

Fijian Resort Hotel; Taveuni Castaway, Fiji

-- Great Hotel, Average Diving; Average Hotel, Great Diving

BULA! This Fijian word for hello was my welcome to diving offered by a broadly smiling, almost glowing Fijian receptionist, Tima, at the dive shop in the Fijian Resort Hotel. Such was the start of my stay and the continued theme that ran through my visit to these beautiful, friendly and largely unexplored islands. My travel agent and my best dive buddy encouraged me to visit Fiji for the people and the diving. I was not to be disappointed either.

My first stop was the Fijian Resort Hotel, which on its stationery confidently claims to be "quite simply one of the best resorts in the world." Even allowing for hyperbole, the Fijian can lay some claim to the above. Located on the "coral coast" on the main island of Viti Levu, the Fijian occupies 100 acres on Yanuca island, a lush tropical area of palms, flowers and gorgeous white sand beaches. The hotel is arranged so that every room has an ocean view and the building complexes as, limited by law, are only three stories, "no higher than a coconut palm." In addition the entire complex is set into a small hill covered with foliage thus masking its hotelness. The rooms, while modern, are tastefully done and each has a lanai and refrigerator. The hotel has a full range of regular activities including sailing, golf, lawn bowling, kayaking and wind surfing. It also arranges daily feasts, festivals and tours to local places of interest such as a Fijian village. Usually once a week the firewalkers of Beqa perform their ceremony and, yes folks, they do walk over hot stones, a feat (sorry) worthy of Houdini. The Fijian caters to the palate as well. It has four restaurants, three moderately priced (\$2 for breakfast of eggs, toast, juice; \$4.50 for hamburger and fries lunch; and \$7 for a grilled Walu, a local fish dinner) and one quite expensive. The menus are quite varied and uniformly excellent, and run the gamut

INSIDE UNDERCURRENT

Moody Rebuilds In Fiji With A Plan For Investors	p.5
What's In A Name?	p.6
Undercurrent Travel Questionnaire	p.7
Nuclear Survival	p.9
Undercurrent Wet Suit Survey: Part II	p.10
Dear Undercurrent: My Tekna Timers Are Not Working	p.11
Solving The Steaming Silicone Dilemma	p.13
Training Agencies And Equipment	p.13
Sharing Air	p.14
Freeflow	p.16

from standard burger and fries to special Fijian and Indian foods (over half the population of Fiji is Indian). The expensive restaurant specializes in French cuisine. The Fijian also has 5 bars. It must be added that the above amenities are not without a price; the Fijian rate is \$95 per night double, is one of the most pricey hotels in Fiji--though quite moderate by comparable Caribbean standards.

After settling in, I sought out the dive shop located near the recreation area on the water. I spoke with Denis Beckmann (Sea Sports Ltd.) who owns and runs the shop. Denis, a slender, blonde Australian, is softspoken, friendly, helpful and concerned. The shop has only been operating for one year and Denis has been, in his words, "careful and cautious" in how he does business. He says he does not want to expand too fast beyond his resources and, thus, dilute good service. His long-term goal is to operate charters around the southern Fijian islands and an experimental first effort will be tried shortly.

Steve, Denis' assistant, is an American who spent time in Hawaii and set up a dive shop in Queensland, Australia. He has only been in Fiji since July. He appears skilled and knowledgeable. The dive shop itself is nicely decorated with Fijian scenes and an aquarium containing live shells, two moray eels and other fish. There's almost no retail stock so don't consider buying equipment. All gear is rentable including wet suits. I was disappointed to learn that only a one tank morning dive (\$20) was offered; wind and swells make afternoon dives difficult. The boats are 16-foot aluminum and entry is off a hotel beach dock; re-entry after dives is either over the side or through the rear using the engine mounting.

All the dives were on "Golden Reef," a 10 minute ride east of the hotel. My first dive was in a 20 knot wind and five foot swells. Visibility was about 60 feet and somewhat murky and sunlight was intermittent. (I found these conditions on all my dives in Fiji.) Denis was fixing a balky compressor and Steve led the dive. At the site Steve gave a good briefing plus outlined the dive plan.

At 60 feet the fish were spectacular in abundance, if not in variety, although they differ from their Caribbean cousins. Hordes of angels, damsels, butterfly and Moorish idols occupied the territories as well as many blue demoiselle, cardinal fish and a bright yellow painted flute mouth which I had never seen. A Jewel damsel kept poking at my mask and numerous clownfish cleaned anemones. There were huge expanses of stag horn, needle and plate coral (the latter looking like giant lily pads) and the browns, whites and greens of mushroom and brain coral. But the colors seemed muted. There was no soft coral, a beautiful addition to Caribbean reefs. And curiously, an entire section of the reef looked dead.

Three of the six divers were beginners with limited ocean diving, and 3 beginners plus one experienced diver violated the dive plan, (went from a plan of 60 feet to 85 feet). Steve was excellent in herding them, although I think he should have been firmer in the beginning as we were diving as a group.

The next day conditions were much better and visibility was sharp and clear.

Copyright 1984 by Atcom Inc., Atcom Building, 2315 Broadway, New York, NY 10024. All rights reserved. *Undercurrent* (ISSN: 0192-0871) is published monthly by Atcom Inc. Copies of this guide are not available on newsstands, but are furnished directly to the diving public by mail subscription only. To maintain its independence *Undercurrent* carries no advertising. Permission to photocopy articles herein is granted by Atcom Publishers, Inc. to libraries and other users registered with the Copyright Clearance Center (CCC) for internal and personal use only at the base fee of \$10 per article plus \$1 per page paid directly to CCC, 21 Congress Street, Salem, MA 01970. Serial Fee Code: 0192-0871/84\$10 \$1. Other copying by any electronic

or mechanical means, including information storage and data retrieval systems, without the express written permission of the publisher are strictly forbidden. News media may use no more than one quarter page of material per issue, provided that *Undercurrent* is credited. POSTMASTER: Send address change with old label to *Undercurrent* Newsletter, 2315 Broadway, New York, NY 10024. Second Class Postage paid at New York, N.Y.

If you wish to receive the accurate, inside information *Undercurrent* offers, please send your check for \$23 (U.S. funds) to *Undercurrent*, Atcom Building, 2315 Broadway, New York, NY 10024-4197, and get a valuable free gift.

Denis led the experienced divers and Steve was with four beginners (including former San Francisco Giant pitcher John D'Aquisto, whose control was better underwater). Purple and blue needle coral were abundant as were large expanses of white staghorn and green and brown plate corals. I noticed knobby coral on this dive and green and brown honeycomb coral. The fish were even more abundant, if that were possible, with schools of blue headed wrasse and goatfish in the hundreds. Two types of cardinalfish were present, five lined and blue striped plus a fusilier and a coral trout that I hadn't seen before. Most interesting on this dive was the appearance of four different members of the cod family, each at least 5 to 10 pounds. Flowery cod have formidable looking lower teeth and their markings are like a military camouflage suite. Inadvertantly, one swam right at me, looking like a fat torpedo with teeth. The 40-50 foot depth meant plenty of bottom time.

Denis found dead shells, although one diver kept a live exquisite cowrie. I noticed extensive shelling, live and dead, on all my dives in Fiji. This "reef rape" will destroy the reef and dive business over time.

On another dive in the same general area the reef seemed less alive, and the water more murkey. But I did see new fish: an emperor angel under a leaf coral, a lunar tailed glasseye and a somewhat uncommon red orange squirrel fish. Denis captured and gently held a small pufferfish which grew bigger and bigger and a 5 foot white tipped reef shark cruised by, acting not a bit curious.

Fijian/Castaway		
	Fijian Hotel	Castaway
Accommodations	★ ★ ★ ★ ★	★ ★ ★
Food	★ ★ ★ ★ ½	★ ★ ★
Diving for Experienced	★ ★ ½	★ ★ ★ ★ ★
Diving for Beginners	★ ★ ★ ★ ★	★ ★
Beach Snorkeling	★ ★ ★ ½	nothing
Money's Worth	★ ★ ★ ★	★ ★ ★ ½

After diving with Sea Sports I had the uneasy feeling of failed expectations; the diving was good and yet I was expecting it to be spectacular. What were the reasons? Perhaps it was expectations; I wanted soft corals, larger and more unusual fish, caves. The area seemed so virgin with few areas of coral decimation. It appeared largely waiting to be discovered. Denis told tales of the soft corals at 120 feet and other spectacular areas to dive. Yet we dived continually in the same areas. Thus I think the answer lies in the focus of Sea Sports, whose concern is certifying the resort diver. In the seven days I was at the Fijian, the same three certified divers went diving nearly every day. In contrast there were continued new learners. Thus, more easily accessible spots are selected.

