

Stella Maris, Long Island, Bahamas

Greater than the sum of its parts

Every dive vacation has four elements: planning it, taking it, talking about it, and paying for it. I've always had trouble paying for my vacations, but the other matters have never posed much difficulty, even if I had to leave on short notice. But then I'd never been to the Bahamas before. My stay at Stella Maris was fine, but planning caused me problems.

First, I discovered that even travel agents have difficulty getting current information about available hotel space. This is not necessarily because of incompetence or unwillingness, but because the information is not easily available. Unless the hotel has an 800 Florida number (few do), communication is by letter or cable. Getting a response within a week after your communique is as common as getting your monthly issue of Undercurrent on time.

The Bahamas Tourist Bureau assisted my agent, but its information too was days or weeks behind. So, if you decide on one Friday to travel to the Bahamas out islands on the next Friday, only a sizeable investment in the overseas radio telephone system can help, and if the people who answer at the other end haven't got their reservations in front of them, you'll be calling again.

There are other obstacles to quick travel. Some of the small resorts take vacations themselves -- the most likely time is from Labor Day to early November -- and it took me a couple of days to find that my first choice on Andros wasn't even open. Infrequent flights to the out islands pose further problems. I expected to visit two Bahamian resorts in a week, but it was impossible to schedule the trip to give me adequate time at each resort. By the time I arrived on Long Island, after the planning hassles, I was not excited about spending a full week at Stella Maris. But, when I left I wished I could stay longer.

Six of us, three divers and three nondivers, took the journey to Stella Maris. None of us knew a whit about the place other than what we had gleaned from Undercurrent reader responses and Skin Diver articles. We knew there were beds, board and diving -- we didn't need anything else -- and that Stella Maris was somewhere on a 95-mile-long island which was home to 3,500 folk. Although reviews were favorable, our anxiety remained.

Frankly, I had a hunch that I had made the right choice the minute I climbed

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into the taxi sent by the hotel. I abhorred the thought of a 45-mile ride to the hotel, but when the driver opened a cooler filled with ice-cold Canadian ale I knew I had come to the right place. That kind of service I call "class" and Stella Maris is class, at least to this corn-raised mid-Westerner who has lived the last decade in the denim city of San Francisco.

The hot spots on the island are Deadman's Cay (pronounced "key") and Stella Maris, each about as hot as my local dive shop on a Saturday night. Twice a week Stella Maris features a decent rock band. (Whatever happened to calypso?) A couple of nights rum punch parties are the thing, where you mingle with people you talked with at lunch, or at breakfast, or at the previous rum punch party. One night we had a marvelous dinner away in a cave -- yes, a real cave -- and afterwards a band, slide shows and four-in-a-row (Long Island tic-tac-toe) closed the evening. Dress for Stella Maris activities is formal: your T-shirt should be clean (i.e., laundered, but all logos are acceptable) and your feet should be covered with sandals at least; black tie is optional.

There are no high-rises. No casinos. No newspapers. No gourmet restaurants. No television. No bare-breasted dancers in the clubs. No discos. And, no single swingers unless you converse in German with a few who occasionally arrive from Hamburg for a three-week stay. But there is good and plentiful food (I ate three lobster tails one night for dinner, never walked away hungry, and always thought my meals were better than most I've had on dive trips), tennis courts, three pools, one clock, isolated beaches for skinny-dipping, a cocktail lounge with good drinks, better-than-decent accommodations, a few friendly tourists and a very friendly staff.

And you know what? The diving is ok too.

In fact, most divers will consider the underwater sightseeing better than just "ok." Every day there are at least two dives and, if weather allows, a third. For a few extra shekels night dives are available. Although there is shore diving on the Atlantic side, most diving is by boat on the Caribbean side, in 20-60 foot water on coral heads. During the first week of October visibility ranged from 50-60 feet, until my companions and I stirred up the sand bottom.

On my very first drop into Bahamian water at Baracuda Heads, I was greeted by a five-foot black tip shark, the first shark I had ever seen. Before this dive I was certain that I would respond to danger just as an octopus would, uncontrollably surrounding myself in a brown cloud. Instead I struggled to get my camera ready, only to have this shy fellow discretely slip into the blue. He never returned, nor did any other shark during my stay. At this site, I was impressed with the scores of groupers. One followed my buddy for the entire journey, staying close to her heels.

Although my first two days of diving were interesting, on the third day I wanted to depart for other waters. I was accustomed to the contiguous reefs of Bonaire, to the prolific sponges and corals of Grand Cayman, to the unexplored reefs of Roatan. Here the bottom was sand, spotted with coral heads, and no deeper than 60 feet. I inquired about a plane, but it would be a two-day wait for the next flight. Only I was unhappy -- my companions were enjoying themselves -- so my buddy, who happens to be my terrific wife, suggested we picnic rather than dive. Off to a deserted beach went the six of us. The folks at the hotel packed a delightful lunch with plenty of cold beer. I snorkeled around the reef and bushes,

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got my head together, and decided to stay the week. I always make the right decision.

What became apparent to me, after I removed my head from where the sun don't shine, was that Stella Maris is a fish photographer's wet dream. I am no Carl Roessler, but I can still roar through a roll of film every dive, even if only one or two shots turn out. Here I shot grey angels, Nassau groupers, grunts, French angels, blue and yellow tangs, triggers, soldiers, morays, barracuda, blue chromis, wrasse, and mantas, and a few non-fish: arrow crabs, garden eels, box crabs, and flamingo tonque. Conch and lobster were both photographed and eaten. So what was I freaking out about? I dismissed my expectations and indulged in what Long Island had to offer. I had a ball.

There's more to diving Stella Maris than coral heads. With sufficient demand from divers, a trip to Conception Island or Rum Cay is possible. At Conception the wall starts at roughly 90' and drops and drops and drops. Understand, however, that the nearest chamber is hours away. There are wrecks both at Rum Cay and Conception, but weather often makes the trip impossible. There is a wall on the Caribbean side, but the journey is too long to make it worthwhile. Coral on the Atlantic side is more abundant than coral on the Caribbean side because the current carries nutrients. The fish life is much less interesting, however. For the strong of heart and back, there is one unique dive. After a 3/4-mile hike -- with all equipment -- one can dive a Blue hole. We are divers, not hikers. We never made the dive.

The diving accessories at Stella Maris are excellent. There are plenty of aluminum 80's to go around. If you forget your BC or your regulator starts to free-flow, the shop has a few extras. The 65' dive boat has a 2400 psi compressor aboard. Bahamian divemaster and skipper Joel is terrific. He's competent, friendly, always helped us with our tanks and gear. Jorge Friese, one of the managers, handles tourist training and takes beginners on simple dives. He's a cautious leader and at the conclusion of a novice's vacation, Jorge provides a signed log with the depths and time. He also cooks a hell of a breakfast every morning.

I've been diving for five years. I spend a number of weekends in cold California waters and have had nearly a dozen sojourns to tropical places. In reflecting on Stella Maris, I know I have had better diving, say at Bonaire, or at Cayman. I have had twice the visibility. I have had better macrophotography. But I have not had a better vacation. Perhaps it was my friends who accompanied me. Perhaps it was that I hadn't been in the Caribbean for more than a year. Perhaps it was that fine rum. Or, perhaps, it was that pleasant staff at Stella Maris who do their damndest to give you your money's worth.

I got mine.

