

Spanish Bay Reef, Grand Cayman

The best of the lot

The skies were grey, the wind whipped whitecaps on the water. It was too rough to dive the north wall, so we dived the south sound. It had been a decent dive, not great, but certainly worth the trip. Swarms of reef fish had greeted our entry. Large cuts in the wall narrowed so as to make passing through impossible. A large french angel had posed for my lens. Given the weather, surely a decent dive.

I sat in the truck with my buddy waiting for Joshua, the boatman, to secure the dive barge. Sam Kahn, a man in his fifties, maybe his sixties, down from New Jersey, leaned against the truck, waiting for Joshua. Athlee Evans, the divemaster, fiddled with the tanks, waiting for Joshua. We chatted about diving, about resorts, about problems at Cayman Brac, about advertising promotion of San Salvador, about the difficulty in getting accurate information about dive sites before a trip. In a particularly direct moment my buddy said to Sam, "Oh, you ought to read Undercurrent."

Sam's eyebrows raised. "I do," he said. "That's a good magazine. They pay their own way when they go to resorts so they can write what they want."

Athlee (pronounced Ot-Lee) looked up. "But you don't know when dat mon is around, mon. Nobody know when he's comin'."

"That's right," Sam said. "That's why it's good." Athlee nodded. "Dey say dat's a good paper, mon. Dey say dat mon can make you or break you, dat Undercurrent mon." Athlee looked at me. "No one knows who he is or when he's comin'."

I pointed at my buddy. "Maybe it's her."

Athlee laughed. "I believe it, mon," he said. "I believe it." Scratching his head, he climbed into the cab of the truck. Joshua had arrived. It was time to return to Spanish Bay.

To evaluate any resort, I consider the setting, the efficiency and congeniality of the staff, the comfort and cleanliness of the accommodations, and of course the meals: the food and service and dining ambience. If one is seeking a dive resort with no frills, these criteria may be relatively unimportant.

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But, in my estimation, SBR compares in quality to many of the best Caribbean resorts and offers that important plus of a generally well-run dive operation. SBR is not for the person who comes to dive three or more tanks a day; it is for those who seek two good dives, fine food and comfort.

SBR is located on a pristine, somewhat rugged, isolated beach. On windy days the surf kicks up like it might on the California coast. On calm nights, one can see the moon reflecting on the mirrored surface, hear birds and other creatures rustle in the sea grape trees, and imagine that up the beach Long John Silver lurks, waiting to shanghai a crew. The beach offers good snorkeling, but it holds no promise for people who wish to play in the surf. To withstand the ironstone, urchins and coral, one would have to train by running through broken glass.

Seven North Americans purchased SBR from the builders, Ron and Nancy Sefton, in 1976. They have since added a beautifully designed dining room, bar and meeting-room complex, constructed out of natural wood and coral rock. An attempt to maintain an aquarium the length of a semicircular coral wall has failed because the fish die; it may be destined to become Cayman's most expensive planter.

There are thirteen units, each well designed and with plenty of rough wood trim, ceramic tile floors, and attractive and comfortable furniture. It is one of the few tropical resorts I've visited where on a squally afternoon I was more than pleased to stay in my room and read a book. Maid service is excellent and for \$1.50 they'll even wash, dry and fold a pile of laundry for you. All tap water is brackish, so maids bring fresh water and ice to each room twice a day.

Perhaps the major achievement of SBR is the cuisine. The food was always good and often excellent. Breakfasts -- a choice of eggs, pancakes, french toast, ham, bacon, or sausage -- were prepared upon order and served quickly and piping hot. Juice and at least one kind of fresh fruit were displayed for the taking. The luncheon buffet permitted me to make the afternoon dive without my customary six-pound weight belt. Hot dishes -- spaghetti in meat sauce (not tomato paste) on one day, lean corned beef and cabbage on another, and barbecued ribs on another -- complemented the plates of sliced roast beef, ham, cheese, salami, fresh local rolls, three salads, and a fresh dessert. Dinners were terrific. Two entrees are offered with the American plan or for a couple of extra dollars one can order from the regular menu. Turtle Florentine and the fresh fish always excelled, the beef was surely decent, and the three vegetables adorning every plate were always cooked al dente. Accompanying the first course, homemade soup, was a loaf of just-baked bread, right from the oven. The desserts were not up to the high dinner standards, but for dive resorts the cuisine was indeed 5-star.

Resident owner/manager Lach MacTavish has done an admirable job in providing guests with excellent ambience, accommodations and cuisine. Lach, who could pass for Elton John in a dark bar -- both have been known to frequent dark bars -- began at SBR as divemaster and attends personally to all management details, from the dive shop to the dinner table. His staff -- particularly business manager Gordon, bartender Roosevelt and dinner hostess Clorettee -- always handled our questions and requests with speed and attention.

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So, what about the diving, you say? It, even alone, makes the trip worthwhile. Next issue I'll cover Cayman in general. For now, let me say that if you dive the right spots, Cayman rates with the best in the Caribbean -- any diving fool knows that. Do you get to these top spots if you dive with SBR? Let us see.

