

undercurrent[®]

THE PRIVATE, EXCLUSIVE GUIDE FOR SERIOUS DIVERS

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Oahu, Hawaii

-- For Conventioneers Only

With my diatribe last month on Maui, you must wonder how I can bring myself to write about Oahu, headquarters of the Hawaiian Islands, home of Waikiki. Well, I can't. I'm turning over this review to our Honolulu correspondent, hopefully less critical than I. After all, he lives there.

C.C., Travel Editor

Don't go to Oahu to dive. Here, divers consider forty to sixty foot visibility good. The coral lacks variety and scenic grandeur. There are relatively few large fish, and 72 to 75 degree F water can be a bit chilly for vacation divers. If, however you insist on the Waikiki experience (which you might get just as well in Miami), if you're stopping over between long flights, if you're in town for a convention or to freeload from friends who have migrated here, then by all means take a few tanks. There's some decent diving -- if you know how to find it.

I've dived with virtually every operation on Oahu, but for the purpose of this article I will include only two. These, I've found, avoid the routine, less-than-interesting runs out of Honolulu and go to very different places. South Sea Aquatics (which also handles the diving for Dan's Dive Shops) is located in the Ward Warehouse, a shopping center about two miles from Waikiki. It keeps its boat on the West shore, in Waianae, about a 45 minute drive. Two of the featured trips are to wrecks -- a DeHavilland airplane and a minesweeper. Aloha Dive Shop, located at Koko Marina Shopping Center, east of Waikiki, sends its boats off a different coast and features a half-dozen sites in Maunalua Bay, including Turtle Canyon, where seeing turtles is virtually guaranteed.

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Unlike many island resorts, Oahu has good shore diving. With a rental car and

your own gear, a day of diving is inexpensive. If you want to travel light, Aloha Dive Shop offers all gear (tank, BC, wet suit top, regulator, weights, octopus) sans mask, fins and snorkel for \$30/day. Filled tanks rent separately for \$6-\$7/day. Two tank boat dives run up to \$60, while single tank dives run \$45 or so. Aloha Dive Shop offers a descending scale, with the first \$55, the fifth \$20 and the sixth free. South Seas Aquatics offers six dives in three days for \$150 and occasional sunset or night dives. Locals get special deals. If you can cop a local address you'll make out. For example, the Club at South Seas Aquatics charges an initial fee of \$25, then \$10 for boat dives (no gear, not even weights, included) and space available.

A dive with South Seas begins with an 8AM pick up at your hotel (and ends with a 4PM return) with a pause at the shop to collect rental gear and pay up. Around 9AM you're off for the harbor, where one of the two guides fetches the boat (which has a roofed, semi-enclosed section for sun and wave protection). Meanwhile the second guide explains the system and helps people set up the first tank. The boat departs about 10AM. The order of the day is simple: a deep dive, normally to the minesweeper Mahi or to the airplane, followed by a shallow second dive. They offer crackers, cheese, juice and soft drinks for between dive snacking; if you want more for lunch, bring your own. If you dive with them more than once or twice, be sure to check ahead about their site selection, since they offer only a few choices.

On my dives with South Seas the guides provided brief but adequate orientations. Buddies have the option of diving with the guide or selecting their own itinerary. Just a few weeks ago, I dived at the Mahi; the visibility was good enough to see it from the surface. In excellent condition, the 190 foot vessel rests upright at about 90 feet. Although in the water only a few years, plenty of surgeons, wrasses, jacks and damsels swim in and out of the hull. Shrimp and urchins and crabs hide in crevices and on this dive alone I saw close to a dozen species of butterfly fish--black face, ornated, four-spot, one-spot, long-snouted, blue striped, masked--in and about the wreck. Whether one swims boldly into the ship or timidly peers around corners, the 30 minute bottom time is never enough.

The 70-foot DeHaviland, outfitted for cargo, sits upright and is in fairly good condition, though bits of aileron and flap are scattered nearby on the sand. You can swim inside the 14 passenger plane, but you can see everything by peering in windows and holes. The airplane is small, so after 15 minutes I headed toward the sloping reef, some 50 yards off the starboard wing. With a 70' maximum, I had a good half hour left to wander. All the usual reef critters are around--damsels and moorish idols, surgeons and trumpets, urchins, shrimp and starfish; hawkfish and lizardfish sit on the coral, eels hide in the crevices. Our guide rooted out an enormous moray, then handed me squid to hand feed it. Fish here are accustomed to divers and even without comestibles I found myself surrounded by greedy wrasses and damsels.

