

Three Craft In The Caymans

-- And The Readers Have Their Say

Dear Reader:

Just about the best diving in the Caribbean is found around Little Cayman Island. After Gilbert one of our correspondents traveled aboard both the Little Cayman Diver and the M.V. Cayman Aggressor III, finding virtually no visible damage in the renowned Bloody Bay Marine Park. Here we compare the amenities of the two craft, then let our readers speak about the diving itself.

* * * * *

Having lived aboard both these vessels, I would award each crew top marks for efficiency and helpfulness, not to mention the superb gourmet meals on both craft which are experiences in themselves. However, the differences in these boats are worth noting. Neither has any major drawbacks, and in the long run, your choice may depend on personal taste.

The Cayman Aggressor III is more than 100 feet long and carries 18 passengers in eight cabins (one is a quad). The cabins are of varying sizes. Singles are likely to end up sharing the quad, which is slightly cramped with four. Every cabin has its own sink and there are two complete heads below decks, with showers. The dining area and galley are spacious, as is the rear deck where passengers gear up. A 3-tiered photo table has ample room for all the camera gear that 18 people can bring aboard. The top deck is carpeted. Tables and umbrellas contribute to an ideal lounging and eating area; meals are served buffet-style.

The 65-foot Little Cayman Diver carries 14 passengers. At first glance she appears rather compact, but the uniformly-sized cabins are surprisingly roomy. Each has two portholes (nice if you're at all claustrophobic) and its own sink. Best feature: every two cabins share a toilet/shower combo. The dining area/galley is crowded if all 14 passengers eat inside; however, the stern deck

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has a wrap-around seating area, so one can dine either in or out.

While the Aggressor shines where above-decks space is concerned, the Little Cayman Diver offers the ultimate in ease of water entry; once your tank is dressed with your reg and backpack, it stays dressed throughout the week. Tanks are stored on the stern platform, and refilled there. You need only appear on the platform's edge and a crew member gears you up; in short, you never handle your tank, or take a single step wearing it.

The Aggressor assigns each diver two tanks; one is being filled while the other is in use. You don your tank on the upper deck and negotiate a short ladder to the platform both going down and coming back up . . . no problem for strong backs, but I observed a couple of seniors having to have their tanks carried up and down for them.

For diehards for whom Bloody Bay is the only game in the Cayman Islands, note that the Aggressor visits there only by prior request. Even then, if winds prevent a relatively smooth passage, the boat may stick around Grand Cayman where she is based. Little Cayman lies 65 miles away, a 6-hour run made in the wee hours if conditions permit. The ship must return to Grand Cayman each Thursday night to resupply for the following week's group, so maximum diving days at Bloody Bay is 5. (PS: I dived Bloody Bay both before and after Gilbert and found no significant damage!)

Passengers board the Little Cayman Diver at Cayman Brac each Sunday afternoon, and the short crossing to Bloody Bay guarantees 6 full days there before a quick return to the Brac late on the following Saturday. The week-long trip runs \$1195 on the Aggressor, and \$1145-1195 (depending on the month) on the Little Cayman Diver. In short, you pay extra for the extra space. Information and reservations: Aggressor Fleet, 1-800/348-2628; 1-800/DIV-XPRT, 504/384-0817. Little Cayman Diver, 1-800/458-BRAC, 813/932-1993.

-- J.K.

Our readers have a lot to say about these craft? About the Little Cayman Diver, generally they echo the words of Brinton Darlington (Augusta, ME) who wrote "A diving experience par excellence. Cooperative, helpful crew. Dive boat A-1 maintained with most convenient and available diving." Bloody Bay is the site of choice, as Mary Anne Simpson (Northbrook, IL) says: "The walls at 'Bloody Jackson' are fantastic. The night dives were the best I have ever experienced. Glowing schools of squid, several octopus, a giant Jewfish." And Robert N. Gould (NYC) saw many sharks (black tips, hammerheads occasionally), eagle rays, turtles, big groupers, barracuda, assorted tropicals. Octopus on night dive, but noted that "the Coral (especially staghorn-elkhorn) dying or blighted (bleached). Though most everyone touts the trip, Richard B. Waite (Holladay, UT) had a contrary view from his trip a little more than a year ago: "The Little Cayman Diver does not take rough water well, has inconvenient equipment locker space, no room for set up dive equipment on deck, and a passenger meal area significantly too small for the passenger capacity. The cabins were noisy and suffered from engine vibration. The diving was DEAD! The

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Court Upholds Negligence Waiver

During his final lesson for scuba diving certification at the Los Angeles YMCA, Ken Sulejmanagic was left alone briefly by his instructor and drowned. When his parents sued for negligence, the YMCA demanded that the suit be thrown out because the Sulejmanagics' 19-year-old son had signed a waiver absolving it of responsibility.

Until recently, most state courts would have allowed the suit to proceed, noting that the waiver alone was not enough to clear the defendant. But in a blunt opinion that reflects a growing trend, a state appeals court in Los Angeles last August told the trial judge to terminate the Sulejmanagic suit. It based its decision solely on the existence of the signed waiver.

