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2020 GEAR GUIDE SCUBA

D I V I N G



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SCUBALAB

189

MASKS, FINS,
REGULATORS,
BCs, COMPUTERS
AND MORE

P 31



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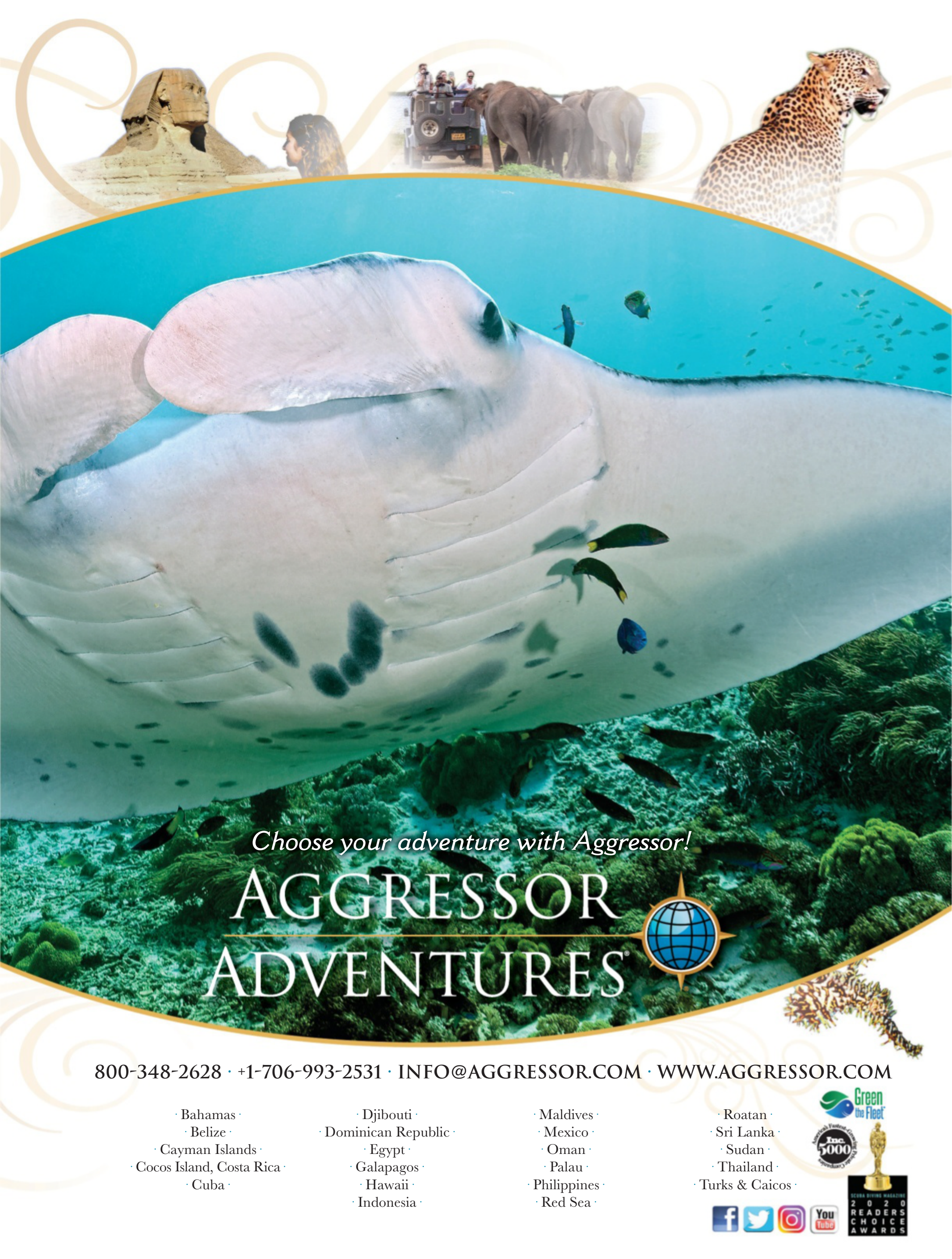
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PROSPEX

“Satan’s Palace”

Miyakojima, Japan

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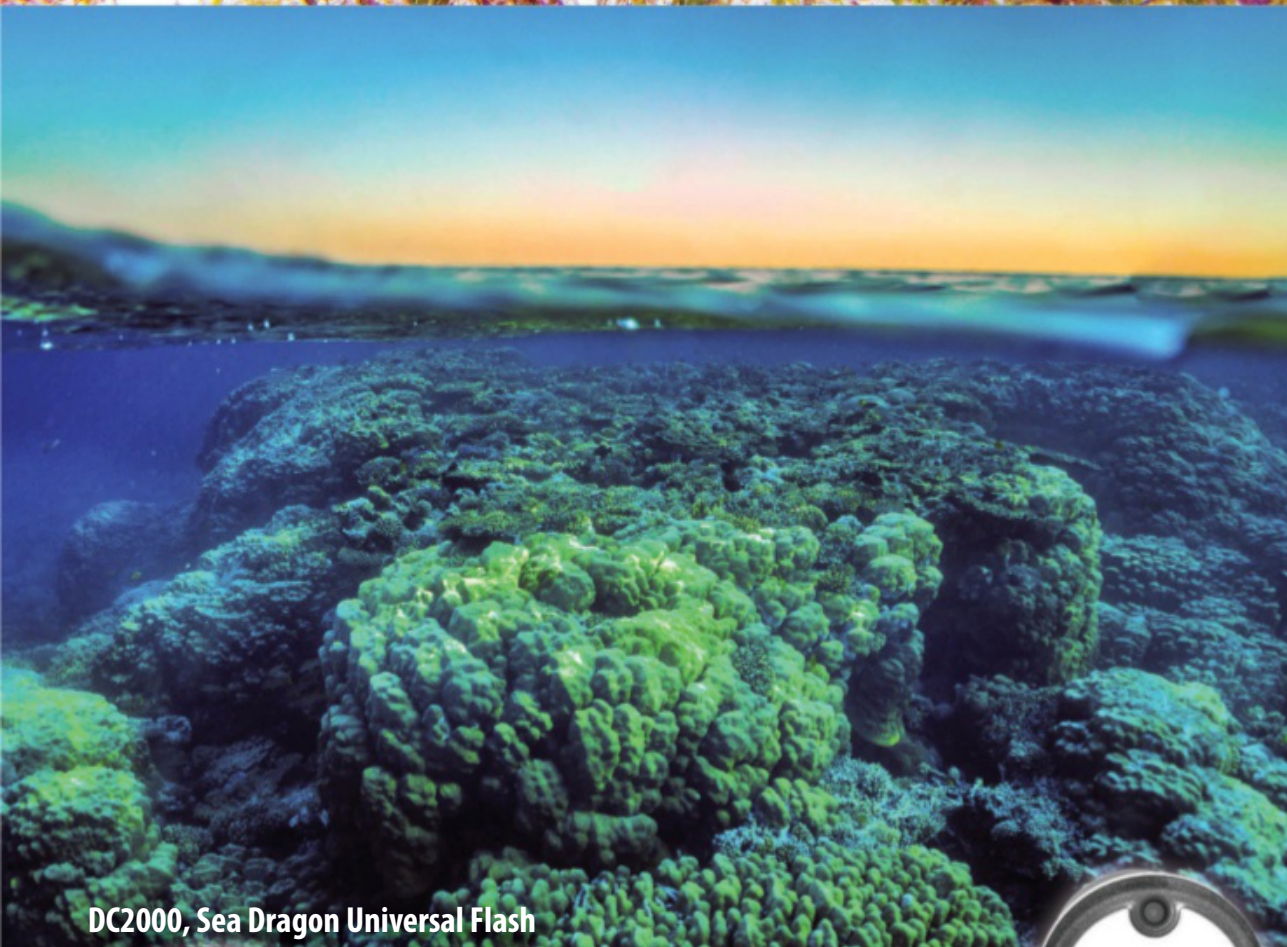


