

## Baskin In The Sun: Kaliko Beach Club; Haiti

### —Like Diving In An Aquarium

It was with mixed emotions that I chose Haiti and the Kaliko Beach Club for the site of my April diving trip. For years I have heard tales of Haiti's police state, run by "Baby Doc" Duvalier. Of course I don't support such politics, but then I suppose there's an advantage to seeing these things first hand. I arrived expecting to see "goon squads" wandering the streets threatening people. Perhaps I would witness a coup. Or the revolution itself. As it turned out my trip was merely a diving vacation during which I encountered some of the friendliest people in the Caribbean. And truly the most honest.

Indeed Haiti does have economic unpleasanties. A country of 5 million people occupying one-third of the Isle of Espanole, Haiti is the poorest nation in the Western Hemisphere. There is little food. The hills have been stripped in the never-ending search for firewood. And, as it is in virtually every country, amid the poverty and squalor is a modern international airport, governmental palaces, luxurious hotels, fine restaurants, and superb resorts.

Haiti's capital city, Port-au-Prince, is easily reached from New York, Miami and Montreal. Upon arrival my patience and temper were clearly tried in the immigration custom's lines, which eventually took an hour and 40 minutes to complete. Uniformed inspectors opened every bag, completely disrupting very careful packing. Drug laws are strictly enforced and "subversive" political literature is not welcome. I carried neither.

As I stood in the customs line, I spotted a young Haitian holding a sign over his head with my name. From then on it was easy. He helped me through customs and loaded my bags, along with those of another passenger for Kaliko Beach, onto a small bus for the nonstop 36 mile, 48 minute ride. I was fascinated by the colorful sites: ornate cemeteries, stick and mud-wall dwellings with thatched roofs; women and men, many in brightly colored clothes carrying baskets on their heads, others with huge loads of thatch on their backs; men, women and children bathing and washing clothes in creeks and rivers; buses or "taptaps" adorned with Haitian art; and fields of large

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coconut palms and banana trees.

I originally made my reservations through Caribbean Adventures, Limited, in Land O'Lakes, Florida. My check was returned with a short letter saying that they were forced to go out of business, but that my reservations were made and I should take the money directly to the diving resort. Checking in at Kaliko Beach Club would have been easy except I had brought a certified bank check for the full payment. As it was, I was unable to convey to the young Haitian at the desk that the check was a bank check and not a personal check--which they will not take--until Eva Cope, Vice President of Baskin-in-the-Sun intervened.

Kaliko is a village of 40 rooms--built as twenty thatched roof duplexes. Completely refurbished just over one year ago, the resort has a reception center, an entertainment center, a lagoon-shaped swimming pool with an artificial waterfall, the watersports center, outdoor lounge, and two restaurants, all surrounded by lush tropical foliage, and blooming hibiscus, oleander and morning glories, and knitted together by cement walkways. The pleasant rooms are six-sided and spacious, air conditioned, with two double beds, and complimentary furnishings and plenty of hot water for the shower. One gallon coolers with bottled water and plenty of ice are placed in the room each day, when rooms are cleaned and mopped and the linen changed.

The Kaliko Beach Club is in a beautiful setting with the sparkling waters of the Gulf of Gonave in front and a 4,000 foot mountain range towering behind. The beach, rocky in part, is a little hard on the feet as well as the libido. I actually avoided it most of the time because many of the women go topless there. Dedicated as I am to reporting, I knew I would forget my responsibilities in such a stimulating setting.

Food is excellent and the service quick and courteous, not a normal Caribbean characteristic. Breakfast is served at 7:30 a.m. in the open-air Le Triton restaurant right on the beach. A buffet of cold cuts, cheese, french bread, preserves, fresh cuts of mango, papaya, melon, and pineapple, coffee and eggs to order (sometimes bacon) would be the daily fare. The luncheon menu offers club sandwiches, hamburgers, and BLT's, salads, and full meals (fish, steaks, chops, lobster), desserts (ice cream, cakes), coffee, soft drinks, beer and mixed drinks. Sandwich prices range from \$2.95 to \$3.95, and the full meals from \$5.95 to \$10.00.