Getting There and Paying for it: The Stella Maris plane can pick you up at Fort Lauderdale every Saturday at noon. You can also be picked up at Nassau or fly Bahamasair, but you may be able to save the \$40 cab ride across the island. Write for details to Stella Maris' Inn, Long Island, Bahamas, or call 809+027+; tell the operator to route the call through Georgetown, and don't forget to say the pluses.

During the peak season, after December 15, accommodations, food and at least two tanks runs about \$55/person, double occupancy. Beer is \$1.25, drinks \$1.75, par for the islands. Diving at Conception Island and Rum Cay costs extra. No rental car is necessary because there's no place to go other than the beach, which you can get to by hotel van. The hotel itself is not on a beach. And bring cash or traveler's checks. No credit cards are accepted.

By the way, Stella Maris does not require C-cards. They take new guests to shallow water for a checkout and may require a pool refresher course.

(T.B., 10/77.)

Critique of World-Wide Dive Sites

-- - *An Update from our Readers*

In three issues last spring, we published a critique of worldwide diving resorts compiled from comments from our readers. We then published that critique in a single publication which we offered as a premium to new subscribers. Now we have prepared an update on the sites reviewed. Some resorts have improved, others have slipped, and some readers have turned us on to new possibilities. We encourage continuing correspondence from our readers so we may update our report every few months.

The Undercurrent Axiom -- the more remote the diving site the better the diving -- needs emphasis. And divers need to understand that the more remote the site the more likely Murphy's Law will prevail: if anything can go wrong, it will. We've talked before about the problem of keeping boats and compressors running, of generators going out, of frozen and canned food dominating gourmet meals. But we also wish to emphasize the problems of air travel.

Getting to remote places requires taking tiny airplanes run by Ma and Pa Airlines. The information and schedules your travel agent has about Ma and Pa may have no resemblance to reality. Attorney Jeff Cross of Tacoma, Washington wrote us about his departure from Anthony's Key in Roatan. We arose at 4 a.m. for the harrowing trip to the airport, waited four hours for the plane, and then was informed there would be no flight that day. He was disturbed that the manager of the hotel could not get him the information about the flight, but remote hotels often can't communicate with the airport and the erratic flight schedules are so much a way of life that management may not care. Don't expect to keep a tight travel schedule if you head to remote islands.

Also, confirm and reconfirm your flight reservations. If you can handle it in person at the airlines office, do so. In St. Lucia, we reconfirmed 72 hours ahead of time by telephone, but once at the airport on flight day there was no record. The next flight was two days later and that was damn near full. The carrier was Eastern, no Ma Airlines, although we've learned to expect problems with Eastern.

Excess baggage, over 44 pounds, is often surcharged and in some cases it's not even permitted on the flight if the plane is too small or if it's overloaded. For these small flights, you are indeed prepared if you have one bag specifically packed with belongings you can leave behind if you must.

For seasoned travelers, we've said nothing new. For the first-time visitor to the hinterlands, welcome aboard.

Belize: A good way to see the barrier reef is by boat. Reader Chuck Hettel of New Port Ritchey, Florida claims the best diving bargain is to charter the 27' sloop Azulu from Bob Even, POB 850 Belize City, Belize. For \$50/day you get the sloop and six tanks of air; you prepare your own lobsters, conch, etc., and for another \$3 you can buy all the plaintains and soursop you need. Bob Even will point out the direction of the reef, but just make sure you know how to sail.

Bonaire: Management problems reported earlier about Bonaire seem to be solved, so diving with Cap'n Don at the Hotel Bonaire or the Habitat seems to be the best fine diving deal in the Caribbean. Popular guide Dave Woodward at the Flamingo has left for the Bahamas, but the operation there is reported to be a good second choice if you can't get with the good Cap'n.

British Virgin Islands: Lots of letters castigated Undercurrent for labeling

George Marler's dive operation in Tortola and Peter Island "acceptable." Everyone says it's great, so one of our associates checked George out. She agrees. Our apologies to the Marlars. The expensive resort at Peter Island, however, still doesn't compare to Little Dix or Caneel Bay Plantation.

On Virgin Gorda, Jaki is back. That's Jaki Kilbride, who was off for awhile as the swim-in for Jackie Bisset in "The Deep." We're looking forward to a return to the good management and operation of Kilbride's Underwater Tours which readers reported a couple of years back. She and Bert have a new 42' boat for trips to Anegada Reef. Readers praise Joe Giacinto, owner/guide of Dive BVI. They like his selection of dive sites. You have to get yourself to his shop. Fischers Cove Hotel is two blocks away.

Canary Islands: Many requests for information, but we've only heard from two divers, both of whom rated the overall diving experience "average." There are two dive schools in Lanzarote.

Cayman Brac: The Undercurrent Reviewer (see July, 1977) found his stay at the Buccaneer Inn filled with unfulfilled diving promises, poor dive sites, and littered dive sites and grounds. A Buccaneer Inn PR person wrote to us after she read the review: "Your July review is, I believe, justifiably unkind to us. April at the Inn was a time of internal chaos and probably the worst time you could have visited us. We were without a resident manager ... and the 'promises, promises policy' of bait and switch trips to Little Cayman was inexcusable -- except for the period of bad weather. Since your visit many changes have been made. Our 42-foot boat has arrived; we have a new dock and the once fish-gut ridden pass has been blasted and cleaned. The trash has been hauled off. And while there are many improvements still in the works, things have changed. Our guarantee of at least one Little Cayman dive is a guarantee that is good now, at no extra fee of \$90. Won't you give us another chance. The bad press of Undercurrent has been devastating." A couple of readers have written that the improvements have been made.

Grand Cayman: The most popular spot anywhere for divers often suffers from being overcrowded and overdived. People complain about too many divers on the dive boats and too many inexperienced divers who have to be carefully managed by the guides. Experienced divers often don't get what they came for: trips to the best dive sites without the encumbrances of first-time divers. On the other hand, divers return year after year because there's plenty of good water to dive, and plenty of divers to swap stories with.

In our critique (see Undercurrent, April, 1977) we reported management problems at the popular Small Hope Bay. Loyal customers were seeking other hostleries. We're pleased to report that current comments from our readers indicate that most of the problems are solved and Small Hope Bay may be back among the best. Lachlan MacTavish, resident owner and manager, wrote to compliment us "on the discretion that you used when you commented on Spanish Bay," and included a letter he had mailed to his guests: "Spanish Bay has been through a crisis year ... I want to apologize for the inconveniences and confusion during that time ... We were under terrible deadlines pressure and even some financial pressure and I was physically and emotionally drained. But enough of that. Now it is finished. We have a happy friendly staff, a smooth-running organization, and our new dining room and bar with meals that are the talk of the island. Best of all we have managed to recapture the old Spanish Bay Reef spirit of informality, spontaneity, fun and relaxation." MacTavish's sensitive letter is the mark of a man and resort that care.

A couple of readers chastised us for our comments on the Tortuga Club. Constance Howard of Freeport, NY considers the diving fine and the hotel fairly priced, given the three superb meals a day served by a courteous staff. We have a couple of recent complaints about discourteous management but, overall, we suspect it's a decent choice, away from the masses.

John Billman of St. Louis Park, MO recommends the Seaview, one of the least expensive inns on the island, and enjoys diving with the guide there, Jerry Willcock.

Haiti: Diving and dive shop management at the Kaloa Beach Hotel apparently haven't improved, but we've received nice comments about Alan Baskin's "Baskin in the Sun" shop at Taino Beach Hotel. So far, it seems that Haiti has decent underwater scenery, but limited fish life.

