

Underwater Photography, St. Thomas, U.S. V.I.

The Churches, The Villa Olga, And Mohawk II

Not long ago, I took a course from a wonderful writer. He told me a lot about writing, but didn't teach me a thing. (Please don't nod in agreement.) As I thought about studying underwater photography, I considered all the courses taught by first-class photographers. I picked Jim and Cathy Church. They're first-class photographers, but I selected their course not because of their prowess with the camera, but because of their skill with students. As mentors to hundreds of students, authors of continuing articles in *Skin Diver* and several fine instruction booklets (*The Nikonos Book* and *Underwater Strobe Photography*), they are indeed professional teachers. I wanted to be instructed, not see pictures. And, because they now instruct at the Villa Olga Hotel in St. Thomas, I was pleased to be able not only to review their course, but also to have an opportunity to report to our readers on the Villa -- a well-advertised diving resort.

Located right off the beach outside Charlotte Amalie (the capital city), the Villa Olga is but ten minutes from the airport. At the hotel desk, I could quickly observe the difference between any hotel and a divers' hotel -- as part of the check-in I was required to produce my C-card, sign a diving waiver, then complete a questionnaire about my diving experience. Normally, on my first vacation day, I would head to the beach for a snooze, but here it was a school day. The first class would convene at 2:30 p.m.

A large, air-conditioned, windowless building serves as the classroom. Formica counters lining the walls provide plenty of space for camera maintenance, film and lens changes. In the center of the room is a bank of slide projectors pointed at the screen at one end; at the other end is Jim's large table. Among the several chairs is the "Hot Seat," where one need only to sit to gain Jim's full attention, whether to get a question answered, to solve a lighting problem, or get help with a strobe repair. For the enrollment fee the Churches provide cameras, strobes, lenses and accessories, charging extra only for items with a cord since they are vulnerable to easy damage. They have electronic testers for light output, voltage meters and devices to test synchronization and shutter speed accuracy, and each student is given a form for film records, batteries and chargers, slide mounts, viewers, and other supplies.

INSIDE UNDERCURRENT

Why Divers Die: Part II

—In 1979, Eleven Died During Formal Training . . . p. 5

People, Porpoises, Whales and Mantas

—New Novels With Twists For Divers p. 9

Instructor Injured by Fenzy Tank Explosion

—Corroded Tank Issued By Resort p. 10

A Foolproof Way To Mend Wetsuits?

—Putting Aquaseal To The Test p. 11

I had enrolled in a special course: one week at the Villa Olga, diving locally, and the second aboard the Goldielocks with Jim and Cathy. During our first week we met twice daily in early morning and after the day's diving. Classroom sessions included lectures, slide shows, questions and answers, equipment testing and repair, and individual evaluation of shots. The morning sessions began at 7 a.m., where Cathy provided personal consultation on the previous day's photos. She is an intelligent woman, vivacious and versatile, and her sensitive critiques were invaluable. Although she can handle the technical side of the program, that was Jim's role, and he performed it with great generosity, especially on those perfect diving days when it was his task to stay aboard the boat to aid students. Both Churches held nothing back, including their enthusiasm for their students' development; both would sincerely rejoice, on those rare occasions, when one of their students produced a better photo than they, themselves, have of a particular subject.

Though I knew well of the Churches' reputation before enrolling in this course, I admit to some concern about coming to the Villa Olga, for Undercurrent readers have given mixed reviews to Armando Jenik, divemaster and Captain of the Goldielocks. Though our editor found him delightful in 1975, many readers have since reported on his martinet qualities, and Cathy, aware of Armando's reputation, explained on the first day how strict he is about running his boat, his way.

Yet, I found that his way works! His boat and organization run smoothly, indeed. His rules are simple and reasonable: the crew puts regulators on tanks before the divers board each morning; each diver's mask, fins and vest are placed on top of each tank for the ride to the dive site; nothing goes on the seats except towels or fannies; no one sits on the large, wooden box that houses the fresh water barrel; no one comes into the forward section of Goldielocks while dripping wet, since here film is changed, and shirts and towels are kept dry; no weight belts are allowed in the forward section, so they won't be dropped on camera gear; for entry, divers, one by one, sit on the stern, with feet hanging onto the dive platform, where a crew member assists in getting geared up. And what's so bad about these rules? They help both the diver and the captain. Armando, by the way, an Argentine, won an Emmy for his underwater marlin footage in ABC's Wide World of Sports, and to me was charming, helpful and unpretentious throughout the week.

On our second day we met in the classroom at 7 a.m. for last minute gear checks, then toted our dive gear to the hotel's front porch to be loaded onto the boat by the crew. The hearty breakfast buffet of eggs, hot-cakes, muffins, Canadian and American bacon, fresh fruit, toast and coffee was a real palate-pleaser. Dinners are not served at the Villa Olga; suffice it to say that there are sufficient reviews in local sources to aid diners in selecting restaurants. I found the Chart House, right next door, a good restaurant with huge, juicy cuts of prime rib, delicious fish, a substantial salad bar, and fresh brown bread.

