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**POINT & CLICK
ON BOLD LINKS**



Fall Dive Fashion



Edited by
Gunild Pak Symes

ALL PHOTOS COURTESY OF THE MANUFACTURERS OR VENDORS



No Gills Required

Limited edition 100% silk jacquard tie reminds us of the deep. The design is inspired by the underwater photography of Walt Stearns. Vibrant ocean colors are enhanced by the jacquard wave pattern of the fabric. An eye-catching conversation piece. Price: US\$19.95

www.nogills.com

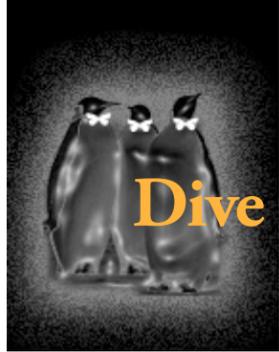


Combhard

Neoprene Design creates stylish neoprene jackets and bags. The company was founded in 1996 by designer Thomas Renaud in a small garage in Biarritz located in the Basque Country of south western France. Renaud's designs are now selling in New York City and major European cities. Combhard also creates designer pieces such as sofas and furniture, wine bottle jackets and neoprene party and evening dresses. www.combhard.com

Dive 44 is an apparel company which seeks to promote a positive image in the diver's mind about the amazing world beneath the waves. They say, "Diving is an attitude and a lifestyle as much as it's a hobby or profession." Dive 44 designs can be worn on boats, at the beach, or in the mountains. The popular boat coat is priced at US\$150.00 www.dive44.com





Dive Fashion



Henderson Hot Skins

With a toasty layer of Lycra®, these rash guards by Henderson are some of the warmest in the industry according to the manufacturer. The skins help prevent UV, sun burn and rashes from activities in and around the water. www.hendersonusa.com



Dive Junkie

The DJ Star is a tube top, popular design that is now available in new stylish colours including fresh White with Gold foil print, hot Pink with Silver foil print, Island Green with Yellow flock print, or Army Green with Orange flock print. www.divejunkie.com.sg



Chammyz

Wrap Skirt is a quick and easy après dive cover up for women. Added comfort and size adjustment results from an elasticized waist and buttons on the side. The wrap skirt can be worn over a bathing suit, work out gear, or for those leisurely walks along the beach at sunset. Comes in several colours: Storm Gray, Natural Sand, Surf White, Sunset Red, Seaform Green, Sunrise Gold, Denim Blue, Ocean Blue, Deep Purple and Midnight Black. Price: US\$25.00. www.chammyz.com



Fourth Element

With each sale of the 100% cotton Shark Art and Shark SOS t-shirts, £3 will be donated to the Shark Trust and related shark conservation projects. Price: GB£19.95 LEFT: Shark SOS on Denim. CENTER: Shark Art on Slate. RIGHT: Water Nymph on Red. www.fourthelement.com



Seven Tenths

The classic Zen Wave design printed on a premium heavy-weight T-shirt of 100% ringspun cotton with taped seams, comes in a new colour this season: Misty Green. It also comes on a new Skinnyfit Tee for women. Price: €29.25 www.seventenths.com



Dive Fashion



Dive Dive

Large orange Braille print on black Fruit Of The Loom shirt, says "Dive Dive!" You might like the band's music, too. Price: GB£10.00 www.divedive.co.uk



Scuzzy

Cool designs. The Five Star Long Sleeve T-shirt has a charcoal body with combat sleeves, 180gm Ringspun Cotton Body, 230gm Rib Arm charcoal. The logo has a high build rubberized print and combat print to match sleeves. Price: GB£17.50. The Seahorse T-shirt has a green body with dirty yellow raw edge hems, white print on sleeve and back, 160gm Cotton Jersey. Price: GB£14.99 www.iamscuzzy.com



Designated Diver

Sportswear, a leading designer of Dive and sports apparel, expands their popular SEA BONES™ line by introducing many new designs, such as SHIP HAPPENS as shown here. Their entire collection will be featured at DEMA 2007 and can also be seen at www.designateddiver.com

GirlDiver Sox

Just Jellies and Octo's of the Night. All ankle socks are 100% cotton. Jellyfish dance across a black backdrop of the deep sea in one pair. Pull on the other pair, and brilliant octopuses wrap around your ankles and feet. Price: US\$8.00. www.girldiver.com



Fathom Divewear

The Black Mark 5 Helmet Tee is a 100% Cotton Tee with Mark V helmet printed in Copper ink and the Fathom Logo in Tan on left shoulder. Price: US\$21.50 shop.fathomdivewear.com





Edited by
Edwin Marcow

“The problem is with the high expectations that tourists have”



Dead Sharks on Oregon's Shores

Several juvenile sharks have recently washed up onto Oregon's shores during this summer, though researchers are uncertain why.

Reports of dead sharks washing up on the shores first surfaced in mid-August. One theory is that warmer water has lured tuna and other bait fish closer to shore, with the sharks following in hot pursuit. When a shark dies in the open ocean, other predators and scavengers consume it, but if through natural selection these sharks are dying from nothing more than natural causes near to the shore, then their remains are likely to be washed ashore creating a false alarm.

“I've had more reports this summer than I've had since 1993,” said Bill Hanshumaker, Public Marine Education specialist at the Hatfield Marine Science Centre. “There have been reports from California of dead sharks testing positive for encephalitis, which can be caused by either viral, bacterial, or protozoan infections,” said Jim Burke, Director of Animal Husbandry at the Oregon Coast Aquarium.

The body count to date is seven, the sharks are usually reported as Great Whites, but usually turn out to be juvenile Salmon sharks, which do look similar to a Great White. With Salmon sharks giving live birth close to shore, it is not uncommon to see newborn sharks washed up ashore. “This year there definitely have been quite a few more than usual. It's hard to tell if there have been more born or if there is something that has gone wrong.” Marine experts at this moment are concerned and watchful. ■

Sharks In Class

Are they learning to link people to food?

Shark tour operators in Gansbaai South Africa hosted a Great White weekend festival to persuade the local population that there is no proven link between attacks on humans and the cage-diving industry.

The local population were given the chance to cage-dive or view the sharks from the safety of the boat at discounted prices. For younger customers, there was a shark play hosted by conservationists on shore.

The Great White has made Gansbaai, its operators and shark wranglers famous. I myself have seen the transformation shark tourism has brought.

Great Whites have created job opportunities and wealth creation beyond what Gansbaai could ever hope to aspire without these sharks. This, in turn, has raised the profile of this much misunderstood animal and helped bring about a better understanding to the population at large.

Though critics of the cage-diving industry argue that the close interaction between the caged divers and sharks in chummed and baited waters condition the sharks to associate people and food, but the boat operators follow a code of conduct which states that an animal must not be rewarded with food. A number of operators have admitted, though, sometimes the shark gets the bait by accident.

Although one person is killed

on average only every two years by a shark in South African waters, experts argue this is indexed in proportion to how many people are swimming in the ocean, and not linked to the cage-diving industry, though a number of locals and South Africans do blame the cage-diving industry despite a lack of evidence to support their claim.

“The problem is with the high expectations that tourists have,” said Alison Kock of the University of Cape Town's Shark Research Unit. “They are not happy with just seeing the sharks, but want them to leap out of the water or go right against the cage. Great Whites don't regard people as natural prey.” ■

Ecuador: Hundreds Slaughtered to Win Votes

Since a ban on the sale of shark fins was lifted, hundreds of sharks are being slaughtered on a daily basis off the coast of Ecuador. The bloody image of shark fins piled upon the piers has triggered a political row with two opposing camps emerging; the government, who lifted this ban, and the fisherman against what seems like the rest of the country!

"It is a big mistake. More than 400 sharks are being caught every day—that changes the whole food chain," said Esperanza Martinez, spokesman of the Ecological Action.

Rather depressingly, some estimates are up to 1,000 sharks being caught and finned per day.

Illegal or what?

Though shark finning remains illegal in

Ecuador, the President, Rafael Correa, legalised the sale of shark fins that were caught accidentally, arguing the extra income would help impoverished fisherman. Mr Correa, a left-wing economist was elected to office on the promise of alleviating poverty. With no clear way to determine when a shark has been accidentally or intentionally caught, the fishermen have taken this move as a green light to kill as many sharks as they can within Ecuador's waters.

An ominous sign of things to come was the return of two tonnes of illegally caught shark fins, caught by local fishermen, that were confiscated by police prior to the ban being lifted. Each fin can fetch up to \$100—a huge sum to subsistence fishermen—though the price has fallen due to a glut on the market! The world just may be changing to become a better place, leaving countries like Ecuador as environmental pariahs.

In the previous Sharktales, an article "The Plight of the Whale Shark" stated depressing figures on the decline of Whale shark numbers within the Pacific

Rim with Whale sharks only enjoying protected status in Australian and Taiwanese waters.

Diplomatic issue

After media reports aired news of a six metre Whale shark being caught by Zhejiang fisherman and sold for \$8 per kilo to restaurants, the Western Australian Premier Alan Carpenter wrote to his counter part Lu Zushan, governor of the Zhejiang Province. The Premier expressed the affection Australians have for Whale sharks and the protection these sharks enjoy. To his, and our delight, an investigation has been launched into the death of this shark, and local fishermen have been ordered to immediately release the captured whale shark and report to the local fishery administration. In addition, an education program to educate the local population will soon be in place.