The second dive is often at Makaha Caves; not true caves, these overhangs and tunnels none-the-less offer much of what I expect from caves. I brought a small cue light from my camera to explore the crevices, and went looking for tubeworms and bandana shrimp, spiny lobsters and pin-cushion stars. Fish are not particularly abundant, but the usual collection of small reef dwellers are present. I enjoyed

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exploring this terrain, happily descending into slits and rising to see the sun sparkling through the water above an opening in the lava. It's a good site for slow diving, looking for little things which so often escape my attention.

Aloha's 30-foot boat visits some half-dozen sites regularly, but if visibility is bad, owner Jackie James (a.k.a. The Red Baroness) doesn't leave the moorage. Because the boat is kept virtually outside the shop, a two tank dive takes about half the time of South Seas trips, beginning with hotel pickup at 8AM and returning by 12:30PM. But the sites are all in one bay, which limits variety. You'll get better fish life shore diving.

The guides choose the first site based on visibility and the divers' experience, and require each diver to stay with the group until they are satisfied with his prowess. These 40-50 foot depths appeal more to novice divers (there may even be uncertified divers along). Experienced divers will

be disappointed in the quantity and size of the fish population and the sparse coral. The guides do their best to give a good show, however. For instance, one coaxed an octopus out of hiding and by encouraging it to swim to different locations, demonstrated its superb ability to change color and texture. For the second dive site, ask for Turtle Canyon. The Pacific green turtle is a threatened species; the hawksbill is endangered. Yet I routinely see half-a-dozen turtles in half an hour. Watching big turtles swim in and out of a group of divers is an experience worth a trip--but maybe just one.

OAHU, HAWAII		
Diving for experienced	★	★ ½
Diving for beginners	★	★ ★
* poor. ** fair. *** average. **** good. ***** excellent		

People on dive boats talk about diving. You can get ideas about shore diving that way, or you can ask at any dive shop. Most employees seem willing to give tips and direction. Two fine spots are Pupukea (Sharks Cove) and the very popular -- and usually crowded -- Hanauma Bay. Located at opposite ends of the island, these two sites are very different. In the summer Pupukea is the place to go. In the winter, when the breakers on the North Shore run 10 feet or more, try Hanauma, where nondivers can have excellent snorkeling inside the reef. Both are public parks, with toilets and showers. Hanauma is on every tourist map, but finding Pupukea is another matter, although the general area appears on the AAA map of Oahu. It's an inlet on the North Shore, between Haleiwa and Sunset Beach, an hour plus from Honolulu. Ask at any dive shop for more complete directions. And check newspaper surf reports before heading there; if the surf is greater than three feet, scrub the trip. If you arrive mid-morning, you won't have trouble recognizing the right beach; small groups of divers and even dive shop vans line the road. Getting in the water before 9:30 means private diving. No spearfishing is permitted.

One can dive to the right or left of the inlet. I favor the right. Underwater, it's a series of ledges, overhangs, cuts and ridges, formed by lava and coral. I enjoy shining my cue light on tiny shrimp, feather duster and bristleworms, swimming nudibranches, sponges clinging to the ceilings of the overhangs, and crabs slithering along the walls. On every dive I see the usual reef fish: wrasses, butterflies, surgeons, and trumpets; hawkfish and lizardfish perch on the lava and coral; goat fish probe the sand with their whisker-like barbels. On one lucky dive I saw a free-swimming white eel, a juvenile lionfish and an octopus with 3' arms. That pus had a lot to learn. Rather than hiding in a crevice, he swam toward me and around me. By now, he no doubt has had a swim in some local's stewpot.

Hanauma is reached by a 30-45 minute drive along a good if sometimes crowded road. You can pick up tanks at the Aloha Dive Shop en route. From above, take a look at

the Bay. You'll notice a reef line 100 yards off shore. About two-thirds of the way across the Bay is a cut in the reef, where you want to start your dive. Across the cut look for a pair of fat telephone cables lying in the sand; following the cables will keep you oriented and provide varied and attractive dives (from time to time the cables disappear into the sand). At the end of the dive leave extra air to come back through the cut. There are days when you will use everything your instructor taught you about ocean diving to

buck the surge. I've taken as many as four minutes and used a couple hundred psi to get through.

Hanauma is an underwater aquarium, as good for snorkel as for scuba. I've never dived it without seeing parrotfish -- pink, turquoise, mottled, up to two feet long. On calm days, I hear them crunching on the coral. I routinely see trumpets, surgeons, filefish, squirrels, puffers, butterflies, damsels, jacks and several kinds of stars, slate pencil urchins, crabs, shrimp and lobster. My buddy has even seen a reef shark. I routinely find morays poking their heads from coral and on nearly every dive I see one or more turtles about the size of garbage can lids. This is easy, easy diving and though shops offer tours here, it's no sweat to hit it with only your buddy -- if you've been wet in the last year.

