

## Reports From Our Readers—Part I

### —Chub Cay, ChacMool, and a Pooh-Pooh

There are few constants in this world, as we have learned in our nine years of reporting. Dive operations, hotels, and even the reefs are not constants. Management changes, inexperienced hordes pound the reefs, and politics change. Although I would delight in the opportunity to continually be on the move to update our review of resorts, even I (free spirit that I am) have other responsibilities. Thankfully, you our readers, are willing—in fact, eager—to keep us apprised of changes. From time to time we publish your comments about resorts and destinations. Now is that time. We try to provide a balanced view, indicating the positive and negative—if our readers provide us a balanced view. In nearly all cases, you do. We thank you for your responses. Here's what you have had to say of your diving experiences during 1983.

C.C., travel editor

**ANTIGUA:** Although easily accessible in the British West Indies, Antigua is not a common destination, even though the diving is relatively decent. (Refer to our full review in May, 1981). Shelley Claar (Greenwich, CT) found Antigua "a true surprise; the diving was a most positive experience." She stayed at the Curtain Bluff Hotel and said that dive guide Tom Dimock was "an excellent guide for new divers; he found several excellent reefs with abundant fish life." Reader D. J. Bluestone dived with John Birk (whom we gave high marks in our review), and said he is "an ideal dive master for a crew of divers with varying amounts of experience." They found plenty of coral, three octopi, and Birk even "danced with a large langusta. Not only does he give guided tours, he narrates them by talking through an air pocket in his mask." Birk operates the shop at Halcyon Cove and oversees the Jolly Beach operation. Antigua is certainly worth a peak by divers who have hit the more popular spots.

**AUSTRALIA:** Dozens of dive boats visit the Great Barrier Reef, but some people prefer land-based spas such as that on Heron Island (although the diving

### INSIDE UNDERCURRENT

The Five Best Hideaways .....	p.3
No-See-Ums .....	p.4
Analog And Digital Dive Watches -The U.S. Navy Tests Six .....	p.6
Drysuit Survey - Part II -Whatever Happened To "Required Training"? .....	p.8
FreeFlow .....	p.10

is much less spectacular). Ann Hoehstetter (Pittsburgh) writes that "all rooms are similar; the staff is extremely friendly; dive masters are great. No wall dives, some drift dives, visibility less than 50 feet in September; nudibranches by the hundreds, and wear a hat--millions of birds. (She didn't have the same good remarks for her stay on Hayman Island.) One diver wrote that at Heron Island in August "diving was most interesting but needed a full wet suit in the Australian winter; saw unusual sharks, electric rays, turtles, great coral, crinoids and nudibranches. Resort is simple, the food great."

The best way to dive the Great Barrier is by live-aboard boat. Our readers told of their trips (but few told us how to locate these faraway craft). Bob Jackson (El Toro, CA) said that the M.S. Takaroa "could be the best bargain on the reef--if the skipper makes some basic modifications in the boat. Saw more sharks than at Rangaroa, great giant clams, a few large sponges, nudibranches galore, large groupers (600 pounds!), ten-foot rays, jacks and octopi." . . . Robert G. Staley (Decatur, IL) offered glowing reports of the Scheherazade. "Superb diving, gargantuan feast and a first-class captain: Peter Wright. Swam among a school of 200 mating bumphead parrotfish," said Staley, a self-admitted voyeur. Staley complains that the people who organized the trip, Dive Australia, did not perform up to standards and hopes that they get their act together to insure that this very good boat gets the business it deserves. . . . Paul Eikenbary (Gibsonia, PA) said the TSMV Coralita was sensational--the greatest diving he's had "in 13 years. Trip leader Dee Scarr was just super." . . . Ken Nemeth (Atlanta) says his trip on the Reef Encounter was "high times and high adventure."

BONAIRE: The sister of Curacao and Aruba has some of the most beautiful diving in the Caribbean (See Undercurrent, September 1981.) Captain Don Stewart, a 20-year veteran, runs the Habitat, about which one reader says "for hardcore divers. Meals are costly and of low quality, but cabins have kitchens; no air conditioning or hot water, but fine diving." . . . If you like big, efficient operations with scores of divers to tell your stories to, then the Flamingo Beach is just about as good as they come. John McMullin (St. Louis) says "hotel is first rate, food really good, management top notch, dive operation is as good I've seen--and I own a travel agency."

