

undercurrent®

THE PRIVATE, EXCLUSIVE GUIDE FOR SERIOUS DIVERS

P. O. Box 1658, Sausalito, California 94965

Cable Address: Gooddiving

Vol. 12, No. 5

May 1987

Report From Our Readers: Part IV

--Wobbygong and Giant Cod

For the last several months we've been running readers' comments about various destinations, and with this issue we'll conclude for another year. In the interim, if significant changes in reports on resorts seem to show up, we'll include them in an update. We appreciate the responses we have received from you, our readers, and apologize for not being able to include all of them. We've tried to present a balanced report, and for those areas we have not included, it's mainly due to not having sufficient information.

Australia: The best of the Great Barrier Reef diving comes off live-aboard boats, but one can also get day-boats out of Cairns, as did reader John Jarosz (Skokie, IL) on the Down Under. "Thought it takes 80 to 100 minutes to get to the reefs," he says the "owners Don and Jennifer Cowie took excellent care of us and the diving was fantastic." (222 McCoombe St., West Court, Cairns, Queensland, 4870, or call 46170 54 4882). Jarosz also stayed at Green Island and said "the diving was acceptable, but nothing great." Louis Kosnin (Carrollton, TX) claims that many U.S. firms "buy space in Australian dollars and bill the identical amount in U.S. dollars, which is a 33% currency profit game in addition to their normal fee. The solution is to call Pam Fischer at Going Places (a dependable, honest agent) in Cairns (011 6170 514055) and will book what you need at the legitimate rate." Kosnin went on the Bali Hai II; he says: "This 60 footer sleeps eight, has unlimited diving and three good meals at \$100/day. Incredible diving with every variety of fish, large and small, plenty of lionfish, clown triggers and white tip and whaler sharks. I know where divers' heaven is; it's on the Great Barrier Reef."

Lance Reynolds (Louisville, KY) booked the Auriga Bay through See and Sea and "I got my five star money's worth, with great diving along Ribbon Reef, fine food (but no fresh fish from this marine sanctuary). I paid \$950, \$150 more than the Aussies." (800/DIV/XPRT) ... Heron Island is a full-fledged resort, catering

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to anyone with an "outdoorsy bent," diver or not. Most travelers speak in superlatives about the food and diving, but a few, who have traveled half the globe to dive and dive, complain about only two tanks a day in somewhat controlled circumstances. Beth Losiewicz (Colorado Springs) writes: "Such a wealth of color and life that it took me several dives to sort it all out: an overwhelming variety of corals, plenty of tropicals, a few reef sharks and lots of turtles." Robin McDougall (Fairbanks) adds to this: "Dinners were always special; so were diving mantas, wobblygong sharks, and even a cow and calf whale." (714/786-0119) ... Robin also traveled the Ribbon Reef aboard the Reef Explorer. "A premier charter boat; to say I was pampered (the crew even handled all the gear after every dive) would be an understatement; had a large, comfortable, double bunk cabin, got in 3-4 daylight dives and a dive every night at super reefs (even saw cod as large as a man) with good dive plans before hand. Top marks for the experienced diver." (011-070-516-360 in Cairns, or 415/421-5588).

Maldives: This archipelago in the Arabian sea, south of India, has more than 50 island resorts, many with scuba diving. James Pearre (Pontiac, IL) visited these islands in January and was kind enough to give us this brief rundown. "At Embudu Island Resort, divemaster Alex Horn takes experienced divers on high current 100 foot deep dives where pelagics and sharks are nearly always present; better than any Caribbean diving (Belize boats the exception); soft corals and tropicals abundant, varied and vivid." Harry Haley (Alexandria, VA) says "Bathala is a 6 acre island with 30 cabins, two and a half hours by boat from capital city. Above primitive, but not fancy. Plenty of fish, good photography and informal diving from beach and boat." ... W.K. Rockey (Arlington, VA) stayed in Nakatchafushi resort, 90 minutes by boat from town. "Diving was perfect; complete variety of flora, fauna and underwater terrain; PADI dive shop at hotel; nothing to do but dive and relax." (Let a travel agent help you with these.)

Papua New Guinea: How about this comment from Zoe Kinnu (Studio City, CA): "It exceeded my wildest expectations. Joined the 65 foot Telita which was designed and constructed just for diving. Magnificent photographic opportunities; a steady stream of mantas and sharks became almost too common; multitudes of colorful and unusual tropical fish. Be sure to take the 'highlands' extension tour." (La Mer, 800/348-3669 or 212/599-0886.)

Thailand: Jim Henry (Sarasota, FL) said: "I found a well run operation at the Pattaya Beach Resort, a three hour drive south of Bangkok. I'd give diving quality a 3 out of 5 for experienced, and a full 5 for beginners. Bill Burbridge, a NAUI instructor, charges \$50 for a two tank dive, with lunch."