That's about it for Oahu diving. I'm not recommending a dive vacation to this island; take those on Maui or Hawaii, off the Kona Coast. But if you find yourself here, don't be bashful about taking a tank or two. There's no better way to spend a day.

Budget Accommodations and Cars: There's no need to review hotels, restaurants and the like. Any bookstore has plenty of guides and virtually every travel agent has decent knowledge. For the budget conscious, however, I'll offer a couple of tips. Near Waikiki, the Ala Wai Terrace has studios for \$110/wk. The Holiday Surf, at \$27/night, throws in a seventh night free. The Ilima Hotel offers, at \$31/night, a room with a desk, easy chairs, kitchen, tv and two double beds. This hotel, like many small ones, is family run; you can get anything from beach towels to bus direc-

tions at the front desk. Let your travel agent make arrangements. For autos, consider any of the cheaper small agencies in the Yellow Pages (you can find a car when you arrive). Special deals often appear in the free tourist brochures which paper the island. Typical rates for "usable used cars" (Aloha Fun Cars, AAA Rents, Island World Rent-a-Car) range from \$75-\$90/week, including insurance and unlimited mileage. Most have 24-hour road service.

It's unnecessary to make reservations from the mainland prior to your arrival in Hawaii, but if you're compulsive then these are the addresses: Aloha Dive Shop, Koko Marina, Hawaii-Kai, Honolulu 96825 (808/395-8882); South Seas Aquatics, 1050 Ala Moana Blvd, Honolulu, 96814 (808/538-3854).

Resort Course Drowning Suit Settled For \$1 Million

The family of a Chicago woman who drowned while scuba diving at Hanauma Bay three years ago will receive a \$1 million out-of-court settlement.

Geralyn J. Mandel, 20, of Chicago died in September 1981 while honeymooning in Hawaii with her husband, Robert. The suit was filed by the woman's parents, her brother, and her husband.

According to the lawsuit, the couple and three other people were escorted by instructor Carol A. Burger of American Dive Hawaii Inc. for the dive tour, which was promoted by Aloha Hawaii Travel Ltd.

It was the first time the couple had scuba dived, according to Wilson C. Moore Jr., the family's attorney. The woman was found in about 20 feet of water after she had become separated from the group, he said.

The settlement was reached prior to a trial that was scheduled to start today. The original complaint asked for \$2.5 million.

Defendants in the case were Burger, American Dive Hawaii, and Aloha Hawaii Travel.

The family will receive \$500,000 from Burger, \$480,000 from American Dive Hawaii and \$20,000 from Aloha Hawaii Travel Ltd., Moore said.

Representatives from American Dive Hawaii confirmed that the lawsuit had been settled, but declined comment on the matter.

Burger is no longer employed by the company.

The Destruction Of The Caribbean

—Can The Tide Be Turned?

Glittering islands in the sun. Long stretches of sandy, palm-shaded beaches. Azure waters rife with reefs and tropical fish. 100 feet of underwater visibility. These are the popular, still largely correct, tourist-poster views of the playground of the New World: the Caribbean. Sadly in recent years less enticing images have begun to intrude. They show thick plumes of exhaust spilling from new oil refineries; bubbling, dark cesspools of untreated wastes only a hop away from beaches jammed by tourists; mountainsides scarred by open-pit mining and hardscrabble agricultural plots. The vacation paradise now faces the spread of environmental blight at an alarming rate.

Time magazine reports that last year the countries of the Caribbean, 27 nations in all, from the islands Grenada and St. Lucia, to the coastal powers such as Venezuela, Mexico and the U.S., took a long step toward improving the region. A majority gave initial approval to two treaties that should help encourage cooperative action toward a cleanup. One of those pacts governs all types of pollution; the other deals specifically with oil spills. Negotiated under the auspices of the U.N. Environment Program, the treaties are relatively toothless declarations of good intent. But they have one notable aspect: the enthusiastic backing of such foes as the U.S. and Cuba, Honduras and Nicaragua.

Much of what has gone wrong in the Caribbean traces to the very success of its economic development. Some 100 million tourists flock to the region every year. Hotels and condominiums are springing up almost everywhere, from the volcanic islands of the Antilles to the 100-mile-long stretch of hitherto virtually untouched barrier reef off Belize. Along with the divers and vacationers has come a multitude of corporate enterprises: petrochemical plants, electronics factories, cement works. Attracted by special economic enticements and an eager labor force, industry now occupies or overlooks once pristine mangrove swamps and placid lagoons like those that dot the coast of Puerto Rico.

