

Isla De Mujeres, Quintana Roo, Mexico

—Letting Sleeping Sharks Lie

It was in April of 1975 that I sat down on the deck of my Sausalito houseboat to lay out the first direct mail advertising plan for Undercurrent. My three other associates and I knew that the age of consumerism had arrived and that sport divers were one social subgroup without a consumer-oriented publication.

I took a break in my writing to bicycle to the post office for the morning mail. My National Geographic had arrived and though I normally tote all the mail back to the office for opening, this morning I slipped the issue from beneath its cover and was greeted with a stunning photograph of a diver embracing a so-called "sleeping shark." I was mesmerized. Quickly I turned to the inside story and stood there in the post office eagerly reading Dr. Eugenie Clark's exciting discovery of these so-called "sleeping sharks" in caves in the Mexican Caribbean. Until this time virtually everything I had read about sharks claimed they were open ocean swimmers, and that they must continue to move about. Should they stop, their gills would be unable to retrieve oxygen from the water and they would suffocate. But here in the pages of the National Geographic was a new discovery--divers actually encountered sharks that were quiet and docile, resting on the ocean's bottom and permitting the divers to approach without showing any aggressive behavior. Someday, I said to myself, I must see these sharks.

I had hoped to travel to Isla de Mujeres not long after the article came out, but I learned from our readers that diving there may not be particularly interesting outside of the caves and that the guides were not the best. With other priorities for our Undercurrent readers, especially covering the more significant resorts available to divers, Isla de Mujeres slipped from my mind.

But now it's back. Having reviewed nearly 100 resorts in these pages in our eight years, we thought it would be time to cover the sleeping sharks -- regardless

INSIDE UNDERCURRENT

Bone Under Pressure — <i>Sport Divers and Bone Death</i>	p.6
Tank Rips Through Three Walls	p.8
A Failing Product Under Warranty — <i>Getting What You're Entitled To</i>	p.8
Writing For Undercurrent	p.10
Free Flow	p.12

of the lack of other diving opportunities.

Isla de Mujeres is a small, (6 miles by half-a-mile) slightly developed island off the tip of the Yucatan Peninsula, north of Cozumel, and a short boat-ride from Cancun. Since it has never become much of an attraction for tourists, it is not an easy place to reach. Information and schedules I received from the Mexican Tourist Office indicated the island was served by commercial aircraft, hydrofoils and jet foils. But that information quickly proved erroneous. By the time my plans were laid, I found my trip was to begin in San Francisco, with one change of planes in Ft. Worth, and another change of planes in Cozumel, where I would catch a commuter flight to Cancun, a \$3.25 bus ride to Puerto Juarez, and a 65¢ ferry ride to the island.

Arriving at the dock at Isla de Mujeres I immediately set out to find our home for the trip, the Hotel Osarios, which turned out to be just a block and a half from the dock -- and a half block from the major dive shop Buceros de Mexicana. We were assigned to a third-floor room (no elevator) with blue tiled floor, twin beds, louvered windows, a ceiling fan, a dresser and end table, a small changing room and a bath with shower stool and wash basin. Nothing fancy, but clean and neat at \$8.65 per night double.

The town itself extends about nine blocks long and six blocks wide, covering the half-mile width of the island. It took but a couple of hours of casual strolling on the one paved road or the tiled or sand side streets to cover the whole town enough times to learn the layout. Two blocks from the Osarios was the hub of action, the town plaza. Each evening local boys and younger tourists got together for a pick-up basketball game, while around them people sold hammocks, panama hats, ice cream and hot dogs.

A block off the plaza is Gomars, a restaurant which should be the first stop on a restaurant tour because their menu is in both Spanish and English. I found the food served at all of the restaurants to be almost identical, so this became a quick and easy way to set myself up with a translation. Perhaps the biggest culinary surprise to most gringos -- me included -- was that there were no tacos, no enchiladas, no refried beans and no Spanish rice. But oh, I ate well: lime soup made from chicken stock with slices of lime, pieces of chicken and broken pieces of crisp tortillas in the bottom; garlic soup of chicken stock again with garlic cloves simmered until soft and sweet, then chunks of bread added and an egg swirled in the hot soup before being served; turtle steaks, broiled shrimp and broiled lobster tails with garlic flavoring (called mojo de ajo) and fish, mostly grouper and yahoo broiled, or fixed Veracruz-style with tomatoes and peppers. Most meals come with papas fritas (French fries) and a vegetable and run from \$4-\$7. None of the food is especially spicy or hot, and hot sauce is available to increase the incendiary nature. Along the town pier and in the plaza there is a cart where hot dogs and hamburgers are available for 35¢.

Of all the meals, breakfast is the most mundane. Fresh fruit or fruit salads, eggs plain, rancho huevos, or boiled (hard or soft). A few places serve hot cakes and undercooked French toast. All of the restaurants serve bottled or purified water, so the iced tea is good and cold and won't make you sick. Our hotel had bottled water on the second-floor landing available at all hours.