Most divers claim the best diving is on the north side. SBR, located on the west end of that north wall, has an advantage over most operations located elsewhere. Because of rough weather during my stay, the SBR folks chose the west side for much of our diving, but one particular north wall dive deserves comment. We anchored in 60 feet on the very edge of the dramatic north wall, 15 minutes from SBR. The reef was covered with a splendid array of tropicals and a variety of corals, including great racks of staghorn, alive and intact. We entered a narrow chimney and, as the light from the surface faded behind us, a glow from the exit guided us through. I emerged on a vertical wall at 100 feet and was enraptured by the still, deep-blue water surrounding me. Ten of us floated along the wall, which was decorated with large sponges, gorgonia and corals. For a time, I noticed, not a single fish was in view, not even a tiny one. It was as if I had discovered a new world. Then, a large eagle ray glided by the group, at eye level, closing in as near as fifteen feet to me. Another followed, slowly, gracefully, carefully. As we divers hung in mid water, the rays surveyed the party and, finally, as they reached me, they turned, dipping their wings, one after the other, then slipped into the mist -- the last ray with a flip of its tail, a cocky flip, as if to show me what he could do and I couldn't. We toured the next 100 yards of the wall, then rose back to the top at 60 feet. As I looked down, I noticed a number of fish had filled the void, and that the rays, too, had returned. A couple of tiger groupers, one about 25 pounds, edged out of their holes, thirty feet below. Indeed, a spectacular dive.

There are an infinite number of dive sites around SBR, easily accessible in decent weather. (According to Athlee, the best months are April, May and June.) We made a shallow afternoon dive on the reef directly in front of Spanish Bay, 250 yards out and 500 east. On calm days, SBR guests make beach dives to this reef or the more distant wall. The bottom, in 20 feet of water, drops vertically to miniature canyons no deeper than 50 feet. Several pairs of french angels scooted by, small butterflies and large parrots were common, and the small wall was brilliantly decorated with sponges and purple and gold fairy basslets. It was a nice dive, good for photography and good for tooling around. Shallow afternoon dives can often get boring. This one didn't.

Generally, Athlee's site selections were good. When we were forced to dive the west side, he seemed to find the less-exploited locations. But on one day (and perhaps a second day), when Athlee felt it was too rough to dive the west side, at least two other operations did make north wall dives. At SBR, boat entry can be nearly impossible on days with high surf, but boats that board divers in more protected northsound areas can get to the wall to dive. Although the surface can get choppy, decent divers would not face difficulty. Some Undercurrent readers have suggested -- and I detected -- a slight tendency of dive staff toward taking the easier route. Any shop can take a diver to the west side, but people come to SBR to dive the north wall. Lach needs to ensure that divers get to that wall whenever they can. One possibility is that when the surf is up the divers could be trucked to calmer northside moorings. Whatever the solution, a first-class resort must always provide the best diving possible.

Many Cayman operations make a two-tank morning dive and a single-tank afternoon dive. SBR dives one tank at 9:30 a.m. and one tank at 1:30 p.m. People can take tanks from the shop for beach dives, but during my stay the surf was prohibitive. Several divers indicated they would prefer three organized dives

a day, giving them two options: diving the morning only, in order to relax in the afternoon, or getting in three tanks a day. To round out its first-class dive-resort image, SBR ought to make such an offering, if not every day then perhaps every other day. The dive schedule could begin, say, at 8:30 and the afternoon dive could be held later to extend the surface interval. I would expect few complaints about an earlier start, since most divers are finished with dinner by 9 or so and after that there is not a thing to do but watch the stars.

Athlee bemoans the dangers of bending divers when diving two morning tanks, and surely the danger is increased -- divers get certified to learn that. But if safety is the reason for a single morning tank, then there are safety inconsistencies. Although Athlee provides a specific dive plan and keeps a cautious eye on problem divers before they enter the water -- you know, the kind who put their regulators on over the tape on the valve -- no one checked anyone for c-cards, no one asked anyone about experience, and no one checked out new divers in the water.

Athlee sets parameters for the dive plan. For example: "This will be a 100-foot dive, for 20 minutes. Don't go deeper and hang three minutes on the line at ten feet when you finish." This permits him to assume that everyone will be in the same category in the afternoon dive. The morning dive is carefully guided and the afternoon, more shallow dive ("you're all 'c' divers, it's no deeper than 50 feet here, so you have 79 minutes") was often unguided. You're free to do whatever. Some divers are annoyed by structured deep dives, but I felt we got our money's worth on those with SBR. We didn't have to play follow the leader, but we were expected to follow the plan.

Overall, I was pleased with the dive operation at SBR. Boatmen Joshua and Clinton were quick to help divers with their tanks, they transported all tanks to and from the shop, and always aided divers climbing up the easy-exit ladder. Shop gear is in good shape, the air fills were 2,300 to 2,400 psi, the dive barge was well maintained, and the dockside departures were prompt.

Prices: Compared to other Cayman hostelries, SBR is priced very fairly. Rates this winter are \$154/day for two; that includes all meals, and two tanks each day. Rooms alone run \$55/day, double; dives are \$14/person/tank, weights and air included. One can get more diving for less money on Grand Cayman, but for less money one cannot get more pleasure, everything considered.

In your planning, however, consider a couple of unexpected charges. First, there is a 5% government tax added to your hotel bill; it applies just to the room rate. Second, SBR adds a 15% gratuity to the entire bill. Because their advertising brochure says it's 10%, our bill was \$50 higher than we expected. That change in policy needs to be changed in printing. Even so, at the time of our departure we didn't even register a complaint. That, friends, is satisfaction.

Diver's Compass: There can be mosquitoes aplenty, particularly in summer; the rooms are equipped with sprays and repellents ... the ride from the airport to the hotel is \$10.50 ... the hotel sells booze at the bar, postcards at the desk, and cigarettes from a machine; if you need anything else, bring it ... a darkroom is advertised, but, unless you bring everything you need to develop your films, you'll be sending them to Kodak ... SBR accepts American Express, cash or travelers' checks ... mid-January visibility ran 60-100 feet.