Dinner, served in the romantic open-air Caille Paille restaurant, starts at 7:30 p.m., but each evening I would arrive early for a hearty pina colada (or two) made with fresh coconut. The menu each evening offers soup, an appetizer, two entrees, two desserts, and a salad bar. The soups--vegetable, chicken, potato, squash or fish--were excellent. The creative entrees included minced beef with paprika, shrimp creole, pork in tomato and garlic sauce, fish baked with lemon sauce and onions, conch with creamed peas, steak, poached fish, shrimp in garlic sauce, tongue of beef, fish fillet or grilled beef. Desserts included rum cake, sherbert, orange cake, fruit salad, pineapple with Kirsch, or banana fritters. The dinners, the drinks, and the five piece band at night all combined to prevent me from engaging in any night diving, though I normally dive at least every other night when on a diving vacation. Damn, this place is pleasant!

Now, with all this rambling about the fine accommodations and food, you must be wondering whether there can be any worthwhile diving amid such luxury. Indeed, I was quite pleased with the simple yet colorful diving. In the first place, our

readers have written glowing comments about the proprietors; and, sure enough, I found Alan and Eva to be excellent managers of their dive business. Along with being friendly and responsive, they have a convenient and well-equipped beachside operation. Two compressors keep their 80-cubic-foot aluminum tanks filled to the brim, and 15 complete sets of rental gear take care of those who come without. Their primary dive boat is a 50 by 20 foot cat, powered by a 140 Evinrude. A terrific boat, it has a head, a sun deck and plenty of shade, stereo, local art, drinking water and a dunk tank. The smaller boat is a 21-foot fiberglass V-hull outboard with an 85 HP motor, and can comfortably accommodate six divers. The boat dives depart from the dock in front of the dive shop at 9:30 a.m. and 2:00 p.m. They normally use only the big dive boat, however, during my stay the first PADI Haitian Instructor Training Course (ITC) was in full swing, so for three days we used the small boat while the class used the large boat.

In addition to my concern about Haitian politics, I expected little improvement in the diving over what our editor found in 1976. The Kaliko was then the Kaloa Beach Hotel, and a new dive operation was ferrying divers over a four-hour round trip route for a two-tank dive. That would be a test for anyone's interest in diving. Baskin, however, has found sites close to home. At Jamie's Reef, 2 minutes from the dock, the depth varies from 10 to 35 feet. It's an excellent dive for new or rusty divers and the experienced diver as well; it has loads of large gorgonia, a full range of beautiful and healthy coral, a mind-boggling variety of sponges and the normal tropical fish. It is an ideal dive for the macro-photographer.

Surprise Reef, 3 minutes from the dock, is a cluster of large coral heads at depths from 65 feet and rising to within 30 feet of the surface. This reef is characterized by very large fan corals, a wide assortment of very colorful sponges, red and orange wall sponges, all varieties of coral and the normal tropical fish.

Les Arcadin Islands are three coral islands about 30 minutes from the dock. Each island is a different dive and depths range from 20 to 50 feet. I found the color variety and abundance of the coral, sponges, gorgonia and anemones super.

Amani, a shore dive about 25 minutes by van from the hotel, is the site of an old hotel on a lovely beach with a covered patio, that makes an excellent staging area. A honk of the van's horn brought a couple of local Haitians to carry all the diving equipment down the steps to the beach (and back up after the dive). The wall starts in water as shallow as four feet and as close to the shore as five feet, and drops vertically to about 660 feet. The wall is the home of what some people claim is "the world's largest sponge," an orange elephant-ear sponge about 8 feet wide and 13+ feet high, located at about 115 feet. Hanging Gardens is a remarkable conglomeration of sponges in reds, oranges, yellows, purples and beige, suspended from an undercut vertical wall. As someone once said, "sponges are King in Haiti," and one dive on the Amani Wall convinced me of that truth. Zombies Hole is a huge crater-like formation featuring a vertical wall and, again, a fantastic assortment of colorful sponges and gorgonia. A chimney here starts at 110 feet and exits at 50 feet. The topography is dramatic, to say the least, but there are also many other attractions to see at Amani. I saw great schools of creole wrasse, anemones of all colors, lobsters and eagle rays. For the shallow dive following the deep wall dive, there is a large area on the west side of the beach called the Sea Gardens, where depths range from 10 to 50 feet. It is also an ex-

### KALIKO BEACH CLUB HAITI

Diving for Beginners	★ ★ ★ ★ ½
Diving for Old Pros	★ ★ ★ ★
Beach Snorkeling	★ ½
Boat Snorkeling	★ ★ ★ ★
Hotel Meals	★ ★ ★ ★ ½
Hotel Otherwise	★ ★ ★ ★ ½
Moneysworth	★ ★ ★ ★ ½

★ poor. ★★ fair. ★★★ average. ★★★★ good. ★★★★★ excellent

cellent snorkeling area.