Hawaii, Kona Coast: Hawaiian Divers changed owners, so our favorite Kona guide, Tom Shockley, now has his own charter service. Although we have no reports from divers, we expect Tom to deliver what he promises -- trips for the experienced to the best dive sites on the Coast. (808) 329-2095 is his number.

Hawaii, Lanai: Ron McComber's Club Manukai is out of business and we know of no other diver operation on the island.

Israel: Always top reviews, but remember that the farther south you travel in the Red Sea, the better the diving. Red Sea Divers shop in Sharm-el-Sheikh is well-rated. Up north, Eliat divers like Willie Halpert's Aqua Sport. Since the Red Sea is so expensive to reach, consider hopping a cheap Freddy Laker flight to London, then joining up with one of the tours out of Twickenham Travel, an English agency pushing dive travel. Write Twickenham Travel at 22 Church St., Twickenham, Middsx, TW1 3NW. You might save a few bucks and see England on the way.

Jamaica: The political situation has stabilized. Tourists tripping to outlying Negril report mellow stays and plenty of sun. Diving there is a bit above average for the Caribbean, but you will find shallow-to-moderate depths and predictable sites. Negril, however, is lovely, and Jamaica is one of the more fascinating Caribbean islands. Visit Montego Bay, but do your diving in Negril.

Micronesia: There's a new dive shop at Truk, Micronesia Aquatics, to which Frank Van Santen of Des Plaines, IL took his 20-divers group. They found owner/guide Clark Graham, an ex peace-corp teacher, terrific. That's good news, because Truk had been a one-shop island. With no other place to do business, divers had to take what the Blue Lagoon Shop offered or was willing to do, which sometimes left in the lurch divers who had ventured thousands of miles without benefit of a group. How competition solved the problems, however, was highlighted by one of our readers who was told by Graham that the wreck she sought to visit was "too far," so she promenaded to the Blue Lagoon shop which took her there immediately.

On Palau, Bena's Dive Shop seems inconsistent in providing acceptable service to divers not in groups, which suggests that group tours still remain the best way for most divers to see Micronesia underwater. See Undercurrent, Nov./Dec. and January, 1976-77 for complete review. Worst months to dive are August and September when the monsoons strike.

Philippines: Jim Wilkins of Ann Arbor, Michigan reports fine dives out of the Grande Island Hotel and the Sea-Us Dive Shop. Good guides and plenty of rental gear. The reefs are profuse and well inhabited.

Puerto Rico: Dr. Cyrus Friedman of New Haven, Connecticut informed us that there are dive shops on the islands of Culebra and Viequeres, and that diving off Viequeres is more than adequate. At Culebra it is purported to be "spectacular."

Roatan: Anthony's Key remains the choice, but divers continue to report inconsistencies at both Anthony's and Spy Glass Hill. Most people find the diving excellent but bemoan the carnivorous sand fleas, mosquitoes and gnats. For you doctors, Dr. Paul E. Stroup reported to Undercurrent that many people at the resort responded to the bites with a secondary allergic reaction producing a red pruritic urticarial type of eruption, which means you'll scratch yourself silly.

St. Lucia: People agree with our review (*Undercurrent*, October, 1977) of the virgin diving potential, but more than one has said Junior Alcee was just as dependable for them; two claim he tried to hit them up for money that wasn't due. Junior tried to rip us off -- in fact, he succeeded by \$10 -- but we ignored it in our article. Now, with more evidence, we'll report it. Negotiate a firm price with Junior before you get into the boat and pay him what you agreed upon.

Seychelles: Thanks to one of our readers, who must unfortunately remain anonymous because we couldn't decipher his signature, there is a dive shop with a good Australian guide on the island of Mahe. Best times for diving are March-May and September/October. The islands are culturally interesting and our secret correspondent saw more stone fish on a single dive than he had in a lifetime.

The U.S. Virgins: We reviewed St. Croix in our August, 1977 issue. We found decent beach diving and nice dropoffs, but too many tourists had picked it over. VI Divers is a fine shop and the island is enjoyable. St. Croix is one of the best places in the Caribbean for good divers to rent tanks and do their own thing.

At St. Thomas, one of the guides we reviewed favorably two years back gets regular criticism from people who visit Bolongo Bay Club. They say Armando Jenik takes divers to the same old sites and seems more into his own trip than serving the more experienced divers. On the other hand, Joe Vogel continues to get fan letters which are so positive they're almost embarrassing. Joe can take divers to the wreck of the Rhone in the British Virgins.

U. S. Divers Recall Their Regulators

New Testing Facility Should Prevent Recurrences

The U.S. Divers Company has recalled *all* regulators sold after December 1, 1976, because of a potentially defective clamp ring (#1085-78) on the second stage regulator. The recall reads, "A defective clamp ring may cause unseating of the second stage demand regulator diaphragm which could result in the regulator being flooded with water and the air flow to the diver being cut off. If this occurs, use of the regulator would be unsafe." An understatement, to be sure, but the reader should get the point.

Three divers got the point when their regulators failed unexpectedly. After U.S. Divers heard the reports, the company put their regulators through a variety of tests and discovered the clamp ring malfunction. They contacted the United States Consumer Product Safety Commission in Los Angeles, informing them of the problem, then notified their dealers and their customers — those who had returned warranty cards — that the regulators must be repaired before further use. U.S. Divers is purchasing advertising space in *Skin Diver* and elsewhere to announce the recall and to urge owners to take their regulators in for free repair. A spokesperson for the Consumer Products Safety Commission said that U.S. Divers has acted responsibly and, in fact, their extensive efforts exceeded the legal requirements of the Commission. The problem is serious, but the decisive response by U.S. Divers was quick and to the point. Well done, Mr. Cronin and Company.

There are two forms of product recall. When a manufacturer becomes aware of a problem, he has 24 hours to notify verbally the Office of Product Defect Identification; he has 48 hours to put the notice in writing. He must explain the number of items manufactured, the date of manufacture, the number on the market, and the identification number of the defective part. This is a voluntary recall, initiated by the manufacturer.

The Consumer Products Safety Commission orders a mandatory recall when they become aware of a problem without the manufacturer's acknowledgment. The Commission gets information about defects directly from consumers, from newspaper articles and other normal sources. It is also served by an electronic hookup to major hospitals. The Commission is alerted to any injuries or deaths which are attributed to usage or malfunctioning of a product.

In either case, distributors and dealers must be notified in writing. In addition, the retailer must post a notice of the recall in a conspicuous place in his business.

U.S. Divers should be able to avoid future regulator problems with new test equipment in the company's Santa Ana, California plant. The equipment is similar to that at the U.S. Navy's facility operated by the Navy Experimental Diving Unit at Panama City, Florida (see *Undercurrent*, October, 1977). The re-

search and development for the Navy's test equipment was undertaken at a cost greater than \$200,000, but the U.S. Divers facility was produced at a fraction of the cost because they were able to replicate the Navy's work. U.S. Divers scored a coup by hiring Tom Cetta to oversee the project. Cetta had spent 6 years in product testing with the EDU and brought priceless experience and know-how to U.S. Divers.

Cetta told *Undercurrent* that U.S. Divers built the testing facility because no one but the Navy could get current information about the quality of regulators. Most regulators on the market are good, but "no one really knows how good," he said.

"If you don't know exactly how your regulator rates, it is difficult to know if you can or must improve it."

"The only valid way to test is to use the EDU research design, and we had to build a facility to do it." Cetta added that if our new facility had been operating when the defective regulators were produced, the defect would have been caught and "we would not be going through this recall process now."