Three dive shops were listed in the material of the Mexican Tourist Bureau, but once on the street I discovered that two only supply equipment for snorkelers,

leaving Buceros de Mexicana with a monopoly. Since I had no diving reservation, I checked in at 8:00am, the day after my arrival. "Come back at 10, señor." I did. "No diving today, señor." All the divers had partied the night before. Tomorrow, I was told, we would visit the "caves of the sleeping sharks." My buddy and I spent the day lollygagging at Coco Beach. Not much to see snorkeling here as the water is only about 3'-4' deep for a long way. Windsurfers are available, and a small restaurant and bar offer the only retreat from the sun. Since all the shops close up from 1:00 - 4:00 for siesta we decided to do the same and beat the heat. At the end of the beach is a bridge leading to the five-story El Presidente hotel, a bit too commercial for my taste on this sleepy island. It has all the modern conveniences (i.e. air conditioning) and goes for \$30 per night double.

Bright and early the next morning we were once again at Buceros de Mexicana. This time we were successful. Dive guides were available and we could go tanking . . . but only one tank. And not to the cave of the sleeping sharks. I registered my disappointment to shrugs of the shoulder. So, at 10am we were off to Manchones with two newly certified divers from Abilene (who had just had their open water check-out in Possum Kingdom Lake), our boat operator and the dive guide. The craft was a 20' fishing skiff powered by a 45hp outboard, with no diving ladder and no shade from the hot sun.

When we got to the reef I dropped in to find a pretty hefty current running. The reef was about 35' - 40' deep and about 15' - 20' across. I started to go with the flow, but my buddy and I became stuck with two new divers -- without the dive guide. He never showed. He later claimed that his regulator had crapped out. The reef had little to brag about. Damn few fish -- and all commoners -- small soft corals, a few clusters of fire coral and the rest plate and other hard corals. Visibility was about 35' at best. And the Texans were running out of air. I sent them up with 500 psi and my buddy and I spent the rest of the time looking under things until we got bored. We surfaced with half the air left in our aluminum 80's.

Back in the boat our Possum Lakers had become "sea sick," so they were dropped off at a nearby beach. We were taken to Light House Reef to be dropped into a nice current for a mile snorkel run. The underwater sightseeing was quite pleasant with a good array of reef fish, including lovely Queens, blue and gray angels along the drift. At one point we snorkeled around the light house island and about 3' below the water line I spotted a 2-foot statue of the Madonna! So be it for the claims of exclusivity at Pennecamp. As the current carried us along I had little to do but enjoy until we came up to the boat. Cost for this 5-hour excursion was \$17.00 per person.

That afternoon I tried again to set up a dive to see the sleeping sharks. "Come back tonight." I did. Five dive guides were hanging around. One could speak a little English. There was no problem about going to the caves, he said. The first cave was at 80' and then after a surface interval of about 20 minutes we would dive the second cave at about 60'. Assuming we were to burn out both tanks, I didn't even have to pull out my tables to say "no thanks." "No worry," he said. "We go down slow and come up slow." How about one dive? "No, you have to make two dives." I shook my head and went searching for a Dos Equis.

While sipping, I spotted a young fellow who had been on our dive snorkeling

**ISLA DE MUJERES
QUINTANA ROO, MEXICO**

Diving for Experienced Divers	
Shark Caves	★★★★★
Other Diving	★½
Diving for Inexperienced Divers	
Beach Snorkeling	★★★
Hotel	★★★½
Food	★★★½
Moneysworth	★★★½

★poor, ★★fair, ★★★average, ★★★★good, ★★★★★excellent

trip, Casper. When I told him my concern about the depths and times of the dives, he told me to come back to the shop in the morning and he would see what he could do. The next morning we loaded our gear into one of the fishing skiffs and headed out to sea. We traveled more than four miles to the open ocean before the boatman stopped. On land, only the top of the Presidente Hotel was visible to provide a fix on our position. No doubt the boatman knew his business. Once on the bottom at 50', we swam no more than 20 feet to the cave, one in a series near the south end of a long reef called La Cadencia. I was not certain what I would find, for Eugenie Clark found not a single sleeping shark on her six-day trip here in 1972. She had to be persuaded to return several months later to look again. We approached the first cave, not really a cave at all, but an archway formed by broken rock about 30 feet wide. Sure enough inside was a sizable bull shark, perhaps 7 ft. or so, just lying on the bottom with her tail half buried in sand. We swam by the animal three or four times. Both the guide and my buddy stroked the critter's tail. I watched. Our guide had explained that the dominant theory is that the sharks feed heavily in advance of going into the cave to be cleaned. Thus there would be nothing to worry about. However, since I did not know how long it had been in the cave -- it could have been at the conclusion of one feast or the start of the next -- I elected to opt out of the touchy-feelie. 'Let sleeping sharks lie' is my motto. And besides, these sharks aren't sleeping. Their eyes move as people around them move and it seemed to me that they were very much aware of what was occurring.

