

undercurrent®

THE PRIVATE, EXCLUSIVE GUIDE FOR SERIOUS DIVERS

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Martinique, French West Indies

--Deep Wrecks, Shallow Reefs

Here is an island that rates among the most beautiful in the Caribbean, with tropical rain forests, jungles and vast deserted Atlantic beaches where one can enjoy solitude, sun and warm water. Martinique has world-class hotels and comfortable country inns. It has five-star cuisine and sumptuous creole cooking. It even has excellent deepwater wrecks and lively coral reefs. And though it can be reached from Miami or New York in less than half a day, fewer American divers come here than to the three tiny lodges on little Cayman.

But if you know Martinique, as do I, this should not be surprising. You see Martinique is pure French, and that poses two sets of difficulties that many tourists will simply avoid. In the first place, to get around Martinique a command of French can be important. While English is spoken at the larger hotels and at many businesses, Creole is the island language and French the universal passport to communication.

In the second place, Martinique is a Department of France and all of its citizens are French. Those traits that Americans who travel in France complain about -- arrogance, indifference, chauvinism -- may be found here just as well.

But, if you're a Francophile, if you can buck the language barrier, or if you can just plain take control of traveling in another land no matter what the circumstances, you can indeed find some pretty good diving -- if you can pierce that armor of indifference that does surely prevail.

Many people get introduced to Martinique diving through the Buccaneer's Creek Club Med, a meeting place for New Yorkers who, 51 weeks of the year, gather at Seventh Avenue singles bars. Serious divers will not be satisfied with the Club Med formula. They must venture forth on their own.

In Martinique, the membership Club system of diving prevails. While there

INSIDE UNDERCURRENT

Quite A Travel Guide!	p.3
Deciding To Go Deep	
--When You Want To Push The Limits	p.6
Crocodile Kletzman	p.7
Havard Report, Part III	
--The Scourge Of Foreign Competition	p.7
No Parts Available	p.10
Laboratory Tests Of Seasickness Remedies	
--Scopolamine Approved For Divers	p.11
Battery Explosion	p.12
Another Invitation To Subscribe?	p.12

place. Traffic jams are worse than New York at mid-day, taking almost an hour to cross through the city by car. And there's no parking.

Heading north, just outside of the city, is the Bateliere Hotel. I was shown a room for this hotel was desperately in need of clients, but at \$70 a night for a single I decided I could do better. But I did return to dive with the Tropicasub International Diving Center, located at the base of a cliff face in the back of the hotel. Admittedly, it's a hassle to lug down gear, but friendly Dominique Tempie has about the best attitude on the island, and went out of his way to get me good diving and photography. He took divers to excellent sites at Caille Vetiver and Cap Enrage, and organized a full-day dive picnic for six, including some club members who live on the island. Dominique's boat is a fiberglass, outboard-powered, open vessel, which provides no shelter from the hot sun. Getting back in the boat requires you to hand up your tank and make it over a two-foot freeboard. Dominique usually schedules two dives a day.

The best diving was at Diamond Rock, a British island fortress occupied from 1803 to 1805 during their war with France. In the middle of this 525 foot high rock, off the town of Diamant, is a large cathedral-like cave, an underwater photographer's paradise. Life on the boulders around the rock island teems with macro views and small reef fish that will inspire even the seasoned, well-traveled diver.

We also dived the Sec du Diamont, or the reef of Diamond Rock, a deep drop-off. Here was a huge resident barracuda, large jacks and other fish which hunt among gorgonians and sponges. It's a magnificent dive, but should only be attempted in dead calm; currents are frequent and difficult, requiring one to stick to the bottom and pull hand over hand along the rocks. There was once a fatality among Club Med divers at Diamond Rock when the dive boat left the group and anchored on the other side of the island.

Quite A Travel Guide!

Let me tell you about the best publication that's happened for the traveling diver since *Undercurrent* put out its first issue in 1975.

It's the *Divers' TravelGuide to the Caribbean and the Bahamas*, a 254 page run down of virtually every island in the Caribbean and the Bahamas. Full color photos on nearly every page give the person planning a dive trip a good peek at the island, and some of the hotels and dive operations.

For each island, there's a list of hotels, of dive operators serving the hotels, and independent operators as well. This is particularly helpful for the Bahamas, for example, where the number of islands and proliferation of dive operations can seem a bit confusing, especially to one who has never been there.

For each island, there's a rundown of the reefs and walls, as well as plenty of other information about the island to give one a preview of what one might do when not diving.

Make no mistakes, this is not an evaluative guide. The commercialism is apparent when one

realizes that while little Saba, with two dive operations and three hotels, gets 16 pages, the three islands of Cayman get but six pages. The spread for Aruba, no destination for serious divers is 16 pages; the same as neighboring Bonaire. Belize gets but six pages. Perhaps the next edition will be more evenhanded.