"The trend is unmistakable, especially in California," where the courts often set the pattern for other states, says Jeffrey K. Riffer, a Los Angeles lawyer and adjunct professor at Pepperdine University School of Law.

Mr. Riffer, an authority on sports-injury law, says that just a few years ago, state judges tended to look skeptically at recreational facility waivers. "They questioned whether people really understood that they were signing away their rights [to sue] or had thought about the hazards," he says. Now judges are coming to believe that "individuals generally should be bound by what they sign."

Mr. Riffer also attributes the change to the increasing number of judges who fear that liability suits have pushed recreational facility insurance rates beyond what many companies can afford. These judges are attempting to alleviate the problem by showing that waivers do hold up in court.

Plaintiff lawyers are alarmed by the develop-

ment. By dismissing suits on the basis of a waiver alone, they say, judges are taking too rigid an approach to these cases.

According to Steven C. Glickman, the Sulejmanagics' attorney, California courts "aren't being realistic" about the ability of people to understand recreational waivers. The waiver in the Sulejmanagic case had stated, in part, that the YMCA was to be exempt "from liability for personal injury, property damage or wrongful death caused by negligence."

Mr. Glickman says that the waiver's "moderately technical language" would have confused many people, especially since "the instructors are saying, 'We are going to do everything right.'"

And, indeed, the trial judge in the case had decided to let a jury hear the argument. But the YMCA appealed the decision to California's appeals court, which concluded that "it would be difficult to imagine [waiver] language more clearly designed to put a lay person on notice of the significant and legal effect of subscribing to it." By ordering the trial judge to throw out the suit, the court was also making a strong statement about the validity of waivers -- normally an appeals court would have allowed the trial to proceed and taken any action after a verdict. (The state Supreme Court declined to hear an appeal by the Sulejmanagics.)

A longer version of this article appeared in the Wall Street Journal written by Journal staff reporter Paul M. Barrett: waivers are common in other countries, where prior to a dive certified scuba divers are often required to sign a document releasing the proprietor from any responsibility. In most cases, it is presumed that such waivers are upheld by local courts.

only exception were the groupers and some other fish that had gotten used to p being fed. I usually shoot a lot of rolls underwater; on this trip I took my photo gear down only once, for a total of eleven pictures. I had much better diving from the Cayman Aggressor off Grand Cayman's north end. A few rays (one eagle), a couple of small reef sharks, two barracudas, and poor small fish activity. The weather: What can you expect in the Caribbean in winter? Seasonal storm conditions, but it could have been worse. It was still nice to get out of Utah's blizzard season." Another reader (S. Feldman of Houston) was there about the same time: "December winds make it tough to dive Bloody Bay Wall. However, diving at other wall locations always exciting & better than most other wall locations. Saw lots of eagle rays, hammerhead & black-tip sharks, numerous jacks and other pelagics." And just last May, Oswald Hilderson (Salisbury, MD) found that "Contrary to what is supposed to be a good time of the year, it rained six days out of eight days." These comments notwithstanding, eighty percent of the people who write us about the Little Cayman Diver are happy as clams.

Three separate Aggressor boats have traveled these waters, each getting high marks as dive boats, and now it's the III. Remember: unless you have made specific prior arrangements to dive Little Cayman for the full trip, you may spend only two or three days there -- or even none at all. And more than one reader has complained to us that they expected many more days at Little Cayman than they received. Peggy Todd Prall (Oakhurst, NJ) says that last year "Dives at Little Cayman were great. Dives at Grand Cayman Seven Mile Beach were 'shopworn.' Wrecks were OK for short dive -- once! Rays should be dived by all -- great experience. Corals & walls spectacular at Little Cayman & fish were very friendly toward divers. Crew on boat was great. Note that Little Cayman trip does not always go. Age of group -- mid-20s to over 70." Jim Holland (Plano, TX) says last April "a weather front moved in on the boat along with me -- heavy seas, lots of turbidity & current throughout week. The crew did an outstanding job and are to be commended." William S. Gregory (Carmichael, CA) "Reef on Seven Mile Beach is dead, dead, dead -- a real shame as it was so easily reached by everyone, which is probably why it is dead. Spent 3 days off the North Shore of Little Cayman -- FANTASTIC!" And one reader complained that because they have to disembark between 7 and 8 am on the Saturday of departure, there can be a long wait for an evening flight or to move into another hotel room. Indeed, there are differences between the Little Cayman Diver and the Cayman Aggressor, but rest assured that both have plenty of repeat customers.

If you're in a hurry on Cayman and want to get away from the maddening crowds, there's another boat: the Gulf Stream offers two- or three-night charters out of Grand Cayman. We sent a reviewer aboard prior to Gilbert and since Cayman's underwater damage was not disastrous, the report remains timely.

-- C.C., travel editor

* * * * *

With only six days available, the Gulf Stream looked like my cup of tea. My liaison with the boat owner had gotten an itinerary that appealed: a couple of North Wall dives, then on to Little Cayman, leaving room for two land days of diving some nightlife, at a not exorbitant price.