Furthermore Governor Zushan is now considering adding Whale sharks to the provinces list of protected species. ■



Marine Protection Zone to Save Sharks

Record Number of Basking Sharks Visit UK Shores

A record number of Basking sharks have been spotted from the shores of Cornwall, most likely caused by late plankton blooms, which has led to some spectacular sightings off the English coast. With a record 460 spotted in one day, this mass migration of sharks so close to shore has also brought unexpected tragedy.

One shark died after being caught in fishing nets, and another had two fins sliced off by a speedboat, which was ferrying passengers to observe the sharks.

These two tragic incidents have led to renewed calls from the Marine Conservation Society for protected marine reserves to be installed along the coast. First promised in 2005, this Marine Bill has yet to make it to the statute books. "It has not been given the high priority it deserves," said Emma Rance from the Dorset Wildlife Trust's Purbeck Marine Wildlife Reserve, who is urging people to sign the Petition Fish to be presented to the House of Commons on October 10. ■

First Angel Shark to Be Born In Captivity

Aquarium of the Bay in San Francisco just announced the first-ever Pacific angel shark pup to be born in captivity. The pup is just 23.5 centimeters in length and weighs 125 grams.



AQUARIUM OF THE BAY

The tiny new-born angel shark pup from Aquarium of the Bay in San Francisco

The Aquarium of the Bay is the only aquarium in the United States to consistently exhibit angel sharks, which are known by the scientific name *Squatina californica*.

"With so much attention focused on great white sharks, many people are unaware of the lesser known species of sharks that live in the San Francisco Bay and surrounding waters," stated John Frawley, the Aquarium's executive director. "Since very little data is available on these sharks, Aquarium of the Bay is focusing its field projects and collaborative research on gaining a better understanding of their life cycles and distribution patterns.

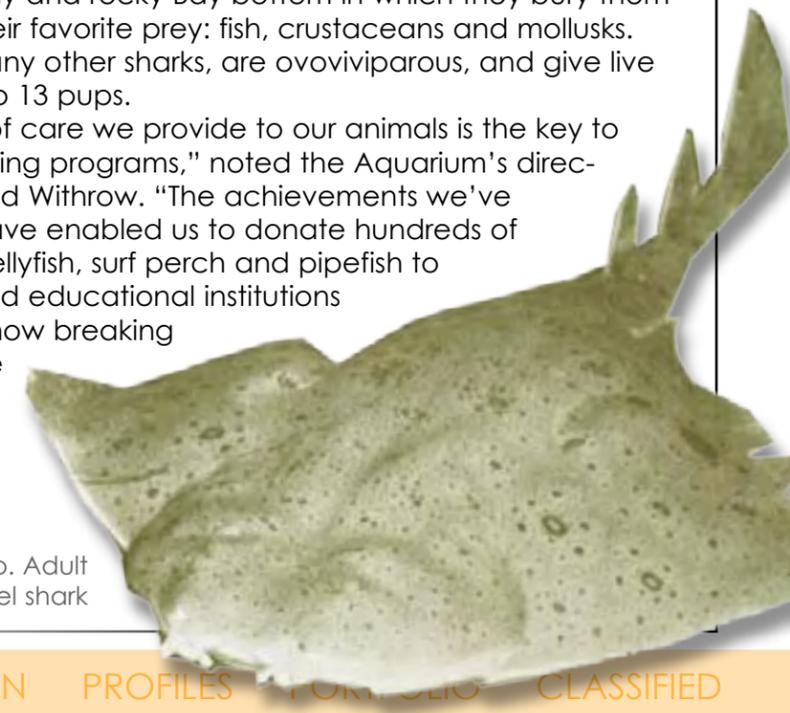
We have recently embarked on a shark tagging program that will help us better understand how sharks fit into the Bay's ecosystem, and what actions need to be taken to ensure they thrive."

Named for their large wing-shaped pectoral fins, angel sharks have flattened bodies and grow to five feet in length. Their gray, brown and black coloring blends with the sandy and rocky Bay bottom in which they bury themselves to ambush their favorite prey: fish, crustaceans and mollusks. Angel sharks, like many other sharks, are ovoviviparous, and give live birth to litters of up to 13 pups.

"The high quality of care we provide to our animals is the key to our successful breeding programs," noted the Aquarium's director of husbandry, Reid Withrow. "The achievements we've made in this area have enabled us to donate hundreds of skates, skate eggs, jellyfish, surf perch and pipefish to public aquariums and educational institutions each year. We are now breaking new ground with the birth of the angel shark pup." ■

SOURCES: NEWS RELEASE ISSUED BY AQUARIUM OF THE BAY

File-photo. Adult angel shark



STATE OF CALIFORNIA, RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF FISH AND GAME



Edited by
Peter Symes

Text and photos by
Svetlana Murashkina

Mr Seacam

Cleared for take-off

It is an old wisdom that when you think of buying a car, a house or dive equipment, for that matter, one should take a look at who the seller is. This approach has served me well in buying the cars I have had. There is always some of the personality in the product. So when I went to did the story on Seacam, I couldn't help also

being intrigued by what the founder and owner was like. Somewhat out of character for an Austrian, Harald Hordosch does not ski. Nor does he dive much for a maker of underwater camera housings, but he pilots his own Cessna, which takes him to the many European dive shows.

When we discussed my visit to Seacam productions, Harald Hordosch cautioned me: "Please, do not expect big workshops, assembly lines and women dressed in white overalls making delicate manufacture. Yes, we are small, but, I hope, effective."

In workshops located in Voitsberg, a small town of about 20,000 situated about 30 km from the city of Graz, Seacam takes care of all the key stages of the production under one roof—from conception to the final product.

In Voitsberg, far from the ocean, is where some of the finest underwater housings in world are manufactured

Translation: "Allowed to fly", or in other words, "cleared for take-off"



Mr. Seacam, the nickname Harald Hordosch goes by, is obviously an effective organiser—he likes to put bits of knowledge together and fit them into a bigger context—organizing it into the whole work process. It shows. He is good at it. Nobody thinks of underwater housings as just simple hermetically closed boxes. But even for specialists, it is difficult to fully comprehend how many components goes into just one 'box', and what a complex device an underwater housing really is.

The first ideas initially take form in drafts and sketches. Nowadays, it is all done with the aid of computers, of course. These first plans are then transformed into physical models, which are cast in a special aluminum alloy, which is resistant to corrosion from salt water. These raw casts are then thoroughly examined before being sent to an outside company who will machine all the necessary holes and what not. The final polish of both outer and inner surfaces is taken care of in their own workshop, where they are also covered with a special coating that gives the surface its characteristic silky spattering. Harald Hordosch used to do this part, too.

Then, the house is fitted with electronics, and the various small components, such as buttons, handles, knobs, levers, cogs and wheels. Many of these components are used across several of Seacam's models. But the majority of the housings and their connections are unique. So, it is not without merit when Seacam claims that their housings are individual and handmade products, "made in Austria".

The role of personality in history

It is not surprising that diving equipment is produced in France and Italy, both of which do not have long coastlines where people can dive. So, why are underwater housings, perhaps the most in demand piece of equipment, located in Austria—landlocked in the middle of the European continent? Because it was here, in Graz, a boy was born, who, being inspired by Cousteau movies, manufactured his first underwater housing at the age of 16.

In his childhood, Hordosch spent a lot of time with his grandfather who was a smith—a man who was not only a respected professional craftsman, but also a person who was capable of doing many things with his hands.

One thing lead to another, and Hordosch also started making housings for his friends. He ending up being so good at it that one day his friend and acclaimed photographer, Herbert Frei, spurred him on to make a business out of it.

And thus, in 1989, the Seacam company came into existence. For starters, it was a one-man operation. Yet, the brief history of Seacam has been very dynamic. Seacam attacked a whole front of the industry, with both new housings for cameras and all the accompanying paraphernalia, such as lights and ports, accessories.

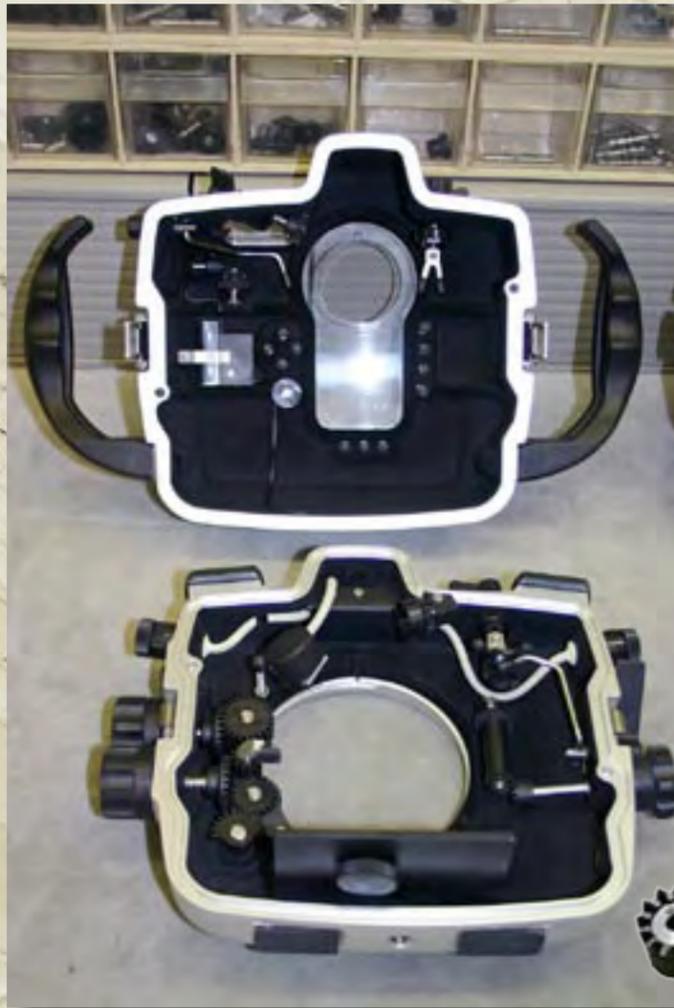
The first production series was simple aluminum housings with integrated hand grips for Canon, Minolta and Nikon all branded under names like Sea Snap, Sea Flash, Sea Arm. These were entry level housings aimed at unproblematic underwater photography.

