

## Moody's Pidertupo Village San Blas Islands, Panama

*Where to get the monkey off your back*

Sitting erect in his potentate's chair, his eyes twinkling, a contented Moody speaks of life on Pidertupo Island, his three-acre domain. Around him sat his guests, drinking coffee, sipping Tia Maria, and eating fresh coconut pie. Most of us had been there for a few days and we were hearing Moody's stories for a second time, but the newcomers listened carefully, fascinated by tales of the rigors of island living, of free diving to 100 feet (which Moody did regularly until "the doctors took a piece of my lung"), and the life of the neighboring Cuna Indians. We each had a chance to tell our own stories, but Moody, whose chair elevated him a full head above the rest of us, was the master of ceremonies. After all, we were guests in Moody's home. We had dined with his family and were now having coffee in their living room. At Moody's Pidertupo Village, Moody is indeed in charge.

In the 1960's, as his wife Joann tells it, Tom Moody ran a miniature golf course in Pittsburgh. He strolled around in medieval archery clothes and a three-cornered hat, with a pet monkey on his shoulder. Although the monkey had no manners and Moody had to change his shirt frequently, Joann found this Moody dandy enough that she swallowed his line about finding their own Caribbean Island, a line she had surely heard before. Only Moody was serious. After searching the Caribbean for a few seasons, Moody discovered San Blas. (The Indians knew the islands were there all along, but Balboa got credit, so why shouldn't Moody?)

Here, off the Caribbean coast of Panama, 365 remarkable little islands, with sandy beaches and coconut palms, provide a setting no travel writer dare to describe--including me. Resident Cuna Indians resisted intrusions by all outsiders, but Moody finagled a fifty-year lease for his island and now operates this extraordinary hideaway of seven comfortable and well-maintained thatched-roof huts. His guests find there is everything to do or nothing to do--and most come to do nothing. With few exceptions, each day is the same, whether Tuesday or Thursday or Saturday or whatever. Usually no one knows which day it is. Or cares.

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6:30 a.m. The mournful putt-putt-putt of Indian Joe, the work boat, signals the departure of guests who had become my friends. I am sad. I watch the room grow light, then snooze awhile, until the putt-putt-putt announces new arrivals from the mainland. I dress and walk to the dock to meet them. It's a big event.

8:00 a.m. Breakfast. Sliced oranges, scrambled eggs, sliced green tomatoes, toast--nothing fancy but enough to stabilize my blood sugar. The guests from New York bring news of Chicago blizzards, Rockefeller's death, riots in Iran. I listen eagerly, since I've heard no news since the last newcomers arrived three days earlier. But now I wonder why I care about these events. Here they have no meaning and I have no perspective. Or is it that I do have perspective and that's why they're meaningless?

9:30 a.m. My buddy and I board Moody's 30' twin diesel. Three snorkelers and a couple come along for the ride. The seas are unseasonably calm, so we'll get to the best outer-reef diving, normally accessible only from April through October. After the 45-minute trip, Moody explains his dive plan and, he says, if we care to follow we won't have to worry about decompression. We follow.

The bottom begins at 40' and, although the day is clear and the sun hot, the visibility hovers around 80'. We drop through a hole in the reef and begin weaving through the many canyons and cuts. At 75' we explore the sheet-coral wall as we go. Black coral is abundant. As the terrain levels, mushroom-shaped coral castles rise among the sponges and the low-moving soft corals and it is all a fairyland. Later Moody says this is one of the best of his many dive sites. Coral gardens, it seems, are the highlight of Pidertupo diving.

Moody foregoes the second dive, but suggests an itinerary for us and tells his Cuna crew member to follow our bubbles by boat. I ask Moody how much time and at what depth, and he says, "Whatever you want." At Moody's you take care



of yourself. We cruise at 50 feet, this time paying more attention to the fish. Yesterday, at a different spot, we had watched three large eagle rays glide by, but today we content ourselves with stoplight parrot fish, blue and yellow tangs, a couple of grey angels, and, in a small cave, a host of glassy sweepers. Fish life is neither profuse nor unique, but it is certainly adequate; it is the scenery that carries the day. Colorful crinoids spread atop basket sponges (yesterday Moody, tank and all, had climbed into one), tube sponges, and gorgonia. Macrolife is magnificent. Nowhere have I seen more colorful and plentiful Christmas tree worms or larger tube worms. When the dive ends, the boat is above, and we are picked up for the ride back.