Day one was not auspicious. At Kennedy airport, Northwest Airlines sent Cayman passengers to a U.S. Customs agent to check over bags. The agent first tried to confiscate my CO2 cartridge, then simply fired it when I protested giving it up. Why, I still don't know, but in the resulting melee, I barely made the plane; my bags did not. I had to spend the better part of that afternoon in Cayman cajoling a lethargic Northwest agent to get them on the final flight in that night, so that I didn't have to sail in the morning with all rental gear.

Next stop was Treasure Island Hotel, to check in at the dive shop and board the boat -- which caught the staff totally off guard. Our group leader had a verbal understanding with the boat owner that we could spend that night on the Gulf Stream for free, before our charter began in the morning. But no one in the shop had been so informed. The boat was docked some distance away and was far from ready. The staff coped graciously, however. They stored our luggage, pointed us to the bar, and worked hard to get the boat in shape for us to board after dinner.

Once on board we learned our itinerary wouldn't include Little Cayman after all -- apparently another case of crossed signals between the boat owner and our liaison. Little Cayman turned out to be an eight-hour crossing, an option only on a three-night booking. So for us, it would be local diving only. The news was cushioned somewhat by the free beer on tap, and the fact that we had gotten the divemaster we requested: Ashton Ebanks, with whom I had dived when he was

DAN And NUADC And NOAA

NOAA's (the National Oceanographic and Atmospheric Administration) Undersea Research Program has notified both the Divers Alert Network and the National Underwater Accident Data Center that NOAA desires to consolidate the gathering and reporting of diving accidents and diving fatalities into one entity. Both DAN, at Duke University, and NUADC, at the University of Rhode Island, were notified that if they were interested in doing such a combined study, each would have to submit a proposal for such a project by March 15, 1989. However, the option has been left open for a joint proposal using the services and facilities of both DAN and NUADC.

NOAA's Undersea Research Program presently contributes \$30,000 to NUADC and \$25,000 to DAN. From NOAA's point of view such a consolidation will as stated in its letter requesting the proposal, "provide economies of scale and more efficient operations." Freely translated, NOAA may be able to cut its grant monies. What is at stake is a \$110,000 combined operation with \$55,000 of grant monies from NOAA and the balance secured from organizations, firms and individuals.

According to Dr. William Busch, Program Manager at NOAA's Undersea Research Program, "Naturally we are under budget pressure, but we would also like to have a more streamlined study in these areas with a more useful report."

John McIniff, Director of the NUADC, told us, "I do not feel that the data-gathering techniques associated with diving fatalities around the world are necessarily compatible with the data-gathering techniques of pressure-related diving accidents in the continental United States and the Caribbean."

Dr. Peter Bennet, Director of DAN, told us, "Since NOAA initiated the request for a proposal, we will respond. We are interested in research into all aspects of diving safety."

DAN and the NUADC have met to consider a joint project; however, both are presently working on individual proposals. Assuming that NOAA does not change its mind after studying the proposals, then, if the NUADC is successful in its proposal, DAN will lose \$25,000 of grant money. If DAN is successful the NUADC may become an entry in the history of diving.

with another operation. Even within the confines of Seven Mile Beach, Ashton had always managed to avoid the beaten path. Surely, I reasoned, he'd come through for us again.

Early next morning we were briefed by our genial captain, Robert Little, and proceeded to Stingray City. It was a whopping twelve-foot dive on a sandy bottom, but a good first choice, as some of our group were novices, and others were trying out new gear. This gave Ashton a chance to check out everyone discreetly while we presumably frolicked with the rays, although we had to hang out for awhile with nothing much to look at, as we were vying for their attention with two other dive boats. Ashton, ever resourceful in a pinch, found a moray and played snake-charmer: it wrapped itself around his arm and let its chin be scratched, then backed off upright, eyed me, and deigned to take some food -- obviously not new to the profession. The rays arrived in a sudden swirl. They went through my food at once and then began to play, one after another landing on my head, unfolding my mask in their wings, while the others circled and rubbed up against me, as though enjoying the contact. I was a point of interest for about ten minutes; then they vanished as suddenly as they had appeared.

Next was Tarpon Alley, where the group that preceded mine saw a large school of tarpon, which had dispersed by the time I descended. The visibility exceeded one hundred feet, and the wall showed up in vivid hues. A hogfish couple gave me an escort; then I fell in with some rock beauties; as I ascended several barracuda lolled about. (Eds. note: Cayman marine biologist Tom Byrnes reported to us that after Gilbert Tarpon Alley had pockets of silt as much as elbow deep; most of that has subsequently drifted away, he said in January, leaving just a couple of inches. He reports remarkably little damage elsewhere, noting that much of the staghorn coral that got broken off has recemented itself and is growing once again.)

In the afternoon we anchored on a disappointing reef that had coral damage and a paucity of fish on both the afternoon and night dives. Although the seas were calm, some passengers had been experiencing slight sea sickness; everyone turned in early. During the night the air conditioning broke down. Although I slept through it, many took to the deck to sleep. Once alerted, the crew fixed it, but by then those sacked out on deck opted to stay.