One of my favorite dive sites was Shark's Cove, so named because a shark was "once" seen here. The water was so clear I could easily watch the anchor descend to the 50-foot depth and dig into a sandy bottom. One giant step later I found myself in calm 84° water. As I began to explore a large coral formation, Alan motioned me to look at a large growth of black coral at only 18 feet! Eva then pointed out a brilliant red sponge--the same kind I have passed over so often and hardly looked at because it appears black in the ambient light. Large schools of creole wrasse pass us several times, and a curious barracuda followed me for several minutes, apparently satisfied that I was not about to eat any of his food. Sponges were everywhere. Lion's paw sea cucumbers had emerged from many coral formations. The large black urchins had arrow crabs and small fish lurking amid their spines. From an anemone a blenny watched me from the safety of the many arms, an easy target for my macro lens. Across a small patch of turtle grass and sand, I found conch, star fish, sea cucumbers and hermit crabs. This whole reef was vibrant with life and color. A chain moray eel watched me from his coral home as I snapped pictures of colorful Christmas tree worms, a very large crab, and a colony of tunicates. Swimming over a large coral head, I found an absolute blanket of green Zoanths flowing over the entire top of the coral head! Eva told me of a cave in 25 feet of water. I found it filled with beautiful white bushy colonies of Telestacean, so thick they looked like snow. I did not enter so as not to stir up silt for the divers behind. The length of the dive: 71 minutes.

Before each dive we were always well-briefed by our dive masters. I dived mostly with Brett Baker, a 23-year-old lad with about four year's experience living in Central and South America. He proved to be a friendly and knowledgeable dive master, a PADI instructor, and fun to be with--a definite asset for Alan Baskin (even though Baker has threatened to change the name of the operation to Baking-in-the-Sun). I also dived with Daniel, a Frenchman, who was an excellent dive master. Alan and Eva spend the whole dive finding exciting things to show the other divers, and many things that less experienced divers never notice.

I'm tempted to compare these dives with dives I took in the Red Sea a few years ago. The stationary life was alive, abundant and healthy, the many tropicals were varied; the shallow depths provided great bottom time for photographers. Yet, no place is perfect, and here my desire to see larger fish as well remained unfulfilled. Oh, I saw a couple of King-sized barracudas, some large king mackerels and a couple of eagle rays. But they're rare. This is aquarium diving, and the list of what I observed in my week is indeed quite a list: trumpets, puffers, blue, green and grey angels, wrasses, all varieties of parrots, squirrels, bigeyes, hawkfish, harlequin bass, butterflies, french grunts, great schools of creole wrasse, octopus, squid and brittle stars. I found many colorful anemones that often held cleaner shrimp and arrow crabs; featherdusters up to 10 inches in diameter, tube worms of many colors and a couple of banded coral shrimp large enough to have been crossed with Maine lobsters. Sting rays, and moray eels, added some excitement. I also saw hamlets, rock beauties, jawfish, large crabs, fairy basslets, bar jacks, surgeon fish, filefish, glasseye snappers, blue runners, spotted drums, and a hawksbill turtle. I found several small worm-like critters about four inches long, banded alternating yellow and black bands like some Pacific sea snakes; I've been unable to identify them.

Overall, I would say that the diving I experienced was, perhaps, diving for connoisseurs. There are no great chills and thrills, no large groupers, no cruising sharks, no floating mantas. The tropicals are typical, often plentiful, sometimes underpopulated, but nearly always residing among excellent and colorful coral, sponge, and gorgonia landscapes. I found the diving especially fine for photography. My average tank time, because of the shallow depths, was well over an hour.

And shallow depths to fifty feet mean plenty of color from the bright sunlight. But, I must caution that one should plan to visit in January, February, or March. Rain at other times can bring a runoff which can drop the visibility below thirty feet. Should that happen to you, there are plenty of other activities at the hotel to keep you occupied, including tennis, windsurfing, water skiing, horseback riding, evening music and a weekly voodoo show, not to mention shopping trips to the markets and galleries of Port-au-Prince.

