

## Travel Reports From Our Readers: Part III

### -- *The Decline of Pleasure*

One serious problem in evaluating world wide diving is remembering what a place we visit today was like long ago. I first went to Cozumel eight years ago. I liked it, though I complained about the slow moving boats and lack of big fish. While there, I met divers who years before had cut their teeth on Palancar reef. One Texas diver told me, "Well pardner, when I first strapped on a tank here in 1960 the fish life on the reef was as busy as a herd of heifers crossing the Red River. There was hardly a hotel and certainly no dive guides." In fact, there was only a sleepy little village which survived from the fruits of the sea. Then came the jets and then a few tourists and then a few developers and then some more jets and more tourists, and today it's damn near a metropolis. I hate to see that kind of development anywhere. That's why I'm a life member of the Sierra Club, which does it's best to slow down expansion in this country. Sure, in Cozumel some of the locals have become wealthy, but some have stayed just as poor and now a unique culture is on the run. So, those of us who can afford to fly farther and farther away to escape the madding crowd and to seek reefs as pristine as the day the good Lord waved his magic wand.

When we report about the diving, should we say it's no good because we can remember what it was like back then? Or should we say it's damned good, recognizing that diving is on the decline throughout the developed areas of the Caribbean? Though we try to keep a balance, I suppose the former shapes our writing. As the quality of diving declines so do our ratings. And, as more and more people see what the other side of the world has to offer, more and more decide to forego repeat trips to the Caribbean in favor of fewer trips to Australia, or to Fiji or to the Phillipines. And with the high prices of Caribbean diving these days, no wonder. Some of those distant trips are looking less and less expensive.

In this issue, our readers report on Cozumel. Those who are just beginning to dive write of the wonders in Cozumel waters. Those who have been there before

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lament its passing. As one diver who first dived there in 1967 wrote: "It has been discovered with a passion and the quality of diving has badly suffered. The personal touch is gone in favor of cattle boat operations. Sadly, I have to write it off as a special dive location. It is no longer a spot to return year after year." And there are those who now say the same about Cayman and Bonaire, about Hawaii and the Keys. And there is nothing any of us can do about it except travel farther and farther away in search of the ultimate dive.

--C. C., Travel Editor

## BC Jacket Recall: Sherwood, Dacor And Parkway Jackets In Question

If you have purchased a buoyancy compensator jacket manufactured by Sherwood, Dacor or Parkway anytime after February 15, there is a good chance you may not be able to float. The plastic molded part at the corrugated hose attachment point, manufactured by Soniform, does not meet specifications and may break easily.

*Sherwood Defective Devices:* 1031-003; 1032-003; 1033-001, 002, 003, 004, 005, 006, 007, 008; 1034-001, 002; 1035-001, 002, 003; 1036-001, 002, 003, 006, 007, 008; 1037-001, 002; 1038-001, 002, 003, 004; 1039-001, 002; 1040-001. Return the defective device for repair to any Sherwood dealer or to the Sherwood West Corp, 11 Autry Lane, Irvine, CA 92714 (714/581-1300 or 800/752-4579).

*Dacor Defective Devices:* BXD-XL (6668-00); BXD-XLX (6668-01); BXD-L (6666-00); BXD-M

(6664-00); BCX-LC (6645-00); BCX-L (6642-00); BCE-MU (6250-00); BCT-M (6634-00); BCT-L (6644-00). You may return the defective device to any Dacor Dealer or to the Dacor Corporation, 161 Northfield Road, Northfield, Illinois 60093 (312/446-9555).

*Parkway Defective Devices:* SYS 2000, SYS 2100, SYS 5000. Return it to your nearest Parkway Dealer or to Parkway, 241 Raritan Street, South Amboy, NJ 08879 (201/721-6300).

Because Sherwood was able to contact 60% of the known owners of their jackets, the Consumer Products Safety Commission considers their action to be a voluntary recall not a mandatory recall. We have no data about the success the other companies had in contacting owners.

The address of Soniform is: 1908 Friendship Drive, El Cajon, California 92020.

Fiji: Our reviewer had some great dives with Ric Cammick on Taveuni, Fiji (see November/December, 1984), but had a few complaints about Ric's leadership. Ric responded to the article with several interesting points: "Should we dive in an area that requires a 'cook's' tour, we naturally guide divers around difficult geography. To stand up like a politician and give all clients a talking to about the complete dive pattern before diving is really an American custom and for me unnecessary. Divers can ask for advice . . . I was disappointed that your writer did not experience some of our better diving along rather grand drop-offs. I can only presume that the group on board was not capable of deeper diving. I am not being critical of the writer's capabilities as I do not know who he was. The excellent sites your writer has yet to visit . . . The local hotel is, in a word, disgusting. We can do nothing about that . . . Physically, this year I was, and still am tired, however it was no excuse for perhaps my attitude toward the writer. If nothing else, Undercurrent has made me aware to pull up my socks personally and I shall. I thank you for that . . . In the Pacific, most of us are struggling to survive. If you knock us too hard we will never get the extra cash

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flow required to improve and expand our operations. Give me a couple of years and a few more dollars and Dive Taveuni will evolve into a destination devoid of bad hotels. Then send your writer once again to this very beautiful part of the world and I will blow his ears off with excellent diving . . . Perhaps my time has come to pass Taveuni on to somebody younger to give it the shot in the arm it richly deserves. Should you know such a person, send him down to paradise with some money. He and I will grow together." Investors, write him c/o Matei Post Office, Taveuni, Fiji.