The next morning we dived the Tunnel of Love, which I rate as one of the most beautiful wall dives along Seven Mile Beach. The configuration of the hard and soft corals in the tunnel is particularly mesmerizing, and one tends to linger there rather than move through it at a clip. I was therefore surprised when Ashton made no mention in his briefing that as you go through the tunnel, you can easily drop to 120 feet for awhile if you don't keep your gauge before you. This happened to a few of the group, but with no repercussions. A turtle swam before me as I came out on the wall, and there were eagle rays as I ascended.

The following reef dive was unmemorable. That afternoon we anchored and dived on Devil's Grotto, where I finally had to ask, why were we consistently striking out on the shallow reefs? On the two wall dives, all had seemed well and unscathed. But in heavily trafficked sites such as this one, the coral damage and dearth of fish on the afternoon and evening dives were as plain as they had been on the reef the day before. A year ago on Devil's Grotto I saw octopus, parrotfish, trumpetfish, grouper, tang; now even the grunts and sergeant majors weren't making much of a showing. I ventured to the captain that divers were taking their toll, but he was understandably reluctant to agree with me. (There were now signs posted island-wide exhorting divers to watch their weight and buoyancy and stay off the corals.)

On our last morning we took a final dive on Eagle Ray Rock and were back at Treasure Island before noon. I left, if with mixed feelings about the diving, definitely satisfied with the boat in terms of standards and crew.

The Gulf Stream is a 65-foot fiberglass yacht, with eight double occupancy staterooms. Cabins are for sleeping only: there are double bunks, a window, a wash basin and mirror; bring only what you need in a duffel bag that you can throw on your bed. There are two VCRs in the salon and a monitor in each stateroom: we had a choice of Top Gun or scuba videos. Aside from the breakdown the first night, the boat was kept comfortably air-conditioned. On deck, gearing up space was rather tight, although alleviated somewhat with personal gear storage drawers. Had there been photographers on board, space would have been at a premium. It was one small step down to an oversized dive platform with extended ladders that made water entries and exits effortless. The crew was always there, unobtrusively, to give as much or as little help as was needed. Captain Bob and cook/wife B.E. were especially accommodating. The two young divemasters were hardworking and polite, if not particularly sociable. Ashton, as talented as ever in the water, was strangely stingy in his briefings before the dives.

Meals were well prepared, the food abundant: pancakes and eggs for breakfast; hamburgers, barbecued chicken, and grilled fish for lunch and dinner, with green salads, vegetables, fresh fruit, and homemade desserts. There was free beer on tap and soda for sale.

Who's the Gulf Stream for? Probably people with limited time who would rather do four dives a day and skip the Cayman nightlife, or those who want it both ways: half intensive diving, half land diving and shore amenities. But on

my two-night charter, at least, the diving was not superior to what I would have gotten from a land-based operation. At all of our sites, shore-based operators were anchored alongside us. Ironically, our best dive was the day after we got off the boat. Again with Treasure Island Divers, we took a North Wall dive in dead-current, crystalline water that yielded black-tipped sharks and more pelagics than we had seen in all our prior dives combined.

The cost for my two nights was \$360 (it's now \$420). This included nine dives, seven meals, and two nights' accommodations. Three nights is \$550 with Little Cayman being the intended destination, depending upon weather and a sufficient number of paying passengers. (A Gulfstream spokesman told Undercurrent by telephone that Little Cayman is reached about thirty percent of the time.) Figuring that onshore one two-tank morning dive is \$45 island wide, the Gulf Stream is an economical alternative to being strictly land-based. One can spend the night of arrival (without meals or service) aboard the boat at no extra charge and stretch the deal further by a "Best of Both Worlds" package offered by Treasure Island Resort, combining two or three nights on the Gulf Stream with three or four nights at Treasure Island, including daily two-tank morning dives. These packages start at \$699 per person, which, for Cayman, is a bargain-basement rate. And deterioration notwithstanding, the diving will still be more than acceptable. The Gulf Stream alone or in combination with a stay at Treasure Island could be a flexible and cost-conscious way to sample it within a short timeframe. For reservation or information: Gulfstream Charters: 1-800/662-9847 or 404/483-2770; Sea Safaris, 1-800-243-3325.

— C.N.

Reports From The Readers: Part VI

INDONESIA: As the well-heeled among us try to dive the last of the undived areas, Indonesia becomes a new destination -- in part because once there even the budget conscious are surprised at how far the dollar stretches. Bob and Jane Goble (Columbia, SC) visited the Club Bualu in Bali and found a PADI instructor who gave them a "customized dive itinerary. We had our own driver and a dive guide. Interesting WWII wreck in Tulamben. Amed had wonderful wall with much coral, abundant fish (Lionfish, royal blue starfish). The best diving was at remote Menjangan Island. Incredible walls, crystal-clear water, lots of fish (a few big ones) and fantastic coral. The hotel was incredibly charming and very much like a private club. The dive staff very knowledgeable and safety-conscious, but left us on our own after checking us out. Excellent American equipment to rent. Our dive master took us to many interesting temples & sites along the way to dive sites. The Balinese people are so friendly, their culture exotic and fascinating. We paid much less for diving and room and food than anywhere in the Caribbean, yet we had a week with our own driver and dive master." James Pearre (Pontiac, IL) says the Nusantara Diving Center has excellent Indonesian-style food, English spoken, comfortable lodging, outboard-powered outrigger canoes to dive sites 30 min. to 1-1/2 hour trips (P.O. Box 15, Manado 95001, Indonesia. Telephone (0431) 3988. Cable: NDC Manado, Indonesia." . . . John Giunco (Freehold, NJ) took the Island Explorer, "not normally run for divers exclusively. Most dives wall or slope -- drift dives. Currents normally not strong. Plenty of lion fish, mantas. Fish quick to run; hard to photo." And two differing views of an August trip. Says Bill L. Meredith (Houston), "Island Explorer not properly outfitted as dive boat, i.e., no tank racks and only loose laundry baskets for gear bins. Crew not prepared or trained for unlimited diving. Primarily a cruise boat crew. Area billed as world class diving but for (\$3,000 + air), was a real disappointment. I have had as good diving in the Caribbean. Absolutely no comparison between here and Fiji or