Nonetheless, it's a fine reference work, fun to read and useful to plan with. Used in conjunction with *Undercurrent* reviews, a diver planning a trip can't go wrong. In fact, it even includes coupons for a free t-shirt, a drink, or maybe even a dive at many of the resorts.

And if you're not planning to travel to the Caribbean, it's enjoyable just for reminiscing about those trips of past.

You can order it directly from the publisher: *Divers' TravelGuide*, 2269 Chestnut Street, #321, San Francisco, CA 94123, or you may use the enclosed order form to order it directly from Atcom, the publishers of *Undercurrent*. The price is \$19.95.

For me, the highlight is St. Pierre bay. Here lie the remnants of 13 ships, sunk in 1902 by the eruption of Mt. Pele. Most were wooden sailing ships that were transporting cargo. Some were iron vessels, and one is a large Quebec Liner. All but one are at depths of 90 feet or more.

Though Dominique will go to St. Pierre when requested, it may entail first a drive then his renting a fisherman's boat. So, I decided to bed down at the Latitude Hotel in Carbet. The Carib Scuba Club, operated by Michel Metery and his instructor Jacky Imbert, is operated on the beachfront at Latitude. It's about a half-hour's drive as the crow flies from Fort de France (a crow would never fly in such a convoluted loop-de-loop as the roads leading north, so allow an extra half-hour). Metery and Imbert use an open fiberglass boat, the prototype for Dominique's. There is no dock at Latitude, so we all helped to hold the boat off the beach to load gear.

If you like shipwrecks and archaeology and you're capable of independence with your buddy and have deep shipwreck experience, this is the place for you. Photo opportunities were extraordinary, though the plankton floating around means back-scatter. Creative use of strobe with natural light will produce good results. To get good shots, I swam to the clearer water inside the wrecks, but there is not much "inside" to some of the wooden wrecks, which are flat open in the sand, their cargoes sitting on top of what was once the deck. Brass and copper nails, hand-blown bottles and some nice souvenirs abound. And do the next diver a favor; don't dismantle or otherwise harm the wooden wreck to get at them.

The Roraima, covered with black wire coral and sponges, is upright at 150+ feet. Aft, in the deeper cargo hold, I saw storm lanterns fused together by heat from the fire. Pans were still in the pantry. On the flattened Terisa Lovico, building tiles and coils of rope are alongside barrels of cement, the barrels having rotted long ago. On the Gabreille, bones of long past sailors still remain.

Metery has written a book about these wonderful time capsules. They are his passion and he loves to talk about his experiences. So, insist on making his acquaintance. Buy his book as I did (it's in French but there are good pictures) and break the ice. One day, I joined Metery and four other divers for lunch. It was grand conversation (in French, although he does speak some English). I wish I had spent my two full weeks here.

Even the most wreck-crazed diver will have to put aside a day to go to La Perle, a rock north of the fishing hamlet of Precheur, a 45 minute boat run. The micro life on the rock ledges and boulders in 10 to 30 feet of water around La Perle I found superb. Deeper, the rock is festooned with gorgonians and colorful sponges. A night dive at La Perle rewarded me with extraordinary pictures of fish and invertebrate life set against stunning sponges in all shades of pastel. There is usually a current around La Perle, so entries and exits can be tricky from the boat. Metery threw a rope and float overboard, essential to any diver, experienced or not.

Since my trip, Metery, who owned the Latitude, has applied for the French equivalent of bankruptcy, but he continues to admit guests into his air-conditioned bungalows built on the water. It's essentially a diver's lodge, complete with single beds of dubious comfort. If the new owner completely refurbishes them, Latitude, in a beautiful setting on a black volcanic sand beach with tall palm trees, will have real potential. Of course, Metery will continue to operate his dive club.

All of the diving I've described is on Martinique's Caribbean side. The Atlantic side is much rougher, with poor visibility. I drove the Atlantic coast and found the scenery magnificent. Having wheels is mandatory to fully enjoy this large island. The basic jalopy rents for \$25+/day. Fast and careless driving is common, making the narrow, winding roads quite dangerous. In fact, I witnessed a couple of bad accidents.

The people? It takes patience — and the French tongue — to get to know everyday folks you meet along the way. Fishermen and people in the small villages will, with your patience, invariably offer to share their meal of their hot fish soup and mackerel rolled in flour and fried in oil. Don't pass up the chance to taste real Creole cooking (but watch the spices and a small red pepper-like thing!) Also, be aware that Martinique has its share of crime. Prudence and going in numbers helps insure security. Don't leave anything of value in vehicles parked in Fort de France and keep an eye on camera gear.

For the hiker, Michel Metery will point you in the right direction for a climb up Mt. Pele, now covered with greenery after lying dormant for three-quarters of a century. Don't miss the excavated ruins in the city of St. Pierre, nor the volcanological museum. You can see the mental hospital and the prison cell where the only survivor of the disaster was imprisoned.