The Kaliko Beach Hotel, then, is a destination for the vacation diver who wants good, easy diving, plenty of pictures, hours for relaxation, and the full vacation experience. If that's your inclination, I can't think of a much better place to go--politics or not.

Reservations: One can call or write directly to Alan Baskin, P.O. Box 851, Port-au-Prince, Haiti (telephone 2-5773) or call their stateside reps, Gary and Judy Geiger, 10131 Buffton Drive, St. Louis, MO, 63123 (314/638-9304). Or use any travel agent. Current prices: double occupancy, for 8 days/7 nights, 10 boat dives, unlimited air for beach dives, breakfasts and lunches, and gratuities, \$599/person, through December 16.

Divers Compass: French is the official language, Creole is the popular language, but English is spoken in most shops and hotels....Bring proof of U.S. or Canadian citizenship....Do not miss taking at least one day to visit Port-au-Prince, soaking up the color, culture, and especially the vibrant art....Bring Iomitol or Pepto Bismol since more than one tourist has been attacked by the local bug.... The hotel boutique sells notions, sunscreen, etc....Petionville restaurant LaLanterne offers superb food, beautiful decor, and the proprietor, George Kenn, operates the newest dive operation on the island....A resort course is \$60....Airport departure tax is \$10.

## **Feds Legalize Blue And White Dive Flag**

### ***—Is The Red & White Obsolete?***

"The standard red-and-white dive flag, recognized for years as a caution to boaters, no longer provides any rights or privileges for divers. Federal laws currently require the use of the International flag "Alpha." When diving from a boat a replica of the Alpha flag, at least one meter in height and visible from all directions, must be displayed. Failure to do so deprives divers of any legal rights or course of action against boaters. The law is also in effect in inland waters as of March 1, 1983.

"This new dive flag law became effective for international waters in December of 1981, but has only recently come to the attention of the diving community. Since federal law preempts state laws, it is almost certain that states with dive flag laws will revise them to reflect the new specifications.

"The new law has created a dilemma. The Alpha flag is needed for legal purposes, but its meaning is not widely known. The traditional flag is recognized, but provides no legal protection. Consequently, it is recommended that divers display both flags until such time as the Alpha flag is effective in meeting its

purpose. It should be noted that divers can be cited for failure to display the Alpha flag and that the flag is not flown unless diving operations are in progress."

The above news release from PADI Headquarters arrived in our office a few weeks back causing, as you might imagine, a bit of a stir. Has our diving flag, our very badge of honor, been cast aside by the Feds? Must we use the new flag if we are to be accorded "legal rights"? If we don't display the new flag we can be "cited." My God!

We made 35 phone calls to get the facts for this story. Many of which were made to various officials in the federal government. Barely a soul knew anything about the "new" law.

We finally found Lt. Commander Kent Kirkpatrick of the US Coast Guard, Department of Navigation Lights and Codes, in Washington, D.C. He told us that The International Maritime Commission adopted the Alpha Flag -- a blue and white banner -- in 1972. The U.S. adopted it in 1976 and it took



INTERNATIONAL CODE FLAG "A"

*The new federally approved dive flag*

effect for international waters in July 1977. It became effective in 1980 for inland waters and in 1983 for the Great Lakes. "The effect," he said, "was to unify the International rules, the inland waters and the Great Lakes rules of the road."

Obviously, the flag switch did not happen overnight. But when it *actually* did occur still remains a mystery. A spokesman in the Aids to Navigation Department told us it went into effect December 24, 1980 for International waters, December 24, 1981 for Inland waters and March 1, 1983 for the Great Lakes.

We contacted the US Coast Guard, 12th District Office, in San Francisco to find out if boaters were notified of the change. After being switched around quite a bit, a spokesman responsible for "Notices To Mariners," told us that they had sent out a notice telling boaters on their list that the rules had been changed, but they did *not* spell out the change. Reference was made to "Commandant Instruction #16672.2" and "Navigation Rules, International and Inland." This book is required to be on board any boat 16' or larger. A staffer at the Government Printing Office told us that they were out of stock and they could not tell us when they would have copies available.