Palau, although I am told good diving exists east of Bali." Wm. F. Quesenberry, Jr. (Coral Gables, FL) reports: "The best liveaboard trip we have taken. Big cabins, each with private full bath. The food is nothing short of gourmet, the service excellent. Diving is some of the best in the world. We have been on a number of trips with Tropical Adventures and find them to be excellent and very fairly priced."

MALDIVES: Since some scientists believe that the Greenhouse Effect will put many of these low-lying islands in the Indian Ocean underwater in 100 years, now is the time to go, especially since many of our readers say that, as everywhere, the resorts are being commercialized too quickly. Ralph Zoberier (Dillingen, West Germany) went to Bathala and Norbert Schmidt's Shop last February: "Located on outer atoll edge -- super strong currents. Lost three divers several weeks before we got there, never found! Immensely rich on plankton -- limited visibility, lots of fish. Accommodation is stone huts w/straw roofs." . . . Bodufinolu on South Male Atoll, says Roland Lickert (Bahrain), has "super dives which can be quite challenging, particularly the current dives need some experience, only advisable w/ an instructor also. Inner reef OK. Fish life and variation is the best in the world." . . . Of course there is a Club Med. A.S. Logan (RUWI, Sultanate of Oman) was there last spring. "This Club Med was far below standard for the club. Besides the accommodation problems, the dive equipment was old and dangerous. Somebody is going to be injured." . . . Holger Behrnolt (Mainz, West Germany) tried Kandcoma Fushi eighteen months ago and is not singing the high praise accorded by other Maldivian visitors: "Diving nice but not great compared to Red Sea. Dive boat not crowded (6-10 people). I'd have liked a little more diving freedom on easy dives -- still it was less strict as in many places I've been in the Caribbean. For experienced divers, this was good simple fare, but no "gourmet" diving." . . . John S. Taylor (Safat, Kuwait) visited Kuramathi a year ago last October. "The most marine life, including large fish, that I have ever seen. Excellent variety of everything, but not the colors of the Red Sea or the drop-offs. The hotel features bungalows with cold running water only and no air conditioning." . . . Keith Payne (Bahrain) tried Male right about the same time. "I dropped into the Maldives two weeks ago to check out an investment opportunity in a live aboard catamaran operating out of Ari Atoll. It was one year since my last visit and the deterioration which had taken place was noteworthy. I dived off both Male and Ari Atolls, from land based operations as well as off the cat. The quality of diving itself off the heavy trafficked Male Atoll was still surprisingly good for color and reef fish. On Ari Atoll from the cat, we had the absolutely brilliant diving for which the Maldives are best known. Vis. of over 200 feet and lots of large pelagic activity. What has become bad about the Maldives is the attitude of the people! These are the people who control the logistics and accommodations. At the airport, there were insufficient transport craft for arriving divers. The high speed ferry link was only 50% operational as the vessel was broken down & running off-schedule. You have to know the Maldives to appreciate the importance of this. The people operating the communications and accommodations have become very sullen, unfriendly, uncooperative. Service at the resorts was poor. Fortunately, there are still enough expats around who make a sincere effort to provide some return for the diver's investment." . . . Finally, H. Roberts (Trinity, Jersey C.I. England), who visited Reeti Raa nearly two years ago (Golly, has it been that long ago?), has written: "This is the 2nd time I've been here and I think my favorite place. The resort is Swiss-managed, and although not luxurious, is efficient and friendly. Each time I've been here, the diving has been excellent. I think some Maldivian resorts are becoming over-commercialized -- hope this won't happen here." (PS: If you read every word, you noted that everyone quoted here lives outside the United States. Most U.S. divers travel to the Maldives aboard a See and Sea liveaboard boat; call 800/DIV-XPRT)

Readers Report On Dive Computers: Part I

-- Plenty Of Problems, But Not the Bends

If you own a dive computer, you most likely would just as soon dive without fins than go diving without your computer. Because of their ease of use -- divers don't have to remember the tables or even compute their own surface intervals -- today's divers in increasing numbers are relying on meters for every aspect of their diving.

In our July issue, we included a questionnaire on decompression computers asking readers for their comments. Nearly 1000 readers responded, from which we obtained 905 complete responses for eight computers.