Finally, I know of one American diver who organizes trips to Martinique, concentrating on the shipwrecks in the north. Mason Logie (Diveaway, P.O. Box 6261, Plainfield, NJ 07062) will send you a brochure with many useful facts about the shipwrecks. Mason is no slick tour operator. He does this only occasionally with small groups but he can help keep costs down. While providing the "group-power" required to get to those special dive sites.

SERVICE INFORMATION: Get free information from the French West Indies Tourist Office, 610 Fifth Avenue, New York, NY 10020 (Tel. 212/757-1125); ask the "Relais Creoles" brochure for information

on smaller hotels and inns, where you will be met with hospitality and friendliness ... Contact Michel Metery at the Latitude Hotel, Carbet, Martinique, F.W.I. (Tel. 78-08-08); address mail to Carib Scuba Club, Carbet, Martinique, F.W.I. ... Dominique Tempie at Tropicasub Diving Center can be reached at the Hotel Casino La Bateliere, 97233 Schoelcher, Martinique, F.W.I. (Tel. 73-34-56 ext. 188) ... Bring a transformer if you're going to charge dive lights and strobes; Martinique uses 220 volt current ... Many

businesses are closed in September and October ... I wore a full jump suit; water temperature at all depths around Martinique remains at about 78oF, which is bathing suit diving for most, but the suit will protect from jellyfish stings, fire coral and hydroids which abound ... I found a fine four course meal at The Crew in Fort de France for under \$10; run by a diver and his wife (Jean and Francoise) I got an appetitif on the house when I told them I too was a diver.

Star Chart:

Wreck Diving For Experienced Divers	★ ★ ★ ★
Reef Diving For Experienced Divers:	
If you work at it	★ ★ ★ ★
If you don't	★ ★
Diving for Beginners	★ ★
Beach Snorkeling	★
Money's Worth	★ ★ ★ ½

★ poor. ★★ fair. ★★★ average. ★★★★ good. ★★★★★ excellent

Undercurrent editors welcome comments, suggestions, resort/travel reports and manuscripts from readers of Undercurrent.

Editorial offices: P.O. Box 1658, Sausalito, CA 94965.

Deciding To Go Deep

--When You Want To Push The Limits

You've been diving for several years and have a couple of hundred dives under your belt, but none below 110 feet. You're on a dive boat in the South Pacific and the divemaster says that at 160 feet there's a cave filled with the biggest fish and lobster you'll ever see in a lifetime. To make that dive, you need to go 50 feet deeper than you've ever gone before, 30 feet past the 130 foot sport diver limits.

You want to take the dive, but that sort of depth scares the bejesus out of you. It's far past the limit you told yourself you would never exceed. Nonetheless, it's an awful tempting challenge. And, let's face it, half a dozen other people on the boat have decided to make the dive -- regardless of what they were taught in certification courses and read in publications are the so-called safe limits. Someone tells you it's just like driving. The safe speed limits are 55 miles per hour, but you've been driving safely for 30 years. You're behind the wheel of a Mercedes, it's a dry clear day, the road is straight, and you're feeling great. The drive is a snap -- and so is the dive.

Now, before you take the deepest dive of your career, what should you consider?

"If you can't do it without a divemaster, then you shouldn't be making that deep a dive out of pride, relying on a divemaster as you would a Disneyland employee in the magic submarine."

The first question to ponder is your experience and your condition. If you have the experience -- a good 50 or more dives, at a minimum -- and the skills, you can probably handle the dive under the best of conditions. But, what is your physical condition? If you're overweight, are over 40, are tired, are taking prescription drugs, (or have any other preconditions) then you have an increased susceptibility to the bends.

Furthermore, at 160 feet nitrogen narcosis will surely affect your judgment. If you're not used to its effect or have a tendency to panic, then a dive to 160 feet can create serious problems.

Many people make the mistake of relying on the experience of the divemaster to get them out of trouble, especially if he takes divers down by the hand. But it's easy to get separated from a divemaster, and then what?

You must rely on your own ability. The divemaster is there for an emergency. If you can't do it without a divemaster, then you shouldn't be making that deep a dive out of pride, relying on a divemaster as you

would a Disneyland employee in the magic submarine. Don't go beyond your own ability.

"Oxygen is a must for treating bends victims, but not everyone has it on board or at the resort."

The trick to a successful deep dive is self confidence. A dive that is safe for someone else is not necessarily safe for you. And do not be caught in the trap of forcing yourself beyond your limits by peer pressure or exuberance. Let your own common sense, intelligence and maturity overcome your emotional whims. Quite frankly, you can be staking your life, for at this depth there are always risks.

But suppose you're ready for that dive. What can you do to further reduce the odds of an unforeseen accident?

First, assess the conditions under which the dive is to be made: the wind, current, visibility and back-up safety features provided by the diving concession. Is the boat adequate? Is the captain knowledgeable? Is the crew proficient? Is the divemaster competent?