1:00 p.m. From the buffet I take a bowl of bean soup and hot homemade bread, and return for seconds. Then I go for several hunks of the unique cheeses, a handful of olives, and spaghetti, passing by the remnants of turkey a la king from yesterday's lunch which had been remnants of the full turkey dinner served the day before. We sit eight at a table and tell the guests who did not take the cruise

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what they missed. Two marvelous Cuna Indian ladies, dressed in their many colors, set up chocolate-chip cookies and coffee in the adjacent lounge area.

2:00 p.m. For an hour the only sounds on the island are the snores of satisfied customers, as the people of Pidertupo nap.

3:00 p.m. The sound of the generator announces the resumption of life; the air is too calm to power the windmill. I run to the dive shack to plug in my strobe for the 90-minute charge I'll get. And I face the only decision of the day. Indian Joe is departing for a Cuna Village a half-mile away, where we can buy molas, colorful Indian reverse-applique blouses, objets d'art. I contemplate beach diving, but visibility has been 50' or less. The coral is moderately interesting--there are spreads of antler and elkhorn coral--and, although the marine life has been only average, there have been some surprises--jack-knife fish, thousands of minnows, which part when I pass through and reconvene behind me, a tiger's tail (an odd, elongated relative of the sea cucumber), and a four-foot nurse shark, which seems to hang around. Nevertheless, I won't pass up the village. Perhaps I'll snorkel a bit when I return.

Cuna women, their faces painted with single stripes down their noses, leading to hanging gold rings, offer their brilliant molas of birds and boxers and fishes and gods. Some are \$10, some are \$15, a few cost more. I buy a bird, then stroll about to observe the close quarters, the shy and giggling children, the way of being of these Cuna Indians. At the pier, rugged sailors from Colombia are loading their sailing ship with coconuts, which they received in trade for cloth and other staples. Cuna men are returning in their wind-powered cayugas from a day of fishing or farming. These are gentle people, living in an unchanged, primitive culture. For the first time in my days I have seen simple life, life as it once was. Somehow I miss it.

6:30 p.m. After a cold shower and an hour on my deck watching the sun set over the Panama mainland three miles away, I stroll the 100 yards to the dining area (my cottage is the farthest away), where guests have gathered for cocktails. I pour my own and mark it on my bill. At 7:30 we sit down to dinner, Moody at another table and at my table, Joann. More political and less philosophical than Tom, she decries the Christian missionaries who hound the Cunas--"the two islands where they've been now have bars to sell liquor and jails for the thieves they've created." She condemns the U.S. for having backed out of Vietnam and failing to stop the Communist menace. I plead for consistency in logic, suggesting there may be little difference between religious and political proseletyzing, but I am not heard. There's salad tonight, which is not common here, canned corn, scalloped potatoes, and tasty meatloaf. For tomorrow Moody promises lobster, which we will hunt. Joann explains that their cook has been expropriated by missionaries and that their cuisine suffers. I had hoped for more culinary excitement, and especially more Central and South American dishes, but I eat heartily from what is generally good old American farm cooking. After all, Pittsburgh has never been the home of haute cuisine. Frankly, just keeping the kitchen going this far from civilization is a remarkable accomplishment.

8:00 p.m. To the couches we go for homemade soursop--wow--ice cream, and coffee. Stories are spun and respun. Moody heads to bed at 9:00, and I try, with a fellow guest, a pocket game of computerized football--but the electronic beep belongs only in a less tranquil setting. I return to my cabin through the darkest night I've known, using the house flashlight to avoid fallen coconuts.

10:00 p.m. I try to read, but the propane light flickers in the wind. In a moment a tropical downpour begins, and I fasten the shutters. I wonder if the hut will survive the storm, but not a drop of rain enters the thatched roof.



The noise of the rain and wind ceases, and now I hear only the waves tapping the beach six feet from my door and the contented sleep of my paramour. Tomorrow is another day and I have nothing to do. I can hardly wait.

One other tour: On demand, Marijo leads adventurers into the mainland jungle for a four-hour trek. It is indeed jungle primeval--I doubt that there is a road for 30 miles. We hiked for a mile, past a covered Cuna graveyard--remnants of past life rest on the mounds--and near cultivated Cuna land. We waded in and swam up a cool stream for a half-mile, then returned by sliding down waterfalls and jumping from 12-foot banks into limpid pools. It almost beat diving. I became a kid again.