The Goldielocks is moored just a few yards from the hotel, and floats under the banner of the St. Thomas Diving Club, which has dive operations serving several hotels on the island. We would depart promptly at 9:30 a.m. The first morning our run was 30 minutes, to the Cartanser Sr. wreck, a 130' freighter which originally sank in the Harbor and was

later towed to a 40' depth. It's fairly intact with lots of corridors, hatches and gangways, and the galley and engine room are accessible and recognizable. It's a great photographic site, especially for wide angle, silhouette, and available light subjects. We made our first four dives here, and though a couple of students complained about the repetition, I found it an invaluable location to practice what I had come here to learn.

Lunches aboard the boat were happy surprises: rich, hot soup, thick sandwiches on whole wheat bread, salads, fresh fruit, chips, candy bars and puddings. Sodas, juice, beer, and lunch are included in the course price. After lunch -- and informal discussion -- we would dive again, then return to the hotel by 4 p.m. where we would shower, take our film to the classroom for overnight developing (five rolls are included in the course price), and have the second formal classroom session of the day.

We also dove Cow and Calf, two rocks rising in the open sea. Waves breaking over them created a whipped-cream effect, and the surge provided new challenges for our lenses -- and for our steady hands. It's a beautiful site, with tremendous color and variety, including tunnels and canyons and a wonderful large cave filled with hundreds of glassy sweepers.

Cathy joined in every dive, helping students with camera angles, distances, and strobe directions, and posing whenever asked. Aboard the boat, Jim solved problems, dried cameras, and changed film or lenses for students changing tanks to dive again. We each had our own numbered plastic carton for camera gear, so it was common to hear requests from the dive platform such as "Jim, would you change the film and switch to my 21 mm lens; my box is 'starboard four'." By the time a tank was changed, so were the film and lens!

Each day pictures improved. I was struck by how good some of the photographs were...and how bad others were. But improvement was evident daily, and so were improved skills in other aspects of underwater photography (including camera repair), for the Churches do much more than just teach a course in how to take pretty pictures. In fact, I might even add that they teach integrity. Early in the course, Cathy was looking at a new Pentax LX brought by a student. She asked if she might pick it up, and did so very carefully. At that moment, Jim approached behind Cathy, touched her shoulder and called her name in a loud, questioning voice apparently to ask her a question. Somehow, Cathy was so startled that she dropped the expensive Pentax onto the carpeted floor. Nonplussed and embarrassed, they apologized profusely, then tested the camera, finding it was fine. The next day's photos showed no malfunction. Nevertheless, the following evening Jim and Cathy presented the student with a brand new Pentax LX, which they had purchased in St. Thomas!

Days six and seven were free days; some students dived or sailed, others shopped or flew to St. John or St. Croix. On day eight, we boarded the Mohawk II, our home for the next week, taking as little personal gear as possible, and leaving the rest in the locked classroom. We were cautioned not to forget a current passport for cruising and diving in the British Virgins.

Mohawk II, 68' long, 22' wide, and 86 gross tons, is moored in front of Villa Olga, next to Goldielocks. With twin diesels, she travels at 8½ knots. She was completed in 1981 and Capt. Jack Laursen keeps her in spanking-new condition. The Mohawk's main salon is unusually spacious; three double cabins and one head are on the main deck, and the same below. Galley Chief Joanne Schmidt served so many great meals that bathing suits were bulging. Breakfast was traditional and freshly prepared. After a

first dive, snacks were available. Lunch was served after the second dive, and another snack after dive #3. Dinner was a feast: meats, fish, fresh fruits and vegetables, fresh bread and rolls, salads and dessert. Eric Link, the 4th mate, was a whiz with the pina coladas, and Bill Ellis, the last crew member, proved a fine dive master, engineer and operations manager. Also aboard were the Churches' two assistants, Jennifer and "Little Cathy" (a moniker to distinguish her from C. Church), who helped in all sorts of ways.

The first and last dive of the cruise were off Ringdove Rock, where I observed thousands of unusual colonial tunicates in every shade of purple. I was especially excited by a school of squid which permitted me, for an entire roll, to float within a foot of them.

A night dive at Great Harbor, on the north side of Peter Island, was not much for a nonphotographer, but I found enough crabs, lobsters and brittle stars to fill my view finder. The following day, at a group of Cays called the Dogs, I could have dived for a week. There were schools of silvery bait fish and beautiful caves and crevices at Joe's Cave. At the Invisibles, an area rarely dived unless the sea is calm enough to spot it, sea mounts attract large schools of grunts and yellow tails. Back at the Dogs, we anchored at The Chimney, said by some to be Cousteau's favorite Caribbean site. Long ridges of coral radiate from the shore, homes to puffers, infinite shrimp varieties, and colorful reef fish. The Chimney itself, a huge cave-like hole only partially covered by a rock roof, is at the end of a narrow canyon covered with beautiful pink and gold and red and orange camera subjects. With only a 40' bottom, I dived five tanks that day. Here Cathy performed most admirably. She teased shrimp from their hiding places, held puffers for our camera, found multicolored crabs, helped with unusual lighting techniques, found unique subjects, and posed beautifully above the staghorn coral crowning the ridge. And thanks to Jim, everything above worked beautifully. That night, mooring at the Chimney, I spent a full dive photographing a lone squid and then a large octopus, iridescent as it changed from one vivid opaline hue to another.