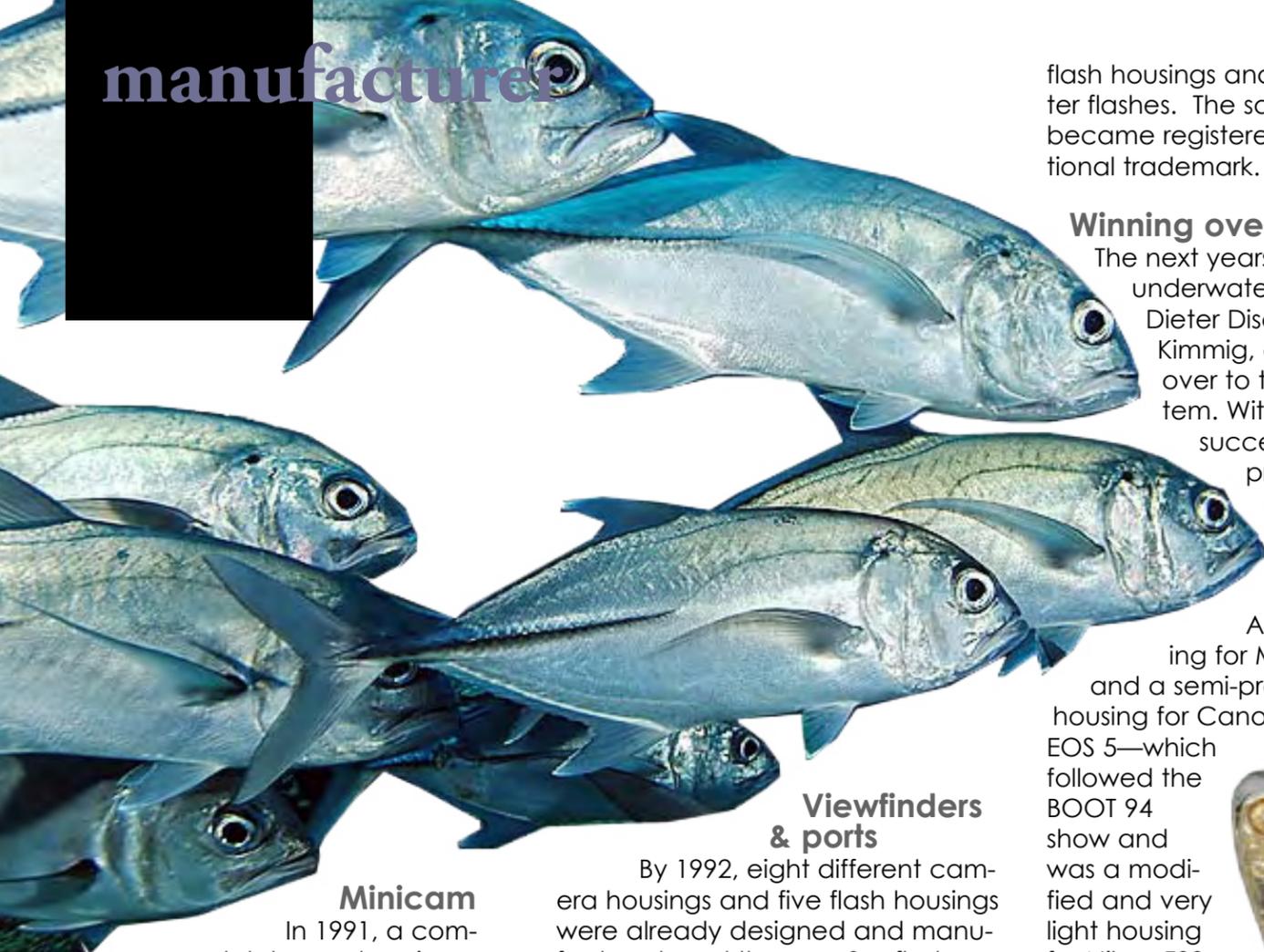
In 1990, Seacam attracted attention via advertisements and a test report in a German UWF magazine. The review of the first series as well as the presentation of the futuristically styled housings at BOOT '90 dive expo (the leading



European boat which presents aroused interest. At first glance, the housing a device from Europe, also diving) public Seacam looked like outer space. It probably also helped that Seacam saw the potential in hiring the leading media agency "Lackner-grafik" to design its public profile and advertising. The owner, Erwin Lackner, is member of acclaimed art group Gruppe 77 in Graz.

In the first brochure for their product range, Seacam already had two different housings for five camera models, one flash housing for three system flashguns including accessories, as well as several interchangeable ports of mineral glass, and a flash arm. Then came the second employee (after Hordosch himself), then the third. During the whole process Hordosch's senior, Harald's father, was of invaluable assistance. At first, his father was rather skeptical of the whole enterprise, but continued to assist his son in putting his ideas on paper and drafts. By a twist of fate, he ended up being fully occupied with the production process.





SCOTT JOHNSON

Minicam

In 1991, a completely new housing concept named Minicam was introduced. The housings were very small and tailor-made for the specific cameras, complete with all the important connections and a high quality interchangeable port system with flat and dome ports made of optic glass as well as a removable hand grip. The housings were offered for Nikon F 801, Minolta Dynax 7000i and Canon EOS 600, which already have special housings.

Miniflash

A new invention was the Miniflash system—a flash housing with an integrated pilot light. Designed for system flashguns, these housings allowed independent work underwater for the first time.

Seacam appeared at the BOOT expo in 1991 with a booth of their own, and since then, have occupied the same central space on the show floor.

Viewfinders & ports

By 1992, eight different camera housings and five flash housings were already designed and manufactured, and the new Seaflash was presented to the public. Here, Seacam relied on the tested and reliable electronics of Subtronic, the renowned flash manufacturer. The cooperation between the two companies has lasted to this day.

Then, the housing, which was neutrally buoyant underwater, was constructed. On the basis of a now forgotten assistant viewfinder, a new and considerably improved viewfinder, the Galilei, was created, which sat firmly integrated into the housing. Units that were equipped with such a viewfinder were named MinicamPro. At this time, the range of ports was expanded by a fisheye port of mineral glass.

In the beginning of 1993, Seacam presented a semi-professional housing for the Nikon F90. Canon received new housings for EOS 10 /100 /1000. The product range was comprised of 13 different special housings for cameras, three system

flash housings and three underwater flashes. The same year, Seacam became registered as an international trademark.

Winning over the pros

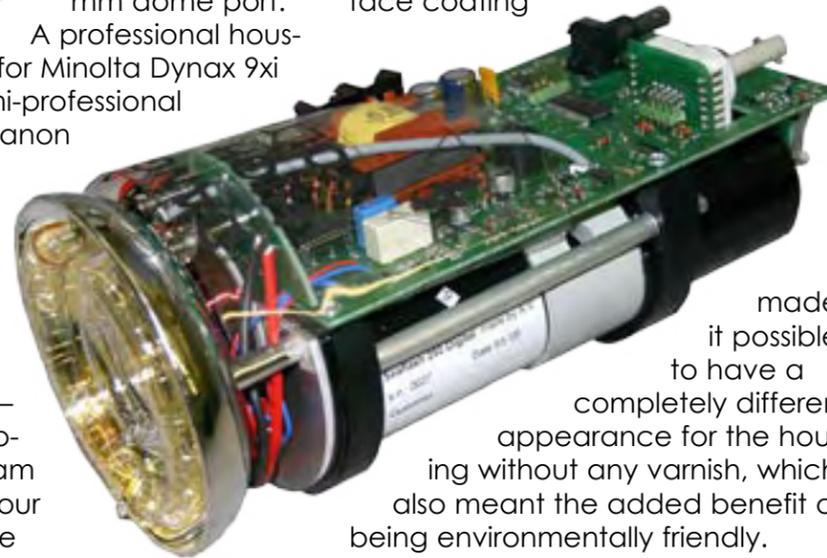
The next years the two top underwater photographers, Dieter Disch and Claus Kimmig, converted entirely over to the Seacam system. With this, Dieter Disch succeeded in taking prize-winning over-under photos with a specially designed 240 mm dome port.

A professional housing for Minolta Dynax 9xi and a semi-professional housing for Canon EOS 5—which followed the BOOT 94 show and was a modified and very light housing for Nikon F90—were also introduced. Seacam now offered four different dome ports of mineral glass for wide angle photos.

Superdome

1995 saw the patenting of new Flasharm. Also the entirely new, especially safe and maintenance-free S6 connectors, and the unique optically polished Superdome with 240 mm in diameter were also presented.

In 1996, Seacam introduced the ultra light weight and still smaller houses for Nikon F90x, F801s, F601, F70 and F50. From this moment forward, plane ports and all dome ports became available with optical coating for considerably improved pictures.