Please understand, by the way, that Moody's is not a dive resort; it is a retreat which just happens to have pretty good diving. The boat is crowded with four divers (although there is room for nondivers), and it would be difficult with six--the preferred maximum. Snorkeling is excellent (one all-day trip included current-riding and exploration of mangrove life), and other guests have the same right to seats as divers. If more divers show than the boat can handle, then diving off the Pidertupo beach is an alternative. Moody is dependable, but, when Joann calls the refrigerator repair man to get the freezer working and he doesn't show up, the chore is Moody's, so the boat may not run at all. Divers headed to Moody's must indicate, when making reservations, that they intend to dive.

The hard facts: Winter rates are \$90/day/double, \$75 in the summer. Only the bar bill and scuba dives (\$6/tank, pack and weights) are extra. Add a 15% service charge. Low fare from Miami, round trip, to Panama City is \$192; from New York, \$336. Panama-Pidertupo is \$30/rt and 25¢/lb. for baggage over 25 lbs. Carry back-up dive gear out of necessity, but go light on clothes; daytime attire is shorts; nighttime is cotton pants, light dresses--no shoes are allowed in the dining hall even during dinner. The Pidertupo flight departs at 6:15 a.m., and Ken Richards, Moody's taxi guide, will pick you up at your hotel. When you return at 7:30 a.m. he'll drive you to breakfast, give you an intelligent tour of Panama City and the Canal (\$25 for 4 hours), or take you directly to the main airport (\$12); his telephone number is 24-9571. Write Moody's for reservations at Apartado 6-4092, El Dorado, Panama City, or (at no extra cost) deal with their stateside rep in New York: Hanns Ebensten Travel, 55 W. 42nd St., New York, NY 10036, (212) 354-6634. We successfully used, in California, Tom McEachern at Mill Valley Travel, 170 E. Blithedale, Mill Valley, CA 94941, (415) 383-5140. Moody's is closed May, June, Oct., and Nov. For more information, see the Winter Issue of Sport Diver.

P.S. After rereading my story, I wonder if my effort to be objective has hidden the warm feelings I harbor about Pidertupo. The Moodys, a hospitable family, have a well-managed and superbly-maintained hideaway. In its unparalleled tropical setting, Pidertupo is a place we all owe ourselves once in a lifetime.

## **Ocean Survival for Divers**

### *Techniques for staying alive until the helicopter comes*

Three winters ago, two divers spent nearly seven days floating in a small life raft off the coast of Australia before they were located and rescued. Their 21-foot dive boat had sunk, but they were prepared and able to survive.

A few months ago, two snorkelers in Hawaii found themselves carried to sea by a surprise current. Their

efforts to swim ashore proved futile, and they soon became separated. One was rescued in a few hours, but the other spent the night floating at sea and was not rescued until morning. They were lucky, but their luck was aided by little pieces of knowledge about ocean survival that they had learned long ago.

Would you fare as well?



Surviving at sea begins with the *will to live*—often the deciding factor in the face of overwhelming odds. When the will to live vanishes one simply gives up, and death can follow quickly.

The will to survive is rooted in the psyche of each of us. It is stronger in some than in others. No one knows its depth until called upon to use it. However, the will to live can be strengthened if a person knows how to take care of himself. He may increase his confidence in his ability to hang on, and therefore have a greater chance of surviving while awaiting rescue.

### **It Will Never Happen To Me**

It's not difficult to do a little homework in order to understand survival techniques, but who does it? After all, we can't imagine ourselves ever facing the horrifying experience of floating alone, adrift from the world, lost, perhaps, forever. "It will never happen to me," we say.

Indeed, we hope not. Nevertheless, read on.

### **Adrift In A Raft Or A Boat**

The odds for survival are much greater for the victim adrift on raft than for one fully immersed in the water. A raft provides some degree of shelter from the elements, and helps in water collecting and rationing, food collecting, and signaling for help. So a primary rule of boating is to carry some sort of rescue raft, outfitted for emergencies. For divers, most inflatable boats well fit the purpose.

In the event of a boat loss, the following points should be remembered.

- \*Stay upwind from the craft to avoid fuel on the water. Remain in the vicinity until the boat and debris are no longer visible from the air.

- \*Check rafts for leaks and chafing. Bail it out. Be careful not to puncture it. (Hopefully you had previously attached repair plugs.)

- \*Inspect all debris and salvage all rations, containers, seat cushions, and clothing, for eventual use. If no life raft is available, try to construct a floating raft out of debris.

- \*Administer first aid, if necessary, and seasick pills, if available; prevention of seasickness prevents vomiting and subsequent dehydration.

- \*Analyze your situation and plan your course of action. Keep calm to conserve your energy. Most rescues happen within a few hours, but prepare yourself physically and mentally for a longer stay.