For more intimate diving, try Bruce Bowker at the Caribe, a five-room inn. Of Bruce's personalized service John Bangma (Tavernier, FL) writes: "I went for a week of peace and quiet and top grade diving and got both in spades." . . . Then there's the Hotel Bonaire, a model of lousy management over the years, but Helen Fine (Sharon, MA) tells of changes: "New food manager has instituted a super menu at reduced prices; rooms are being refurbished." Since many divers report good vibes at the hotel dive shop, the Bonaire Scuba Center, could this provide true competition for the Flamingo?

BELIZE: Nothing but bad reports on the Mariah Reef resort. Sherrye Shell (Laurel, MS) "would never go back." Another reports: "I have been to six dive areas and this has been the worst all around." Says still another reader: "The biggest rip off--meals were nothing but rice and beans and sloppy joes, and the innkeepers were often unpleasant." Diving off the reef is quite good, if one can beat the winds and get outside. . . . We have recommended Ramon's in the past, but two divers wrote of not-so-pleasant experiences. H.D. Sweeney (Houston, TX) said he makes "a hundred dives a year in the Caribbean and Ramon's is as bad as they come. The food was barely edible." Belize is about as remote and rundown (Can

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## The Five Best Hideaways

"The Connoisseur's Guide to Peaceful and Unspoiled Places," *The Hideaway Report*, has recently published its annual list of the "most enchanting small resorts in the world—well managed, personalized hostleries nestled in uniquely private environments." Several will be of interest to snorkelers and divers:

**Coco Point Lodge, Barbuda:** "The *joie de vivre* here is very special, springing from the remote and breathtaking setting, a casual dress code, convivial clubhouse, and an all-exclusive rate encompassing everything from meals and drinks to daily laundry service and unlimited deep sea fishing on a 43-foot motor sailer." \$350-\$495, double, the day.

**Petit St. Vincent Resort, St. Vincent, Grenadines:** "A wonderfully isolated, luxury retreat where you can bask in oneness with the sky, the sea, and the blossomy tropical terrain, right from the hammock on the patio of your own stone cottage. The privately owned 113-acre islet is rimmed with coral lagoons and sublime stretches of natural white sand beach. The 22 spacious bungalows are sprinkled about the shoreline, bluffs and hillside." \$326-\$386, double, the day.

**The Meridian Club, Pine Cay, Turks and Caicos:** "It's the best kept secret in the West Indies—an 800-acre, privately owned island of tranquil beauty where dedicated escapists can stroll vast stretches of sandy coastline without ever encountering another footprint." \$225, double, the day.

**The Village, Ponape, Caroline Islands:** "Gin clear lagoons hued in turquoise and sapphire give way to a lush volcanic interior thrusting upward in a wondrous profusion of tumbling waterfalls, lacy ferns, giant palms and exotic plants. The intimate resort compound is sequestered on one such prolific hillside overlooking a coastline of colorful coral reefs. . . .superb snorkeling, scuba diving." \$45-\$65 double, the day.

**Toberua Island Resort, Fiji:** The setting is travel-poster lush with white sandy beaches scampering up to an unspoiled four-acre interior abundant in coconut palms and fragrant flowers. Lodgings are limited to just 14 individual cottages cradled under rustling fronds along the coastline." \$175, double, the day.

*The Hideaway Report* covers tiny retreats in Europe, Mexico, The British Isles, and even here in the U.S. You can subscribe by sending \$45 to Harper and Associates, P.O. Box 300, Fairfax Station, VA 22039.

something be rundown if it was never run up?) as the Caribbean has to offer. Expect just about anything. . . .Your best bet might be to contact Chuck Hettel, Belize Diving Services, P.O. Box 667, Belize City for diving and a clue to accommodations. And then there is St. George's Lodge, still a find. (See Undercurrent, August 1980.)

**BAHAMAS:** At Bimini, Neal Watson has the only diving and gets mixed reviews. Some find his guides helpful, others claim they can't find the reefs. We suspect that if Watson is diving it's good, if he isn't then it isn't. Browns Hotel remains a relic of the past—better accommodations at the Bimini Big Game Fishing Club. Consider Bimini only for long weekend hops; those who stay longer become psychotic. . . .Dr Robert Rill writes that "Chub Cay (See Undercurrent, July 1981) is "a real sleeper; good, healthy reefs, nice pelagics, super personnel. Had a ball." . . .We reviewed UNEXCO on Freeport in 1976. Richard Burr (Cheltenham, PA) says "unlimited dive package is one of the best around. Experienced divers follow buddy system and may go alone (hats off to Lou Fead); diving is varied; some good, some great, some just fair."