Although somewhat disappointed I was hopeful about my next stop, the garden isle of Taveuni, a largely undeveloped island off the east coast of Vanua Levu, Fiji's second largest island. (Fiji has over 300 islands most of them inhabited). A short 1½ hour 9 seater plane ride and a ¾ hour van ride from the airport on a one lane dirt road brought me to the Castaway Hotel.

Shifting from the ambiance of the Fijian to the Castaway Taveuni was like going from the San Francisco Mark Hopkins Hotel to a fishing cabin in Yellowstone Park. The Castaway is a basic motel-like structure (it was originally constructed for Travelodge) with a small pool set against the water's edge. There is no usable beach. Each of the 33 rooms has a lanai, refrigerator and air conditioning, and is pleasantly furnished. The complex also has a game room and sauna. Next door, separate from the hotel, is a local bar (a sign outside states that women are prohibited) and a small grocery. The restaurant serves a limited choice of food at somewhat high prices given the setting (e.g., \$7.50 for a local fish dinner). The dinner meals, however, are excellent, tasty and well prepared, and the menu varies. Breakfast is acceptable and lunch very ordinary.

Soqulu Plantation, a housing development, has tennis courts, golf and a restaurant that is available to Castaway guests. It is, however, 15 minutes away. There are also beautiful local sites, e.g., beaches, waterfalls available by bus or taxi.

Although in splendid isolation, the Castaway was somewhat of a disappointment, much of this came from having spent a week at the Fijian. Some of it stemmed from the propaganda and misleading brochures published by the Castaway resort chain. Castaway Island, off the west coast of Vanua Levu, is luxurious and events oriented. I was expecting the same from Taveuni and found it very overpriced at \$60 per night double. Non-diving spouses will enjoy the Castaway if they like solitude, want to finish War and Peace or need a quiet place to study for the bar exam. Children will present greater problems.

Based on appearance and occupancy, the Castaway seems to be in some difficulty. It has the look of a hotel that has begun to deteriorate and could become seedy very quickly. For example, the lobby bathrooms were intermittently cleaned and there is peeling paint in areas. The Castaway chain recently sent in a new manager to improve things and there are unconfirmed reports that the chain wants to sell the hotel. Dive Taveuni has recently been allowed to expand its currently very limited tourist accommodations and of course, this has hurt Castaway business. As of now, Castaway is an acceptable place to stay; it's questionable what conditions will be like in three months.

But enough whimpering. I was here, however, for the diving, so arranged for two dives the next morning with Dive Taveuni (Matei P.O., Taveuni Island, Fiji. Phone 406M) and Ric Cammick, 2 tanks for \$50 including lunch. Snorkelers were also welcome for \$20 each. In meeting the legendary Ric I almost felt like those who met another Ric(k) (from Casablanca), a figure much larger than life. The tale of Ric has been told many times in the South Pacific; a construction worker who moved from his birthplace, New Zealand and went native. For the past 10 plus years he's escorted divers around Taveuni and he's purported to know about as much as one can about this 19 mile series of reefs.

And there he was. Tall, lean, rugged and always a hand-rolled cigarette dangling from his mouth. I found him droll, expert, very experienced and always distant. A rugged individualist, he makes his opinions known and he specifically dislikes any type of regulation, including government boat safety requirements such as life jackets. He doesn't much care for diver certification either, claiming he's met numerous uncertified middle aged divers who do very well. Ric runs a 32 foot cabin cruiser with plenty of space and a rear entry/exit transom. He trails a launch and either picks up divers from the water's edge at their hotel or ferries them from the hotel by truck to the waters edge. Adding to the legend, Ric sits on the upper deck of his boat, dangles his feet through a transom connected to the lower deck and steers his boat with his toes.

For experienced divers Ric will discuss the dive spot, depth and current. After that, divers are on their own. He doesn't dive much these days; sometimes his assistants dive and sometimes they don't. Ric's, it has been quoted, is for "divers who know what they're doing." Thus divers have to be responsible for everything from choosing buddies to the entire dive plan, which may prove stressful and awkward to divers who are strangers to each other and the area.

But what fantastic diving! The first dive to about 60 feet had visibility of only about 40-50 feet. Yet, fish were in the thousands. All the usual Fijian reef fish were present, damsels, Moorish idols, angels, clownfish, etc. plus two types of cod of at least 10 pounds, a wrasse of at least 20 pounds, schools of unicorn fish, plus a lion fish and a moray eel. The corals were abundant, soft and hard and bright colors of purple, green, orange and blue, and crinoids were abundant.



**YOU NEED DAN
DAN NEEDS YOU!**



**Join the
DIVERS ALERT NETWORK
(DAN)**

DAN FILLS A NEED

Diving has an excellent safety record, but as in all sports there is the potential for serious injury. DAN unites hyperbaric chamber facilities into a nationwide communications network to help divers and their physicians arrange consultation, transportation, and treatment by using a single central emergency telephone number.



**FOR DIVING EMERGENCIES CALL
(919) 684-8111**

24 HOURS 7 DAYS A WEEK



FOR INFORMATION CALL (919) 684-2948 MONDAY-FRIDAY 9-5 E.S.T.

DAN NEEDS YOU

The cost of providing this invaluable national service is high. Startup funding was provided by the federal government but not continued. Your certifying agency has shown its concern for safe/diving by actively supporting DAN. Do your part by becoming a member of DAN which will help insure the continuing existence of DAN as well as provide you with **diving safety information.**

JOINING DAN—\$10

Individual membership in Dan is \$10 per year—a small sum to insure there will be somebody able to help you immediately in the event of an accident and a real bargain when you include all the other services.

On joining you will receive:

- A. A personalized **membership card** with the DAN emergency phone number and a list of diving injury symptoms on the back.
- B. 1 large and 3 small **tank decals** made of salt and weather resistant mylar, with the DAN emergency phone number.
- C. The **DAN Underwater Diving Accident Manual** which describes symptoms and first aid for each of the major diving related injuries plus giving guidelines a physician can follow for drugs and i.v. fluid administration.
- D. **A newsletter, "Alert Diver"**, presents information on diving medicine and diving safety. Technical diving medicine materials are discussed in laymans language along with diving medicine articles for professionals. Actual DAN case histories and questions are presented in each issue.

Yes, I wish to join the National Divers Alert Network (DAN), and enclose my membership fee of \$10. Please send my Divers Alert Network new member's package as soon as is possible. (Please allow 3-6 weeks for delivery.)

Yes, I support the Divers Alert Network (DAN) and am enclosing an extra tax deductible donation of \$ _____

NAME _____

ADDRESS _____

NAME OF YOUR
INSTRUCTOR _____ AGENCY _____

Check if you are a:

instructor dive shop operator physician

Mail to: **DIVERS ALERT NETWORK**
BOX 3823 • DUKE UNIVERSITY MEDICAL CENTER
DURHAM, NORTH CAROLINA 27710

Supplement to Undercurrent for March 1984.

Moody Rebuilds in Fiji With A Plan For Investors

In our nine years of publishing, just about our favorite resort was Moody's Pidertupo Village, a seven-cottage outpost on a three-acre island off the Caribbean Coast of Panama. A few years back, as we reported, the village was attacked and burned by local Indians and the proprietors, Tom and Joann Moody, barely escaped with their lives.

Today they are rebuilding their dream, this time on the tropical Fijian island of Namena, where they are developing 10 of the 107 acres. Guesthouses, being built on the hillside, will have "panoramic views of the sea and distant islands and will be spaced far enough apart to ensure total privacy," writes Joann.

She also says "there are beautiful coral reefs abutting the shoreline for those who want to snorkel at leisure. For scuba divers, there is the spectacular Namena Barrier Reef which encircles the island and is about a 15-20 minute boatride away. The corals of the South Pacific are so colorful... every hue of the rainbow and then some. I am still enthralled every time I see a royal blue starfish. The reef fish are also more striking and brilliant in color in comparison to their Caribbean counterparts."