Resort

- - *Those Short Resort Courses*

"A strong swimmer these days can have the first thrill of a 40-minute scuba dive in an underwater paradise with no more preparation than a brief training session . . . Called an underwater experience, or an 'introduction to diving,' most Hawaiian scuba schools and many elsewhere are offering the morning- or afternoon-long opportunity to dive for the first time . . . There is instruction in using the equipment and breathing apparatus, use of the flotation pack and emergency hand signals . . . There are several quick practice dives in shallow water. It is a chance to practice equalizing pressure on the ears and clearing the face mask of water, both necessary from time to time during the dive . . . O'Brien (the guide) beckons the novices to join him at the bottom. They are now in 20 to 30 feet of water. The surface above is dark, but the bottom remains illuminated. They tread within an inch of coral outcroppings to see the life underneath. Eventually the dive is over. Back on the bench, the novices are jubilant . . . 'We've had beginners aged 7 to 68,' said the guide."

That report came from the *Los Angeles Times* (November 24, 1977). It demonstrates that resort courses—opportunities for noncertified divers to take their first open-water dive after a poolside lecture and pool training—are alive, well, and thriving.

Yet among professionals and active divers resort courses remain controversial. Stories abound about the horrors of resort courses, about embolisms, about fatalities. Bill Walker, general manager of VI Divers, Ltd., in St. Croix, told *Undercurrent*: "We hear numerous stories of what goes on in some areas, especially Mexico it seems, as far as putting a tank on someone's back and throwing them in the water after a minute's lecture. Such stories give me nightmares."

Yes, there are frightening stories about the tragedies of resort courses, but evidence about those tragedies is hard to come by. That's probably because what a few years ago was a brief one-hour course has given way to a safer, more intense and intelligent course. In the early 1970's it was not difficult to find untrained people who called themselves "instructors" at work throughout the Caribbean and other tropical places. Resort courses which provided less than an hour's instruction before an open-water dive, sometimes a dive to 50-60 feet, were common. As might be expected, there were injuries and deaths. Nowadays, however, many resorts will only hire certified instructors. We've met a number of local guides who have been leading trips for years, but have recently come to the U.S. for instructor certification. They know their own reefs, and they have wisely decided to become proficient in diving safety.

Yet the one-hour course is still around; the course

itself is less a problem than what the novice is permitted to do once that course is completed. In Cozumel last year, for example, we observed several divers who completed the short course in about an hour and a half. That included about 45 minutes at poolside and in the pool, and another 45 minutes in 10-15 feet of water. Those divers could then tell any of the local shops that they had completed the course at, say, El Presidente Hotel, and the shop would permit them to join the regular trips to Palancar reef. That might be permissible if the guide accompanied the novices down to the reef—about 30 feet—but we observed only one or two guides for as many as 12 divers, including several just-trained novices, in a group that would drop down to 80 feet. A novice perhaps could make special arrangements for careful observation by the guide, but most didn't.

Some people doubt that the short course belongs in even the best of operations. Captain Ed Davidson, proprietor of the Sunshine Aqua Center in the Florida Keys, said: "We are very much against the 'resort course' because no matter what you tell people, they will wind up thinking they know how to dive even though they may not have been exposed to the full course material."

Many stateside shop owners and instructors oppose the courses. One Northern California instructor said: "Can you imagine me pushing a diver through the surf at Salt Point, into the kelp beds, after a half-an-hour lecture and a dip in a heated shop pool?"

No, obviously we can't, but then short courses are the creatures of warm-water resorts where the water is clear and the seas are calm. They don't make sense in 48 out of 50 states, but the well-designed and well-taught course seems to make a lot of sense under the right diving conditions.

The more responsible resort course—the kind you trust for your lover or your offspring—is something much more than a rap session, a swim across the pool and a drop in the ocean. Cap'n Don of Bonaire's Aquaventure, who seems to study C-cards for forgery before he gives a diver a tank, says: "Concerning resort courses, pray tell what the hell is the one-hour course? I can barely take a crap and have a cup of coffee in that time. I have heard of such an animal but we don't want him living on Bonaire. Assume that there are 1000 things to learn and put to test for certification, and that really only 476 are required to be a safe diver. We teach the 476 which includes knowing the tables and how to use them. The end result is that most of our 4-day wonders eventually become certified divers, and at the end of the 4th day they are usually better divers than most of the new divers arriving from the States."

Dave Fredebaugh, who owns St. Thomas' Caribbean Divers, takes up to four people to a beach for an hour lecture, then spends at least an hour in 4-

5 feet of water before heading off to a shallow dive site.

At FLAG Royal Palms on Grand Cayman, Glen Galtere writes: "In our resort course, after a full day of instruction the student can only dive with one of our instructors in a literal hand-to-hand situation in shallow water." At Cayman Kai, Gale Anspach teaches a three-hour course which culminates in a short scuba swim, after which people can join up with the regular divers, under close supervision. Anspach claims to have taught 459 persons enrolled in 153 short courses: less than 1/2 per cent have dropped out.

At Central Pacific Divers in Lahaina, Hawaii, the three-hour course ends with a dive in 20-25 feet of water. Jon Good reports that approximately 95 per cent of the people go to the bottom but 5 per cent "either are too frightened to go down or talk themselves out of the dive before getting into the water. 85 per cent of the people who complete the dive go home *stoked!*"

And getting stoked is why the diving community has come to encourage the resort course, because many people who otherwise would never get certified decide to take instruction once they make their first dives. Some move right into the certification course at the hotel they're staying in—if a course is offered. Others take a course when they get home. NAUI, for example, offers the Introductory Diving Course as part of its curriculum so their instructors are covered by liability insurance. In the new Pro Manual, NAUI notes that it "is of great value to resort guides and other instructors who may use it to help sort prospective basic scuba students or promote the basic course." That sanctioned NAUI course is, for example, the only short course taught at the Coral Reef Marine Center in Guam, and the student has to take a brief written exam after a morning lecture before he is permitted to enter the ocean.