Turks and Caicos: When I was on Grand Turk 5 years ago, the only dive guide had a tough time getting his jury-rigged boat to the reef each day, but I certainly liked what I saw when I got there. Arlene Simon (Guttenberg, NJ) says: "The north wall rivals the famous Cayman wall and has all the critters, big and small; Omega Diving staff divides groups according to ability and experience; Kittina hotel has large luxurious beach front rooms, but eat your meals elsewhere unless they hire a new chef." (305/667-0966). Blue Water Divers also gets good

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ratings; The Salt Raker (which I definitely prefer) with 12 dives is \$461; the Turks Head with 12 dives is \$338 (809/946-2260). Grand Turk is a sleepy, quaint (read run down), British Colony, hence the low prices. Located 550 miles southeast of Miami, it's reached via Pan Am. My March, 1983 review still is worth reading.

Turneffe Island Lodge, Belize: In the November/December issue, we printed comments from two readers who weren't pleased about the diving and treatment they received at this pricey and isolated outpost. We have since received six letters rebutting their negative comments: here are two examples: "I went to Turneffe Island Lodge in January; at the Elbow, 15 minutes from the Lodge, I saw black tip sharks, large numbers of eagle rays and even porpoises; there are many types of live corals and the divemaster, Beau spared no effort in finding the best sites and making our stay as enjoyable as possible." Izhak Kroshinsky, (Manasset Hills, NY). And Colleen Chmik (Wetaskiwin, Alberta) writes: "I've dived all over the Caribbean and the South Pacific and Turneffe Island is the only place I've returned to more than twice. Meals consist largely of fresh seafood, conch, lobster, grouper, snapper and fresh fruit and vegetables; accommodations are comfortable and cleaned daily; the dive boat is seldom crowded; the diving is organized and very professional. I have made over fifty dives here; sponges, gorgonia and numerous types of fish are abundant. This last trip I saw turtles, black tip reef sharks, a hammerhead, mantas and I see eagle rays on most dives. If weather permits a drift dive can be made through a mangrove creek, and I've even dived with porpoises here. To experience the undiscovered, the extra price is well worth it. All dive operations have their problems, but this one has few....." (800/772-1002 or 713/528-3988.)

Virgin Islands, British: Overall, the British Virgins get good marks for "better than average Caribbean diving due to a good array of tropicals and healthy and colorful coral. With few residents and not a lot of tourists (most don't get past the U.S. Virgins) much of the area is not heavily dived, so virgin spots are still accessible. On Tortola, the Moorings caters primarily to sailors who sail in for a day or two, and (like is sometimes the case for such operations on other islands) some divers looking to dive for a week are less than satisfied because they cater to different dives every day. William Kitz says dives here "were something of an exercise class; the mother duck and up to eight ducklings swam just as fast as they could to some distant point and back again, not allowing much exploration of some pretty good dive sites. When I questioned the owner about this she said that they did not like to deal with single divers who dive daily." Jerry Belike had similar complaints, which he solved: "The guides were sometimes too attentive, but when I told them I was a rescue diver they backed off and relaxed. Because we were between season (May) we had a boat and guide to

Vanuatu

Until recently, hardly a soul in the U.S. had heard a thing about the diving at Vanuatu, known until 1979 as New Hebrides. Now, that island nation is hitting the U.S. with a well-funded advertising campaign which included a booth at the DEFA convention. They use a splashy 24 page publication that's as appealing as anything we've seen from anyplace, Grand Cayman included.

It ought to be good; it's paid for by the American taxpayer through a grant from the U.S. Agency for International Development.

It's an interesting dilemma in American economic versus political policy. The economists are concerned about the balance of payments and the outwardly flow of American dollars, while the diplomats are concerned about maintaining America's sphere of influence in the South Pacific. Since our foreign aid money is being used to persuade Americans to spend their money in Vanuatu -- not Hawaii -- it looks like the diplomats have won. And to our way of thinking, it seems better to spend U.S. funds in Vanuatu to attract U.S. divers than to attract the U.S. Navy.

This past February, a major hurricane swept through Vanuatu, damaging several major resorts and causing losses in the millions. We have no report about the effect on the reefs.

ourselves everyday." Bill Gotherard wrote highly about Mike and Keith Roayle of Blue Water Divers: "They are the best; they're diver's divers, who took us anywhere we wanted to go on our two tank dives." Last year 15-year-old Charles Schneider (Carpentersville, IL) got certified at the Aquatic Center. "I made three checkout dives and the instructor was very helpful. All my dives were very good." On Virgin Gorda, the Bitter End Yacht Club is a stopover for anyone plying these waters by sail. Its diving needs are well served by old salt Bert Kilbride (although his son Gary, who doesn't get such high marks, guides many trips) who has been diving these waters for more than three decades. Harry Livingood (Winter Springs, FL) says diving here "beats the Bahamas, Cozumel and even Cayman." The Bitter End is so far out of the way of the beaten track, that the reefs stay healthy.

