

Undercurrent®

The Private, Exclusive Guide for Serious Divers

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Palau, Micronesia

—Palau Aggressor, Sam's Dive Tours, Splash Dive Center

Dear Reader,

Last fall we ran readers' comments about the Sun Tamarin, a motor sailer that had been plying the waters of Palau for many years. While our readers liked the boat, they indicated that due to aging and disrepair, mechanical problems disrupted trips. Carl Roessler, owner of Sea and See Travel who books the boat, cried foul, saying that the boat had been repaired and was back at sea. So, we sent one of our writers to find out first hand. Yes, it was aging rapidly, yes it had been repaired, and yes the diving was great. Yet, shortly after our reviewers visit, the Sun Tamarin sailed from Palau, having been sold to a private party. So, no review here, folks.

Thankfully, there's a lot else happening in Palau, thanks to just about the best fish life in the South Pacific. The Caribbean pales in comparison.

Roughly 60-some nautical miles from stem to stern, the entire group of islands, from Kyangel and Babeldaob in the north to Peleliu and Angaur in the south, lies within a complete barrier reef structure roughly 150 miles in circumference. Now, that's a lot of reef! So, let's look at other options for diving - the Palau Aggressor, which our reviewer booked in May, and land based diving, visited in another season, last October and November.

Ben Davison

—Napoleon Bonaparte and a yellow wall

"So when are you going to show us some fish?" I asked our dive guide as I climbed into the Palau Aggressor's broad-beamed skiff.

"Appropriately," he laughed. We'd just drifted along a steep wall through clouds of jacks, sennets and snappers, accompanied by a dozen sharks lurking on the

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sidelines. We'd ascended to our safety stop through a mass of barracuda, a shimmering galaxy rotating dreamily on the axis of our bubble streams. Dogging us on the dive was a three-foot Napoleon wrasse named Bonaparte, hopeful for a free lunch.

The Blue Corner is the island chain's most popular site. Considered a high voltage current dive, on this particular morning it was benign, nearly current-free. I was able to sneak up on a cleaning station to watch a gray reef shark being groomed, its jaws agape while a small wrasse picked its dentures. Two other sharks waited patiently for their turn.

Only two days later, Blue Corner lived up to its reputation as we rode a three-knot current along the wall's 30-foot crest; just where the wall bends, the dive master motioned for us to grab the substrate and watch the passing parade of sharks, dog-toothed tunas, the occasional turtle. Like a clown darting into the audience to playfully harass a spectator, Bonaparte appeared suddenly and tried to twist the lens off my buddy's camera.

Most dive sites are on the outer edge of the Palau Lagoon with vertical walls falling to nowhere. Some are decorated with Technicolor soft corals and twelve-foot yellow sea fans. Where the wall makes a sharp turn, like at Blue Corner, sharks and other big pelagics are almost guaranteed.

I came away from Palau with an appreciation for the variety of diving experiences crammed into a single week. Besides drifting the awesome walls, we explored gently terraced, stony, coral gardens, negotiated long dimly lit tunnels, and examined relics on a newly discovered Japanese warship. We also kicked through successive chambers of a cave hung with stalactites, snorkeled in a brackish jungle lake through a myriad of orange non-stinging jellyfish, and dropped in on a manta cleaning station (yes, they were there, twice).

At Ulong Channel, I jumped off the stern into a fish convention. Five species were schooling at the wall's crest: scarlet big-eyes, three species of jacks, and the elegant spadefish. Each school, numbering in the hundreds, was tightly packed, presenting a solid wall of fins and scales shutting out the surface light. Like flowing mercury, the schools enveloped me as their persistent predators—large groupers, sharks, and tunas—prowled the perimeter. I've dived many remote corners of the Indo-Pacific; I've seen richer stands of soft corals, and a larger selection of invertebrates, but never have I encountered such dense populations of fish. Never.

The Palau Aggressor, in service since January, is the former Kona Aggressor. One of the fleet's more comfortable vessels, she sleeps 14 in seven cabins, each with private bath and a king-size bunk (with a single upper). Spacious lounging areas are spread over two levels. The main lounge contains a library of escapist paperbacks as well as field guides to the local fish and to Palau itself.

Divers who remember the ship's hot tub (it was quite relaxing after a chilly night dive off Hawaii's Kona Coast) won't be disappointed that the tub has been removed. With sea temperatures a steady 84-85 degrees F. all year, and air temperatures to match, both day and night, a hot tub has limited appeal.

In true Aggressor style, dive gear is stowed below your seat on the stern deck; each diver has two aluminum tanks, one being filled while the other is in use.

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A sidetrip to Yap

Since my review of the *Sun Tamarin* is no longer useful now that she has been sold (so my editor exercised the good judgment not to print it), I went on to Yap, a 45 minute plane ride from Koror, an extension that many people take because of the "guarantee" to see mantas.

The only dive operation on the island, Yap Divers, is associated with the Manta Bay Hotel. But the tariff there—\$150/person/day (two meals included) seemed exceptionally steep for such a remote location. Add that to the \$95/day, two-tank dive package and a couple faces a \$500/day tab.