The notion that the sharks feed heavily in advance is but one theory. Another is that the sharks may get "high" in the electromagnetic fields that are created when fresh water springs enter here and mingle with the salt water. Regardless of the theories, this bull shark seemed to be as docile a creature as I had ever seen and at no time suggested any notion of aggressiveness or even assertiveness.

We left the cave and went hunting for more sharks. We found a small nurse shark which, after being prodded by all of us, decided it had had enough and swam off. The bottom outside the cave is fairly flat, mostly rock covered with sand, with little coral. But angel fish were everywhere. I stopped counting Blue angels when I got to 30. A few barracuda hung around. And the guide grabbed my shoulder to point out a spotted ray floating gracefully by into the distance. When I got to 500 psi I went to the surface. The boat was right there. The boatmen had followed our bubbles and he took my weight belt and tanks and I climbed, rather rolled, into the boat. All in all, an exciting dive.

Our guide was not associated with the shop. He explained that the dive guides had a cooperative. The boat operators had a union. The dive shop just supplied air and gear. When there was a request to dive the caves of the sleeping sharks, the shark fishermen act as both guides and boatmen. "We know where the sharks are because we fish for them." The shark fishermen won't tell anyone the exact location of the caves, so if anyone wants to go out, the dive shop has to negotiate with them. He also explained that the dive shop didn't want to push a single-tank dive since the shop would lose the revenue from renting the two tanks. But since we had agreed to pay for two tanks, the shop operator was satisfied. When I told him of my concern about the depth and time, he laughed. The first cave is in 65' of water, not 80', he said. There would be a 45 minute surface interval between the dives. The reason for making a two-tank dive was to have a second chance for the sharks if they were not in the first cave. If no sharks were found at the deeper cave, then the dive was terminated after 35 minutes, leaving a good margin for safety. "The only reason people want to take this dive is to see sharks and that is what we try to do." Now, if I had only known all this before I requested a single tank!

That afternoon we snorkeled at Garrofon Beach, a developed area where sunning

is done on levels built up around a rocky shoreline. The terraced area offers shade, chairs, stairs to the water, a bar, shops and a restaurant. Snorkeling is easy, pleasant, and crowded. Every day boatloads of tourists come from Cancun for the day; 150 people must have been on the beach or diving off of boats on this day. Nevertheless, we saw schools of 40-50 sergeant majors in 15' - 20' of water. Grunts and sergeant majors were too abundant to count. A couple of dozen angels -- Blue and French, paraded majestically for us. The bottom is sand and rather dull, but along the wall running parallel to the shore are a few small anemones. I found vivid black and orange juvenile angels. All things considered, it was a pleasant way to spend an afternoon.

A diver comes to Isla de Mujeres to see the sleeping sharks as indeed I did. Those are exciting moments. I don't believe the other diving here is worth a trip. But the island itself is delightful and offers an Old World experience that's yet to be cluttered and distorted in ways that have affected Cozumel in the last 10 years. The town has yet to be tourist-dominated.

In the evenings and on weekends the movie is open. The local girls wear dresses, hose and heels. The people are neat, clean and dress better than the tourists. In the evening they are out with their children and dogs, visiting and watching the gringos pass. There are shops, but no large stores. Business begins at 8am and closes down around 1:00pm for siesta and opens up again at 4 and goes til 8 or later. For every restaurant in town a clean t-shirt and shorts are all the tourists usually wear.

About a half block north of the Dive shop, the local boys have set up a soccer field, using old fishing nets and wood for the goals, and there is a game going on every evening until it gets too dark to see the ball. Shop personnel are normally friendly and helpful but with little English and a lot of patience. I bought ice cream in one of the shops and every time I passed the shop or saw the vendor on the street, he smiled and waved. If you are a reader, take along plenty of books as none of the stores had books in English, though a small restaurant east of the Plaza had some English books where you can trade in the one you have finished or pay \$1.50 to the cashier. There are few cars and fewer trucks. Most transportation is by shanks mare or moped. The Police do not carry guns: in fact none of the police I saw in the Quintana Roo carried weapons. I was told that in the past 10 years there has only been one violent crime in the entire state of Q. Roo, so the government doesn't see any reason to arm their law enforcement people. True or not, it's a good story.

All in all, Isla de Mujeres is an enjoyable spot to unwind, enjoy the sunshine, beaches and good beer. Despite the fact that the diving is limited, to say the least, the fact that I saw the sleeping shark made the trip for me. I wouldn't go there to feed a three tank -- or even a two tank -- a day habit, but I'd go there for the town and the people, for another chance to see the sleeping sharks, and for a real chance to get away from it all.

Divers Compass: Bring cash or traveler's checks; I found no one accepting plastic. . . .Beer is no more than 45c/bottle, drinks about a buck. . . .Rates of exchange are best at the banks, which are open for exchange from 10:30 to 12 noon. . .no one will accept pesos for U.S. dollars.

Undercurrent correspondents are located strategically in the major diving areas of the world as well as on all coasts and major inland waters of the continental United States.

The editors welcome comments, suggestions and manuscripts from the readers of Undercurrent.

Editorial offices: P.O. Box 1658, Sausalito, CA 94965.