Virgin Islands, U.S.: Although close neighbors of the British Virgins, tourist diving doesn't quite measure up (unless you're a resident and go to the spots the tourists don't reach). St. Thomas, says Diedre Nockus (Polos Hills, IL) "does not compare to Cozumel or the Caymans, but it is a very acceptable runner up. Sea Adventures divemasters at the Frenchman's Reef Hotel went out of their way to make sure the diving was enjoyable." Readers who stay at the Bolongo Beach Hotel and dive there with the St. Thomas Dive Club generally write well of their stay. "The people at the resort, dive shop and restaurant were among the friendliest and helpful I've encountered on half a dozen Caribbean Islands. And the diving was good too!" writes a reader who forgot to include his name. ... About St. Croix, one reader writes that "Dive masters from Dive Experience were very professional; one diver who either was less experienced than she represented herself or hadn't dived in a long time was actually rescued by a dive master. Experienced divers were allowed to do as they pleased within depth limits. The dive shop was well stocked and had repair facilities." Joe Ullery (Brookfield, IL) used VI Divers and says: "Salt River is a must for wall divers. St. Croix is a great vacation island with some good diving, but fish may be trapped or speared with no restriction and soon its waters may be as barren as those of Jamaica."

Jeff Hubbard (Glenmont, NY) found a good dive boat operating from St. John, where one can camp in the tents at the Cinnamon Bay campground or reside in pure luxury at the Caneel Bay resort: "The MV Cinnamon Bay has been refurbished after her years of ferry boating. This is the ultimate day boat with a large deck, modern heads, and even couches for resting." And Hubbard, who's dived previously in Cayman and Bonaire, called this "5-star diving" (Capt. Bob Corn, Box 476, Cruz Bay, St. John, USVI, 00830, 9809/776-6462).

And with these comments, we conclude our reader update for another year, or so. But keep those cards and letters coming, folks.

Why Divers Die, Part IV

--Where's The BC?

This is the last in our series of articles detailing the reason behind sport diver deaths. In this article, we look at the deaths of working divers, many of whom were using scuba gear.

The data presented has been gathered from reports by the National Underwater Accident Data Center at the University of Rhode Island. *Undercurrent* takes all responsibility for editorial changes.

Occupational Fatality Statistics

During 1983, the NUADC recorded a total of 12 occupational diving fatalities. For 1984, 11 occupational fatalities were recorded. Eight of the 1983 fatalities were using scuba gear and the remaining four deaths occurred while using surface-supplied air. Seven of the 1984 occupational underwater

fatalities were using scuba diving gear.

At the entrance to Cape Cod Canal, the 39-year-old victim was making a 20 foot dive alongside a tanker in an effort to determine the source of a diesel oil spill. He apparently experienced stomach cramps, swallowed oil and got oil in his eyes before making too fast an escape to the surface and suffering a probable air embolism.

After completing his day's work, a diver at a Mississippi River power plant in Louisiana dropped some of his equipment and went back into the river to retrieve it without a safety line. He was apparently sucked up against the screen of an intake pump and held for several minutes before the pump could be shut off. By that time, the victim had drowned.

A 33-year-old professional diver lost his life while working on a California dam. The victim was reportedly sucked into an intake pipe and carried through the dam. His body was found a mile and a half below the dam structure.

A 26-year-old male succumbed to an air embolism in a Virginia river while diving on surface-supplied air. It was reported that his air hose became pinched while he was at a depth of 80 feet, and he attempted to make a free ascent without his air.

In California, the body of a 22-year-old male victim was found nine days after he disappeared from the end of his surface-supplied air system while commercially harvesting sea urchins. His lines had become severely entangled in a kelp bed.

An air embolism caused the death of a 24-year-old male scuba diver attempting to retrieve scallops off the coast of Maine during 1983. This fatality occurred on the victim's third dive of the day, when he failed to surface. His equipment was lost over the side as the body was being brought aboard his vessel.

"He was reported to have been at a depth of 130 feet, diving without a buoyancy compensator, when he failed to surface."

A 30-year-old police officer died during the testing of an underwater communications system in 60 feet of water. Upon completion of the test, the victim proceeded to dive deeper and deeper. Between 125 and 135 feet, the victim's buddy attempted to get him to the surface. The victim ceased swimming at about 15 feet from the bottom. His buddy attempted to bring him to the surface but was unable to do so, then dropped his own weight belt and made it back to the surface alone. Other members of the dive team immediately responded to the emergency, finding the victim at a depth of 125 to 135 feet and returned him to the surface. Total elapsed time from when the buddy was forced to leave the victim until the time the body was recovered was approximately 9 minutes.

How To Save A Life

Since 1970, the National Underwater Accident Data Center at the University of Rhode Island — and especially its director John McNiff — has made a vital contribution to sport diving safety, not only by recording and analyzing the causes of fatal accidents, but also by speaking out against unsafe diving practices.

No doubt, its work has saved many lives.

Now, the NUADC needs your help to save its life.

In this era of fiscal conservatism, its funding sources have shrunk, and it must now appeal to outside sources for a share of its budget.

Every diving manufacturer and dive shop in this country ought to send them a three figured check to ensure that NUADC can continue its critical work. And sport divers, who should be thankful for NUADC research, ought to send them an amount equivalent to a round of drinks at their favorite diving pub.

Send your tax-deductible contribution to:

The National Underwater Accident Data
Center

University of Rhode Island

Post Office Box 68

Kingston, Rhode Island 02881

Do it today.

During 1983, a 45-year-old professor of zoology was conducting research on shrimp among black coral off Hawaii. He was reported to have been at a depth of 130 feet, diving without a buoyancy compensator, when he failed to surface. The body has never been recovered.

