

# undercurrent®

THE PRIVATE, EXCLUSIVE GUIDE FOR SERIOUS DIVERS

P. O. Box 1658, Sausalito, California 94965

Cable Address: Gooddiving

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## Bonaire, Netherlands Antilles

### *Fairy Castles And Hobbit Hideaways*

What if the devil suddenly appeared at your door announcing it was the day before he was to take you forever, and said: "As my last gesture I will transport you to any dive destination in the world--for a single dive. But you can't call ahead to find out the conditions and, once there, you can't request a specific dive spot. You can only go where the boatman takes you. And that will be your last dive. . .ever."

Where would you go? Where could you take the chance that the weather would be permitting and the visibility good; that the divemaster would pick a decent spot? It's a tough question, I know. But in the northern hemisphere I'd choose Bonaire, that sweet sister of Curacao and Aruba, down deep in the Caribbean, nearly in full view of Venezuela.

"Why?" you ask. First, it's almost impossible to have a bad dive on Bonaire. Nearly twenty years ago Captain Don Stewart sailed from Sausalito to Bonaire, took a brief peek below, dropped anchor and settled down. He quickly persuaded the government to preserve the extraordinary resources below the surface and got a ban on spearfishing. Although clumsy divers are now kicking the coral around more than I'd like to believe, the scenery is startling. Fairy land vistas are created by the wondrous species of hard and soft coral; at play are hundreds of common and not-so-common fish to fill out the diver's dream. And although there are scores of dive sites, one need only walk off the shore in front of any hotel for a quick drop to 120 feet and a fine bed of coral and fish.

Second, year-round the weather is nearly ideal. Well-sheltered by the isle of Klein Bonaire a couple of miles north, Bonaire is also far removed from hurricane country. So of all the places I've been, north of the equator, there's the least chance here that bad weather--or a lazy divemaster -- could spoil your dive.

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On my recent trip to Bonaire in late May, I found the water temperature in the mid-80's, the visibility nearly always greater than 100 feet, and the dive services offered by four vendors consistently suitable. During my two weeks I made twenty-five dives at sixteen different sites, each with unique hard coral formations, many with cuts and canyons, some with sharply slicing walls down to 150 feet or more, and all with lush soft coral, sponges and gorgonia, and a large population of reef fish. Night dives are simple, because the drop-off is directly in front of each diver's hotel. And night dives here are indeed beautiful when the creatures of the night replace those of the day. One evening, for example, a huge moray, seemingly agitated by our lights, grew unceasingly frenzied, then suddenly struck, in a blur of sand and movement, at a blue tang, which soon disappeared down the eel's throat. There's much of interest on Bonaire's reefs. Here are just a few spots I visited:

Ebo's Special: Here one can stay in relatively shallow water and play in soft coral beds, or slide down the drop to view deep water gorgonia and black coral. On one dive at this spot I logged 14 blue scrawled file fish--one pair seemed to be engaged in a minuet of courtship -- 3 groupers at wrasse cleaning stations, 11 box fishes, and plenty of angels, parrots, durgons, triggers, brittle stars, and bushes of black coral -- all amid violet, orange, red, lime and mustard hued sponges.

Angel City: Perhaps my favorite site, for nowhere else have I seen coral formations such as these. No doubt they are fairy castles, submarine towers, rococo apartment buildings, and Hobbit hideaways. Queen angels here seemed unusually tame, and there were plenty of triggers and morays, large schools of grunts and yellowtails, beautiful anemones, and I even saw two white-spotted file fish. The coral formations provided excellent silhouette photography.

Carl's Hill: A beautiful dive on Bonaire's northwest side, featuring a steep dropoff, radiant sponges, and swarming grunts and yellowtails. Though one can go to well below 100' before hitting bottom, I reveled in the beauty at 50 feet.

Karpata, Repel and 1000 Steps: These similar sites near the open ocean on Bonaire's west side offer a much different feeling than most others. Here moderate current and slight surface chop gives way to deep canyons and a more rugged terrain and different marine life. I was impressed with the shrimp varieties here -- my macro snapped closeups of blue cleaner shrimp, banded coral shrimp and others I've yet to identify. Forty-pound groupers at Repel were quite a sight. Though sharks are rarely seen in Bonaire, readers once in a while report seeing one or two in these areas.