U.S. Divers has tested regulators produced by their competitors, but they are not releasing these test results. They have hired an outside testing laboratory to purchase their own regulators over-the-counter, and to test them.

The U.S. Divers test facility may be used by anyone in the diving industry, but the actual testing must be done by U.S. Divers technicians. Cetta says this re-

striction is due to insurance requirements, rather than any desire to ferret out a design breakthrough by a competitor.

Undercurrent Comments: Regulator malfunction is damn serious business. *Although U.S. Divers acted with dispatch, the fact is that faulty regulators are in the hands of thousands of divers and some may never learn of the recall.* What's to be done to prevent future problems?

Cetta himself says that had their testing facility been operating the problem would have been discovered prior to shipping the regulators. U.S. Divers, then, should now be able to catch these errors. Dacor, too, is planning a similar facility; when it is completed Dacor should catch similar problems. But, what about Healthways, Scubapro, Sherwood Selpac, AMF Swim-master, Sportways and other regulator producers? Do they have the sophisticated testing procedures required to catch these kinds of problems? U.S. Divers didn't.

Why not have Navy tests conducted on all regulators before they are marketed? If that's too slow, why not require manufacturers to run their regulators through tests at the new U.S. Divers facilities? Or what about standards for regulator performance established by a committee of the Diving Equipment Manufacturers Association (DEMA)?

Nancy Ackerman is the new director of DEMA. It might be time to expand the role of the association from one of promoting trade to include policing the life-support products its members produce.

Laboratory Tests of the Scubapro Pilot Regulator

In the October, 1977 issue of *Undercurrent*, we ran the first in a series of reports on regulators evaluated by the U.S. Navy Experimental Diving Unit. We described the test equipment and research design of the Navy program and then ran edited results of tests of two Sherwood-Selpac regulators, the 4100 and the 3000.

The better regulators on the market deliver the air a diver needs at whatever depth he finds himself, regardless of the intensity of work the diver is performing. Poor regulators, which may seem to work well on the surface, can't deliver the air a diver needs at every depth and workload. At some point, the resistance to inhalation can become so great that the diver will no longer be able to draw air from his tank. When a tank is down to less than 500 lbs. a poor regulator at 80 feet may provide *no* air to a hard-working—or struggling—diver.

The most important criteria, then, in determining the quality of a regulator are the resistances to inhalation and exhalation at varying depths and workloads. The easier it is to breathe, the less energy a diver needs for breathing. The less energy he expends, the less tired he becomes and the less air he uses. That means longer bottom time. And, it also means increased safety.

This is a review of the Experimental Diving Unit test of the Scubapro Mark V Pilot Regulator, a single hose, demand regulator. The test was completed in May, 1977 and required 204 man-hours. All testing was in accordance with the applicable military specifications. The breathing machine simulated inhalation and exhalation at various depths and diver work rates.

The MKV Pilot Regulator

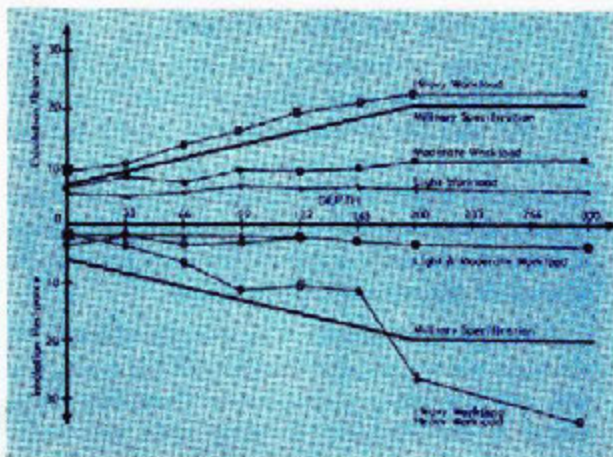
The Mark V Pilot Regulator has a balanced, piston-type first stage with two low-pressure ports and one high-pressure port for a submersible pressure gauge. This first stage regulator is the same model that is marketed with the Navy-approved Scubapro regulator model MIL-105.

The second stage has a unique balanced, pilot-assisted valve. The balanced demand valve is opened by air pressure controlled by a pilot valve. This second stage design is a basic change from a conventional second stage with a demand valve activated by direct mechanical linkage contacting the diaphragm.

The pilot valve is sensitive to the slightest pressure differences in the second-stage diaphragm. The regulator tends to free-flow when it is bumped while the diver is out of the water, but the diver can desensitize the second stage by setting the DIVE/PRE-DIVE switch on the front of the regulator to PRE-DIVE. Once in the water, the diver should set the switch to DIVE for easier breathing. However, the regulator is safe to use if the diver should forget to set the switch to DIVE.

The pilot second stage has two low-pressure ports for accepting two supply hoses from either a single first stage or from two separate first stages. This feature, by keeping breathing resistance at a minimum, would be valuable in deep-diving situations.

Another distinguishing feature of the pilot second stage is the demand diaphragm that functions also as an exhaust valve.



Breathing Resistance at Increasing Depths and Different Workloads .. MKV Pilot Regulator in PRE-DIVE Mode

The Test Design

The breathing resistances plotted in the diagrams are the maximum resistances measured, excluding cracking pressure, during one complete inhalation-exhalation cycle at a given depth and workload. Air supply pressure to the first stage was 1000-psi. Resistance was measured at 500-psi, and 200-psi supply pressures on the surface and again at a simulated depth of 200 feet.

Regulator in DIVE Mode

Inhalation Characteristics: In most cases, the maximum pressure occurred just after air flow was initiated. As the inhalation cycle continued, resistance dropped to zero and a slight positive pressure was recorded. This characteristic indicates that the pilot-assisted second stage is an effective means of significantly reducing inhalation resistance at all work rates.

Inhalation resistance at the light work rate remained extremely low to 200 feet. Performance at a moderate work rate was almost identical to performance at the light work rate.

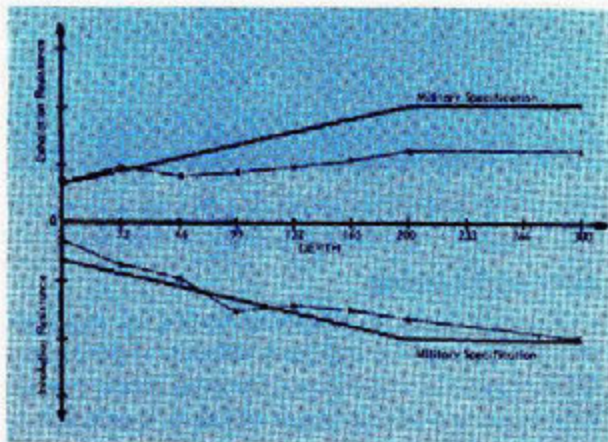
It is significant that at a heavy work rate inhalation resistance increased greatly but was still within military limits down to 180 feet. Under a heavy workload most conventional regulators exceed the military specification limits between 66 and 99 feet.

Exhalation Characteristics: Exhalation resistance at light and moderate work load was within military specifications and was comparable to that of most Navy-approved regulators. At heavy workload, exhalation pressures exceeded accepted military limits throughout the depth range, as they do with all Navy-approved regulators.

Regulator in PRE-DIVE Mode

Inhalation Characteristics: When the pilot regulator DIVE/PRE-DIVE switch is set to PRE-DIVE to prevent free-flow, a spring preloads the second-stage diaphragm linkage. More pressure is required, therefore, to activate the pilot valve, making the regulator more stable, but significantly increasing inhalation resistance.