Nassau diving is commonplace stuff and no place for a full dive vacation unless you are a rookie. Most people prefer the South Ocean Beach Hotel and find the Rudy Turnquist operation quite acceptable. Lambert Alborn (Sun Divers at the British Colonial Hotel) gets a good score from a couple of readers for his personal service and ability to find the better sights on this over-dived island. . . .The Riding Rock Inn on San Salvador has been a premier destination because of its better-than-average diving and its well-managed shop. Since Dave Woodward's departure, we have noticed a decline in enthusiasm from our readers who speculate that the reefs seem to be suffering from too much traffic. Are the salad days of San Salvador slipping slowly by?

The Ramora Bay Club was best described by long-time Undercurrent reader Dr. Donald Mahler (Newton, MA) as a "luxury hotel that offers gentlemanly diving; experienced divers are allowed to hit the water first and go their own way. Limited sights, but many groupers, angels and even a few big game fish; a couple of sharks seen on shallow dives." . . . Small Hope Bay is still a fun and friendly place where most divers find that they indeed got their moneysworth while enjoying the ambience of this out-of-the-way lodge. . . . On Stella Maris divers see plenty of sharks at the well-advertised Shark Reef, but otherwise diving is quite average. Recent reader reports say it is more expensive and less suitable than most other Bahamas resorts. Unless you have to see a shark, you might be better served elsewhere.

GRAND CAYMAN: We reviewed Spanish Cove in September 1982, and gave it a high rating, especially the hotel and kitchen. The Cove faces the perennial problem of bucking the winds to get to the good diving at the north wall. Some of our readers speculate that it's sometimes less the winds and more the lack of desire. Divers are regulated throughout Cayman, and here is no exception. Gerald Slaweki complained that his group at the Cove had to take dives to 85 feet for only 15 minutes; on another trip a diver told us of wanting to dive less than the 80-foot first dive and was told to dive that depth or no go. Although this is just about the best hotel on the island, when any boats carry up to 20 people you can almost expect regimentation. . . . But that's not quite so at Bob Soto's, where experienced divers report a fair degree of freedom on dives. Nevertheless, this is a volume operation and the more discriminating divers will find the mobs too much. Dr. B.L. Anderson (Howell, MI) said "they loaded 42 divers aboard two craft for a night dive. Far cry from the days when Peter Milburn worked there." . . . But Peter is still around, and Dr. Herbert Dorfan (Houston, TX) says "If one enjoys diving with a mature, intelli-

## NO-SEE-UMS

If you have not been plagued by "no-see-ums," you have not been to the tropics. No-see-ums, also known as "punkies" and "sand fleas" are minute, almost microscopic (0.02 to 0.2 inch) gnats of the family Ceratopogonidae. Like their relatives the mosquitoes, the females of some species are bloodsuckers. Their bites may cause itching and welts. Secondary infections sometimes result from scratching. Various nematodes, protozoans, and viruses also may be transmitted in their bites, and some species are responsible for transmitting diseases among livestock. The persistence of some non-biting species in attempting to crawl into the eyes, ears, and nose may be just as annoying as the bites of the bloodsucking species.

Unfortunately, no-see-ums are immune to most insect repellents and sprays and are small enough to pass through screening. When in areas inhabited by these gnats, one should wear long pants and a long-sleeved shirt. Biting may be prevented by impregnating clothing made of loosely woven fabric with Cutter Insect Repellent or Florida Swamp Insect Repellent. Limited protection inside buildings and tents may be provided by applying Screen-Pruf by Protexall to screens. In small enclosed areas, aerosol sprays containing pyrethrins or alcotisone cream may aid in relieving the itch of bites.

The key to controlling these pests is eliminating the moist habitats needed by their larvae. Depending on the species, no-see-um larvae may be aquatic or semiaquatic, living in salt, fresh or brackish waters. They also can be found in moist soil habitats such as salt marshes and mangrove swamps; in decaying materials such as cactus, banana, or plantain stems; moist or muddy adobe; cattle dung pats; and piled mud from dredging. In these places, they are buried in the rich organic material upon which they feed. The entire cycle from the larval to the adult stage is completed within 25 days.

Proper irrigation with controlled flooding and draining has proved effective in combating no-see-ums in Florida and Panama. Periodic flooding drowns many larvae and makes the remainder more accessible to larger aquatic insectivores, while draining simply reduces available moist areas. Aerial spraying is generally impractical and not recommended, due to the vast areas involved and the rapidity with which the areas can be reinfested after the spray has dissipated.