Bone Under Pressure

—*Sport Divers And Bone Death*

Most divers know that the penalty for missing decompression time is decompression sickness or "the bends." But many are not aware of a more insidious and potentially crippling long-term complication of inadequate decompression. I refer to dysbaric osteonecrosis (DON) or, in the vernacular, diver's "bone rot." Even though the exact cause of DON is not known, enough is known about it that it should be preventable.

What Is Bone And Bone Death?

Before discussing the specifics of dysbaric osteonecrosis I should first review a few fundamentals about bones and joints.

The human skeletal system is made up of more than 200 bones which provide the structure and housing for our bodies. The integrity of this system is essential for normal function, and, as anyone with arthritis can tell you, even the simplest of activities can become a painful experience when the bones and joints are ill.

Bones consist of two major parts -- marrow and cortex. Bone marrow is the relatively soft, disorganized inner portion of bone where most blood cells are formed. Conversely, the bone cortex is the hard, highly organized outer portion of bone that consists of solid calcium salts and provides the strength to bone. Indeed, this is what one usually thinks of as bone. The cortex has a relatively poor circulation, which is important with regard to the development of dysbaric osteonecrosis. In addition, the ends of long bones, i.e. the joints, are covered with cartilage and surrounded by special tissues, the combination of which provides the ultrasoft surface and lubrication essential for normal painless movement.

Although you may think of bone as a relatively lifeless material that does not do much once it has developed, this is not the case. Actually, bone is quite dynamic and continually changing. If this were not so then there would be no way to repair damage (e.g. fractures) or adapt to changing structural stresses (e.g. as occurs with exercise and muscle development). However, if the circulation to an area of bone is blocked, essential nutrients, oxygen and other life support materials will not be able to get to the bone cells, and they will die. This is what is meant by necrosis. The term "osteonecrosis" simply means bone cell death.

Destruction of bone can be divided into two main types: septic, or that which results from bone infection, and aseptic, or bone cell death due to causes other than infection. Dysbaric osteonecrosis is a specific type of aseptic bone necrosis.

Aseptic bone necrosis is most often due to an interruption of the blood supply to the bone, either as a result of severing the blood vessels in an injury (e.g. a fracture) or blocking the circulation with a blood clot. This latter circumstance can occur as a complication of several different conditions, e.g. alcoholism, obesity, liver disease, pancreatitis, certain metabolic diseases and prolonged treatment with cortisone-like drugs.

Bone Death In Divers

In divers the circulation to bone can become blocked as a result of air bubbles forming in small vessels. These bubbles can occlude the circulation either directly or indirectly by giving rise to fat emboli or aggregates of platelets, cells and other debris resulting from biophysical interactions at the blood-bubble interface. These bubbles and clots are presumed to be the proximate cause of dysbaric osteonecrosis.

Occlusion of blood vessels can occur in either the bone marrow or cortex, but significant bone necrosis is more likely to develop in the cortex because the blood supply is not as good there. The result of such a blockage is formation of a bone scar, which is usually not significant unless it occurs near the end of the bone, i.e. near the joint, in which case the area of bone cell death will result in roughening and abnormal wear of the joint surface. Over a period of time this will lead to destruction of the cartilage and development of a painful arthritis. Indeed, the major problem in dysbaric osteonecrosis is pain and loss of musculoskeletal function because of damage to major joints.

Osteonecrosis in divers usually involves the shoulders, although it may also involve the hips, knees, elbows and other joints. In many cases more than one bone or joint will be affected.

Although quite rare (about 1 in 10,000), a specific type of bone cancer has been known to develop in these areas of bone scar also.

Studies Of Divers

Cases of dysbaric osteonecrosis were first reported among compressed air tunnel workers a little more than 70 years ago, and even though DON was long suspected of occurring in divers too, it was not until 1941 that its occurrence was clearly demonstrated among divers. Since then, DON has become a major concern of commercial and military divers, which is the reason why these divers are usually required to have regularly scheduled x-ray examinations of their bones. Its occurrence among sport divers has also been reported, but, overall, there is little information about its occurrence in recreational divers.

"The association of dysbaric osteonecrosis with both years of diving experience and depth of dives has now been well-documented, with the incidence of DON substantially increasing with diving to depths greater than 100 feet."

A number of studies have looked at the frequency of DON in selected diving populations and related it to their diving practices. For example, among Japanese and Hawaiian diving fishermen, who typically make multiple deep dives and do not adhere to established safe decompression schedules, 50% and 80% of divers have dysbaric osteonecrosis, depending on the length of time they had been diving. The longer one is active as a diver, the greater is the frequency of DON. The association of dysbaric osteonecrosis with both years of diving experience and depth of dives has now been well-documented, with the incidence of DON substantially increasing with diving to depths greater than 100 feet.

There is also a relatively high incidence of DON among divers who use heliox -- presumably because of the association of use of heliox with deep diving. Likewise, saturation divers have a higher likelihood of developing DON, with its occurrence also associated with the depth of dives.