More and more Caribbean nations are tearing up irreplaceable rain forests to plant such export crops as bananas, sugar cane, tobacco, coffee and cacao. On the sea, tankers, carrying oil from Venezuela and more distant shores, crisscross the Caribbean; as much as half of the U.S.'s imported oil comes through these crowded sea arteries, many of them leading through dangerous, narrow straits.

These developments are slowly helping to raise the standard of living throughout the Caribbean basin, with its exploding population of nearly 200 million. But the price has been high. Each new hotel or fac-

tory takes away a bit of jungle, sometimes replacing valuable mangrove, whose matted roots provide shelter and sustenance for aquatic life. Says Puerto Rico's Arsenio Rodriguez Mercado, a scientific adviser to the U.N. Environment Program: "Sewage generated by 30 million people is dumped more or less untreated into the Caribbean." On some islands, hotels discharge wastes into the waters where guests swim. Adding to the mess are the cruise ships and yachts anchored offshore.

No one knows yet what effects these discharges may have on the sea, but marine scientists are not optimistic. In Jamaica's Kingston harbor, numerous fish kills have been linked to the high bacteria count in the water. Fishermen in Cartagena, Columbia worry about the effect of mercury and pesticide levels on shellfish and other marine life. The Caribbean's shallow coastal waters are a rich breeding ground for sea life, ranging from shrimp, mollusks and crustaceans to numerous varieties of finfish. Any major disturbance of this fragile ecosystem could have far-reaching repercussions. Unfortunately, there is little awareness of the economic importance of these resources. Few officials seem willing to trade off the immediate payoff of a new hotel for the long-term benefits of a protected reef or thriving coastal estuary.

Inland the story is worse. Each year nearly 4.4 million acres of forest were destroyed. In Central America, vast tracts have been converted to pasture land, largely to raise beef for the U.S. market, while natural-grasslands in Venezuela and Columbia go largely unused. Another reason for loss of forests is the increasing incidence of slash-and-burn agriculture. As impoverished peasants lose their traditional lands to the spreading single-crop plantations, they move higher and higher up forested mountains, clearing away timber for firewood and subsistence farming. In Haiti and Jamaica, the results have been disastrous.

Once the mountainsides are denuded, erosion begins. The land can no longer hold water. Soil fertility drops without the replenishing nutrients from trees. Rivers swing from one seasonal extreme to another, sending flood waters surging off the mountains in the rainy season and causing long periods of drought in summer. The torrents may be accompanied by landslides. More subtle damage comes from silting. As rivers wash debris into the clear coastal waters, the particles reduce the transparency of the sea, cut down sunlight and kill off coral reefs and valuable coastal sea grasses, on which much marine life depends. Any diver who has dived an island over a several year period may have seen the

symptoms.

No less damaging are the effects on the rain forest's flora and fauna. Perhaps a hundred of the famed parrots that appear on St. Lucia's stamps are believed to be still left. Conservationists estimate that 40% of the vertebrates that have become extinct around the world in recent years have died off in the Caribbean. Scientists can only guess how many species of plants are permanently gone. Such losses represent a tragic assault on the splendid diversity of terrestrial life. They deprive us of genetic varieties that could have been valuable for any number of purposes, from supplying natural pharmaceuticals to offering the genes for crossbreeding hardier plants.

Informed, sensible agricultural policies could reduce such losses in the future but even the most sophisticated technologies have so far been little help against the growing threat of Caribbean oil spills. In addition, there is the danger of seepage from offshore fields along the coasts of the U.S., Venezuela, Trinidad and Tobago and Mexico. Past experience suggests that 6.7% of total offshore oil production

will spill into the sea because of such mishaps as blowouts, platform fires and other accidents. The world's largest oil spill, in fact, occurred in the Caribbean when a well being drilled by Pemex, the Mexican national petroleum company, blew on June 3, 1979. Before it was capped 290 days later, it had poured some 475,000 metric tons of oil into the sea. Scientists still cannot say what the effects were on the rich fisheries, coral reefs or sea-grass beds of the Caribbean basin. But they agree that the beautifully delicate world of the Caribbean could not readily withstand a repetition of that environmental disaster.

Whether the tide can be turned remains to be seen. Given the enormous influence of the United States in the Caribbean, it will most likely be up to American leadership. Although the Reagan Administration has spoken of grand plans for the Caribbean, its approach to development does not carry a concomitant concern for the potential disaster development may bring. Unless mutual pacts turn into mutual action, the once pristine Caribbean will be forever fouled with the by-products of its own short-sighted success.