After a bit of research, I made an excellent discovery: the Pathways Hotel. Here, I had my own palm-thatched cottage, with all the conveniences, nestled on a hillside amidst a lush mass of tropical foliage, fruits and flowers. Exotic birds perched in the trees, hands of ripe bananas hung from the deck, tame fruit-bats at times cavorted in the perfumed air. I sipped my tropical drink on my deck entranced in an island fantasy! It was literally like living in a rain forest. Price: \$85/person/day. Reservations: International Diving Expeditions (1/800-544-3483); Adventure Express 800/443-0799; Fax - 415/442-0289)

Yap Divers' truck picked me up at a more or less designated hour in the morning and took me to the marina where I boarded their daily boat. Here, 14 divers and all their gear were jammed into the small craft. Each person had to jostle for position to suit up and set up tanks. And, it was a long ride through rougher seas than we'd encountered in Palau.

First dive was "Land's End", along the top of a reef with the usual reef fish and an occasional shark off in the distance. And terrible visibility! Getting back into the boat was a major ordeal, the captain alternately pulling in divers and dashing back to get the boat clear of the reef. When the last exhausted diver was hauled aboard, we were given a rather tasteless lunch during the surface interval. The second dive was in calmer waters, "Yap Caverns", for me the most interesting dive we made. We followed the divemaster through a whole range of tunnels and interstices in the coral heads, and in the process he found one lionfish after another, each seemingly bigger than the one before. There were also a couple of morays. If the water had not been almost opaque with sand saturation, it would have been great.

Day two and day three each took us to "Manta

Channel" and "Manta Ridge". First dive, we swam down the channel towards the ridge, spotting a dim shark from time to time and one distant manta up on the surface. Second dive, we sat on either side of the ridge about 30 feet down, concentrating on the central channel where the mantas were alleged to appear. It was cold. And the visibility was crummy and deteriorating by the moment. True, the first day, we did see three mantas, one of which was reasonably close to us though badly obscured by the silt in the water. The second day, someone saw one manta just beyond my own visible range. From what others have told me, I'm sure we must have hit it at a bad time and been unlucky. I'm told that it is sometimes crystal clear, that the mantas may hover and cavort within touching distance of divers and perform all manner of fascinating acrobatics. I'm sure it's true, but it didn't happen for me. I was profoundly grateful to have my soothing tree-house waiting for me.

[Writes reader M.P. Ciecierski, Columbia, MD: "In February did 6 dives at "Manta Ridge" and saw mantas on 4. Mantas like modest current; at times, the current was really strong and no mantas came. When they did appear, they were really close and presented great photo opportunities. Dives on Spanish Wall and Gilman Wall were nice, but the area is still trashed from the recent typhoons—lots of dead hard coral."]

Yap Island, incidentally, is of major interest in its own right. The legendary stone money is widely displayed, but the impressive thing to me was the unspoiled native culture and traditions. Many men still wear only wrap-around loin clothes while the women are frequently topless. The women in town seem to wear grass skirts now only for traditional dancing; I happened to catch a fascinating learning-and-practice session they were having at the high school. And people of both sexes wear their flower leis. For themselves, not for tourists. Subsistence farming is still the rule on the outlying islands though modern technology is certainly present in the main town of Colonia. Several members of the staff at the Pathways are related to local chiefs and (if I'd had the time) would have given me personalized tours of their villages.

My advice: if you're keen on diving, stay at Palau; good chance you'll see mantas, anyhow. If you want a little change of scenery, a glimpse at a culture-past, and a romantic little hotel, don't miss Yap.

S.W.

There are video cameras and Nikonos cameras and accessories for rent, daily E6 processing (Ektachrome and Fujichrome slides only), and a photo pro who will share his slides and expertise, and also repair a flood if required. Crew members shoot video on most dives and show off their handiwork on the large-screen TV afterwards.

During the week I was aboard, meals and in-between snacks seemed up to Aggressor Fleet standards, which is high. Since I'm watching my cholesterol however, I was sensitive to the fact that most dishes were heavy on ingredients such as cheese

and eggs. Fresh fruit was thankfully plentiful, and seafood was served on at least four occasions. Passengers pay only for their alcoholic beverages.

The 340 Palau Islands are located in the Western Caroline Islands, 600 miles due east of Mindanao, Philippines. The driest months are January to June, if normal weather patterns prevail. The island chain runs north-south, and for eight months (October - May), prevailing winds are north-easterly, putting the west side of the lagoon on the lee. (West-side sites include Blue Corner, Blue Holes, and Yellow Wall; the sharks have evidently departed from Shark City, but we saw their cousins on nearly every dive.) Winds reverse direction from May to October and underwater visibility is reduced somewhat by the rains.

When seas are calm, the Aggressor outdistanced the day boats and cruised to seldom-visited reefs. On flat, sunny seas, we ranged from the capital, Koror, to the southernmost island in the main group, Peleliu, with its beautiful yellow wall. This vertical face festooned with amber-colored soft corals is a fitting rival to the famous White Wall of Fiji.

Palau Boats

With the departure of the *Sun Tamarin*, the *Palau Aggressor* and *Palau Sport* are the only boats presently operating in Palau.

The *Palau Sport* is purportedly owned by the same people who recently bought Mike Ball's operation in Australia. Japanese divers are the main patrons of the vessel. American booking agents have not enthusiastically accepted the *Palau Sport* because they do not believe that her accommodations are up to the standards that the U.S. market expects. The *Palau Sport* typically anchors in one spot for several days and sends out her launches full of divers (often simultaneously to the same site) who at times overwhelm everything around them.