Where is the nearest working recompression chamber? What provisions are available for getting you there quickly? Is an air ambulance available? Can you afford it? Do you have insurance?

Talk with the divemaster and boat captain about the emergency equipment available. Oxygen is a must for treating bends victims, but not everyone has it on board or at the resort. In the Florida Keys, many boats do carry oxygen equipment and some operators even have a second stage connected to onboard oxygen tanks suspended in the water from a trellis on which decompressing divers can hang. Breathing oxygen while using the Navy Tables for Air Decompression offers an increased safety factor (providing one has had an oxygen toxicity test). Oxygen can greatly alleviate any post-dive symptoms until a chamber can be reached. In lieu of that, a hang bottle filled with air and enough regulators for all the divers in the water should be tied off to the boat at all times.

Much of the rigidity of the U.S. Navy tables has been reduced with the introduction of decompression computers such as Orca's Edge. Electronic movements and sensitive transducers combine with sophisticated calculators to compute the exact amount of decompression needed. Most divers see this as a way to pick up more bottom time, since a multidepth dive is interpolated in the diver's favor. But the real benefit is the program design.

The Navy Tables, as helpful as they have been to

Crocodile Kietzman

Gustav Kietzman went out for a little spearfishing in February on Lake Kariba, near his home in the African nation of Zambia. While diving in 20 feet of water, reports the Associated Press, he felt something nudge him from behind. Turning, he faced a 16 foot crocodile.

"He was so close," Kietzman said, "that I couldn't use the speargun. I grabbed for a tree and he grabbed me. He shook me like a dog shakes a rat. It was very painful. I thought I was going to die."

The crocodile took a chunk out of Kietzman's leg as he hauled himself up a petrified tree. Then it thrust itself out of the water, snapping at the man's heels as he clung to a branch with his flippers dangling three feet above the water.

One of his friends leaped from a motor boat to rescue him, then drove him 225 miles to the nearest hospital for repair. Kietzman, who will have no problem walking when the wound heals, will try spearfishing again.

"I hear that if you're farther out, towards the middle of the lake, there are fewer crocs," he says.

sport divers, are quickly becoming outdated. They were originally formulated by bending subjects in a chamber, then backing off the time on the next compression and taking a statistical analysis. The idea was to see how much of a pressure differential the subject's tissues could take without causing decompression sickness.

To be sure, the Navy Tables have come a long way since the 1920s when the "Attempted Salvage of the USS S-5" reported, "Four hundred and seventy-seven dives were made and only 10 percent of these resulted in a diver having the bends. This was con-

sidered a remarkably low percentage." Thankfully, the tables have been modified and refined since then.

Modern experimenters use a doppler to detect bubble size in the blood stream. This way, instead of allowing a nitrogen bubble to form a passable size, no bubbles are allowed to form at all. This is largely a function of the slower ascent rate -- 20 to 40 feet per minute -- allowed by the decompression computers, and a continuous ascent, as opposed to a staged ascent, which more closely matches the desaturation rate. Medical advances and computer science have given us safer methods and tools for decompression.

But the decompression computer needs a backup, especially when using it for deep dives. In case of battery death, component failure -- and Edge users have reported failures at depth and in its memory -- flooding, or accidental damage, the diver needs an awareness of his condition.

With a time place, the Navy Tables, and his ever-present knowledge, he can figure out his own decompression within allowable limits. One should always carry a set of Tables on a plastic card, so if the depth is deeper, or the diver gets carried away and does not watch his time, he can ascend to a stage one stop below his previously calculated stop, and figure out a new decompression schedule for himself.

With today's technology, one ought to use a decompression computer for deep dives. Without a computer, one ought to follow the tables which are more conservative than the U.S. Navy Tables (See *Undercurrent*, May and June, 1986).

But no matter which tables or devices one wishes to use for a deep dive, there is much more to making the decision than following diving rules. Of all the people sport diving today, only a small percentage ought to attempt a dive deeper than 130 feet. Before you make the decision to make that deep dive, make sure you, your experiences, the diving conditions and the boat and crew measure up to the task.

The author, Gary Gentile, has made more than 700 decompression dives, and more than 40 on the Andrea Doria. He resides in Philadelphia.

Harvard Report, Part III

--The Scourge Of Foreign Competition

This is the third part of "The Harvard Report," a study performed by Harvard Business School students of the American diving industry. In part one, several manufacturers were described and in part two the operations of the training agencies were detailed. The Harvard Report was commissioned by the Diving Equipment Manufacturers Association, but after limited distribution it was yanked from circulation. DEMA and others disassociated themselves

from the conclusions, stating that the recommendations, if implemented, would violate a number of American laws.

Other people in the industry, however, believed that the report was snuffed because it showed that the American industry was in disarray, perhaps even in decline, and that foreign manufacturers were about to take over the market.

We'll leave those conclusions up to you.

