, Garry Howland, NAUI #13 said, “That’s what we knew. I was a member of the Electrical and Electronics Engineers, Inc. and Al was familiar with the YMCA.”

NAUI's first elected Board of Directors included Al Tillman (NAUI #1), John C. Jones, Jr. (NAUI #2), Neal Hess (NAUI #3), Garry Howland (NAUI #13), Jim Auxier, (NAUI #4), and James Cahill, (NAUI #85). A Board of Advisors was appointed and included Captain Albert Behlke, Jr., Commander George Bond, Captain Jacques-Yves Cousteau, and Dr. Andy Rechnitzer.

NAUI grew throughout the 1960s by way of large Instructor Certification Courses (ICC’s) conducted in central locations throughout North America. The organization relied primarily on volunteers and regional leaders like Garry Howland and John C. Jones and in Canada, Ben Davis, NAUI #101. Al Tillman administered the Association’s business out of his home until Jim Auxier and Chuck Blakeslee, NAUI A34, with Skin Diver Magazine provided office space and a salary. Skin Diver Magazine published the “NAUI Page” as a regular feature, helping NAUI to continue to grow.

Al Tillman left the NAUI Board and administration in 1967 to operate his resort, the Underwater Explorers Society (UNEXSO), that he had opened in 1965 in the Bahamas. He was elected to a newly created position of NAUI Resort Branch Manager. Otherwise, NAUI continued to use regional Branches (managers) and local Chapters (leaders) as
a way to organize its member populations. In 1968 Art Ullrich was hired as the new Executive Director and moved NAUI's headquarters into his home in Grand Terrace, California, and later to offices in Colton, California—in an area known in Southern California as the “Inland Empire” for its proximity to the base of the mountain ranges that form the Los Angeles basin.

The first International Conference on Underwater Education (with the acronym ICUE and later shortened to IQ) was held in 1969 at Santa Ana College (now Rancho Santiago Community College) with Glen Egstrom as Program Chairman, John Reseck as Facilities Chairman, Larry Cushman as Promotions Chairman, and Art Ullrich as Coordinator. For many years IQ served both as a venue where NAUI nationwide members could meet and exchange ideas and as a forum in which papers were presented on diving skills and safety, teaching, diving physiology, physics, and other diving and marine sciences.

In the 1970’s NAUI membership began to expand internationally. A NAUI Instructor Certification Course was held in Japan in 1970, and NAUI Canada was organized as a separate corporation in 1972. The first ICC in Houston had included three Canadians, and the second ever NAUI ICC was held in Toronto in 1961, largely under the direction of Ben Davis, NAUI #101 (numbers 1-100 being reserved at this time for U.S. instructors). NAUI had certified over 5,000 instructors by 1979 and had increasing member populations worldwide.

Jon Hardy became the first NAUI General Manager when he replaced Art Ulrich in 1975. Jon left in 1978, and was replaced by Ken Brock from the YMCA, who left in 1980 and was replaced by Marshall McNott in 1981. Marshall was the first non-diver to be hired as an executive director of a scuba diver training organization.

In 1981, NAUI relocated to new larger headquarters facilities in Montclair, California, (still in the Inland Empire) where it would remain until 1997. In 1986 Marshall McNott left NAUI and was replaced by Sam Jackson. Sam had served on the NAUI Canada Board of Directors and emigrated from Canada to the United States to lead NAUI as its executive director through the rest of 1980s and into the 1990s. In 1987 Nancy Guarascio became the first woman to be elected president of the NAUI Board of Directors. By 1989 NAUI had certified over 12,000 instructors.

The 1990s were a time of challenge for NAUI. In 1995 Sam Jackson left NAUI to head up the Diving Equipment and Marketing Association that had formed out of the Diving Equipment Manufacturers Association (retaining the acronym DEMA) the previous year. After a three-month search NAUI hired Jim Bram, and consistent with other modern companies, changed the title of the NAUI chief executive to President. Jim initiated a turn around of NAUI, which was in dire financial condition when he was hired in June of 1995. Among the other nitty-gritty tasks of helping a company achieve a financial recovery, such as implementing sound business management practices and financial policies, Jim reset NAUI to do business as NAUI Worldwide. This global outlook was a factor as NAUI implemented a strategy to provide business support to members everywhere via licensed service centers and secure our most precious asset—the NAUI brand reputation. By 1998 NAUI Worldwide had established a network of twenty service centers supporting a growing membership population around the world. Along with this strategic shift in services delivery, the independent NAUI associations that had formed in the 1970s were retired and their members welcomed back into NAUI Worldwide, forming a single membership association teaching to one worldwide standard of training.