In the British Virgins, one must dive the wreck of the Rhone, which we did for two days. Dives to the bow were strictly planned for exactly 40 minutes, and we obediently followed the anchor line up and down. Here, currents can suddenly appear, and one swept through during the last few minutes of our first dive. I was glad to have the line handy. Fish were so tame I could fill my macro framers with their teeth and eyeballs. Large red schools of soldiers and squirrels, and yellow schools of grunts and snappers made for fine shots. Mackerels and triggers swam through and "Fang," a four-foot resident barracuda, obligingly posed for my lens. What a great site for close-ups, photogenic angles, silhouettes and wreck superstructures!

Overall, this was a super trip. Though I'm paid for my critical eye, I cannot report in other than glowing terms about any of the aspects I experienced. The Villa Olga was pleasant, Armando proved a competent skipper, the Mohawk II was a delight, the diving was terrific, especially for a photographer. And the Churches were exemplary. I came as an experienced photographer, but nevertheless measurably improved my skills, especially my special effects abilities, my mastery of lighting, and my eye for composition. Those who learn the most are probably those who come with no skills, but even those who have been in the seas with camera for years can only benefit. In fact, I'm proud to report that when I returned home I won first place in a regional photo contest. The thrill of that was worth the price of the course.

Divers Compass: Given the complexity of employing the star rating for this trip, we will forego it. . .The Villa Olga St. Thomas Diving Club package is \$796/week,

including three days on the Mohawk II, breakfasts, lunches, and 3 dinners on board; for information write POB 4976, St. Thomas, USVI, 00801; for information call 809/774-1376; reservations 800/524-7940. . . .for the upcoming schedule of classes offered by Jim and Cathy to be offered from May 8 to September 11, write them at Box 80, Gilroy, CA 95020, (408)842-9682. The one week tuition for their course in addition to Villa Olga's \$796, is \$350. . . .St. Thomas, 40 miles east of Puerto Rico, has fine free port bargains. . . the Villa Olga is an easy 3/4 mile walk from town (or \$1.75 cab ride/person), so restaurants are easily accessible. . . everything you might need during your stay is easily available in busy Charlotte Amalie, including cardiac specialists whom you might need after making the four- to six-flight trek from water to hillside hotel. . . The Churches report that 62% of their students have taken the course before, which could suggest that they didn't learn enough the first time, but we presume the statistics reflect the students' appreciation of the course and their desire to learn even more.

Why Divers Die: Part II

In 1979, Eleven Died During Formal Training

This is the continuation of the article begun last month, an analysis of diver deaths compiled by the National Underwater Data Center (NUADC) of the University of Rhode Island. Our belief is that by understanding the myriad causes of diver fatalities, a sport diver will be in a better position to avoid life threatening situations and, should he encounter such a situation, be better able to extricate himself safely.

The youngest fatality recorded in 1979 was a 15-year-old male who was not certified and on his first dive ever with scuba. Table One shows that 37% of the dive fatality victims were inexperienced. 63% demonstrated "some experience," "considerable experience," or were "very experienced." The 37% probably represent less than six or seven dives per person, while the 63% probably represent something like a dozen to hundreds of dives. The first three levels of experience represent immensely greater risk than do the latter three levels.

During 1979, the NUADC recorded 11 fatalities which occurred during formal training sessions conducted by certified instructors from nationally recognized training agencies. An additional fatality occurred while the victim was under instruction from a buddy not certified as an instructor, who was, apparently, too inexperienced to have helped the victim when he became entangled in weeds and lost his mouthpiece.

One of the eleven formal training fatalities during 1979 occurred during the victim's second openwater dive, conducted in 100 feet of water in a cave in Florida. It was reported that the victim's first openwater diving experience occurred in a spring 65 feet

deep earlier in the day. The same tanks that had been used on the first dive were used again on the second dive, and were reported to have contained only 1200 psi at the beginning of the dive. A group of eight divers, including the victim, entered the water accompanied by two assistant instructors, while the chief instructor remained on shore to help get a second group ready to dive. The victim's buddy later stated that the victim continuously strayed from both the group and his buddy. The buddy last saw the victim as they began their ascent to the surface. When the victim's body was found, it was at a depth of 125 feet and a distance of about 30 feet beyond the end of all existing safety lines.

For the first time in the ten years of this study, the NUADC has recorded a double fatality during a formal training course. This accident occurred during a "deep dive" exercise which was part of an "advanced diving course" in the Great Lakes. Four students and a certified scuba instructor were to reach a depth of 160 feet at the site of a wreck. At some point, the instructor signaled to all four students to surface, as he was going to continue to take motion pictures of the wreck. Upon finishing his filming, the instructor observed two divers ascending, but could not see the other two. In a brief search, the instructor found diver #1 inverted -- that is, with his head downward in the water column. There were no air bubbles to indicate breathing. Diver #2 was nearby, breathing and excited, and he was given a signal to surface. The instructor made an effort to raise diver #1, only to see diver #2 with his regulator out of his mouth. While attempting to assist diver #2, the instructor had his regulator pulled from his mouth and was forced to ditch his tank assembly, inflate his dry suit, and begin an ascent. The body of diver #2 was recovered the following day in 98 feet of water. The second vic-

tim, diver #1, was not recovered until two days after the accident. Both victims died of massive cerebral air embolism.