Alice-in-Wonderland: One of Bonaire's more popular spots, I swam across a large, conch-populated sandy canyon (the bottom was 110') to a coral ridge at 90'. Of course there were the usual reef fish, in addition to several 15-20 lb groupers and, interestingly, two free-swimming spotted morays. I observed a few dramatic coral towers, though I wasn't as impressed with this area as I had expected to be -- or as I had been elsewhere. Later I learned we had not anchored at the "right" spot; I was diving with the Bonaire Scuba Center and a boat from the Flamingo with a score of divers had already moored, so we anchored away so as not to find ourselves in an underwater traffic jam.

The underwater traffic has increased, perhaps by three times since Cap'n Don had the only game in town when we first visited (See Undercurrent, January

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1976). The underwater beauty, the expanding dive services, the generally moderate prices, the proximity of good diving to the shoreline and the year round good weather means good business for the island -- and a slow decline of the isolated, pristine diving. Though the coral remains alive and well, inexperienced and inconsiderate divers still kick off hunks of life on every dive. With 100 or more folk in the water every day, one wonders just how long the reefs will reflect nature's original design.

Photographers will find Bonaire's water filled with beautiful backdrops and not-so-common fish. Divers in search of the excitement of larger creatures-- eagle rays or mantas, jacks or porgys, big barracuda or sharks -- will most likely be disappointed. New divers will find the calm water, services, and scenery to be just splendid -- though now and then divers complain of the similarity -- albeit beautiful similarity -- of the vistas. And now, where to stay and what boats to ride:

AQUAVENTURE HABITAT: Although the redoubtable Cap'n Don may have lost a step over the years, many of the old hands at Bonaire diving believe he still has the operation. His Habitat offers several two-bedroom cottages, simply furnished, comfortable and clean and with kitchens, for those who wish to buy supplies in town and prepare their own meals. Other Habitat quarters are little more than "monk cells" (please, "implored Bonaire travel rep Frank Fennel, "don't use that word; Cap'n Don coined 'monk cells' and we think they ought to be called 'economy rooms'") -- small, spartan, not air-conditioned -- and inexpensive. Nowhere on Bonaire is restaurant food distinguished (all vegetables, for example, are canned and frozen and entrees seldom have any flair), but Cap'n Don's kitchen puts forth one of the better efforts. Unlike most places, real coffee and real eggs -- not powdered -- are served for breakfast and a fresh fish entree for the evening meal earns good marks. Canned music is played throughout dinner in the al fresco dining area and disco takes over for the frolickers at 10 pm.

The Cap'n claims the Habitat is for "serious divers only," which means that once on board a dive boat no diver will get his hand held--literally or figuratively. You are on your own. It will be up to each diver or buddy team to get himself organized and plan their own underwater tour -- which is easy enough in these waters. The beach shop is well-organized with plenty of equipment and his two flattops -- which could use cosmetic maintenance -- make twice daily trips to the reefs. For shore diving, tanks are for the taking. There's also a photo lab for those anxious to preview their Ektachrome.

Cottage rent for two people is \$36 in the summer, \$52 winter; for four is \$48 and \$72; economy units are as low as \$14/person, single occupancy. Meals run \$3-\$9 and six days of unlimited dive package is an additional \$150. Reservations: Frank Fennel, Box 237, Waitsfield, VT 05673 (802/496-5067).

CARIB INN: This nicely restored beachfront home, with a pleasant courtyard and pool, has only five rooms, two with kitchenettes. Guests in the other rooms may rent a small refrigerator and an electric kettle for \$2/day. The Inn serves no meals, but it's only a short stroll to the restaurants of Kralendijk -- and the Flamingo Beach Hotel is just next door.

Bruce Bowker runs the dive operation -- and he and his wife operate the Inn. Bowker learned the reefs of Bonaire while under the tutelage of Cap'n Don in 1975, and now runs a small and highly personalized service for his guests -- and for nonguests who tire of the crowds at other resorts. Two small and speedy boats with canopies make either two trips/day or take all day, lunch-on-the-beach excursions to more distant and less-frequented dive sites. Bowker is highly



competent, attentive, and personable, and provides just the service needed by divers familiar with Bonaire's waters who want to visit a few new and yet untrampled sites.

Rooms run \$35-\$45/night. Two tanks by boat are \$25/day; additional tanks are available for beach diving. Reservations: POB 68, Bonaire, N.A. (Phone: 8819).