NAUI sanctioned nitrox training in 1992, the first recreational training agency to do so, continuing to innovate in support of its members and in the interest of diving safety. In
In early 1997, in keeping with NAUI’s founding principles, the association published standards for teaching technical diving, a practice that had been growing among NAUI members for several years. Thereby, NAUI instructors and leaders were provided support for any of their teaching endeavors and consistent with NAUI’s position as the global leader in quality diver education.

All of this produced unprecedented growth as divers worldwide saw that the NAUI ideal of “DIVE SAFETY THROUGH EDUCATION” was extremely important in a community becoming increasingly crowded with training organizations, all claiming to be either the fastest growing or the most convenient method for learning to dive. The NAUI slogan “The Quality Difference” continues to distinguish NAUI members from the rest, whose apparent qualifications seem to be little more than an acronym, a toll-free number, and a web site.

In 1997 NAUI Worldwide headquarters was moved to Tampa, Florida. In the same year the Board of Directors included members from Europe and Asia for the first time. In 2000 and 2001 NAUI released award-winning, state-of-the-art, fully integrated educational systems for diver education and training, and posted record revenues in its 41st year since that first instructor course in Houston.

NAUI has a wonderful history and is well prepared for the future. NAUI is its members. Our association will continue to grow as we promote Dive Safety Through Education. NAUI members are known and respected all across the industry for the quality of their teaching, concern for the individual student, and safety awareness. Even as we grow, we remain a real association of members who share our common values and a trust in one another’s commitment to our motto. There has never been a better time to become a NAUI leader or instructor.

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Health & Fitness in Scuba Diving
By Joel Dovenbarger, Vice President, DAN Medical Services

Your Personal Fitness Level
Scuba diving creates opportunities for travel, family fun and a friendly interaction with the environment. So, why the concern for physical examinations before diving?

Answers can be varied for the individual diver, because the physical demands of diving are many and diverse. Regardless of your health status, you must be able to tolerate the specific exertion required for scuba.

Consider your own fitness level. People of all ages and athletic abilities pursue recreational diving, and need to take the time to consider the fitness level required for scuba. Although the relatively weightless underwater environment can make diving appear almost effortless, scuba diving does require a measure of strength and stamina.

With this general article, DAN explains:
• Why overall fitness is important to all divers.
• When you may need to postpone diving based on medical conditions.
• Why you may need a pre-certification physical examination.
• The impact of medications on diving.

In addition, DAN addresses scuba diving safety for individuals with underlying health conditions such as asthma and diabetes (see paragraph “Asthma and Diabetes”) in past Alert Diver articles and in the Diving Medicine section on the DAN website.

Learning to Scuba Dive
If you’re considering learning to dive, keep in mind that not all your diving will be in the same conditions. Water and weather conditions vary from dive to dive and can even vary dramatically from the beginning to the end of some dives.

Divers need to have the necessary cardiovascular reserve to perform unexpected strenuous tasks while diving, such as moving through strong currents to reach your dive site or performing a long surface swim at the end of a dive.

Another consideration for diving includes health conditions or medications that may cause a loss of consciousness during a dive. If you’re already certified, you will recall completing a medical form. If you’re planning to learn to dive you will be asked to complete a medical history form from the Recreational Scuba Training Council, a global organization with the primary goal of developing worldwide minimum training standards. This procedure helps your instructor to determine whether you have health issues that would affect your ability to dive safely.

Depending on your answers, a physician’s examination may not be required. In some cases, students report medical problems that may prevent them from diving or temporarily restrict their diving. Once they have been evaluated and receive a physician’s consent, these students will be allowed to dive.

Restrictions on Diving
Some medical conditions, such as colds, flu, recent injury or pregnancy, will temporarily restrict diving. With colds or flu, swelling of the mucous membranes and congestion may cause blockage in the Eustachian tubes, which connect the middle ear to the pharynx, or in the openings to the sinuses themselves, preventing adequate equalization of these air spaces.