“As if it has not even been touched by a shrimp”

Silver age

From the very beginning, the company has made customer and after sales service one of its tenets. All housings sold in Europe get serviced here, and there are only three other service workshops worldwide. Two of the other places are in USA and one is in Singapore.

Sometimes people brought housings back for service with chipped paint—an ugly sight that did not please the perfectionist, Mr. Seacam, Hordosch himself.

Out of this issue, came the idea for the now characteristic silver coating. New technology of applying surface coating

made it possible to have a completely different appearance for the housing without any varnish, which also meant the added benefit of being environmentally friendly.

The cast, which was made of aluminum, which is resistant to salt water corrosion, was covered with special ceramics and baked creating a surface that was more resistant to both corrosion and mechanical damage. Some of these silver housings, when brought in for service, were hardly distinguishable from new ones—“as if it has not even been touched by a shrimp” said Hordosch.

The signature silver color also has other benefits. Being a natural color for fish and marine animals, it does not intimidate them. The color is also elegant and associated with high-tech.

The new design and silver generation of housings were presented at the BOOT 97 show. On display for the first time were housings for the



KURT AMSLER

Canon EOS 1N and the Minolta Dynax 700si. The most interested visitors could also take a look at the pre-production housing for the Nikon F5.

Innovation

Later, a groundbreaking innovation, the first swivelling 45° sports viewfinder cameras were presented. The viewfinder image was bright and showed the image in real size. In 1998, Seacam introduced the real professional housing for the Nikon F5 generating worldwide attention. In the following years, Seacam also developed a semi-professional housing for the Nikon F100, which came with all the features seen on the Nikon F5 housing.

The introduction of a new production process bettered the production of the front and back side of the housing fitted to a new level of perfection, and the main O-ring groove ran absolutely centered.

In 2001, Seacam anticipated the developments in digital photography and became the only manufacturer in the world to introduce the housings for the professional digital Nikon D1/D1X/D1H cameras. In 2002, professional housings for the EOS 1V, EOS 1D digital and



Nikon D 100 were added to the production range. In 2003, housings for Nikon D100 were introduced, and finally in 2005-6, housings for Nikon D200, Canon EOS D5, Nikon D2X/D2H, Nikon D70, Canon EOS 1D Mark II/ EOS 1DS Mark II were presented.

The creative process never stops at Seacam, and every day sees new innovations come to light.

Seacam Fan-club

During its 15 years of existence, Seacam has produced about 10,000 housings.

The minimum requirement to do a model series is 50 units with the most popular models being manufactured by the hundreds of pieces. Most housings return "home" for service sooner or later. During my visit, I see three housings belonging to the award-winning photographer, Constantinos Petrinis, lying on the shelf waiting for a service overhaul. Another one, which came with a dark brown spattering, had been made especially designed and created for Fred Bavendam, to shoot the most shy fishes. He also owns three Seacam housings.

Often the regular professional customers purchase two to three housings,

sometimes more. One collector from Bonn owns all the housings.

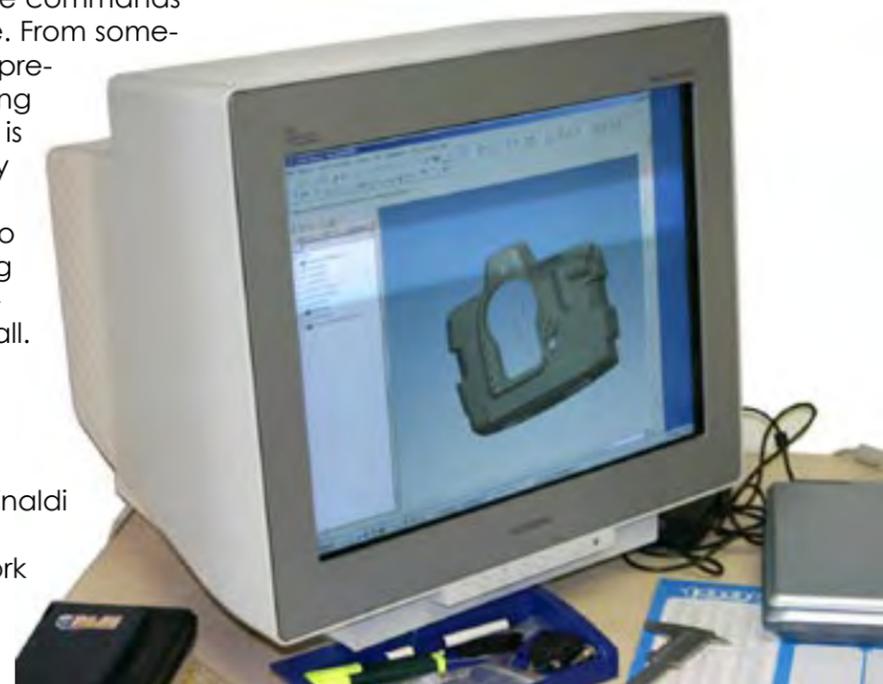
Today, Seacam is the choice of many professional underwater photographers. Here are a few quotes:

"So far, it is the best housing I have ever had in my hands. With my Seacam housings, it feels like I have the Nikon F5 directly in my hands; all the commands are precise and well done. From something so technical and so precise, one aspects something delicate and fragile. But it is not like that; after so many dives on wrecks deeper than 100 meters, or after so many extreme cave diving expeditions, the two housings have not suffered at all. And every time I go back to the tropical and colorful waters, I can enjoy the stunning quality of the Superdome." —Roberto Rinaldi

"Seacam allows me to work intuitively and fast. Their housings translate design

features and philosophy of high-end SLR cameras into outstanding underwater imaging tools." —Christoph Gerigk

"In my opinion, Seacam makes the Aston Martins of housings. They're a work of art, exquisite to look at, and optically perfect!" —Zena Holloway (see Zena's work in this issue's Portfolio section —ed.) ■



A Talk With Harald Hordosch

Edited by Peter Symes

Photos by Svetlana Murashkina & Harald Apelt



The company is actually very small. We are only eight people, including father and me, but we have the structure of a big concern

X-RAY MAG: *What inspires you? There seems to be a connection to art.*

HORDOSCH: The main inspiration comes from nature and from simple and classic design from all around the world. It means design I see in nature but also art and furniture but mostly from nature, for example how fish are formed.

X-RAY MAG: *This is clearly something that you use in your industrial designs, but does it also influence you on a more personal level? Which styles do you favour?*

HORDOSCH: Yes. I am very interested in contemporary art, but I can't afford the ones I am really a fan of, as they are too expensive. But I collect art from a famous Austrian artist group called Group 77, who do both paintings and sculptures.

X-RAY MAG: *You started building underwater housings when you were very young...*

HORDOSCH: I was about 16 when I started with my grandfather, who helped me build my own housing made of fiber glass, because I could not afford to buy any underwater housings that were available at that time. I wanted to house a very old film camera that my father owned, and it was very successful, because my grandfather was a very good craftsman. So, he helped me a lot, and I think he gave me the sense of working with materials and tools.

X-RAY MAG: *It must have been wonderful to have such a family relationship with knowledge being passed down through generations like that? It must have bonded you closely.*

HORDOSCH: It has now been many years since my grandfather passed, but now I work closely with my father. He is a machine engineer, who used to work with irrigation projects in Africa and the Middle East, and when he retired early, I took him in as my partner, which has been immensely helpful. It has also kept him busy, as

Seacam is as close to his heart as it is to mine. But his main interest is to help his son.

X-RAY MAG: *Do you feel that having so much of your family involved is part of the secret to your success?*

HORDOSCH: Well, we are always fighting a little bit. I have ideas, he has ideas, but it is more like a permanent bouncing of ideas off each other in a constructive way. It is a good way to develop new ideas and find the optimal solution. But, as you can imagine, we have a lot on our plate, as we also have to look after the manufacturing and finding affordable ways to administrate—It is not very easy.

The company is actually very small. We are only eight people, including father and me, but we have the structure of a big concern, like Mercedes. Because we have import, export, a lot of distributors to manage, advertising, and the functions of a big company, we have to manage, and that makes it very difficult. For example, we have to send invoices out to all over the world, so our financial system has to cope with all kinds of regulations, and we have to communicate with customers in several regions around the world, such as Australia, Italy and United States.

I talked to my father yesterday and told him: "I cannot believe it. Now, it takes about 70 percent of my time just to talk to people and email." I have less and less time to supervise production and to do innovation and new things, but we try. Essentially, it is a good development.

On a related note, what you might like to know is that everything has been learned by doing. I have no formal technical education, but a good humanistic education, so this is probably also why I am close to art.

X-RAY MAG: *But as you have the technical competence around via your father, this must give an very interesting dynamic?*

HORDOSCH: My experience is, if you are deeply

engaged in what you doing, you can do everything. It is only down to the spirit in you to develop better solutions. If you are a universal person, you should be able to do that. If you concentrate, you can achieve a lot, but you need to be very focused. Only a few years back, I knew very little about computers, or digital photography for that matter, but if you get involved, you go deeper and deeper, and eventually become a specialist.

X-RAY MAG: *How do you feel working with your father affects or changes the relationship? When you were a kid, he was the role model and responsible guardian. And later an equal partner? How do you find this change of relationship worked out?*

HORDOSCH: I think it is very difficult at times, and sometimes I think is very hard. But if you have your father behind you, you also have a lot of additional things. He is more experienced, because he is older. He rests in himself and knows economics and technical things. But we work closely together now to find the best solution for the company. The advantages do outweigh the disadvantages. The company is actually in my parents' building, though I live elsewhere. It works, because I have a good relationship with my parents.