Polaroid's Instant Slide Film

—For Amateurs Or Professionals?

Don't compare it to other film. It doesn't look like it, it doesn't feel like it and the results are not comparable by the same analytical criteria. It is Polaroid color and black and white instant 35mm slide film.

When I first read about Polaroid's development of the film, I was enthusiastic but skeptical. It was too good to be true. Snap a roll of slides and a minute later have projector ready slides in your hand. I made mental note of obvious questions: Was the process messy? Would the slides have to be dried before mounting? What kind of resolution and fidelity could be expected? How was the grain structure? Was it prohibitively expensive? And, most of all, judged on the whole, did it work?

Yes, it works. That's the most important criterion for a professional or amateur photographer. How the film performs under actual field conditions is much more important than pages of technical data and scientific descriptions of why it works. When I spoke to Ron Klodenski at Polaroid, before testing the film, I asked him if there were any special criteria to look for or applications that might not be apparent, especially for underwater photographers. Ron pointed out that their color slide film had a low ASA rating of 40, something easily enough taken care of with strobe lighting. He suggested that making an analysis of the film with a loupe would not do it justice, that the film was made differently from other slide films, was of greater density and should be projected in a dark room for best results. Polaroid

was interested in knowing how the film would do underwater.

Since I was off to Bonaire in the Dutch Antilles, I was ready to give the film a good workout. I loaded the 40 ASA color slide film into a Nikonos III camera equipped with an Oceanic 2001 S strobe. Metering, where necessary, was done with the Sekonic L164-B Marine Meter. Close-ups were made using extension tubes and the standard 35mm Nikonos lens, set at 2.75 feet. All strobe pictures were exposed at 1/60th of a second at varying apertures, testing film sensitivity.

Since the film had greater density and a relatively low underwater guide number, based upon its rated 40 ASA speed, I assumed that I would have to compensate by opening the aperture a little more than required. A surprising thing happened. Underwater, when the strobe was being used, the film was properly exposed when shot as though it were 64 ASA rated film. In other words, it behaved like some motion picture films: when exposed with artificial light the rated speed was increased. On land, however, a little more lens opening was required for proper exposure. But that's getting ahead of the story.

The Film And Its Processing

There are three types of instant slide film. Polachrome 35mm Instant Color Slide Film rated at 40 ASA, Polagraph High Contrast 35mm Instant

New Findings On Decompression Sickness

Some recent and rather disturbing findings about decompression are presently causing concern throughout the diving medical establishment. That's the report of David Clarke, the editor of *Triage*, the newsletter of the Association of Diver Medical Technicians.

Clarke reports that detailed examinations of forty-four spinal cords taken from animals previously subjected to various decompression procedures (and the spinal cord of one diver who had sustained serious Decompression Sickness) suggest that residual damage is far greater than would have been anticipated from previous clinical evaluations. Perhaps even more worrisome was evidence of permanent spinal damage in those animals whose history was believed to have been limited to Type I (pain only) Decompression Sickness (DCS).

At present, the implications of this research are being evaluated and further evidence sought. Mixed opinions abound and the outcome is far from resolved. In the meantime, however, a more cautious and informed approach to the immediate management of decompression incidents is necessary. Greater attention must be paid to those seemingly mild or transient symptoms which are occasionally reported after diving. In many cases, when divers fail to recognize symptoms or choose to ignore them, significant delays in recompression result or symptoms remain untreated.

It is well-documented that bubbles are produced without concomitant symptoms. Although these bubbles produce certain temporary changes within the body, they have in the past been considered to be generally well-tolerated. With these recent findings in mind, the diver should pay more attention whenever such bubble formation is sufficient to produce symptoms. This caution is especially applicable where skin manifestations of DCS occur.

Even today, some diving medical specialists advise that these signs and symptoms will resolve without recompression and do not require attention. Although this has certainly been the case in many instances, a diver complaining of DCS should not wait to see if he'll improve without therapy.

Obviously, it's unreasonable to institute recompression treatment for every ache, pain or unusual sensation. It is equally unreasonable, however, to ignore complaints when they are associated with a recent dive. In many instances, where it might be tempting to consider such complaints as not decompression-related, it is advisable to bear in mind the following:

- (1) Mild symptoms can deteriorate to more serious complications.
- (2) Effectiveness of treatment decreases proportionally with the length of time between symptom onset and recompression.
- (3) A survey (by Pearson) indicated some 30% of those divers reporting Type I DCS were found, upon examination *prior* to recompression, to be suffering also from concurrent Type II DCS. It may be reasonable to assume that if any of the group suffering Type II problems does not report his or her symptoms, or symptoms are left untreated, permanent cord damage could be a possibility.
- (4) Response of skin manifestations to recompression is usually excellent. Often the diver is asymptomatic even before arrival at treatment depth. The diver, then, should be aware of any unusual physiological conditions and seek treatment if he has any question.