Moody's handcrafted Pidertupo Village was a real pleasure and we can't wait to see this one. However, the Moody's lost much of their resources in the Pidertupo burning and need investors. Writes Joann:

"We are plagued with one big problem, though, and that is sufficient financing to see this project through as quickly as possible. We do have a plan which might entice some of you. For a \$10,000 minimum investment for a 'Friends of Namena Club,' we would guarantee a payback of \$2000 each year due on the 12th, 24th, 36th, 48th and 60th months. For this investment, we would give eight ten-day vacations which would include meals and lodging. These vacations can be taken, given or sold by the investor with no time limit. If our opening rate is between \$190-\$200 double daily, our investors would realize at least \$16,000 worth of vacation time. . . . we can be contacted at either: Moody, PO Box 34, Charleroi, PA, 15022, or Moody's Namena Island Resort, Private Mailbag, Suva, Fiji.

After lunch (excellent quiche, cake bread, salad and pizza prepared by Do Cammick, Ric's wife), we traveled to a different, shallower spot. The wind had come up on the morning dive and created a strong current that continued in the afternoon. My dive plan required me to stay at 50 feet and I did not drop below the currents. "Walking" along the coral became tiring and stressful and I was not able to fully take in the reef. Again the corals, soft and hard, were multihued and plentiful as were the fish. Blue fusiliers and a school of pelagic jacks predominated; I was told that the currents for this day were "average"; perhaps, but I was hanging on the anchor line like a bed sheet in the wind. A drift dive would have made much more sense.

Legends can grow old and Ric's may be a bit tarnished. During my dives many divers, some by plan and others by circumstance, dived alone as regular practice. One diver regularly surfaced at least 10 minutes after the last diver. There were many jokes on board about how long this diver would stay below; if she developed serious problems, quite a lone time. A more serious story surfaced from a diver with Ric the previous day. He was not certified and his experience consisted of four 20 foot dives five years previous. One of Ric's assistants dived with him the entire first dive. The second dive the assistant stayed 15 minutes, then surfaced leaving the diver alone without even a buddy. This, I think, is irresponsible behavior.

Come on Ric! More consideration and concern might only diminish that nonchalance just a bit. Even the cinematic Ric eventually gave up his aloofness and became involved. Although not required, I think you have a greater responsibility to monitor what happens on board your boat. For example, although divers may foolishly want to dive alone, you are an imposing figure. Just saying the words "buddy up" triggers well ingrained responses in divers that are hard to ignore. In the water divers may choose to ignore your suggestion; my experience is that for most divers there will be at least a brief dive plan discussion, checking of equipment and periodic glances underwater. That may be enough.

Ric must have heard my criticism. On the boat ride to the dive site two days later, divers reported very strong currents similar to what I had experienced on my prior dive.

This time at the dive site, Ric mentioned the currents, warned everyone to be on guard, directed people where to dive, placed two lines trailing on the stern of the boat and said that if there were problems, divers would be picked up. Good for you, Ric! As a bonus Ric also led a tour. Although not as spectacular in size of fish, again there was abundance; a lobster hiding in coral, aqua colored anemones wrapped like basketballs while feeding, two transparent, almost microscopic shrimp cleaning an anemone, a giant clown triggerfish pacing to and fro, two emperor angelfish swimming in tandem, a jellyfish of brilliant blue, free swimming, a white-tipped reef shark. And there were crinoids of brilliant purples, a gorgonia and three very large fan corals. Ric left the tour after guiding the divers to the boat area and the dive was finished at 25 feet. The afternoon dive was less spectacular largely because my conservative dive plan prevented me from descending a coral wall. I saw from a distance a school of palagic jack and two 5 pound cod came within 10 feet. What was most enjoyable about this dive was, again, the abundance of reef fish and the brilliant colored corals at only 25 feet. Truly virgin diving.

Ric provides the experienced diver with fantastic sites, limited direction and at times his personal expertise. Thus, diving with Ric requires a very good knowledge of diving and it's necessary to be in good physical condition. It would also help greatly to have a buddy. If a diver is willing to forgo extended hotel amenities and be largely on his own underwater, Taveuni with Ric will be an unforgettable experience.

Divers Compass: Round trip air fare in August, out of San Francisco, was \$733/person plus \$128 to get to Taveuni...How to Get Lost and Found in Fiji by John McDermott (Waikiki Publishing Co.) is a good tour book; order through local store...At these distant outposts, you can rent masks, fins and snorkels, but bring everything else in good repair...The boat ride to Taveuni sites can take up to an hour; because there is choppiness, seasickness remedies are advised...in August, the Fijian winter, I found a wet suit top essential for mid 70 + water.

What's In A Name?

-- *FCSA/WPOCS, MOUPUS And SSAPRGDS*

In today's world of high technology there seems to be an ever-growing reluctance to call a spade a spade. This simple item would sooner glory under a more imposing title, such as MANUALLY OPERATED TOPSOIL PORTION RELOCATION IMPLEMENT (MOTPRI). Only the other day I heard a radio commercial in which a sponsor beseeched those with ailing cars to bring them to a certain garage where they would be repaired "by our fully trained Service Advisers." Is this ostentation about to invade our sport? Inner space may already be trying to emulate the technical jargon of outer space.

On a recent diving trip, one of our customers boasted a brand new buoyancy compensator on the front of which, amid all the plumbing, was a sort of flap with a velcro fastening. Above it, bold letters announced pretentiously, ALTERNATE BREATHING SOURCE. I wondered idly what sort of alternate breathing source such a small flap could possibly contain. It was too modest to hold even the tiniest pony bottle and mini-regulator. A CO₂ cartridge and two straws, perhaps? The mystery was

solved when the customer used the little gadget to hold the spare mouthpiece of her Octopus rig out of the way. But what if she were not using an Octopus rig? I had hilarious visions of a narced diver, confronted with ALTERNATE BREATHING SOURCE, trying to get emergency sustenance from a strip of velcro, or heaven forbid, the mammary gland that might possibly lurk behind it.

Our sport has already been attacked by those who wish us to operate under the camouflage of a vague blue and white flag that blends beautifully with blue sky and white clouds, thus rendering it virtually invisible from a distance. We no longer make a free ascent...it is now a free *swimming* ascent, even if the victim has accidentally caught his athletic supporter in the flukes of a rising anchor and is resisting strongly, so the thin end of the wedge seems to have appeared. How much longer will it be before our very basic equipment becomes renamed and hideously acronymic?

If we cannot fight this drift towards flamboyant

(continued on page 9)

Undercurrent Travel Questionnaire

Response Requested

Mail to: *Undercurrent*, PO Box 1658, Sausalito, CA 94965

Location being evaluated _____ Would you return? _____

Date of your trip _____ Hotel _____ Dive shop _____

What other resorts have you dived? _____

fish size tropical fish kinds of tropicals hard coral soft coral sponges, gorgonia... caves, ledges... wrecks sharks shelling snorkeling from boats water temperature visibility	<input type="checkbox"/> large ones plentiful <input type="checkbox"/> abundant <input type="checkbox"/> impressive variety <input type="checkbox"/> plenty and colorful <input type="checkbox"/> plenty and colorful <input type="checkbox"/> very nice <input type="checkbox"/> good variety <input type="checkbox"/> exciting <input type="checkbox"/> a couple for fun <input type="checkbox"/> excellent <input type="checkbox"/> some of the best <input type="checkbox"/> 80° + <input type="checkbox"/> 90 ft. or more	<input type="checkbox"/> a few big ones <input type="checkbox"/> not bad <input type="checkbox"/> fairly interesting <input type="checkbox"/> o.k. <input type="checkbox"/> o.k. <input type="checkbox"/> pretty average <input type="checkbox"/> some of interest <input type="checkbox"/> worth a tank or two <input type="checkbox"/> none <input type="checkbox"/> o.k. <input type="checkbox"/> not bad <input type="checkbox"/> 74°-79° <input type="checkbox"/> 50-90 ft.	<input type="checkbox"/> too small to eat <input type="checkbox"/> sparse <input type="checkbox"/> common ones only <input type="checkbox"/> kind of a bore <input type="checkbox"/> kind of a bore <input type="checkbox"/> not much <input type="checkbox"/> none worth diving <input type="checkbox"/> none <input type="checkbox"/> too many <input type="checkbox"/> none or prohibited <input type="checkbox"/> nothing to see <input type="checkbox"/> less than 74° <input type="checkbox"/> less than 50 ft.
--	--	--	---