Peter Hughes has almost completed a deal to take his next boat, the *Sun Dancer*, to Palau. The craft is being refitted as a dive boat and should be completed in the Spring of 1994.

And, the prior owner of the *Sun Tamarin* is reportedly seeking a new boat to operate in Palau.

Regardless of Palau's reputation for outstanding diving, will it support four liveaboards? There may be a coming glut in the market, not only in Palau but elsewhere. Art Travers of Poseidon Ventures told us, "The Bilikiki has space available now and that is unusual."

While the boat owners may worry, that can only mean good news for us divers, who find the price tags for these trips already in the ozone. Travel agents once touted liveaboards as the best dollar/dive ratio. Now, at \$1895 for five and a half days of diving, we're talking close to \$100/tank.

I think I'll go snorkeling.

Ben Davison

Palau Aggressor

Diving for Experienced	★★★★★
Diving for Beginners	don't go
Accommodations	★★★★★
Food	★★★★★
Moneysworth	(expensive)★★★★★

* poor. ** fair. *** average. **** good. ***** excellent

Windy weather may confine the vessel to sites frequented by day boats; but these are also the most famous sites and divers generally insist on seeing them anyway. While I had been warned that Palau's productive dive spots were limited in number and often entertained two or more dive boats at the same time, during my week, we never shared a single reef. Our captain was careful to plan our visits to the most popular sites for periods either before or after the dayboats were there. Most considerate.

Four daily dives and one night dive are the norm. While some people claim that Palau is for "advanced divers only," the efficient manner in which the Aggressor's current dives were planned served intermediate divers well. (Your C-Card will be scrutinized; don't leave home without it!)

The quality of dive sites in every Pacific destination I've visited has proved to be uneven. Each day has its great dive and its so-so spot. Palau is no exception. But each site seemed to feature something special, whether it was a lionfish convention, a uniquely rich coral garden, some 4-foot clams, fish in schools, or a palsy Napoleon wrasse. I didn't find it difficult to polish off a full roll of film on most dives, and I'm mighty picky about what I shoot.

When currents are absent, dives are made from the stern of the mother ship. Current dives, on the other hand, involve the chase boat, a 16-foot skiff with a 5-foot beam.

Sometimes the Aggressor is backed up to the wall and divers bail out in small groups off the stern platform. We were later picked up down-current by the skiff, which sports a convenient steel ladder of its own. At other sites, divers ride the skiff to and from the site; the longest such ride we had was 5-10 minutes.

Our dive guide, Keith, had a magical way of making our current dives totally stress-free and relaxed. While keeping everyone under control, he gave us plenty of freedom; I never felt that someone was holding my hand, or confining me on a short leash. While keeping us all safe, Keith managed to point out interesting marine creatures. (Given the frequency with which Aggressor Fleet crews are rotated, I hesitate to rave about any individual lest he move on even before this appears in print.)

Bottom times are ample. On most sites, all the action and color are right at the wall's crest, anywhere between twenty and sixty feet. (The nearest recompression chamber is in Guam, two hours by jet.) There is no objection to computer diving.

The worst visibility we encountered, during an outflowing tide, was disappointingly on a wall site famous for its colorful soft corals; wide-angle shots were out of the question due to plankton. A promised return to this site when currents were right for maximum visibility never materialized. The best visibility during the trip was at least 100 feet, in several spots. But, as divers familiar with Pacific reefs are aware, horizontal visibility can change in a matter of minutes, as currents ebb and flow.

If I had a complaint, it would be that a seven day, five and one-half diving day cruise is too short. Since most divers stretch their trip beyond the seven-day Aggressor cruise, and spend a tidy sum doing so, perhaps the Fleet should consider a ten-day trip; it could be quite marketable, and I might be the first to sign up.

U.W.

Diver's Compass: A week aboard the Palau Aggressor runs \$1895 through the end of 1993; book through Poseidon Ventures (800/854-9334; fax 644-5399); Sea Safaris (800/821-6670; fax 310/545-1672); or Aggressor Fleet, 800/348-2628; FAX 504/384-0817. . . .When you go to Palau, take a passport but forget the vaccinations and the malaria prophylaxis; they're not needed. . . .Air fare from West Coast begins at \$1468 (you can get to Fiji or Australia for much less). . . .An Aggressor divemaster

Protecting Palau

Despite their remoteness, reefs of Palau are not invulnerable to the environmental problems facing more crowded dive destinations. Anchor damage to corals is evident in spots; however, the first permanent mooring buoys were placed last fall and more are to come, spearheaded by the Nature Conservancy working in concert with local dive operators.

Ironically, as Palauns are waking up to the fragile nature of their marine environment, they are gradually losing control of their destiny as more Pacific Rim investors gain a foothold. Taiwan and Chinese fishing vessels had an impact on surrounding waters, often fishing illegally inside the island's 12-mile limit. Japanese own the major hotels and are planning to build more, putting increasing pressure on reefs from diving traffic alone.

There is presently no protection for coral reefs in Palau, but such legislation is being drafted. It cannot come too soon. It will require cooperation among three factions making up the dive industry--Palauns, Japanese and Americans.

According to representatives of the local Nature Conservancy chapter and the Palaun Visitors Authority, the new catch-word around the islands is "ecotourism." As long as everyone understands that ecotourism embodies a commitment to the ecosystem--ahead of tourism and not subservient to it--perhaps Palauns will not end up like so many of their tropical neighbors, wondering where paradise went.