In Los Angeles harbor, the 42-year-old male victim was standing on a ladder on a barge with all of his diving equipment on except the helmet. The ladder broke and the victim fell into 30 foot deep water. The victim apparently dropped his 40-pound waist belt and tried to walk some distance while carrying the remaining 140 to 150 pounds of metal diving gear. His body was not recovered until 35 minutes after the accident.

A 29-year-old victim was cleaning a retention pond drain when he was sucked up against the grate. He was pulled in by a safety line only after excessive force was used to bring him to the surface.

A 27-year-old male victim died in Tampa Bay, Florida, while using scuba gear to clean a ship's bottom. It was reported that this was the victim's first day on the job.

In Rhode Island, a 22-year-old male was diving in 35 to 40 feet of water using surface-supplied air while fishing for shellfish. The compressor, its hose and all

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connections were in bad repair and very loose. It is also possible that the gasoline engine ran out of fuel. The victim drowned.

A 40-year-old male died of a heart attack after overexerting himself while scuba diving for sea urchins. The autopsy report indicated that this victim had also suffered another heart attack in the past six to twelve months.

A 28-year-old man was employed to feed fish beneath a glass-bottom tour boat. He had been observed for more than half an hour before he disappeared. The body has not been recovered.

"The death of a 27-year-old marine biologist which occurred off New Caledonia in French Polynesia was suspected to have been caused by bad air."

A 29-year-old police scuba team diver was searching for the body of a boat crash victim in a depth of 70 to 75 feet. The victim signaled his partner that he was having difficulty breathing, so he was assisted to the surface, where he was unconscious and pronounced dead a short time later.

The death of a 27-year-old marine biologist which occurred off New Caledonia in French Polynesia was

suspected to have been caused by bad air. This individual had been diving to 125 feet for about 10 minutes when he was observed unconscious on the bottom with his regulator out of his mouth. He was brought to the surface immediately but efforts to resuscitate him with CPR were unsuccessful.

A 30-year-old female college student and a partner were gathering specimens in "blue water," off the California coast. Since the bottom is nowhere in sight, blue water divers use a float at the surface with a line going vertically down with a heavy anchor at the end. The divers are clipped to this anchoring line at whatever depth they select (in this case, 50 feet). Somehow this anchoring line came loose from the surface float and the heavy weight then started falling toward the bottom, 3,000 feet below. The victim's partner was able to unclip himself from this line at 200 feet and ascend rapidly to the surface. The victim, however, was unable to disencumber herself and was never seen again.

Conclusion:

Undercurrent offers the NUADC report in the hope that divers who read and understand the causes of fatal accidents will become safer divers, not making the same mistakes made by others.

We wish you safe diving.

The Harvard Report: Part II

--The Commercial Position Of The Agencies

This is Part II of the Harvard Report, a study of the diving industry squelched by DEMA. In this part the commercial role of the training agencies is established. In the next issue we will begin the analysis of the retail business, price competition, and how the industry strives to maximize profit -- even at the expense of the consumer.



Certifying agencies grew out of diving associations in the 50s and 60s. Each of the five major certifying agencies operates under a different philosophy. NAUI and the YMCA are nonprofit organizations; PADI, NASDS and SSI are for-profit.

Until 1985, each agency had different standards for training, but in that year they joined together to standardize the basic training that every new diver must receive. The agencies still differ in terms of their criteria for advanced certifications and methods of doing business.

Two of the certifying agencies liken themselves to "retailer associations," working very closely with the retailers to help them improve their businesses. The other three agencies concentrate on instruction and

provide varying levels of retailer support. The existence of five very different certifying agencies serves to exacerbate the fragmentation which exists among the manufacturers and retailers.

Although it's difficult to be exact about the number of new certifications per agency because of crossovers and the reluctance of some agencies to discuss their statistics, the approximate market shares are estimated as follows: Out of 400,000 total certifications, 240,000 are estimated to be new divers.

Certifying Agency	1985 New Divers Certified	Market Share
PADI	160M	66%
NAUI	22M	9%
NASDS	22M	9%
SSI	22M	9%
YMCA	17M	7%

Professional Association of Diving Instructors (PADI)

PADI is a nonprofit organization but has several corporate bodies which are for-profit. [*Undercurrent*

(Continued on page 9)