-- Sea Secrets

gent dive operator, a person who seems in tune with the sea and its creatures as well as with his customers), then Peter Milburn is an excellent choice.

Other excellent choices for more personalized attention on Cayman include Clint Ebanks and Athless Evans (Quabbin Divers). . . .The high-rise Holiday on Cayman is not part of the national chain and continues to get complaints from our readers. . . .We gave nothing but rave reviews for Pirate's Point on Little Cayman in our August, 1982, issue. But, recent responses suggest a shift; two readers report disappointment with the dive guides. Two of our Sausalito friends organized a group to the Point, sent advance deposit, then got notice just a few days before their journey that the resort had decided to close for the period during which they had booked it. They had to scramble for a substitute. Pooh on Pirates Point.

JAMAICA: One of the most interesting, beautiful and, yes, even friendly islands in the Caribbean. Too bad the diving stinks. Bill Jurney (Roseville, MN) stayed at the Shaw Park Hotel, Ocho Rios: "The diving was not good at all." Ed Rhodes (North Miami) says of Ocho Rios: "The diving was disappointing, the coral formations monotonously uniform, and there was hardly a trace of marine life." . . . .R.J. Franklin writes of his stay at Trelawney Beach Hotel last June: "Scuba standards, leadership and attitude at the resort are subpar and dangerous to new divers." He reports that 21 fully geared divers were martialed on to a 16-foot glass-bottom boat. A mile out it took on water, the divers had to jump ship and wait to be rescued by boats from shore. . . .Tom Harrington (Delray Beach, FL) said that the "Club Caribbean is a very good hotel--the dive operators are professional but the dynamited reefs provide poor dives." . . . .Joseph Ulery (Brookfield, IL) said "fish traps are all along the Negril reef, and most were run by hotel dive guides. Air compressors at the Sundowner show no sign of ever being serviced and the exhaust is near the intake. The guide swam so fast we couldn't see what few fish there were. With so many other excellent resorts, why did I bother with this one?"

MEXICO: Our review of Cozumel (September 1982) produced a varied response. Bob Halliday (Vineyards Dive Shop, Kenner, LA) said: "There is at least one person like you on all dives in Mexico. From what you claim about your diving difficulty you must also have little diving experience. If you don't consider Cozumel good for novices and can't loosen up enough to enjoy the beauty and culture of Mexico, I suggest you restrict your diving to the swimming pools of the finer U.S. hotels where you can have ice delivered to your room." . . . .Dominic Bianca (Fort Lauderdale) said "the Fantasia was fantastic. Why didn't you try it?". . . .Linda Belangee (Oakgrove, MO) said "we dove at Agua Safari and had their best--two fine guides, Orlando and Sandy. The only thing that bothered me was the amount of liquor on board. By night time I'm surprised the boatman could find the reef, let alone the divers. But they seem to do quite well".

From Houston Bill Rapson writes: "You apparently encountered the normal diver's adventures at Cozumel. Your appraisal was very correct. The trick, however, is to find the fast boat that leaves reasonably promptly and returns very early. May I suggest the Hotel La Perla. They have the only good guide I have found on the entire island; the boat leaves at 10am and returns at 1pm. . . . Thomas Grant Bernard (Bloomfield, NJ) says "your report on Cozumel is accurate except that you overlooked the best dive operation there. At La Cieba, David (an independent guide) takes no more than six certified divers on his junk boat along with two boatmen. He offers a two-tank dive, a gourmet lunch, and excellent in-water performance for \$35. I would not dive from the cattle boats which you mildly describe in your article."

As for our August article on Isla de Mujeres, Mark McGannon (Orangeburg, SC) writes: "A week after your article arrived, my wife and I went to Cancun and dove with Aqua Quin shop. They took us to Isla de Mujeres where we found an excellent reef, two miles south of El Garrafon, teeming with small reef fish; it's an excellent site for photography and I think it deserves better than 1½ stars. . . . Al Haas (San Francisco) says to dive at Los Arcos in Puerto Vallarta is to dive the most over-exploited piece of water this side of the blue Grotto in Capri." Chico's Dive Shop goes to one other site. An all-day, two-tank trip, with lunch for \$36 was far better with 100-foot summer visibility. . . . One reader sent us a four-page report on ChacMool Center, south of the last paved road down the Yucatan. What a chamber of horrors. Almost like camping out, with an ex-UDT dive master who seems to treat the reefs as he would an enemy submarine. A place to go only if you want a trip into a time warp. . . .