	%	#
Orca Edge	43	389
Orca Skinny Dipper	31	279
Suunto	9	84
Oceanic Data Master II	7	59
Beauchat Aladin	6	53
USD Data Scan II	2	16
Dacor MicroBrain	1	13
Sherwood SigmaTech	1	12

Some care must be exercised with this data. When dealing with the small bases of responses for Data Scan II, MicroBrain, and SigmaTech, any conclusions drawn may be out of proportion to reality. However, if the raw data for Data Scan is added to the data for Data Master (basically the same computer), and the data for SigmaTech is added to that of the Skinny Dipper (basically the same device), one can get a more accurate picture of these computers. MicroBrain, however, only had 13 responses and is not comparable to any of the other meters.

Orca Industries dominates the market, according to the responses from our readers. The Edge accounts for forty-three percent and the Skinny Dipper for thirty-one percent of the meters in use by our readers -- or a total of seventy-four percent of the meters owned by our respondents. This probably reflects the length of time that these computers have been available.

Validity and Reliability

There are two fundamental issues at stake in the analysis of any device -- its reliability as a mechanical and electronic unit and the validity of its tables in preventing decompression sickness.

Until recently, little data was available on the validity of dive meter tables. At the end of last year, however, DAN released results of a study showing

that bends occurred on approximately two percent of the dives. Our readers have been more fortunate. Although fifteen respondents (1.6%) had been bent while using their meter (in two cases, more than one device) this figure represents something less than 1/100 of one percent of the dives. These are the devices they used: SigmaTech (1); Aladin (2); Edge (8); Skinny Dipper (5); Suunto (2) and no reported bends for the Data Scan II, Data Master II, or MicroBrain.

This is what the divers who got bent said about their incidents:

Ted Sledzinski (San Diego) was using a Suunto and said that "it was in its error mode, so it wasn't functioning as a computer." He reports that he "usually takes it to its limits." Sledzinski is no lucky fellow. He reports another incident using a Beauchat and a Skinny Dipper, which "shut off during the first of two dives. I used it along with a Beauchat on the second dive (the Beauchat was used on both)." Sledzinski says he "followed a 20-minute dive to 253 feet (+ 40 min. decompression) with (after 3 hours) a non-decompression dive (160 feet for 8 min., 80 feet, 20 min.). One hour after surfacing, I had decompression sickness -- blockage of artery supplying nerves to inner ear."

Leonard M. Toonkel, a physician from Miami, used the Sherwood SigmaTech and made three dives (80 ft., 80 ft., and 55 ft.). After vomiting and weakness a brain stem bubble was diagnosed and he recompressed in a chamber. Toonkel says he "used to dive near the limits until the CNS event," but now he only uses the meter as a "backup to the Navy tables."

James C. Brown of Newark, Delaware, reports that he "had skin bent after doing a second decompression bounce dive following the first decompression dive, back to back, with no surface interval." Brown reports that he was using a Skinny Dipper with a Beauchat as a backup.

Virginia M. McClain (Dallas) says that "Twice I have been to a chamber due to bends-like symptoms (tingling & numbness & pressure). Both times they felt after treatment that although symptoms resembled bends, it probably wasn't the bends. Symptoms remain after treatment. They come and go periodically. Although diving may be involved, it's not the bends. My dive profiles were even conservative for the Navy tables. I decompress on every nondecompression dive and didn't do any decompression dives. Problem still undiagnosed." McClain uses a Skinny Dipper as "backup to Navy tables. If I

have been careful to slowly work up from deep to shallow, I sometimes stay longer than the Navy tables to decompress even though it hasn't been a decompression dive."

"The first time I used the Skinny Dipper," reports William McCullough, Jr., of Irmo, SC, "I was wreck diving. Both dives were within the limits set by the Skinny Dipper. The first dive was within the Navy tables. The second dive was slightly over. I did a 5-minute safety stop. I got bent the next day."

"Bends? My fault. I wanted to take the computer to its limits."

Admits Michael Shidler (Aurora, CO), "My fault. I wanted to take the computer to its limit."

Robert M. Barbarite (Columbia, MD) was using an Edge "on a planned decompression dive. The first dive was to 130 feet for 21 min. bottom time using computer to do progressive decompression. Stayed five feet below ceiling indicated at all times. Hung

additional five minutes on first dive. The second dive was to a maximum depth of 133 feet, with a bottom time of 28 min. Again did progressive decompression, allowed additional two minutes at ten feet for hang. Wasn't bent badly but did make trip to the chamber at the University of Maryland."

Honolulu's Joan Farrington says that "It appears that my physiology is such that by running my diving close to the extreme margin of Edge safe diving, I subject myself to more of a chance of becoming bent than by using the Navy tables. Bent once last year in Palau using the Edge and discovered when I stopped using it my almost permanent back pain while repetitive diving went away."

Lee Godwin (Tampa) was bent "when surfacing from an extreme cold water rescue and recovery dive. I, however, feel the reasons are totally physiological, not to be tied to the Edge. After the incident, which was mild to light in nature, I got in better physical shape and no other incidents in cold water happened."

Frank Gurski (Brookfield, CT) uses the Edge and reports that he has been bent "three to five times.