The British Sub Aqua Club (the English certifying organization) also sanctions a short course which Gerry Wilcocks teaches for F.L.A.G. Underwater Services on Grand Cayman. Wilcocks says: "One-hour instruction is impossible. Not even the rudiments can be covered in that time. The minimum requires at least three hours of pool work—and many people take four hours or more. We require them to be competent and happy with their own performance at each step in the program. Scrambling through an exercise is somehow not acceptable. At least one open-water dive must be taken with the instruction. A card is then issued, explaining exactly what the diver has done, specifying the number of open-water dives, the depth, and the duration."

Finally, in Barbados, Willie Hassell offers the introductory course and notes that "Prince Charles received his first three diving lessons from me and has continued to be quite a good 'uncertified' diver."

So, throughout the tropics, the short scuba course is well regarded, widely used, and sanctioned. But, just as in the selection of any scuba training, the prospective client ought to take certain steps before

jumping in any ocean with a stranger. Here are some suggestions to consider before signing up your friends or family for their first scuba experience:

Look for an instructor who has been certified by a legitimate training agency, whether U.S., British, French or any other. Don't settle for a local guide who might know where the reef is, but doesn't know how to perform an ocean rescue or read the tables.

On the other hand, some very competent instructors have never been trained because they were in the business long before the certification agencies were created. A few are terrific, others use pre-Cousteauvian methods. If you select an old timer, verify that he's modernized his techniques. Talk with people who have trained with him.

Meet the instructor, ask whatever questions you wish, and trust your intuition. If the instructor doesn't appeal to you, i.e., if he's too militaristic, too loose, or too up-tight, forget it.

Observe the course in action before enrolling. Judge the content, the instructor's sensitivity, and, again, trust your intuition.

Make sure the class has a couple of hours of solid lecture, pool or beach training before the shallow-water open dive is taken.

Look for the first open-water dive to be a beach dive. Most first timers find it much easier to ease into the water off a beach than to fall off a boat. The possible entry problems are reduced. But if no beach dives are available, don't shy away from a boat dive.

Verify that the depths of training dives don't exceed 25 feet; even more shallow water is preferable.

Ensure that all required equipment is introduced and that the diver trainee uses an underwater pressure gauge and a buoyancy compensator.

With these points in mind, you should be able to select a safe, satisfying course for an introduction into scuba. If you're still concerned, consider the claim of Bruce Parker, who runs the dive operation at Rum Point, on Grand Cayman: "In my 29-year diving career, I have run over 38,000 people through my short course and have *never even had to pump one out!* I have had more potential problems from unqualified certified divers than I've ever had with my short resorters. We nurse our resorters through their early stages and in 6-7 dives they have been down to at least 130 feet. I firmly believe that if the short resort course is given properly with good follow-up on the succeeding dives, along with plenty of control, there will be *no limit* to where scuba diving will go!"

Well, Bruce, there aren't many professionals who would approve of your taking novice divers down to 130 feet. But, if you've run 38,000 people through

your course without a single problem, then you must be doing something right! (38,000 students in 29 years means 3.5 students per day, every day, year in and year out. Bruce, can we believe that?)

Regardless, assuming careful selection of an instructor, a resort course is a fine way to introduce friends and lovers to diving. An awful lot of people would love a safe safari into the underwater wilderness, but would never consider braving the icy Pacific, feeling their way through five-foot wreck

visibility, or exploring a desolate quarry. However, completing a decent resort course can mean safe and easy passage to reasonable adventure underwater.

NOTE: A person who completes a resort course is qualified to dive only with guides and instructors. A certified diver who wants to take his novice buddy diving without benefit of guide or instructor had better be damn certain of the competency of both.

The Poseidon Adventure

2000 Faulty Air Hoses Can Mean Trouble

If you own a Poseidon Cyklon 300 regulator, you might have a serious problem awaiting you on your next dive. Parkway Fabricators, which distributes the Swedish-made Poseidon regulator, announced the following on December 30:

Certain of the Cyklon 300 regulators manufactured in Sweden in 1974 by Poseidon Industries, AB, distributed in the U.S. by Parkway Fabricators (with the serial numbers 15024 through 16523 and 18050 through 18549) have experienced failure of the intermediate air hose. The serial numbers can be found on the first stage of the regulator. If failure should occur while the unit is submerged, the air supply to the diver would be cut off. *Therefore, if you have a regulator with a serial number listed above, do not use the regulator until the hose is replaced.*

If you own one of the regulators in question, send your name and address to Parkway Fabricators, 241 Raritan Street, South Amboy, NJ 08879. The company will send you a replacement hose with installation instructions for no charge.

Parkway Sales Manager Keith Chodak told *Undercurrent* that they have received no reports of in-use hose and regulator failure and so far no accidents have been reported. They discovered the problem after receiving an inordinate number of requests for hose replacement. In those cases the air hose between the stages had slipped out of its fitting. When the problem was discovered, they notified the Consumer Product Safety Commission and Poseidon Industries in Sweden. They determined that the problem occurred only in a certain batch number which had been

supplied to Poseidon by a company other than their regular supplier.

Anyone who owns the regulator and has completed a warranty card should by now have received a notice from Parkway, but if you have a friend who owns a Poseidon or if you run into a diver on the beach or in a boat using one, you might mention the problem. If that diver bought the regulator second hand, if he has moved with no forwarding address, or if he doesn't read his mail, you might be performing a great service.

Any reader of *Undercurrent* is probably aware that in the last few months Poseidon, Scubapro, and U.S. Divers regulators have been recalled. Are the products getting worse?