The regulator was tested only at moderate workload and 1000-psi supply pressure in the PRE-DIVE mode. The purpose was to verify that the regulator meets military specifications in the PRE-DIVE mode, inasmuch as a diver could inadvertently leave the switch in PRE-DIVE while making a dive. Although breathing resistance was noticeably higher than in the DIVE mode, it was within military specifications to 300 feet. Inhalation flow was smooth.



Breathing Resistance at Increasing Depths and Varying Workloads .. The Scubapro MKV Regulator

Exhalation Characteristics: Because the PRE-DIVE switch position does not affect the exhaust valve, the results of the test at moderate work load were nearly the same as the results in the DIVE mode.

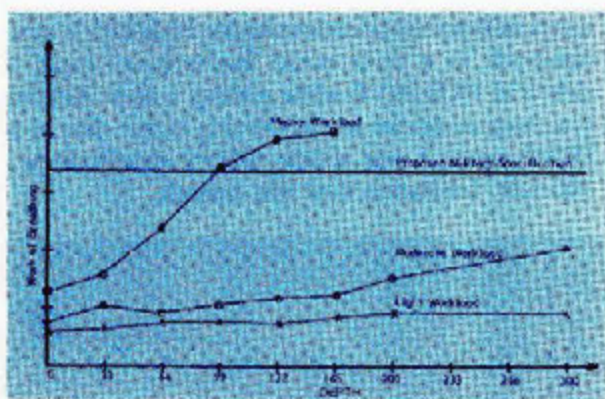
First-Stage Performance

The Navy technicians tested the second stage independent of the first stage. This is important to sport divers because the second stage is sold separately and many divers buy just the second stage and attach it to their existing first stage. Also, the first stage is the same first stage Scubapro sells with other regulators; the second stage is their development.

Regulator in DIVE Mode: The factory setting of static pressure on the Scubapro MK V Pilot Regulator is 140-psi. At light workload, the first-stage pressure drop was small, reaching a maximum of only 19-psi — less than the static setting. When supply pressure dropped to 500-psi and 200-psi, no increase in pressure drop was measured. These results demonstrated why inhalation resistance at moderate workload did not increase at low supply pressures.

At heavy workload the pressure drop increased rapidly beyond 132 feet and reached a maximum of 48-psi at 200 fsw. It is unusual that at this depth and workload inhalation resistance was so low. The low resistance under extreme conditions is attributed to the large volume of second-stage porting and to the function of the pilot valve.

Regulator in PRE-DIVE Mode: Again, the PRE-DIVE position of the regulator switch does not affect first-stage operation and regulator performance was nearly identical to moderate workload performance in the DIVE mode.



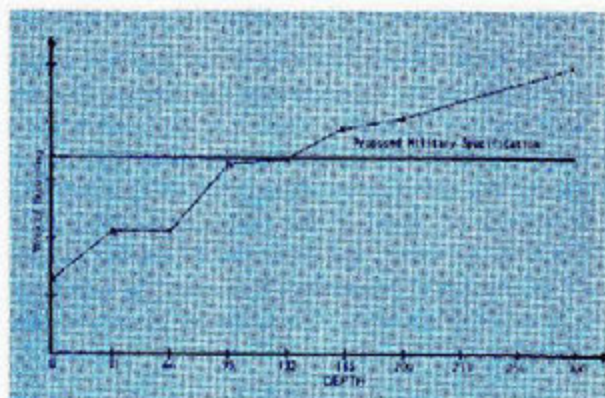
Work of Breathing at Increasing Depths and Varying Workloads -- MKV Pilot Regulator in DIVE Mode

Work of Breathing

The specification governing testing of regulators uses peak inhalation and peak exhalation pressures as the standard for evaluation. However, recent research has shown that measurement of a diver's external respiration work in operating his regulator yields useful supplemental data for evaluating equipment performance.

Regulator in DIVE Mode: Breathing work is extremely low at the light workload, and at the moderate workload breathing work increases only slightly. Under a heavy workload, the work of breathing exceeds the proposed limit at 100 feet.

Regulator in PRE-DIVE Mode: Breathing work is substantially greater at moderate workload when the DIVE/PRE-DIVE switch is set to PRE-DIVE than when it is set to DIVE. Work exceeded the proposed limit at 100 feet even though the breathing resistance was within the military specifications.



Work of Breathing at Increasing Depths and Varying Workloads -- MKV Pilot Regulator in PRE-DIVE Mode

Conclusions and Recommendations

The Scubapro MK V Pilot Regulator meets military specifications and is recommended for placement on the list of equipment authorized for Navy use. The pilot-assisted second stage provides exceptionally easy breathing with light diver work rates.

First-stage performance was also good. The first stage maintained intermediate pressure and flow at 200 feet and heavy workload with supply pressures of 200 psi. Uniform inhalation characteristics were maintained regardless of the supply pressure. Results of the test indicate that increased breathing resistance at heavy workload was due to first-stage pressure drop instead of second-stage performance.

Although performance was severely affected when the regulator was used in the PRE-DIVE mode, it was still within military specifications. Operating the regulator in the PRE-DIVE mode does not threaten diver safety and the PRE-DIVE mode effectively prevents free-flow on the surface.

The complexity of the pilot second stage with three times as many parts as most other second stages is one area of concern. Maintenance will require considerable skill and training, and could present problems for fleet operators unless special training is made available.

Undercurrent Comments: We spoke with Dennis Hart of Scubapro's engineering department. Hart said that no significant changes have been made in the Pilot Regulator since the Navy tests. There was a small

rusting problem which was eliminated by replacing a chrome-plated screw with a brass screw.

There is a general belief among divers that the more effective a regulator performs at increasing depths, the greater the free-flow and the more difficult it is to maintain. As the Navy tests demonstrate, Scubapro has overcome part of the problem by adding a PRE-DIVE mode which eliminates or reduces free-flow on the surface. We interviewed a number of dive shop managers who sell the Pilot and spoke with divers who use the Pilot regularly. They confirm that the PRE-DIVE mode prevents free-flow on the surface, and many keep the regulator in the PRE-DIVE mode in shallow water, up to 20 or 30 feet. Since Navy tests demonstrate that using the regulator in the PRE-DIVE mode is safe, this is an acceptable technique. Beyond 60 feet or so, the DIVE mode should always be employed.

Shops and divers indicate a low incidence of return for repairs or adjustments. Shops which fine-tune the

regulator prior to selling (as opposed to those which sell the regulator just as it comes from the factory) indicate lower return rates. Because the regulator has been on the market for only a year, it's difficult to judge its long-range reliability, but so far the results seem better than might be expected from this extraordinary regulator.

Whether you should buy a PILOT is a question to be answered after considering your own diving needs. If you dive frequently beyond 100 feet, if the water is cold, if you perform strenuous work, if you dive in caves or current, then the PILOT may be the best investment you can make in your own safety. And, at \$225 it is indeed an investment.

If, however, you're an average sport diver who spends most of his time in water less than 100 feet deep and doesn't push himself, the PILOT is probably a luxury. Other regulators, such as the Sherwood Selpac 4100, which we reported on last month, will meet your needs nicely, and cost less.

The Undercurrent Limerick Contest

The Man from Nantucket moves to Bonaire

When we launched our limerick contest in July, we had no idea what to expect from our readers. In fact, we decided that if no one were to respond, we would write our own limericks and give ourselves the awards.

But the mail poured in. About eighty poets answered the call, cluttering our desks with nearly five hundred limericks, poems, stories and treatises.