## Analog And Digital Dive Watches

### —The U.S. Navy Tests Six

In September 1983, the U.S. Navy Experimental Dive Unit (NEDU) issued its evaluation of six dive watches; four totally digital and two analog with a secondary digital display. Testing was conducted to find suitable digital watches that could be used by U.S. Navy divers. Tests carried out at NEDU were designed to evaluate their reliability, accuracy, robustness and ability to stand up to normal diver use. The stop watch function of each watch was used in tests carried out in open water, and during glove tests. In addition to these tests, the watches were evaluated with respect to their magnetic signature for possible use by Navy dive teams. The NEDU carried out a number of manned tests both at NEDU facilities in Panama City, Florida, and at sea during open water dives.

The watches chosen for the test provided a cross section of available digital watches representative of those available on the U.S. market. Since the test, the two specific Casio models are no longer available (a Casio spokesman said they have been replaced by improved models). Those watches tested were:

*Casio W100/Digital*, \$49.95. This watch is no longer available; however the W200, W300, and W400 are similar; slight internal changes, but essentially the same case. Prices run from \$29.95 to \$49.95.

*Casio W150/Digital*, \$69.95. This watch is no longer available; however the W250, W350, W450, W550 and W750 are similar. Prices of these models range from \$49.95 to \$69.95.

*Chronosport UDT Seaquartz Analog*: black with nylon band, \$385; steel band, \$460; champagne gold, \$595.

*Heuer Analog Chronograph*: stainless, \$345; stainless and gold, \$395.

*Seiko MGL03 Digital*: \$125.

*Seiko MGH19M Digital*: \$79.50.

#### Nut Retrieval Tests

This test was designed to simulate the worst punishment a diving watch could be subjected to by a working diver. It consisted of having a diver retrieve 50 hexagonal headed nuts from a baffled box. The diver was to reach through a circular hole on one side of the box, through a baffle with a notched slit provided for access, to the bottom of the opposite side of the box, locate and retrieve a nut, finally placing it in a bucket outside the box. This retrieval action was repeated as fast as possible utilizing the hand with the watch.

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*"The actions carried out during the test resulted in alteration or stoppage of the pre-set stopwatch function in all of the watches."*

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At the beginning of testing, each watch was started to record bottom time as the diver entered the water to perform the retrieval test. Upon completion of the retrieval of the 50 nuts, the diver returned to the surface to ensure that the bottom time had not been inadvertently secured or altered when compared to a stop watch running simultaneously topside.

The actions carried out during the test resulted in alteration or stoppage of the pre-set stopwatch function in all of the watches. None of the watches suffered damage to its watertight case or actuation buttons. All watches continued to display a normal time function when so programmed.

To avoid the problem when working in confined areas the diver should cover his watch with a neoprene band, or wear a glove which extends on the wrist far enough to cover his watch. The interruption of the stop watch function was avoided by changing modes of display after activating the stopwatch function. The stopwatch time was then recalled when required.

### Glove Tests

For additional in-water testing, the diver donned various types of wet suit jackets and gloves, including dry suit thermal protection gloves. Wearing each glove in turn the diver started, stopped and reset the stopwatch function of each watch.

For both glove and mitt, it was difficult and time consuming to find the stopwatch activation button on all the watches. Once found, several attempts were required to activate the stopwatch function. The same problem occurred when stopping and resetting the stopwatch.

A diver must give consideration to the method and choice of watch used to record bottom time. A solution to the button activation problem was found by using the point of the diver's knife to activate the button. A watch which offers the rotatable bezel in conjunction with a digital display window provides a more convenient method of recording time, yet is also subject to errors caused by movement of the bezel.

### Luminescence Tests

All watches were mounted and placed in a darkened room. The watch face figures were discernible to a maximum distance of 30 inches from the

eyes of each viewing subject—far greater than the distance from a diver's wrist to his eyes. The digital figures could not be read without using the integral watch light. The digital displays on the two analog type watches could not be read because there was no integral illumination in the watch. However, the luminous hand figures and bezel markings remained visible to the same viewing distance as the totally digital watches. Providing visibility in a night dive is better than zero; it can be concluded that the watch faces, bezel and figures can be seen with minimum difficulty using the background integral light.

### Durability

Each watch was tested for the reliability of its case and actuation buttons under normal diver use. This test was an integral part of the nut retrieval, glove and open water tests, as well as a component of the unmanned tests. There was no damage to watch bodies, no strap breakage, and no time malfunctions during open-water tests. The digital watches proved to be extremely durable, easily absorbing the knocks and hazards associated with diving from a small craft.