X-RAY MAG: *Do you have a certain business philosophy?*

HORDOSCH: I formulated this about ten years ago when Seacam introduced the new silver housing, and I was thinking about how to solve problems and do underwater housings in a better way. And found that the important issues in our business philosophy should be being very innovative and have superior design. Which boiled down to "superiority through innovation". Also, the main thinking was to create elegant design with clear functionality—to make tools for underwater shooters, which they can really work with without having problems with the equipment. Already, when we launched the



innovation and making a tool for the photographers, do you have some of your closest photographers giving you feedback?

HORDOSCH: One of our basic ideas was to develop new housing in dialogue with the best photographers. We work very closely with some of the professionals, and there has probably not been anyone more influential than the German photographer, Herbert Frei, who was actually the reason that I started Seacam. He always told me: "Ask professionals what they like, and then make it. You will then see that you will have success." And I have followed his good advice ever since. I always ask the photographers what they need. That has been instrumental in making Seacam what it is now, by being open to these suggestions.

And I never understood why other companies seemed more concerned about cooking their own soup than asking the important questions. But I should be glad that they are not.

Sometimes, the questions or requests I get seem really crazy, but the photographers, like Kurt Amsler, are also leaders in their field and have a good reason for wanting a tool. I try really hard to involve the photographers. Actually, it is also how our distribution works. I am not interested in fancy shops, but in knowledge and competence. There are no better agents than professional photographers doing courses.

X-RAY MAG: Is there anything a housing manufacturer can do to further the evolution of underwater photography, and on a related note, is there anything new you would like to see in underwater imagery?

I think that it is good that everything is changing to digital, because the quality of the images is increasing, and this happens because they have more frames to their disposal. You have more choices. Very good shooters shoot a lot of frames, and art, nature or fashion photographers

have always been able to do that. Then you can select the best pictures. Of course, a good photographer always knows when to push the button and how to compose, but the fact that you are able to shoot more pictures without additional cost is a huge benefit. I think there are far more better pictures shown now on exhibitions than just five, let alone ten years ago. Also, the lower prices for beginners' cameras has made it possible for far more people to step into underwater photography. Ten years ago, it was difficult for beginners, because there was much less equipment available at this level.

X-RAY MAG: But your products are not meant for beginners?

HORDOSCH: No, but the interest has to be started, and you should enable people to take up photography. Surely, Seacam is not for beginners, but if somebody then decides to get the right tools to go further, we have these things ready. With the digital evolution, we have seen far more people go into photography and turn their hobby into a profession—that is the most important thing.

X-RAY MAG: What do you tell customers complaining about your prices?

HORDOSCH: You always have to compare and see what you get for your money. Once you take a closer look at the quality that we offer, you realise that we have to charge a higher price. Anybody with



"Harald x 2"
X-RAY MAG's
associate publisher,
Harald Apelt, with
Harald Hordosch at
the Antibes festival

a little knowledge about the design, components and craftsmanship, which is put into the housings, is ready to pay the extra cost, which is usually just a little bit more than other manufacturers. The main thing is the quality, but you should not forget all the service, after sales and handling we offer, too. All these things are highly organised. It is the whole package you get. I would never like to sell cheap stuff, because you have to sacrifice quality and service, which you have to cut to save money.

It is important for me to enter a long term relationship

with the customers. If you put a cheap camera into a housing, it is mostly likely going to be outdated within a few years, but the overall combination is still quite an investment, so what is the point? I only go for the higher quality cameras, which you can use for five to seven years and still remain happy with it. If money is an issue, then go for, say, a system at €500, get some experience and then decide for an upgrade on an informed basis later.



KURT AMSLER

X-RAY MAG: Next plans are?

HORDOSCH: We will be introducing several new innovation's at this year's Antibes Festival. Wait and see. ■

silver design ten years ago, we also had the superdome (port) and the 45 degree viewfinder. Only now, have several of the other manufacturers begun to offer such features. Sometimes, I feel that the audience forgets how far ahead Seacam has been with innovation.

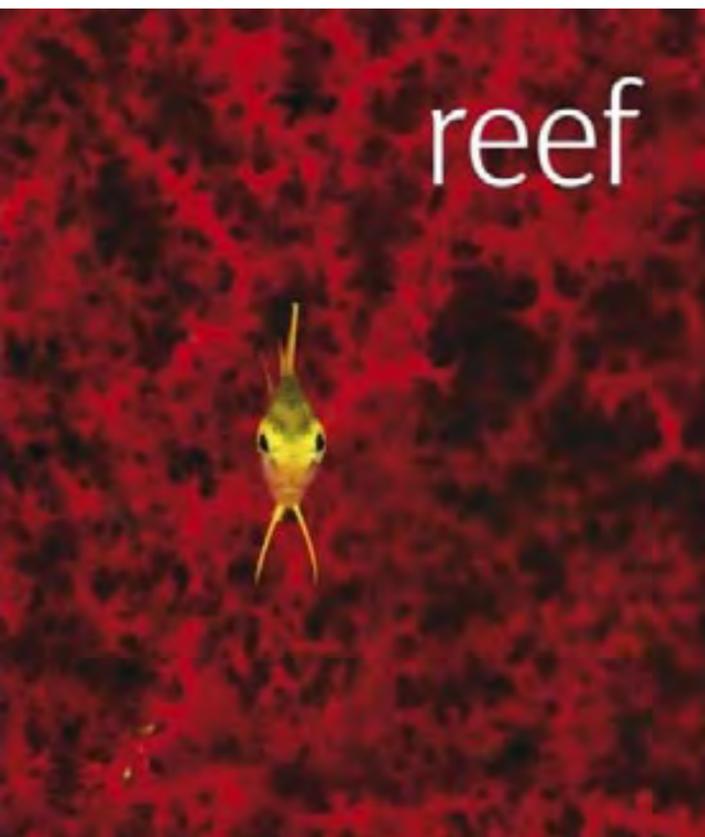
X-RAY MAG: When you speak about



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Edited by
Catherine GS Lim

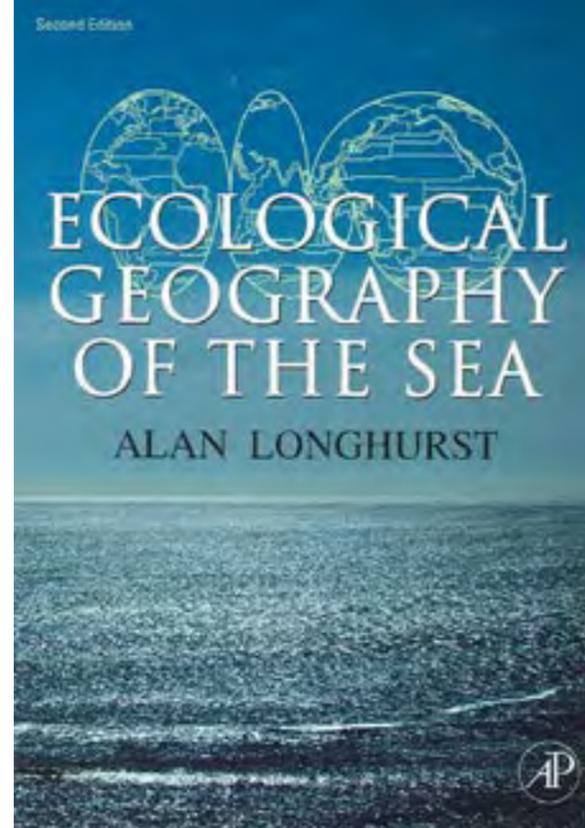
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ON BOLD LINKS**



Reefs in Livin' Colour!

This photographic collection of coral reefs is both comprehensive and stunning. Whether you are a seasoned expert or a coffee-table browser, Reef offers a soothing yet enthralling journey into the 'rainforests of the sea'. And it's not just the picturesque corals that take centerstage, you'll also savour temperate reefs, kelp forests, seagrass beds, various seascapes, marine animals as well as mangrove swamps. There are also photographic essays, maps and an interesting behind-the-scenes section.