Studies among military and commercial divers, in whom the incidence of DON is generally less than 5%, have also demonstrated an association of DON with deep diving and length of diving experience, as well as some other important findings. For example, it has been shown that fatter divers are more likely to develop DON than their thinner cohorts. Similarly, there is a definite association of the occurrence of decompression sickness with DON.

Divers who have had the bends have about a five

times greater chance of developing DON. Although the bone injury may develop in the same joint affected by the bends, this does not necessarily happen. Instead, it seems that the circumstances that cause decompression sickness are the same ones that cause osteonecrosis, and any joint may be affected regardless of the type of bends.

Preventing Bone Necrosis

Based on these observations, then, some things should be clear to sport divers.

First, confining one's diving to depths of less than 100 feet should make the occurrence of dysbaric osteonecrosis most unlikely. Currently available data indicate that divers who do not go deeper than 100 fsw probably have much less than a 1% chance of developing DON.

Second, maintaining a lean body habitus and good physical condition should reduce the likelihood of suffering DON, as well as succumbing to decompression sickness.

Third, adhering to established safe decompression procedures, especially if diving deeper than 100 feet, should minimize the risk of developing DON. Conversely, not adhering to such, especially if it results in actual decompression sickness, greatly increases the chances of developing a bone problem.

In addition, to follow the decompression tables you must use a depth gauge and diving watch that are functioning properly, for the decompression tables only work if depth and time parameters are known with accuracy. Unfortunately, many new and in-use depth gauges are inaccurate. Thus, periodic calibration is necessary to ensure their accuracy. Using a submersible pressure gauge is also essential so that the dive can be controlled from start to finish without running out of air or experiencing some similar exigency.

Fourth, for divers who routinely make decompression dives or dive to depths greater than 100 feet, it may be a good idea to get periodic x-ray evaluations. Likewise, because of the association of decompression sickness and later development of DON, it is worthwhile for any diver who has had the bends to get a baseline bone x-ray examination so that if a joint problem develops at a later date there is a basis for comparison. (In general, it takes at least 3-4 months for the bone injury to show up on an x-ray.) However, this should not be done until first discussing your particular circumstances with a knowledgeable physician who can order the ap-

appropriate radiographic examination and verify your need for such, since these x-rays are not cheap and do involve a significant radiation exposure.

"Divers developing 'arthritis' after starting diving should consult a diving medical specialist."

And fifth, divers developing "arthritis" after starting diving should consult a diving medical specialist knowledgeable about DON to find out if the joint pains are related to one's diving. This would be particularly important for anyone who has been

an active diver for a long time or who has a history of DON risk factors, i.e. deep diving or prior decompression sickness.

In most cases, though, simple adherence to safe diving practices should be all that is needed to prevent this potentially crippling condition.

The author, Kenneth W. Kizer, M.D., is a former U.S. Navy diving medical officer, past president of the Hawaii Undersea Medical Society, and current UMS North Pacific Chapter President. He has written previously for Undercurrent. Dr. Kizer currently resides in Novato, California.

Tank Rips Through Three Walls

In Moline, Illinois on May 23, a scuba tank took off "just like a rocket," ripping through *three* walls and injuring two employees of Sentry Pool and Supply Company.

Ed Hadley, a spokesman for the company (which also has a full-line dive shop) said that the tank had been brought in for a hydro, and an employee opened the valve to allow the tank to drain. The tank sat for a couple of days until two employees began to unscrew the valve to begin inspection. Apparently, internal rust had clogged the valve, preventing the tank from emptying, and when the valve was partially removed the trapped air "propelled the tank like a jet-propelled rocket."

The valve went in one direction -- knocking a heavy metal door from its hinges -- and the tank went in the other, crashing 35 feet through three walls and striking Elizabeth Newman -- she suffered six pelvic fractures. Another employee was grazed by the tank.

The tank had not been hydro-tested since 1976. Water in the tank or inadequate filtration from a compressor could have caused the blockage. The tank had been stored full. Had it been stored with roughly 500 psi, as is normally recommended, it is unlikely that Ms. Newman would have been injured.

A Failing Product Under Warranty

—Getting What You're Entitled To

What should a diver expect from a product warranty? He can expect a great deal if he follows the rules of the warranty, but he may *not* be able to expect much at all if he ignores the warranty or fails to exercise plain old common sense.

A while back we received a letter from a subscriber, whom we shall call Bob Smith, complaining that Scubapro had not responded to his complaints about the failure of their BC, and that he was going to contact everyone from the Consumer Product Safety Commission to *Undercurrent* to get a replacement for his failed BC. His initial letter to Scubapro stated the problem as follows:

"I am having a problem with one of your back pack buoyancy compensators, purchased new in early 1976. I have used it approximately four times a year and have carefully rinsed it and allowed it to dry after each use. After the last use it would not hold air. I tested it and found three small pin hole leaks. I repaired these, and then retested by immersing the BC in water to find two new pin holes. I repaired these, retested, and two new ones appeared. It appears that the BC has reached its 'end-of-life.' If the material has a limited life, it was never mentioned when I purchased the BC."