Injuries to joints and muscles may not only reduce your abilities, but they could also increase susceptibility to additional injuries. It is best to postpone diving until injuries are fully healed. Because little is known about the effects of scuba diving on an unborn child, it is recommended that
Asks Divers to Take Note When Restrictions Are Necessary

DAN Explains Why Overall Fitness Is Important and

By Joel Dovenbarger, Vice President, DAN Medical Services

Health & Fitness in Scuba Diving

Most medications will have no effect on your doctor or purchased over the counter. Medications, whether they are prescribed by

Tell your dive instructor if you take any individual responds to exercise.

to collect information about how well an cardiovascular problems. This is appropriate when the diver is older or appears generally out of shape. This test allows a physician to collect information about how well an individual responds to exercise.

Other medical conditions that restrict the movement of your arms and legs may limit in-water mobility. Some people may simply be out of shape and experience pain or discomfort with the physical exertion of scuba diving. Such health issues require individual evaluation by a physician prior to learning to dive.

Predive Physical Examination

A student is sent for physician referral when a dive instructor requires more health-related information. The most common reason for referral is that a student has an existing medical condition and is under the care of a physician. The evaluation is simply an assessment of scuba’s compatibility with various medical conditions.

Other reasons a diving student may be asked to see a doctor include (but are not limited to):

- A history of heart or lung disease.
- An unexplained loss of consciousness or “blackout”.
- Unexplained nausea or vomiting.
- The regular use of prescription or non-prescription medications.
- Shortness of breath.
- Repeated trouble equalizing air spaces.
- The appearance of being physically unfit.

No upper age limit exists for participation in scuba diving, provided you meet all other demands.

During a precertification exam, you may be asked by your physician to perform an exercise tolerance test to rule out any cardiovascular problems. This is appropriate when the diver is older or appears generally out of shape. This test allows a physician to collect information about how well an individual responds to exercise.

Diving While Using Medications

Tell your dive instructor if you take any medications, whether they are prescribed by your doctor or purchased over the counter. Most medications will have no effect on diving, but some may cause drowsiness or fatigue, which could increase the susceptibility to nitrogen narcosis. Others may affect heart rate. Read the warning labels and precautions before using prescription or over the counter drugs. If you plan to dive and still have questions, consult your doctor or call DAN.

If you start a new medication, be sure you experience no side effects at the surface before entering the water. (This is especially true of anti-motion sickness medications.) If a medication “may cause drowsiness” or suggests restricting the use of machinery, reconsider your plan to dive and wait until you’re no longer taking that medication. Talk with your doctor or call DAN if you have questions.

Asthma and Diabetes

There is concern in the diving medical community about the advisability of diving with asthma or insulin-requiring diabetes mellitus. After a careful evaluation, some physicians may permit individuals with a history of either condition to dive. Appropriate medical specialists should evaluate diabetes and other medical conditions, on a case-by-case basis. DAN continues to research the safety of scuba diving for individuals with underlying health problems. Your DAN membership helps support these studies.

For more in-depth information, see:


Enjoy Scuba!

Scuba diving is an activity that anyone with good health and fitness can enjoy for a lifetime. To get the most out of your diving, practice prevention of disease and injury and participate in a health maintenance program. Adhere to these principles:

- See your physician for regular check-ups.
- Participate in a regular exercise program.
- Be rested and well nourished before diving.
- Use proper exposure protection and equipment.
- Plan your dive to avoid over-exertion.

Good Advice

Don’t hide or downplay any medical condition or health problem: It’s better to have an open and frank discussion before a problem arises than to wonder if a dive injury could have been avoided.

Finally, call DAN if you have questions about your own diving fitness, certain medical conditions when diving, or how to find a diving doctor in your area. If your physician has any questions he or she can call DAN and speak with a medically trained professional.

Need More Info?

If you have questions about your fitness to dive, or if you need evaluation by a diving doctor, DAN can provide you with a list of specialists in your area.