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Micro 3.0 Pro 3000 Set



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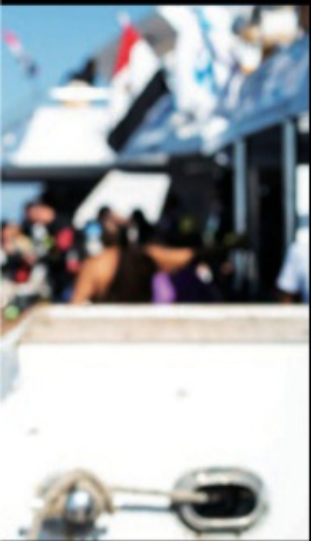


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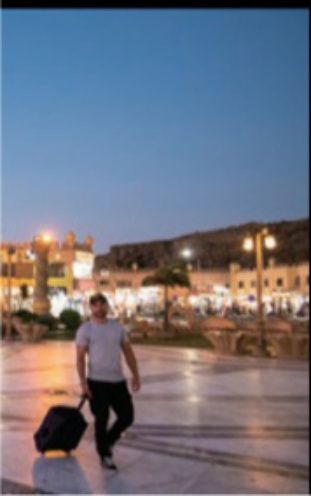
Our great sea has become a treasure trove of life, to which we continue to give our ongoing prayers of gratitude. Each morning dawn begins with a promise from the beach and turns the water still by dusk. With the moon's gravitational pull, tides rise and fall, forever revealing new underwater worlds.

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ON THE COVER

The Scubapro Go Sport, Hollis F1 LT and Aqua Lung Storm make a colorful splash in this year's Gear Guide. Photography by Jon Whittle



FOR BOTH YOUR WORLDS.

DIVE COMPUTER WITH SURFACE GPS¹
DESCENT™ MK1



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DEPARTMENTS

22 ASCEND

A message about **safety considerations** when charging battery-powered devices, such as smartphones, computers, cameras and more, aboard dive boats; a roundup of the **gear that took home top honors** from the editors of ScubaLab for Testers Choice and Best Buy in 2019.

31 GEAR

Your guide to 189 **masks, fins, BCs, wetsuits, computers, watches and virtually any other dive gear** you're planning to purchase—this is one issue you're definitely going to want to hang on to all year.

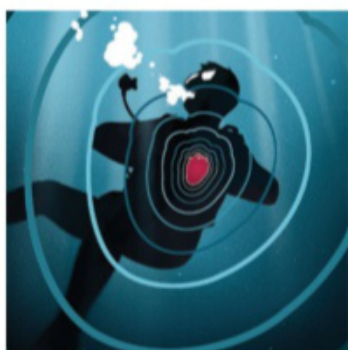
111 TRAINING

Make sure you know what to look for and what will work for your specific needs when putting together your own **underwater photography rig**; what's hot and new in our **camera bag**; a public safety diver makes a **fatal mistake** disregarding protocol—and becomes a victim himself; tips for **streamlining your gear** for the perfect dive; reducing your risk with **redundant equipment** for recreational diving; a look at what it takes to get your feet wet with tec and try the **Discover Technical Diving experience**.

130 STAFF PICKS

See what our editors chose as their personal **favorite pieces of gear** and why.

120



130

DIVE INTO COLOR

Shadow Masks & Mini Shadow Masks offer an incredibly wide field of vision with a frameless design, 100% liquid silicone skirt and comfortable neoprene mask strap that packs down flat to fit perfectly in your travel bag or BC pocket.

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MARY FRANCES EMMONS joined Sport Diver in 2009 and Scuba Diving in 2012, serving as features, senior and deputy editor. A diver since 2006, she was named editor-in-chief in 2018.

A LABOR OF LOVE

ScubaLab's test-team divers work hard so you don't have to

Five hundred sixty-nine dives, executed across Florida; the Bahamas; Bonaire; Catalina Island, California; the Galapagos Islands; Hawaii; the Red Sea; and Mexico's Socorro Island. [And that's just the sexy spots.] Last year, ScubaLab's test-team divers hauled 1,400 pounds of gear from boat to beach to springs and back—we know because we shipped 121 tested products home to their manufacturers afterward—to generate the data that underpins the ScubaLab gear reviews you rely on. It's a labor of love: ScubaLab is the only independent, head-to-head testing agency in dive, and we are darn proud of it.

The point of all of this—besides the chance to consume approximately 105 pounds of sandwiches and 4,480 peanut-butter pretzels along the way—is to give you the information you need to make informed decisions when it comes time to purchase new dive gear. Often, such decisions have to be made without any opportunity to get that gear wet; that's where we come in, with reviews you'll find in these pages each month and at scubadiving.com. The 2020 Gear Guide you hold in your hand is full of the brand-spanking-new equipment we'll be test diving this year. Like you, we can't wait to get our hands on it.

[Want to be a test-team diver? ScubaLab welcomes participation from qualified volunteers based in or visiting central Florida or one of our testing locations; reach out to me at maryfrances.emmons@padi.com if you'd like to learn more.]

Thanks for reading, and happy shopping.

MARY FRANCES EMMONS

EDITOR-IN-CHIEF

GEAR ON THE GO

Take ScubaLab with you wherever you go: You'll find video reviews of our Best Buy and Testers Choice winners—plus complete testing results, articles and videos highlighting the features of brand-new gear—on scubadiving.com.



SCUBALAB REVIEWS

The ScubaLab reviews you trust are available in video form for winners of Best Buy and Testers Choice awards in most categories of gear we test. scubadiving.com



HOW-TO VIDEOS

Once you've found the right gear and made your purchase, learn how to protect your investment with tips on proper use and maintenance. sportdiver.com

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DREW RICHARDSON, ED.D., president and CEO of PADI, has logged more than 6,000 dives worldwide and received many industry awards, including 1992 DAN/Rolex Diver of the Year.

IT'S MAGIC

Today's dive gear performs a neat trick, making the mystical into everyday reality

Like every technology, dive gear changes, evolving with minor and major innovations and improvements. Today we dive in kit that's more refined and offers more than just 10 years ago. With this in mind, this issue of *Scuba Diving* previews some of the newest, most popular and most interesting scuba equipment available—which, as a PADI Club member, I'm sure interests you. If you're serious about diving, it's important to stay familiar with dive technology, whether keeping up with the latest and greatest, choosing something new or [probably] a bit of both.