Hawaii: Oahu (i.e., Honolulu) continues to get a bad rap from our readers, generally in support of our September, 1984 story. Jeff Askew (Thousand Oaks, CA) says he found both South Sea Aquatics and Aloha Dive Shop "unprofessional and would not recommend them to any diver." . . . David J. McLean from Boulder City, Nevada, a NAUI instructor for the National Park Service, went out with the Sea Urchins shop and had a great first dive on the minesweeper MAHI, but had to wait four hours on the beach for the second dive and watched the guide drink beer the whole time. "I decided to risk the second dive with him and though we were supposed to go to 60 feet, we ended up in 90 feet; later the guide admitted he had exceeded the tables. He was not working as a professional." To the guide: You're damn lucky we're not going to mention your name, pal . . . One Honolulu resident, C. R. Benson, says, "Granted diving on Maui and Hawaii can be better, but if you know where to go it can be acceptable." That's our point, C.R. If a traveling diver (our readership) shows up, it doesn't look like the charters will take them to the top diving. Only the locals know the secrets, if there are any. C.R. didn't have much else good to say, either: "I would also recommend you get down off your high horse, you act like an authority, but anyone who can't figure out why a mask fogs up should take another basic course. What's your problem? You trying to close sport diving before the government does?" C.R. signs his letter "diving consultant."

On Hawaii, the Big Island, off the Kona Coast, we always get rave reviews from divers who got out with Tom Shockley and Lisa Choquette (Dive Makai--808/329-2025): we're not going to belabor their fine services, since we always do, but will simply quote Henry Corra (Richmond, VA) who says he was led to: "tarpon being cleaned, even in the eyes, by cleaning wrasses, harlequin shrimp, white tipped shark, conger eels, snowflake morays, zebra morays, rays, turtles, leaf fish, red angels, etc."; for more, see our review from June, 1982. It still holds re Tom and Lisa, who are indeed world class guides . . . Off shore a couple of hundred yards from the classy Kona Village Hotel are a string of caves, usually plum filled with small reef sharks. One of our readers recently visited there and says the hotel now caters to beginners so don't expect to see the sharks or any other sites suitable for pros; but beginners get first class treatment . . . Sherry McAfee liked diving with Sandwich Isle Divers (808/329-9188): "I give their guides very high marks; they worked very hard to make sure I got plenty of good photographs, which included a 7-foot moray, blowfish and lava tubes." . . . PADI instructor Carol Weisman (Carmel Valley, CA) rates Kona Coast Skin Diving LTD very highly. "The store itself is well organized, adequately stocked and cordially staffed. They rent state-of-the-art diving equipment and the dive boat has a line and hook for support air cylinders beneath the boat, a drift line off the stern and a floating buoyancy device. Our divemaster was knowledgeable and courteous."

In retrospect, I may have been a little hard on Maui (August, 1984), but Frank Dunn of Little Rock, Arkansas says simply: "I agree with your evaluation." Central Pacific Divers still rules the roost here. Anthony Barcia writes: "surprised by the abundance and color of fish. Dives are relatively expensive (\$65-\$75/day) and distance to sites far, diving is good to excellent and CPD was first class and professional in every way." . . . David Melin (Chicago) tried Mike



Seaverns (Hawaiian Clearwater Charters 808/329-6569): "an extremely interesting individual; a biologist heavily involved in shell collecting and the marine history of Maui; his unique knowledge of the local diving was absolutely invaluable. He is a real professional, his dives were very interesting, and I unhesitatingly recommend him."

**Dear Undercurrent:**

Thank you for your informative, thought provoking article on wet suits and rescue (January, 1985). For the last ten years Henderson Aquatics has been putting retro-reflective tape on the "Zip-On" suit which we sell to the U.S. Coast Guard and other military agencies. Henderson's founder Everett Edmund designed and patented this suit with safety in mind.

However, it wasn't until we read your article (yes, we do read your articles and sometimes even listen) that we thought to use this safety measure in our sport diving market. Good idea. We displayed a sample at the DEMA show in 1985 and will offer the retro-reflective tape package as an option in our 1985 price lists.

Harry T. Palmer  
Director of Business Development  
Henderson Aquatics  
Millville, NJ

*Ed. Notes:* Though Henderson has joined the bunch in developing color and style, Palmer's letter suggests that safety still remains their primary consideration. Cheers to Henderson.