**Exposure:** The first problem to overcome is exposure to water and the weather. As much as possible, you must stay dry and warm; once you are wet, your body heat drains faster. Replace wet clothing, or dry out what you have. Seek shelter from the wind and direct sun. Wear your wet suit if you have salvaged it. Shivering is the first sign of chill; once un-

controllable shivering begins, the victim must be warmed up.

Excessive sun exposure accelerates dehydration and leads to a number of sun-related difficulties. Dampen your clothing in the ocean to cool yourself and to conserve body water. Keep covered as much as possible.

**Seasickness:** Seasickness is nearly impossible to avoid when you're afloat on a raft. Aside from the miserable discomfort, vomiting takes precious body water and accelerates dehydration. If seasick pills are not in the rescue kit, then not much can be done. Some people are successful in reducing the symptoms by concentrating on other thoughts or on specific tasks.

Getting into the water (as long as you're not too weak to get back into the raft) may help. When seasickness is likely or prevails, food should be rejected. For most people, however, overcoming seasickness will require patience and slow adjustment.

**Water:** Some people believe that salt water can be used as a supplement to or substitute for fresh water, but research has led the United States Air Force to conclude that salt water should not be drunk. They believe it upsets the chemical balance of the body and increases the need for fresh water, which the body craves to flush the salt from it. Apparently, however, if one expects rescue soon, a small amount of salt water to supplement fresh water can increase one's energy. Some people also believe that urine can be used as a water substitute, but the Air Force has concluded that the liability of reintroducing the waste product into the body is not overcome by the value of the water in it.

Because one can survive much longer without food than without water, the USAF believes that, if no water is available, food should *not* be eaten, because it increases the need for water. The juice from a fish, for example, is considered food, not water. The Air Force recommends that, unless one drinks two quarts of water a day, food should be avoided.

Fresh water may be gathered during rains in any kind of container, including the bottom of the boat. Those who have planned ahead may have been able to salvage their portable solar still, which converts salt water to fresh water with the aid of the sun, or their desalter kit, which uses chemicals for conversion.

**Food:** Because of the primary need for water, obtaining food is a problem only if water is available. If water is acquired, fish, birds, and seaweed can be eaten, but follow a few guidelines.

As a general rule, any salt water fish which is edible cooked is edible raw. Rule out any dangerous-looking fish; the best advice may be that if a fish doesn't look like what you think a fish should look like, then don't eat it. If it swells up (e.g., a puffer fish, if eaten, may be fatal), has a box-like shape, or



has spines or other odd features, don't eat it.

If you know the fish is edible, proceed with small bits of the flesh, but don't eat the skin, head, roe, or internal organs, and don't eat a fish which has spoiled. If you question the edibility begin with a small sliver of the flesh. If it stings or tastes bad, discard it. If it seems okay, swallow it and wait an hour. If there is no reaction eat about half a teaspoon and wait twelve hours. If no symptoms occur, the entire fish can be eaten.

Obviously you'll employ any method you can to catch fish, but bait is often a problem if you have a line for fishing. Sometimes fish can be lured to the boat at night with a flashlight, and then caught by hand or lifted out of the water in a container held below the light.

All birds are potential food. They can be caught with baited hooks, triangular pieces of metal dragged through the water, or with a noose. If you remain still enough, you may catch a bird perching on the raft.

Of the 2,000 varieties of seaweed, two-thirds are edible. Most brown, green, and red seaweeds are edible, and many, such as kelp, irish moss, and laver, have been staples in the diets of many peoples. Inedible seaweeds are often not toxic, just unpalatable or indigestible. Test seaweed just as you would fish, beginning with only a sliver. Even when you have determined that it's edible it should be eaten in small quantities, because, until the stomach is conditioned, large quantities may be violently cathartic. And, when collecting seaweed, don't overlook the small edible creatures which may be hiding out in it—fish, shrimp, and crabs.

*Other hazards:* Salt-water sores are common; keep them dry and use antiseptic, if available. Do not squeeze them. Sore eyes often result from glare and salt water; keep them covered and rinsed out, if fresh water is available. Constipation is normal. A shortage of water may make urinating difficult; darkened urine is normal.

The danger of sharks is mostly imaginary, but, to be safe, reduce the stimuli in the water (for example, cut fish or splashing feet).

*Rescue:* Being sighted on the open ocean may be difficult. A raft stocked with critical rescue devices can make the difference between life and death. Radio batteries should be fresh. Night and day flares are cheap and easy to store. A salt-water-activated light lasts longer than a flashlight. A sea dye marker produces a bright green trail behind a raft (but don't use it if the seas are rough and the light disperses quickly). A mirror is one of the best daytime rescue devices, since it can be seen from far away and won't wear out.