rules for experienced divers guides for new divers diving frequency night diving boat diving beach diving dive shop manager air quality air fills rental gear repair capability	<input type="checkbox"/> no restrictions <input type="checkbox"/> top-rated <input type="checkbox"/> 3 or more tanks/day <input type="checkbox"/> frequent <input type="checkbox"/> two tanks under \$25 <input type="checkbox"/> as good as the boats <input type="checkbox"/> a great person <input type="checkbox"/> no problems <input type="checkbox"/> 3000 psi + <input type="checkbox"/> everything you need <input type="checkbox"/> can handle anything	<input type="checkbox"/> a little tight <input type="checkbox"/> acceptable <input type="checkbox"/> 2 tanks per day <input type="checkbox"/> 1-2 times/week <input type="checkbox"/> \$25-\$35 for two <input type="checkbox"/> fair possibilities <input type="checkbox"/> just does the job <input type="checkbox"/> I wondered <input type="checkbox"/> 2250 psi + <input type="checkbox"/> tanks, wt. belts... <input type="checkbox"/> some repair capacity	<input type="checkbox"/> treated as a novice <input type="checkbox"/> lousy <input type="checkbox"/> one per day <input type="checkbox"/> none <input type="checkbox"/> over \$35 for two <input type="checkbox"/> no way <input type="checkbox"/> a real bastard <input type="checkbox"/> I worried <input type="checkbox"/> short-changed often <input type="checkbox"/> bring everything <input type="checkbox"/> pray nothing breaks
---	---	---	--

hotel food nearby restaurants accommodations car needed nightlife locals weather insects	<input type="checkbox"/> gourmet <input type="checkbox"/> must try <input type="checkbox"/> luxury <input type="checkbox"/> of no use <input type="checkbox"/> swinging <input type="checkbox"/> helpful, friendly <input type="checkbox"/> great every day <input type="checkbox"/> none	<input type="checkbox"/> not bad <input type="checkbox"/> adequate <input type="checkbox"/> o.k., decent <input type="checkbox"/> only for touring <input type="checkbox"/> enough <input type="checkbox"/> no complaints <input type="checkbox"/> o.k. <input type="checkbox"/> now and then	<input type="checkbox"/> ugh! <input type="checkbox"/> better off fasting <input type="checkbox"/> far below par <input type="checkbox"/> a daily must <input type="checkbox"/> dead <input type="checkbox"/> hostile <input type="checkbox"/> many bad days <input type="checkbox"/> too many bites
---	--	--	---

Comments and comparison to other places visited: _____

Circle the number of stars applicable to your experience, from 0 to five (for the tops)

Diving for beginners	★ ★ ★ ★ ★
Diving for old pros	★ ★ ★ ★ ★
Beach snorkeling	★ ★ ★ ★ ★
Hotel meals	★ ★ ★ ★ ★
Hotel otherwise	★ ★ ★ ★ ★
Moneysworth	★ ★ ★ ★ ★

Location being evaluated _____

Date of your trip _____ Hotel _____ Dive shop _____

What other resorts have you dived? _____

- | | | | |
|-----------------------|---|--|---|
| fish size | <input type="checkbox"/> large ones plentiful | <input type="checkbox"/> a few big ones | <input type="checkbox"/> too small to eat |
| tropical fish | <input type="checkbox"/> abundant | <input type="checkbox"/> not bad | <input type="checkbox"/> sparse |
| kinds of tropicals | <input type="checkbox"/> impressive variety | <input type="checkbox"/> fairly interesting | <input type="checkbox"/> common ones only |
| hard coral | <input type="checkbox"/> plenty and colorful | <input type="checkbox"/> o.k. | <input type="checkbox"/> kind of a bore |
| soft coral | <input type="checkbox"/> plenty and colorful | <input type="checkbox"/> o.k. | <input type="checkbox"/> kind of a bore |
| sponges, gorgonia... | <input type="checkbox"/> very nice | <input type="checkbox"/> pretty average | <input type="checkbox"/> not much |
| caves, ledges... | <input type="checkbox"/> good variety | <input type="checkbox"/> some of interest | <input type="checkbox"/> none worth diving |
| wrecks | <input type="checkbox"/> exciting | <input type="checkbox"/> worth a tank or two | <input type="checkbox"/> none |
| sharks | <input type="checkbox"/> a couple for fun | <input type="checkbox"/> none | <input type="checkbox"/> too many |
| shelling | <input type="checkbox"/> excellent | <input type="checkbox"/> o.k. | <input type="checkbox"/> none or prohibited |
| snorkeling from beach | <input type="checkbox"/> some of the best | <input type="checkbox"/> not bad | <input type="checkbox"/> nothing to see |
| water temperature | <input type="checkbox"/> 80° + | <input type="checkbox"/> 74°-79° | <input type="checkbox"/> less than 74° |
| visibility | <input type="checkbox"/> 90 ft. or more | <input type="checkbox"/> 50-90 ft. | <input type="checkbox"/> less than 50 ft. |

- | | | | |
|------------------------------|---|---|--|
| rules for experienced divers | <input type="checkbox"/> no restrictions | <input type="checkbox"/> a little tight | <input type="checkbox"/> treated as a novice |
| guides for new divers | <input type="checkbox"/> top-rated | <input type="checkbox"/> acceptable | <input type="checkbox"/> lousy |
| diving frequency | <input type="checkbox"/> 3 or more tanks/day | <input type="checkbox"/> 2 tanks per day | <input type="checkbox"/> one per day |
| night diving | <input type="checkbox"/> frequent | <input type="checkbox"/> 1-2 times/week | <input type="checkbox"/> none |
| boat diving | <input type="checkbox"/> two tanks under \$25 | <input type="checkbox"/> \$25-\$35 for two | <input type="checkbox"/> over \$35 for two |
| beach diving | <input type="checkbox"/> as good as the boats | <input type="checkbox"/> fair possibilities | <input type="checkbox"/> no way |
| dive shop manager | <input type="checkbox"/> a great person | <input type="checkbox"/> just does the job | <input type="checkbox"/> a real bastard |
| air quality | <input type="checkbox"/> no problems | <input type="checkbox"/> I wondered | <input type="checkbox"/> I worried |
| air fills | <input type="checkbox"/> 3000 psi + | <input type="checkbox"/> 2250 psi + | <input type="checkbox"/> short-changed often |
| rental gear | <input type="checkbox"/> everything you need | <input type="checkbox"/> tanks, wt. belts... | <input type="checkbox"/> bring everything |
| repair capability | <input type="checkbox"/> can handle anything | <input type="checkbox"/> some repair capacity | <input type="checkbox"/> pray nothing breaks |

- | | | | |
|--------------------|--|---|---|
| hotel food | <input type="checkbox"/> gourmet | <input type="checkbox"/> not bad | <input type="checkbox"/> ugh! |
| nearby restaurants | <input type="checkbox"/> must try | <input type="checkbox"/> adequate | <input type="checkbox"/> better off fasting |
| accommodations | <input type="checkbox"/> luxury | <input type="checkbox"/> o.k., decent | <input type="checkbox"/> far below par |
| car needed | <input type="checkbox"/> of no use | <input type="checkbox"/> only for touring | <input type="checkbox"/> a daily must |
| nightlife | <input type="checkbox"/> swinging | <input type="checkbox"/> enough | <input type="checkbox"/> dead |
| locals | <input type="checkbox"/> helpful, friendly | <input type="checkbox"/> no complaints | <input type="checkbox"/> hostile |
| weather | <input type="checkbox"/> great every day | <input type="checkbox"/> o.k. | <input type="checkbox"/> many bad days |
| insects | <input type="checkbox"/> none | <input type="checkbox"/> now and then | <input type="checkbox"/> too many bites |

Comments and comparison to other places: _____

Circle the number of stars applicable to your experience, from 0 to five (for the tops)

- | | | | | | |
|----------------------|---|---|---|---|---|
| Diving for beginners | ★ | ★ | ★ | ★ | ★ |
| Diving for old pros | ★ | ★ | ★ | ★ | ★ |
| Beach snorkeling | ★ | ★ | ★ | ★ | ★ |
| Hotel meals | ★ | ★ | ★ | ★ | ★ |
| Hotel otherwise | ★ | ★ | ★ | ★ | ★ |
| Moneysworth | ★ | ★ | ★ | ★ | ★ |

PLEASE RETURN THIS TO:
UNDERCURRENT, P.O. BOX 1658,
SAUSALITO, CA 94965

Name _____

Address _____

City _____ State _____

Zip _____ Tel. _____

euphemisms, let's join it. With this in mind, perhaps the manufacturers of diving equipment could enhance their sales by pandering to the macho instincts of their customers, especially the state-of-the-art freaks who tend in rather large numbers to inhabit our sport. No longer would we deal with mere masks, fins and snorkels. These mundane items would proudly become FACIALLY CONTOURED SUBMERSIBLE AIR-TO-WATER PORTABLE OBSERVATION CHAMBERS (FCSA/WPOC), MANUALLY OPERATED UNDERWATER PROPULSION UNITS (MOUPU) and SURFACE SUPPLIED ATMOSPHERIC PRESSURE RESPIRATION GAS DELIVERY CONDUITS (SSAPRGDC) respectively.