Jamaica: A couple of times a month I get letters or questionnaires from subscribers bemoaning their "diving vacation" to Jamaica. God only knows how many people who have read our publication have selected other destinations over Jamaica, but there are still those poor souls who head off to Rasta land expecting great underwater thrills and get none. One of the reasons is puff pieces like Frommers Dollarwise Guide to the Caribbean which says "Jamaica has some of the finest diving waters in the world." Waters, yes. Fish and coral, no. But sometimes people get lucky. J. Bardach (Providence, RI) writes "poor fish life but I was lucky to meet a couple of nurse sharks (eight feet!) and an enormous manta ray out of Negril." Beginners, however, may find the tranquil waters a decent place to get started. Jamaica, itself, is interesting and generally safe, but the people are not necessarily friendly and pleasant (except for those who's occupation requires them to cater to tourists). Ocho Rios has antiseptic conditions and upscale prices; Negril is for those who like to

hang out and find \$4 dinners. Dive here with Raymond on Negril Beach, go to Ric's Cafe for American excesses, and do not drive with herb in your auto. My buddy and I encountered two roadblocks in three days. Without cause our car and personal effects were thoroughly searched by the armed militia. I can thank our President's misguided policies for Jamaica's infringements on my civil liberties--infringements that would not be tolerated in America.

Mexico: The options for residing and diving in Cozumel are as varied these days as anywhere in the Caribbean. Check our September 1983 review. Galapago Inn gets good reviews from our readers these days. As one says: "a modest, well run dive resort; clean, with good food, and the dive shop is run well also." . . . One dive operation that gets consistently high marks--very unusual for Cozumel--is Dive Paradise, whose owner Tom Hartdegen gets continuing kudos from those who use his services. "The one safe operator on the island; makes sure the boats aren't too crowded and is open to suggestions as to where to go" (Jim Kostresa, Chicago); "diving with Tom was tops; interesting and much attention paid to my rustiness (Mike Stern, Silver Spring, MD); "trip would have been a disaster if it weren't for the fast intervention of Tom Hartdegen; Villa Blanca turned away our group upon arrival although we had reservations, but Tom found alternate accommodations right on the water." . . . We're also getting positive comments about Scuba Cozumel; La Ceiba and the Barracuda remain favorite hotel choices for divers . . . Cozumel has one of the most fascinating reef structures in the Caribbean, if not the world. Some of the fish life is coming back, but the turkey



divers swarm; says reader Mary Wicksten (Bryant, TX): "protection of fish has resulted in more big ones—groupers, jacks, etc. At Paradise reef fish are used to being fed; shelling and collecting prohibited and enforced; too many divers with no ocean experience confronted with current and dropoffs; most dive guides don't pay much attention to slow pokes or frightened divers—dangerous."

Elsewhere in Mexico, people like to party in Puerto Vallarta and there are fish on the reefs—if you can only see them because the visibility is often below 30 feet. As Charles Burton, MD (Excelsior, MN) wrote: "Chico's one day dive trip to Quemixto probably represents the low end of sport scuba diving; native fishermen's boats, poor organization and low visibility; took a trip to the Marietta islands off the coast; spectacular location except for poor visibility (10-40 feet) . . . Don Niles (Flint, MI) got some decent but not special diving from the Casa Del Mar dive shop at Zihuatanejo . . . Acapulco? Summed up most eloquently by Marilyn Wise (Novato, CA): "so bad it doesn't count as a dive location." . . . Mazatlan had not so great diving, but Toshio Jason Akamatsu, MD, writes: "I found a tremendous guide—Sergio Giron Sanchez—who has good equipment available; his shop is being moved to the "main drag," across the street from the tourist hotels."

Micronesia: The diving is superb and Truk Lagoon, the home of more than a score of sunken Japanese military vessels, is unique to the world of diving. Although many people join high priced tours to Truk, you'll save money by booking your own modest accommodations and diving with the local shops; we have not had reports from our readers. Clark Graham of Micronesia Aquatics is one who gets good marks (POB 57, Truk Lagoon, ECI, 96942). And Ronald Baron (Highland Park, IL) writes: "Continental is the only first class hotel, but you should not pay the \$74 they charge unsuspecting visitors; I found the hotel mostly empty and they are quite glad to have you for a modest price. Group rates are \$24 for double occupancy!" On Ponape, Baron enjoyed a stay at The Village, with Bob and Patti Arthur (POB 339, Ponape, ECI, 96941). W.A. Morrison (El Paso, TX) was there as well: "a wonderful place to wind down; the wall drops are breathtaking, grey reef sharks abundant, photography is excellent; dive guides Gibson and Albert very alert; one of the most scenic and beautiful islands I have ever seen." Richard White (Holladay, UT) dived the islands from See and Sea's SS Thorfin for \$2400 plus airfare: "a luxury ship led by people who bent over backwards to make everyone's experience memorable. Diving ranged from 3+ days in Truk to reef and wall diving to sightseeing in Ponape."

## Technical Limitations Of The Octopus

### *--And A Way to Test Your Own Regulator*

Within the past few years, the redundant second stage, or 'octopus,' has almost become a standard in sport diving. While it is easy to learn, and requires somewhat less constant practice to perform than buddy breathing from one shared regulator, there are limitations which frequently go unstated.