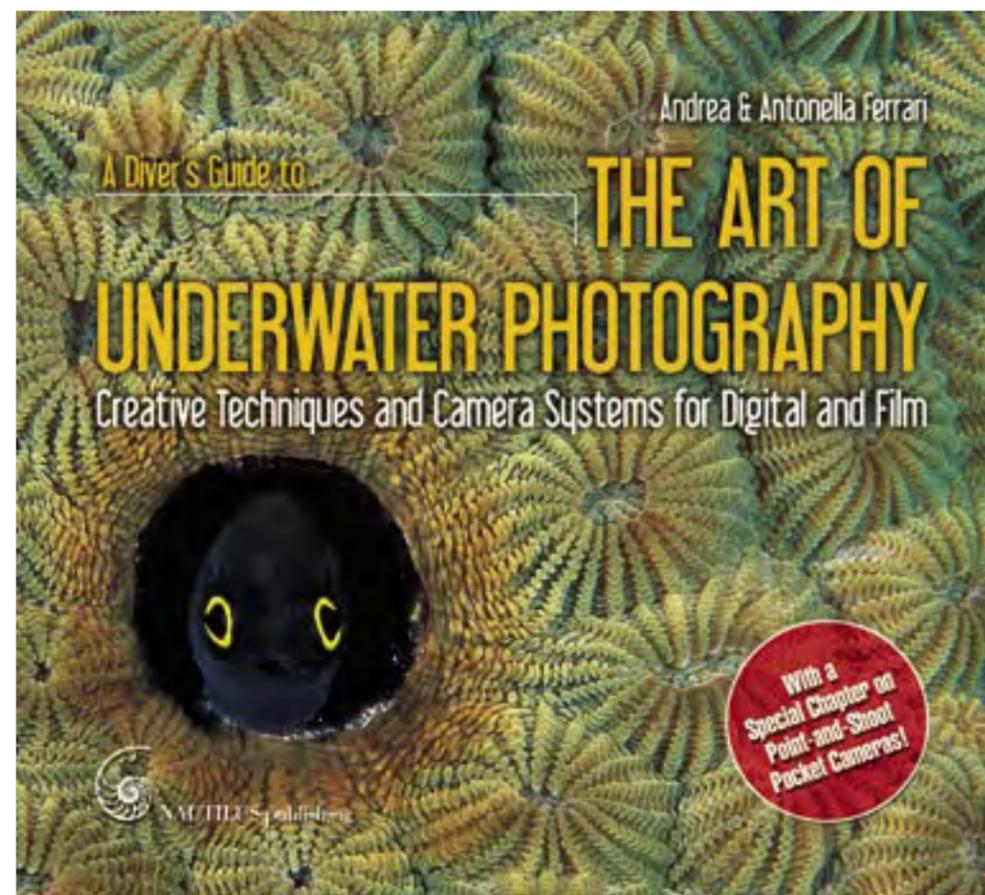
In addition, a 30-minute DVD contains dynamic footage that is the perfect (though short) accompaniment to this photographic treasury of underwater imagery. Photography is by Scubazoo. Proceeds of the book go to the Coral Reef Alliance. www.us.dk.com



What Your Geography Teacher Forgot to tell you

Ever wondered why geography textbooks seemed to concentrate so much on rocks and vegetation on land even though more than 70 percent of the Earth is underwater? Well, we can't answer that, but we can recommend a book that will remedy the situation: The Ecological Geography of the Sea. This new ebook—a second edition—focuses on our ocean's biological and ecological geography. In it, author Alan R Longhurst has divided the ocean into four compartments (based on patterns found in algal ecology), and these are further subdivided into smaller categories. Local restricted studies are utilised to bring the reader a comprehensive global geography of the ocean. Sounds intriguing? Well, we definitely think so!

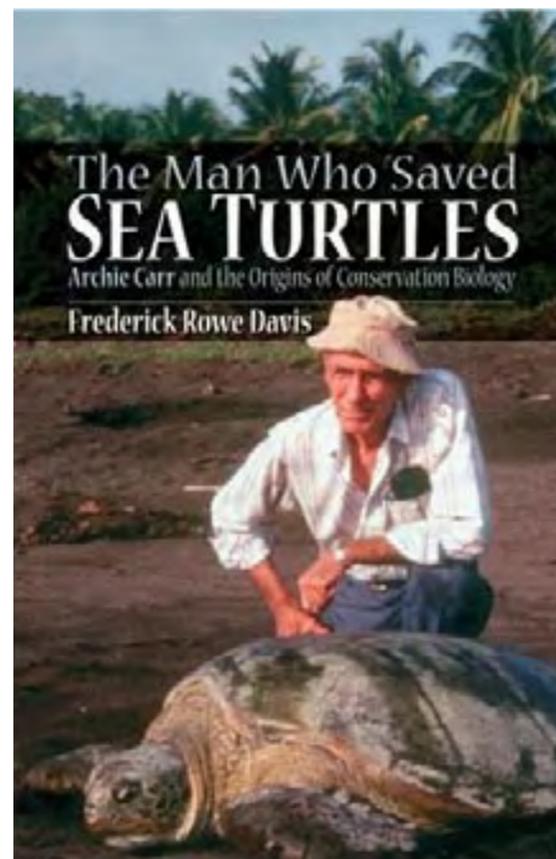
www.ebooks.com



Turtle Saviour

When it comes to sea turtles, no one knew them better than Archie Carr (1909–1987). His naturalist roots were laid right from childhood, with a backyard full of caged snakes, lizards and turtles. The foundations for his career were then cemented in the form of a doctorate in zoology and research work in taxonomy. A teaching stint in Honduras brought him up close and personal to Central American wildlife—and sea turtles.

www.us.oup.com



The Art of Underwater Photography

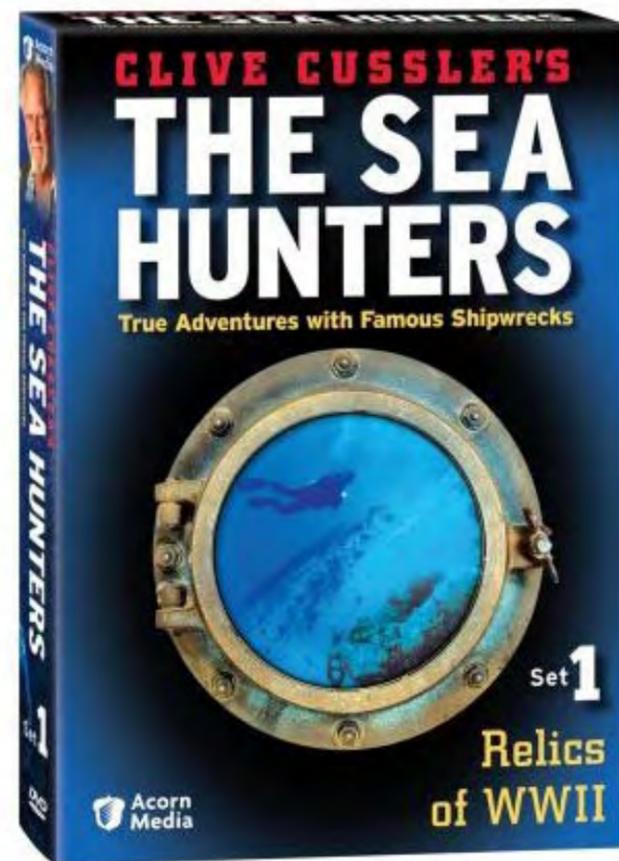
This book is by X-RAY MAG contributors, Andrea Ferrari and Antonella Ferrari. This statement alone ought to be enough to get out of your seat and on your way to the bookshop in a hurry (at least, until you read further and find out that the book will only be available at the end of the year). What you can expect from this volume is 400 large photos printed on heavy glossy paper. These images are published alongside eight chapters about equipment, housing, technique, macro photography, etc., on 360 pages. There is also coverage on related topics such as motivation, mindframe, philosophy and artistic influences. The photos in the book are taken by the two Ferraris, but you can also savour the photos by other top photographers like Eric Cheng, Charles Hood, Alex Mustard, Doug Perrine, John Scarlett, Takako Uno, Stephen Wong, Tony Wu and many others. Available at www.nhbs.com and on Amazon worldwide at EURO 37,00 / GBP 24.99 / USD 51.00.



Go Diving UK

Welcome to a showcase of the United Kingdom's magnificent underwater heritage. No aristocratic stiff upper lips here, just a DVD on plain great diving, produced by the folks at the British Sub-Aqua Club (who else?). The footage takes you to dive spots from Cornwall to Scotland, from the serious (the famed *HMS Scylla* wreck) to the funny (seals biting divers' fins). No doubt that producers had fun producing the program, as much as film-maker John McIntyre had fun filming and presenting it. Get up close and personal with the world's second largest shark (the basking shark) as well as the BSAC Chairman Marcus Allen, DIVE's top underwater photographer Charles Hood, BSAC instructor Sophie Rennie, Marine Conservation Society Director Sam Fanshaw and university students Ben and Hollie.

www.aquapress.co.uk



Shipwreck Hunting

The title may make some of you cringe, wondering what blood-speckled spectacle awaited the unsuspecting viewer. But for those in the know, the title is as exciting and invigorating as a hunt for underwater treasure—'treasure' in the form of sunken ships, that is.

The *Sea Hunters* chronicles the search and exploration of significant shipwrecks of World War II. It's one shipwreck per episode, so viewers have the luxury to delve in-depth into the history, technical challenges, mystery, drama and science of a particular shipwreck in each episode. There are prep sessions to attend, technical problems to solve, exclusive interviews with survivors, witnesses and experts, and of course the dives themselves.

All this is masterfully overseen by host Clive Clusser, an action-adventure writer who used proceeds from his book sales to co-found the National Underwater and Marine Agency, which searches for shipwrecks and other vehicles that have been lost underwater. Famed marine archaeologist James Delgado complements every episode with historical and intriguing snippets of information.

Highlights of this three-disc DVD box set include the search for the *RMS Carpathia*, which rescued more than 700 survivors of the *Titanic*, the relics of D-Day and the remnants of an aircraft carrier that's made entirely of ice. Available October 23rd. Preorder at www.amazon.com

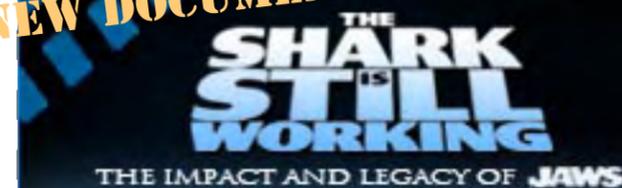
Watch Shark Week Every Day!