Three of the training fatality cases involved some sort of heart condition. Two of these three fatalities were diagnosed at autopsy as acute myocarditis, i.e., inflammation of the cardiac muscular tissue. The first victim was a 36-year-old male who entered the water with a buddy and two others to accomplish a simple compass course exercise, while the instructor and his assistant both watched from shore. When they had completed the exercise and had surfaced, they were advised to swim to shore. Both the buddy and the instructor noted that the victim stayed in place and made no attempt to swim. Upon reaching

the victim, they found him unconscious and not breathing. Heroic efforts at resuscitation were to no avail. After autopsy, the pathologist's comments noted: "This individual has undoubtedly had a very minimal myocardial reserve and the exertion of scuba diving superimposed upon his all-night driving and other activities in the hours preceding the dive are, in my opinion, sufficient to explain this individual's sudden collapse while still in the water."

A 57-year-old male was on his first openwater training dive in 25 feet of water when his feet became entangled in ropes. He thrashed violently to get loose and then became unconscious. He was almost immediately pulled into the boat. All efforts to revive him were unsuccessful. Medical history of the de-

Table One. Experience of Nonoccupational Underwater Diving Fatality Victims, Yearly, 1970-79

Experience	Percentage of Cases									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
First dive ever with scuba	11	16	8	4	11	8	10	10	9	6
First dive in open water	6	7	4	5	6	6	5	1	1	10
Early open-water dive	31	24	21	34	37	25	30	26	34	21
Some experience	33	19	37	26	24	20	34	40	45	39
Considerable experience	13	23	14	21	16	28	16	19	7	18
Very experienced	6	11	16	10	6	13	5	4	4	6

Table Two. Nonoccupational Underwater Diving Fatalities, Diving Partners During a Fatal Accident, Yearly, 1970-79

Number with Victim	Number of Fatalities									
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Zero (diving alone)	13	12	11	10	21	13	18	8	6	22
One other (buddy)	47	54	41	60	60	51	67	63	48	64
Two others	11	20	20	25	27	20	27	12	17	9
Three others	10	10	4	2	14	11	9	6	12	12
Several others	19	16	33	14	11	27	15	8	22	12
Unknown	10	0	10	14	11	9	11	7	13	4
Total	110	112	119	125	144	131	147	102	118	130

Table Three. Nonoccupational Underwater Diving Fatalities, Buddy Activity During Fatal Accident, Yearly, 1971-79

Activity	Number of Fatalities								
	1971	1972	1973	1974	1975	1976	1977	1978	1979
Buddy stayed with victim	25	27	22	40	20	39	24	32	25
Buddy lost victim underwater	24	25	38	36	52	34	12	18	25
Attempted buddy breathing	15	14	7	11	14	15	14	8	6
Buddy left water ahead of victim	9	4	4	3	6	11	4	2	6
Buddy lost victim on surface	12	15	14	11	12	7	6	9	11
No buddy	12	11	10	21	13	18	24	22	23
Unknown	15	23	30	22	14	23	18	24	34
Total	112	119	125	144	131	147	102	116	130

ceased indicated that he suffered from gout, hypertension, high blood pressure, and sinus problems. At autopsy, it was determined that the drowning was caused by cardiac failure due to hypertensive arterial sclerotic heart disease.

In another training fatality, field investigators found that the victim's first ocean experience should probably have been at a depth shallower than 50 feet. The deceased student's equipment was insufficient, since he had no depth gauge, no submersible air pressure gauge, no watch, and no compass. There was, apparently, no pre-dive plan other than a word of caution about the rough surf; no pre-dive buddy check, by either the students or the instructor, and no surface float was available. Buddy contact had been broken, and neither the instructor nor the other two students realized that the victim was in difficulty for almost two minutes. Upon discovering the victim was missing, a surface search was made, but no effort was made to search the bottom. High surf conditions on this particular day made scuba diving a marginal risk. The victim had had difficulty with his regulator free-flowing in his last pool dive. It is indicated that, when tested, this regulator failed to function properly at a depth of 50 feet. The student had approximately 26 pounds of lead, which was far in excess of the recommendation for his body weight of 130 pounds.

"The deceased student's equipment was insufficient, since he had no depth gauge, no submersible air pressure gauge, no watch, and no compass."

Another training fatality occurred in cold waters off the New England coast, on the victim's first

open-water dive with his instructor and five other students. At about ten minutes into the dive, in approximately 25 feet of water, the instructor took a head count and realized that one diver was missing. After surfacing and sending the other students to shore, the instructor and two other divers from the area attempted dives and eventually found the victim with his mouthpiece out on the bottom on his back. The area was muddy, and it is likely that the silt confused the diver.

During 1979, another fatality involved a student who apparently was suffering from a bronchial condition, but nevertheless was permitted to make his second openwater dive though he had been coughing severely prior to the dive. This victim died of a massive air embolism.