U.W.

died in March; he was free diving and apparently succumbed to shallow water black-out; his name is unavailable.

—Intimate, rock and roll diving

The three-legged flight to Palau from California ranks right up there with the nastiest manipulations of body and mind ever concocted by airline scheduling computers. At best, you can expect to lay over in Honolulu at least two hours and then, after a nine hour "leg-numbing leg" to Guam, you may lounge in the "International Transient Holding Tank" at Guam International for four hours or more. The government of Guam saves money these days by shutting off the air-conditioning to this windowless hellhole whenever it feels like it; so, be prepared for meltdown. You can sweet talk your way for free or twelve dollars (who knows why) into the too cool President's Lounge where life is again human. Or, consider entertaining hordes of Asian tourists as Domino's delivers your pizza (yes, anywhere in a half-hour or less!) through the x-ray machines and straight to your picnic sarong, laid out on your patch of floor, to join the bottle of California Cabernet you purchased from the Duty Free Shop.

Sam's Dive Tours

for experienced
for beginners

★★★★★
★★★★

Splash

for experienced
for beginners

★★★★★
★★★★★

Palau Pacific Hotel

all the way around
moneysworth

★★★★★
(expensive) ★★★

* poor, ** fair, *** average, **** good, ***** excellent

For the first several weeks, I stayed with American dive friends living in Palau. Palau is rapidly becoming one of the world's best known and visited dive destinations. For comparison, one could say that Cozumel, Mexico is to the U.S. mainland as Palau is to the islands of Japan; so Japanese divers abound.

Many new dive operations are opening and the old established ones are adapting and expanding as quickly as they can. In the not so long ago "old days," Francis Toribiong, owner

of the renowned Fish 'N Fins dive operation and one of the earliest scuba-assisted explorers of Palau's reefs, had the only trusted game in town. He still operates Fish 'N Fins himself and many of my stateside dive buddies won't dive with anyone else when they are in Palau. I dived with his operation one day and had no complaints.

Neco Marine, owned by the former President of Palau, now not only fuels and fills nearly everyone else in town, but also provides the Aggressor with everything from soup to divemasters.

I wanted to dive with the best, most accommodating, skillful, advanced and customer-oriented small boat operator who would produce the kind of advanced and adventurous diving I like. My friends were quick to introduce me to Sam Scott, owner of Sam's Dive Tours. I hit it off well with Sam and his right hand man, Maurice, from the git-go. Sam's stepfather is the Ibedul, or high-chief, of Koror and its environs. While he was serving in the U.S. military, he met and married Sam's mother, an American working on the military base. When he returned home to Palau, Sam joined his stepfather, and started his own dive business with his Palauan wife Felicia.

Sam operates three boats on an "as needed" basis, so there is room to accommodate various skills and adventure levels by design. On a given day, his slick little Bayliner, with gear stashed in the forward area, might take a snorkel party out for protected pictures at a well-known wreck of a Japanese Zero, followed by lunch on the magical beach of one of the Rock Islands. On that same day, his largest boat, a 26-foot Yamaha (Boston Whaler type), covered by a flat blue canopy and

heavily powered by twin 175 HP outboards, might bash its way through heavy seas for the hour long trip to Gnemelis Reef and the Blue Corner.

During my time in Palau, I had plenty of opportunity to test the seaworthiness of Sam's boats. Even though this was the October-November dry season in Palau (indeed, it did not rain a great deal), nearly every day for three weeks we awoke to westerly winds instead of the normal easterly trade winds, rough to terrible seas, cloudy skies and the prospect of more of the same. On two occasions, due to deadly cyclones in the Marianas Islands, friends of mine from Air Mike were grounded in

Women First, please

My Orlando, Florida dive club booked us last September on the *Crown Islander*, homeport Freeport, Bahamas. While the brochure expounded on the luxurious accommodations for 32 passengers on the 135 foot craft, our trip carried only 24 passengers-- 16 members of my dive club, one Californian, and seven Norwegians. After we got settled, the divemasters briefed us on the boat, casually explaining where the life jackets and life rafts were, and what to do if the ship alarm sounded.

By late afternoon the first day, we were anchored 25 miles from Freeport for an unexciting check-out dive. Even though the sea was getting rougher, when night fell, some of us hearty souls plunged into the darkness with lights and glow-sticks for our dive. While we were on the bottom, the seas became rougher still, making climbing back onto the boat a real challenge. After showering, we went to the sun deck for a couple of beers to discuss the diving. With the boat rocking from side to side, a few chairs actually tipped over.

About 11:30 p.m., I climbed into my top bunk. Because the ship was rolling, I couldn't sleep. Although lower deck windows had been bolted shut to prevent water from entering, huge waves were striking my second deck cabin window. At 12:30 am, I heard the engines start. The captain had decided to pull anchor and move to the leeward side of the island. But, they were unable to free the hook from the reef. At 1:00 am, they shut the engines down and assigned the night watch, deciding to simply ride out the rough seas until morning. I finally fell asleep.

About an hour later, I was shocked to full consciousness by an impact that almost threw me to the ceiling of my cabin. Then another impact. I heard the divemaster yell "get to the sun deck!" Then the alarm sounded. Heading for the top deck, I careened off the walls from more impacts. On deck, life jackets were being passed out to the passengers, some still in their night clothes. It was pitch dark, no moon, and I had no idea where we were. More impacts. We counted off to make sure that everybody was there. Life rafts were being inflated and sent overboard. Then, the order came down: "Abandon Ship, Women First."