For those who wear glasses which are attached inside the mask (sorry, I mean FCSA/WPOC) with a moistened suction cup, they would require a SPUTUM ADHESIVE MYOPIA CORRECTION LENS ACCESSORY (SAMCLA). For those who prefer to have their prescription built in, they would need a FACIALLY CONTOURED SUBMERSIBLE AIR-TO-WATER PORTABLE OBSERVATION CHAMBER WITH FUSED MYOPIA-RECTIFIED SCRUTINY PORT (FCSA/WPOCWFMRSF). Even the buoyancy compensator wouldn't escape. The hapless diver would don his INFINITELY VARIABLE VERTICAL DEPLOYMENT CONTROL APPARATUS (IVVDC), and by the time he came to his humble weightbelt he would be confronted by a VENTRAL CINCTURE WITH MASS BALLAST ADJUSTMENT MODULES (VCWMBAM).

In 1943, Cousteau and an engineer, Emile Gagnan developed the first Aqua-Lung. For many years this title was deemed adequate until someone decided that it just wasn't elaborate enough and so we were presented with SELF-CONTAINED UNDERWATER BREATHING APPARATUS. And so it is, alas SCUBA. Well, over forty years have elapsed since the Aqua-Lung was born and its high time for a change. "Tank" is far too simplistic and could mean anything from gas to Sherman. PRESSURIZED RESPIRATION GAS RESERVOIR (PRGR) is more explicit. Messrs. Cousteau and Gagnan were very happy with their first regulator and this device has so

far evaded with clutches of foraging hi-tech nomenclators. Soon it may succumb only to be reincarnated as a SUBMERSIBLE INHALATION/EXHALATION-ACTIVATED RESPIRATION GAS DISPENSING UNIT (SI/E-ARGDU). Manufacturers could have an advertising field day with this and bludgeon hesitant buyers into awed submission by adding brand and model numbers to the already ostentatious designation above. "DEBRIS DIVERS proudly announced its new and improved Submersible Inhalation/Exhalation-Activated Respiration Gas Dispensing Unit, the AUTO-MEGABLAST LUNGBUSTER MAGNUM, model UP-U-2. Ask your dealer for our DD SI/E-ARGDU A-M L M, UP-U-2." Add a few serial numbers to all this and the lure to even the most reluctant state-of-the-art fan would be irresistible. His prestige would soar immediately merely by virtue of ownership.

Making mountains out of molehills, or rather, sea-mounts out of polyps, could ruin skindiving. Eventually we could find ourselves indulging in DIVERSE ACTIVITIES VOLUNTARILY IMMersed IN AN ALIEN MARINE ENVIRONMENT (DAVIAAME). A future newspaper report on a diving accident could read: "...the victim had been DAVIAAMEing and his drowning was due to panic caused by an interruption in his SSAPRGDC." In other words, some swine had shoved a cork up his snorkel.

So while you all are rummaging in your PORTABLE DAVIAAME EQUIPMENT TRANSPORT REPOSITORIES (dive bags), fiddling with your FCSA/WPOCs, MOUPUs and SSAPRGDCs, assembling your IVVDCAs, discussing the merits of your favorite SI/E-ARGDUs, fumbling with your VCWMBAMs and banging your PRGRs together, I'm going to grab my stuff and go diving.

END.

Nigel Froome, the author of this article, retired in 1981 after spending 23 years as the resident dive instructor at the Grand Bahama Hotel. His last piece published by Undercurrent in November/December 1982, was "The Pig, the Owl, and the Pussycat."

Nuclear Survival

If you don a wet suit and tank and jump into a sizeable body of water during a nuclear attack, you've got a fair to middlin' chance to survive, claim officials at the prestigious Lawrence Livermore National Laboratory, in Livermore, California. Robert Hickman, a project manager at the Lab, said water can offer protection from immediate dangers, such as burns and injuries from "things flying through the air like bricks or pieces of glass. Water also absorbs

some forms of nuclear radiation." It can also absorb a lot of heat and some blast energy. Although a swimming pool might offer some help, the body of water should be large to "keep things cool," e.g. a river, a canal, a lake, a lagoon in a park, or a bay. The Livermore report was disputed by the Federal Emergency Management Agency, however. Calling the report "ludicrous and absurd," the agency will not pay for the report.

Undercurrent Wet Suit Survey: Part II

-- Would You Recommend Your Suit To A Friend?

In the last issue, we published the results of our readers' survey on wet suits, rating ten brands on warmth, durability, workmanship and comfort. Now let us look at each brand, listed in the order of their numerical responses:

1. PARKWAY. The typical Parkway suit is one-fourth inch nylon inside and out. However, there are a number of them with skin outside and some with lycra. The majority of the jackets do not have zippers on the wrists, have separate hoods and only a front zipper. Two-thirds of the pants are Farmer John style. About one-third have ankle zippers and a few have a front or side zipper. Seams are glued and sewn. Slightly more than one-third have no accessory pads, but over half have knee pads. Just slightly more than half (58%) indicate that the suit was custom made.

Percentage of Parkway users experiencing problems

Fabric tearing when striking a sharp object	21%
Stitches unraveling	30
Seams separating	18
Zipper breaking	17
Neoprene tearing from sharp object	14
None	44%

2. IMPERIAL: The typical Imperial suit is one-fourth inch neoprene with nylon on both sides, a separate hood, and about half have wrist zippers in the jacket. The majority of pants are Farmer John's with ankle zippers. The seams are glued and sewn. 80% have some accessory pads: 77% have knee pads, 57% have a spine pad. 80% are custom made suits.

Percentage of Imperial users experiencing problems

Stitching unraveling	29%
Fabric separating from neoprene	14
Fabric tearing from sharp object	13
None	49%

3. U.S. DIVERS: Three-fourths of the suits are one-fourth inch neoprene while the other quarter are three-eighths inch. The suits are about evenly divided between skin outside and nylon outside, with most having nylon inside. The hood is separate from the jacket. Most jackets have wrist zippers. Pants are divided equally between Farmer John's and high waist models. The majority of pants have ankle zippers. The seams are glued and sewn and most have no accessory pads; 88% of the users indicate they bought it off the rack.

Percentage of U.S. Divers users experiencing problems

Stitches unraveling	31%
Seams separating	21
Fabric tearing from sharp object	19
Neoprene tearing from sharp object	17
Fabric separating from neoprene	17
Fabric tearing while dressing	12
Neoprene tearing while dressing	12
None	33%

4. HARVEY: The typical Harvey suit is one-fourth inch neoprene nylon II (inside and out). The jacket has only a front zipper and detached hood. The pants are Farmer John's with no zippers. The seams are glued and sewn. Most are custom made and the majority have knee pads.

Percentage of Harvey users experiencing problems

Stitches unraveling	20%
Neoprene tearing on sharp object	16
Fabric tearing on sharp object	13
Fabric separating from neoprene	13
Seams separating	13
Fabric tearing while dressing	10
Neoprene tearing while dressing	10
None	53%

5. FATHOM: The typical suit is one-fourth inch lycra outside and plush inside. The jacket has a separate hood and no wrist zippers. Pants are Farmer John's with no zippers. Seams are glued and sewn and 94% have some accessory pads. Nearly all are custom made.

Percentage of Fathom users experiencing problems

Stitches unraveling	19%
None	73%

6. HENDERSON: The typical Henderson suit is one-fourth inch nylon II with a separate hood, zippers in the wrist Farmer John's pants with ankle zippers. Seams are glued and sewn and 82% have knee pads. The majority are custom made.