Who's More Afraid, Who Takes The Risks: Men ... or Women?

Clinical psychology graduate student Edith Hoffmann from Miami's Barry University recently conducted a study to determine whether male or female divers exhibit greater anxiety and risk-taking behavior. Her research was carried out in cooperation with Quiescence Diving Services in Key Largo, Florida.

Thirty-nine male and 39 female sport divers were chosen from 100 respondents. Excluded were those who were under 19 years of age, had not dived within the past six months, or did not dive with their regular buddies; included, however, were those subjects who generally dived with different partners.

Using an accepted test to assess how respondents "feel right now" and how they "generally feel," Hoffman found no significant difference anxiety levels of male and female divers.

Surprisingly, *male and female divers, as a group, were significantly calmer before diving than they reported being in their everyday lives.*

To determine the extent to which divers engage in risk-taking behavior, Hoffman developed a scale which assesses risks divers take in the maintenance of their scuba equipment, with their physical health and mental well-being, and in adherence to diving rules.

The results showed significantly higher levels of

risk-taking behavior in male than in female divers.

Thirty-six percent of the male divers violated the commandment "never dive alone," whereas eight percent of the women had dived without a buddy.

Forty-three percent of the men admitted to diving with a hangover compared to five percent of female divers.

Both female and male divers succumbed to peer pressure when they were hesitant to make a dive. The female divers led with 46 percent, followed by the male divers with 33 percent.

No correlation was found between anxiety and risk-taking behavior. Of the male divers with low anxiety, 38 percent took low risks, 51 percent moderate chances, and 11 percent exhibited high risk-taking behavior. Of the female divers with low anxiety, 65 percent took low risks, 31 percent took moderate chances, and one woman exhibited high risk-taking behavior.

Hoffmann concludes that risk-taking behavior may not be affected by anxiety and may be a matter of choice. The tendency toward risk-taking is culturally defined in some males.

However, just as men who are very sure of themselves as human beings reject the "male" role of taking chances, some female divers take more risks than expected to ensure their safety and that of their diving buddies.

Minor tingling in the hands and arms; pain in the shoulder; blurred vision; red and itching in the midsection."

Marilyn L. Johnson (King of Prussia, PA) reports that her Edge "said I had hours, so I surfaced. I got two hits in the spine & experienced temporary partial paralysis." She had made three dives with it.

Last July, Nick VanderWal (Neptune Beach, FL) got bent after "a third dive to 80 feet. I usually make a safety stop. This time I did not, due to building weather. I was still within my Edge limits. After five minutes I had shoulder pain. Most of pain went away during 1-hour boat trip home. At dock, physical exertion brought pain back big time, so I went to the chamber at Gainesville, FL."

One reader, who prefers to remain anonymous, said that "In the Maldives in 1985, my Edge suddenly went black after two dives to the 40-60 feet level. The divemaster prescribed 120 foot afternoon dive which I didn't want to miss so I went without the Edge. No problem. But went on a 'shallow' evening dive and one hour post-emergence developed constricted visual field in left eye, confusion. Lasted one hour --no seruelae. I think I had transient decompression sickness, mostly my fault as I overdid it that day."

Although our survey is not scientific, the incidence of bends reported appears low for so many divers and dives. They do suggest a couple of conclusions. *Unique diving profiles can be troublesome and should be avoided by the careful diver, but even the most cautious diver may be susceptible to a bends hit.* Decompression computers offer no guarantee; the physical makeup of the individual -- age, weight, general condition -- contributes significantly to the likelihood of getting bent.

Other Problems

The accuracy of the time and depth indicators in the computers seems to be vastly superior to mechanical devices. For example, tests of depth readouts of many of these devices show a consistent error rate of less than two feet, while mechanical gauges have been found to be off by ten feet or more. However, our questionnaire did uncover what seems to be a high number of other problems. Our readers reported a variety of malfunctions during the dives, which will be discussed in greater detail in subsequent parts of this article. In the order of most problem mentions to least mentions are:

SigmaTech	33%
Skinny Dipper	28%
Aladin	26%
Edge	24%
Suunto	17%
MicroBrain	15%
USD DataScan II	13%
Oceanic Data Master II	12%

These numbers seem very high for such expensive, critical products. In subsequent issues we'll look at problems of specific meters.

Dive Without Computer Backup?

With all these potential problems, our survey discovered that some divers shun backup devices such as depth gauges and watches and rely *entirely* on their electronic computers. Although 88 percent of the divers use some additional backup equipment, 12 percent use only their computers. Several divers indicate they have supreme confidence in their computer.

"Some divers shun backup devices such as depth gauges and watches and rely entirely on their electronic computers."

Dr. Millard T. Hennessee (Framingham, MA) says, "I am confident in my Skinny Dipper and am always well within the limits of decompression." Another diver (Donald Banos, Glendale, CA) says, "I fully trust the computer -- it's far more accurate than the old depth gauge. If there was a discrepancy between the two instruments I would rely on the computer unless there were other reasons to believe the computer was malfunctioning." And Philip Adams, a NAUI instructor from Tampa, says: "I know many serious divers who have used an Edge for years and they have given me no reason to worry about a backup." Many divers say if there is a malfunction, they will simply abort their dives for the day.