*Pressure tests:* to assess its watertight integrity, each watch was placed in a fresh water bath and pressurized in a hyperbaric chamber from 100 FSW to 330 FSW. None of the watches showed signs of water leakage and each continued to function without fault.

*Thermal Stress:* the effect of temperature on watch accuracy and watertightness was evaluated by conducting a time check on each watch against a Hewlett Packard HP 1000 series digital clock and then immersing them in a fresh water bath at temperatures ranging from 30°F to 90°F. The watches were then

**TABLE 1: WATCH MODEL NUMBERS, AVAILABLE FUNCTIONS, MANUFACTURER**

	Alarm Function	Count Down Timer, Alarm	Stopwatch	Time, Day, Date Function	Face Illumination
Casio W100 Digital	YES	YES	YES	YES	YES
Casio 150 Digital	YES	YES	YES	YES	YES
Seiko MGH19M Digital	YES	YES	YES	YES	YES
Seiko MGL03 Digital	YES	YES	YES	YES	YES
Chronosport UDT Analog/Digital	NO	NO	YES DIGITAL	YES	NO
Heuer Analog Chronograph Digital	NO	NO	YES DIGITAL	YES	NO

pressurized to 100 FSW at the above temperatures and left for four days. At the end of each 24-hour span, watch accuracy was checked against the HP digital clock (which has an accuracy of  $\pm 1$  minute a month).

None of the watches showed any timekeeping error greater than  $\pm 1$  second in any 24-hour period. None of the watches leaked during this test. Military specifications for a watch are  $\pm 30$  seconds per day.

### Manned Open Water Tests

Open water dives were conducted to evaluate diver comfort, ease with which the digital readout could be read under water, and operation of the stopwatch function using bare hands. After each open water dive the diver filled out a questionnaire, evaluating comfort, legibility of display, and ease of actuating the stopwatch start button. Visibility under water at the time of testing was in excess of 15 feet and button activation was carried out using bare hands.

shows the rating by the divers.

### Conclusion

The digital diving watches tested at NEDU were effective in normal use by a diver. Digital diving watches are suitable for the U.S. Navy diver as long as they have some form of "elapsed time" function incorporated to allow measurement of bottom time, and consideration is given to the conditions and method of activation when thermal protection is required.

### Undercurrent Comments

The results of the study are self-evident. Should a diver need an accurate and reliable timepiece, he will most likely be well-served by an inexpensive watch. After the basic needs are met, the additional cost can usually be attributed to the jewelry or cosmetic value of the timepiece.

**TABLE 2: RESULTS OF DIGITAL WATCH QUESTIONNAIRE**

Watch Model	Casio W100	Casio W130	Seiko MGL03	Seiko MGH19M	Chronosport Seaquartz	Heuer Chronograph
Digital Display Legibility	3	3	3.25	3.5	3	3
Activation Characteristics	3	3.25	3	3.25	3.25	3
Ratings Based on General Comments	4	4	4	4	4	4

Note: The figures given are the average from four diver-subjects using a rating scale of: 1 for Poor to 5 for Excellent.

## Drysuit Survey—Part II

### —Whatever Happened To "Required Training"?

In April of 1980, we published the results of a study on dry suit safety in which the Viking, the Unisuit and the Jetsuit were tested. The study was conducted by NOAA (the National Oceanographic and Atmospheric Administration) which used NAUI instructors as subjects. The author of the article, William High, both a NAUI Board member and NOAA staff member, concluded: *special training is appropriate to alert the user to unique features of the suit. Ascent can be rapid and out of control.*

Dry suits were a relatively new item. Virtually everyone recommended that any sale of a dry suit be accompanied by training; manufacturers agreed, ap-

parently the training agencies agreed, and so did the retailers.

But, that's not what's happening today. Our survey of dry suit owners revealed that a full 60% of those who purchased suits were "not offered training" by those who sold them suits. Of those who were offered training, 23% did not take it. Therefore, only 31% of the dry suit users who responded to our survey indicated that they had been trained in the use of dry suits at the time of purchase. Of the respondents, 49% indicated they were at ease during their first dive with a dry suit; 56% were somewhat or very apprehensive.

(Continued on page 11)



People who use dry suits are normally experienced divers. But when they switch from a wet suit to a dry suit they face an entirely new set of potentially serious circumstances for which they have never been trained. As we discovered, 70% are left to experience those circumstances themselves without prior training.