Many divers who tried to write limericks somewhere along the way lost track of rhyme, rhythm and meter. Others submitted poems unrelated to the five-line limerick, some with two lines per verse, others with eight or ten lines. And several, however clever, were just too gross to adorn the pages of a publication even so irreverent as *Undercurrent*.

When we sat down with the basic one hundred we realized we had no criteria for judging. After hours of worthless debate we finally concluded that the object of this contest was to have fun and not take ourselves seriously. We would use no grading system. Instead, over quarts of beer we would stumble across the ones most of us seemed to like and call them winners.

It was tough. Everyone had their favorites, but we finally found three that seemed to rise slightly above the rest, only slightly, and decided to print many others for a brief moment of entertainment. Let us first look at the also-rans, and leave our winners for last.

Limericks have notoriety because most are naughty, but naughtiness nohow describes the defiling prose of

the derelict divers who wrote to us. We would like to run the best of the worst submissions from readers such as Roger Gilbertson of Silver Spring, Maryland, but the FBI would be at his door and our door the day we took this issue to the post office. Yet a few of the ribald we'll permit to soil our pages. With the exception of the winning limericks, we have exercised our editorial prerogative where necessary.

If you're offended by nasty limericks, please read no further. If we get letters denouncing the filth, we'll presume that the letter writer derived some pleasure from reading those limericks he denounced.

First, we noticed a fanny affectation. Many writers seemed to be intrigued with diving behind their buddies and wrote accordingly. For example:

A lovely young diver named Nancy,
Wore a bikini bottom quite chancy,
The fish of Bonaire
Watched her derriere,
And the sea fans all tickled her fancy.
Nancy's mom, a Mrs. McCuddy
(Who's a bit of an old fuddy-duddy),
Asked her sweet daughter, "Why?"
Nancy gave this reply:
I never get lost from my Buddy.

HOWARD FISCHER, *Hillside, N.J.*

A young maiden from France was no prude.
She decided to dive in the nude.
But her buddy, behind,
Went out of his mind,
When he noticed where she was tattooed.

*WILLIAM A. CARLSON, *Washington, D.C.*

The fanny fixation took other forms. To wit:

There once dove a man from Madras
Who tended to suffer from gas.
For when he did sink,
The gas — it would shrink,
But on ascent, oh what a blast!

DR. JOHN BARCLAY, *Port Moody, B.C.*

The owner of a wet suit named Gotty,
Came into our shop quite haughty.

"The suit seems just fine,
But I sure have a time,
When down deep I have to go potty."

NANCY OSTERHEIM, *Superior, Wis.*

Several divers had good ideas, but had to create their own words to carry them out. These three are examples:

There was a Russian Diver named Ribikoff,
From the island village of Libikoff.

His Bikini brief,
Didn't cover his sheath.
And a fish came along and bititoff.

No name included

A diver in upper New York,
Bobbed 'round in the lakes like a cork.

But the water's so cold,
up there I am told,
He came up with a frozen gazork.

*JIM and VIVIAN ROBERTS, *Pacific Grove, Ca.*

There once was a diver so fickle
He let his air slow to a trickle.

He made a panicked descent,
Proceeded to get bent,
And turned his squash into a pickle.

DR. HOWARD GROSSBARD, *Brookline, Mass.*

Perhaps those limericks don't belong in this section for nasties. After all, the divers discussed may have been carrying a squash and a gazork in their goody bags. We don't think so.

No single topic caused more writers to poise their pen than the theme running through these:

There once was a girl so lovely
Who wanted to make love in the bubbly
She strapped on her tanks
And started her pranks
But the lobsters all thought she was ugly.

STEVE CITRON, *Los Angeles*

One day a Monterey daughter
Did scuba down under the water.

She later turned up
the mom of a pup,
And they say t'was an otter that got her.

JIM and VIVIAN ROBERTS, *Pacific Grove, Ca.*

So enough of the uninhibited poetry of our readers. It's time for more serious study. For example, some divers dealt with their own fear of the denizens of the deep by writing about them:

Slipping silently through the dark sea,
One feels peaceful, all knowing, free:
A flash in the dark,
An eerie, still spark,
What is that, slowly shadowing me?

*BARBARA CARSON, *Modesto, Ca.*

A lobster hunter named Shefty,
Saw a bug in a hole that was hefty.

He reached in to feel,
Disturbed a large eel,
And now he is known as lefty.

*RICH MYBERG, *New York City*

I think I shall never see
A shark that looks friendly to me

Whatever their sizes
My anxiety rises
And I find myself wanting to pee.

GORDON DAUGHERTY, *Bay City, Tx.*

In Hawaii there was an old grouper
Who made an unfortunate blooper.

Instead of a fish
(His usual dish),
He swallowed an old diving trooper.

*STEVE CITRON, *Los Angeles*

Not many divers focused on diver safety, preferring less serious topics for their levity. Of those who did, these are the offerings:

There was a young diver named Ted
Who continually pushed to the red.

Now Ted's grown old,
But he's not quite so bold
Since Ted is confined to his bed.

NEIL MCDANIEL, *Vancouver, B.C.*

Of all the safety measures I've tried,
Experience has made me decide,

If the dive's to be tough,
Forget the book stuff,
And slip five bucks to the guide.

BILL CHRISTIAN, *Rockport, Texas*

Farallon's out of the run.
Oceanics in on their fun.

I hope their dive meter,
Is a little bit sweeter,
Or it's back to roufette with no gun.

REBECCA HESCH, *Jessup, Md.*

He dove down overweighted with lead.
Passed one hundred and flat lost his head.

He flapped and he flailed,
Spit his hose and he wailed,
Swallowed water and found himself dead.

ALAN KELMEREIT, *Denver*

Let us dwell on the fate of poor Joan,
Who aways went diving alone.

She ran out of luck,
When in a cave she got stuck,
With no buddy to take her back home.

ELLIOT BLUM, *Far Rockaway, N.Y.*

Not surprisingly a number of divers wrote an ode to Captain Don, that idiosyncratic baron of Bonaire who runs one of the finest diving businesses anywhere.

The famed Cap'n Don of Bonaire,
Has a chin that's covered with hair.

His ego's as large,
As a forty-foot barge,
But his head is increasingly bare.

GORDON DAUGHERTY, *Bay City, Texas*

On the beautiful isle of Bonaire
Captain Don wholesales hot aire.
To young and to old,
Don's bullwit is told,
But the compressors are treated with care.

*STAN YOKELL, *North Caldwell, N.J.*

Finally, some limericks defy categorization, so we'll run them simply for fun.

Glenn Egstrom of verbal fast starts
Says diving's the sum of its parts
There's nitrogen bubbles
Whose volume oft doubles
But how do you legislate smarts?

*BO RAMSEY, *San Jose, Ca.*

Night diving, the newest of sports,
Is baffling the island resorts.
Where most barmen frown,
At the guys going down,
Without taking two or three snorts.

VERA SCHOEN, *Ortonville, Mn.*

There was a young diver named Joe,
Who carried a Tuba wherever he'd go.
He'd suck on his scuba,
Then blow out his tuba.
And summon all the whales from below.

LEN TRAKALO, *Branford, Ont.*

Factory fish kills and PCB's are reknown.
There's so much sewerage, my wet suit's turned
brown
Maybe the solution to pollution
Is a profusion of dilution.
We might not get rid of it, but we'll water it down.

JOSEPH BOUDREAU, *Two Harbors, Mn.*

A physician in Clarendon Hills
Can prevent diving trauma and ills.
He webs finger and toes,
Engrafts fins on your nose,
And transplants halibut gills.