Undercurrent Travel Questionnaire

Response Requested

Location being evaluated? _____ Would you return? _____

Hotel/Liveaboard boat _____ Dive shop _____

Date of your trip _____ What are best diving months? _____

Where else have you dived? _____

tropical fish	<input type="checkbox"/> abundant	<input type="checkbox"/> not bad	<input type="checkbox"/> sparse
fish size	<input type="checkbox"/> large ones plentiful	<input type="checkbox"/> a few big ones	<input type="checkbox"/> only tropicals
hard coral	<input type="checkbox"/> plenty and colorful	<input type="checkbox"/> o.k.	<input type="checkbox"/> kind of a bore
soft coral, gorgonia	<input type="checkbox"/> plenty and colorful	<input type="checkbox"/> o.k.	<input type="checkbox"/> kind of a bore
the wall	<input type="checkbox"/> beautiful and exciting	<input type="checkbox"/> a decent dive	<input type="checkbox"/> no wall at all
caves, ledges...	<input type="checkbox"/> good variety	<input type="checkbox"/> some of interest	<input type="checkbox"/> none worth diving
wrecks	<input type="checkbox"/> exciting	<input type="checkbox"/> worth a tank or two	<input type="checkbox"/> none
sharks	<input type="checkbox"/> a couple for fun	<input type="checkbox"/> none	<input type="checkbox"/> too many
beach diving	<input type="checkbox"/> as good as the boats	<input type="checkbox"/> fair possibilities	<input type="checkbox"/> no way
snorkeling from beach	<input type="checkbox"/> quite interesting	<input type="checkbox"/> not bad	<input type="checkbox"/> none or nothing to see
water temperature	<input type="checkbox"/> 80° +	<input type="checkbox"/> 74°-79°	<input type="checkbox"/> less than 74°
visibility	<input type="checkbox"/> 90 ft. or more	<input type="checkbox"/> 50-90 ft.	<input type="checkbox"/> less than 50 ft.

rules for experienced divers	<input type="checkbox"/> no restrictions	<input type="checkbox"/> a little tight	<input type="checkbox"/> treated as a novice
guides for new divers	<input type="checkbox"/> top-rated	<input type="checkbox"/> acceptable	<input type="checkbox"/> lousy
decompression computers	<input type="checkbox"/> o.k. to use freely	<input type="checkbox"/> only with guide	<input type="checkbox"/> Navy Tables only
dive personnel	<input type="checkbox"/> help with all gear and tanks	<input type="checkbox"/> assist if asked	<input type="checkbox"/> you tote the tanks
day time diving frequency	<input type="checkbox"/> 3 or more tanks/day	<input type="checkbox"/> 2 tanks per day	<input type="checkbox"/> one per day
night diving	<input type="checkbox"/> frequent	<input type="checkbox"/> 1-2 times/week	<input type="checkbox"/> none
air quality	<input type="checkbox"/> no problems	<input type="checkbox"/> I wondered	<input type="checkbox"/> I worried
air fills	<input type="checkbox"/> 3000 psi +	<input type="checkbox"/> 2250 psi +	<input type="checkbox"/> short-changed often
rental gear	<input type="checkbox"/> everything you need	<input type="checkbox"/> tanks, wt. belts...	<input type="checkbox"/> bring everything
repair capability	<input type="checkbox"/> can handle anything	<input type="checkbox"/> some repair capacity	<input type="checkbox"/> pray nothing breaks
overnight ektachrome develop- ment	<input type="checkbox"/> on premises	<input type="checkbox"/> nearby stores	<input type="checkbox"/> not available

hotel food	<input type="checkbox"/> gourmet	<input type="checkbox"/> not bad	<input type="checkbox"/> ugh!
accommodation	<input type="checkbox"/> luxury	<input type="checkbox"/> o.k., decent	<input type="checkbox"/> far below par
nightlife	<input type="checkbox"/> swinging	<input type="checkbox"/> enough	<input type="checkbox"/> dead
locals	<input type="checkbox"/> helpful, friendly	<input type="checkbox"/> no complaints	<input type="checkbox"/> hostile
weather	<input type="checkbox"/> great every day	<input type="checkbox"/> o.k.	<input type="checkbox"/> many bad days
insects	<input type="checkbox"/> none	<input type="checkbox"/> now and then	<input type="checkbox"/> too many bites

Comments and comparison to other places: _____

Circle the number of stars applicable to your experience, from 0 to 5 (for the tops)

Diving for beginners	★ ★ ★ ★ ★
Diving for old pros	★ ★ ★ ★ ★
Beach snorkeling	★ ★ ★ ★ ★
Hotel meals	★ ★ ★ ★ ★
Hotel otherwise	★ ★ ★ ★ ★
Money's worth	★ ★ ★ ★ ★

PLEASE RETURN THIS TO:
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 SAUSALITO, CA 94965

Name _____

Address _____

City _____ State _____

Zip _____ Tel. _____

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nightlife	<input type="checkbox"/> swinging	<input type="checkbox"/> enough	<input type="checkbox"/> dead
locals	<input type="checkbox"/> helpful, friendly	<input type="checkbox"/> no complaints	<input type="checkbox"/> hostile
weather	<input type="checkbox"/> great every day	<input type="checkbox"/> o.k.	<input type="checkbox"/> many bad days
insects	<input type="checkbox"/> none	<input type="checkbox"/> now and then	<input type="checkbox"/> too many bites

Comments and comparison to other places: _____

Circle the number of stars applicable to your experience, from 0 to 5 (for the tops)

Diving for beginners	★ ★ ★ ★ ★
Diving for old pros	★ ★ ★ ★ ★
Beach snorkeling	★ ★ ★ ★ ★
Hotel meals	★ ★ ★ ★ ★
Hotel otherwise	★ ★ ★ ★ ★
Money's worth	★ ★ ★ ★ ★

PLEASE RETURN THIS TO:
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SAUSALITO, CA 94965

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City _____ State _____

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PADI Lawsuit Update

PADI, the Professional Association of Diving Instructors, is involved in two protracted lawsuits which were filed against them by several instructors, including Don Dibble, owner of a San Marcos, Texas, dive shop.