According to personnel in several scuba repair firms, the majority of divers who send in their regulators for annual or semi-annual over-haul do not have their redundant second stage over-hauled. Upon discovering that it will increase the cost of the overhaul by as much as twenty dollars, they elect to leave it alone. The logic seems to be that since it is not

used, it doesn't need an overhaul. Nonetheless, divers who don't maintain the auxiliary second stage still present themselves as being able to provide air if and when it is needed. But they really don't know if they can, and neither does the buddy.

Historically, problems and accidents occur at the start and end of a dive. Out-of-air situations normally occur at the planned end. Thus, low tank pressures and possible anxiety in some cases can combine to place physical limitations on the technique that is unique to the octopus. Dr. Glen Egstrom of the U.C.L.A. Department of Kinesiology tested five octopus systems for the breathing characteristics on the



surface: at 60 feet, with normal breathing and with heavy breathing, with alternative breathing and with breathing at the same time and at tank pressures of 600 and 300 psi. (An additional test was conducted on the surface with 200 psi.) The results of these tests indicated that under certain conditions there is, indeed, a marked increase in breathing resistance.

The surface tests were undertaken to determine if there were variations in regulator performance under conditions of low tank pressure, normal breathing and heavy breathing, breathing alternatively or breathing at the same time.

These results indicated that there was little increased breathing resistance during "normal" breathing, whether alternative breathing or breathing at the same time. Yet, as work loads increased, there was a noted increase in the breathing effort required to draw adequate air. Some regulators indicated excessive resistance at 200 psi when both divers breathed "hard" at the same time. These variations were found to be consistent with the baseline characteristics of the individual regulators. That is, the better breathing regulators demanded less effort under the increased demands of heavier breathing with low tank pressure. These tests conclude that there is indeed, variability in performance, but at the surface this variability is only significant for quite low tank pressures.

For underwater tests, two highly experienced divers made a series of dives to 60 feet, and again breathed the octopus rigs with alternative breathing and simultaneous breathing under their "light" and "heavy" breathing patterns. The results were enlightening.

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*"With low tank pressure and heavy breathing, such as might be encountered in a stressful situation, the work effort needed to obtain air can triple when an octopus is being used."*

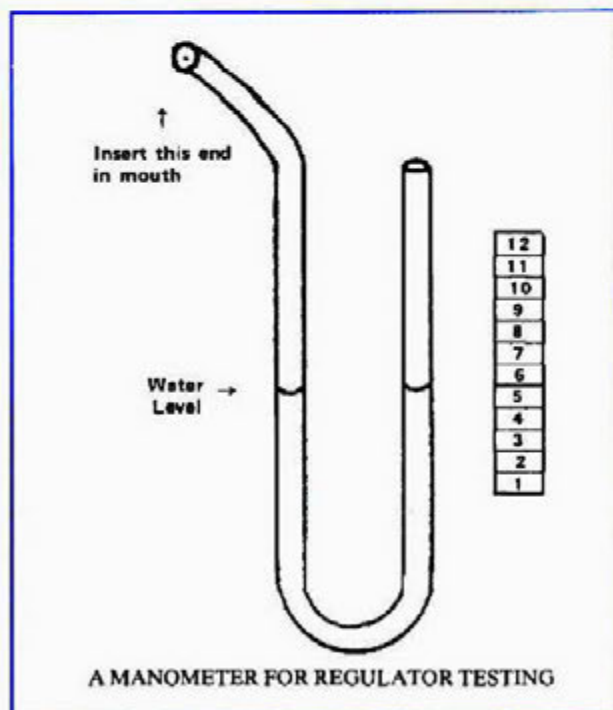
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A normal differential pressure measurement for a regulator is  $\pm 3$ ". Differential pressure is the difference in effort or pressure required to open the valve and deliver air. It is also sometimes called "cracking" or "breaking" pressure. The tests indicate that at 60 feet with 600 psi and with "light" breathing, all five units tested resulted in 5 inches or less of differential pressure. Heavy breathing at the same configuration showed over 10 inches of differential pressure in 3 of the five units. At 300 psi, 4 of the 5 units were over 10 inches of differential pressure under heavy breathing conditions. This means that with low tank pressure and heavy breathing, such as might be encountered in a stressful situation, the work effort needed to obtain air can triple when an octopus is being used. In fact, although air remains in the tank, it's conceivable that

it cannot be withdrawn. As previously mentioned, the divers involved in the tests were highly experienced, the equipment in good working order and the tests conducted under controlled conditions. Take the case of two divers in the open ocean, with only a couple of years experience, in an out-of-air situation, and there could be a major problem. The potential for problems increases if the redundant second stages are not in as good condition as the primary second stages.