Percentage of Henderson users experiencing problems

Fabric tearing from sharp object	21%
Neoprene tearing from sharp object	17
Stitches unraveling	17
Neoprene tearing while dressing	14
Wearing out from back pack	14
Seams separating	10
None	52%

7. **BLUE WATER:** Typically a Blue Water suit is one-fourth inch with either nylon or lycra on the outside and with nylon lining. The hood is detached, the jacket has no wrist zipper and the pants are Farmer John's with no zippers. Seams are glued and sewn and 72% have knee pads. Three fourths of these suits are custom made.

Percentage of Blue Water users experiencing problems

Neoprene tearing on sharp object 16%
 Fabric tearing on sharp object 12
 None 76%

8. **SKIN DIVER:** This suit is ordered by mail, so all are considered to be custom made. It is one-fourth inch skin outside, nylon lined, with a separate hood. The majority have no wrist zippers nor zippers in the pants. All pants are high waisted. Seams are glued and sewn and there are no accessory pads.

Percentage of Skin Diver users experiencing problems

Seams separating 35%
 Neoprene tearing on sharp object 17
 None 39%

9. **SUB-AQUATIC SYSTEMS:** The typical SAS suit may be either three-eighth or one-fourth inch nylon outside, plush inside. The hood is separate from the jacket. The jacket has no wrist zippers. The pants are Farmer John's with no zippers. The majority have knee pads and seams are glued and sewn. Most are custom made.

Percentage of SAS users experiencing problems

Stitches unraveling 21%
 Neoprene tearing on sharp objects 16
 Fabric tearing on sharp object 11
 None 63%

10. **SEA SUITS:** The typical Sea Suit is one-fourth inch nylon II. The jacket has no wrist zippers and a separate hood. The pants are Farmer John's with no zippers. The majority will have knee pads and spine pads. The seams are glued and sewn. The majority are custom made.

Percentage of Sea Suit users experiencing problems

Stitches unraveling 28%
 Fabric tearing from sharp object 11
 None 61%

Dear Undercurrent

My Tekna Timers Are Not Working

Dear Undercurrent:

We have experienced a failure rate of over 80% in Tekna Timers model T3100 and T-3101. Other dealers that I have talked with in this part of the country are reporting like results. Instead of worn out topics like "The Pre-dive Jitters" and "Punch Drunk Divers," why not earn your money and look into this issue? Are you afraid of the manufacturers?

A Pennsylvania Dive Shop Owner

Dear Shop Owner:

What do you think? In the first place, we need to know about the problem before we can look into it. The manufacturers never tell us, of course. Your letter prompted us to contact the President of Tekna, Ralph Osterhaut, and, he quickly admitted that they, indeed, had had problems with the timers, despite extensive in-house testing prior to sending them out to the field. The timers failed to give the correct bottom time, often erring by enough minutes to cause an unsuspecting diver to get into bends time.

As Osterhaut explained it, "We have made a change in the pressure switch. The original switch did not come down correctly." They have also changed their bonding procedure and "the problem has apparently been eliminated."

"We test every module before sealing it in the housing. First it gets a drop test from three feet, then the unit is tested on an electrical tester to test the software. Then it is bonded (into the housing) then pressure tested and then put in a chamber to simulate five dives." These tests are conducted in air, since it is easier to detect leakage with air than it is with water.

One of the problems is that, "sometimes it worked fine and sometimes there was a problem indicated. But the problem was not consistent and not statistically projectable. When we got a 10% reject rate we knew something was wrong and immediately redesigned the units."

According to Mr. Osterhaut, the dealers have been notified of the changes made and older models can be returned for full credit. If you are a diver, return your defective model to the shop at which you bought it (or any other dealer) for a replacement.

And, to you dive shop owners, thanks for clueing us in. Of course Osterhaut didn't admit to the failure rate that you found, but that's not the point. There was a problem, the dive community is alerted, and hopefully it is now resolved.

By the way. Since you won't let us use your name because you're concerned about retaliation by other manufacturers, how about an apology for that bit about *Undercurrent* being "afraid."

Ben Davison

In 1976 the highest response we had that would recommend their suit to a friend was 90% and the lowest was 78%. Today, 96% is the highest and 83% the lowest. A marked improvement.

Zippers have greatly improved in the past eight years. Every manufacturer back in '76 had zipper problems while today only Parkway users and measurable problems. The major problems revealed in our survey eight years ago was stitches unraveling; it is still a problem, but surely of lesser proportion. With more suits being coated on the outside, there has been a decrease in the number of problems associated with neoprene tearing from sharp objects. But there has been an increase in fabric tearing from sharp objects.

Design of wet suits has also changed. The results of our '76 survey indicated strongly that an attached hood was warmer. Today you have to look long and hard to find someone who orders his suit with the hood attached. There are also fewer Skin-in and Skin-out suits reported. There is also a marked decrease in ankle, waist, wrist and side zippers used in suits; we suspect that a statistical correlation could be found -- the fewer the zippers the warmer the suit.

While the over-all ratings indicate that Fathom and Blue Water are the top-rated brands, this may well be due to the short time they have been used and the low number of dives with them. Only time can either substantiate or refute these ratings. We admit to some confusion.

**Percentage of users who would recommend
Their Suit to a friend**

Skin Diver	96%
Blue Water	96%
SAS	95%
Fathom	95%
Harvey	93%
Parkway	90%
Henderson	90%
U.S.D.	88%
Imperial	87%
Sea Suits	83%

Personal likes and dislikes, values and attitudes go a long way in determining how various people perceive their purchases or choices. In marketing parlance it is called by various names: psychographics, life-style, or whatever may be the buzz-word tomorrow. What ever it is can be seen in action here in this study. What else could account for someone recommending a \$70 suit to a friend at the same or higher level than those who own a \$400 suit? Skin Diver suits rank 9th for warmth; 10th for durability; 7th for comfort; and 10th for workmanship. But is the highest in the level of recommendation at 96%. Perhaps it is based upon the belief that at \$70 it is a good value. We can't argue that. But several things are happening with wet suits. First the

construction of products has improved over the years. It had to, just to meet competition. Even the good companies like Bayley, which is now out of business, could not keep up.

Perhaps more important is the introduction of new materials. Back in '76 the big argument was which neoprene was better: gas or chemically blown neoprene. With the answer to that question still not agreed upon, others have taken its place. Does a more flexible neoprene have less insulating capabilities than a stiffer neoprene? Does a more flexible (i.e. softer) neoprene break down faster than a stiffer neoprene?

In 1976 if you wanted the greatest thermal protection you would buy a three-eighth inch suit and put up with it being more cumbersome cause it had more material in it. The argument is the same one for the "soft" neoprenes versus the "non-soft." A Rubatex G231 has more material than does the R6000. Also a Yamamoto Type 45 has more material than the Type 38. But the R6000 and the Type 38 are more flexible and may give a better fit. But are the R6000 and Type 38 really "softer" than G231 and type 45? Rubatex maintains that their G231 is very soft. However, it does lose some stretchiness when covered with another material. But it does have more neoprene in it than the others.

Thus, as softer material comes on the market, it will probably be accepted because the suits "feel" better than the older ones -- even if in theory they are not warmer. But being warm is indeed subjective. We interviewed a number of people in the industry about warmth and material variety and found no science --only studied options and personal beliefs. It seems our ratings of divers preference perhaps has as much or more validity as any other technique.

Purchasing a suit

When purchasing a wet suit, you need to consider how cold the water is where you normally dive, as well your own level of comfort. Some people are just naturally warmer than others. If you normally dive in the Northeast or off the Jersey coast an old wrecks, or in the Northwest where the water temperatures run in the low 40's, then you should look for high density materials such as G231 or Type 45. These materials coupled with a good custom fit should provide the maximum insulation presently available.

Since wreck diving and shore diving are likely types of activity to encounter sharp objects, the suit should have some form of exterior coating material to protect it from cuts and tears. If you dive in areas where the water temperatures seldom drop below the mid 50's then you may have more options, again depending upon how cold you normally feel. It is in these and higher temperatures that some thermal protection can be sacrificed for suit flexibility, ease of getting into and out of the suit, and how pretty you look. But remember, you also may be giving up some

longevity in the suit itself.

Evaluate what your suit design should be, i.e., a high waist or a Farmer John.

Check around with other divers and note what they are wearing. Take advantage of their experience.