About 75 percent of the purchases of diving equipment are made by someone taking or just completing his basic certifying course. A complete diving outfit costs approximately \$1500, a major purchase by most standards specially when compared to many other sports. Not all new divers purchase equipment. Most choose to rent.

Divers purchase their gear from more than 2500 retailers in the U.S., 1500 of which are full service stores. Many are small dive shops which gross under \$200,000 per year. Although some stores earn good returns, the majority are marginally profitable.

The failure rate among dive shops is high, which can often be attributed to the lack of business sophistication of the dive stores' managers. Many instructors who open their own shops have little or no business experience. Their goals range from wanting to create an independent self-sustaining lifestyle to wanting to build a large and profitable enterprise. Even those with the drive to succeed often find themselves in trouble due to the complexity of a full-service dive shop, which in effect is six different businesses: equipment sales, equipment rental, instruction, vacation travel organization, air sales and equipment repair.

Equipment sales is by far the most profitable and the most critical to a store's success, generating up from 65 to 75 percent of a store's revenues. The gross margin on equipment is anywhere between 40 to 55 percent.

Profit Squeeze:

As instruction prices have been driven down and the cost of insurance, instruction, etc. have risen, retailers' profits have been squeezed. Some of the larger retailers have started to import equipment directly from Taiwan and Japan in an effort to raise gross margins. In some cases, importing has helped the retailers and in other cases, it has led to price discounting, further driving down margins. Retailers are gaining more bargaining power with the U.S. manufacturers as they find cheaper sources of quality goods.

A retailer's other businesses, such as instruction, are sometimes run at breakeven cost or a loss to sell equipment. We found that the average cost incurred by a retailer to offer a basic course is \$160 to \$200 per student, including all materials, rental equipment and four open water dives, as well as an allocation of overhead costs. But, retailers often allocate much less, so they conclude that at least a small profit is being made. But, after adding overhead for teaching space, depreciation for rental equipment, insurance and management, a loss often results.

Some retailers argue that because each student is expected to buy a mask, snorkel and fins, and the gross margin on these goods is typically 48 to 52 percent, they still make a profit. But some students buy

their equipment elsewhere, so it is difficult for the retailer to pinpoint profitability.

Mail Order:

Although the retail store is the most efficient outlet for providing products and services for new and existing divers, mail order reaches consumers through magazine advertisements. Several U.S. manufacturers sell equipment to mail order houses, but in the past two years at least two major U.S. manufacturers have stopped selling through mail order for both liability reasons and to protect the ultimate margins on their products. Some of the smaller mail order houses are having trouble purchasing inventory, as the larger U.S. manufacturers stop selling to them. Mail order accounts for roughly four to six percent of the wholesale market.

A disadvantage for mail order houses is that most consumers want to purchase life support equipment from a reputable source where it can be serviced and refilled. If a diver enjoys her instruction course, the possibility exists that she will return to the retail store for service, advanced courses and equipment purchases. A consumer gets no continuing service if equipment is ordered through the mail.

Retailers' View:

Equipment retailers have their own views of the problems they face. These comments represent some of the more frequently voiced opinions.

"Most manufacturers offer no geographic exclusivity. There is a discount store eight miles away that sells the same products for 30 percent less. The discounting is killing us all. Of the seven competitors in my area, one turns over every two years."

"The foreign manufacturers are a definite threat to the U.S. manufacturers. They're already starting to produce gauges, and within a couple of years, will offer decent regulators. Right now their prices are still high and the quality isn't perfected."

"Diving equipment is developing characteristics of commodity products, with price, rather than brand name, becoming a more important purchase criterion for retailers."

"Seventy-five percent of my equipment sales are to new divers. Most have no idea of what they want to purchase, so the instructor and I have a lot of influence. There's a lot less brand loyalty than most people will admit. Among the older divers and with certain manufacturers, there's a lot of loyalty, but this is a small portion of my sales."

"Color is very important. I have to carry it but I'm terrified about having a lot of obsolete inventory I won't be able to get rid of."

"U.S. manufacturers blame the industry's problems on the 'stupid' retailers, but we aren't as stupid as they think. The typical retailer has changed a lot in the past 10 years. New retailers are far more professional. We ought to be treated as intelligent business people."

"I don't consider myself tied to any one manufacturer. I write orders big enough to get the service I need, so I 'cherry pick' the products I want to carry. If I have a problem with a certain manufacturer, I know I can get a similar product somewhere else."

Intense Competition and Rivalry Among Manufacturers

Manufacturers themselves are feeling intense and severe competition between them. There are several contributing factors:

Lack of a dominant industry leader

No manufacturer controls more than 15 percent of the market. And no U.S. firm has a significant cost advantage that can be used to exert pricing and margin pressure to force out weak competitors.

The firms also differ significantly in their strategies to gain competitive advantage. There is a lack of agreement on the "rules of the game." These characteristics can lead to industry instability.