11 hours on 4 DVDs

For twenty years, the Discovery Channel has dedicated a week every year to the education and conservation of sharks, with the aim of turning fear into fact. It's not your typical flower-power all-sharks-are-great campaign, though. The programmes that air during Shark Week do exult upon the majesty of sharks, but it also presents stories in which sharks are relentless predators, terrorising their hapless victims. This year, the Discovery Channel has issued a special four-DVD set to commemorate the 20th anniversary of this special programming. shopping.discovery.com



NEW DOCUMENTARY



The Shark is Still Working

According to the American Film Institute, *Jaws* ranks among the fifty greatest movies of all time and the second greatest thriller ever (Behind Alfred Hitchcock's *Psycho*). After three decades, the film continues to intrigue, thrill and frighten viewers. It's become an entertainment mainstay, a timeless classic in a world of fad filmmaking.

The movie's legacy is undeniable and virtu-



ally unmatched; it jump-started the summer blockbuster phenomenon, not to mention the illustrious career of one of Hollywood's most influential directors, Steven Spielberg.

Narrated by Chief Martin Brody himself, Roy Scheider, this feature-length documentary focuses squarely on the many ways *Jaws* has helped to shape these elements of pop culture. In addition, *The Shark is Still Working* proudly showcases many of the fans, artists and craftsmen who keep this film alive, examining some of the creative venues through which they express their passion for the film.

It covers the recent events at Jawsfest'05, celebrating the picture's thirtieth anniversary and highlights *Jaws* homages and send-ups from pop culture. Interviews with the cast and crew, and prominent filmmakers whose careers have been duly influenced by the movie will give the viewer some insight as to why *Jaws* has earned a well-deserved place among the greatest classics Hollywood has ever produced. *The Shark is Still Working* promises to be the ultimate retrospective on *Jaws*.



technical matters

Column by Cedric Verdier

Bailing out

Rebreather practices

Yes, but *how?*



Bailing out to Open Circuit is like falling in the snow when you are learning to ski. It's a solution when facing a problem—not always the most elegant solution, but always the easiest one, and most of the time, the most efficient one. But Open Circuit bail-out is actually much more than simply going off the loop and breathing from another second stage. There are lots of possibilities.

Sanity Breaths

When dealing with most of the problems that could occur with a rebreather—equipment failure, physiological problem, etc.—one of the first reactions should be to do a **diluent flush** to make sure you breathe a safe gas for the few seconds you'll need to switch to OC and take some sanity breaths from a known mix. Four or five breaths should help most of the divers experiencing any kind of symptoms to quickly regaining their ability to think properly and to react in the most efficient way. In case of hyperoxia, hypoxia, mild hypercapnia, or any mechanical or electronic problem, a good diluent flush

followed by some sanity breaths can help. Even if this doesn't help, most of the time it doesn't do any harm (if the mix is safe to breathe at that depth), apart from depleting the stock of gas available.



Press the button—one of the first reactions should be to do a diluent flush



A bail-out valve is a switch on the mouthpiece that allows changing gas source from closed to open circuit



"Take me to your leadier"
—a bail out valve on a full face mask



JAKUB REHACEK, GOLEM GEAR

These sanity breaths can be done in different ways:

BOV (Bail-out Valve)

That's generally the easiest and fastest way. There is no need to remove the mouthpiece, so no stress. The BOV is already in the mouth, so no delay and no risk of drowning or panic. Therefore, a BOV is extremely useful, even required when diving with a Full-Face Mask. Some rebreathers come with a BOV fitted (Kiss, RB80, Cis-Lunar, etc), or it can be purchased separately (Golem Gear, Nemo, etc). The BOV is normally fitted to the on-board diluent but with a quick-connect, all your dreams can be fulfilled...



Open Loop technique

Still no need to go off the loop. The idea is to use the ADV as a kind of "manual 2nd stage"—obviously less convenient than a BOV, especially in case of a flooded loop. However, it's one of the fastest options and can be so easily done that it should be one of the first skills to be taught to any CCR novice.

Standard 2nd stage

Fitted on a sling tank, it provides the diver with a sufficient and known source of gas. However, lots of rebreather divers simply store the complete regulator on the side of the sling tank. This configuration obviously requires more time than if the 2nd stage is stored on a shock cord loop around the neck. Remember,

One of the earliest rebreather designs. In 1680, Giovanni Borelli envisioned a diver carrying a large bag of air from which the diver breathed as necessary

one of the goals of the sanity breaths is to quickly go off the loop to be able to safely breathe and think about the safest way to fix a problem. Looking for a few seconds for a second stage that is trapped somewhere (or even worse, loose) is not the best choice. Opening the tank valve also takes some time. If the 2nd stage is stored around the neck, the tank valve can be left open and any leak or free flow will then be easily spotted.



Combined regulator/2nd stage

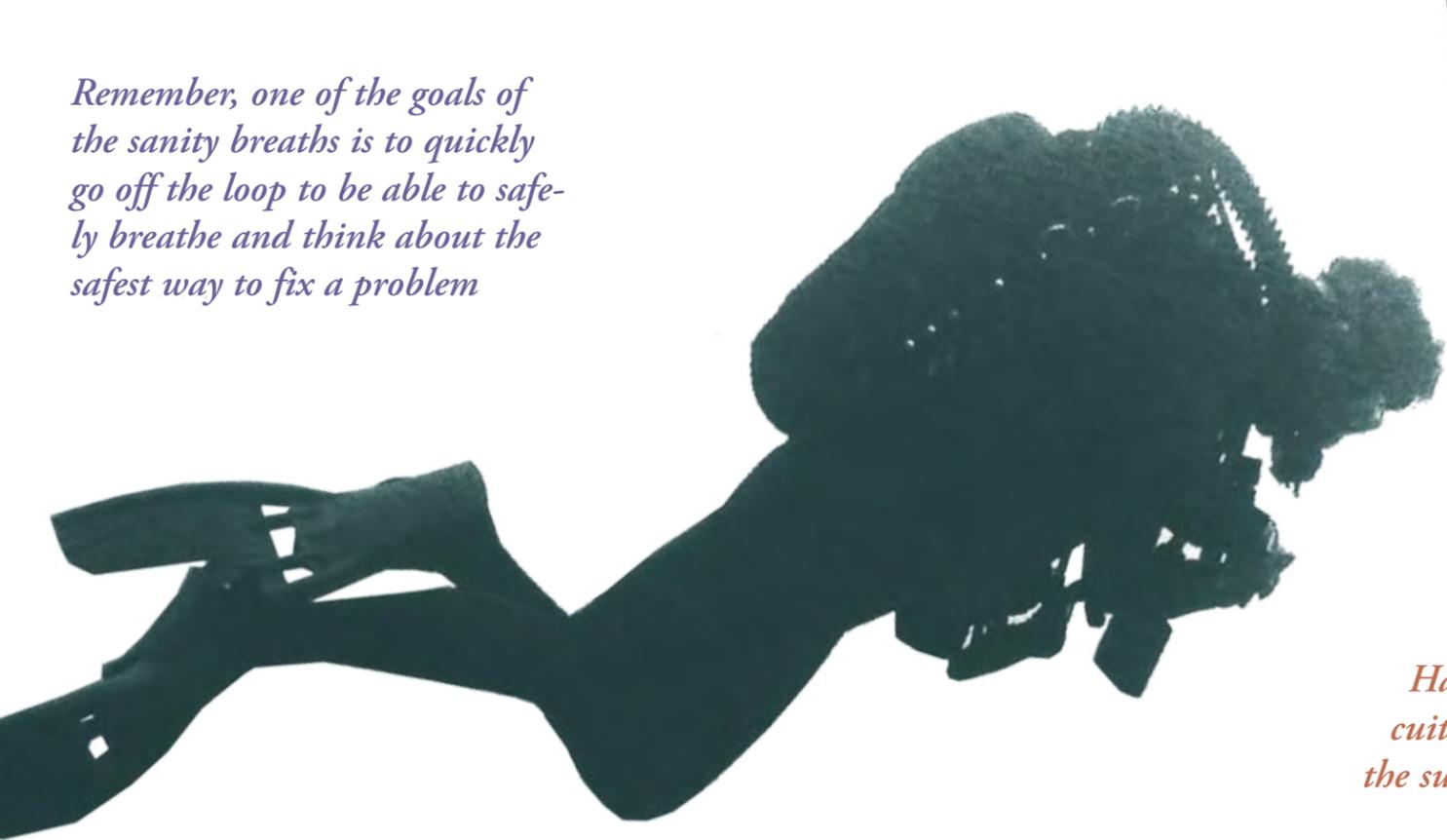
This is another option fitted on some rebreathers like the Inspiration and the Evolution. Some rebreather divers don't like them as it might be difficult to breathe from them at depth. Other divers like the convenience and store them around the neck.

One of the problems with hypercapnia is the often-associated uncontrolled urge to breath. Closing and removing a DSV, then clearing a mouthpiece before being able to breathe is sometimes next to impossible. Because of the risk of water egress in the airway, a BOV is a convenient and safe way to gain control on the breathing pattern for a short period of time. It can only be a temporary measure before switching to a bigger stock of gas (off-board diluent/bail-out tank).

Combined regulator and 2nd stage as they come mounted on i.e. Inspiration CCR



Remember, one of the goals of the sanity breaths is to quickly go off the loop to be able to safely breathe and think about the safest way to fix a problem



Having enough open circuit gas to safely ascend to the surface is not an option. It's a requirement.



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Open Circuit Bail-out

As every rebreather diver (either SCR or CCR) learns during their basic rebreather diver course, having enough open circuit gas to safely ascend to the surface is not an option. It's a requirement.