FLAMINGO BEACH HOTEL/DIVE BONAIRE: The Flamingo is a larger hotel (110 air-conditioned rooms) with a somewhat tropical ambience. There are some individual cottages and the better rooms have balconies facing the ocean or overlooking the pool in the garden courtyard. Open air dining is pleasant and though the service is tedious, the food is reasonably decent. Somewhat standard steak, chicken and fish dishes are the main evening fare, but the once-a-week Indonesian special, Rijsttafel, is a must. If one prefers larger hotels, this is the place.

Peter and Alice Hughes operate the most successful dive business on the island --if success is measured by sheer volume. Beginning as a friendly little operation in 1977 (see Undercurrent, May 1978), the Hugheses now transport three score or more divers twice a day to the reefs. Even so, they've retained somewhat of a personal and pleasant feeling with the volume and their well-organized shop operates efficiently and promptly. They also have a photo lab, operated by Dec Scarr whose occasional rudeness (it's been reported by some Undercurrent readers) to me seemed a bit unnecessary. Though the Hugheses operate a well-greased, super operation, I must state that I find 65 divers divided between three flattops (that was the case on one day I was there) a bit too crowded for my pleasure. As one old timer told me, "I remember when Peter wouldn't take more than 16 on a boat." Apparently, he's adding a fourth craft soon, but it remains to be seen whether the number of divers per boat will be reduced -- or whether Dive Bonaire will simply be able to serve more divers. Nevertheless, many divers like to have plenty of others around and that's why they come to the Flamingo.

HOTEL BONAIRE/BONAIRE SCUBA CENTER: When we first visited this motel-style operation in 1976, we complained of the run-down character but several changes in management have improved and cleaned up the building and grounds -- though the staff remains a bit impersonal. The beach is the best on the island -- actually, the other hotels have tiny, almost nonusable beaches -- and the beach bar is a pleasant place to relax after a dive. A small casino provides nighttime diversion. The real bummer at this operation, however, is the food. Just as we found several years ago, the largely canned and frozen fare is ill-prepared, tasteless and expensive. For example, some kind of frozen white fish in a sauce based in canned soup was a typical dinner entree -- and it went downhill after that. However, the quality of the dive operation is sufficiently high that taking the pleasant one-mile stroll into town for dinner (and perhaps riding a cab back) is an excellent alternative. Lunches, of course, are pretty standard.

The dive operation is first rate -- perhaps as well-organized, prompt, and efficiently run as I have seen on any island, anywhere. Unless requested by a visiting dive club, the divemasters never load more than 14 divers on a flattop. Gear can be stored and rinsed right at the beachside shop and a handy hot water shower at the shack means you can rinse off before lunch, nosh at the pleasant beachside bar, and prepare for the afternoon dive without heading back to your room. Tanks are always available for afternoon and night dives. The obliging staff is pleasant and very helpful.

The one week unlimited dive package -- double occupancy, ground transfers, unlimited diving and no meals (thank God!) is \$297 now and \$395 after December



15. Reservations: Bonaire Tours, POB 775, Morgan, NJ 08879; (phone 201/566-8866) or Hotel Bonaire, POB 34, Bonaire, NA (Phone 8448).

**HOTEL ROCHALINE:** If every other hotel on the island is booked, then this provides a fall back. This small hotel with sparsely furnished rooms all located on the second floor, has no facilities for divers, but it's served by boats from the Bonaire Scuba Center.

The dive package, double occupancy, with three meals is \$450. Reservations: Bonaire Tours, POB 775, Morgan, NJ 08879 (phone 201/566-8866).

**Restaurants:** In town, Zeezicht is the most popular restaurant, serving a mixture of local and Indonesian dishes. I found the food decent -- the best term for describing table fare on this island -- but not special. Two Chinese restaurants, neither comparable to average Chinese restaurants in this country, attract divers. At the Great China I had the only fresh vegetable salad in my two weeks; at the China Garden I ordered a conch salad, which turned out to be a slice of unpounded conch on a bed of lettuce, covered with salad dressing. Some divers reported good meals at the Beefeater, but I did not eat there. The Habitat and the Flamingo, I suppose, serve the best meals.

**Other activities:** Rent a car to tour the island (it's only 5 miles wide and 24 miles long), taking your tanks to drop in the water any place along the way. See the large lovely lake just south of Washington National Park. Drive around the windward side and drop into one of the two local bars for a cold Amstel (the locals are as friendly a lot as you'll find anywhere and speak English, although the local language is Papiementu, a creolized, Spanish-based language). By all means see the hundreds of pink flamingos against the white mountains of salt in the pink salt ponds at the south end of the island. Bonaire is a bird-watcher's paradise -- 145 different species live here.