Dive gear differs from many other technologies in how we relate to it. Famed science-fiction writer Arthur C. Clarke once wrote, "Any sufficiently advanced technology is indistinguishable from magic." That is, if someone had absolutely no concept at all about how a device works—like a Neanderthal seeing an LED flashlight—that person might resort to mysticism or mythology to explain it.

And that's what is different about dive gear. We do understand [basically] how it works, but it's still magical. When we go underwater, we can see. It's cold—but we're not. Gravity loses its grip—we fly, and most magical of all, we can breathe. It's what makes the dive experience not only possible, but unique and special. It's a "magic" that didn't exist a generation or so ago, and even today, for more than 95 percent of the population, it's a magical experience that hasn't happened for them yet.

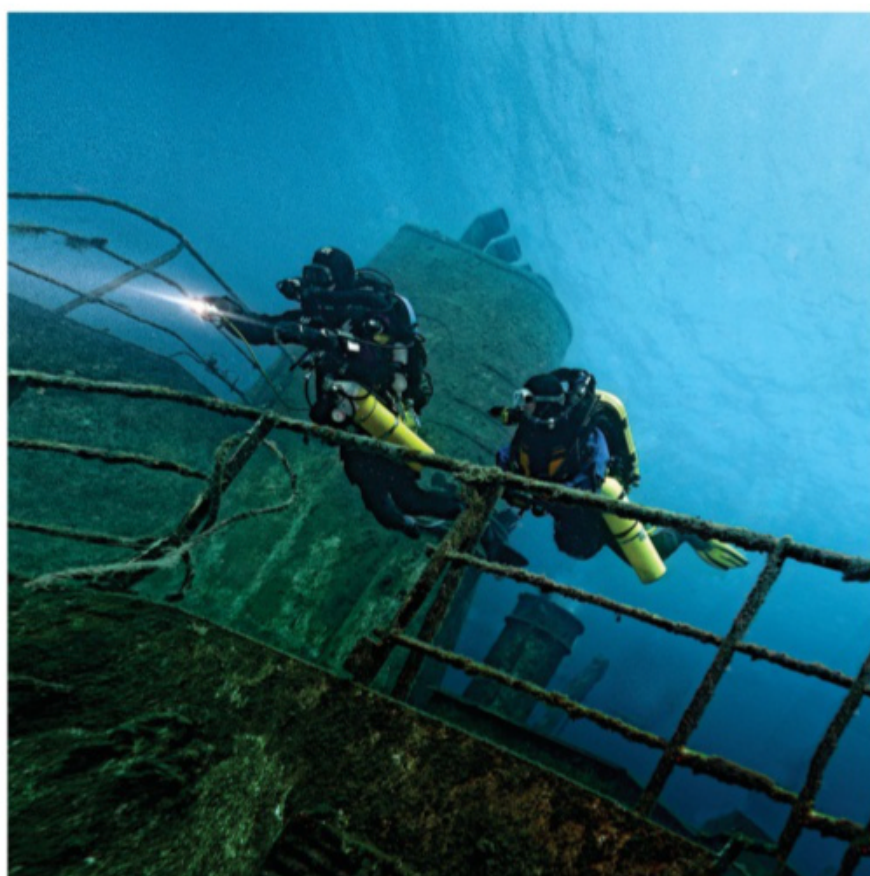
Broadway producer Sidney Sheldon said, "There is magic, but you have to be the magician. You have to make the magic happen." When we gear up, go underwater and invite non-divers into our ranks, we're making magic happen.

Seek adventure. Save the oceans.

DR. DREW RICHARDSON

PADI PRESIDENT & CEO

PS: If you're not yet enrolled in PADI Club, please join us. Visit, call or text your PADI Resort or Dive Center to get signed up today, or go to padiclub.com/save.



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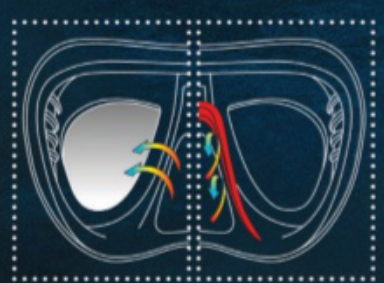
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Zeus is the ideal mask for any recreational or professional diver. The lenses are offered in regular tempered glass as well as having an advanced option of adding on iridium coating over them. The iridium coating will help prevent glare as well as adapting the lenses based on your surroundings. The lenses adapt by changing the color. This change in color is established by the ambient lighting around you, giving you the best visibility possible in any underwater situation. The IDF-INTEGRATED DUAL FRAME TECHNOLOGY SYSTEM gives you the optimal fit and flexibility to your face, preventing any possible leaks and discomfort. With the Zeus's patented inclined lenses, the mask gives you a wide field of view as well as an almost complete lateral 180 degree view. The result is a mask with an extremely hydrodynamic shape with optimal visibility, all while maintaining the best comfort and fit for you.



FOG STOP SYSTEM INNER NOSE POCKET ANTI-FOG

A patented membrane surrounding the inner nose pocket which acts as a barrier. The result is that not only is moisture channeled away from the lenses, thus avoiding the fogging up of them, but it also reduces the need to compensate for pressure.



NEW STRAP DOUBLE INJECTION SILICONE STRAP



2020 NEW CLEAR/RED	2020 NEW CLEAR/BLUE	2020 NEW CLEAR/PINK	2020 NEW CLEAR/BLACK
 BLACK	 BLACK/RED	 BLACK/SILVER	 BLACK/GOLD
 DARK GRAY/BLACK	 BLUE NERY	 BLACK UV420 IRIIDIUM LENSES OPTICA GLASS PROTECTION FILTER	



SAFETY FIRST

What you need to consider about batteries, power and charging on dive boats

There's a rising prevalence of battery-powered devices being used in diving situations: smartphones, underwater propulsion vehicles, computers, cameras, strobes, drones and other personal equipment.

Following recent boating-related tragedies, the National Transportation Safety Board and the U.S. Coast Guard have recommended that owners, operators and masters of passenger vessels consider limiting the unsupervised charging of lithium-ion batteries and extensive use of power strips and extension cords due to an increased risk of fire.¹

Boat fires can be especially violent, progress rapidly, create a significant

amount of toxic smoke, and be deadly for those aboard asleep, unaware or with limited escape options. While this document cannot cover every eventuality, PADI and the dive community would like to remind divers (and all boaters) of important safety recommendations for preventing and being prepared for an on-board fire, and remind all of the need for fire-safety awareness in all situations.

GENERAL FIRE SAFETY

General boat fire-safety requirements vary with vessel size, location, type, age and regional regulations. Listen closely to crew safety briefings, and follow their instructions specifically. If you're unsure

about something, ask for clarification.