"Many company representatives talk about how their products differ in color from competitors, but color differences are not a sustainable competitive advantage."

No differences between products

The lack of product differentiation contributes to the intense rivalry. All of the companies sell products that are similar in the eyes of the retailer and the consumer. Diving equipment is developing characteristics of commodity products, with price, rather than brand names, becoming a more important purchase criterion for retailers.

An important reason for this lack of product differentiation is that new products are easily and quickly copied. There is little proprietary technology or product protection. The lack of product differentiation is strikingly evident at DEMA shows. The masks, fins, and buoyancy compensators of many competitors are virtually identical. Many company representatives talk about how their products differ in color from competitors, but color differences are not a sustainable competitive advantage.

It is becoming increasingly difficult for manufacturers to differentiate their company from other companies. Most of the U.S. manufacturers are "full line" producers, providing complete product lines with no product specialization, making manufacturers similar in the eyes of retailers.

Some larger U.S. manufacturers attempt to differentiate their company and products by brand identification and brand loyalty, using trade magazine advertising to create an image. This strategy is losing value because there are an increasing number of manufacturers with quality products. Furthermore, diving students are strongly influenced by instructors and retailers who have more products from which to choose.

Manufacturers are trying some new forms of differentiation, such as emphasizing product testing, product safety and product liability insurance.

Low industry growth rates

To grow, a manufacturer must steal market share from entrenched competitors. As a result, competition takes a form that frequently damages other competitors and the industry as a whole. Price competition, inventory dating, product copying, and product line proliferation are all results of the fight to gain a share in a stagnant market.

The ease of being a competitor

Manufacturers are not erecting defensible barriers around their retailers, so new competitors may easily enter the market. Several foreign competitors have quickly and easily gained market share. Tabata is a prime example.

The industry has low barriers to entry and emo-

YOUR MOST IMPORTANT PIECE OF EQUIPMENT

You pride yourself on being a safe, serious diver. You'd never consider 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. Join the thousands of other serious divers already receiving the inside information that only *Undercurrent* can offer. Return the order form on the reverse today!

No Parts Available

Dear Undercurrent,

My local U.S. Divers shop informs me that they do not know when my regulator can be repaired because they cannot obtain a common part -- the first stage high pressure seat, 1053-20 -- from USD. It's been unavailable for more than two months. No dive shop in my area has it.

This seems to be a rather major safety concern, since it's a part common to all USD regulators. It could encourage many people to dive with a marginally operating regulator rather than wait weeks or months to go diving.

Ollie McClung
no address given

Dear Ollie,

You are absolutely right. We received several letters from readers and called several dive shops, then called U.S. Divers. The part was unavailable for several weeks, but it should be in your shop now.

Brian Miller of U.S. Divers told us that their supplier "could not get the brass to manufacture the part. While we carry a two month supply of parts, it took longer than two months for the supplier to produce the parts. We now have a full supply and a six month inventory just in case there should be a problem with our supplier again."

In checking out this problem, we learned of other developing problems in equipment repair that relate to the changes in the industry discussed in the accompanying Harvard report. More about those in an upcoming issue.

Ben Davison
Editor

tional barriers to exit, the worst combination possible. This has led to overcapacity and an excess supply

of product in the industry.

Some sources of low entry barriers are: exposed distribution channels, lack of product differentiation, non-proprietary products and low customer switching costs.

In addition, few economies of scale exist for U.S. manufacturers, who primarily assemble and test components produced by outside vendors. These activities are overhead intensive and involve significant direct labor. As a result, small competitors and new entrants can perform just as efficiently as the largest competitors.

Moreover, frequent product changes are an important competitive weapon. Those companies with manufacturing facilities must be able to react to changes in customer demands or competitive product offerings. Small firms may be more efficient than larger firms when a short lead time for change is required.

The entry of foreign competitors

Foreign competitors -- mainly from Japan and Taiwan which were once suppliers to U.S. manufacturers -- have intensified competition. They now bypass the U.S. manufacturers to sell directly to retailers. A few have gotten broad retail distribution and a share of the market. This is a problem for the entire sporting goods market, in which foreign products account for approximately 50 percent of the equipment purchased in the U.S.

"There is strong evidence that these foreign competitors are developing improved regulators, valves, and buoyancy compensators with cost advantages over the same products manufactured in the U.S."

Foreign competitors appear to have substantial cost advantages. Many are located close to inexpensive sources of raw materials such as rubber, and benefit from lower labor costs. Some of the products of foreign competitors are produced with excess capacity from other operations, permitting lower prices based upon variable or direct costs. Tokyo's

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Kinugawa Rubber Company produces rubber parts for Japanese auto manufacturers. According to one industry source, they use excess manufacturing capacity and fully depreciated equipment to produce high-quality, low-cost rubber diving products, giving Kinugawa a lower cost position than other manufacturers that are using facilities that are dedicated to producing rubber diving products.