The NUADC believes that some of these tragic events could have been prevented. Student divers in their first few openwater dives with the instructor are being taken to too great a depth too soon. These early instructional dives should have been conducted in shallow water so as to allow the student to become acquainted with the new environment.

The instructor should always be cognizant of the environmental conditions and never subject an early openwater student to violent surf or other hazardous conditions.

It is vitally important that students more than 35 years of age have an extensive physical examination to determine their suitability for diving.

None of the formal training fatalities in 1979 occurred during out-of-air or emergency-ascent training exercises. This is especially encouraging since these and buddy-breathing exercises have accounted for a large number of the formal training deaths in previous years.

SHARE UNDERCURRENT WITH A BUDDY

Hard as it may be to believe, not every diver knows about *Undercurrent*. Despite all our efforts to reach each diver in the country, it's impossible for us to let everyone know about the hard-hitting reporting and insightful travel advice that our subscribers have come to expect from *Undercurrent*. That's why we need your help. If you know of anyone interested in diving, why not pass along this copy of *Undercurrent* for them to look at. If they like what they see, and we both know they will, they can use the convenient order blank on the reverse. Or better yet, be a real buddy and begin a subscription for them.

Activity of Victims During Fatal Dives

During 1979, cave-diving deaths totaled 12, or approximately 11% of the total. Eight occurred in Florida; two each, both double fatalities, occurred in New Mexico and Texas. Of the eight cases in Florida, two were the result of a double fatality and six were single fatalities. Six divers lost their lives while making deep-wreck dives in cold waters, and another three while diving under ice.

All three categories of diving activity -- cave, wreck and under ice -- are extremely hazardous. These activities call for special training and specialized equipment because the diver might not be able to come directly to the surface.

During 1979 there were nine instances in which two persons lost their lives. Three of these double deaths involved cave diving. In New Mexico, two 23-year-old males who had approximately 15 hours of total diving experience, and were on their first cave dive, were found at a depth of about 85 feet, 20 feet inside the cave. Their hand-held equipment was strewn about the bottom of the cave. Neither victim had any air in his buoyancy compensator. They had apparently become entangled in the safety lines they had brought into the cave with them. The fatal moment must have occurred very early in the dive, since both divers' tanks were nearly full of air.

The second double fatality occurred at a popular diving site in Texas known as Jacob's Well. Since the early 1960s, at least eight persons have died exploring the Jacob's Well caves. These two victim divers had entered through a small tunnel into a large cavern at approximately 100 feet. The tunnel entrance was so small that the tanks had to be removed and pushed through the opening before the divers could get through. Both men became trapped inside the deep cavern by rock and gravel slides. During recovery ef-

orts, one diver suffered a severe case of the bends, and a second one became entrapped in the very same tunnel by a rock slide and nearly lost his life. Struggling to get out and down to about his last breath of air, the diver finally gave one last effort, which resulted in a ruptured abdomen, and major surgery was necessary.

In Florida, four divers descended about 25 feet and then entered a cave for a distance of about 60 feet. They had agreed that when their air reached 500 psi they would reverse and return to the surface. This was apparently the fatal mistake, since the two divers who failed to surface apparently ran out of air before they could get to the mouth or entrance of the cavern. Both were later found with their air tanks completely empty.

Diving Partners and Their Activities

The number of divers in the water with the victim at the time of the fatal accident is noted in Table Two. The action taken by the victim's buddy at the time of the accident is shown in Table Three. For many years, the principal axiom in the scuba-diving field has been "never dive alone." That rule is short and to the point, but somewhat misleading. Looking at Table Two we can see the numbers of people who were in the water with the victims; therefore, a victim was not, per se, "diving alone." A better way to express this rule might be, "Always dive close to your buddy." The statistical record indicates that many individuals do not practice the "buddy system," regardless of how many people are in the water. The buddy system is a one-on-one, person-to-person working relationship, with the divers in close proximity and each looking out for both himself and his buddy. The NUADC strongly emphasizes the need for the proper use of this close buddy relationship.

Yes! Please enter a
subscription to *Undercurrent*
immediately for the diver below.

I enclose \$23 for a one year subscription. \$42 for a two year subscription.

Or charge my Visa Mastercard account. Account number _____

Expiration Date: _____ Signature _____

Name _____

Address _____

City _____ State _____ Zip _____

Please make check payable and mail to *Undercurrent*, 2315 Broadway, New York, NY 10024-4397. 1/83

People, Porpoises, Whales and Mantas

New Novels With Twists For Divers

My biggest fear is being caught with nothing to do. I need stimuli. I write with the stereo blaring, the TV staring, the brandy steaming. When I go to the dentist's office I take *Time*, *Newsweek* and a paperback. Damned if I'll get trapped with last year's *Highlights For Children*, which is all my dentist ever has available. On any flight across country my bag is filled with unfinished novels, *Sports Illustrated*, and *Skin Diver*, and when I get to the airport I pick up a couple of paperbacks for insurance.