MEL LEWIS, *Chicago, Ill.*

What a great day it was in Truk.
But you can bet it was just my luck.
I realized in a stupor,
As I eyed that grouper,
That the shutter on my camera was stuck.

WESLEY BYERS, *Clarkson, N.Y.*

Now, without rhyme or reason, we give you the winners. We have two second choices: V. Tresun of

Los Angeles, whom we presume is either male or female since nowhere in our records can we find for whom the "V" stands. \$15 will be sent to Tresun's favorite shop, Laguna Sea Sports in Van Nuys, for a gift certificate and another \$15 will be sent to the Divers Den in Lancaster, Pa., in honor of the limerick by C. Dorworth, obviously an initial associate of V. Tresun.

A nervous new diver named Kent,
Made a deep and too rapid descent
He saw somethings beautific
Then a moray, Horrific!
Screamed loudly, rose quickly, and bent.

V. TRESUN, *Los Angeles*

At a depth not too great as it's reckoned,
Diver Dan met his girl and love beckoned.
And so, glove in glove,
Exhaling their love,
They screwed up at one foot per second.

C. DORWORTH, *Lancaster, Pa.*

The winner? Why it's Barry Lambert, of Vail, Colorado. Barry earns \$50, which we can't send to his dive shop because he didn't name one. Gary will learn about the prize when he reads this. Are you there, Gary? Your shop, please.

There was a young man from Bonaire;
Often narc'd in the dark, I declare.
He found, when imbibing,
Then deeply night diving,
He frequently ran out of air.

BARRY LAMBERT, *Vail, Colorado*

Thanks, indulgent ones, for your patience. If limerick-writing frustrated you, consider these words of Howard Fischer from Hillside, N.J. We awarded him a year's subscription to *Undercurrent*, as we did for all people with an asterisk by their name. Now, until the next contest:

A diver who's nicknamed "the Fish"
This contest, to win, was his wish.
He knew limericks rhymed
Almost all of the time,
But he couldn't for the life of him
think of anything that rhymed with
spontaneous pneumothorax, or even
mediastinal emphysema, for that matter...

IQ 9, Emergency Procedure, and Weight Dropping *Random Thoughts and Reader Responses*

NAUI held its ninth annual conference on underwater education in Miami from September 28 to October 2, and they did their best to keep their promises to improve on the previous IO 8. We found IQ 8 informative, but we were disappointed with the

absence of serious consideration of many controversial issues in diving. NAUI agreed with our critique, so this year they attempted to stage three "debates" in which prestigious panel members would explore unsettled issues in diving. We expected probing dialogue but instead heard varied monologues.

The panel on emergency out-of-air training promised to be the highlight of the conference. Each agency teaches different emergency procedures. Our expectations were high when we learned that John Gaffney, NASDS head, Jon Hardy, NAUI, Dennis Graver, PADI, and Bob Smith, YMCA, would share the stage.

NASDS prefers that its students use octopus regulators, but recognizing that the octopus is still uncommon, NASDS teaches free ascent as the next best alternative. If buddy breathing must be used, according to Gaffney, the diver with air should keep control of the regulator.

NAUI, on the other hand, teaches buddy breathing and in their open water course has students demonstrate a swimming ascent with the regulator in the student's mouth, but with the student exhaling all the way up.

PADI apparently teaches all methods, Graver stated at the session, but Bob Smith said that the YMCA teaches only buddy breathing; however they are re-evaluating their training.

The debate setting provided the opportunity for participants to explore each others' beliefs and debate the differences, but no panel member was willing to raise another's hackle. Instead, the participants explained what they taught—not *why* they taught it—and no one questioned the assumptions of the experts on the stage. The intent was admirable, the outcome useless.

Next time NAUI should install a tough-minded moderator who permits only *questions* from the floor and who pushes the participants out of their comfort zones. Otherwise, pap will again be the main course served from the stage.

The other debates were no more illuminating, but the papers offered were valuable and contributed to furthering safety in diving. Yet one doesn't have to go to the conference to get the papers. They're available from NAUI (P.O. Box 630, Colton, Ca. 92324) for \$15. Regardless of our criticism, the IQ series continues to be the major stimulus to improve diver training and safety.

A comment from one of the debates—the “debate no buoyancy”—is worth citing. UCLA professor Glen Egstrom believes that a diver should enter the water 4-6 pounds positively buoyant, without considering the air in his vest. This buoyancy will permit a diver to float, even if he is unconscious or unable to inflate his BC. Egstrom noted that divers who purposely overweight themselves ought to consider the risk they're assuming. Furthermore, if a diver must inflate his BC to maintain buoyancy for a long surface swim, he will need up to eight times the physical effort to make that swim. Being positively buoyant on the surface without the aid of a BC provides the diver with increased safety and reduces his potential fatigue.

Feedback to Fead

In the July issue of *Undercurrent* we carried an article by Lou Fead wherein Fead argued for much less reliance on dropping weight belts in emergencies and much more reliance on diving neutrally buoyant and using a free ascent even without weight dropping. Fead's article led to several responses from readers.

Most people who wrote made the same basic argument: Teach an integrated system for emergencies, including all the techniques which may save lives. Begin with diving neutrally buoyant, but add other emergency measures including buddy breathing, emergency ascent, and dropping a weight belt. Divers should be practiced in all techniques so that the appropriate technique can be applied to the specific emergency. No single response will be a life saver in every circumstance.

Mike Eyring, NASDS instructor and former manager of Bob Soto's Grand Caymen Lodge, and now a forensic chemist with the Arizona Department of Public Safety, wrote:

“Saying that divers won't drop their belts in an emergency so we shouldn't teach them to jettison their belt is a bit like saying that divers will naturally hold their breath in an emergency so we shouldn't teach them not to. It is true that a diver neutrally buoyant at 66 feet who makes an emergency ascent but fails to drop his belt will float to the surface even if he passes out and floods his lungs. Still, neutral buoyancy training with the option to ditch weights is vital safety, just as is training in swimming free ascent and octopus use. By the way, note that the figures Fead cites are for dead divers. No one has numbers for the divers who ditch and live to tell about it.

“Fead's suggestion to take bigger breaths for added buoyancy is the *worst* option in the book. A diver with lungs inflated normally will not be affected by a short unexpected ascent if he holds his breath inadvertently. But a diver with fully inflated lungs will damage his lung tissue if he is diving horizontally and simply stands up. Use the BC for neutral buoyancy, not the lungs.”

A number of divers caught a fallacy in Fead's article, a fallacy that Jean Gregor of NAUTIC addressed in her response, which we printed along with Fead's article. Fred Calhoun, a NAUI branch manager, explained it this way:

“A diver may become *lighter* (i.e., weigh less) by jettisoning weights. A diver may become more buoyant when he displaces water by inflating a safety vest. ‘Weight’ and ‘buoyancy’ are related to each other, but they should not be confused.

“The resultant force experienced by all objects immersed in water is the sum of the weight of the object (a negative value) and the buoyant force exerted on the object (a positive value). If the weight

force is greater, then the resultant force is negative and downward—the object sinks. If the buoyant force is greater, then the resultant force is positive and upward. Though Fead is technically correct, he is misleading because even though dropping the 15 pounds of weight will not increase the buoyant force, it most assuredly will increase the resultant upward force . . . and that will be equal to 15 pounds.

“By dropping a 15-pound weight belt a diver will be 15 pounds lighter and that diver can raise himself (or be towed) to the surface more easily than if he is still wearing weight.”