The key to rescue, then, is preparing yourself ahead of time with a raft and necessary gear. If the gear is not well secured, it can be lost when the raft is being inflated or if it capsizes. When in the water,

keep it secured but handy.

Finally, to be prepared one should have a personal survival kit, the contents of which we leave up to the individual. A knife, matches in a waterproof container, fishhooks and line, needles, a small first aid kit, signaling devices, and candy might be included. A plastic box sold by Pelican, Inc., which is bright yellow and watertight, and floats with 5 lbs. of weight, is a good container for items of survival.

### When There Is No Raft.

Being adrift in water without a life raft poses its own serious problems. If a diver has flotation—a wet suit, a BC (which he had aboard, slightly inflated, so it would float if anything went amiss), a cushion, or a piece of debris—he'll be able to conserve the energy he would otherwise expend maintaining his buoyancy and breathing.

However, hypothermia—the effect of cold on the body—is far more serious. No matter in what ocean of the world a diver finds himself floating, the water temperature will eventually drain body heat and therefore his life.

### HELP

The Heat Escape Lessening Posture (HELP), if properly employed, will substantially increase one's survival time in cold water by protecting those areas which have a relatively high heat loss—particularly the chest and the groin.

Floating in the water, the survivor pulls his knees to his chin, in a manner similar to the fetal position. He presses his upper arms to his sides and either folds his forearms over his chest or grips the neck of his BC.



Three or more people in the water should huddle. They should put their BC's on their backs and then press the sides of their chests, groins, and lower body areas together, while wrapping their arms around each other. Along with slowing heat loss, this has the additional psychological advantage over floating alone, which may quickly bring depression, panic, or both.



In cold waters of the Atlantic and Pacific, fishing boat crews now use neoprene drysuits (called "survival suits"), which they can slip over their deck clothes for both warmth and flotation. These suits have saved the lives of people who have floated for hours in waters as cold as the Bering Sea. In warmer waters, where the diver will have some chance of survival, he can assume the so-called HELP position (see insert), by which he will minimize his heat loss by covering the most susceptible areas.

A number of tips can help the solo diver survive. If there is water aboard his sinking craft, he can put a quart or more into his BC before he has to hit the water—he'll still have adequate buoyancy. If he is in sight of land and fighting a current, he should swim at an angle and tack, as a sail boat might, to get through the current. He should not confront it directly. If he has his diving gear, he should use the chrome

or the glass of his faceplate as a reflector. He should do his best not to take in salt water. He should carry a whistle, because if he becomes dehydrated he will be unable to yell. He should carry a salt-water-activated back-up light on night dives.

And, most of all, he must maintain his will to survive. This article does not prepare you for survival—it only provides ideas about how to prepare yourself. In such terrifying circumstances as being lost at sea, the will to survive may be the deciding factor. If you have come prepared, your will may get that added boost you need to survive.

John Duggan, the author, has had sixteen years of experience as an Air Force Survival Instructor. He is a NAUI and a PADI instructor, and has been diving for 16 years. He teaches diving in Spokane, Washington, and regularly makes the 250-mile trip to Puget Sound to certify his students. This article is a version of the paper he delivered at NAUI's IQ 10 Conference last November.

## The Products of 1979

### *Hues are a ruse but there's other good news*

At the end of January, scores of diving equipment manufacturers and distributors displayed their wares in New Orleans at the Diving Equipment Manufacturers' Association (DEMA) convention. As at any convention directed at retailers, the wholesalers were offering special bargains and cut-rate deals, and more than one dive-shop owner told us that he had made some pretty spectacular wholesale purchases in the dying hours. Hopefully, some of those savings will be passed on to the sport divers who keep this whole business boiling.

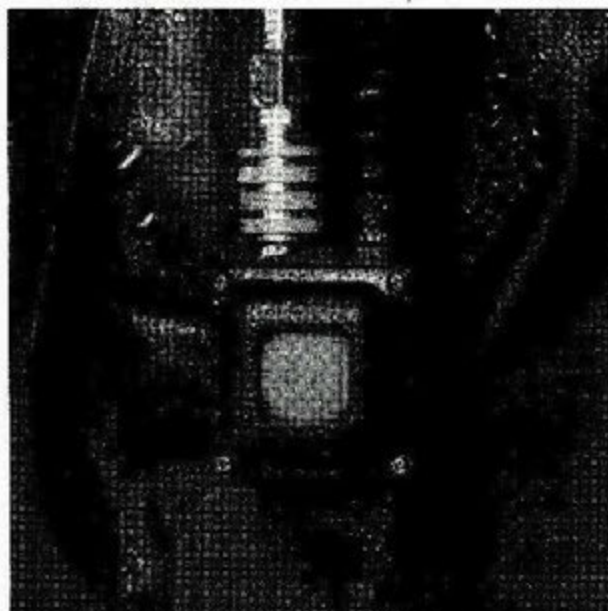
We weren't there for the deals, but rather to find out what's happening in new products, and we found there to be a couple of noteworthy introductions.