Smith's ensuing correspondence spoke about "life-

threatening defects" and demanded that Scubapro either repair or replace his BC. Dennis Hart, Director of Engineering, told him no way. We decided to enter into the dispute, and though we love to find favor with the poor, powerless consumer, in this case the consumer demand was nothing short of unreasonable.

We asked Hart for Scubapro's position on the matter, and Hart sent us a letter with these salient points:

According to Smith, his BCD...is about 6½ to 7 years old....After examining it, we have concluded that the material has deteriorated to the point at which it should be retired. Our devices are constructed of a heavyweight nylon cloth material coated with a neoprene rubber that seals it internally. This coating, like any rubber, has a limited lifespan and is susceptible to accelerated deterioration from sunlight, smog, chemical and solvent vapors, etc. We feel that 6½ to 7 years is a very respectable service life for this type of product, especially when we have no control over consumer end use or storage conditions. This is over three times the two-year warranty period that was in effect when the product was purchased. The fact that Smith allegedly made only 34 dives in 6½ years is not pertinent. This failure appears related to time or storage rather than use.

We are sorry that there appears to be consumer feeling that our products should last forever. In some instances this may be close to the truth, and in such cases those Scubapro products carry a life-time warranty, but not for fabric or rubber components which deteriorate with age....We have informed the consumer that this product is a buoyancy device, not a life jacket and is not intended to save his life as he feels it is.... This unit will still function as a buoyancy device but has obvious pin hole leaks which should give evident indication that its time is up and it should be retired.

Hart went on to offer Smith a used replacement bag for \$35, but Smith refused the offer, having already purchased another BC.

We find Smith to be a bit ballsy. Seeking a free replacement for a seven-year-old product has no precedent so far as we know, and we find Scubapro's and Hart's response entirely appropriate. From time to time manufacturers have complained to us about other consumers who try to get free replacements for aging products, and from time to time we get complaints from readers about manufacturers who go out of their way to frustrate the consumer even though a product might be under warranty.

If you have a problem with a product, you have an obligation to follow a process to seek repair, just as the manufacturer, if the product is under warranty, has an obligation to repair the product. How well you handle your end of the bargain will affect just how quickly and easily you get service.

Two items are vital to a purchaser: *the warranty card and the sales receipt*. The warranty tells you what you are protected against and for how long. It may also tell you what you must do to keep the warranty in force.

The sales slip proves that you bought the item and indicates when you bought it. Since a warranty runs from time of purchase, the sales slip is normally required to establish that the product is still under warranty.

At *Undercurrent*, we have occasionally received letters from divers who complained that the product they bought "less than a year ago" was refused repair by the manufacturer. The problem is compounded by the diver having never mailed in his warranty card -- so the manufacturer has no date of purchase on file -- and "not being able to find the sales slip."

"More frequently than not, we suspect, the diver is trying to stiff the manufacturer."

So, it's the diver's word against the manufacturer's word. More frequently than not, we suspect, the diver is trying to stiff the manufacturer.

Not long ago we received a complaint from a reader whom we shall call "Nellie James," who sent a leaking Graflex strobe to Subsea for repair (they handle the strobe). The dispute that arose was complex and James had some problems with Subsea that might have been better resolved by Subsea, but her difficulties were amplified because she sought repair under warranty. Yet, she had no proof of purchase. Nor did Subsea have a warranty card on file. Furthermore, the serial number on the strobe had been eradicated by an electric pencil, no doubt raising everyone's suspicions. From the exchange of correspondence we received, James seemed to get her back up when Subsea told her they would charge her \$78 for the repair -- or charge her \$19 for checking out the strobe even if she decided not to have it repaired. She was not pleased.

Nevertheless, Subsea's response was consistent with the terms of the warranty. And regardless of those terms -- which are pretty consistent throughout the industry (and in other industries as well) -- all

Writing for Undercurrent:

We get frequent inquiries from writers and would-be writers asking whether we are interested in their free-lance work.

Our answer is always yes.

If you have an article prepared, send it to us. Expect that the article will be in our hands for one month. Don't send it to any other publication while we are considering it (and don't send us an article you have sent to another major publication).

It is not necessary to send a full article. If you have an idea for an article, you may send us a few paragraphs on the idea; we'll contemplate it for awhile and then let you know whether we are interested in the full article.

We pay for our stories upon publication and we also pay for tips. If you have discovered an equipment problem that we find significant and end up writing about it, we'll pay you for your alertness.

When submitting an article to Undercurrent, remember that we are a consumer newsletter. We want stories that save time, lives, or money. We want investigation, analysis and commentary. We do not want stories about how to learn to dive or what you did last summer.

Send your inquiry to Ben Davison, PO Box 1658, Sausalito, CA 94965.

too many consumers seek repair under warranty. When the manufacturer makes appropriate repairs after the warranty expires, they get angry and even a bit irrational when they receive a bill for the repairs. Dacor's national sales manager, Jim Foley, told us how they handle this problem:

"We look over the product," he said, "and can usually tell when it was made. We make minor changes in the product or the production from time to time that are not very noticeable, but we can use these to tell about when it was made and judge whether it would normally be under the warranty." Of course, there can be no help for the consumer when a diver buys an aging product that has gathered dust in a shop. In that case, he will surely need his sales slip or an indication from that shop that the equipment is still under warranty.