Call DAN’s Dive Safety and Medical Information Line at +1-919-684-2948 (or call 1-800-446-2671, press 2, in the United States and Canada) from 9 a.m.-5 p.m. Eastern Time.
The Straits of Mackinac
A Ferry Trip Through Time

By Captain Dale Bennett

Sinking The Straits of Mackinac

It was an early Thursday morning on April 10th of 2003. The chill of early spring was in the air as the sun pulled itself skyward out of the eastern waters and the cloudless sky slowly lightened to reveal a glass calm Lake Michigan. The dive boat, Enterprise, was the only thing disturbing the surface as she left a v-shaped wake, moved east out of Waukegan Harbor and then turned south. My partner, Dave Manchester, and I were on board as we began a trip down the lake to witness an end and a beginning. A long and illustrious career was about to come to an end and, at the same time, a new attraction was about to be born. We were on our way to rendezvous with a small fleet of vessels near Chicago where the steamship, The Straits of Mackinac, was scheduled to be sunk as an artificial reef and a destination for wreck divers.

We arrived at the planned site of the sinking early so we just motored around in circles, waiting for the rest of boats to arrive. We would not be surprised if The Straits of Mackinac was late. Nothing really goes according to schedule once you get out on the water. The one thing we were sure of was, that barring a catastrophe, she would be there. The old ferry had been in Chicago for only 10 months, but she had been cleaned and prepared for sinking and all the permits had been obtained. A site had been approved for her final resting place, five miles east of the Wells Burt in eighty feet of water. There had been storms on the lake for the past couple of weeks and it was deemed important to take advantage of this window of good weather. No one wanted to give anyone in government a chance to change their mind.

After waiting on station for nearly an hour, we saw a shape starting to become visible on the water to our south. We watched as a large vessel began to resolve out of the morning haze. After a few minutes the vessel defined itself into the rust-red hulk of an old steamer being pushed by a tugboat. Accompanying it were two specks in the water that, as they came closer, we identified as the Tow Boat US vessel, Recovery, and one of the dive charter boats that hail from Burnham Harbor in Chicago. Another tugboat pushing a barge with support personnel and equipment on board was underway somewhat behind. We got underway south to meet them and fell in with the little fleet.

Once The Straits of Mackinac was maneuvered into position at what was designated to be her final resting several concrete-filled oil drums with attached cables were pushed over the sides. These were to act as anchors to help keep the wreck from drifting while it sank. The bilges had been filled with concrete to help ensure that she would sink upright. When all was ready the sea cocks were opened and two men in an inflatable dinghy removed safety plugs from all the through-hull openings. The Straits of Mackinac began to settle lower in the water. It took about forty-five minutes for her to gently settle, stern first, forever into the waters of Lake Michigan.

Although we on Enterprise did not participate in the actual sinking, we counted ourselves privileged to be witnesses to such a noble end to the career of this great lady. She had a long and valued service that we hope will be preserved as a sort of underwater museum.

The History of The Straits of Mackinac

The history of the steamer began with the geography of the State of Michigan. The upper and lower peninsulas of the State of Michigan are completely separated by the Straits of Mackinac.

By Captain Dale Bennett
Mackinac, a five mile wide waterway that connects Lake Michigan and Lake Huron. It was never easy to get from one half of the state to the other. Up through the first part of the twentieth century, people had always relied upon privately operated boats and ferries to get from one half of the state to the other. Citizens were annoyed with the unreliable availability of regular transportation and made their representatives in the state legislature aware of their displeasure. So it was that, in 1923, the State of Michigan began a state owned and operated ferry service across the straits. The steamship, The Straits of Mackinac, was the third ferry to be put to this service. (Interestingly, the word, “The” is part of the registered name of this vessel.) She was built for the Michigan Department of State Highways and began service carrying cars and trucks across the straits in 1928. At nearly 200 feet long with a beam of 48 feet she was a sturdy, seaworthy coal-fired steamship and she served the state well until the Mackinac Bridge was built and opened in November of 1957.

When the Mackinac Bridge opened, the fleet of ferries was decommissioned. In 1959 The Straits of Mackinac was sold to Straits Transit, Inc. She continued to serve as a ferry carrying freight and passengers to and from Mackinac Island until 1968. In 1969 The Straits of Mackinac was sold to the Sturgeon Bay shipbuilder, Peterson Builders, Inc. She was moved to Sturgeon Bay where she was used as a floating warehouse. With virtually no maintenance, she deteriorated over the years and eventually her wooden decks, exposed wooden cabins and other such structures became a hazard and were removed. Eventually, in 1994, she was sold to a Greek salvage company and moved to a dock in Kewaunee, Wisconsin. Unfortunately, shortly after the sale, the owner of the firm died and The Straits of Mackinac was left abandoned. After a few years, a weather beaten, vandalized hulk of the once majestic steamship was left, grounded, in the shallow waters of the harbor at Kewaunee.