Passengers tried to climb from the stern dive

platform into the life rafts, but the seas were angry. A divemaster pinched his foot in one of the dive ladders. We climbed over the railing and waited for the word to drop 10-12 feet. I hit the opening in the life raft and people already in the raft pulled me out of the way so the next person would not land on me.

We were packed so tight in the 20 person life raft that three people were on top of me. Looking through the opening, seeing the waves breaking and the raft drifting under the hull of the ship, I knew that if something happened, there was no way I was going to get out of here. I would drown.

The last person who entered was one of the Norwegians. He promptly tied the opening shut, against the screams of the others. He didn't understand English. He didn't know his knots. He tied one that he couldn't untie.

They finally let go of the lines holding the rafts to the ship. We were adrift in rolling seas. Yet, in no more than a couple of minutes, I felt something hard under the bottom of the raft. We were on land. There 30-40 yards offshore was the now brightly lit ship. The anchor had let go and the ship had drifted ashore and grounded, without anybody noticing.

We headed inland in search of a telephone. After about a mile, we came upon a house and called taxis. At 6:00 a.m., twenty wet, sand-coated people with nothing but the clothes on our backs showed up at the Bahamas Princess Casino and Resort.

We spent the next three days at the resort getting our clothes and gear off the boat. Several months later, refunds arrived for our failed trip.

William D. Turman, Oviedo, FL

Editor's note:

The *Islander* had to have both motors replaced and the bottom of the vessel repaired. By the time you read this, she should be operating. Crown Diving's Wendy Waite told us that "1992 was not a good year for Crown Diving, as the *Islander's* sister ship the *Crown Diver* hit a reef in August and has been out of service since then. These multiple accidents accounted for the delay in passengers receiving their refunds.

Palau, unable to return to their home base due to the destruction caused by these storms hitting Guam dead center! This time was a real eye-opener for me and for many dive travelers who had planned to be in Palau during the best season. You just never know.

Because most of the great diving is on the western walls, every day was a new adventure. The small group of us who were diving together were always game to try dive plans that were challenging, given the conditions. Sam could easily have said

Slay Our Sharks

Stella Maris resort in the Bahamas has attracted a lot of business due to its shark feed. Guides use bait to attract the critters and tourist divers watch the frenzy. As many as 18 sharks have appeared.

About eight weeks ago, a long line Bahamian fishing boat the Exuma swept through. Jeorg Friese, a Stella Maris owner, told Undercurrent that when "the boat left, Shark Reef had no sharks. "We kept going back and leaving bait but for six weeks no sharks came. Now, they are slowly coming back. First there were three, and now (early June) there are eight. Our concern is not only the sharks but the reef ecology. We don't know how the presence or absence of sharks in a given area affects other fishes."

Sharks are hunted for their fins for the Asian market. Friese said that "our crawfish harvesters have been looking for additional income particularly during the closed season. \$30 per pound looked good."

The Bahamian government has no restrictions on long line fishing and, except for size, sex and seasons, no restrictions on the amount of any species that a Bahamian commercial fisherman can harvest. Friese said that "we, along with the Bahamian Dive Association and particularly UNESCO, have protested to the government and we are hopeful that within this year we will have legislation restricting these long line fishermen as well as establishment of underwater parks where no commercial fishing can be conducted."

Even with a law, the Bahamian Coast Guard may not enforce it. Friese is worried that local fishermen may not carry the priority that drug interdiction does. Hopefully, if enough pressure is brought on government, it will be enforced.

If you're concerned, write the Minister of Tourism, Commonwealth of the Bahamas, Nassau, Bahamas.

Ben Davison

no to most or all of our ideas and we would have understood. But, given a tight group of very advanced divers and just the right combination of personalities, we were almost always able to come to a consensus on what would be both safe and fun. The few of us lucky enough to be on Sam's Dive Tours got in more good dives, by far, than any other divers in the country. We would usually, on these bad days, approach the walls from the east where the lee side of the islands afforded perfect protection. After we took a look at our target, anyone who wanted to sit it out got dropped at a beautiful beach, sandwiches and suntan lotion in hand, and was simply picked up after the dive.

Once I was underwater, everything changed. I have dived many open ocean reefs that had never been visited by divers-- where the sharks were so abundant it was scary. But none of them outclassed the thrill of coming around the corner with my buddy at Big Drop Off, one of the famous sites at Gnemelis Wall. I ran smack into an army of more than 50 gray reefs, herding a school of thousands of surgeon fish in swirls like a giant rice ball, waiting to be lunch!

West toward the island of Oolong, we did a magnificent, strong current drift dive in the Oolong Channel, that ended at the outlet into open water, where we clung to rocks and watched dozens of gray reef sharks cruising from near the surface to depths too dark to penetrate. Dozens of medium

to large groupers sat on the bottom watching the sharks as we watched them. Afterward, we had lunch on the beach at Oolong and later climbed a fairly treacherous route to caves 200 feet up the wall to see some wonderful, prehistoric cave paintings of fish and birds and bats and God knows what. That was quite a day and the perfect way to say, "till next time," to Sam and Maurice and the gang.