Does that mean that the octopus should be scrapped? By no means. But every diver should realize that under some circumstances, two second-stage regulators on the same tank may not deliver air at all. Understand the limitations of your own equipment and your buddy's. Keep the equipment well maintained and know the critical tank pressure for your particular setup. This knowledge will help you to plan your dive more safely -- that is, to be prepared for out-of-air situations -- and know when the dive should be terminated, based upon the regulator limitations and the available air supply. In short, your regulator may not be able to deliver air adequately to you at sixty feet with only 200 psi in the tank, especially if you are in a current or in a state of pre-panic. Using an octopus under those circumstances would compound the problem.

Several years ago *Undercurrent* published a simple technique for checking the performance of your regulator. We are reprinting that technique, which was provided to us originally by Dr. Glen Egstrom:



1. Get a 12-inch ruler, a roll of masking tape and find a board of any thickness—about a foot wide and a couple of feet high.

2. Purchase four feet of clear tubing,  $3/16$  inch



*interior diameter*, from a scientific supply house, your local pharmacy, or anywhere you can find it. Glass tubing can be bent by heating it over a gas flame, or straight glass tubing can be used with 3/16" surgical tubing to form the "U."

3. Following the diagram, tape the tubing to the board in a "U" shape. One side (a) should be about 15 inches long, while the other side (b) should be at least 30 inches long. Be careful not to crimp the tubing at the curve.

4. You now have a "manometer."

5. Fasten the ruler to the center of the board.

6. Pour water in the tubing until the water level on both sides comes up to 6 inches on the ruler, just as in the diagram.

7. Hook your regulator up to your tank, open the valve, and put the mouthpiece into your mouth.

8. Insert the long tube into the corner of your mouth.

9. Breathe normally and watch the water level

in the manometer fluctuate.

10. If the fluctuation exceeds three inches in either direction, your regulator needs an overhaul.

You may run this test with two regulators to determine the differential pressure when they are both working at once and at variable tank pressure. Have your buddy breathe on the second regulator at the same time and let him try the manometer as well. You should see quite a difference in differential pressure. That difference will increase dramatically as depth increases, tank pressure decreases and work of breathing increases.

Realize, then, that the octopus system is not fool-proof and has severe technical limitations in situations that can occur at depth, near the end of the dive when the tank pressure is low, or when the divers are under great physical or psychological stress. To overcome the problems, keep your buddy breathing skills up to snuff and remember that your best choice in an out-of-air situation might very well be to head directly to the surface.

## Why Divers Die: Part II

### -- *Drugs, Deep Dives and DCS*

This is the conclusion of the two part article on Why Divers Die, prepared from the report issued by the National Underwater Data Accident Center at the University of Rhode Island. The report carefully assesses those fatalities of 1982, and compares them with diving deaths since 1970. Hopefully, lessons from these deceased divers will contribute to the safety of those who read the reports.



The most notable reduction of fatalities in any single kind of diving is found in cave diving, which contributed 25 fatalities in 1974. In 1981, the total was 17 fatalities, but 1982 had only three, all of which occurred in Florida.

#### Activity Of Victims

One incident took the lives of two young men who had been warned not to go into the caves, and will be discussed later. In the third cave diving fatality, a 35 year old male entered the cave structure with three partners. All four began to realize that they were running out of air and made an escape from the cave through an open pothole, only to find that a victim had been left behind. His body was recovered several hours later. None of the three cave diving victims had any training whatsoever for this kind of diving.

The single wreck diving fatality involved a 38 year old male with 20 years of wreck diving experience. He frequently dived the wrecks alone, which he did in this case, even though there were many others on board the charter boat he had taken. This victim was found lying on his back in 170 feet of water with the regulator out of his mouth.

Multiple scuba diving fatalities have occurred frequently in previous years. In 1981, there were eight double fatalities and one triple fatality. The only double event in 1982 happened in a Florida cave, after two men had been warned by an instructor not to enter the cave systems. They had no lines, no flashlights, and were found lost in the silt inside of the cave.

Several or many divers in the water, diving in a group, may add more confusion than safety. In earlier reports, the NUADC has consistently emphasized the need to use the buddy system, a one-on-one relationship between two divers who are in close proximity, and each looking out for both himself and his buddy.

#### Starting Causes Of Fatalities

Three categories of probable starting causes of nonoccupational underwater diving fatalities have been designated: Medical and Injury Causes, Environmental Causes and Equipment-related Causes.



*"Upon returning to the surface, he is apparently all right, though he may be shivering. He gives his buddy the okay sign, and they start returning either to their boat or to shore. After a few strokes, the buddy turns to find that the victim is laying face down on the surface, not swimming, totally expired. There has been no outcry, no splashing and no panic."*

Under medical and injury causes, "possible exhaustion, embolism, or panic" may include cases which have exhibited panicky behavior, confusion and disorientation. Also included is the condition described as 'sudden drowning syndrome' (SDS). SDS was first noted by the NUADC several years ago. We have had a number of such cases each year. Typically, they involve a diver who has been to a depth of 50 feet or more in considerably cold water. Upon returning to the surface, he is apparently all right, though he may be shivering. He gives his buddy the okay sign, and they start returning either to their boat or to shore. After a few strokes, the buddy turns to find that the victim is laying face down on the surface, not swimming, totally expired. There has been no outcry, no splashing, and no panic.