Foremost, however, as consumers entering the convention hall, we were awestruck by the range of colors which have blossomed in the industry and brought it alive. Of course there had been some introduction of color into the basic-black industry over the past few years. A few products like the U.S. Divers red, white, and blue fins—didn't do so well. Others—like red wetsuits and blue drysuits—have become popular. But now that the dive industry has decided to employ a range of colors beyond the imagination of Yves St. Laurent, divers may coordinate by color their fins, masks, snorkels, suits, BC's and so forth, coloring themselves from powder blue to puce. A chocolate suit, complemented by the bright red Zodiac inflatable now being marketed, would be a knockout.

Why all the color? Well, it surely enhances the vistas created for the underwater photographer. And it might attract people to the sport who previously

didn't see much advantage in looking like a WW II frogman, all black and depressing. Furthermore, if we may offer a note of cynicism, as our readers have come to expect us to do, bright colors might get a few divers who already own decent gear to dump it prematurely in favor of keeping up with the Joneses, who, in their new spring outfits, will look simply smashing.

Yet, for all the color, two products stood snorkels above the others in real value to the diver. The first, the Dacor Dive Computer, we previewed in the last issue. If it works as Dacor claims, those who want



SCUBAPRO'S AIR II—A COMBINATION INFLATOR AND OCTOPUS REGULATOR



all-electronic diving will have in it their ultimate instrument.

The second, from Scubapro, is a combination power inflator and octopus regulator, which eliminates the need for a separate octopus and therefore the extra hose. The AIR II (Alternative Inflation Regulator) will sell for less than a power inflator and an octopus second regulator purchased separately. A great idea and welcome contribution to the industry, it once again demonstrates Scubapro's continuing leadership as an equipment innovator. The AIR II should be in dive shops by summer.

At DEMA's convention, Scubapro also confirmed what industry insiders had known for some time—they have halted production of the Pilot Regulator, the regulator that many divers had believed to be the best on the market. A Scubapro

spokesman told *Undercurrent* that too many were being returned to dive shops for tuning up and servicing, a reflection of the sensitivity of the regulator and the failure of divers to give the complicated device the tender loving care it required to keep operating efficiently. In its place Scubapro will soon offer a new design which, they claim, will approach the efficiency of the Pilot, but it will have one-third fewer parts and, therefore, reduced sensitivity.

For the first time, foreign manufacturers were invited to DEMA, and shortly American shops may begin to sell such products as Typhoon regulators, Fitz-hugh wetsuits, Tabata BC's, Spartan tanks, and Nautilus Pressure gauges, from Canada, England, Australia, Italy, and Japan. Of course, some products marketed under the name of Dacor or Scubapro or Seaquest are manufactured abroad, but

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## Tax Deductible Dive Vacations in the Name of Science

One way to lower the high cost of a tropical dive trip is to join a scientific expedition under the auspices of a nonprofit organization. The overall trip is generally less expensive than a similar resort trip because the accommodations may be dormitory and the food less than gourmet.

More important, however, is that the cost of the airfare and entire trip package (which includes lodging and meals) is *tax deductible*. If you are in the 25% tax bracket, the effective cost of a \$1000 trip becomes roughly \$750.

And most important, you learn a great deal about the subject you study and make a contribution to the continued health of the ocean and its inhabitants. Many readers who have shared their expedition experiences with us say they could never stand to go back to a *boring* dive resort.

Here are two organizations and several trips coming up in 1979. Write for the complete brochure. The quoted price does *not* include transportation.

University Research Expeditions Program, University of California, Berkeley, California 94720.

*Marine Lakes of the Palau Islands: A Study of Unique Biological Communities.* Participants will collect and measure fish from several lakes, record data on nutrition, age and growth and make underwater behavioral observations. The lakes are surrounded by dense tropical forest, fed from the sea and, in some cases interconnected by underwater passages. November, 1979 (possibly May), \$1100.