No, we don't believe the products are getting worse, but the systems for discovering and correcting defects is getting better. First, the U.S. Consumer Products Safety Commission is a no-nonsense operation and, although small and understaffed, when it learns of a company that has produced a faulty product and has failed to recall it, the Commission gets tough and persistent. Second, the diving industry itself is maturing. Not so long ago manufacturers would claim that nothing had ever gone wrong with their equipment and industry advocates would argue that no death could ever be attributed to mechanical equipment failure. At least for regulators (if not for decompression meters), the industry today seems to acknowledge that once in a while a faulty product will get into the hands of divers, and when it does they'll let the divers know about it. We like to think that *Undercurrent* just might have helped that attitude along.

The Poseidon Cyklon Super 300

U. S. Navy Approves Swedish Design

In the October 1977 issue of *Undercurrent*, we published the first in a series of regulator evaluations performed by the U.S. Navy. In that issue we reported on two Sherwood Selpac models and in the Novem-

ber-December issue we reported on the Scubapro Pilot. In this issue we provide an edited version of the Navy report on the Poseidon. Please refer to an article in the October issue ("In and Out, In and Out, In and

Out: Putting Regulators to the Test") for details about the Navy testing procedures.

In May, 1977, the Navy Experimental Diving Unit issued a report on a test of the Poseidon Regulator, a single-hose demand scuba regulator manufactured in Sweden and marketed by the Poseidon Systems Division of Parkway Fabricators, 291 New Brunswick Avenue, Perth Amboy, New Jersey 08861. The regulator tested was model Cyklon Super 300.

The Poseidon regulator has an unbalanced diaphragm-type first stage with three low-pressure ports, and one high-pressure port for a submersible pressure gauge.

The regulator second stage has a balanced demand valve with an adjustable sleeve which directs the air flow from the second-stage valve seat toward the mouthpiece. When the sleeve directs the air straight into the mouthpiece, the least amount of breathing resistance occurs. As the sleeve is rotated away from the mouthpiece, inhalation resistance increases, reaching the maximum resistance when the sleeve is at a 180-degree angle to the mouthpiece. A diver can easily adjust the sleeve to achieve the desired (i.e., the most comfortable) inhalation response from the regulator.

In the test plan for the Poseidon Cyklon Super 300 regulator, a breathing machine was used to simulate breathing at light, moderate, and heavy diver work rates. The chamber was pressurized at various depth increments to 200 fsw, and pressure changes were measured between the mouthpiece and ambient pressure with the ejector sleeve wide open (pointing straight into the mouthpiece) and with it pointing 45 degrees and then 180 degrees from the mouthpiece.

Breathing Resistance

During the test of the Poseidon regulator, breathing resistance was measured at three workloads. Breathing resistances plotted are the maximum resistances measured, excluding cracking pressure, during one complete inhalation/exhalation cycle at a given depth and work rate. Air supply to the first stage was 1000 psi. Resistance measurements were also taken at 500 psi and 200 psi supply pressure both on the surface and at a 200-foot depth.

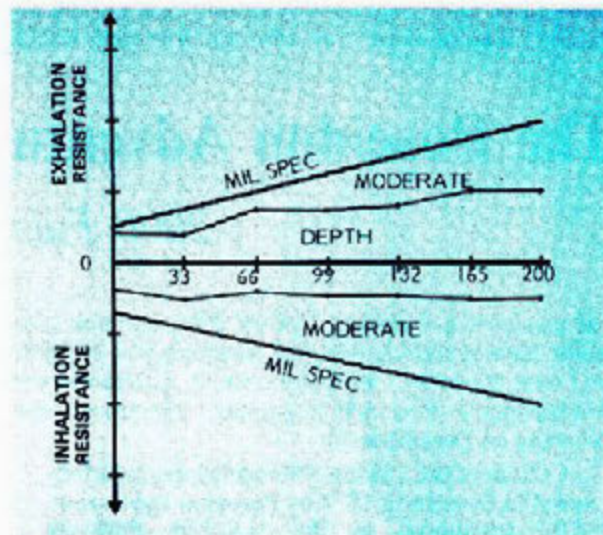
Ejector Sleeve Wide Open

Inhalation Characteristics. The maximum inhalation pressure usually occurred immediately after flow began. As the inhalation cycle continued, resistance was slightly unstable. This slight instability was expected and is not considered a problem; in fact, it demonstrates the effectiveness of the ejector sleeve in reducing breathing resistance. Generally, inhalation resistance remained low and almost constant over the entire depth range. The cracking pressure—i.e., the pressure required to begin air flow—was also low.

At 200-foot depth, inhalation resistance increased as supply pressure decreased. The regulator second stage is balanced with almost constant resistance at all depths. Therefore, the increase in breathing effort required at low supply pressures is probably a result of

the unbalanced diaphragm first stage.

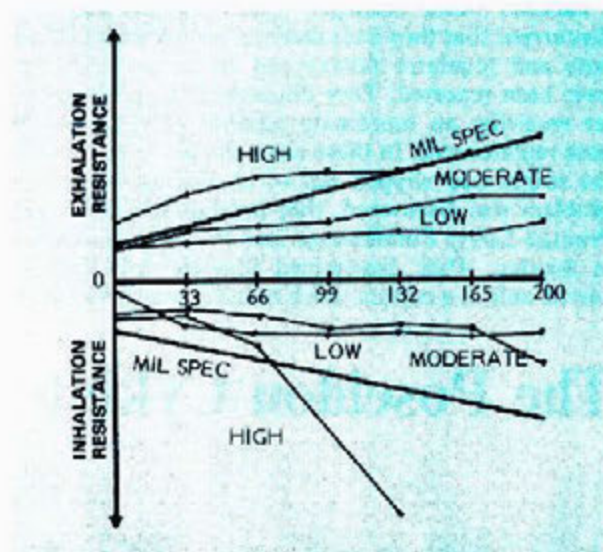
Exhalation Characteristics. The exhalation resistance measured with the ejector sleeve wide open was well within military specifications. The exhaust pressure was stable, probably a result of the unique exhaust valve design of the Poseidon, which includes a series of small exhaust ports rather than one large exhaust port.