1. After the safety briefing, with respect to fire safety on most vessels you should know:

- Where to find and how to use all fire extinguishers, fire alarms, lifeboats/rafts and personal flotation devices.
- How to quickly alert all hands in case of fire or other emergency.
- How to radio/call for help from local authorities if the crew is unable to do so.
- The location of all exits from below

deck. If berthing [sleeping aboard], there should be at least two ways out. Determine for yourself, personally, that the escape hatch can be removed and that you can get through it.

- Your primary and alternate escape routes if a fire occurs anywhere on board, including how to obtain a PFD because you may have to go in the water.

- If berthing, ensure there are operational smoke detectors, CO monitors and other regulation-required safety equipment in all berthing areas.

- If so briefed, know where to turn off power to any potential electrical fire source; e.g., charging stations, stoves, ovens and dryers.

- Where to go and what you're expected to do in the event of a fire alarm/alert.

2. Stow equipment and personal items away from fire sources, primary and emergency exits, electrical panels, fire alarms and fire extinguishers. Keep these unblocked, visible and accessible at all times.

3. Never use anything involving open flame [including smoking materials] below deck.

4. Always get crew permission before using high-heat tools [e.g., a soldering iron] anywhere on board. If you suspect fire, or if you suspect for any reason that something is burning, immediately raise the alarm, alert all hands and follow crew instructions.

5. If berthing, someone should be on watch and routinely monitoring all areas of the vessel.

CHARGING, BATTERIES, POWER STRIPS AND ELECTRONICS

Although rechargeable electronics have an impressive safety record, their growing utility and popularity mean dozens can be present and charging on a passenger vessel at any time.

This, combined with the limited circuit capacity of many vessels and the abundance of flammable materials, makes onboard electronics use, and battery charging in particular, an increasing fire concern.

1. Charge only in areas designated by the crew in a dry place and away from flammables. On many vessels, this requirement may include use and storage of your cellphone or other personal devices.

2. Use only manufacturer-designated chargers for each device and follow all instructions. Pay attention to battery groups [age, state of charge] and input-power requirements. [The voltage fluctuation common to many boat generators may be an issue.]

Although rechargeable electronics have an impressive safety record, their growing utility and popularity mean dozens can be present and charging on a passenger vessel at any time.

3. Do not leave charging batteries or devices unmonitored.

4. Remove batteries from chargers as soon as they're charged, and disconnect the charger from the power source. Allow batteries to cool before charging and before use after charging.

5. Store batteries as specified by the manufacturer. Don't store batteries in a charger, and use the contact cover to prevent an accidental battery short, which can cause a fire.

6. During charging and storage, use a lipo-safe bag or another suitable protective container as practical.

7. Immediately disconnect any battery or device and its charger from the power source if it becomes abnormally hot, emits a smell, swells or does anything else unusual. Similarly, do not charge or use a battery that's been wet or may have impact damage. Do not reuse these damaged batteries. Instead, keep them in a fire-safe location until they can be disposed of properly at an appropriate facility ashore.

8. Do not overload circuits by charging too many devices at once; doing so can

create a fire hazard within the boat's electrical system. Take turns charging small groups of devices, and strictly adhere to limits established by the crew. Never "gang load" by plugging power strips into other power strips.

9. Confirm the use of power strips and extension cords with the crew before use. If berthing requires a medical device [e.g., CPAP], confirm you can use it with the crew or boat operator before departure.

IN CASE OF FIRE

When prevention procedures are followed closely, the risk of a boat fire is actually very small. However, there is always some risk you must accept and for which you should be prepared. If there is a fire:

1. Raise the alarm and alert all hands immediately.

2. Exit as planned and as prebriefed by the crew. Follow all crew instructions.

3. *If the fire appears controllable, if you are not in a confined area where smoke can be a deadly hazard, if you have the ability [e.g., fire extinguisher at hand], and if doing so is within what the crew has briefed, attempt to extinguish the fire. But do not hesitate to evacuate—boat fires are fast and deadly. If in doubt, get out.*

4. If berthing, as much as practical, sleep in clothes that you can wear during an evacuation—you may not have time to get dressed. If acceptable to the crew, an option may be to have suitable garments staged where you can easily take them as you leave the vessel in an emergency situation.

For all of us who use battery-powered devices, fire concern extends to any location where batteries are being charged, including spaces in hotels, at land-based dive resorts and inside designated camera rooms.

Safety is a culture; it's everyone's responsibility. Pay attention, be proactive and stay safe.

¹USCG Marine Safety Information Bulletin 008-19: https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/MSIB/2019/MSIB_008_19.pdf?ver=2019-09-10-115632-287

SCUBALAB'S 2019 GEAR OF THE YEAR

OUR TEAM OF TEST DIVERS EVALUATED 120-PLUS PIECES OF GEAR LAST YEAR—THESE WERE THE STANDOUTS



AQUA LUNG TITAN

Now in its third generation, this new Titan sports a sleeker, soft-covered look with the same steady, easy-breathing performance that the Titan has long been known for. **\$399; aqualung.com**

AKONA COLLAPSIBLE MESH BACKPACK

This tough backpack easily handles everything you'll need for a day of boat diving, is comfortable to carry, and collapses to almost nothing when not in use. **\$98; akona.com**



CRESSI NEON

Simple, intuitive operation; an easy-to-read, high-contrast display; and its comfortable, stylish design in a truly watch-size package made the Neon a standout among wrist computers. **\$399.95; cressi.com**

AQUA LUNG FUSION BULLET W/ AIRCORE

This suit's high-stretch outer skin keeps a streamlined profile; the semicircular front zip makes for easy on and off; and the breathable AirCore lining is soft and dry, topside or submerged.

\$2,349-\$2,449; aqualung.com



SUUNTO D5

The air-integrated D5's three-button operation is so intuitive you can navigate menus before even glancing at the manual, and the full-color display is easy to see in bright sun or dark.

starting at \$849.95; suunto.com

UNDERWATER KINETICS HANGAIR HANGER

With a built-in electric fan, the HangAir will completely dry a flooded drysuit overnight—right down to the toes of fleece boots—and also works on wetsuits, skins and coats.

\$69.90; uwkdive.com





SCUBALAB
TESTERS
CHOICE
2019

CRESSI OTTERFLEX

Comfortable and effective seals at wrists and ankles and a design that maximizes insulation in the body's core without sacrificing range of motion made the Otterflex a winner in its class.

**\$299.95 (men's),
\$249.95 (women's);
cressi.com**



SCUBALAB
TESTERS
CHOICE
2019

TUSA BC0403B TINA

Designed specifically for women, the Tina's harness provides comfortable lower back support and distributes weight around the hips—and won rave reviews from female test divers.

\$499; tusa.com



SCUBALAB
TESTERS
CHOICE
2019

TUSA ROLLER BAG (SMALL)

The cleverly designed pockets on this carry-on make it a snap to pack dive gear and personal items in a way that keeps contents organized, safe and easy to find.

\$185; tusa.com



SCUBALAB
TESTERS
CHOICE
2019

SCUBAPRO SEAHAWK 2

With abundant lift, integrated weights and a lightweight, easy-packing design, this comfortable and stable BC can handle anything from tropical diving to drysuit duty.