Any coating will increase the cost of a suit. The coating must be bonded on, the manufacturer has to carry an inventory, and there may well be more labor involved with a coated neoprene suit than one without coating. If you want all the bells and whistles, fine. But don't buy something more than you want.

The shop person should know more about the products than you do, but don't count on it. Any shop is in business to make money and if enough people come in and ask for a specific suit you can be sure

that they will soon carry it -- or else have a good story about why they don't.

Finally, in both surveys our data has pointed to the value of a good fit. Suits taken off the rack can fit some bodies. With the addition of a spine pad they will keep that standard body warm and comfortable. But for many people, that's not the way to go. Air pockets under the arm, down the back, in the crotch, or anywhere in a suit will, underwater, permit the cold sea water to flow freely (rather than to warm from the body) and reduce body temperature. There is no better reason to quit diving than because one doesn't stay warm for the duration of a dive.

But all custom suits don't always fit. . . . and that's a story for the next issue.

Solving The Steaming Silicone Dilemma

Do you find that your silicone mask steams over continually? That was the problem of reader Rosemary Burns, which we wrote about in our September issue. She claimed to have tried everything, to no avail. A number of people responded with solutions, but there were others who claimed, as had Rosemary, to have no success. Let us share several responses in hopes of clarifying the issue:

Kim and Steve Madaras, Scuba Luv, Thousand Oaks, CA. "We sell hundreds of masks through our store and we have our salespeople always inform the customer that a film does exist on the inside glass of the mask, and it does have to be removed prior to the first use. We have found that 'Softscrub' (manufactured by Clorox) works the best. It's a liquid and easy to apply and does not harm the mask. We originally discovered the problems on a trip to Cayman with new masks of our own. It looks like the manufacturers need to inform all of us about this problem."

Bruce Langston, Texas Scuba, Houston, Texas: "We advise all our customers to remove the film by rubbing toothpaste, a light abrasive, on the lens. If this is not done, no amount of spit or defogger will work. Curiously, some toothpastes work better than others, the gel type being the most efficient."

Jerry Gilbertson, Talahassee, FL. "In my family we're experienced the problem with U.S. Divers, Tekna and Tabata masks. I found a product called 'Go-Jo' in K-Mart and some auto supply houses, which mechanics use to clean the grease from their hands. Just put a gob of the stuff in the mask and scrub it well. Then rinse it out carefully. It will smell of hand cleaner for a couple of dives, but it sure works to eliminate the fogging problems."

Dr. Quentin Bennett, Napier, New Zealand: "With one mask glass that I had I tried every conceivable agent to remove the film: surfactants, degreasing agents, and wetting agents. I then retried all these with the addition of ultra sound, and in desperation tried special wetting agents for silicone, but still had no success. I obtained a replacement glass from the manufacturers, Sportsway Waterlung (they had to be pushed before they did anything) and there were no further problems."

'Nuff said?

Training Agencies And Equipment:

-- What They Don't Tell The Teachers

One thing that has always troubled us about the training agencies is how they systematically ignore mentioning anything "negative" about any piece of equipment. NAUI, PADI, NASDS, and the YMCA each have publications they send their instructors, but in our review of the issues over the years not a single publication carries significant evaluative comments about equipment.

We first realized this in 1975 when we reviewed the work of Red Howard, from San Diego, who had run tests on the SOS Decompression meter (marketed by Scubapro) and had realized that the meter gave a readout that did not fit with the U.S. Navy dive tables or any other table that we could find. Some of the profiles for repetitive dives were guaranteed to bend anyone who followed them. We published the

results of Howard's work, along with other follow-up articles involving interviews from Scubapro employees.

That kind of information should have been in the hands of the instructors. After all, plenty of instructors recommended the use of that meter and many followed it as if it were without fault. But not one training agency would publish Howard's results or warn their instructors of the problems. And they still don't.

The response to a letter to the editor in an issue this year of the NAUI News highlights the problem.

Kermit Robinson, a NAUI instructor from West Newton Massachusetts, wrote a letter indicating that he has had several inaccurate depth gauges in his five year career as a diver and has found errors as "dramatic" as 10-20 feet. Robinson, concerned that such error can mean a serious danger to divers writes:

"Since being certified for Scuba diving five years ago, I have been plagued by inaccuracy of several types of depth gauges, all oil filled, that I have owned. I am writing to you because I feel strongly that the information I have learned should be used in some way in certification class curricula... I have been disturbed enough by the apparent lack of knowledge among divers concerning gauge accuracy to try to do something about it... Please do what you can."

Here's NAUI's published response:

National Training Director, Walt Hendrick, Sr., said that he "shares Robinson's concerns" on this subject and has lectured on it on several occasions. The Navy report referred to in the letter was issued by and is available from the Department of the Navy, Experimental Diving Unit, Panama City, FL. 32401. Ask for Report No. 2-82, Evaluation of Commercially Available Weitt-Worn Depth Gauges, June 1982. "This report is too lengthy and complex for publication in NDA News."

Too lengthy and complex? Well *UNDERCURRENT* carried it for our readers. We got it into two and one-half pages. We didn't think it was too complex. Of course, perhaps our readers are a lot smarter than NAUI instructors.

But at least NAUI made mention of the report in

their Letters to the Editor. Other training agencies have not said one word about it... about any Navy equipment report... or about any equipment problems or shortcomings. Unless of course there is an equipment recall. Those they have started to publish.

So why do these agencies stonewall equipment? Why do they leave their instructors in the dark about equipment problems, developments and trade-offs?

Perhaps the most significant reason product information is never evaluative or critical is the inextricable human linkages that exist between the agencies and the companies. Executives of manufacturers and distributors sit on agency boards, agencies participate in the Diving Equipment Manufacturers Association, agency executives and instructors occasionally get consulting fees from the manufacturers, people have shuttled back and forth between jobs in training and manufacturing. As one agency executive told us, "We all know everyone else in the industry; there's no stomach for discussing product shortcomings." Another said, "Agencies simply don't want to be in conflict with the manufacturers; we'd rather keep the peace."

In addition, the PADI, NAUI and NASDS publications are supported by advertising revenue from the manufacturers -- ads on depth gauges, regulators, wet suits, etc. That by itself may be seen as sufficient reason to dodge commentary on their products.

But as reasons the agencies don't publish "negative" comments about equipment, they should not be excuses. In the case of the depth gauge study, why should the agencies not inform their instructors that in 70° water the U.S. Navy found that between 51 and 200 feet of depth, the Princeton Technics DG-100 showed the depth to be ten feet less than true depth, as did the Scubapro 28-503? That ten foot error could have a lot more to do with divers getting the bends than just about any other story the training agencies ever run. When the seriousness of these kinds of errors is conveyed to instructors -- and then to the people whom they train -- there will be a lot fewer people pushing the tables, a lot more people calibrating their gauges.

C'mon folks, get with it.

Sharing Air:

-- *Standardizing An Emergency Procedure*

Back in 1977, the Undersea Medical Society convened an Emergency Ascent Training workshop, and thirty-five experts spent two full days discussing the topic. Position papers were compiled in a publication available to the diving public. Reactions to the positions were also recorded and published.

The outcome of the conference reflected the desirability of using an independent action such as a

controlled emergency ascent or personal alternate air source ascent when it was feasible. If no independent action was feasible, buddy breathing, breathing on a buddy's pony bottle was recommended. All attendees agreed that training in these emergency procedures was critical to the success of any procedure. "Greater standardization of emergency ascent training and equipment was also recommended."

During the years since that conference there has been little, if any, progress toward that standardization of emergency procedures. Unfortunately, the recommendations from the workshop received little widespread acceptance and the trend toward the use of an additional second stage or "Octopus" continues without standardizing the procedure or placement of the extra second stage. Often the additional second stage just hangs loose and changes its location dependent upon the divers position in the water. Special clips for attachment of the additional second stage to the tank and straps come as well as pockets on bouyancy compensators in a variety of forms. In short, the proliferation of techniques available for an out-of-air emergency is limited only by the diver's imagination.

It is quite clear that emergency procedures should meet certain standard criteria if they are going to be effective for large populations of divers. Some criteria which seem appropriate are listed below.

* Simplicity—the procedure should be easy to learn and reinforce.

* The procedure should be logical and require a minimum level of skill.

* The procedure should be reliable and effective.

Without getting involved in the controversy over which of the techniques for air sharing is the "best," an examination of the problem reveals a procedure which would meet the above criteria with a minimum of retraining or expense.