In order to understand this new syndrome, the NUADC has consulted many physiologists and hyperbaric specialists. We still do not know the cause. One possibility is that slight hypothermia coupled with the well-known mammalian diving reflex (the slowing of the heart rate upon emersion of the face in cold water), results in a cardiac arrhythmia and sudden unconsciousness, followed by drowning.

Possible exhaustion, embolism, or panic contributed to 13 of the fatalities in 1982, while eleven cases were diagnosed as air embolism. The four cardiovascular events are considered both probable starting causes and the final results of the events.

The 1982 cases include one death caused by decompression sickness, a very experienced 38 year old male who died while diving 170 feet deep on a wreck off the New Jersey coast.

The possible suicide is a 26 year old male who had been using marijuana and alcohol extensively. Friends reported that for a number of weeks this man had contemplated suicide. He disappeared on the third dive of the day in 100 feet of water off the California coast. The 1982 cases include at least five in which drug abuse may have been a contributing factor, including either alcohol, marijuana, or prescription drugs.

Sixteen cases may have had an environmental or external factor as a starting cause. Lost or out of air in a cave accounted for three of the 1982 events. High waves or heavy surf accounted for four fatalities, while seven were attributed to extremely strong currents. One case was determined to have been caused

by entanglement in kelp. One victim in 1982 disappeared near Elliot Key, Florida, in about 70 feet of water. This victim was not recovered, but pieces of his clothing, including swim trunks and other equipment, were recovered and all showed signs of having been attacked by a shark.

For equipment related cases, three divers died because they ran out of air. A fourth diver was severely overweighted for the depth of his dive. Weight belt entanglement in the victim's vest straps was the cause of a single case in 1982, while poor maintenance of a regulator led to the death of still another diver. A 28 year old male was found off the coast of Maine in an upside down position with the legs of his dry suit hyperinflated, while the fast moving waters of a river in Michigan claimed the life of a 30 year old male when he became entangled in his diver's flag line and fishing gear on the bottom. The

Table 1. Probable Starting Causes of Diving Fatalities, 1976-1982

Estimated Cause	Number of Cases						
	1976	1977	1978	1979	1980	1981	1982
<b>(A) Medical and Injury Causes</b>							
1. Possible exhaustion, embolism, or panic	24	25	24	33	28	12	13
2. Disoriented air embolism	10	16	12	14	10	8	11
3. Cardiovascular event	1	0	0	2	1	2	0
4. Nitrogen narcosis	1	0	0	2	1	0	2
5. Hit by boat, extensive injuries	2	2	2	3	1	0	0
6. Aspiration of vomitus, etc.	1	2	1	2	2	0	0
7. Possible intoxication	1	1	0	0	3	1	0
8. Possible choking, wed of gum	1	0	1	1	0	0	1
9. Decompression sickness	1	0	1	1	0	0	1
10. Cramps at depth/cold	0	1	0	0	0	0	0
11. Ruptured eardrum	0	0	1	0	1	0	0
12. Ruptured stomach blood vessel	0	0	0	1	0	0	0
13. Gunshot	0	0	0	1	0	0	0
14. Epileptic Seizure	0	0	0	0	0	0	0
15. Asphyxia/regurgitated food	0	0	0	0	0	0	1
16. Possible suicide	0	0	0	0	0	0	1
<b>Total Medical Causes</b>	<b>49</b>	<b>51</b>	<b>45</b>	<b>62</b>	<b>54</b>	<b>27</b>	<b>33</b>
<b>(B) Environmental Causes</b>							
1. Lost or out of air in cave	21	7	11	12	10	17	3
2. High waves or surf	2	4	2	7	1	7	4
3. Strong currents	7	2	3	0	1	1	7
4. Entangled in kelp or weeds	6	2	2	3	4	5	1
5. Lost under ice	1	1	3	1	2	6	0
6. Suspected shark attack	1	0	0	0	2	1	1
7. Entangled in external lines/ropes, etc.	1	1	3	3	1	3	0
8. Night dive, lost sight of shore lights or lost buddy	1	0	1	1	0	0	0
9. Foot wedged in rocks	0	0	0	0	1	0	0
10. Sucked into dam gate	0	0	0	0	0	2	0
11. Lost in wreck (bill)	0	0	0	0	0	1	0
<b>Total Environmental Causes</b>	<b>45</b>	<b>19</b>	<b>26</b>	<b>29</b>	<b>28</b>	<b>43</b>	<b>16</b>
<b>(C) Equipment-related Causes</b>							
1. Out of air at depth	7	12	17	6	8	3	3
2. Overweighted at depth	1	1	1	0	4	2	1
3. Weight belt entangled-tank/vest straps	1	0	1	0	0	0	1
4. Poor maintenance regulator	2	0	0	2	0	3	1
5. Equipment "tied" on victim	1	0	1	0	1	0	1
6. Tank fell from backpack, victim strangled by neck strap	1	0	0	0	0	0	0
7. Accidental back-mounted buoyancy	1	0	0	0	0	0	0
8. On anchor line, struck on head by boat	0	1	0	0	0	0	0
9. Tangled in buddy's dropped weight belt	0	3	0	0	0	0	0
10. Lost buddy line, black water	0	1	0	0	0	0	0
11. Burst safety disc, tank flooded	0	1	0	0	0	0	0
12. Air reserve pull rod under tank band	0	1	0	0	0	0	0
13. Carbon monoxide poisoning, had air	0	0	1	1	1	0	0
14. MC oral inflator breaks	0	0	1	0	0	0	0
15. Regulator freeze-up	0	0	0	1	0	0	0
16. Lost weight belt, rapid ascent	0	0	0	0	0	1	0
17. Dry suit inversion	0	0	0	0	0	0	1
18. Entangled in flag line	0	0	0	0	0	0	1
<b>Total Equipment-related Causes</b>	<b>14</b>	<b>19</b>	<b>22</b>	<b>10</b>	<b>14</b>	<b>9</b>	<b>8</b>
<b>Probable Cause not defined</b>	<b>39</b>	<b>13</b>	<b>23</b>	<b>29</b>	<b>13</b>	<b>24</b>	<b>17</b>