On the last week, I moved myself over to the Palau Pacific Resort, home of the Splash dive operation. The resort provided me with showers that did not go off at 10 in the evening (water does in private homes), and electricity that always worked (hence always producing air-conditioning). The Palau Pacific sports several charm-

ing restaurants, a classic beach front bar for absorbing sunsets, sweetly landscaped grounds with a semi-lunar beach on which to space out (or from which to swim and snorkel), and hi-tech diving with Splash. Cheerful rooms have natural fiber furniture, a helpful desk/work alcove, and comfortable outdoor sitting areas. After getting a tour of the new facilities and a great pitch on reef ecology, Operations Manager Lee Bachelor OK'd my C-card and filled me in on the drill for the following morning. I was ready early to join 17 other very enthusiastic divers, primarily young vacationers from Japan, for the quick trip out to the Gnemelis Wall (Splash, the boat, does an easy 24 knots).

In contrast to the intimate, rock-and-roll style diving I had been doing with Sam Scott, on boarding Splash, I had come to true, cattleboat tourist diving. Yet, Splash offers well thought out, conservation-sensitive diving. They have to. Since thousands of divers a year (of all skill levels and intentions) choose the Palau Pacific Resort as their "once-a-year destination" dive resort, people like Lee and David Feinberg (general manager of the resort) do a lot of thinking about the greatest resource Palau has to offer: its reefs.

Splash offers resort-style diving at its best. Besides all the land-based amenities to back her up, from gear sales at mainstream prices, to equipment repair, to multi-lingual staff and every possible level of diver education and assistance, Splash, the boat, is a serious machine. She is as well thought out and well run as any large resort boat I have dived from. I especially like the jet-drive, which makes having those larger numbers of variably skilled divers in the water just a bit safer. To add to the quality of the operation, Splash has, since my visit, added a new 32' catamaran that can carry up to 12 divers at 30 knots of high speed, 400-hp fun. She is called Mesekiu, the Palauan name for their version of the rather rare dugong-- or manatee.

Before getting in the water, the

Save Our Sharks

After years of warnings from scientists and conservationists, the National Marine Fisheries Service has issued the first-ever restrictions on fishing for 39 major shark species. Aaron King, a fisheries expert who helped draw up the plan, said that "most biologists would not argue that we run the risk of biological extinction. But if the problem doesn't already exist, it's going to exist soon."

The agency published commercial quotas for blues, makos and threshers for fishermen along the U.S. coastline from Maine to Texas and out to the 200-mile international limit. (King said federal officials felt state restrictions already provided protection for sharks on the West Coast.) Bag limits for sports anglers have been set at four sharks per vessel.

Among other restrictions, the plan stops the practice of "finning," catching sharks only to cut off their fins for shark fin soup and other delicacies. The finless carcasses are then thrown back into the sea.

The government also may order a halt to commercial catches of some large coastal shark species, including the great white, tiger and black tip. "We feel they may have already reached the quota," King said. But agency scientists are going back to recheck their data this week before a final decision is made.

Conservationists who have pushed for a decade to get the restrictions said they are a big step — but that a plan for the West Coast, and ultimately international restrictions, are also necessary.

"Sharks do not recognize federal boundaries, and yet they are sought by fishers worldwide," said Sonja Fordham, spokeswoman for the Center for Marine Conservation.

Beginning in the 1970s, the market for shark meat expanded as U.S. consumers switched from beef to fish. In the mid 1980s, China — where shark fins are highly prized — opened its markets. "Literally overnight, the demand for shark fins went through the roof," King said.

Leading marine biologists, including Samuel Gruber of the University of Miami, began reporting the disappearance of some shark species in coastal areas. "High-tech fishing gear catches everything," Gruber said.

"Ecologically, sharks are perhaps the most important creatures in the ocean, more important than whales," Gruber said. "Sharks, as the top predator, guide the evolution of lower fish, just as cougars, lions and other predators do on land," he said.

Larry Dukehart, president of the Islamorada Charter Boat Association in Florida, said the sport-fishing restrictions don't go far enough.

"They were hollering about how overfished the shark fishery was and how the bag limits were excessive," he said. "What's somebody going to do with three or four 500-pounders?"

Richard Cole, Associated Press

dive staff carefully cleaves the group into smaller units for the underwater tours. The hotel's investment in reef awareness has really paid off, with many buoyancy control reminders and enforcement of the "no touch the reef rule." I am ambivalent, however, about putting any large group of divers, no matter how well-trained and carefully monitored, next to the same general section of reef. If I had my way, given the fragility of this reef, I would find the means to regulate the number of visitors based on the best science available and keep changing the regulations as our knowledge increases, not just in Palau, but everywhere we intrude on the reefs for our aesthetic pleasure and spiritual renewal. Splash is doing a conscientious job of learning how to protect Palau's special area of the Waterplanet. But we have so much more to learn even about our best intentions.

Each great dive day and each great adventure must come to its close. Cruising back to the PPR on Splash's sunny foredeck, smooth as silk, watching all the little day boats bash their way through the chop, I knew that a cool shower, the Mesekiu Beach Bar and another Technicolor Palauan sunset were minutes ahead. I'm a sucker for the obvious bit of philosophical reflection: Palau is one of the Seven Wonders of Any World, no matter which side of the surface you're on. The Palau Pacific Resort is one of our species best attempts yet at integrating modern technology (and our instinct for pleasure) into the natural equation. I can't wait to go back.