*Coral Reef Ecology, Discovery Bay, Jamaica.* Participants will collect samples of algae, coral and reef dwelling invertebrates, measuring light intensity at collection site. Purpose is to understand growth, reproduction and ecology of reefs. Three, three-week summer sessions, \$975.

Earthwatch Research Expeditions, 10 Juniper Road, Box 127, Belmont, Massachusetts 02178.

*Dugongs of Shark Bay, Denham, West Australia.* Participants will observe and record feeding, resting, traveling, courtship, mating and calving of dugongs (also called manatees or sea cows) with underwater voice communication gear, still and cine photography and audio taping. Three, two-week trips, summer, \$1125.

*Historic Shipwrecks at Looe Key, Florida.* Participants will identify (but not remove) anchor, cannons, hull structures, ballast deposits, etc. of unidentified vessels. Two, two-week trips, summer, \$975.

*Evolution of Coral Reefs, Bonaire.* Participants will map the reef cavity system and collect samples of the many groups of plants and animals that inhabit the reefs. Teams will explore fossilized reef cavities. Two, two-week summer trips, \$950.

*Hawaii's Colorful Mollusks; Honolulu.* Participants will photograph, collect and study chitons and nudibranchs. June 28-July 19, \$975.

*The Elusive Octopus; St. Josephs Bay, Florida.* Participants will chart distribution, make day and night observations and collect specimens of the pygmy octopus. October 7-24, \$575.

*Coral Reefs of Granada.* 1977 Earthwatch expedition unexpectedly discovered dead and dying reefs. Participants will be taught techniques of coral survey, sediment coring and flow study while cataloguing reef flora and fauna. Two two-week trips, September and October, \$900.



now we may begin to see other products sold under their own trade names.

In the next couple of years, the sport diver will be confronted with a much wider range of products from an increasing number of manufacturers and distributors. In theory, that should increase competition and reduce prices, but in an inflationary economy we expect prices to continue to rise—perhaps a little less than the rate of inflation, but nevertheless still to increase.

More important, the diver, faced with new choices, will require more information to help him make his decision. How do you choose from among the regulators by Dacor, Tabata, and U.S. Divers? Which of the wetsuits will be most reliable? Those are difficult questions, and, with prices increasing,

divers will need factual information more than ever.

In the main, the DEMA show gave the impression that the dive industry is alive and well. Although some companies seem to be thinning out their lines to reduce costs, in sight of the projected recession, new products and new companies continue to appear. The rise and fall of companies will depend on the number of divers annually attracted to certification courses and their subsequent equipment purchases. Although we old-line divers, might like to think that our needs control the market, the industry survives on a high volume of newcomers—unless, of course, the manufacturers can persuade us to switch from our old BC's to new wrap arounds, or to discard our perfectly good but ugly wetsuits for that newer model in shocking pink.

## The Psychology of Diver Stress

### *Taking an imaginary shark seriously*

U.S. Navy divers are often called upon to perform strenuous work under difficult diving conditions. Not only must they be physically and mentally capable of responding to emergencies, but also they must be able to cope successfully with circumstances which, if left unchecked, can lead to severe psychological stress.

Familiar examples of stimuli that can trigger stress are the appearance of a great white shark or the sudden development of a 5-knot current. Even the *thought* of being approached by a hungry great white shark while in the water can be stressful.

Stress, however, also has a major cognitive component where the diver *feels or perceives* an endangering circumstance. For example, in the midst of a 150 foot dive, the realization that reasoning is becoming affected by nitrogen narcosis can be stressful. This threat may lead to stress that is as debilitating as that arising from an approaching shark.

An example of psychological threat familiar to many Navy divers occurs during the harassment portion of Navy scuba training. Although this harassment takes place in shallow depths with minimal physical discomfort, it forms psychological stress which makes this phase of training one of the most difficult for many diver candidates. For, not only must the diver be physically capable of handling emergencies, but he must also be able to cope successfully with the psychological threat of losing his air, equipment, and dive buddy, as well as the apprehension he feels at the prospect of drowning.

Most Navy divers are intuitively aware of individual differences in reactions to stressful diving situations. Why do some divers remain calm and collected in the presence of dangerous marine life, yet

others display extreme agitation?

The behavior displayed by a diver is generally determined by that diver's previous learning history, biological temperament, and the particular environmental setting in which the diver finds himself. Stress is an interaction between the diver and the situation—not either alone. Any stimulus may be stressful in a given situation for a particular diver. Except for extreme and life-threatening situations, no one stimulus is stressful to all divers exposed to it.