Thus far, the products for which Japanese and Taiwanese competitors have a cost advantage are primarily rubber goods. However, there is strong evidence that these foreign competitors are developing improved regulators, valves and buoyancy compensators with cost advantages over the same products manufactured in the U.S.

Power of Suppliers

The products U.S. manufacturers purchase from other sources range from component parts that are then assembled by the U.S. manufacturers, to completed tanks, masks, fins, snorkels, buoyancy compensators, and wet suits, that are simply put in boxes and shipped. The purchased components include machined metal components for regulators and valves, rubber hoses, injection molded plastic components for buoyancy compensators and regulators, and sheets of neoprene rubber for wet suits.

Because there are many foreign sources (OEMs), U.S. manufacturers have alternative suppliers. They can use these sources as a bargaining point with existing suppliers to demand high quality, low prices, favorable delivery and other critical concessions. If these needs are not met, they can switch to one of the alternative suppliers.

But the OEMs have substantial power as well. First, U.S. manufacturers have to be sure that components for life support equipment are of the highest quality and are consistent with design specifications. As a result, once a U.S. manufacturer establishes a stable relationship with an OEM, it is difficult to break it. Thus, OEM suppliers of life support components can demand favorable margins and favorable terms.

Second, the individual U.S. manufacturer represents a small percentage of the revenue of any OEM supplier. As a result, these OEM suppliers can drop the diving equipment component business if customers become too demanding or profits fall.

Third, if the distribution business appears profitable, there is little to keep OEMs from becoming distributors themselves, as have Tabata and Sherwood-Selpac, a domestic OEM.

Fourth, it takes substantial effort to establish and maintain foreign sources of components and products. These difficulties empower current OEM suppliers because they raise the switching costs.

Fifth, purchases from OEMs represent from 55 percent to 75 percent of the cost of goods for U.S. manufacturers, making them vulnerable to price increases.

Power of the Retailers

Retailers are becoming more powerful in their relationship with manufacturers.

First, retailers are very price sensitive and earn low profits. Because they must generate maximum margins on equipment sales, they must reduce their cost of goods sold in any way possible. They search for the lowest-cost source of product, and fight for the most advantageous credit terms possible. So there's an incentive to drop higher-cost products and replace them with lower-cost imported products. High price sensitivity, combined with an abundance of low-cost products, results in reduced power for U.S. manufacturers.

Second, with low retailer loyalty toward any specific manufacturer, retailers can play one manufacturer off against another and threaten to switch product lines, putting high-cost U.S. manufacturers in a very vulnerable position.

Third, retailers are joining together to form buying groups to purchase products directly from foreign manufacturers. One major buying group, Z-90, currently exists, and others are being considered. They pose a serious threat to U.S. manufacturers.

Next issues: Remedies.

Laboratory Tests Of Seasickness Remedies

--Scopolamine Approved For Divers

It's not uncommon for someone who has had plenty of dives in the Caribbean to head off for a first live-aboard trip on the Great Barrier Reef or other distant reefs, and spend a number of hours green-gilled and wretching.

Live-aboard diveboats ply some very serious waters and the unprepared diver can only suffer silently.

There's a lot of myth and hokey about seasickness

remedies, but thanks to research at the Louisiana State University Medical Center and by the U.S. Navy Experimental Dive Unit, many of those myths can be put to rest.

LSU researchers recently evaluated 13 medications given orally, using double blind and placebo techniques. Two hours after receiving the medication each subject was spun in a rotating chair, with the number

Battery Explosion

An exploding rechargeable battery has led to an alert in the care and maintenance of batteries.

Ike Brigham, president of Ikelite Industries, told us that one of his customers flooded a dive light in fresh water. He dismantled the light, and let it stand in open air to dry out. Once dry, he reassembled the unit and stored it in his garage.

Several weeks later the battery exploded. Pieces of the battery and shards of the light case were scattered about the garage. Had anyone been near the explosion, they would have been seriously injured.

Ike speculates that the water caused a low level short circuit in the battery which eventually ignited the slowly building hydrogen gas within the battery.

That means a flooded rechargeable battery ought to be discarded and replaced with a new one.

of rpms increased to a maximum of 35. The subjects were instructed to complete specific head movements which the researchers counted until the subjects indicated they were experiencing specific predetermined nausea symptoms.

Following is a chart of effectiveness of the medications as determined by the researchers, with the number of head movements beyond a placebo level of zero tolerated by the subject as the revolutions were increased:

ginger, 500 mg	- 8
ginger, 1000 mg	- 4
amitriptyline, 25 mg	+ 36
ethopropazine, 50 mg	+ 44
trihexyphenidyl, 1 mg	+ 50
trihexyphenidyl, 3 mg	+ 66
dimenhydrinate, 3 mg	+ 66
promethazine, 25 mg	+ 81
scopolamine, 0.6 mg	+ 81
d-amphetamine, 10 mg	+ 118
scop/d amphet., 0.6/5 mg	+ 162
scopolamine, 1 mg	+ 183
scop/d-amphet., 1/10 mg	+ 201

Dimenhydrinate is the primary ingredient in marezine; the primary ingredient in Marezine, cyclizine hydrochloride, was not tested. Some studies have indicated that ginger is effective, but this study finds it no more effective than a placebo.