**Divers Compass:** The four dive operations have plenty of rental gear and can handle many camera and equipment repairs. . . .there's some shopping, but this is no shopper's haven. . . .The Hotel Bonaire has two tennis courts. . . . there are plenty of fair-to-good snorkeling sites up and down the beach. . . . To the prices quoted here, one must add 15% for gratuities for the room rates and 10% for all other services, including diving; these surcharges are fixed by the government. Drinking water distilled from sea water is pure and safe.

## **CMAS: The World Underwater Federation**

### *—Why the U.S. Isn't Fully Accepted*

The director of a diving club taking a boat to Europe called me recently. He wanted the names of people to contact for diving in the cities where his ship would call. I had the international CMAS directory and gave him the addresses and telephone numbers of clubs and divers in several European communities. It was simple for me to look up names in a directory, but consider the difficulty a foreigner would have trying to locate a dive club in the United States.

CMAS, which stands for the Confederation Mondiale des Activités Subaquatiques (translated: World Underwater Federation) is an international associa-

tion of national diving federations. Founded in 1959 in Monaco by Jacques Cousteau, who was President until 1974, and Jacques Dumas, who has been the President since Cousteau's resignation, the federation now has 51 member nations representing 3 million divers.

CMAS functions through its member-nation participants, organizing world class diving events and championships, setting standards for diver training and issuing international diver "passports" earned through a carefully studied equivalency rating system. CMAS sponsors an international college of instructors which conducts training seminars and



provides expertise to the diving community worldwide. Most important, CMAS fosters a dimension of international cooperation and understanding among divers, whether their pursuit is pure sport or serious academic ocean research. Divers from as far away as Hong Kong can join with colleagues in Mexico and enjoy the benefits of the latest research in decompression diving, compete for prizes in international ocean orienteering, fin swimming or underwater photography.

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*"The United States is unique in not having a national federation that regulates diving, instruction, certification and licensing..."*

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The United States is unique in not having a national federation that regulates diving, instruction, certification and licensing, although the YMCA and NAUI are members of CMAS. PADI was once one of the more active members of CMAS but when PADI attempted to register the CMAS trademark to get exclusive use of their logo in the U.S., the CMAS Executive Bureau booted PADI out of membership.

According to CMAS officials PADI had not obtained prior approval from CMAS. PADI officials have indicated that a lack of communications and language difficulties led to the misunderstanding.

While NAUI was the only U.S. certifying agency present at the last international CMAS congress, NAUI's delegates were also the only members conspicuously absent at the balloting session for officers. That absence, and an insensitivity in the manner of criticizing CMAS procedures, has not made a particularly good impression with some members. The lack of participation and inconsistency in the U.S. representation in CMAS, as well as the lack of experience in international cooperation in underwater activities and an unwillingness to accept rules that prohibit international CMAS equivalency certification outside of a national federation's boundaries, has impeded U.S. acceptance in the CMAS program.

### **Diver Equivalency Ratings**

CMAS uses a three-star system to classify both divers and instructors and standardize ratings between countries. A one-star diver is least experienced, while the three-star rating indicates the most experienced and skilled diver. While a generalization about U.S. training may be unfair to the many conscientious and able instructors in the U.S., the level of diver training here, compared to certification and licensing requirements in foreign countries, is rather poor. Divers being pushed through "store courses" with the emphasis on equipment sales and often being taught by instructors who lack adequate experience, has resulted in almost universal disdain for the U.S. C-card.

Foreign dive instructors and resort operators who see American divers who first can barely swim and then struggle with even the most fundamental diving skills, have plenty of evidence for their bad impression of American divers.

American instructors are also lightly regarded in other countries. On many occasions when I have seen certified instructors struggling in the water, I've often wondered how American certifying agencies could have possibly turned them out. In Europe these U.S. instructors would not have been licensed as divers.

Using the CMAS standards, U.S. certifying agencies could benefit, both in better training procedures and added emphasis on open water training dives. If American divers were required to achieve a particular CMAS star level, training standards would be raised significantly. Unlike the C-card, the CMAS certification card is recognized and respected worldwide.