\$715; scubapro.com



SCUBALAB
TESTERS
CHOICE
2019

APEKS XL4+

The robust first stage with long heat-exchange fins is designed for reliable cold-water performance, while the compact second stage delivers dive-all-day comfort.

\$580; apeksdiving.com



AQUA LUNG EXPLORER II ROLLER

Even with the lowest price among all the large bags we tested, this roller's high-capacity main compartment, durable construction and rugged hardware made it a winner.

\$155; aqualung.com

SCUBALAB
BEST
BUY
2019



SCUBALAB
BEST
BUY
2019

MARES QUAD AIR

The air-integrated Quad's 1½-by-2¼-inch screen features jumbo characters and a clearly labeled, three-level layout that makes it supremely easy to read and understand at a glance.

\$526; mares.com

2019 TESTERS CHOICE AND BEST BUY WINNERS

BAGS

Testers Choice

Stahlsac Steel 34
Tusa Roller Bag
[Small]

Akona Collapsible
Mesh Backpack

Best Buy

Aqua Lung Explorer
II Roller

DRYSUITS

Testers Choice

Aqua Lung Fusion
Bullet w/ AirCore

Best Buy

DUI Yukon II

FINS

Testers Choice

Scubapro Go Sport

Best Buy

OMS ReefStream

BCS

Testers Choice

Scubapro Seahawk 2
Tusa BC0403B Tina

Best Buy

Mares Magellan

REGS

Testers Choice

Apeks XL4+
Aqua Lung Titan

Best Buy

Seac DX200

5 MM WETSUITS

Testers Choice

Cressi Otterflex
Pinnacle Tempo XT
Truli Wetsuits Truli-
Ful the Beautiful

Best Buy

Bare Elate

ACCESSORIES

Testers Choice

Mac Wagon
Underwater
Kinetics HangAir
Hanger

Best Buy

Innovative Scuba
Fin and Mask
Holder

ACTION CAMERAS

Testers Choice

GoPro Hero7 Black

Best Buy

Yi Technology YI4K+

DIVE COMPUTERS

Testers Choice

Cressi Neon
Suunto D5

Best Buy

Mares Quad Air



SCUBALAB
TESTERS
CHOICE
2019

TRULI WETSUITS TRULI-FUL THE BEAUTIFUL

Don't let the playful name and polka dots fool you: This women's 5 mm is seriously warm and comfortable, with clever touches that enhance comfort and convenience. **\$549; truliwetsuits.com**



SCUBALAB
TESTERS
CHOICE
2019

PINNACLE TEMPO XT 5 MM

This suit's soft merino wool lining was so effective that divers in our chilly test conditions found they could don the suit when it was wet and still warm up throughout their dive. **\$369.95; pinnacleaquatics.com**

SCUBAPRO GO SPORT

The Go Sport brings the same comfort, performance and travel-friendly convenience to boot-clad divers that the original Go offers for the barefoot crowd.

\$129; scubapro.com

SCUBALAB
TESTERS
CHOICE
2019



STAHL SAC STEEL 34

With two main zippered compartments—one waterproof and the other vented—this nicely made jumbo roller bag gives divers welcome flexibility when traveling with wet or damp gear.

\$359.95; stahlsac.com

SCUBALAB
TESTERS
CHOICE
2019



SCUBALAB
BEST
BUY
2019

SEAC DX200

"Butter," "silk," "glass": These are just a few of the words test divers used to describe the consistently smooth, quiet breathing performance of Seac's refined, sleek-looking flagship reg. **\$519; seacsub.com**

BARE ELATE 5 MM

With an anatomical cut inspired by highly flexible multisport suits, the women's Elate impressed test divers with the way it hugged the body without restricting movement.

\$229.95; baresports.com

SCUBALAB
BEST
BUY
2019



MARES MAGELLAN

The minimalist design and foldable back plate make the lightweight Magellan a cinch to pack, while its cleverly designed harness and strap system offer a comfortable, secure fit. **\$440; mares.com**

SCUBALAB
BEST
BUY
2019



QUAD AIR



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- Magnificently clear display with jumbo size information
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- Four buttons for intuitive user interface
- Option to view dive time including seconds
- Multigas capable
- Long battery life, user replaceable

Be intelligent. Take the edge of performance.

mares.com

mares
just
add
water

DIVING'S COOLEST GRANDMAS!

The new generation of grandparents are adapting to the times, inspiring younger generations who will some day follow in their footsteps.



THE DANKS FAMILY IN FIJI

By Margo Peyton

There's something to be said about this generation of grandparents. They are adventure-spirited, filled with wisdom, and enjoy having outdoor fun with their grandkids.

I remember we looked to our parents when we were children, trying to navigate our way through the world, learning things like how to: ride a bike; drive a car with a manual shift; dress up fancy for prom; cook something more than mac and cheese out of a box; tie your first tie; or braid your own hair. I even remember learning to whistle from my dad, and carry a tune from my mom. Somewhere along the line we kind of move on and get busy, and find that (even as kids) we have it all figured out and have somehow passed our parents along the way.

Harry Chapin's song "Cat's in the Hat" comes to mind when I look back on it all; in the song, a father never has time for his son, and when the son grows up he never has time for his father. Kids today out



GIVE THEM A WEEK THEY WILL REMEMBER FOREVER

type us, out tech us, out browse us. They live in a world where making appointments is done without talking to anyone, taking classes is done online without a teacher. American football has become bigger in fantasy than on the field. That's true! I heard an NFL player saying on a radio show that

he was sad he lost his game, but happy the quarterback he'd played against was on his fantasy team and had performed well so it was a "good loss."

World sports now include drone racing and robot wars. Kids don't need to go to the mall or the grocery store or even a library anymore; it's all online. There's no need to meet people in person any more, just the new talking, a.k.a. texting. There's no need to go visit grandma and grandpa any more, just Skype them and sing happy birthday or show them your new puppy.

Where am I going with this? The current generation of grandparents is the coolest ever! They inspire me and I look forward to following in their footsteps. They are letting their hair go gray; they are fit and taking care of themselves both mentally and physically. They walk their dogs, ride their bikes, still dance and go sing, read paper books...and take their grandkids scuba diving!

Today's generation of grandmas and grandpas take vacations and travel. They



WWW.FAMILYDIVERS.COM 803-419-2556 KIDS@KIDSSEACAMP.COM



FROM LEFT TO RIGHT: The Synders in Bonaire. TOP CENTER: Carol Danks on her 600 dive in Cayman Brac. FAR RIGHT TOP: The Wilkins in Bonaire. RIGHT BOTTOM: The Ayers in Bonaire.

taste new foods, meet new people, travel in style, and enjoy their kids and grandkids. They make time for being together and having fun. They are cool grandparents according to their grandkids, and they are teaching their adult kids why disconnecting from their virtual worlds and reconnecting to each other is so important.

Kids grow fast. If you think about it, you have 17 summers with them. Seventeen summers to make memories and impact their lives with something meaningful. How can you be more fun than a video game or draw their attention with real words, not in a text message? Show them something they can't record for later.