Black and White Slide Film rated at 400 ASA and Polapan Continuous Tone 35mm Black and White Slide Film rated at 125 ASA. The Polachrome color slide film is packaged in 36 or 12 exposure cartridges and has a list price of \$14.85 and \$10.50 respectively. The Polapan black and white slide film is packaged in 36 exposure cartridges with a list price of \$14.95, the same as for the color film. Polagraph black and white film is packed in 12 exposure cartridges and lists for \$10.50.

Polaroid has devised specialized equipment to process exposed film and mount the slides. The AutoProcessor, a small boxlike device which winds the exposed film against the processing cartridge, lists for \$99.95. The slide mounter, listing for \$19.95, enables the slides to be quickly and easily mounted

and cut. Polaroid also markets boxes of slide mounts which list at \$4.95 per hundred. List prices are provided for comparison purposes. Perusal of any of the major photography magazines reveals that the Polaroid AutoProcessor and film is heavily discounted by stores, many of which sell mail-order. No other chemicals or products are necessary other than the film, the AutoProcessor, the mounts and mounter. Each roll of film is packed with a disposable cartridge of developing fluid which is plugged into the AutoProcessor, used and discarded.

The instant slide film feels thin. When developed, it looks like aluminum foil on one side. The film, which fits all standard cameras, worked without problem in all Nikonos and Nikon land equipment. If the finished roll is rewound entirely into the car-

tridge, the end can be pulled back out easily by means of a clever little extractor which comes with the AutoProcessor. When the film is exposed and rewound, it is slipped into the AutoProcessor and clipped to the leader of the processing fluid pack. The slack is taken up, the lid closed and, after waiting five seconds upon depressing a lever to activate the fluid, the film and processor strip are wound slowly with a crank. One minute later (two minutes for the Panchromatic 400 ASA film) a lever is thrown and the crank is turned again. The film is now being rewound into its original cartridge and the processing strip rewound back into its disposable pack.

While being rewound, the developing strip removes several layers of film along with the negative layer. The lid of the AutoProcessor is opened and the developing pack thrown away properly. The pack is neat and dry, but in the event any chemicals are seen, use care to keep them out of eyes and if skin contact occurs, rinse and wash with water. The developed slides are dry and clean and ready for projection.

How Does It Work?

Polaroid describes their invention as a fine-lined color screen over a clear polyester support. The screen repeats three color stripes, red, green and blue. When the light strikes the film, these 394 triplets per centimeter act as color filters. Each "filter" allows only its color through. The reds, for example, are exposed on silver halide grains directly behind the red screens or filters.

When the film is developed, alkali, developing agent and silver halide solvent are released. The silver halide grains are reduced to silver, the unexposed silver halide becomes soluble and migrates to a positive image receiver layer. During developing, the soluble silver complex becomes the positive silver image which will not permit light through during projection. When the film is rewound, the negative image layer and other top layers of the film are peeled off and go into the disposable processing pack. In projection the color screens or "stripes" or "filters" transmit light of their color, blocking other colors. For white, no positive image silver covers the three color stripes. Black forms when the positive image silver covers all of the stripes and blocks the passage of light through them.

All the above is easier said than conceived or invented. The Polaroid engineers truly deserve the highest awards for ingenuity for their development of this system.

The Results

Here I'm critical. The film behaves just fine in the camera. It is easy to use and easy to handle in developing in the AutoProcessor. The Polachrome film proved to have a higher ASA sensitivity than its

rating, nearly double, when a strobe was used underwater. On land with natural light, a little more exposure was necessary. The 40 ASA film speed is not a drawback for underwater use, since most underwater photographers try to use 25 ASA for macro and 64 ASA all-around. But the pictures...

Dear Undercurrent:

I blew a fancy \$65 on a silicone skirted mask and just hated it. It kept fogging up and I thought maybe it was that I just had hot, fat little cheeks. Then I began checking with other divers and found that they had the same trouble. We all were ticked off that nowhere was there a hint or any information that this was the nature of the beast. It might be nice service to your readers so that they can at least make an informed decision before purchase.

Rosemary Burns
Houston, Texas

Dear Rosemary:

That's never been a problem with any of our silicone masks so we were perplexed especially after we learned by phone that you had tried every sort of defogger - spit, a cut potato, and commercial stuff - and nothing worked.