Behavioral indicators of stress take many forms. Often a diver will verbally indicate his stress prior to the dive. A diver may complain of various physical ailments such as headache, nausea, insomnia, or stomachache. Other divers may notice increased hostility or irritability. The affected diver may engage in gallows humor—joking about the possibility of severe injury or death in the water. Anxious divers may verbalize strong concern over relatively routine matters or problems easily corrected.

Physical manifestations of diver stress may include profuse perspiration, pupil dilation, and tremor (shakes). The psychologically stressed diver may fumble inefficiently with his gear and seem "all thumbs." Changes in mood are often present: the normally out-going, life-of-the-party diver suddenly may be withdrawn and quiet. Similar changes may be apparent in normally quiet individuals who become extremely active. Once in the water, a diver who is experiencing stress may display jerky, abortive movements, as well as frequent glancing at the surface, equipment adjustments, and communication checks. Increases in air consumption and heart rate may also occur.

Individual divers cope with stress differently.



Some joke. Others become aggressive and attack the source of stress. Aggression may be verbal or physical, subtle or obvious. Some avoid contact or prevent contact with the potential source of harm—e.g., not thinking about something or not diving where there are sharks. Some do nothing at all and become resigned to the circumstances. (In extreme cases, as reported by near-drowning victims, there is no panic when all exits seem closed.) Of course, the best means of coping is to strengthen personal resources against potential harm—proper physical conditioning, advanced training and experience and preventive equipment maintenance.

Divers who cope successfully with psychological stress generally possess an accurate perspective of the risks and benefits attendant to diving and actively seek out the latest information regarding diver equip-

ment, training, and safety. They express freely both their positive and negative feelings and can tolerate frustration. When faced with a difficult problem, they break the problem into manageable bits and work through them one bit at a time: they accept assistance from others and show flexibility and willingness to change. Successful divers are in tune with their physical state, can pace themselves, and are able to recognize the onset of fatigue and the accompanying tendencies toward disorganization. Finally, divers who can cope with psychological stress have a basic trust in themselves and possess a basic optimism about life.

This is a version of an article appearing in the winter issue of *Faceplate* (the official magazine for U.S. Navy divers) by Lt. Michael Curley of the Naval Medical Research Institute.



You'll never learn from us the name of that big dive company that just discovered one of its top employees had slowly pilfered six figures worth of gear to sell on his own little black market. Of course he's innocent until proven guilty, but he is no longer employed and the local gendarmes, according to company sources, have pressed charges. Why this misguided soul began expropriating goods is a mystery to the company and the industry, since he had a bright future and was one of the real engineering experts in the business.

*Sports Illustrated* reported recently that the waters off New York and New Jersey were aswarm with jellyfish this past summer and may very well continue to be so because man continues to overharvest the ocean while he pollutes it. The only Atlantic predators of the jellyfish are giant ocean sunfish and sea turtles. Why these behemoths eat jellyfish, which are only 3 percent protein, is a mystery, but some scientists speculate that perhaps the jellyfish contains some unknown growth stimulus. The loggerhead turtle, which reaches 1500 pounds, seems to get high on the Portuguese man-of-war. After a meal, loggerheads "have blood shot eyes and are oblivious to the approach of boats."

We recently received a press release which will be absolutely meaningless to anyone who has not met the redoubtable subject:

In keeping with a long history of firsts, Cap'n Don Stewart of Aquaventure/Habitat on Bonaire announces the installation of the first popcorn machine in any dive station anywhere in the Caribbean.

The machine was recently installed in Habitat's new dive station, known as 'La Shack.'

"As far as I know we are the first dive La Shack to have a popcorn machine," Cap'n Don boasts.

The popcorn machine will be waiting to serve thirsty divers returning from reef trips. It is also conveniently located near the bar.

*In These Times* newspaper recently carried an article by David Helvarg on the military use of Dolphins. He reported that congressional testimony recently disclosed two CIA plots to kill Fidel Castro. They involved "impregnating Castro's wet suit with poison and planting a booby-trapped conch shell in an area where he dived in the hope that he would detonate it as he picked it up off the sea bed."

Jim and Cathy Church, two experts in underwater photography and equipment, have sent us this observation: "Too often a diver will go into his local shop for a half-hour or more of free advice about photography equipment, then order it from a discount mail house to save a few bucks. To add insult to injury, he may go back to the shop for more free advice after the equipment arrives. If a shop is used as a source of free information, it's only respectable for a person to buy from that shop. If it costs a couple of bucks more, chalk it up to the cost of consultation and the free coffee consumed."