BREATHING RESISTANCE AT INCREASING DEPTH, MODERATE WORKLOAD, WITH EJECTOR SLEEVE WIDE OPEN - THE POSEIDON REGULATOR

Ejector Sleeve at 45 Degrees

Inhalation Characteristics. Generally, no pressure fluctuations were observed while the regulator was operated with the ejector sleeve in positions other than wide open. When the ejector sleeve was at a 45-degree angle to the mouthpiece, inhalation resistance measured at low and moderate workloads were low and stable, remaining almost constant over the entire depth range.



BREATHING RESISTANCE AT INCREASING DEPTH AND VARYING WORKLOADS, WITH EJECTOR SLEEVE AT 45 DEGREES - THE POSEIDON REGULATOR

Medical Aspects of Women Divers Survey

Are women scuba divers more susceptible to decompression sickness during their menstrual period? Are there any dangers for the fetus if a pregnant woman continues to dive? These are some of the questions women divers may ask. Unfortunately, data has not been gathered from the diving histories of women.

The following survey attempts to find the answers to some of these questions. However, your participation is necessary. I would like all female divers to fill out the survey. If you already filled out the survey at IQ9, or if you are a male diver, give your copy to a female dive buddy. More copies are available upon request.

The survey should be completed and in the mail by April 15, but don't procrastinate! DO IT NOW! Results will be published.

DIRECTIONS:

Please go through the entire survey and answer all of the appropriate questions. The symptoms of decompression sickness (the bends) are skin rash (may be accompanied by skin itch), joint pains, paralysis, or numbness. If you have had any of these symptoms following a deep or a repetitive dive, you may have had decompression sickness.

Send M.A.W.D. Survey to:

Susan Bangasser, Ph.D.
M.A.W.D. Survey
802 E. 16th St., #7D
San Bernardino, CA 92404

THANK YOU FOR YOUR COOPERATION.

A. BACKGROUND

1. In what state do you reside? _____
2. Overall health:
 - a. good
 - b. fair
 - c. poor
3. Diving activity:
 - a. once a week
 - b. once a month
 - c. 6 times/year
 - d. diving vacations only
 - e. seldom
4. Number of years diving? _____
5. Highest level of certification:
 - a. basic scuba
 - b. sport diver
 - c. advanced diver
 - d. divemaster
 - e. asst. instr.
 - f. instructor

B. MENSTRUAL PERIOD

1. How do you usually feel during your menstrual period?
 - a. normal
 - b. ill
 - c. incapacitated
2. Do you normally partake in strenuous activities during your menstrual period?
 - a. yes
 - b. no
 - c. sometimes

3. Do you scuba dive during your period?
 - a. yes
 - b. no
 - c. sometimes
4. Have you ever made a decompression dive during your menstrual period? (In this and the following questions, menstrual period is defined as the time from three days prior to your period through the last day of your period.)
 - a. yes
 - b. no

If yes, did you get decompression sickness?

 - a. yes
 - b. no
5. Did you ever get decompression sickness on a NO-decompression dive while diving during your menstrual period?
 - a. yes
 - b. no
 - c. not applicable
6. What was your maximum depth obtained when diving during your period?
_____ feet
7. What was your average depth obtained while diving during your period?
_____ feet
8. Are you concerned with menstrual blood loss into the water around you while diving?
 - a. yes
 - b. no
 - c. sometimes

C. BIRTH CONTROL METHODS

1. Have you ever used any form of birth control method since you began diving?
 - a. yes
 - b. no
2. Are you presently using any form of birth control method?
 - a. yes
 - b. no
3. What type of birth control method are you currently using?
 - a. pill
 - b. IUD
 - c. diaphragm
 - d. other
 - e. not applicable
4. How long have you been using your present method of birth control?
 - a. 0-1 years
 - b. 1-2 years
 - c. 2-3 years
 - d. 4-5 years
 - e. over 5/yrs.
 - f. not applicable
5. Has your present method of birth control changed your diving frequency or pattern?
 - a. yes
 - b. no
6. What other method of birth control, other than your present method, did you use since you began diving?
 - a. pill
 - b. IUD
 - c. diaphragm
 - d. other
 - e. not applicable

7. Have you had any side effects from the pill, not diving related?
 a. yes b. no
 c. not applicable
8. If yes, what side effects?
 a. blood clots b. high blood pressure
 c. headaches d. nausea
 e. weight gain f. lighter periods
 g. heavy periods h. other

D. DECOMPRESSION SICKNESS

- I. Did you partake in any of the following while USING birth control pills? If not applicable, go to section II.

1. Have you ever made a decompression dive? While on the pill?
 a. yes b. no
2. If yes, did you get decompression sickness?
 a. yes b. no
3. Did you get nitrogen narcosis?
 a. yes b. no
4. Have you ever had decompression sickness on a NO decompression dive, while using the pill?
 a. yes b. no
5. What was the depth of your deepest dive while using the pill?
 _____ feet

6. What was your average depth?
 _____ feet

- II. Answer the following questions regarding diving activities while NOT using birth control pills.