### **Underwater Sports**

CMAS recognizes four competitive underwater sports: spearfishing, fin swimming, underwater orienteering and underwater games. For a number of years CMAS has proposed that the International Olympic Committee recognize fin swimming as part of the world games. Recently dialogue between CMAS and representatives of the Olympic Committee suggest that fin swimming and possibly underwater hockey competition may become official Olympic sports. With the underwater games coming to California this year as an Olympic Games demonstration sport, these competitions could become sanctioned as international Olympic events. CMAS will not only continue to organize these sports, but will also certify judges for the competitions. The head of the CMAS fin swimming committee has requested that interested dive clubs contact him through CMAS to organize competitions in the U.S. Clubs wishing to participate in or organize CMAS-sanctioned activities or competitions can contact CMAS for information, addressing correspondence to the appropriate sports committee chairman for finswimming, underwater hockey, spearfishing or other activities in care of CMAS, 34 rue du Colisee, Paris, France 75007.

### **CMAS Membership**

Membership is applied for directly to CMAS committees and must be approved by the Executive Bureau and ratified by the CMAS General Assembly, which is composed of delegates from all member nation federations. CMAS has three committees: the Sports Committee which deals with underwater games and competitive activities; the Technical Committee dealing with all noncompetitive aspects of diving; and the Scientific Committee, which deals



# 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             | <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 boats | <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"/> ough!              |
| 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 visited: \_\_\_\_\_

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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          | ★ | ★ | ★ | ★ | ★ |





with biological, oceanographic, archaeological and other scientific diving endeavors. Only one organization per nation can belong to the Sports Committee and in most cases it's the national diving federation of the member nation. For the Technical and Scientific Committees, besides the national federations, instructional organizations or scientific research organizations can apply for affiliation, so long as there is no veto by the national federation.

### Conclusion

In the twenty-one years since CMAS was founded, it has largely accomplished the goals set in 1959, to unify, coordinate and develop the underwater disciplines. Notables such as Lord Mountbatten, Prince Rainier, the King of Sweden, Prince Charles

of England and dozens of others have addressed CMAS World congress meetings and taken part in CMAS activities. In a symbolic gesture at Genoa, Italy in 1964, CMAS took possession of the sea-bed with Jacques Yves Cousteau reading a declaration. The document was later sealed in a bronze cylinder and dropped into the sea with the flags of the member nations.

CMAS can be of invaluable assistance both to individuals seeking to pursue disciplines in diving seriously, and to clubs and diver organizations wishing not only to expand their horizons, but also to participate with fellow divers from around the world in cooperative exchanges of ideas and information. As diving becomes more popular and as divers continue to travel, CMAS equivalency certification will take on more important status as will the CMAS concept of standardization of diver training.

## Dacor J-valve Blowout

### Revisited

In the last issue we reported that 1600 Dacor J-valves (manufactured by Sherwood Selpac) may be defective. While the tank is being filled, the bonnet nut on the J-valve may blow off. So far five incidents have been reported, four occurring in dive shops. In one case the parts hit and damaged a display case; in another case a flying part glanced off and bruised an onlooker's hand. In one case the tank had been taken

from the shop after being filled; the valve blew out in the diver's garage. Fortunately, no one has yet been seriously injured, nor have there been any reports of in-water blowouts.

*The faulty valve is stamped "D-80." Any diver with the D-80 J-valve should first empty his tank then take the valve into his shop for repair.*

Bill Bowden, Chief Engineer of Dacor, explained

## YOUR MOST IMPORTANT PIECE OF EQUIPMENT

You pride yourself on being a safe, serious diver. You'd never think of diving without first going through a thorough check of your equipment. But if you're not currently a subscriber to UNDERCURRENT, you may be leaving behind your single most important piece of gear. UNDERCURRENT keeps you informed of the latest dive spots, gives you consumer tips on merchandise, and keeps you up-to-date with feature articles of interest to every diver. So don't be without the one piece of equipment most serious divers consider essential—UNDERCURRENT. Begin your subscription today!

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that the problem is with the bonnet nut, which is manufactured from brass—an alloy of copper and zinc. The nut is cleaned in a brief acid bath, but apparently in this batch the nut was either left in the bath too long or the acid wasn't sufficiently neutralized afterward. Regardless, the acid eroded the zinc, leaving soft copper threads. Under pressure, the copper threads don't hold, and the nut can blow off, along with reserve mechanism parts.