Presumably, then, a change in the law would have trickled down to charter boat operators. Our calls to Monterey and Santa Barbara, California, to the Florida Keys and to New York produced only one operator, in New York, who flew both the red-and-white and the Alpha flag. He runs trips to wrecks which "might" be in sea lanes. But he was unaware of the law change.

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*"We've spent a lot of time getting the guys around here to know what the red-and-white flag means and some still don't know."*

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In fact, no one was aware. And they were indeed surprised. The manager of Halls Diving Center in Marathon, FL told us "everyone around here flies the red-and-white dive flag. We've spent a lot of time getting the guys around here to know what the red-

and-white flag means and some still don't know." Roy Houser of the *Truth* (Santa Barbara) said, "hell, if that's what they want we'll get them on our boats, but what about the fishermen who don't know what the Alpha flag means."

It's no surprise that these operators know nothing of the changes. The Government has made little effort to inform them. Lt. Commander Kirkpatrick said he "thought that the information was published in the *Federal Register*" but he was not sure, since "I've only been in the department for about a year." Reading the *Federal Register* is, of course, like reading tax code.

No one in any of several Coast Guard departments we contacted would direct us to any printed material outside the previously mentioned booklet which is currently out of print. We did learn, however, that while it is the law to possess and fly the Alpha flag, so far no one has received an 835 non-compliance citation. So, despite the law having been in effect for almost 6 years in International waters, there has been little if any effort to enforce it -- even though a majority of charter boat diving in the United States takes place in waters covered by those rules. We doubt if there will be enforcement, unless a boat is moored in the sea lanes normally travelled by tankers, freighter or cruise lines. And, if you read the review of New York charter boat diving in the last issue of *Undercurrent* -- where a boat nearly got mowed down by a tanker -- no flag in those lanes would seem to make much difference.

PADI is issuing releases about the potential "loss of rights and privileges." NAUI is making up new decals showing the Alpha flag and having their legal department look into the matter. Frankly, our view is that the impact of the law may be little more than an opportunity to conjure up a sales program for new flags.

As for the legal remedies available if run over by a passing fisherman or waterskier, Ron Young, who specializes in Scuba insurance for the firm of Kelter-Thorner, sees little effect. "On the surface, I don't see any problem," he said. "A flag of any kind in the water or on a boat should serve notice that something is going on. If I have insured the boat for liability and the operator runs a diver down, my company has to defend." A real question is whether boaters in the first place know and recognize the current divers' flag. We doubt it. We are unaware of any state which requires any power boater to pass an examination on the rules to operate a boat under either power or sail. A random selection of six Sausalito boat owners in a downtown bar, found not a one who had heard of a divers flag or could identify its meaning when shown a drawing. In most quarters, we suspect, the flag is less a symbol for "diver down," than it is a badge of identification to slap on an auto bumper or a T-shirt.

The original intent of the divers flag was to serve a

warning. It was designed and developed twenty-five years ago by Ted Nixon and Roy Pearce. In a *Skin Diver* "Guest Editorial" by Nixon in February 1958, he wrote since there was no flag in any country which alerted boaters to divers being in the water, they had designed a flag for that purpose, unfurling it at the Flint, Michigan Sports and Boat Show in March of 1957. They promoted it in *Great Lakes Diver*, and in May 1957, the flag was adopted by the Michigan Skin Diving Council. The state of Michigan officially recognized the flag in 1958 and half a dozen other states have recognized the flag for the waters under their jurisdiction. But the red-and-white dive flag has never received Federal recognition despite 26 years of effort and promotion. And not one foreign country has ever recognized it officially. So regardless of claims, the flag never carried any rights or privileges to begin with.

What the Federal Government has done then, is to attempt to bring conformity to internationally recognized flag codes, and to minimize confusion by

adding inland waterways and the Great Lakes to that code. Ships in those bodies of water often travel to international waters as well.

Some confusion is bound to remain. States have the right to legislate anything that they can get away with in water and territory under their jurisdiction. But like the 55 mph speed limit, the Feds can do what they want in areas of traffic and navigation. So, in lakes, ponds, creeks, and quarries the State laws can apply since there is little if any intrastate navigation. But where there is commercial traffic which must be controlled, the Federal rules rule.

Although commercial craft will be well-advised to fly both flags, we see no reason for sport divers to refit their innertubes (or even the sterns of their Whalers) with the blue-and-white banner. No doubt there will be some effort by some entrepreneurs to profit commercially, but for the time being we're going to keep the old red-and-white standard unfurled here in Sausalito.