1. Have you ever made a decompression dive?
 a. yes b. no
2. If yes, did you get decompression sickness?
 a. yes b. no
3. Did you get nitrogen narcosis?
 a. yes b. no
4. Have you ever had decompression sickness on a NO decompression dive?
 a. yes b. no
5. What was the depth of your deepest dive?
 _____ feet
6. What was your average depth?
 _____ feet

E. PREGNANCY

1. Have you ever been pregnant?
 a. yes b. no
 If yes, answer questions 2-19
2. Did you dive before pregnancy (or in between pregnancies)?
 a. yes b. no

3. Did you dive during your pregnancy?
 a. yes b. no
4. Did you maintain the same level of diving activity during pregnancy as before?
 a. yes b. no
5. How often did you dive while pregnant?
 a. once a week b. once a month
 c. 6 times/year d. diving vacations only
 e. seldom
6. Did you make a decompression dive?
 a. yes b. no
7. Did you get decompression sickness on a decompression dive?
 a. yes b. no
 c. not applicable
8. Did you ever get decompression sickness on a NO decompression dive while pregnant?
 a. yes b. no
9. What was the depth of your deepest dive, while pregnant?
 _____ feet
10. What was the average depth of your dives?
 _____ feet
11. Circle the number of the month you quit diving during pregnancy.
 1 2 3 4 5 6 7 8 9 never quit
12. Did you wear a full wet suit during your dive?
 a. yes b. no
 c. most of time d. sometimes
13. What was the temperature(s) of the water you dived in?
 a. 80 b. 70 to 80
 c. 60 to 70 d. 50 to 60
 e. 40 to 50 f. 32 to 40
14. Did you learn to dive while pregnant?
 a. yes b. no
15. Did you dive during more than one pregnancy?
 a. yes b. no
16. Was your delivery normal?
 a. yes b. no
17. Was your baby normal?
 a. yes b. no
18. What was the sex of your baby (babies)?
 _____ male _____ female
19. Did you continue to dive after the delivery?
 a. yes b. no

Comments:

At high workload, breathing resistance increased and exceeded limits at all depths greater than 66 feet. Cracking pressure remained unusually low, which is probably a result of the balanced second-stage valve.

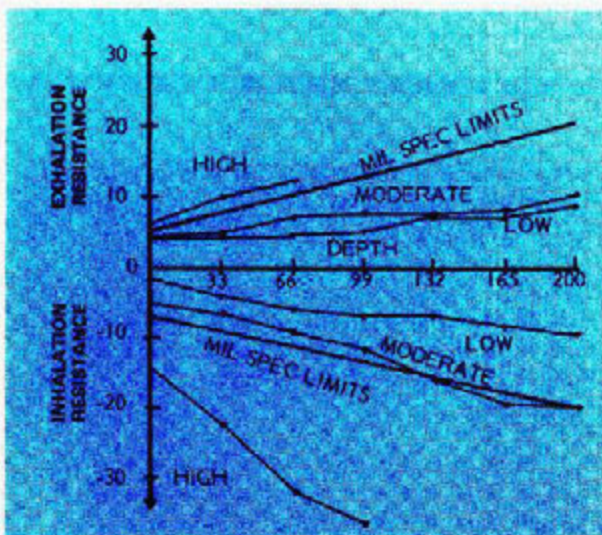
At low workload, decreasing supply pressures did not affect regulator performance. At a moderate workload at 200-foot depth, with supply pressures of 500 and 200 psi, there were increased breathing resistances but within specifications. Reduced supply pressure at the high workload at 200 feet produced increased breathing resistance which exceeded military specifications.

Exhalation Characteristics. At low workload the exhalation resistance remained almost constant at all depths. Exhaust pressure at moderate workload increased at each depth, but remained within specifications. At heavy workload exhalation resistance was greater than military specifications. However, all of the recorded pressures for heavy workload can be considered low compared to many other regulators.

Ejector Sleeve at 180 Degrees

Inhalation Characteristics. At low workload, inhalation pressures were stable and did not differ significantly from the measurements obtained at the same breathing rate when the ejector sleeve was at 45 degrees. At moderate workload, breathing resistance increased substantially but remained within military specifications. At heavy workload, resistance exceeded limit at all depths.

Exhalation Characteristics. When the ejector sleeve was at a 180-degree angle to the mouthpiece, exhaust pressures were similar to those measured at the other ejector settings because ejector position does not affect the exhaust valve.



BREATHING RESISTANCE AT INCREASING DEPTH AND VARYING WORKLOADS, WITH EJECTOR SLEEVE AT 180 DEGREES—THE POSEIDON REGULATOR

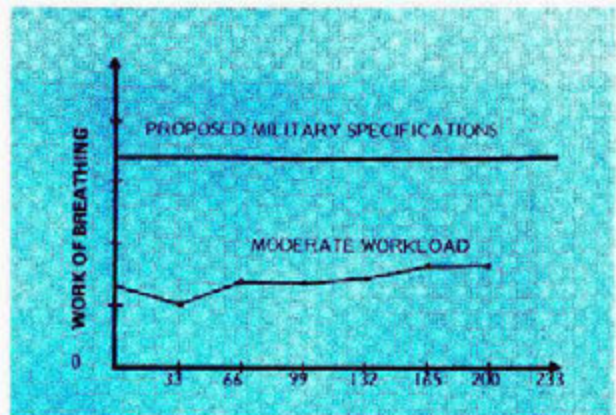
Work of Breathing

Recent research has shown that the measurement during one complete breathing cycle of external respiratory work performed by the diver to operate his

breathing apparatus is a useful supplementary guide to understanding regulator performance.