Diver's Compass: Palau Pacific, as quoted by Sea Safaris, currently \$525/person, double occupancy, seven nights; don't miss the snorkel off the beach; giant clams, Moorish idols, Picassofish and several species of butterflies in four feet of water. . . .Sam, and other boats, hop from hotel dock to hotel dock to pick up divers. . . .Splash' two tank-dive plus lunch on board runs just under \$100/day (most divers are beginners and intermediate); with Sam, \$85/day and most divers are advanced; on the right day, Sam might toss in a third dive. . . .While several cuts below the Palau Pacific, the Palau Marina, at \$95/day, is a good choice for saving a few dollars; the D and W Motel, at \$45/day, is bargain basement; meals are available at both. . . .Furasata restaurant on Kror is where American expats often eat; good fish and Chinese dishes. . . .Call Sam at 011-680-488-1720 or fax 011-680-488-1471; Palau Pacific and Splash (800/538-4040). . . .Book either directly or through your travel agent.

Dead Air Spaces

Dear Undercurrent:

Regarding Gary Howland's story about divers dying from breathing in closed air spaces (April issue), a few points deserve clarification.

It is unlikely that significant problems will result from excess CO₂, especially if it is from exhaled gases from other divers' exhaust. While breathing this amount of CO₂ may cause some shortness of breath, it would not likely cause the terrible effects often attributed to CO₂.

The significant problem is hypoxia, or inadequate amount of oxygen in the blood. However, it is the partial pressure of oxygen, not the percentage of oxygen, that is important. Remember, there is still 21 percent oxygen on the summit of Everest. It was mentioned in the article that a sample from a cave contained 10.7 percent oxygen, but the depth was not mentioned. At 33 fsw, this would be equivalent to the 21 percent oxygen we are all accustomed to breathing. This may seem like a small point; however, it is the essence of the problem.

John B. Feiner, M.D.
Department of Anesthesia
University of California, San Francisco

Dr. Feiner is right on target. We sit in our closed cars for hours with our exhaled CO₂. But, who knows what else generates CO₂ underwater? In dead air spaces, it is not really dead air, it is that you just die there. I define an air space that will not support human life as a dead air space.

Most of my experience with the low partial pressure of oxygen is from 800 hours in a B-17 flying above 18,000 feet where I witnessed hypoxia in real time and in real terms. Low partial pressure of oxygen is the essence of the problem that Dr. Feiner said may seem a small problem to point out but it scares the tar out of me so I presented a paper to tell divers to keep regulators in their mouths underwater. We know the partial pressure in our air supply.

The gas percentages uncovered by NEDU in samples taken from the dive site after the accident are not assumed to be those at the time of the accident. This discovery suggests being cautious in underwater gas pockets.

Gary Howland

R.M.

Why Divers Die: Part II

The National Underwater Accident Data Center (NUADC) at the University of Rhode Island has been recording diving fatalities involving U.S. citizens for 20 years. To further your awareness of the causes of death so that you may dive more safely, *Undercurrent* has been reporting their analysis for 15 years. The 1991 report on scuba fatalities is the second joint effort by DAN and NUADC.

Ben Davison

While accidents and fatalities are usually the result of multiple factors, in most instances, there is generally one event or condition that precipitates a sequence of events. In three of the 1991 cases, the environment was the probable starting event. All occurred at the surface, after successful completion of an uneventful dive.

For example, a 31-year-old female was receiving instruction in open water diving and surf entry. She had made one similar dive. She was the only student with the instructor. They attempted to swim under the surface, and switch from regulators to snorkels. A large wave caught her and she aspirated sea water. She was rescued with difficulty by the instructor, who initiated CPR, but she drowned.

Panic was the probable starting cause in one training fatality, and narcosis was the probable starting cause in an advanced training fatality.

In the narcosis case, the victim was a 22-year-old female making a deep dive for her advanced open water certification at 100 feet. She was missing at the 15 foot stop and was recovered by the two dive instructors. She had 1,600 psi remaining and her 22-pound weight belt was in place. She was recompressed, but died from drowning.

Entrapment was the initial cause in one case. The victim was an experienced cave diver who was trapped in a cave following a geologic disturbance which blocked the cave exit. One member of the team found the exit and survived.

Equipment Unfamiliarity

Equipment unfamiliarity may have precipitated the drowning death of a 30-year-old female who had been certified about five years. She was diving from a private vessel in about 45 fsw. She and her buddy began their ascent together. She had 600 psi in her tank. During the ascent, she signalled to her buddy that she needed to share air, which they did for a brief time. Her cylinder was equipped with a J-valve which the diver must operate to obtain the last 300 psi of air. The buddy noted that the J-valve was up and attempted to pull it down. However, she started struggling and pushed him away, then made a

breath hold ascent. She reached the surface, then sank.

Drowning death often follows the occurrence of factors which prevent the diver from reaching or remaining at the surface. Buoyancy control not only makes diving pleasurable, but also is a self-rescue skill which should prevent drowning.

The inexperienced diver has probably not learned the technique well enough so that the responses are automatic. In a stressful situation, such as out-of-air and negative buoyancy, the diver responds inappropriately. As the BC inflation and deflation controls are operated by the left hand in most designs, the stressed diver has only a 50-50 chance that the proper control will be activated when attempting to control buoyancy in an emergency. Even experienced divers frequently make errors in pressing the proper button during routine dives.