Undercurrent devoted three pages to the text of the suit in September, 1985. The plaintiffs allege mismanagement, fraud and conflict of interest against several PADI principals, including John Cronin, an executive of both PADI and U.S. Divers at the time of the suit.

PADI has sought unsuccessfully to have this suit dismissed, and trial is set for August 1.

In the second suit, the instructors allege that "PADI violated the Texas Proprietary School Act and has misled the Texas Education Agency [the regulatory body]. Partially out of fear that this alleged violation might lead to their own prosecution, plaintiffs abandoned teaching PADI courses, to their own economic detriment."

PADI sought a motion for Summary Judgment (essentially a tactic to get the suit dismissed) on the grounds that they did not do business in the State of Texas and therefore the charges were unfounded. They argued that all PADI courses are taught by independent diving instructors and not PADI employees. The Court denied PADI's motion and will soon set a date for trial.

notes: since this report was written, it was discovered that the nonprofit PADI became a profitmaking organization in 1982 after being sold to several insiders.]

PADI defines its business as diving education and is credited with the great expansion of certified divers during the past few years (19 percent compounded growth between 1981 and 1985). Of the 265,000 PADI certifications awarded in 1985, 160,000 are estimated to be new divers. PADI is represented in 1000 stores.

"Some agencies have criticized PADI for not having tough enough certification criteria."

PADI's philosophy has been to make learning to dive a pleasurable experience. Scare tactics are not used. A decade ago, PADI introduced the "resort" course which allowed people to experience diving in a closely-supervised environment after a half-day of instruction. Some agencies have criticized PADI for not having tough enough certification criteria.

PADI's largest profits are generated from the sale of educational materials. Their greatest concern, like all other agencies, is insurance. PADI provides insurance to their stores and instructors. They have had problems obtaining reinsurance, and, like the rest of the industry, have seen their premiums escalate in cost.

PADI allows its instructors to deal directly with the agency without having to be associated with a retailer. Theoretically, an instructor can set up shop in his home and certify students during sessions at a pool. Retailers are generally opposed to this system because independents can offer courses at very cheap rates, due to low overheads. This forces the retailers to either lower their prices or potentially lose students. Many students, however, are hesitant to sign up with independents, viewing these operations as possibly unsafe.

National Association of Underwater Instructors (NAUI)

Nonprofit NAUI was once the largest and most influential of all the certifying agencies, but in the past few years it has lost significant market share, mostly to PADI.

It has the reputation for having the most difficult certifying criteria of all the agencies. NAUI is said to have the most loyal and "hard-core" group of followers in the industry.

NAUI also provides product liability insurance to retailers and insurance to its instructors.

National Association of Scuba Diving Schools (NASDS)

Started in 1962, for-profit NASDS is probably the most controversial of the certifying agencies. NASDS is a retailers' association which extends far beyond the instructional role. It views each segment of a dive shop's business as a profit center.

NASDS interviews store managers to assess motivation, management skills and profit potential. If granted membership, the store pays a fee and agrees to abide by NASDS regulations. The 180 member stores may use only the NASDS training program and all educational materials must be purchased from NASDS. NASDS offers advertising clips, sales training workshops, business training, and publishes the *Diving Retailer* magazine. NASDS trains its instructors both to sell equipment and to instruct.

Four years ago, NASDS began working with a buyer's group owned by Leisure Time Services, Inc. It has two diving equipment lines, one a complete, quality branded line, "Z-90," and the other a generic lower-priced line of accessories (fins, masks, etc.). The products are manufactured offshore and volume discounts are passed on to the retailer.

These lines are sold only to NASDS retailers. In-

structors in NASDS stores are paid commissions for selling the equipment, eight percent for the quality line and three percent for the generic products. According to NASDS, it has the highest-paid instructors in the industry and the lowest turnover due to generous selling commissions.

Apparently Scubapro and NASDS were aligned several years ago, but certain retailers initiated antitrust suits. The argument was that if NASDS stores were forced to only carry Scubapro equipment, the fair trade act might be compromised. Scubapro would be in a position to require minimum orders and fixed prices. The Leisure Time buying group gets around this because stores are allowed to carry other manufacturers' products.

Young Men's Christian Association (YMCA)

The YMCA is the oldest national certifying agency in the U.S. They are a strictly nonprofit organization and consider themselves the least commercial of all the agencies.

YMCA should be well positioned. By providing aquatic instruction to children and competitive swimming programs to teenagers, they have a natural in-

roduction to potential new divers. Because their name is associated with safety and fun, it would seem that parents would be more likely to trust a YMCA for the certification of their teenagers than a dive shop.

Nevertheless, YMCA has been losing market share over the past few years. Many attribute this to their lack of commercial support to the retailers and instructors.

Scuba Schools International Inc. (SSI)

SSI was founded in 1975 and, like NASDS, considers itself a retailers' association. The SSI instructional system operates only through dive shops, which number about 250. They do not offer independent certificates like PADI. SSI considers itself less restrictive than NASDS, and their retailers have more freedom to choose between programs and educational materials. Also, stores can use instructors from different agencies, not just from SSI.

Although SSI is a profit-oriented organization, it does not have the aggressive and commercial reputation that NASDS does.

Coming up: The juicy stuff.