We called a number of people in the industry to identify the problem, but without success. Not until we spoke with Vern Peterson, production manager of Dacor, could we find anyone else who had heard of it. Peterson said "the only word we have had about this is that it has come from Texas and we can't explain why only Texas has problems. Our engineering department is looking into it."

It took a call to Dennis Graver to find a plausible solution. He has found that silicone grease used in manufacturing can be present on the glass and this grease may cause fogging. No amount of spit or defogger will work. A strong abrasive cleaner such as Comet or Old Dutch is required to cut the grease. And, it doesn't hurt the glass.

We could not find a fogging mask to test, nonetheless we passed the solution on to Vern Peterson. "That's a hell of a lot better answer than my engineering department has come up with," he said.

But, Rosemary - and readers - if the problem is more tenacious than that let us hear from you. And, why only reports of fogging from Texas? 'Tis a mystery.

Ben Davison

"The film is somewhat grainy and the grain structure will not hang together for enlargement greater than 8 x 10."

There is a purpleish dominance and the reds are not crisp. The film is somewhat grainy and the grain structure will not hang together for enlargement greater than 8 x 10. The Polachrome color slide film will not presently enable high quality reproduction in magazines or books, so the professional magazine photographer will not be inclined to use the film on assignment. It wasn't designed for that anyway. The professional photographer doesn't use a Polaroid instant camera on assignment either, except to test exposure and composition. The black and white slide film is adequate for reproduction in magazines and newspapers. Polachrome color film can have newspaper application in black and white, by conversion. Some of the slides I took using the Polachrome film may be acceptable to some publications where color fidelity is not rigorous.

What about for fun? The amateur photographer, the teachers, the professional who wants to see what a particular camera is doing, will all rejoice. Polaroid 35mm instant slide film is a tool. Used for the first

roll or two on a dive trip to verify exposure, it can help the diver avoid problems he would otherwise not discover until he returned home. Used in teaching underwater photography, it will give instant proof of what's being taught, instant satisfaction and enable instant correction. Used in conjunction with the Polaroid slide printer, the film is ideal for instant snapshots. Price wise, discount stores have put the Polaroid instant outfits and film within reach of the average photographer's budget.

So my editor asked, "Now, whaddaya think? Is it any good?"

"It's amazing and it works, I replied. "But, instant pictures are instant pictures, not custom lab productions. If you're tolerant and willing to experiment, you'll achieve acceptable results. There's no mess and the whole shebang can go where you go. And it's going on my next underwater photography class dives, so my students can enjoy the thrill of instant success... or failure, but see and learn from the results."

The author, John Fine, is a prolific writer, a prize winning photographer, and a master instructor. When not away diving, he can be found at his typewriter in Scarsdale, New York.

Are There Limerick Lovers Among Us?

—Welcome To Our Second Limerick Contest

It was July, 1977, when we last asked our subscribers, Are there limerick lovers among us?

The answer was a resounding YES. We received more than four hundred limericks from our readers, some unprintable, some unreadable, and some not even limericks. We had a jolly good time reading them and so we published a couple of dozen to the delight of most -- but not all -- of our readers. We'd almost forgotten about the contest, until this letter arrived.

Dear Sir:

The recent interest in *Undercurrent* concerning scuba diving without benefit of clothes brought to mind a short limerick which I'm too embarrassed to share with anyone else. So here you are:

There once was a diver so crude,
He loved to swim in the nude.
A shark cruising by
The live bait did spy.
Now his gender is quite misconstrued.

Robert M. Jackson, M.D.
Philadelphia, PA

Although the good Dr. Jackson claimed to be too embarrassed to share his limerick with anyone but *Undercurrent*, we're certainly not too embarrassed to share it with our readers. After all, we have long been

aware of the locker-room instincts of divers. The raunchy response to our first limerick contest was living proof that divers are an outrageous sort, ready to do it deeper at the very first opportunity. Our limerick writers were physicians and pharmacists, women and working stiffs, fraternity boys and fraternity men, and basically divers out for a good laugh.

In case you weren't around in those days, let us show you a few sample entries.

Some people picked on well-known folks in our sport, and Cap'n Don of Bonaire got his share of friendly ribbing. Stan Yokell of North Caldwell, N.Y. wrote:

On the beautiful isle of Bonaire
Captain Don wholesales hot aire,
To the young and to old,
Don's bullwit is told,
But the compressors are treated with care.

Others took a more genteel approach. Take Barbara Carson of Modesto, California, for example:

Slipping silently through the dark sea,
One feels peaceful, all knowing, free;
A flash in the dark,
An eerie still spark,
What is that, slowly shadowing me?