Understand The Warranty

Reading a warranty card before buying an item --and keeping it handy after you make the purchase --may save you hassles later. To illustrate, let's take a look at a few BC warranties. Nearly all BCs are warranted to be free of defects or poor workmanship for one year. In addition, some manufacturers give a longer warranty to the inflator mechanism than to the BC itself. (SeaQuest, for example, provides a three-year warranty on their inflator.) Some manufacturers offer a longer warranty on the inner

bag under certain conditions. The SeaQuest warranty is for the life of the original owner so long as the BC is maintained and not harmed by accident or carelessness.) And, in every case, the consumer must be able to prove ownership.

"Consumers who don't read the fine print are often irritated when they first bring a product with a lifetime warranty in for service."

More frequently, lifetime warranties are being seen on the market. Although they make excellent advertising copy and attract divers to products, they are usually more complicated than one might imagine and usually require the diver to have regular service. Consumers who don't read the fine print are often irritated when they first bring a product with a lifetime warranty in for service. For example, one shop owner (who wishes to remain anonymous) told us: "Take Scubapro's lifetime service warranty on their top of the line regulators. If a diver has it serviced yearly, all parts needed except the filter are free. But labor is not free. Some customers think that the labor is to be included in the warranty, and we catch hell from them when they find out we charged for our work."

U.S. Divers offers a one-owner lifetime warranty for the aluminum tanks they sell. However, to keep that warranty in effect you must have the tank

hydrotested every five years and visually inspected every six months -- proof of this has to be sent to U.S.D. should a problem develop. And when you buy the tank you must also send in the warranty card or else the warranty is not in effect.

A case can be made that the complexity of many warranties -- the U.S. Divers' lifetime tank warranty notwithstanding -- makes it nearly impossible for a consumer to collect. To follow the rules of that warranty requires the kind of compulsive behavior that keeps psychiatrists' offices filled. Nevertheless, those are the rules. Whether the warranty is created just to look good in advertising, or whether it is created to indeed serve the consumer makes no difference. They're the manufacturers' rules, and we divers have to play by them.

The Right Way To Get Service

But with all we have to say about shipping gear off to the manufacturer for repair, that's precisely the wrong way to initiate getting an under-warranty gear problem resolved. The first step to take -- and the wisest step -- is to return to the shop where you bought the equipment. Take copies of the receipt and warranty. Until you have dealt with the retailer do not send the equipment back to the manufacturer. As Ben Fairrow, manager of the Pinnacles Dive shop in Novato, California, says, "The dive shop can do more for you because the shop has a more direct economic relationship with the manufacturer. The sales slip proves where and when you purchased the product and then we can do something about it."

Dacor's Jim Foley agrees: "The best thing to do is to take the product back to the shop that sold it. They may be able to do any needed work right there. If that doesn't work, then copies of the warranty and sales slip should be made, and a letter describing the problem should be included with the item and sent to us. The letter should state as closely as possible what is wrong. For example, my BC doesn't work is not as helpful as my BC leaks at the lower left."

When an item arrives at the manufacturer's it is first tested. If the consumer has been clear about the problem, the response time may be reduced significantly. If the warranty is in effect, the manufacturer will respond -- or, at least, is required to respond. Frequently, however, the warranty is void. It may be out of date. Or no sales slip is included. Or the owner may have worked on the equipment himself, which is often enough to void a warranty or, it may appear that the unit has been damaged through accident, carelessness, lack of maintenance as specified by the warranty, or there may not be warranty coverage.

If the manufacturer believes that the warranty no longer applies, it's his obligation to inform the owner, indicate the charge, and give the owner the option to have the work performed -- or to have the equipment returned -- C.O.D.

We asked several manufacturers for their usual response time, and the range ran from one to four weeks -- but a response does not mean a repair. It may mean a simple letter indicating the cost of repair -- and therefore it may be another month before the product is shipped. Chuck Jehle of SeaQuest told *Undercurrent* that "the total time needed to respond is determined by the mails and our work load. It can vary considerably. We try to respond within a couple of weeks," he said. Dacor's Foley said they normally take two weeks to respond, but sometimes as long as a month is required, noting that the best time to get a rapid response is in the winter months -- not July and August.