Give them zero gravity, blowing bubbles, new sights, new sounds, a new world to explore. These experiences are almost as good as taking them to outer space because, underwater, there are aliens and sharks and blue holes and sunken wrecks; night dives and scooter dives, flora dives, muck dives and drift dives. It's endless adventures that are so cool, and even cooler when you tell your friends that you're doing it all with your grandparents.

One of my clients, Carol Danks, celebrated her 600th dive in Cayman Brac with her four adult children and three grandchildren. After the dive, walking on the dock back to the dive shop, Carol's granddaughter looked up at her full of pride and said, "You're a bad-ass grandma!"

"I didn't know what to say," Carol told me. "I was shocked at first because I didn't know quite how to take that. And then my

granddaughter said, 'Grandma, that's a good thing!'" Carol Danks of the Danks family of nine, has traveled around the world with Kids Sea Camp for the past 13 years.

I have enjoyed diving with so many grandparents this past year, and I have asked each and every one of them what was so special about scuba diving – what makes them choose a dive vacation over every other option. And each and every one has said, to some effect, "Margo, we dive with them because diving gets their heads out of their phones, gets them engaging in life and spending quality time having fun with us. They aren't texting or watching videos, they aren't even thinking about their phones or devices. They are right here living in the moment and happy to be doing just that. They love scuba diving and they think it's so cool that we old people do too."

I hear over and over that a Kids Sea Camp diving vacation is the best vacation ever. I have grandparents still diving with me well into their upper '70s. Not only are they creating memories to last a lifetime, they are also passing the torch to the next generation of divers.

They are leading by example and instilling good habits in younger divers. Experience, love, and time are shared between family members who dive together; scuba diving helps to lessen fears, builds character, and reinforces bonds.

People say time is what's most important in life – it's the one commodity we have less

and less of as we age, so what we decide to do with our time becomes the most important decision. No matter what is happening in their own lives, all the kids and grandkids want to figure out a way to make time for that family scuba vacation.

The families who go to Kids Sea Camp decide to always make time to create memories that will last a lifetime. "Things" like smartphones and devices and fancy clothes aren't what matters anymore; time with my family matters. And diving is one of the few adventures left in this world that allows us, as we age, to continue doing easily and with great fun together as a family. Diving with grandma and grandpa does the whole family good.

My kids are all grown up now: 22 and 25 years old. I imagine myself 20 years from now in my '70s, hopefully diving with my grandkids. And that I can be a bad-ass Grandma some day too!

MARGO PEYTON:

CEO Kids Sea Camp Inc. & Ocean Wishes Foundation, PADI Elite MSDT instructor, "Diver Of The Year" Education, at the 2019 Beneath the Sea. Women Divers Hall of Fame, SCUBAPRO Deep Elite Ambassador, PADI Ambassador, PADI 25 yr Award of Excellence in training & education. The Family Travel Association's 2016 Person of the Year Award, The Seiko 2017 Sea Hero Award, DEMA's Hall of Fame & "Reaching Out" Award 2018 and Wyland Icon Award nominee 2015, FTA Board of Directors 2019.



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ADVENTURES**



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Marathon

ACCESSORIES

BAGS **P32** + LIGHTS **P35** + KNIVES **P37** + EXTRAS **P40**

CHOOSING DIVE ACCESSORIES

While ScubaLab tests a wide variety of accessories from dive lights and knives to mesh bags and safety gear, each test is aimed at evaluating the effectiveness of key aspects of specific types of gear, so divers can in turn evaluate what works for them.

For example, dive knives are rated for their effectiveness cutting a variety of lines that divers might encounter; resistance to corrosion is gauged by soaking them in salt water.

Dive luggage such as large roller bags and carry-ons are packed with the items testers typically take on trips that involve air travel, while mesh boat bags are packed with the gear testers normally need for a day of diving. Bags are rated for effectiveness of design, size/shape, protection of packed items, capacity, ruggedness, special features, and overall ease and convenience of use.

Testing dive lights includes measuring their total light output at an independent facility. Test divers rate factors including ease of use, grip comfort and security, beam size and shape, and how well the controls allow regulating output in useful increments. Lights are also evaluated for battery duration and features such as emergency or SOS flash mode, and convenience of battery charging or replacement.



JOHN MICHAEL BULLOCK

For ScubaLab gear reviews, visit scubadiving.com/scubalab.

1



PVC mesh panels on fin pockets allow airflow

2



Large mesh bag that works as a roller or a backpack

3



Comes with 21-ounce Akona stainless water bottle

4



Water-resistant PVC fabric wipes clean

1] AKONA CHELAN LIGHT ROLLER BAG

This roller bag is large enough—and light enough—to handle everything you'll need and still meet air travel weight restrictions. Weighing just 8 pounds, it's 31 inches tall with versatile exterior pockets that maximize internal storage and a removable protective regulator pouch on the front. Durable fabric, smooth-rolling wheels and heavy-duty zippers are made to last.

\$200 | akona.com

2] AKONA GEORGIAN MESH ROLLER BACKPACK

This versatile roller backpack offers a convenient gear-toting solution whether you're on a boat, dock or navigating a parking lot. The adjustable web tow handle and roller wheels make it easy to pull when loaded, while the backpack straps help navigate steps or stairs. Made of reinforced mesh with generous 14-by-15-by-29-inch dimensions, it folds to fit even on a crowded boat.

\$115 | akona.com

3] AKONA SINALOA ADVENTURE BACKPACK

With three roomy internal compartments, padded shoulder straps and tough, breathable ripstop nylon construction, the Sinaloa will be your go-to bag for daily adventures. The laptop compartment keeps your devices secure, and a secret bottom pocket provides a safe place for valuables. Generous 19-by-12-inch dimensions with two external pockets provide plenty of storage.

\$101 | akona.com

4] AKONA TANAMI SLING DRY BACKPACK

Made with welded-seam construction to block water entry, the Tanami can keep your clothes or other belongings dry whether you're on a boat or a beach. A generous 23 inches tall and 12 inches wide, the Tanami has a roll-top closure for quick packing and easy access. Side mesh pockets are perfect for water bottles, and the removable shoulder sling makes for easy carrying.

\$58 | akona.com

1



Available in desert tan or heather gray

2



Compact, durable duffel/backpack hybrid can fit a whole set of scuba gear

3



Padded grab handles on top, side and bottom for easy grab-and-go

4



Keeps fins and other freediving gear together and protected

1] AKONA PANAMA DRY DUFFEL BAG

At 24 inches long and 13 inches in diameter, the Panama Dry is big enough to protect all of your gear from the elements. Made of heavy-duty PVC fabric, this duffel has a long, U-shaped top zipper opening for easy access and a reinforced bottom for durability. Removable straps let you turn the versatile Panama into a backpack for easy carrying.

\$87 | akona.com

2] AQUA LUNG EXPLORER II DUFFEL PACK

This carry-on-size bag is quite versatile thanks to stowaway adjustable backpack straps that double as duffel bag handles. Built with dive travel specifically in mind, the Explorer II duffel pack features a mesh drying pocket and exterior straps to hold fins of any size. The roomy interior is well-padded to protect your gear from rough handling.