Assume that independent action in the form of a controlled emergency swimming ascent is not executed, so we have an individual who goes to a potential donor for air. The "out-of-air" signal (hand drawn sharply across the throat) followed by the "I want to buddy breath" signal (hand and fingers motioning toward the mouth) could be given during the initial contact *regardless* of the manner in which the air supply exchange would proceed.

The person who wants the air would therefore always follow the same procedure:

1. Signal out-of-air.
2. Signal for sharing air.
3. Establish contact with donor.

4. Guide the offered air source to the mouth without taking it from the control of the donor.

This part of the procedure is well established in the field and should present no new problems. The donor may be prepared for:

1. Share—using buddy breathing.
2. Share—using alternate second stage.
3. Share—using a device such as the Scuba Pro Air
4. Share—using a redundant system such as a pony bottle.

5. Share—using some other suitable device.

Unfortunately, as it stands now there are a number of variations within each of these procedures which effectively complicate the problem of standardization.

It is proposed that consideration be given to standardizing the donor response signals. This can be done if the donor procedure is:

1. Respond to the signal by linking-up with the recipient. Grasp the harness or tank with the left hand and face the recipient.

2. Immediately pass an air source to the recipient using the right hand, passing the air source to the left front into the mouth of the recipient who will be facing the donor.

3. The donor retains control of the air source and permits the recipient to guide the mouthpiece of the air source into the recipient's mouth.

Thus the donor grasps either a strap or some other part of the recipient's gear with the left-hand while passing an air source with the right hand. This can be done quite easily if the air source is positioned in a consistent location where the donor can take the right hand and quickly (in a single move) grasp the air source and pass it to the recipient's mouth. We conducted an evaluation using a variety of techniques and determined that the most important issue for the donor was to be able to reach the air source and transfer it to the recipient's mouth in one motion. The move could be made quite easily when the air source to be passed was located within an area roughly covered by a triangle on the front of the body including mouth and the bottom of the rib cage on both sides. Placement of the air source anywhere

Statement of ownership, management and circulation, required by 39 U.S.C. 3685. 1. Title of publication: Undercurrent Newsletter. A. Publication No. 01920871. 2. Date of filing: Sept. 29, 1984. 3. Frequency of issue: monthly except for last month of year which is combined with the prior issue. 3A. Number of issues published annually: 11. 3B. Annual subscription price: \$23.00. 4. Location of known office of publication: Atcom Building, 2315 Broadway, New York, NY 10024-4397. 5. Location of the headquarters or general business offices of the publishers: Atcom Building, 2315 Broadway, New York, NY 10024-4397. 6. Names and complete addresses of publisher, editor and managing editor: Publisher: Edwin H. Brown, Atcom Building, 2315 Broadway, New York, NY 10024-4397; Editor: Edwin H. Brown, Atcom Building, 2315 Broadway, New York, NY 10024-4397; Managing Editor: Paul Susi, Atcom Building, 2315 Broadway, New York, NY 10024-4397. 7. Owner (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership, or other unincorporated firm, its name and address, as well as that of each individual, must be given): ATCOM, Inc., 2315 Broadway, New York, NY 10024-4397; Edwin H. Brown, 2315 Broadway, New York, NY 10024-4397; Lloyd deMause, 2315 Broadway, New York, NY 10024-4397. 8. Known bondholders, mortgagees, and other security holders owning or holding one percent or more of total amount of bonds, mortgages or other securities. None. None. 9. Not applicable. 10. Extent and nature of circulation: A. Total number of copies printed (net press run): Average number copies each issue during preceding 12 months: 13,000. Actual number of copies of single issue published nearest to filing date: 12,700. B. Paid circulation: 1. Sales through dealers and carriers, street vendors and counter sales: None; None. 2. Mail subscriptions: 12,740; 12,463. C. Total paid circulation: 12,740; 12,463. D. Free distribution by mail carrier, or other means: Sample, complimentary, and other free copies: 52; 52. E. Total distribution (Sum of C and D): 12,792; 12,515. F. Copies not distributed: 1. Office use, left-over, unaccounted, spoiled after printing: 208; 185. 2. Returns from News Agents: None; None. G. Total (Sum of E & F) 1 and 2 should equal net press run shown in A): 13,000; 12,700. H. I certify that the statements made by me above are correct and complete: Paul Susi, Business Manager.

in that triangle resulted in an easy pass, as long as the hoses, if any, passed over the shoulder or were attached near the shoulder in a fashion to permit the air source mouth-piece to be placed in the recipient's mouth easily.

The principal issue is that when the individual who wants air comes to the donor, the same procedure is always followed. This behavior then triggers a response from the donor that is functionally the same with regard to the mechanics of the movement irrespective of the other factors, such as the type of air-sharing device being used.

The air sources which were located on the left side of the driver's chest could be easily moved to the recipient's mouth whether they were attached to a hose leading from a first stage, or were attached to the inflator hose on a bouyancy compensator. It was however, important that the air source be in a *fixed* position in order to avoid delays in the smooth pass to the recipient's mouth. Velcro or other attachments need to be substantial enough to hold the second stage in a stable position.

Air sources located on the right side of the chest could also be passed quickly and easily if they were in a fixed location and had hoses sufficiently long to permit an easy pass to the individual on the donor's left. It was noted that fewer adjustments were necessary when the donor and the recipient were facing each other while holding onto each other during the exchanges.

The establishment of a standardized procedure does not mean that dive buddies should feel that there is no need to discuss or even rehearse the procedure prior to the dive. Training is paramount in any emergency procedure.

It is clear that there is a learning curve associated with the acquisition of the skill of air sharing. In the case of buddy breathing, a study conducted by the staff of the UCLA Diving Safety Research Project determined that from 17 to 21 successful trials of the skill would result in performances without errors in a group of basic students.

It was also noted that during a sampling of the student's performances on buddy breathing, following three months of diving without reinforcing the skill, resulted in degraded performances involving errors in

procedures.

It seems obvious then, that not only should the skills be well learned, but they should be periodically reinforced, especially in circumstances where the buddies are diving together for the first time. Use of alternate air sources such as an alternate second stage, Air II, pony bottle, etc., also involves the learning of a series of skills, and in terms of behavior involved in air sharing, these procedures are as complex as buddy breathing up to the point of sharing. The basic difference is that the recipient receiving an alternate air source need not alternate breath with the donor. This is a substantial benefit in many cases. It is folly, however, to assume that these alternatives to buddy breathing do not require substantial learning and reinforcement.

Please note that the recommended procedure would *not* require the donor to remove the primary regulator from the mouth except in the case of buddy breathing. Mounting the alternative air source within the triangle formed by the mouth and the outside borders of the rib cage has several advantages:

- * The air source has a consistent, semi-permanent location.
- * The air source is visible to the recipient as he approaches the donor.
- * A single movement with the right hand can quickly move the air source to the recipient's mouth.
- * A single basic behavior pattern is possible for the recipient and donor.

Some minor issues have been raised regarding potential problems which could complicate this recommended procedure. I am reminded of Paul Anderson's comment, "I have yet to meet a problem, no matter how complicated, which when looked at in when looked at in the right way, did not become even more complicated." It is certainly possible to conceive of "what ifs" that could create additional variables and interfere with smooth procedures. Adequate training, education and dive planning will still be required in order to minimize the "what ifs" and their effects.

The author of this article, Dr. Glen Egstrom, is in charge of the UCLA Diving Safety Research Project, Department of Kinesiology, UCLA. Dr. Egstrom's continuing research has made several significant and far-reaching contributions to diver safety.

FREEFLOW

Reader Daniel F. Condon of Salt Lake City, Utah, along with about 20 others caught us with our mathematical pants down. In our article on exploding tanks we used a figure of 5 psi increase of pressure for 1 °F. increase in temperature. This is an error. We inadvertently inverted the correct relationship, which is that for every increase of 1 psi there is an increase of temperature of 5.3 °F. In the actual test conducted by Linde, the tanks were at 800 psi and generated about 2217 psi in the fire. Well below the

3000 psi rating for the tank. But, the tanks blew up because aluminium anneals or loses "temper" at 350 F°, if held there for any length of time. In our example, the tank at 100 psi would only develop about 277 psi in a house fire of 1000 F. Whether or not this 277 psi could cause the tank to explode is not known. We would have been safer (if we did it correctly) by using 500 psi which would develop 1386 psi in the house fire. That might well have blown up.