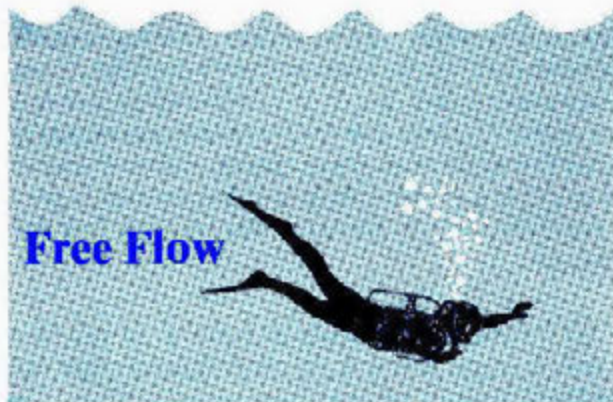
If the shop has gone out of business, or you have moved, then it's best to deal directly with the manufacturer of the equipment under warranty. Jim McGahey, owner of the Aquarius Dive Shop in Monterey, California, explains why. "Shops are not paid for work they do under warranty. So while a shop usually will repair or adjust something that they sold, they may be hesitant to do it for another shop's customer. If I sold it and have some in stock I will either repair it, if possible, or replace it from my stock. But I can't do that for everyone or I'd go broke."

Rules For Warranty Application

So, if you have the warranty card -- and filled it out and mailed it at the time of purchase -- and have proof of the date of purchase -- a sales slip -- you should get little flack from either the shop or the manufacturer. Yet, to minimize your repair problems under warranty we offer the following suggestions:

1. When you're considering a purchase, compare warranties as well as the products.
2. Follow the warranty directions, and keep records of sales slips and warranty cards.
3. Even if you have the skills, do not attempt to repair anything that is under warranty, as that may void any recourse you may have with the manufacturer.
4. If you have a problem, take the item back to the shop you bought it from (if possible) and spell out the problem. If you are covered by the warranty, let the shop deal with the manufacturer for you.

5. If you must deal with the manufacturer, include all documentation (copies of the warranty card and sales slip) and a letter detailing the problem you are having.
6. Anticipate, upfront, that if you send your gear to the manufacturer it may take at least a month and maybe longer, before it is back in service. You might get it sooner, but always be prepared for the worst.



James Jackson of Honeycomb Valley, Alabama, dives for mussels in the Tennessee River. He brought up a batch a few months ago and with his wife and a friend pried them open at home. Having found pearls in mussel shells on other occasions, they were keeping an eye out for others. And another he found, this one measuring a full 3/4 of an inch across and weighing more than half an ounce. Since Jackson had had previous pearls mounted for his wife, she asked about this one. "No way," he said. "It's so big it would cost too much to mount, and we also can't afford to do without what we can get for it." Jackson sold this pearl for a cool 1000 clams, er...mussels, er...dollars.

Have you noticed those ads for Vantage cigarettes showing the diver, in brand-spanking new gear, ogling some sort of treasure he has just surfaced, while he grips his Vantage, ready for another drag. Well, if you haven't figured it out by now, smoking and diving isn't a particularly sensible combination, regardless what the turkeys at Vantage would have us think.

John Twilley, Editor of the British *Sub Aqua Scene*, writes that an American diver is seeking an entry into the *Guinness Book of Records* for the highest scuba dive in the world -- and under ice too. Twilley said this was achieved by spending "rather less than five minutes in three feet of water, under about five inches of ice, 17,000 feet up a mountain in Bolivia. . .He barely had room to move between the ice and the shallow lake bottom."

7. If you deal with the manufacturer, you will pay the postage. If it turns out not to be under the warranty, it may be returned to you C.O.D.
8. If you do not have any documentation, you may try to throw yourself on their mercy. But like using Scuba, don't hold your breath.

A year ago we reported that a waterproof container was being manufactured for the Sony Walkman and similar portable stereos -- headphones included. Now we'll tell you how to get it. Send \$43.50 to the Sharper Image, 406 Jackson St., San Francisco, 94111. The flexible bag permits you full control over your device while underwater, but don't expect much in the way of great depths.

From *Diver Magazine*, a British publication, comes this tidbit: How like the Italians to be the ones most often seen to be breaking the conservation rules in the Red Sea, looting shells and corals and spear-fishing friendly fish. This dedicated pursuit of their nonexistent macho image has already turned the seas around their native land into a desert. Have you noticed that as the fish they spear get smaller, the guns get bigger? Why, I ask myself, do they not stick to the things that they can do really well, like making ice-cream?

One of the best ways to protect yourself from damage to your ego, pocketbook or -- God forbid -- your health and safety, is to constantly supply yourself with the latest in diving information. Here are three books we recommend to get more fun out of safe diving:

- *Diving with Undercurrent*: Our latest compilation of articles from the pages of *Undercurrent* features advice on every aspect of serious sport diving from how to select the best equipment to how to get more enjoyment from diving to how to protect yourself against shark attacks. It's a must for any diving novice or veteran who wants the best how-to information on serious sport diving.

- *The Best of Undercurrent*: Our famous collection of articles from our first five years of publication can show you how to dive for dollars, avoid deep trouble or hunt for treasure. It's a veritable encyclopedia of diving lore.

- *Diver's Guide to Underwater America*: Get over 1,000 dive reviews of little-known locations within the US. Along with full-color photographs by some of the best marine photographers and essays by today's most prominent diving writers.

Take a look at the page which accompanies this issue and describes these valuable sources of information in more detail. Then order your personal copies today!