Ejector Sleeve Wide Open

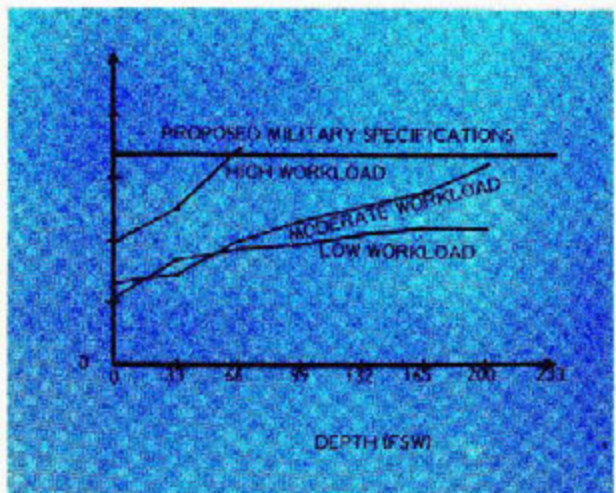
The Poseidon Cyklon Super 300 regulator operates most efficiently with the ejector sleeve wide open; in this position, breathing work is low and remains almost constant from the surface to 200 feet.



WORK OF BREATHING WITH EJECTOR SLEEVE WIDE OPEN

Ejector Sleeve at 45 Degrees

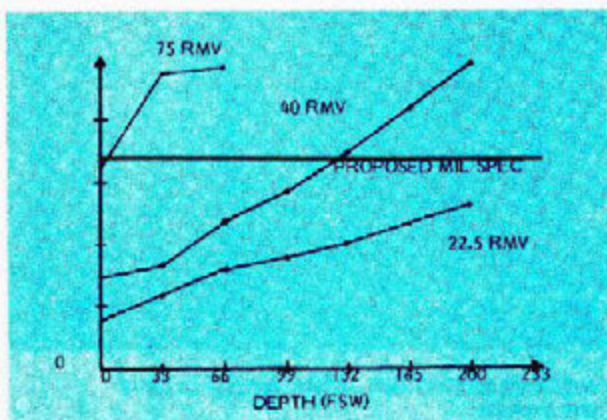
The breathing resistances measured with the ejector sleeve at 45 degrees did not significantly differ from those measured with the ejector sleeve wide open. However, substantially more breathing work was required when the ejector sleeve was at a 45-degree angle to the mouthpiece than was required when the sleeve was in the wide-open position. A higher work rate was needed at the low workload than at the moderate workload. However, measurements remained within the proposed limits. The breathing work required at high workload exceeded the military specifications at 66 feet and increased rapidly at greater depths.



WORK OF BREATHING WITH EJECTOR SLEEVE AT 45 DEGREES

Ejector Sleeve at 180 Degrees

At low workload, breathing work rates remained within the proposed limit. At moderate workload, the required breathing work increased rapidly with increasing depth; although breathing resistance pressures stayed within the specification limits at all depths to 200 feet, the proposed breathing work limit was exceeded at 132 feet. At high work rate, the proposed limit for breathing work was exceeded at less than 66 feet.



WORK OF BREATHING WITH EJECTOR SLEEVE AT 180 DEGREES

Conclusion

The Poseidon Cyklon Super 300 regulator meets military specifications and is recommended for use. Tests revealed that under normal conditions this regulator provides ease of breathing with smooth inhalation and exhalation characteristics. The ejector

sleeve on the second-stage demand valve effectively reduces breathing resistance when the sleeve is in the wide-open position (pointing directly toward the mouthpiece). Although breathing resistance approaches, but does not exceed, military specifications when the sleeve is rotated more than 45 degrees from the mouthpiece, more breathing work is required. Therefore, the sleeve *should not* be positioned at a greater-than-45-degree angle from the mouthpiece.

The Poseidon regulator performed poorly both at high work rate and at low supply pressures. The regulator's problem appears to involve its first stage. Larger first-stage porting and a balanced valve mechanism could improve performance.

The regulator is made in Sweden and uses metric measurements, which may present difficulties involving maintenance, obtaining spare parts, and interfacing with auxiliary equipment. Submersible pressure gauges made in the U.S. will *not* interface with the regulator first stage without a special adapter which is available from Poseidon Systems.

NOTE: The preceding article reports the results of U.S. Navy tests of the Poseidon Cyklon Super 300. The Navy approved purchase and use of the Poseidon. The recall does not affect the Navy recommendation and should not affect a diver's decision to purchase the Poseidon. The likelihood that there will be future problems with the Poseidon is neither greater nor lesser than with other Navy-approved regulators. Although it is improbable that any of the 1974 recalled regulators are being sold in dive shops today, one might check the serial number of one's regulator against the number of the recalled regulators to verify that he is not purchasing a problem regulator.



The Fantastic Diver, that luxury launch headed for Bahama and Caribbean diving, was expected to be operating by now, but it looks like it'll be late spring or summer before it's underway. Owner Ernest Oliphant sent us the following Christmas greetings:

Christmas is the Celebration of Christ, God's precious gift for the salvation of humanity. In that same spirit which gives purpose and meaning to our lives, Betty Joe and I, along with Bruce and Alnetta Evans, and Captain Bill and Buzzy Conklin, would like to officially announce

the dedication of our ship, *The Fantastic Diver*, to the work of the Lord.

The perfection of God's creation can be sensed from the heights of the mountains to the depths of the sea. Through the sport of diving, we of *Fantastic Diver* want you to experience God's marvelous underwater masterpiece as few have ever done.

Fantastic Diver welcomes all, and it is our prayer that everyone who comes aboard will be blessed by the ever-present love of God.

In the November/December issue, *Undercurrent* played God when on page 5 we moved Small Hope Bay Lodge from Andros Island to Grand Cayman with one swoop of our pen. We apologize to the folks at Small Hope Bay, where divers always seem to have a fine time (so they tell us), and admonish ourselves for breaking the commandment: "Thou shalt proof-read the copy before printing."