Why go the OC way when you have so many other options with a CCR? Because it's safe! The rule is: if you don't know where the problem comes from, if you don't know how to fix the problem, or if you simply don't know if the mix in the loop is breathable, stay on Open Circuit.

Even if most of the problems can be fixed at the bottom on a CCR, there are three circumstances where there is absolutely no other reasonable alternative than bailing out on Open Circuit:

1. Total Loop Flooding.

If divers properly check their units before the dive, there should never be any Total

The golden rule is: If you're not 100% sure about the problem and how to easily and quickly fix it, don't come back to the loop!

Loop flood. Unfortunately, it happens from time to time, mainly because of a user error (lost mouthpiece, DSV removed while still open, lack of pre-dive positive and negative pressure test, etc).

2. Severe Hypercapnia. In case of scrubber breakthrough, the signs and symptoms of hypercapnia might be so severe that chances to recover from the CO₂ hit become minimal. Keeping on breathing from the loop (even on an SCR mode) makes these chances even smaller.

Ascending (reducing the ambient pressure and the pCO₂), stopping any exertion (no CO₂ production) and breathing from an OC regulator (no CO₂ build-up) could be the best solution.

3. Personal choice. It's like the rule about aborting a dive at any time for any reason. When one doesn't feel comfortable on the loop, there is no shame in bailing-out. It helps to get the stress level down and avoid any further problem.

In any case, the procedure should always be the same, to keep the thinking process as limited as possible. When your brain becomes as small as a peanut and as primitive as an action movie hero, you need simple steps to follow:

1. Start with a few Sanity Breaths. With a BOV, it's extremely easy. Take a few long and slow breaths to clear up your mind and relax somehow. This is one of the reasons why many rebreather divers prefer to always have the same on- and off-board diluent/bottom mixes: they don't mix up their decompression with multiple diluents and bottom bail-out gas.
2. Try to identify the problem and its cause. Different tools are available for that (from the handsets to the SPGs, the HUD, audible or visual alarms, your symptoms, etc).
3. If the problem can be fixed, do it and come back to the loop when—and only if—it's safe to breathe from.

4. If the problem can't be fixed, it's the right time to prepare the bail-out ascent. Don't drain your on-board gas as most of the time, it's also the gas you use to inflate your wing (and sometimes your dry suit); in case of emergency, you might need to be positively buoyant at the surface. Prepare for a 3-step ascent:

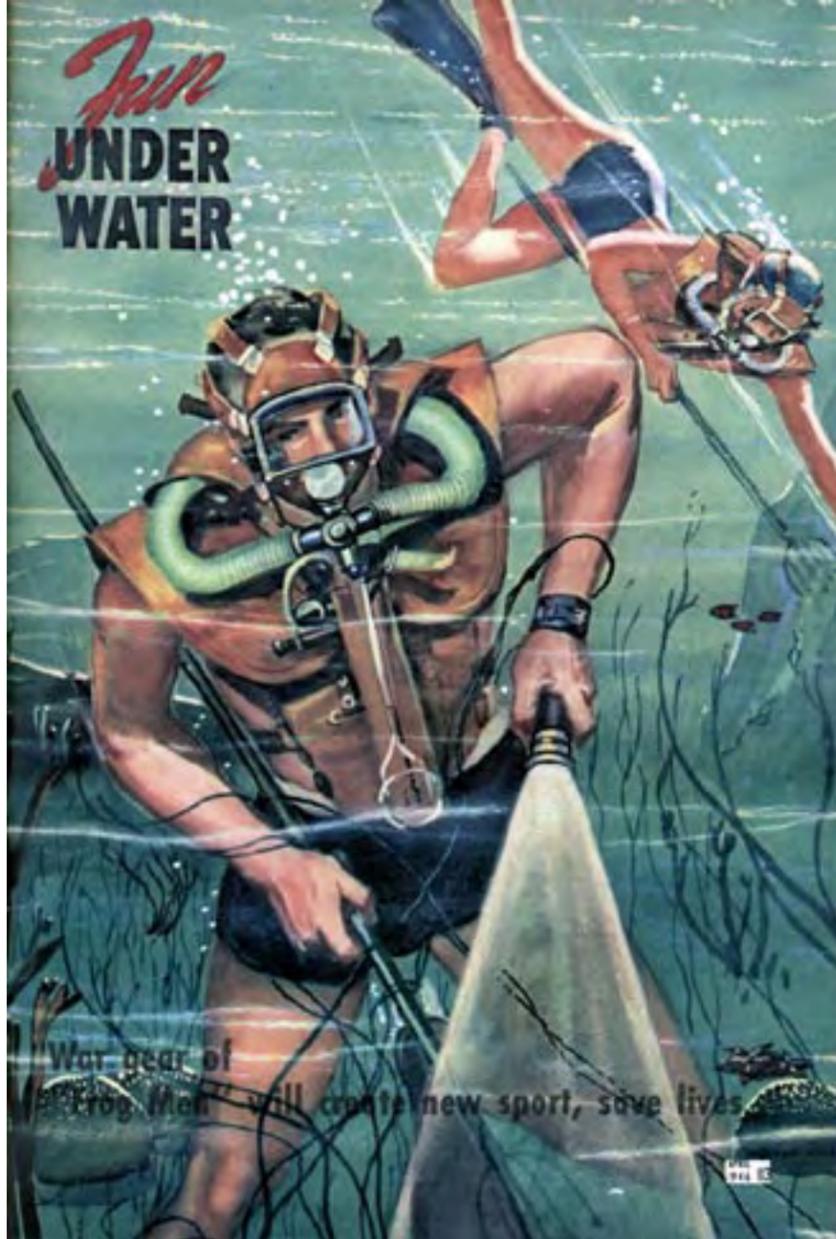
- Switch to the off-board regulator. Many rebreather divers prefer to always have this tank valve cracked open (easy to shut off in case of free flow, quicker to breathe in case of emergency).
- Communicate with the team mates and check for the dive parameters (depth, time, decompression, navigation)
- Control buoyancy. It's often a tricky part, as the loop will expand during the ascent. The key to success is

- 1) Slow ascent,
- 2) OPV fully open and
- 3) Practise.

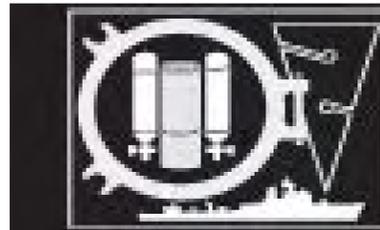
Apart from Buoyancy control, there shouldn't be any stress involved in this kind of ascent, as long as one has enough gas to complete the ascent.

The Rubik's cube we had going in our last issue is now completed





"Fun under water" with rebreathers - anno 1946



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as it will increase the risk of losing it and flooding the loop.

► Easy to switch. Some BOVs are very stiff and you need the help of a team of weightlifters to operate the lever. Not the best solution when your loop is full of water and your lungs are empty after a few minutes.



► Easy to breathe at depth. When you need to breathe OC, it's because you NEED to breathe! Only high performance 2nd stage should be used in BOVs. Even if your diluent is easier to breathe because of its Helium content, the fact is that one needs a lot of gas when switching to Open Circuit. A hard-to-breathe-at-depth BOV will just make everything worse and increase the stress level.

► Not free flowing. That's where manufacturers speak about

compromise. How could an easy-to-breathe 2nd stage not be prone to free flow i.e. at the surface when submerging, or when scooting? One answer is the adjustable knob, designed to avoid losing the precious and limited gas at the beginning of the dive. It should be set "Hard" before jumping into the water, then loosened up during the bottom phase, just in case...

► Air and watertight. That's where some of the BOVs on the market have a lot of problems. I personally experienced a lot of leaks and failures to hold negative pressure with two BOVs that come standard with some popular CCRs. It's a life-support equipment so proper designing and machining are of the utmost importance.

I had the opportunity to try the following BOVs: KISS, Golem Gear and v4tec. I also extensively studied these other models: Nemo, Kirby-Morgan (NATO pod) and Cis-Lunar.

I selected the Golem Gear for my Megalodon CCR, as I found it a reliable and robust piece of equipment that actually meets all the requirements listed above. The design is simple, and the performance at depth more than satisfying. It comes in two flavours that allow it to fit on most of the rebreathers. The lever is a little bit hard to operate when it's brand new but everything becomes

easier after a couple of dives. It's also very easy to service and maintain, and a little bit of grease eases up the lever without contributing to any leak. And the LP hose comes from the left hand side, more convenient for my tank configuration.

When it comes to safety for CCR divers, bail-out tanks are often compared to an ejection seat on a very sophisticated plane. You have a very expensive machine that fails. You need

a very simple solution that always works!

A proper Bail-out Valve is an easy and quick way to breathe Open Circuit. Who would say that it's not of the utmost importance? ■



The author with a Twin Megalodon with 2 BOVs

It might be wise to plan for the worst-case scenario—like having the problem at the deepest depth or the furthest point of penetration while being separated from the team. And make sure you have enough gas with at least a 30m/min SAC rate.

Different BOVs available

The Bail-Out Valve (BOV) is not a new idea. Unfortunately, there are not so many rebreathers on the market that incorporate this extremely useful feature as standard. Switching to OC without removing the mouthpiece sounds really interesting for most of the

rebreather divers. Therefore, some BOVs are available, most of them with adapters to fit in all the major rebreathers currently available.

The necessary features are:

► Small and light. You don't want to have a small anvil hanging on your mouth. It would be at least uncomfortable, even dangerous,