\$75 | aqualung.com

3] CRESSI PIPER

Solidly constructed with a durable coated fabric exterior, and solid reinforcements near the wheels and on the back corners, this carry-on-compliant bag is ready to fly. An overlapped zipper opens wide for easy access to the main compartment, which has small mesh pockets for organization. External compression straps make it a cinch to secure anything from a nearly empty load to one that's close to bursting.

\$159.99 | cressi.com

4] IST FREEDIVING FIN BAG

The long, flexible design of freediving fins makes them efficient in the water—but not so much when you're transporting them. The IST freediving fin bag is specially sized and shaped for freediving fins, and folds open for easy loading. A pair of nylon straps with Velcro fasteners keeps each fin in place, with a large internal pocket to stow a mask and other accessories.

\$110 | istdivingsystem.com

1

Big—and tough—
enough to hold all
your dive gear



2

Keep your
possessions safe
and dry in tough
conditions



3

Durable, large-
capacity dive bag
makes it easy to
travel with your
whole kit



4

Keeps dry items
separate from wet or
damp ones



1] IST SPORTS ROLLER BAG BG03

This 32-by-15-by-13-inch bag has a place for everything. Large zippered side pockets have mesh vents to air out wet or damp gear, and there are three pockets on the front flap, which unzips wide for easy packing. Heavy-duty roller wheels and a stout aluminum telescoping handle make it a cinch to tow fully loaded, and backpack straps help you tote it when the road runs out.

\$300 | istdivingsystem.com

2] PADI DRY BAG

Constructed of an exclusive 420-denier ripstop nylon with TPU coating, this dry bag is durable and eco-friendly. The watertight roll-top closure is secured by clips made from recycled plastic, and the adjustable sling strap is made of 100 percent recycled nylon. The tough, watertight bag is available in three different sizes and four colors to suit the needs and style of any diver.

\$20 [5L], \$30 [15L], \$40 [45L] | padigear.com

3] SCUBAPRO DUFFEL BAG HD

This traditional duffel-style bag is built from tough 100 D nylon with heavy-duty webbing reinforcements. The double zip opens wide to access the large interior, which easily accommodates a full set of gear. Beefy external compression straps cinch everything down nicely. A padded carry handle and strong molded side handles on each end make the bag easy to lift and carry.

\$125 | scubapro.com

4] STAHL SAC 22-INCH STEEL CARRY-ON

This premium roller carry-on has separate compartments to isolate wet gear from dry clothing, electronics or sensitive contents. Water-resistant zippers on outer pockets allow you to quickly access your belongings while protecting them from the elements, and the telescoping aluminum handle and padded side grips make it easy to wheel, hoist or carry with a full load.

\$244.95 | stahlsac.com

**1] BIGBLUE DIVE LIGHTS
AL 1200NP II CAMO**

This 1,200-lumen torch is perfect for general dive duty, yet small enough to stow as a backup. The narrow 10-degree beam is good for peering into crevices. The push-button control cycles through four power options and features a colored battery indicator light. The light is rated for 330 feet [100 meters] and can burn for up to two hours on high.

\$178.95 | bigbluedivelights.com

2] IST SPORTS T-60 TORCH

At just 5.2 inches long, this compact torch puts out 1,200 lumens of light with four power levels (including an SOS flash), controlled by a twist of the magnetic rotary switch. It comes with a sliding beam shade and a removable light diffuser, and has a rugged aluminum housing that's rated to 300 feet [100 meters]. It runs on a rechargeable 18650 Li-ion, or single-use CR123A batteries.

\$180 | istdivingsystem.com

3] SCUBAPRO NOVA 850

Depth-rated to 492 feet [150 meters], this 850-lumen dive light is more than capable in any environment. The 9-inch [230 mm] aluminum body with rugged black-matte finish is lightweight and tough enough to withstand years of rigorous use. The narrow 8-degree spotlight cuts through the darkness and features an extended light head shroud to prevent the beam from blinding the divers around you.

\$210 | scubapro.com

4] SCUBAPRO NOVA 850R

The 850R runs on a rechargeable 18650 Li-ion battery (not included) and can burn for two hours on full power. Rugged, lightweight aluminum construction and double O-ring seals ensure durability over time. This compact light is powerful enough to be a primary torch, but easily fits into a BC pocket for use as a backup. The push-button switch features a safety lock to prevent accidental activation.

\$215 | scubapro.com

1

Light comes
with a dry
bag

**2**

Powerful, yet small
enough to slip
into any BC
pocket

**3**

Powered by
three C batteries
(not included), with
a burn time of up
to seven hours
on full power

**4**

Rechargeable
compact light that
can serve as a
primary or backup



1



2,300 lumens of power in a tough aluminum housing

2



High-intensity 8-degree beam lets this compact light cut through the dark

3



Swap lenses to change between 90-degree and 20-degree beam

1] SEAC R40

The 2,300-lumen Seac R40 torch is perfect for general dive duty and is also small enough to stow in a BC pocket as a backup. The adjustable beam can be set anywhere between 12 and 75 degrees wide. The push-button control cycles through four power options and features a colored battery indicator light. The light is rated for 330 feet (100 meters) and can burn for up to two hours on high.

\$239 | seacsub.com

2] SEALIFE SEA DRAGON MINI 1300S

This 1,300-lumen dive light outputs a tight, high-intensity beam. Made of anodized aluminum with a rubberized grip, it's compact enough to slip into a BC pocket. The one-button operation features a colored battery indicator. The light can run for eight hours using a 3500mAh battery and is rated to 330 feet (100 meters).

\$99.95 (light only), \$119.95 w/ battery and charger | sealife-cameras.com

3] UNDERWATER KINETICS AQUALITE PRO2

Compact and versatile, the 1,300-lumen Pro2 lets you change lenses from a 90-degree video beam to a 20-degree dive beam. With a push-button tail switch, three power levels and a corrosion-free composite housing, the Pro2 is powered by a rechargeable Li-ion battery. It's 6.5 inches long and weighs only 6 ounces, and has screw mounts for imaging use.

\$189.95 | uwkdive.com

SCUBAPRO TK15

Built around a single piece of marine-grade stainless steel, this tactical dive knife has been machined to achieve the ideal balance of strength and weight. The thickness of the blade is consistent from end to end, making it sturdy and strong. The 6-inch blade has a smooth cutting edge on the bottom, with a serrated edge on the top.

\$259 | scubapro.com

**SEAC TITANIUM**

The 3.5-inch blade of this new model is made from rust-proof titanium and includes a serrated sawing edge, a dual-edged cutting tip and a line cutter. The compact tool is designed to fit snugly and comfortably in the palm, with a multi-textured grip. It comes with a convenient snap-in sheath with multiple mounting options to keep it handy and secure.

\$99 | seacsub.com

**SPYDERCO DRAGONFLY 2 SALT HAWKBILL**

Just 3.3 inches long folded, the Dragonfly 2 Salt cuts like a bigger knife thanks to the curved, 2.3-inch blade with SpyderEdge serration. Made of H1 steel, the thumbhole makes it easy to open with one hand, and the textured, fiberglass-reinforced nylon grip is easy to hold and won't corrode.