According to John McAniff, director of the National Underwater Accident Data Center at the University of Rhode Island, as many as six fatalities may be directly attributed to dry suit problems. There is no record of the number of non-fatal bends or embolism cases that can be attributed to dry suits. And the problems can indeed be unusual.

Consider this case reported in the *South Pacific Underwater Medical Journal* involving an experienced diver in a Scottish loch in 1980. It illustrates the cumulative effect of a number of seemingly minor errors. The victim was involved in an underwater excavation accompanied by a student at the National Maritime Museum. He wore a variable volume dry suit. He carried 105 pounds in total (cylinder: 35 lbs., weight belt: 25 lbs., shoulder harness: 35 lbs., and 5 lbs. around each ankle), and was standing in water five feet deep at the edge of the channel, the planned entry site, when last seen. His buddy submerged, leaving him to follow. When he didn't, she returned to find him on the bottom—head down and feet up. She found it impossible to raise him; it required the combined efforts of several people to raise the body.

He had ditched his weight belt, but the chest harness containing weights had not been dropped because it had been put on before the scuba harness. Apparently, he had fallen forward into the ten-foot-deep water and had been unable either to reach his mouthpiece or to drop all his weights. His inability to get into an upright position, a buoyancy maintained inversion problem long known to standard "Hard Hat" divers, denied him any chance to escape drowning.

So, why is there no training? First, it has become common—and accepted by some people but not everyone—to use a BC with any type of dry suit. Only the Unisuit now claims its product is usable without a BC. Many suit manufacturers tell the diver to load up on special underwear for warmth, not excessive air. Some suits (for example, Whites, a Canadian suit, and DUI) are cut with tighter legs to minimize air shifts to the legs and feet—and therefore minimize the problem of inversion. Furthermore, the material in many newer suits does not stretch like neoprene, thus excess air is vented off and does not expand the suit. Therefore, many of the problems that surfaced in the NOAA study have been mitigated by the design and construction of newer suits.

Second, when manufacturers issued the call for

having divers trained in their suits, and requested retailers to conduct training as part of the sale, a question of responsibility arose between distributors and retailers. Some distributors claimed that the price of training was built into the dry suit—they suggested the profit margin was great enough so that the retailer could afford to train the purchaser. Today, if a shopkeeper gets that so-called keystone mark-up, he sells a suit which costs him \$300 for \$600—for that mark-up he could afford training. But in the last five years discounting has become common. What was once a \$600 suit now may sell for \$450. No retailer will give training for that mark-up, but they could require an additional charge. In fact, many respondents who were trained indicated that they had paid extra—roughly \$30—for their training. Viking, for example, does not include the training price in the price of its suit, although they are trying to develop some sort of incentive program. Viking sales manager, Ricahrd Zahornaiak, told *Undercurrent* that "there is no way we can force our dealers to offer training, but if I were to spend \$800 for a dry suit I would personally demand some instruction."

A third problem is the lack of training facilities. Many shops don't have training pools. Others have shallow pools in which training for a blowup would be virtually impossible. Furthermore, no shop would like to face the liability concomitant with training people to ascend with inflated suits. Karl Wallin (Wallins Dive Shop, San Mateo, CA) has his own solution: "If we feel that the buyer is not experienced, we suggest that he join one of our club dives. If he wants training in the suit, we may charge \$10 or \$15. Most of our buyers, however, are experienced. If a student wants a suit, we train him in the class."

What was once expected to be "training," has come down to "written or verbal instruction"—or simply explaining what can go wrong. Frank Sanger, President of Parkway, who distributes the Unisuit and the Jetsuit told us: "We provide a complete instruction book with every suit. We have also sent out reprints of the NOAA article to every dealer to make sure they are aware of the areas in which instruction should be offered."

Bob Cranston of DUI said: "We are preparing a book on dry suit use, and we hold seminars for our dealers and encourage them to hold seminars for their customers. But there is no way we can force dealers to do this."

But Bruce Spangrud, President of Offshore, believes he can enforce training with his dealers. "Part of our contract with our dealers," he told *Undercurrent*, "is that they offer instruction in the use of the suit, both in and out of the water. Emphasis is on using the valves to dump air, if needed, and how they operate." That's the kind of training one needs to operate a suit safely.

In contrast, a customer relations person at Hender-

son told us "we emphasize how to get into the suit since the major problem is the breaking of the zipper."