You can imagine what it's like when I head off to the Caribbean. But on the last trip, no matter how many books I had, none fit the mood. The *Tao of Physics* was far too heady in 80 degree weather after a rum and soda. *The Third Deadly Sin* was written about a world I didn't care to recall down here in Margaritaville, and *The Key to Rebecca* was far too violent for my peaceful setting.

Returning home, I decided to search out a few books that would enhance my next vacation, rather than keeping me locked up with urban terrorists, goose-stepping Nazis or New York cops. Here's what I found!

Not long ago, Peter Benchley came out with his fifth novel, *The Girl of the Sea of Cortez*, soon to be issued in paper. Unlike three of his others -- *The Island*, *The Deep*, and *Jaws* -- where the reader is presumably titillated with various forms of "acceptable" violence -- *Girl* is something of a G-rated book, suitable for anyone who can read it. And any teenager should be able to. Paloma, a 16-year-old girl living on the Sea of Cortez, discovers, with her father, a reef filled with giant groupers, mating triggers, and colorful parrots. After her father dies, she visits the reef daily to free dive to great depths to see the creatures she loves.

One day a giant manta floats up from the deep, and Paloma sees it is injured; nylon fishing lines have burned through its flesh. Paloma dives deep, pulls the line from the wound to relieve the manta's pain, and the giant creature survives. But then, horrible kids, her brother included, discover the reef, begin to rape it, and the fight is on. Will the manta return to aid Paloma? Will the reef be saved? Will the lion save Androcles?

I suppose there's a surprise or two. It's easy reading, beach and sunshine stuff, and a happy little way to spend some time. And though the book deserves no serious literary consideration, Benchley's sensitivity to the sea makes it worthy reading even for the most snooty divers.

It was a little tougher to understand *Easy Travel*

To Other Planets (available in hardcover from Farrar, Straus and Giroux) because I had to concentrate here and there; this is an intelligent novel, more complexly structured than Benchley's. Author Ted Mooney writes of relationships and romance, of sex and sexuality, and at the core of the book is Melissa, a marine biologist, whose relationship with her dolphin extends beyond the limits of most human-to-human relationships. The novel certainly stands on its own merits. I derived my greatest pleasure from the moments with Melissa and her dolphin. Like most people with a crush on marine critters, I believe that dolphins are people, and would just as soon read about them as about the guys in my neighborhood.

And because dolphins and whales are people, I found Hank Searls' *Soundings* (Ballantine paperback) an absorbing and sensational story focusing on an aging sperm whale as the lead character. Indeed, I lost my heart to the sensitive portrayal of the love, the anger, the lust, the intelligence and the full "human" spectrum of Searls' cetaceans.

"For half an hour the school leapt and dove and squirmed in joy. The aging bull, who for years had not felt a female body sliding along his own, or the thump of a calf butting him in play, found himself starved for these things and reluctant to call a halt.

"But when he had cavorted and stroked and been stroked by all, sounded his love to each and heard their love for him in the moans of the young and the old, he led them slowly north, stopping every few thousand yards to glide and let the baby rest, until he felt the pulse of the herd stilling and knew that the excitement had ebbed.

"They had hunted all night, and soon all but his half-sister and her calf dozed, sleeping with both eyes closed because he was there, secure in his nearness as if he had never left."

This is an exciting tale of love and adventure, one which kept me intensely involved as only a good storyteller can. There's an enormous fight between the aging sperm and a younger bull, deep dives to hunt until death the giant squid, and confrontations with orcas--and ultimately confrontations with mankind.

The sperms are curious about men, and among themselves tell tales of man's hunts (they are ever watchful for whalers) and of his compassion for their beached brothers. They desire to know man, and, when the aging sperm discovers a disabled Russian submarine in deep water, with dying crew members aboard, the two giants of this planet--man and cetaceans--begin listening to each other. Searls leaves

no doubt as to whom he believes are the superior creatures on this planet.

I should add that, in addition to a whale of an adventure story, the information imparted is its own story. To wit:

"He swam onward. A swift rise in water temperature and his own racing pulse told him that he had intercepted the tepid core of the Antilles Stream. In his thick arctic blubber he must either dive deeper for cooler layers, or divert his path to the north. His flukes and pectoral fins were cooling surfaces -- increased blood flow radiated heat. But water too warm could raise his internal temperature so fast that his blood would simmer in his veins.

"He elected to submerge. Rather than expend energy by diving, he would simply sink. He glided to a stop and began to charge his lungs for depth.

"Though the surrounding water was warm, it was still much cooler than the spermaceti oil in his headcase. When sperm oil was cooled, it contracted in volume. Lining the membranes of the great cavity in which the oil was kept, were sinewy conduits through which salt water from his mouth and blow hole could be led. He forced water through these channels.

"In a few minutes, the sperm oil in his head case became more dense. In arctic water he could actually have caused it to congeal. But this sufficed. Gradually his head dropped beneath the chop of the Gulf Stream. He began to sink slowly, then more and more swiftly as the temperature around him fell."

Searls, who wrote *Jaws II*, has one other novel worth mentioning. *Overboard* is a terrifying tale of a couple who set sail from Sausalito to the South Seas

and, enroute, the Mrs. tumbles overboard in a storm. Her struggle for survival in the water and his frantic search while singlehandedly manning his vessel is high adventure -- and left me exhausted. For anyone who has ever been aboard a small vessel in high seas, this book is heartstopping.