An Effective Shark Repellent Exists

--Just How Necessary Is It?

Researchers have tried everything from electrical shocks, underwater guns and recorded sounds of porpoises to repel sharks, but nothing has been as effective as something we use everyday -- detergent.

According to Samuel Gruber, a professor of marine science at the University of Miami, it's "100% effective" as a shark repellent. He has tested it by loading it into a squirt gun and shooting it into a shark's mouth. When the sharks get a taste of the soap, they turn tail, swim off and don't return. The active ingredients cause the shark's gills to dissolve and it paralyzes their jaws.

The discovery goes back more than ten years to the Red Sea, where marine biologist Eugenie Clark found a small flatfish, the Moses sole, which seemed impermeable to shark bites. Although a shark might have its jaws wide open, ready to clamp down on the little sole, the shark would become paralyzed, and swim off as quickly as it could. The poison works faster than nerve gas.

Israeli scientists were able to isolate the ingredient the Moses sole emanated, and found it chemically similar to detergent soap. The question then, became whether it could be converted into a usable repellent for divers and shipwreck survivors.

The U.S. Navy wanted to find out and provided a grant to Dr. Gruber for further research. The Navy

has had a long and unsuccessful history developing shark repellent. Its biggest boner was the Shark Chaser, a packet that hung on all U.S. Navy life jackets for more than twenty-five years. Shark Chaser allegedly contained a depressant to stun the shark and a black die to hide a person from the shark. By the time the Navy got around to testing it in the 1970s, they found that, not only did sharks like to eat the packet, but also 125 packets would be required to protect a person in a body of water the size of a swimming pool. The Navy's rejoinder was that although Shark Chaser was ineffective, it was valuable because people in the water believed in it and therefore had a psychological edge.

This time around, the Navy might be on a better research footing.

"The shark would freeze, then rush away, not to be seen for the rest of the day."

Gruber told *Undercurrent* that he and his associates have conducted tests of two common ingredients, sodium dodecyl sulfate and sodium laurel sulfate, on mako, lemon, hammerhead and blue sharks. Both worked as well as the substance exuded by the Moses sole.

They tested several delivery systems. The most effective was a pressurized metal container with a four-foot wand attached. When a shark got within six or seven feet of the diver, they'd shoot the substance toward the shark's mouth. The shark would freeze then rush away, not to be seen for the rest of the day. As little as two parts per thousand of the substance were needed to be effective.

Gruber doesn't believe that the results merit commercial application yet and also that the delivery system needs to be developed. "We are biologists, not divers," he said, "so what served our research may not at all be best for divers."

Gruber questions whether it will be ultimately practical to impregnate a wet suit with the chemical to offer protection. "It is possible, but perhaps not feasible because the shark would have to get too close to the diver for the repellent to work."

The Navy grant has run out for Gruber and he does not know if more money is forthcoming. It is conceivable that the Navy is working on its own delivery system, which could mean that a product might eventually be commercially available. Gruber, himself, would like to get the backing of a diving company to further develop the toxin and the squirt gun.

For private parties to continue with the work, Gruber thinks that \$150,000 or more would be needed "not counting design costs, marketing studies, and the production required to bring it to market -- assuming whoever does it has some present production capabilities." A delivery system might involve some sort of exiting equipment like a shark dart or a bang stick, or require an entirely new product.

Gruber cautions, however, that "a group of entrepreneurs just couldn't do it without the production facilities and the knowhow. Just throwing money at it won't work."

As the next article by Dr. Ken Kizer points out, shark attacks are rare. And that leads divers to take

Sherwood Depth Gauge Problem

Dear *Undercurrent*,

My brother and I purchased two Sherwood Sigma System 200 depth gauges. The needles stuck on the way down -- one at 40 feet and the other at 50 feet -- and we couldn't get our true depth. I took mine back, got another, and had the same problem. The needle stuck at 10 feet. Are all their gauges like this?

Craig Nowicki,
Burnsville, Minnesota

Dear Craig,

Certainly not all their gauges -- Sherwood is a reputable manufacturer -- but far too many of this model.

After Sherwood introduced the Sigma System 200 depth gauge in 1986, they began to get complaints just like yours. Sure enough, the needle stuck. (Kinda makes you wonder about how carefully those things got checked out before they were shipped off initially?)

The gauge was redesigned and reintroduced last autumn. John Gray of the Sherwood Group tells us dealers have been instructed to replace any of the faulty gauges with the new model for no charge. Individual owners weren't informed of the problem so there may still be quite a few bad gauges kicking around. If you or any other diver has a problem getting a replacement, let us know.

Ben Davison

more adventurous trips, seeking out bigger and bigger sharks for thrills and photography. So perhaps the value of such a device is not so much in actually having to use it, but rather in just knowing it is there.

Just How Common Are Shark Attacks?

Sharks have been depicted as both friend and foe in the world's mythology, but in recent years they have been portrayed in a distinctly dim light. They do not deserve the negative image given them in "Jaws" and other popular accounts.

Sharks have few natural enemies -- mainly larger sharks and parasites, especially tapeworms. In recent decades, man has emerged as their primary enemy, for sport, for food and for their hide.