The J-valve problem occurred coincidentally with our research for the J-valve article, which appeared in last month's issue. Not one of the dealers or repair facilities we contacted mentioned the problem while we were discussing the reliability of J-valves. Only later did we learn about the problem from a brief note in Joe Dorsey's *Dive News* from Baltimore's Divers' Den. Later we called back the dealers and repair facilities to determine just why they hadn't mentioned the problem and received some interesting—and feeble—excuses. "Oh, why didn't you men-

tion it?" was one response, putting the onus on us. "I thought you knew about it," was another response, though we had asked if there were any problem with J-valves and the response to us had been negative.

In short, the industry at all levels maintains a protectionist attitude. But it's not divers who are being protected, it's the so-called "good name" of the industry.

Whenever there is a problem with equipment, everyone who can do something about it ought to be informed—and that includes *Undercurrent*. In this case, not only did Dacor fail to inform us so that we could bring the problem to the attention of our readers, but also people who sell and service the products remained mum.

When the industry talks about how much attention they pay to diver safety, we still must shake our heads in disbelief.

## Why Divers Die: Part IV

### *Embolism: The Number One Killer*

The apparent starting causes of nonprofessional underwater diving fatalities are presented in Table I.

Embolism continues as the major cause of fatalities. Many of these cases involve novice divers and include several cases of death while training in

either buddy breathing or emergency swimming ascent. The number of embolism cases is probably conservative, since other cases will be found in the category of possible exhaustion, embolism or panic.

Cases of heart attack or heart failure continue to

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appear each year. The toll would probably be reduced if rigid physical examinations were instituted for divers over the age of 35.

Hypothermia—the reduction of body core temperature—is a contributing factor to diving fatalities, but medical reports on cases in which hypothermia is suspected seldom mention this in the final diagnoses. One fatal case noted as “cramps at depth, cold” is the only instance in 1977 or 1978 in which we could pinpoint hypothermia as the probable cause of death.

The failure to use or the misuse of the “Divers Flag” was a factor in three fatalities where divers were hit by boats. In two cases the flag was not being used, therefore affording no notice to the boat operators that there were divers in the water. The other fatal case occurred while the flag was displayed from the dock which was used for the staging area during an advanced diver training course. A current of 5 to 6 mph made it difficult to keep a flag in the water upright and in place.

Environmental causes of underwater diving fatalities includes three categories: High waves or surf, strong current, and concentrations of kelp which cause entanglement. These are all situations which might have been avoided if the diver victim had recognized that the conditions were beyond practical diving. Equipment-related causes were discussed in the last issue.

### Skin Diving Fatal Accidents

It is nearly impossible to obtain information on all

skin diving fatal cases. Many are never noted or are listed simply as “swimmer drownings.” Nevertheless, the NUADC has recorded 19 skin diving fatalities for 1977 and 16 during 1978. Five in 1977 were apparently caused by extreme surf or sea conditions. Alcohol was involved in two of the 19 deaths. In the first instance, the victim attempted a two-mile swim after drinking more than 6 beers. The second victim allegedly was partying with friends on marijuana and beer. He was later found face down in the motel swimming pool with mask and fins in place.

Two cases were caused by the diver victim being stuck by a motorboat. In neither of these cases was the “Divers Flag” in use.

The 16 skin diving fatalities during 1978 included two apparent heart attacks and a 15-year-old boy whose death was verified by autopsy as congenitive heart failure.

Shallow water blackout may occur when a diver hyperventilates and reduces the carbon dioxide in his lungs, which is the triggering mechanism in one's desire to breathe. This can result in a reduction of oxygen in the blood reaching the brain, with blackout following. This malady is frequently noted in skin diver deaths and is suspected in at least six cases during 1977 and 1978.

Entanglement is another often-cited contributing cause in fatalities of breath-holding divers. Two deaths in 1978 were the results of such entanglement. In the first instance, the diver's legs were noted to be hopelessly fouled in a lobster pot line and in the sec-

## New Findings On The Moses Sole Shark Repellent *Is Lemon-scented Joy The Answer?*

When we last left our heroes and heroines of the sharp repellent saga, they had isolated pardaxin—the active ingredient in the Red Sea Moses Sole secretion that wards off shark attacks. (See *Undercurrent*, April, 1981). Because milking flatfish for mere milliliters of pardaxin is hardly the practical route to a marketable shark repellent, the researchers knew then that their chemical adventure had just begun. Now, on with the story.