Others still emphasized diving dangers as the key

to their limerick.

Let us dwell on the fate of poor Joan,
Who always went diving alone.
She ran out of luck,
When in a cave she got stuck,
With no buddy to take her back home.

Of course, all of our readers didn't exercise such good taste -- and that's what made the contest worth the kicks. Bodily functions were a preoccupation to many. Consider the submission of Nancy Osterheim of Superior, Wisconsin.

The owner of a wet suit named gotty
Came into our shop quite haughty
The suit seems just fine,
But I sure have a time,
When down deep I have to go potty.

And, just like Dr. Jackson's rhyme, private parts got plenty of exposure. Jim and Vivian Roberts of Pacific Grove, California, penned these lines:

A diver in upper New York,
Bobbed 'round in the lakes like a cork
But the water's so cold,
Up there I am told,
He came up with a frozen gazork.

So there you have it -- your invitation to submit your very own limerick to *Undercurrent* for entry into our second occasional limerick contests.

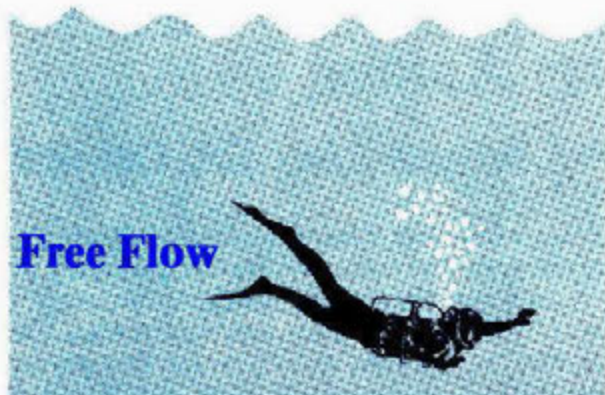
And to make your effort worthwhile, we'll send the winner a \$50 certificate to cash in at his (or her) favorite dive shop, and a \$25 certificate for second and third place winners. Each will get a one year renewal to *Undercurrent*, as will a few select honorable mentions.

So, sharpen your pencils, plug in your word processors, and let your imagination flow free. Send us as many entries as you like, but please submit each on a separate piece of paper. Don't forget to include your name and address on each.

We'll delight in reading any limerick sent, but will exercise at least a grain of good taste in deciding which to publish in our November/December issue. All submissions will become the property of *Undercurrent*.

Send your entries, before October 20, to:

Ben Davison
Undercurrent
Post Office Box 1658
Sausalito, CA 94965



Columnist Jack Anderson believes that the U.S. Navy is about to use dolphins in the "secret war" against Nicaragua. He writes: "The amazing dolphins chalked up an impressive record against enemy frogmen during the Vietnam War. They would be unleashed to find enemy demolition experts, whom they would dispatch with special hypodermic needles attached to carbon dioxide cartridges. The enemy frogmen would be impaled on the needles and literally blown up by the CO₂. Dolphins killed about 60 North Vietnamese divers -- and two Americans who accidentally got in their way. . . . The CIA has been concerned about the possibility of a U.S. Soviet 'dolphin gap.' For nearly 20 years the Soviets have been developing their own dolphin program. As a CIA report notes, one important use of trained dolphins is to attach 'intelligence collection packages and other devices to enemy submarines,' so the Soviets have been concentrating on jamming devices that would thwart U.S. dolphins.

Operators of an off-shore platform on the Northwest Shelf are continually training and evaluating the safety procedures of their crews. One exercise they have taken to is casting a life-like dummy, without prior warning, into the seas to monitor crew reaction. Recently the dummy was dropped into the water for another exercise, only to be immediately devoured by a passing shark.

The *Sedco*, a 470-foot floating oil drilling ship, will begin ocean exploration next year, drilling in water with depths as great as 27,000 feet. One of the goals of the project is to look for evolutionary clues. The Earth's land masses have been evolving for 4.5 billion years, while the sediment on the ocean floors is a "mere" 100 million to 200 million years old. Scientists hope to gain answers to many questions, including whether the Caribbean originated as part of the Atlantic or Pacific crust, and whether Florida and the Bahamas were once welded together.

The Underwater Medical Society recently reported one weird diving accident. A scuba diver needing treatment was brought to a decompression chamber, where one operator began to lock the chamber while the other went to the controls. Apparently the pressure was initiated before the chamber was fully attached or secured and the chamber itself was blown into the street 30 feet away. The patient got three broken ribs, although his decompression treatment came out successfully. And, yes, this is a true story.