Written or verbal instruction can never accomplish what experiential training does—otherwise one could provide basic certification for divers with classroom instruction only. Booklets may indeed provide advanced warning about dry suit problems, but they do not teach problem resolution under pressure. Furthermore, instruction manuals don't accompany many suits. Imperial, for example, does not have one. Imperial sales manager, Nick Salmella, said, "we instruct our sales reps to tell the shops not to sell our dry suits to inexperienced divers and to give verbal instructions on uncontrolled ascent procedures and flooding. However, we have no way to enforce this with our dealers." Obviously, the "we can't enforce this" enjoinder has swept the industry. But if manufacturers or distributors can't enforce this, retail stores might consider refusing to sell suits without training. Few, however, claim there is a need.

Joe Ford of the Pinnacles Dive Shop (Novato, CA) offered the most typical response. "Most of our [dry suit] customers are regular customers who go diving with us. We know something about how they dive. It is rare for someone to walk in off the street and buy a dry suit." Ford said that they explain the use of the suit and offer buyers the use of the pool for practice.

Since it is the rule, rather than the exception, that

today's purchaser of a dry suit will not get supervised training with the suit, we offer these bits of advice for the new buyer.

- Get a full rundown on the suit from the store owner (not just any old salesperson), or the person most knowledgeable in the store.

- Try on several suits, and, if permitted, try the suits in the shop's pool.

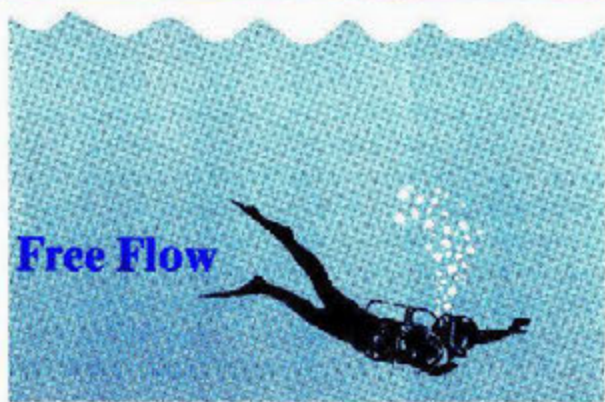
- Get as much information as possible about how the suit's construction and materials affect buoyancy. Discuss ways of dealing with inversion and flooding.

- Get facts about the typical weight requirements for this suit for your body weight and investigate a variety of means for weighting yourself.

- If possible, pay the shop for one training session in which you receive both verbal instruction in the use of the suit and in which you make one shallow dive to experience the suit and test your own responses to it.

- Make at least one pool dive or one shallow water dive, with a buddy observing you, while you test your weight and get accustomed to the buoyancy.

Once you get a dry suit, you will never again be satisfied with wet suit diving. But a dry suit is such a departure from the wet suit, that you must have respect for its uniqueness. Don't rush into a deep dive without first giving it a good test. That's the best way to enjoy the comfort of a dry suit—and the best way to keep from becoming a statistic.



The pursuit of sunken treasure in foreign waters is risky business. Ask Fredrick Graham, from Belmont, California, whose son Fred, 19, has been in a Vietnamese prison since last June. Fred and a British adventurer were arrested in Vietnamese territorial waters while searching for plunder they believed was left by 17th-century Scottish pirate Captain (William) Kidd. To free his son from prison, the elder Graham needs to pay a \$10,000 fine (a modern form of bounty), but "our family is not wealthy and I don't have any idea how we're going to raise the money." Graham said that even if he had the money it would do little good because the State Department has told

him Federal law prohibits exchanges of funds between the U.S. and Vietnam.

**The jungles of the Amazon produce one-third of the world's oxygen supply, yet developers and farmers are denuding an area equivalent to the size of West Virginia each year. Jacques Cousteau's *Calypso* has completed her voyage on the Amazon to document the problems, and a documentary is forthcoming. Following the Amazon, the *Calypso* began a study of the Mississippi, but nearly sank after a collision. When extensive repairs were completed, the craft set sail again! Expect the TV documentary of the Mississippi later this year.**

One of the raps on Grenada's St. George's School of Medicine is that it's the only place a prospective doctor can attend where he can "major in surgery and minor in scuba diving." Actually, that's probably essential training for the trade, given the number of tax-deductible meetings and conferences doctors are able to create for themselves at any number of Caribbean spas. Now if someone would only figure out a way to get the same training and eventual tax deductibility for secretaries, truck drivers, and waiters.