Shark attacks on humans are quite rare. Only about fifty shark attacks have occurred in more than one hundred years in Hawaii, one of the most heavily used marine environments in the world.

Fewer than sixty shark attacks have occurred along the California coast in as many years, despite a

sizable endemic population of great white sharks off the coast -- and that these waters are widely used for surfing, scuba diving and other marine sports. However, the frequency of shark attacks along the Northern California coast is increasing, most likely as a result of the protection and subsequent return of the native elephant seal population.

Of the 960 scuba deaths in U.S. waters in the nine years between 1976 and 1984, only five have been attributed to shark attacks. Surfers and surface swimmers are far more susceptible to attack.

Overall, fewer than one hundred shark attacks occur throughout the world annually, and most of these are the result of people being where they should not be or doing something that increases the risk of an at-

ORCA Files Suit On Patent Infringement

Orca Industries, manufacturer of the EDGE decompression computer, has filed a suit to stop the distribution in the United States of the Decobrain, also a decompression computer. Orca is claiming "patent infringement."

Although Jim Fulton, Chairman of Orca Industries, would not discuss the specifics of the suit, he did tell *Undercurrent* that "EDGE patents cover a broad range of decompression computations and other companies have also been notified of potential patent infringement." Those companies include Suunto, which manufactures a computer that may be marketed by Sea Quest and Oceanic.

Decobrain has been distributed in the U.S. by Princeton Tectronics, whose president, Bill Stevens, says that "we have complied with the request to cease selling the Decobrain until the issue is resolved in court." Princeton Tectronics, which is only a distributor, withdrew the Decobrain from the market in order to leave the legal defense up to the manufacturer, Keller of Switzerland. Keller

officials, Stevens says, have assured him there is no patent infringement.

Oceanic president Bob Hollis, told *Undercurrent* that "we aren't using anything of theirs that could be considered an infringement on their patents."

Although Tekna has been cited by Orca, Tekna president Ralph Osterhaut isn't concerned. "Any company making a meter has to be very careful about what tables are used. A suit would mean the loss of insurance and a subsequent suit would mean the loss of the company. Because of that liability, we produce only those items that we've done the proprietary work on." The Tekna meter will be based on the new Navy Tables.

Apparently, SeaQuest is not particularly concerned either. Their SME (Scuba Metric Electronic) will be based upon the Navy tables.

Because the Decobrain has been removed from the American market, the suit may never be heard. Whether Orca pursues the other companies is still in doubt.

tack. Many attacks occur when people are wading in shallow and murky waters, and involve relatively small sharks and repairable wounds.

Thirty-two species have been identified in attacks on humans, and some thirty-five species are considered potentially dangerous. Nonetheless, the majority of shark attacks are accounted for by a handful of species -- great whites, tigers, makos, hammerheads and various types of bull and reef sharks.

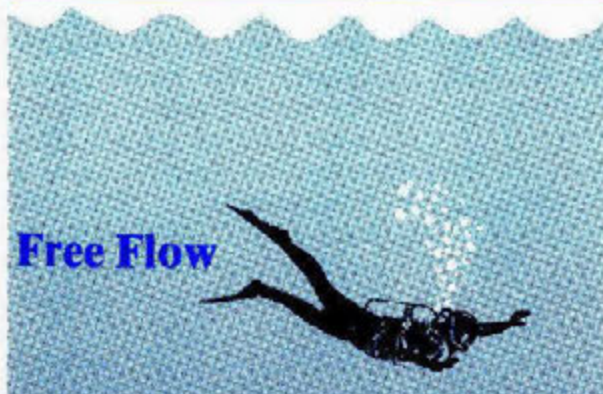
When sharks attack humans, there are two types of attacks: feeding or agonistic. Agonistic attacks are poorly understood, but seem to be defensive or, possibly, involve some type of territorial behavior. An especially good demonstration of this is the pre-attack posture of the Pacific gray reef shark.

In contrast, most shark attacks along the Califor-

nia coast probably have been feeding attacks involving cases of mistaken identity -- that is, a surfer or diver dressed in a wet suit and fins is mistaken by the shark for an elephant seal or sea lion. However, in many of these cases, it appears that the shark very rapidly realizes that it has made a mistake, breaks off the attack and swims away.

Even though most marine enthusiasts realize that the risk of being attacked by a shark is exceedingly small, too many people address the subject on a visceral, rather than cerebral, level. Hopefully, this article will put some fears at rest.

The author of this article, Ken Kizer, is an avid diver and has written previously for Undercurrent and other publications. He is currently Director of Public Health for the state of California. Undercurrent takes all responsibility for editorial changes.



While whales are usually considered the deepest divers, the champion may be the endangered leather-

back turtle. Researchers sponsored by Earthwatch Foundation have documented a leatherback dive to 1567 feet, deeper than the 1140 feet attributed to the sperm whale. Two leatherbacks under study made continuous dives, day and night, for 214 hours! One of the reasons is to feed, but another may be simply to escape predators.

In the mountains of Oregon, paleontologists have discovered fossilized remains of a coral reef more than 220 million years old. The researchers have concluded that fossilized reefs found in the Austrian and German Alps are nearly identical. Said one researcher, "Almost everything in the Oregon reef including the algae has counterparts over the Alps."