Scopolamine, a prescription-only drug, proved the most effective. In the past few years, scopolamine has become available in a small patch that is placed behind the ear, permitting the drug to be absorbed into the skin for up to 72 hours. But with the novelty has come the concern that the side effects for

scopolamine are such that divers should not use the drug at all.

These doubts have now been generally dispelled by research at the Navy Experimental Dive Unit.

A number of Navy divers were given the scopolamine ear patch, while others were given a placebo patch. There were no significant differences between the cognitive performance of one group or another under pressure.

Pre-dive, six divers given transdermal scopolamine had no side effects, three had a dry mouth, and two reported mild malaise or mental fuzziness. At 60 feet, two divers had no side effects, and eight reported a dry mouth. Other side effects reported were two cases of mild malaise or mental fuzziness, one case of clumsiness, and one case of a difficulty with focus.

"The Navy found that the symptoms attributable to scopolamine were not severe or incapacitating, they did not interfere with the ability to process and retrieve information, and that the divers functioned satisfactorily in the dry chamber, 60 foot test."

Post-dive, three of nine divers had no side effects, five had a dry mouth, four had drowsiness, two had itching at the patch site, one had dilation of one eye, and one had trouble with visual focus.

The Navy found that the symptoms attributable to scopolamine were not severe or incapacitating, they did not interfere with the ability to process and retrieve information, and that the divers functioned satisfactorily in the dry chamber, 60 foot test.

The Navy concludes by saying: "A prudent precaution for using transdermal scopolamine is to apply a patch for 24 hours at least several days in advance of anticipated need in those individuals who have never used the drug. This trial should be done when a serious side effect would not cause safety problems. Those people who experience serious problems should not use the drug again."

The scopolamine patch is available by prescription only, under the trade name of Transderm Scop. Each patch costs about \$3.50. After you've tested your reaction on dry land, be sure to apply it from four to six hours before your travel begins.

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is a commercial side to their operations, the Clubs function within the framework of the French National Diving Federation. They pretty much keep their diving prices identical (\$30-\$35/tank) so they don't compete against each other. The clubs will supply French tanks, (which don't need valve adaptors for American regulators) and weights (which won't be needed with the heavy steel French tanks). The French tanks are not easily adapted for all stab jackets, so a horsecollar BC is easier to use.

On my latest trip to Martinique I first stayed at the attractive 303-room Meridien, located -- with three other major hotels -- on Pointe du Bout, the major resort area. At \$100+ a night, food extra, its motel style, air conditioned rooms were not a bargain. Don't be surprised if a hotel carpenter starts drilling and sawing outside your room at 7:00 a.m. ... or if, when you pay your several-hundred-dollar bill at the hotel that they don't snottily demand 50 cents more for telephone calls. It happened to me.

Martinique is expensive. It's an "everything's extra" island and those extras add up fast. The Meridien breakfast buffet runs a reasonable \$7, but the dinner buffet is \$23; they offer broiled steak and fish with local vegetables and ample fresh fruit, cheese and dessert. Food elsewhere is similar. In the French tradition, it is plentiful, generally interesting and well prepared.

I dived a couple of times with Bathy's Club, the operation at Meridien, which handles clientele from all nearby hotels. They run an old cabin cruiser which, like any cabin cruiser, has little deck space for gearing up and is generally not well suited to diving. We dived at Anse D'Arlet, around the bend from the Meridien. Hard and soft coral is quite pretty and small reef fish interesting. Snorkeling was lousy off Pointe du Bout beaches; the reefs are silt-covered and there is little life near shore. But I did discover the bones of an old shipwreck off the Meridien's water ski dock, but I was never told about it by anyone at the dive operation. (P.S.: Watch out for ski boats, sailboats and wind surfers.)

While the Meridien may rate five stars in the Landlubber's Guide to Large Hotels, divers will not appreciate it unless the new owner bucks tradition and makes an attitude adjustment in the diving business. Imagine an answer from a greasy individual rummaging around in the motors when you come to dive: No dive today. No dive tomorrow (a little wind and no other customers), and sorry, we're closed Monday. But, I came to Martinique to dive, I protested! That got a shoulder shrug.

Dissatisfied with the Meridien, I rented a car to search for a better bed. I stopped at the 180 room Diamant Novotel, beautifully set in lush plantings. The comfortable motel-style rooms were in the \$70-a-day price range. The Caraibe Coltri-Sub dive club was closed when I arrived, but a guest who had been diving there told me it is operated professionally.

I drove on, through Fort de France the capital of Martinique, an ugly, dirty

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