Chapter two opens with Eli Zlotkin of Hebrew University in Jerusalem. Studying the chemical structure of pardaxin, he noticed its similarity to industrial surfactants, a class of chemicals that includes detergents, wetting agents and emulsifiers—some of which sell for less than 5 cents a pound. Zlotkin discusses his observation with Samuel H. Gruber of the University of Miami's Rosentiel School of Marine and Atmospheric Science. “To me,” says Gruber, “saying that a surfactant would repel sharks was like saying catsup will cure cancer.” He nonetheless suggested Zlotkin use his shark-equipped laboratory to test surfactants for potential shark-repelling properties.

Zlotkin took Gruber up on his offer last month and showed up in Miami with several Israeli brands of surfactants. Much to Gruber's surprise, the substances mimicked pardaxin's activity, causing sharks to veer away, adjust their gills, shake their heads. One particular surfactant even proved to be ten times more effective than a pardaxin extract.

Gruber declined to identify the substances already tested and strongly advises divers against conducting amateur experiments with surfactants. “We have to screen more than 100 different kinds of surfactants that exist,” he says.

The saga continues.

—Science News



ond, monofilament fishing line anchored the victim to the base of a pier piling.

### Commercial Diving

Some data from commercial diving fatalities will be useful to sport divers. Dry suit overinflation caused two fatalities each in 1977 and 1978. Three of the victims were using the modern neoprene-type of dry suit, and the fourth victim was wearing a full hard hat rig.

The hard hat victim was found floating in mid-water fully blown up and upside down, with his air lines hopelessly entangled on the bottom. The rescue

diver cut the airlines and the victim ballooned to the surface.

Overweighting is quite common for some types of commercial diving, but the NUADC felt that this was a causative factor in at least two 1977 fatalities. In the first instance the diver, in a dry neoprene suit, was wearing an estimated 60 pounds of weight without a quick release system. He was operating in very fast running water ten feet deep and was suddenly swept away. The body was recovered a great distance downstream. The second overweighted victim was also on scuba and wearing a back-mounted inflation device with a built-in weight compartment. The total weight was later estimated as 66 pounds.

**Table I.** Proximate Starting Causes of Nonprofessional Underwater Diving Fatalities, 1976-78

Estimated Cause	Number of Cases		
	1976	1977	1978
<b>(A) Medical and Injury Causes</b>			
Possible exhaustion, embolism, or panic	24	25	24
Diagnosed air embolism	10	16	12
Diagnosed heart attack or failure	8	4	4
Nitrogen narcosis	1	0	0
Hit by boat, extensive injuries	2	2	2
Aspiration of stomach contents	1	2	1
Possible intoxication	1	1	0
Possible choking, wad of gum	1	0	0
Decompression sickness	1	0	1
Cramps at depth/cold	0	1	0
Ruptured eardrum	0	0	1
<b>Total Medical Causes</b>	<b>49</b>	<b>51</b>	<b>45</b>
<b>(B) Environmental Causes</b>			
Lost or out of air in cave	21	7	11
High waves or surf	3	4	6
Strong current	7	2	3
Entangled in kelp	6	2	2
Lost under ice	3	1	3
Suspected shark attack	1	0	0
Entangled in external lines/ropes, etc.	3	3	3
Night dive, lost sight of shore lights or lost buddy	1	0	1
<b>Total Environmental Causes</b>	<b>45</b>	<b>19</b>	<b>26</b>
<b>(C) Equipment-related Causes</b>			
Out of air at depth	7	12	17
Overweighted at depth	1	1	1
Weight belt entangled in vest straps	1	0	1
Poor maintenance, regulator	2	0	0
Equipment "tied" on victim	1	0	1
Tank fell from backpack, victim strangled by neck strap	1	0	0
Accidental back-mounted buoyancy compensator inflation	1	0	0
On anchor line, struck on head by boat	0	1	0
Tangled in buddy's dropped weight belt	0	2	0
Lost buddy line, black water	0	1	0
Burst safety disc, tank flooded	0	1	0
Air reserve pull rod under tank band	0	1	0
Carbon monoxide poisoning, bad air	0	0	1
BC oral inflator broken	0	0	1
<b>Total Equipment-related Causes</b>	<b>14</b>	<b>19</b>	<b>22</b>
<i>Proximate Cause Not Defined</i>	39	13	23
<b>Total</b>	<b>147</b>	<b>102</b>	<b>116</b>