Some readers say they use no backup because dual systems are complicated or incompatible. Ron Merker (Laguna Niguel, CA) says a computer and backup are "too confusing; use either one system or the other."

A number of people who dive without redundant devices confess that they rely on other divers for backup. Gloria Borer (North Bethesda, MD) says: "I know about ten people with Edges who have never had any problem, so I trust it more than I should. My backup is my buddy's Edge -- casual backup, that is, since buddies change." Another reader, Walter Dudley (Phoenix), says, "one member of our dive group uses conventional gauges and we check the readings with our computers." And J.S. Allan (Pin-court, Quebec) writes, "How far does safety go! My buddy has a set of gauges to back me up."

In addition to those who carry no backup, we would estimate an additional fifteen percent of the respondents used only a watch (without a depth gauge) or a depth gauge as the sole backup. That means that as many as twenty-five percent of the divers using computers are not fully backed up. Keith

dive fully backed up, but few with systems so redundant as Springfield, New Jersey wreck diver Joseph Garcia, III, who reports that he uses "three depth gauges (two bourdon tubes for depth indication, one capillary for decompression stops); one wind-up bottom timer; two navy tables (on my light, one in my tool pouch). I use the Edge as a backup to the Navy tables. The major use is to guide my ascent, the secondary uses are surface interval timing, maximum depth indication, and backup bottom timing."

Edward Green (Annapolis) uses a depth gauge and bottom timer: "Orca told me that if you can verify your depth and bottom time to be correct, it is almost impossible to have a computation failure." Mike Gordon (Sinking Spring, PA) backs up his Skinny Dipper because "I don't have full confidence that the chips in my Skinny Dipper are more stable than my home computer which occasionally goes wacky and needs to be reset." Linda Stough (Kokomo, Indiana) says, "If I forget to turn on the Dipper I still can carry out my dive."

Some people have had problems that confirm their need to carry backup. A Pennsylvania pair says they have "taken the Skinny Dipper on two live-aboard trips and it failed us both times the first day of diving. We cannot rely on it." And Tim Tye (Dayton, Ohio) was diving at the Brac, when one of his buddies' computers "maxed out at 126 feet while his Dacor gauge was pegged at 200 ft. Turned out the Reynolds (Newtown, PA) is one of these. "I use a watch only, just to note the time in and out. I don't use any other devices because their functions are not critical enough (as opposed to an octopus) to warrant redundancy. If the computer fails, I would immediately abort the dive." And some people, such as Linda Frumkes (Malibu), say that "I wonder why I bother to carry a watch and depth gauge? I can't go back to the tables and would have to stay out of the water 24 hours if my Skinny Dipper fails."

The answer to Linda Frumkes and others who wonder why they need to carry a backup watch and

depth gauge is based on what action they need to take should their computer malfunction at depth. Suppose you're on your second dive of the day after several diving days. You've been in the water for awhile, you're quite deep and your computer all of a sudden has no reading for you. You must exit. You need to rise at the rate advised by your own computer's instructions -- 40 feet per minute, 20 feet per minute? -- and you probably ought to stop at one or more depths to blow off the nitrogen. Wouldn't a watch or a bottom timer and a depth gauge be essential to a safe ascent?

At least seventy-five percent of the respondents computer was grossly miscalibrated."

The questionnaires reveal that many people use mechanical backup devices because they purchased them prior to buying a computer and continue to use them out of habit. Robert Pasqual (Charleston, SC) writes, "I continue to dive with my console probably because I already owned it. But, how much backup is necessary? I never used a back for my gauges in the past. I have no qualms about relying on my computer."

A number of people indicate that they are using a second computer as backup, in some cases one they originally purchased and replaced with a model they like better. James C. Brown of Newark (the fellow who reported earlier that he has been bent twice) uses a Beauchat Aladin as backup to his Skinny Dipper and an "Edge is standby backup if either the Beauchat or Skinny Dipper fail." Just like backing up a computer with the Navy tables, using a different computer for backup means falling back on different tables as well.

Finally, Doug Roberts (Boca Raton, Florida) gives the most succinct answer to our question about whether he dives with backup devices: "Hell yes, I do. I read your 'Bendomatic Computer' series and the 'Why Divers Die' articles."

Next issue: How the individual meters stack up and more about how divers use them.

Save The Spiney Seven!

If you consider yourself a friend of mother nature's underwater critters, can you match up to Cam McQueen and the gang from People for the Ethical Treatment of Animals?

In December they became offended when Jack Sun, the owner of a Rockville, Maryland restaurant that's popular among vegetarians, installed a lobster tank and filled it with bugs. On ethical grounds, the PETA members tried to persuade Sun to free the spiney seven and remove the tank. He wouldn't budge.

So the PETA members raised \$240 to buy the bugs from Sun and fly them on a commercial flight from Washington National Airport to Portland, Maine. There, the bugs were deposited a new home off the coast. Sun removed the lobster tank.

Now, do you suppose that one of you Maine divers reading this dined on a member of the Spiney Seven just last night and didn't even know those were celebrity claws you were cracking?