Dick Overman, from Sunnyside, California, questioned Fead's research design. Overman disagreed with Fead's statement that: “The change in buoyancy when losing a weight belt in 70 feet of water could go almost unnoticed.” Overman said “the diver better react quickly or he'll find himself in an uncontrolled and increasingly rapid ascent.” Fead's oversight is that he considered velocity at 70 feet, not acceleration. The diver would rise slowly without kicking, but he would accelerate upward. If he were not managing his ascent he would quickly be in trouble. That acceleration would be even faster if he were kicking.

Undercurrent invited heads of the training agencies to review and comment on the article, and of those only Jean Gregor pointed out the discrepancy—a fallacy that has a significant bearing on Fead's argument that dropping a weight belt may not produce the expected effect. Overman, a NAUI instructor, chastises the heads of the agencies for not taking a closer look at Fead's argument:

“The really dismaying aspect of the entire article is that the prestigious training organizations and individuals who reviewed it failed to pick up the basic fallacy in it. . . . If the training organizations don't pick up these errors in their reviews, how can we expect the subject to be taught well?”

Training Shortcuts

Clinton Ferris, a sport-diver and geologist from Arvada, Colorado, suggests two reasons why divers may fail to save themselves:

“On two of the three group tours I've taken to Caribbean dive sites, there were stern warnings from the divemasters that equipment was in short order, and although weights could be supplied, I needed to have my own weight belt. In one case, there were not even enough weights for the divers.

“So, the diver starts with the impression that if he loses anything—including his weight belt—he's apt to ruin the rest of his vacation because he won't be able to dive. This feeling tends to discourage the timely ditching of weights. It would be good practice for local dive masters as well as group leaders to announce that dropping weights in emergencies is rec-

ommended and that it will not result in crimping the divers' future activities. Tours and resorts should have extra weights on hand and visible.

“Furthermore, I'm aware of classes being taught in Pueblo, Colorado, where trainees only simulate dropping weights because the weights they train with are shot and marbles in their backpack flotation devices. Because there is no way to retrieve these weights from the mud and rocks, they're never jettisoned.”

Ferris is highlighting a severe weakness of many training courses. First, certification courses which teach only with backpack flotation devices are increasing, but that can be inadequate training. Nearly all divers trained with backpacks will have occasion to dive with BC's and belts, and many will switch to BC's permanently. If they have not been trained with BC's and belts, they might find themselves in emergency situations for which their training is inadequate.

Furthermore, simulating dropping a weight belt seems a useless exercise. An instructor might not care to retrieve weights or may worry about the liability should a student shoot to the surface, but should a diver be certified if he's never dropped a belt and experienced sudden buoyancy under controlled circumstances?

That's the kind of experience Dr. Irvin Kraft was talking about in his article in *Undercurrent* in June, 1977. A diver who has not experienced that sensation in training may panic when he's faced with having to drop his weights in a real emergency. And panic is the biggest killer of all.

Instructor Management

National certifying agencies find it impossible to manage their instructors to ensure that they're teaching properly. In Paul Tzimoulis' November editorial in *Skin Diver*, he estimates that 20% of the certified divers really aren't prepared to dive without a competent guide. Tzimoulis goes on to say that “the system” is at fault, and indeed it is. We'll explore that in a future issue. For the present, let us offer one suggestion to shiver a few instructors.

Every death or serious injury of a diver ought to be reported to the training agency which originally certified that diver. That training agency should then send the information on the injury or death to the instructor who certified that diver and to the shop under which the training was sponsored. If instructors and shops begin to get information about their own students and the problems that caused their death or injury, those who don't exercise the greatest care in training might give second thoughts to their procedures. This is not to say that instructors and shops are ultimately responsible for the divers they certify. It is to say that marginal instructors who are confronted with the results of their failures might be motivated to improve their training or get out of the business.



Free Flow

For those of you who panic on a night dive when the lights go out, consider the plight of blind diver Richard Hardy, from Rensselaer, New York. Hardy senses direction by listening for the bubbles and feels them flow upward across his ears. On your night dives, adding just a bit of air to your BC when the lights go out will tell you which way is up, but keep your hand on the hose so you can control your ascent.

Scuba divers discovered two new undersea animals in the Antarctic, according to a recent issue of *Science News*. The animals, found in 85 to 100 feet of -10°C . water, have no eyes or mouth. They look like miniature trees, 1 to 2 inches tall, and stand erect in the mud bottom. Their branches catch and absorb microscopic food. Since they seem covered with fine grains of sand, the divers who found them believe that no other animals prey on these greyish-brown, one-celled creatures.

Neil Lehman is selling 25 years of *Skin Diver* (1953 to the present, with 11 missing issues). Collectors may write him at 444 Saratoga Ave., Santa Clara, Ca. 95050.

Neal Watson of Bimini set out on October 19 to swim 150 miles underwater. He quit after 10 hours, but he did cover 70 miles, and according to the *Miami Herald*, set a new world record for the effort. He came up early because his lunch came up early when he inadvertently drank a tube of warm salt water he thought was Gatorade. The warm salt water was intended to go inside his suit to keep him warm—he was too dehydrated to use the traditional method. Watson is also the co-holder of the world scuba depth record of 437 feet, 3 inches.

A recent issue of the British Sub-Aqua Club's *Triton* magazine tells of a group of divers arriving at their dive hotel only to find thick black smoke issuing from one diver's bag. The diver's 100-watt halogen lamp had accidentally gotten switched on when

the bag was jarred and its concentrated energy burned a large hole in the diver's wet suit. . . . Consider what would have happened had that bag been jarred at 37,000 feet on the way to Bonaire. That powerful lamp would ignite other materials and last rites would be in order. *Always* take your batteries or bulbs out of lamps—all lamps—when traveling.

The recompression chamber at Al Mikalow's Coastal Diving School in Oakland, Ca., has a new task. A San Francisco neurologist is taking patients with migraine headaches down to 100 feet to determine if pressure has a mitigating effect. Two of the fifteen so far tested have had dramatic pain relief; five others have "improved somewhat." That's good news, but we've always known when the squabbles at home give us headaches the best relief is a dive or two.

Nowadays, about the best stateside price we can find for the Nikonos III is \$319.95. Add a few bucks for delivery and it's yours from 47th St. Photo, Inc., 36 East 19th St., New York, N.Y. 10003. You may order by calling 800/223-5661 or 800/221-5858. For \$1.50, they'll send you their latest catalogue which not only advertises the Nikonos, but has a decent range of Ikelite housings. Strobes, SLR cameras, light meters, movie cameras and a host of dark-room supplies are available from 47th St. for a discount. Previously, we've recommended Cambridge Camera in New York, but after a couple of complaints from readers we no longer recommend their service.

In response to the article "Working your Way up the River," (*Undercurrent*, March, 1977), Brian Denault of Seattle suggests an easier way to climb into boats such as the Zodiac with low gunwhales. He and his buddies have a rope tied to the gunwhale with a strong brass clip on the end. At the conclusion of the dive the first person back to the boat clips his tank to the line, and, forty pounds lighter, pulls himself aboard without aid. He then helps the others.

Sub Aquatic Systems president Bill Miestrel recently wrote to dive shops, lamenting that his liability insurance has increased 1000% in the last year, although they had never had a product liability claim. To cover the cost, Sub Aquatic has added a 4% insurance surcharge to their products and suggested to shops that they pass on a 2% insurance surcharge to the consumer so he is aware of the reason for the price increases. Miestrel urges that people write Senator John Culver in Washington, D.C., to get product liability insurance reform.