## **Exploding Tank Yields \$150,000 Of Cannabis**

*—Shop and Employee Festooned with Resin*

An unwitting scuba diver may have been swimming around the Irish coast, totally unaware that inside his tank was 23 kilos of Moroccan cannabis resin, with a street value of more than \$150,000.

And the luckless diver was also unaware that his spare cylinder had another 16 kilos secretly packaged inside.

The accidental discovery of the marijuana, which occurred when one of the cylinders exploded as an employee of a dive shop was refilling it, has sparked an international search by Dublin Drug Squad and Interpol.

The bizarre story began more than two years ago when Drug Squad authorities staked out Dublin airport, following a tip that two scuba cylinders might contain contraband. They inspected the bottles, but found nothing suspicious, and continued their watch.

Although the two tanks later disappeared from the airport, officials believed that they had been stolen only for their intrinsic value as scuba tanks.

Recently, Des Mulreany who works for the Great Outdoor Store, was visiting their Galway branch and brought a vanload of cylinders to their Dublin facility to be tested. One tank appeared to have a smaller inside diameter than normal tanks, but the serial number indicated it was an American tank which should hold 80 cubic feet. "I knew from my experience," Mulreaney said, "that there was no way that 80 cubic feet would go into those bottles." He sent one to a colleague, Willie Siddel, who tests tanks at his facility in Dalkey, asking him to examine the bottle closely because "I felt there was something fishy about it."

An employee of Siddel's connected the cylinder to a compressor and a few minutes later the cylinder exploded, sending a shower of cannabis resin all over the room, sticking to the ceiling, the floor, the walls...and the employee. He suffered only a minor cut near his eye.

The authorities were called, of course, and upon examination of the second cylinder discovered a false bottom underneath a rubber protection cover. This part of the tank had been cut and threaded and the cannabis resin was then packed like a doughnut around an inner cylinder which held the air.

The Drug Squad interviewed the client who had left the tanks at the Galway shop; they believe that he was unaware that the cylinders carried the cannabis. Another man who sold the cylinders is now being questioned and authorities have now expanded their search from Dublin and Galway to Paris, Morocco, and the United States.

As for the diver who was using the cannabis-laden tanks, with that kind of air contamination he must have seen some remarkable creatures below.

# New & Safer Tables For Sport Divers

## —And Why The USN Tables Can Lead To Bends

In the last issue of *Undercurrent*, we published the first part of this series by Dr. Bruce Bassett, which detailed how the U.S. Navy tables were developed, and explained the incidence of bends for U.S. Navy divers and why civilian divers differ. In this part, Bassett explains his theories behind a more conservative set of tables and provides those tables. His remarks were originally delivered to a meeting of the South Pacific Underwater Medical Society. *Undercurrent* takes all responsibility for editorial changes.



In one study, Dr. Andrew Pilmanis of the University of Southern California used a few divers for controlled open water no-decompression dives to a depth of 100 feet, with a bottom time of 25 minutes and an ascent rate of 60 feet per minute. Some subjects produced intravascular bubbling to a great degree on that exposure.

They found, however, that if they put in a 3 minute stop at 10 feet, it drastically reduced the degree of bubbling. If they put a 2 minute stop at 20 feet and another 3 minute stop at 10 feet they could eliminate the bubbles. This indicates that perhaps the U.S. Navy no-decompression limits are on a knife's edge in terms of bubble production and the risk of bends.

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*"Perhaps the U.S. Navy no-decompression limits are on a knife's edge in terms of bubble production and the risk of bends."*

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The tables were developed and tested to an end point of bends -- not bubbles. After a bend they cut back slightly to produce the final bottom time. It would be tested a few times and if there were no bends it was accepted. But, perhaps 30% of those people were bubbling at that time. When you put those tables into the big world, you must expect a few

cases of bends to pop up. However if you cut back a bit more you can drastically reduce the bubbles so you should be able also to decrease the incidence of bends.

Generally speaking the sport diving instructors tell us not to push the tables. Sport divers are instructed to avoid decompression dives, maybe for the wrong reasons as I indicated in the last issue, but nevertheless I think it is valid.