A Green Bay area dive club, Neptune’s Nimrods, found the old ferry there in Kewaunee and, in the year 2000 assumed control of the wreck with the intention of sinking it as a wreck diving attraction near Algoma. They pumped out the bilges to re-float the hull. They began cleaning out the ship and started the process of getting the permits and approvals they would need from all of the governmental entities having jurisdiction. While these efforts progressed, the marina at which the ferry rested was sold. The new owners wanted the wreck removed as a condition of the sale. In May of 2002 Neptune’s Nimrods were given thirty days to move it out.

The club was not yet ready to sink the wreck and they did not have another place to store it. They also lacked the resources to pay for a seaworthiness inspection or to have it towed. It began to look as if The Straits of Mackinac would end her career in the scrap yard.

Just then a white knight appeared. A group of divers from the Chicago area stepped up to take responsibility for the vessel. The Tim Early Foundation, a 503c corporation, and Pat Hammer, owner of Scuba Emporium, put together the Mackinac Foundation which took ownership for the purchase price of $1.00. It was June of 2002 when they had the ship towed down to Chicago. A truly Herculean effort followed. Many Chicago area divers volunteered their time and donated their money to help with the project. In only ten months they had the ship cleaned up and had all of the bureaucratic red tape signed and sealed so that they could sink the old girl off of the north shore of Chicago.

Diving The Straits of Mackinac

Now, The Straits of Mackinac is a very popular destination for recreational scuba divers. Resting in eighty feet of water she is easily accessible to most divers. Dive charter boats from Burnham Harbor make the twelve mile trip out to this wreck on a regular basis. Enterprise also makes the trip from Waukegan for all day, four-tank dive trips. Approaching the site, we usually see one or two permanent moorings. On a recent visit we found only one but, luckily, there was no one else there when we arrived. Another dive boat came while we were preparing to get in the water so we gave them a stern line and they tied up to us. On this day I wanted to take some pictures of the wreck so I was diving. My partner and co-captain, Dave Manchester, would stay on the boat.

I splashed with my trusty Nikonos III (I haven’t gone digital yet.) and swam to the front of the boat. Two other divers, Steve and Bob, were right behind me. Normally, there are two moorings on The Straits of Mackinac, one at the stern and one at the bow. Since there was only one this day I was not sure which one we were tied up to. I wanted to photograph the engine room, so I was hoping we were tied
up to the stern. Starting my descent next to the mooring line I checked my gear and the settings of my camera. The trip to the deck of the shipwreck was fast and it was quickly apparent that I was on the raised foredeck – the mooring was tied to the anchor windlass. That meant that I would have to swim most of the 200 foot length of the wreck to get to the engine room that I wanted to photograph. Adjusting my buoyancy I swam aft to the rear edge of the foredeck and followed the ladder over the edge down to the main deck. On the foreword bulkhead I passed the board that displays engraved nameplates honoring many of those who donated to make the sinking of this shipwreck possible. To one side of the board is an entryway into the bow section of the wreck.

On this dive there was no time to explore this area, but I have done so in the past. As in any overhead environment, one should not enter a wreck without proper training and even then not without using a line to help find your way out. Even the best divers can make a mistake and kick up the silt and there is a lot of very fine silt accumulating in this wreck. The fine clay particles that are the normal component of Lake Michigan silt are very easy to kick up. They will reduce the visibility to zero in seconds and take hours or even days to settle back out.

As I started to swim aft along the port side I saw Steve and Bob tying off in preparation to go in to the bow section. Just inside they located a companionway and ladder that leads down and aft to a corridor that goes back half the length of the ship. There are state rooms on either side of the corridor, with bunks, sinks and toilets. Toward the aft end of the corridor is the galley and dining rooms. As they explored this area, I swam on the deck along the port side. I passed over many holes that were cut in the deck to make it easier for a lost diver to get out of the wreck. Unfortunately, many of these holes are not quite big enough to get through with scuba equipment on but they do provide additional light to the space below. About three quarters of the way back I found the entry to the deck house above the engine room. Just inside was a ladder down to my destination.