"For anyone who has ever been aboard a small vessel in high seas, this book is heartstopping."

For our last novel, let me offer *Mosquito Coast*, not strictly as a diver's novel, but as a novel about a Yankee who decides to chuck it all and move to the wilds of Belize. Author Paul Theoroux (*Saint Jack*) writes a humorous tale of a headstrong, inventive, iconoclastic sort who drags his family to Belize and, with missionary zeal, tries to restructure everyone's way of life. The characters are unusual, the pace sprightly, and the travails enough to talk me out of my pioneering tropical dream. Once a *Book of the Month Club* selection, *Mosquito Coast* has recently been issued in paperback.

There we have it. Five books for on-the-beach reading. At least that's what I thought, until winter struck. Unable to head southward, these volumes became my tropical escape while I remained tucked safely under my down comforter. You might do just the same.

Ben Davison

Instructor Injured by Fenzy Tank Explosion

Corroded Tank Issued By Resort

Once upon a time, the Fenzy dive vest was just about the most prestigious piece of diving equipment an American could buy. Half again the price of other vests on the market, its bright orange color was a badge of honor to any diver who donned it. It was especially prized because it carried its own inflation; a small bottle attached underneath which, with the twist of the valve, could inflate the device for emergencies.

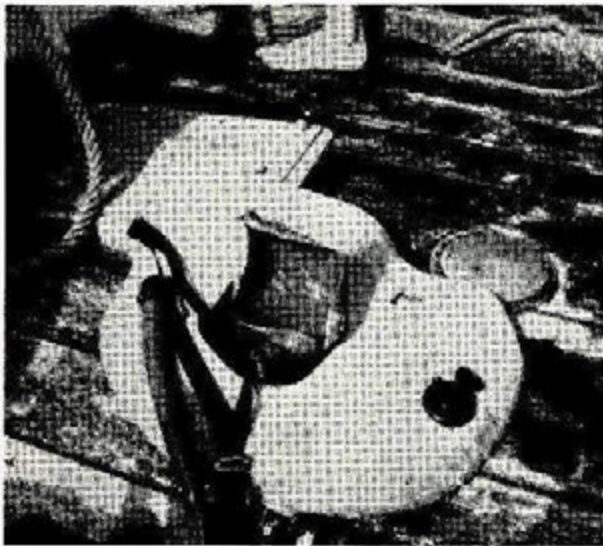
With the advent of BC's and the growing ability of American firms to produce quality dive products, the Fenzy slowly lost its market in this country. Many divers still use it, however, especially those who relish the idea of the Fenzy bottle as an emergency air source.

In Europe, the Fenzy is still popular and in September, Undercurrent correspondent John Fine was aboard a dive boat of a major international resort (which he has asked to keep anonymous) in

Spain, when a Fenzy auxiliary tank exploded. He filed this report.

They were more than rusted. Corrosion completely obliterated the stampings on the neck of the cylinder. Frederick Lehman, an instructor who had been issued a Fenzy vest with its small refillable tank, complained that the tank was rusted and in bad condition, as were a number of tanks similarly issued to others. The organization for which the instructor worked was capitalized at several millions of dollars, but it had no replacement tanks and made no effort to buy them, although they were readily available. The instructor was returned to work with the badly corroded tank.

Two weeks later I was aboard the resort's dive boat while Lehman was charging his Fenzy tank. There



THE EXPLODED FENZY TANK AND VEST

was a loud explosion, then a hissing sound, a pregnant silence, then the screams as the injured diver ran forward on the ship crying out for help.

The tank had exploded. It opened laterally along its axis. The explosion and wound resembled war trauma blast damage. Luckily the diver was not gravely injured. Afraid of the tank, the diver fortunately had not leaned over it on filling and his hand had not been full around the tank as he transferred air at an equivalent pressure of about 3000 psi to the small Fenzy cylinder.

The unfortunate diver was burned and wounded by the blast and fragments, which injured his shoulder, chest and hand. A small fragment caused a superficial cut on the diver's nose. Despite immediate medical attention, the diver passed out from shock while being transported to a dispensary. Hearing in one ear was temporarily impaired from the noise of the blast.

Examination of the Fenzy tank revealed that it was

badly corroded inside and out. Resultant metal deterioration caused it to explode.

The size of the Fenzy tank exempted it from the testing required periodically for larger cylinders. The diving organization, in this case, had put defective material into service which very nearly resulted in tragedy to an employee. Had students been near the blast, they could have been seriously injured as well.

As a result of this accident, this dive-vacation organization now intends to test and inspect its Fenzy tanks each diving season.

Many small tanks are in use on popular life vests and buoyancy compensators. In the case of any compressed air, CO₂, or other cylinder, including oxygen bottles, they should be carefully checked for corrosion or deterioration inside and out. The same visual inspections and testing should be made of small tanks as is required for larger diving cylinders from which they are filled. When using the small tanks in the water, care should be taken not to empty them completely to prevent water from getting inside.