Various instructors that I have come across in my years of talking to diving groups have come up with their own safety factors. Some take 5 minutes off all the no-decompression limits across the board. Others reduce them by 2%, which actually has a little more logic to it because you end up reducing the shallower depths more than you do the deeper depths, and that in fact is what probably is needed. The other thing that is common among sport divers is that, unlike a navy diver who goes down to the bottom and stays a certain period of time and then comes up, they are up and down and all over. What influence this multi-level diving has on the risk has yet to be determined.

### Revised No-Stops Limits

It seems to me that the right way to go about putting some safety factors into sport diving and to give a definition to not pushing the tables, is to re-design the tables. That is what I have done with my sport diver table, though it is not in its final form yet.

When I flew my men to 10,000 feet after exposures to depth, I had 5-6% bends. That was unacceptable. We still had the problem of giving our military divers a schedule that would allow them to fly immediately after diving. We then reduced the altitude from 10,000 feet to 8,500 feet. Taking a group of men to 8,500 feet after their dive did not produce any bends at all. The result led to our reducing the USN no-decompression limits to those in Table III. These were tested.

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These ratios worked in flying after diving. I am convinced that my dives were equivalent to no-decompression dives. The reduction is about a five minute reduction at the greater depths, a 10 minute reduction in the intermediate depths, and very significant reductions shallower than 60 feet. A 30 minute reduction at 50 feet, an 80 minute reduction at 40 feet and actually putting a limit on the 30 foot dive.

Spencer was able to bend people at 25 feet by exposing them for over 12 hours. I was able to bend 5% if I kept them at 10.75 feet for 24 hours and then took them to 10,000 feet. In this situation the change in pressure was equivalent to being saturated at 22 feet of sea water. The shallowest bend so far.

Table III shows the no-decompression limits that I recommend. I have put them in some publications. I hope the National Certifying Agencies in the United States will start to push them.

I would like to see, along with this, some revision of the repetitive dive system, because something goes when one analyzes the tables. There are anomalies for which I have never been able to determine the cause. But you may run into these anomalies. For example, take a 60 foot dive for 30 minutes with a surface interval of 30 minutes and then another 60 foot dive for 30 minutes. The USN dive tables tell you that one has to do an 8 minute stop at 10 feet on the second dive. The USN tables also say that one could have gone to 60 feet for 60 minutes and gone directly to the surface. The reason this happens is too technical to explain here but I think it would be good to eliminate these anomalies. It is going to be difficult. It may be impossible.

### Recommendations For Sport Divers

Until such time as I am able to satisfy myself that there is a better repetitive dive system my recommendations are to use the revised no-decompression limits.

The question comes up "If you throw in these safety stops, how do you get your repetitive group?" The answer is easy. You count the total dive time for selecting a repetitive group. No-decompression limits are based on bottom time. You come up. You make an additional stop. If you use my schedule 50 feet for 70 minutes, you actually use that 70 minutes. Then you come up and hang on for 3 to 5 minutes at 10 feet. You then take the total underwater time of 75 minutes to enter the repetitive group selection process.

In addition to that I recommend that all dives to greater than 30 feet end with 3 to 5 minutes at 10 to 15 feet. Do I really recommend belt and suspenders to be used together: to lower the no-decompression limits and add a safety stop? Yes. And I do it myself, because sport diving is supposed to be fun and

anyone who has treated a case of bends knows that bends is not fun. Anything you can do to prevent decompression sickness makes a sport of diving rather than it being the pain of diving.



After Dr. Bassett presented his paper at the SPUMS meetings, Dr. Fred Bove, who now writes a regular column for *Skin Diver*, offered these comments about how U.S. Navy diving operations are conducted. They further support the notion that the U.S. Tables are far too liberal for sport divers:

The USN diving tables are pinned up at all dive stations, often in very large print. There are big red "X's" on some tables because the divemasters have found that at certain depth and time combinations, some have a high incidence of bends. One of the notorious ones is 150 feet for 30 minutes. [Even with prescribed decompression.] The USN has experienced about 15% bends with this table so they do not use it any more. There is nothing in the diving manuals that tells you that.

The divemasters seldom use the prescribed depth and time to decompress the diver. The usual practice in the USN is that if they are anywhere near the depth or time limits, they move to the next schedule. Some divemasters will use two minutes, some will use three, some will even use five. That is, if the diver is within five minutes or five feet, or two minutes or two feet, of a limit for decompression, he is decompressed on the next schedule.