# BULLETIN

The Reagan Administration has stopped funding of the National Underwater Accident Data Center at the University of Rhode Island. As we have come to expect, programs concerned with the health and welfare of the citizens get frontal attacks with a blindly swung budget ax, while such items as defense procurement get treated with blinders. It's tragic.

Since 1969, the NUADC has been the sole source of analysis of diving accidents. Its reports have helped national agencies shape training programs, helped dive leaders recognize problems of divers in the water, and helped individual scuba divers dive safely. The information disseminated has saved a countless number of lives.

Yet, the government is discontinuing funding for the program at the end of June. They're saving a paltry \$69,000, the sum some defense procurement officers pay for 100 ashtrays.

You might be able to do something about this. Write two letters of protest, asking for the funds to be reinstated, so that the millions of active sport divers in this country have the information they need to dive safely. Address

your letters to the following people, asking Elliot Finkel to reinstate \$44,000 from the NOAA budget and Lt. Commander Tom Talbot to reinstate \$25,000 from the Coast Guard Budget.

Elliot Finkel  
NOAA  
Department of Commerce  
Undersea Research Program  
RD/SP 2  
6012 Executive Blvd  
Room 726  
Rockville, MD 20852

Lt. Cdr. Tom Talbot  
U.S. Coast Guard  
Merchant Vessel Inspection Division  
2100 2nd St. SW  
Washington, D.C. 20593

Send a copy to your Representative and Senators. This is especially crucial if you live in states heavily populated with divers: California, Washington, Texas, Florida, New York, Massachusetts and Hawaii.

Write immediately. The life you save may be your own.

NUADC only received information on 12 buoyancy compensator devices worn in fatal accidents in 1982. Of the 12, three were not used and found to be faulty afterwards.

## Free Diving

Five of the ten skin diving -- i.e., freediving -- fatalities took place off Florida shores. Two cases were recorded in Hawaii, while single cases were noted in California, Oklahoma, and South Carolina. Six occurred in ocean waters, while three occurred in either lakes or ponds, and one fatality occurred in a swimming pool.

One male victim, age unknown, was struck by a boat while snorkeling during a diving instruction class in an Oklahoma lake. A 32 year old male drowned in ten feet of water in a pond on a golf course while attempting to recover golf balls in South Carolina. A 63 year old male victim was one of the two Hawaiian deaths which occurred while snorkeling alone from a charter boat. This victim was later found to have suffered cardiovascular failure. The

second Hawaiian death was a 48 year old man who swam off alone and whose body was never recovered. A 47 year old U.S. Navy officer, who died skin diving in Florida, may have been the victim of shock as the result of extensive jelly fish stings. In Florida, a 17 year old boy who had been snorkeling from an aluminum canoe in a lake was struck by lightning.

A 21 year old college student from the state of Washington had completed basic training courses two months prior to the accident. While engaged in academic research, he swam across a heavy kelp bed on the surface, and became exhausted. He panicked and sank to the bottom in ten feet of water. Efforts at cardiopulmonary resuscitation were unsuccessful.

A Washington state Fish and Game Department biologist lost his life while diving for the first time with a dry-suit that had been borrowed. His 40 pound weight belt was not dropped during the incident. It was said that he had completed a 50 foot dive, and on the way to the surface had experienced difficulties, and sank back to the bottom. It was later determined that the filler hose for the dry-suit had not been attached, or perhaps had become loose during the dive.



## Guinness Underwater World Records

\*The record depth for breath hold diving is 282 ft. by Jacques Mayol (France) off Elba, Italy, Nov. 9, 1973 for men and 147½ ft. by Guiliana Trencani (Italy) off Cuba in September, 1967, for women. The pressure on Mayol's thorax was 136.5 lbf/in<sup>2</sup> 9.6 kgf/cm<sup>2</sup> and his pulse fell to 36. Enzo Maiorca (Italy) surfaced unconscious from a dive of 87 m 285 ft. off Sorrento, Italy, Sept. 27, 1974.