There have been reports of Fenzy tanks severing at the neck and shooting off like missiles. Some observations as a result of these accidents may bear keeping in mind.

In charging a Fenzy tank from a diving cylinder pay attention to the rated pressure.

If the service pressure on the small tank is 180 atmospheres, a 200 atmosphere tank that has been sitting out in the sun on the boat's deck may have a pressure of 220 atmospheres.

Do not empty Fenzy tanks rapidly in the air before refilling. The escaping air causes condensation which allows moisture inside the tank and makes the tank cold. Rapid filling then raises the temperature significantly. Open the air supply slowly, not suddenly, pointing the Fenzy tank base in a safe direction.

Do not lean, stand or hold the small tank being filled.

Most important, when a Fenzy or similar tank exhibits signs of deterioration, dispose of it -- do not continue to use it.

A Foolproof Way To Mend Wetsuits?

Putting Aquaseal To The Test

God only knows how many dives my 10-year-old Imperial Turtle suit has been through. It's as comfortable as the proverbial old shoe, and I'll do anything to keep it patched and wearable. But last summer, when a rip appeared at the elbow and continued to open like a fissure in the great San Francisco earthquake, I was just about ready to chuck it all and buy another top. Three times I tried repairing it with a patch and black goop and three times, during the easiest of dives, the patch loosened and peeled. I have great success with

patches on spots that don't get the continued bending of joints, but at the knees and elbows I've got to relinquish my pride to a professional patcher if I'm to have any success.

Just as I was about to surrender my suit to my dive shop for repair, I received in the mail a sample tube of Aquaseal, accompanied by several neoprene swatches with holes, cuts and tears that had been repaired with this allegedly wondrous new stuff. The repairs appeared professionally performed, as neat as if beaded

by a senior welder. I and my colleague pulled and yanked and stretched the mends, putting them to their full test. Not so much as the slightest crack appeared in the repairs.

I pulled my wet suit top out of the closet and went right to work.

My jacket is nylon two side. Although the neoprene had been torn at the elbow, the nylon on the inside remained intact. I decided to patch it without cutting the backing, since I was uncertain whether this "miracle" stuff would work and didn't want to risk further destruction to my Turtle. Whether it appeared cosmetically correct was of no concern to me -- nor to the fish beneath the sea.

The directions are simple enough: rough up the surface; clean it with solvent, nail polish remover or paint thinner; squeeze out some Aquaseal and put it on one edge of the tear; push the torn edges together and put a piece of tape on the backside for a smooth finish. Curing, the instructions said, would take 24 hours and the suit must be left flat.

Everything but flattening out the arm was simple. I stacked books on the suit to keep it flat, but the gash was so long that the suit still was curved. Nevertheless, my effort was successful, the hardened Aquaseal was clear, transparent, and water-tight.



THIS ELBOW GASH DEFEATED EVERY EFFORT TO BE PERMANENTLY PATCHED WITH NEOPRENE AND BLACK GOOP, BUT AQUASEAL CLOSED IT TIGHT.

Since the patching, I've made several dives and there's every indication that the repair will last a lifetime. Yet, I do have a couple of minor problems. Although Aquaseal is supposed to stretch as it moves, I have some difficulty in bending my elbow, which may be due to the size of the hole I had to repair. I did not have that difficulty with a standard neoprene patch. Furthermore, there is some roughness to the seal so I can occasionally feel the rough edges as I bend my elbow. However, I must admit to not having put the tape backing on the inside when I made the seal; I suspect this would have prevented the problem.

If I were to make this repair again, I would alter the procedure slightly.

First, I would cut through the nylon on the inside and use the solvent on both the neoprene and the nylon.

Second, I would fill the tear with the sealant (rather than put it on one edge) and push the edges of the nylon together, mopping off the excess sealant.

Third, I would follow the instructions and put tape on the back of the seal, pushing down hard to spread the sealant thoroughly.

Fourth, I would stuff the sleeves with dust rags until firm and cylindrical, rather than flat.

Fifth, I would reapply the sealant on the outside, without worrying about getting the edges of the tear to match up exactly.

Overall, I'm quite satisfied with Aquaseal. It's relatively easy to use and appears, so far, to be damn near indestructible. Because the finish is hard and smooth, I issue one caution; if it is used on the soles of booties, sand should be sprinkled on after an hour or so to create a no-skid finish.

Perhaps the only liability is that it takes 36 hours to cure, making overnight field repair impossible. I called the distributor, D.V. McNett Company, (Bellingham, Washington), and raised the issue with D.V. himself. He acknowledged that a faster curing time would be a positive improvement, and believes that they'll be able to reduce the curing time to seven hours or so.

So far, the only disadvantage to the faster-curing product is that it may not be transparent when it dries. "But," he said, "that shouldn't matter because it will get you back in the water faster, and that's what counts."

Aquaseal is slowly finding its way into dive shops around the country, at roughly \$5 a tube.

U.S. Navy Depth Gauge Report

The second installment of the U.S. Navy report of depth gauges, which we indicated would appear in this issue, will appear in a later issue. The first installment, including test data, appeared in the November/December 1982 issue.