The divemasters also will make the table more conservative if the diver is overworked, underworked, in cold water, in warm water, in current, has a tough job to do, was up late the night before, or for anything at all. They will use the decompression one or two steps beyond that of the actual depth and time, to decompress the diver.

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*"One reason there is reasonably low incidence of decompression sickness in the USN is because the divemasters on the dive stations are extremely conservative."*

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So in the USN statistics, the actual depths and times of the dives are often lies. The statistics show an incidence of bends from these wrong dives. When one studies the depth and time log, one finds that the decompression that was prescribed by the tables was not used, but a more conservative one was chosen. One reason there is reasonably low incidence of decompression sickness in the USN is because the divemasters on the dive stations are extremely conservative. They factor in almost anything they can find in the environment to make the tables more conservative.

The USN has certain physical requirements which are fairly stringent. Reserve divers and sailors from the fleet coming into diving are often not fit enough to meet the basic entry requirements for the USN Diving School. Those entry requirements are higher than the average population of, say, 25-year-old sailors. At the diving school, the day begins at 0630 with a four mile run for everybody, then PT exercises --that is, vigorous calisthenics -- timed by one of the divemasters for another half hour before the classroom and the diving begin. This continues throughout the course, eight weeks for the medical officers, sixteen weeks for the second class diver and twenty-four weeks for the diving officer. Everybody, including the medical officers, goes through that. When one graduates from the diving school and joins a diving team, that same routine is followed. Navy divers are generally fit. The master divers somehow manage to extricate themselves from the exercise, but at the same time they do not dive very much. They are up on the platform, supervising.

The USN assigns two people with watches to time the dive and one or two people to watch the depth gauge. So the time is accurate to the second and the depth is accurate to the foot.

Not much of the scuba diving is done close to the no-decompression limits. Most of the scuba diving is done shallower than 30 feet. The USN does not use scuba for deep diving. Most scuba diving is shallow, less than 100 feet, often for short, inspection operations.

All in all, the USN tables are quite successful for military operations where the diver goes over the side, goes down to a depth, does a job, comes back up and rarely does a repetitive dive. There is a dive team on site, so diver number one does one part of the job and diver number two another part, diver number three, and so on. It is rare that the USN does a repetitive dive. It is not routinely used.

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*"Sport divers should be instructed not to dive right to the second of the no-decompression limits because they will get a higher incidence of decompression sickness."*

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With all that, to take the Navy tables and the statistics related to them, with some knowledge of what operational diving in the USN is like and apply them to sport divers, who dive so very differently, is

difficult. I generally tell sport divers to knock five minutes off all their bottom times for no-decompression dives. Bruce Bassett has said to take off more than five minutes at the shallow end, I think that is right. I think sport divers should be instructed not to dive right to the second of the no-decompression limits, because they will get a higher incidence of decompression sickness.

Decompression diving seems to be riskier in sport diving, probably because of the operational aspects. The divers do not do the timing right, and are not prepared for the rest of the requirements. A lot of military and commercial diving is done with surface decompression. When the diver gets to the 30 feet stop, they pull him out of the water and put him in a chamber. So he finishes the dive in a nice warm environment with a cup of tea in his hand. It is not quite the same as a sport diver sitting at 30 feet, 20 feet and 10 feet stops waiting to decompress in cold water with surface action of the waves and everything else.

It is also interesting to look at your depth gauge when there is wave action and you are at 10 feet. Half the time you are at 5 feet and the other half at 12 or 13 feet. So you are never quite sure where your 10 feet stops are.

*This concludes Dr. Bove's response to Dr. Bassett.*

**TABLE III**

REVISED "NO-DECOMPRESSION" LIMITS FOR SPORT DIVERS

DEPTH IN FEET	TIME IN MINUTES	
	USN	REVISED
30	UNLIMITED	220
35	310	180
40	200	120
50	100	70
60	60	50
70	50	40
80	40	30
90	30	25
100	25	20
110	20	15
120	15	12
130	10	10
140	10	5

*Undercurrent correspondents are located strategically in the major diving areas of the world as well as on all coasts and major inland waters of the continental United States.*

*The editors welcome comments, suggestions and manuscripts from the readers of Undercurrent. Editorial offices: P.O. Box 1658, Sausalito, CA 94965.*