\*The record dive with Scuba is 437 ft. by John J. Gruener and R. Neal Watson (US) off Freeport, Grand Bahamas, Oct. 14, 1968.

\*The record dive utilizing mixtures of nitrogen, oxygen and helium is a simulated dive of 2,250 ft. in a dry chamber by Stephen Porter, Len Whitlock and Erik Kramer at the Duke University Medical Center in Durham, North Carolina, Feb. 3, 1981, in a 43 day trial in a sphere of 8 ft. Patrick Raude and five divers left and returned to the bell *Petrel* at 501 m, off Cavalaire, France, in 1982.

\*The greatest depth of an actual escape without any equipment has been from 225 ft. by Richard A. Slater from the rammed submersible *Nekton Beta* off Catalina Island, California, Sept. 28, 1970.

\*The most protracted underwater kiss was one of 2 min. 18 sec. by Toshiaki Shirai and Yukiko Nagata on Channel 8, Fuji TV in Tokyo, Japan, Apr. 2, 1980.

\*Thirty-two certified Scuba divers in Tucson, Arizona, on Nov. 27-29, 1981, rode a submarine tricycle for 60 hours covering 64.96 miles on the bottom of Amphi High School pool, to raise money for a charity.

\*The world record for voluntarily staying underwater is 13 min 42.5 sec. by Robert Foster, aged 32, an electronics technician of Richmond, California, who stayed under 10 ft. of water in the swimming pool of the Bermuda Palms Motel at San Rafael, California, on Mar. 15, 1959. He hyperventilated

with oxygen for 30 min. before his descent.

\*The most protracted underwater endurance record (excluding the use of diving bells) is 147 hr. 15 min. established by Robert Ingolia in tests in which the US Navy was the beneficiary of all data in 1961.

\*The continuous duration record (i.e. no rest breaks) for scuba is 78 hr. 2 min. by Michael Moore (Viking Sub-Aqua Club) in the St. Mary's Hospital pool, Baldoyle, County Dublin, Ireland, Dec. 26-29, 1982. This surpassed the previous record of 72 hr. 2 min. by Valmore E. Willhite of Athol, Ma. on Sept. 16-19, 1981.

\*The first underwater cross-Channel swim was achieved by Fred Baldasare (US), who completed a 42 mile distance from France to England with Scuba equipment in 18 hr. 1 min. on July 10-11, 1962.

\*Peter Saville, John Mason, Robert Mortimer and Duncan Moulder, of Stratford upon Avon Sub Aqua Club, (GB), swam a relay of 279.099 miles underwater in 168 hr. at the Holiday Inn, Birmingham, England, June 30 -July 7, 1979.

\*The deepest salvage operation ever achieved with divers was on the wreck of HM Cruiser *Edinburgh* sunk May 2, 1942 in the Barents Sea off Northern Norway inside the Arctic Circle in 803 ft. of water. Twelve divers dived on the wreck in pairs using a bell from the *Stephaniturm* over 32 days under the direction of former RN officer and project director Michael Stewart from Sept. 17 to Oct. 7, 1981. The 431 gold ingots recovered were divided: \$26.3 million to the USSR, \$13.15 million to the British Government and some \$32.4 million to the salvage contractors, Jessop Marine Recoveries Ltd (10%) and Wharton Williams Ltd (90%). John Possier, 28, was the first to touch the gold. The longest decompression time was 7 days 10 hr 27 min. The \$71.85 million is an all-time record.

### FREEFLOW

A snorkeler off the coast of Maui recently made an unexpected discovery: a live, 100 pound World War II Japanese mine about 75 years off shore in fifteen feet of water. The U.S. Navy detonated the mine, which contained 40 pounds of explosives.

The newsletter *Tropical Island Living* recently rated the ten best tropical islands on which to live. In alphabetical order they are: Barbados; Grand Cayman; Guam; Montserrat; New Providence (Nassau) Bahamas; Oahu (Honolulu) Hawaii; St. Thomas; Trinidad; Tutuila, American Samoa; Viti Levu, Fiji. Although we suspect that the selection has both an American and an urban bias, its not a bad

list to consider if you're dreaming about the great escape. To learn more about tropical island living, you may subscribe to the publication for \$36 annually or \$9 for a three month trial: *Tropical Island Living*, POB 733263, Arlington, VA 22207.

Kelly Hedger searched for lost treasure and found it -- at a dive store in Crystal River, Florida. His booty: the badly deteriorated, two man wet sub used in television's "Sea Hunt", the 1957-1961 series which starred Lloyd Bridges. Hedger has now completely refurbished the 15 foot sub and plans to take it down to 90 feet in the Ohio River, near Louisville, KY. Hedger says he hopes to recover the safe from an old paddle wheeler that sank there in 1825, which allegedly contains as much as \$3 million.