Inside I found the massive, triple expansion, steam engine. The crankshaft below the pistons is open and the drive shaft runs back to the stern of the vessel. If I were to go up and enter the next compartment back I would be able to see the packing box along with the steering post and quadrant. This day, however, I stayed in the engine room and took pictures of the equipment in there. There is what looks like a motor/generator set, several pumps and what seems like miles of plumbing. I took pictures as fast as my strobe would recycle and by the time I was out of film it was time to turn my dive and make my way back to the bow. Resting at my twenty-foot stop I couldn’t help but spend the time planning my next dive on this wreck. I know that it will take me at least another half dozen good dives to get all the pictures I want.

We will return to dive The Straits of Mackinac again. The old Lady will live on as long as scuba divers come to visit the depths of Lake Michigan to relive the great age of the steamship.

Sources: Milwaukee Journal Sentinel; Chicago Tribune; Michigan State Ferry Album; Cyber Diver News Network; Bowling Green State University Libraries and others.
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Ernest H. Brooks II
Brooks Institute of Photography, underwater photographer and diving pioneer, one of only 40 photographers in the world to be elected to the Camera Craftsmen of America.
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Tea cup from the Andrea Doria.

Brian, Tracy and Ethan Pautsch interact with the dolphins at Atlantis in the Bahamas.

A large angelfish followed Tracy Pautsch during a Bahamas dive.

The Wreck of the “Mr Bud.” in Roatan, Honduras. Photo by Dan Schmidt.

Julie Schmidt on the bridge of the “Mr Bud.” wreck in Roatan, Honduras.

Caribbean Reef Shark. Photo taken by Nate Pittock.

“BACKSCATTER”
A elephant spotted in Maui. 1 of 24 remaining in the world.

Parrotigers can be seen only on night divers in the Bahamas.

Captain Darrick on a wall in the Exuma’s. Photo taken by Nate Pittock.

Butterfly fish taken by Nate Pittock in the Exuma’s.
Steve Tisinai uses “El Cheapo” brand oxygen analyzer before a 190-foot dive on the Roscinco off of Racine, Wisconsin

Dive training weekend at Haigh Quarry in Kankakee, Illinois

“Backscatter”

Do you have underwater diving photos, pictures from top side events, photos from scuba club gatherings or vacation albums? We’d love to show them here in the “Backscatter” section of the magazine. Be sure to include your name, email address and a short description the photo.

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Pat Hammer, owner of Scuba Emporium in Orland Park, Illinois, is a fixture in the Midwest diving community. He is one of only 65 PADI Platinum Course Directors in the World. Mr. Hammer started diving at a young age. In 1971, while still in college, he belonged to a dive club with over 150 members. Being foresighted, he realized the potential success of opening a dive store. Pat opened his first facility in 1974 and became a course director in 1975. Over the years he has owned stores in Illinois, Michigan, Atlanta, Georgia and Crystal River, Florida. Today he owns facilities in Orland Park, Illinois and Lauderhill, Florida.

Early in his career Pat opened a store in Alsip, Illinois, next to a Coffee Shop, which he frequented. It was there that he met a waitress named Sherry. They married and Sherry became a big part of Pat’s life and business. Sherry loves to teach so it was a great match from the very beginning. Pat gives Sherry a lot of the credit for the tremendous success of his operations. She wears many different hats, handling accounts receivable, accounts payable and much of the financial and accounting aspects of the stores. Pat likes to say that “Sherry holds the purse strings, I am just an employee!” Pat does a lot of Instructor Training Courses in Illinois. Since 1980 he has also held training in Caribbean locations such as Sandals Resort in Jamaica and St. Lucia. He even does Instructor Courses in the desert southwest state of Arizona. He also owns the Our World-Underwater exposition that is hosted every year at the Donald Stephens Convention Center in Rosemont, Illinois. Our World-Underwater is without question one of the most successful venues in the United States. Pat told us, “Eileen Skiba is my right hand on the project and does a fabulous job.”

Pat completed two terms with DEMA’s Board of Directors, which gave him the ability to speak and interact with many dive retailers from all over the world. Organizing the trips and traveling with his clients is Pat’s favorite activity. Unfortunately, traveling for fun has been difficult because of a busy instructional schedule. He also enjoys spending time at his Florida store where he mingles with guests and makes an occasional dive off his boat “Hammer Time.” Pat Hammer may be the most successful dive professional in the Midwest and is definitely a Midwest Diver you should know! He can be contacted at scubapat@aol.com and http://www.scubaemporium.com
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