An inexperienced diver who panics in attempting unsuccessfully to inflate a buoyancy compensator by depressing the deflate button will not make a decision to use the other button. Instead, in all likelihood, the diver will merely press the deflate button even harder. Several of the drowning deaths appeared to fit the pattern of an inability to control buoyancy even though the equipment was found to be working properly and there was sufficient air in the tank.

“As the BC inflation and deflation controls are operated by the left hand in most designs, the stressed diver has only a 50-50 chance that the proper control will be activated when attempting to control buoyancy in an emergency.”

While doing a navigation exercise during the fourth open water check out dive, a 28-year-old female unintentionally descended below the thermocline. Her buddy helped her ascend, but she started thrashing and struggling. Reportedly, she then used the deflator instead of the inflator to establish buoyancy. The buddy was unable to lend further assistance, so he surfaced and called for help. The body was located after a one hour search. The autopsy indicated the cause of death was drowning, caused by an air embolism.

Equipment Problems

Equipment difficulty may have played a role in the case of a 26-year-old male who made a 130 fsw dive for 25 minutes using “independents” (twin tanks without a manifold). He was reported to have done only a few dives with this equipment. Approximately 20 minutes

after the dive began, he attempted to use his buddy's regulator, but could not. He became unconscious at depth and was brought to the surface by fellow divers. On investigation, the equipment was in working order; however, one tank was empty and the other contained 3,400 psi. The decedent was probably not breathing during rescue to the surface and in effect was ascending while breathholding.

A 46-year-old male with 22 dives since certification was diving with companions on a wreck when he was discovered on the bottom with his free-flowing regulator out of his mouth. Companions attempted to inflate his BC, but the tank was apparently empty due to the free-flowing regulator. His pony bottle was full. The victim had complained about an "upset stomach" and a "tight weight belt" prior to the dive.

Failure to Drop Lead

In reviewing diver fatalities, it's amazing to find the number of divers in distress who fail to remove their weight belts. As one might expect, uncertified divers may fail to drop their weights, but even trained divers die without discarding their lead. Here are a few of the cases:

A 43-year-old male was making his third dive of the day and had just started the descent with his buddy after indicating "OK". The buddy noticed his partner not descending and returned to the surface, to hear him say that he had an "emergency." He then became unconscious. The buddy was unable to support the victim at the surface and the body sank. Rescuers found the body after a one and a half hour search. The victim wore all his weights (26 pounds) strapped to the tank.

Another victim was a 30-year-old male who had been lobster diving in an inlet and had made three long shallow dives (20-30 feet) during the day. An observer witnessed him surface, call for help, then sink. The recovery team located the body 19 hours after the incident. There was no air in the tank or buoyancy compensator. He was wearing a 12-pound weight belt while clad in a bathing suit.

A 16-year-old male with limited diving experience was making a 90 foot wreck dive for an advanced level certification. After agreeing to ascend, the buddy team could not find the down line and initiated a free ascent. About 10 feet off the bottom, the victim came to his buddy with the regulator out of his mouth. The buddy gave the victim his octopus and signaled to ascend. The victim did not respond, so the buddy ascended on his own and called for assistance. The body was located in about 5 minutes. The victim's tank had 500 psi remaining and his weight belt was still on.

A 26-year-old male uncertified diver had been diving with a certified buddy in a high altitude lake. He had had trouble equalizing his ears on several previous dives. After descending and ascending several times, both divers were able to descend to approximately 15 feet. The victim signaled "OK" to his buddy who then turned away

The Emperor's New Clothes

In early May, Philippine President Fidel Ramos launched a program to save coral reefs ravaged by fishermen who use dynamite to take their catch. In the Hundred Islands, 125 miles north of Manila, Ramos helped haul two artificial reefs made of bamboo to sea and then swam 250 yards to an island to meet residents. Later, he helped plant two-foot-long giant clams and accompanied a group of drivers in cleaning garbage from the coral reef.

Scientists estimate that just 5 percent of the Hundred Islands coral and 20 percent of the larger reef in the Lingayen Gulf remain. The islands have been a national park since 1941 but laws to protect the area have rarely been enforced. Tourists who once frequented the reefs have gone to central and southern Philippines to find new diving spots.

Unfortunately, Ramos did not offer details of his plan.

Ben Davison

and swam a short distance. The certified buddy turned around and noticed his partner on the lake floor with his regulator out of the mouth and mask removed from the face. The victim was still wearing his 32-pound weight belt. The buddy brought the victim to the surface and called for help. The tank pressure was 2,000 psi when measured after the accident.

***"...the victim ditched all gear
except his weight belt and
sank to the ocean floor"***

Two buddies did a shore entry to about 15 feet, while their friend sat on the beach and watched. The inexperienced member of the dive team left the water and lent his gear to his uncertified friend, unknown to the other buddy. The uncertified diver was observed to be in distress on the surface a short time later. The buddy, who had lent the gear swam to the panicked victim and attempted to render assistance; however, the victim ditched all gear except his weight belt and sank to the ocean floor. The search team located the body in one hour. The tank was out of air. The cause of death was drowning.

A male untrained diver was using borrowed gear and collecting lobsters in the company of two certified lobster divers. He was diving alone and was observed to surface, call for help and then submerge. Witnesses went to his assistance immediately and found him out of his scuba gear on the bottom, but still wearing his 7-pound weight belt and one fin.

Nest Issue: Entanglement