\$102 | spyderco.com



SPYDERCO FISH HUNTER

The fixed-blade Fish Hunter is tailored to spearfishing. The symmetrical hollow-ground blade is made from tough H1 steel that won't corrode. The SpyderEdge serrated cutting surface makes quick work of thick fishing line and heavy rope. The stout handle is made of corrosion-proof reinforced nylon for strength and durability.

\$175 | spyderco.com



Injection-molded sheath with snap-fit lock for quick and easy deployment choices

SPYDERCO NATIVE 5 SALT

The full-flat-ground blade of the Native 5 Salt is crafted from LC200N—a martensitic steel that's immune to corrosion. Available with plain edge or serrated SpyderEdge blade, it has a rugged, fiberglass-reinforced nylon handle that accepts a lanyard and movable pocket clip. Bi-directional texturing on the handle offers a secure grip dry or wet.

\$179.95 | spyderco.com



Precision-machined back lock securely holds the blade open when cutting

SPYDERCO SIREN

Capable, rugged and convenient, this new folder in the Salt series has a 3.6-inch blade that opens with a flick of the thumb, and stays in place thanks to the stout back-lock. The LC200N blade won't rust and holds its edge even after heavy work, while the blue accents on the handle give it a cool, at-home-in-the-water style.

\$240 | spyderco.com



Impressive cutting power in a compact, folding design

TIPS

HOW TO CARE FOR YOUR DIVE ACCESSORIES



PRE-DIVE

1 If you use a dive light with rechargeable batteries, make sure they're fresh. Inspect and clean the battery contacts. Check the O-rings for wear.

2 Check your dive knife for corrosion; you can remove light rust buildup with a towel. If that doesn't work, try a toothbrush or thumbnail. Check the locking function and straps in case they need to be repaired or replaced before your next dive.

POST-DIVE

1 Rinse your dive light in fresh water as soon as possible after each use, store it in a cool, dry place out of direct sunlight, and store the batteries separately.

2 Rinse your dive knife in fresh water after your dive with the blade re-

moved from the sheath. Spray the blade with a light coating of silicone to prevent rusting. Do not use WD-40 or any other petroleum-based products.

3 Never store your tanks completely full or completely empty. Without some pressure, empty tanks can take on contaminants and moisture. Full tanks, especially aluminum cylinders, can crack if stored for long periods of time.

REPLACE YOUR ACCESSORIES WHEN ...

>> The dive light has been flooded, damaged or lost.
>> You can't clean the corrosion off your knife.
>> Once your boat bag or dive luggage is held together by duct tape, it's time to invest in a new one that will keep your gear secure.

SPYDERCO WATERWAY

Part of Spyderco's Salt line of watersports knives, the Waterway has a 4.4-inch, flat-ground fixed blade made of LC200N, a rustproof steel tough enough that NASA has used it for ball bearings. The CNC-milled texture on the handle provides a sure grip whether gloved or barehanded, and the molded sheath has a movable G-clip for a range of mounting options.

\$200 | spyderco.com



SPYDERCO SALT 2 WHARNCLIFFE

Designed to thrive in a marine environment, the folding Salt 2 is made of H1 steel impervious to salt and moisture. The hollow-ground Wharncliffe blade [available with plain or SpyderEdge serration] has a straight edge for maximum power and a deeply arched back for strength. Just 4.25 inches folded, it comes with a titanium pocket clip.

\$131 | spyderco.com



1

Includes threading device to mount retractors to BC



2

Affordable package with a full set of BC accessories



3

Reserve indicator activates when gas drops below 725 psi (50 bar)



4

Water-resistant, floating design and sunlight-readable display for marine use



1] AKONA PROKIT-2

The convenient ProKit-2 has all the must-have accessories you need to make sure your BC is well-equipped. The compact 420-lumen LED dive light has a comfortable ergonomic grip and is rated to 330 feet, and can be tethered to your BC with the included retractor. There's also a stainless-steel knife with a built-in lock that keeps it securely in its sheath and a heavy-duty gauge/computer retractor with a line lock.

\$188 | akona.com

2] AKONA PROKIT-MINI

This handy accessory package includes a 100-lumen light rated to 330 feet and equipped with a cone diffuser and a retractor to keep it safe. The gauge/computer console retractor has a quick-release clip and rugged Spectra nylon line for durability. The line cutter has a protected stainless-steel blade and comes with a quick-draw nylon sheath with multiple BC-mounting options and a secure Velcro closure.

\$115 | akona.com

3] CRESSI DIGI 2 DIGITAL CONSOLE

Built to withstand the harshest conditions, the Digi 2 uses bold digits organized on a high-contrast display to highlight important data including current and max depth, bottom time and tank pressure. The unit automatically activates when connected to pressurized tank and is powered by user-replaceable CR2450 batteries. The depth gauge reads to 394 feet (120 meters), and the gas pressure reads up to 4,351 psi (300 bar).

\$649.99 | cressi.com

4] GARMIN GPSMAP 86SCI

This GPS device comes pre-loaded with BlueChart g3 coastal charts and can stream boat data from compatible chart plotters and instruments to aid in marine navigation. Built-in inReach satellite technology helps you stay in touch globally, allowing for two-way text messaging, and the ability to trigger an interactive SOS to get emergency help from a 24/7 global monitoring center [subscription required].

\$649.99 | garmin.com

1



Satellite-linked two-way communications, GPS and SOS capabilities

2



Worldwide two-way texting and SOS via global satellite network

3



Take two-way satellite communication with you on every dive

4



The perfect blend of form, function and sustainability

1] GARMIN INREACH SE+

Combining global satellite messaging with robust outdoor navigation, the inReach allows you to send an SOS message 24/7 to the search-and-rescue monitoring center, and access two-way messaging and social media sharing via Garmin's subscription satellite network. The full-color screen displays GPS tracking, and you can pair with Garmin's Earthmate app for downloadable maps.

\$399.99 | garmin.com

2] GARMIN INREACH MINI

Compact and rugged, this satellite communicator enables you to engage in two-way text messaging via Garmin's Iridium satellite network (subscription required). You can also use it to trigger an interactive SOS to a 24/7 search-and-rescue monitoring center and access downloadable maps and NOAA charts using the Earthmate app. Social media sharing allows you to share your route with friends and family.

\$349.99 | garmin.com

3] GARMIN INREACH MINI DIVE CASE

Water-resistant to depths of 330 feet (100 meters), this protective housing allows you to take your Garmin InReach Mini on every dive. Simply clip the device to your scuba gear and you can have access to two-way text messaging, GPS positioning and the ability to trigger an interactive SOS to a 24/7 search-and-rescue service whenever and wherever you surface.

\$49.99 | garmin.com

4] PADI X ECO-FRIENDLY PONCHO

This changing poncho is incredibly soft and wicks away water. It makes changing and drying off easier and allows you to quickly go from wet to dry. It is made from sustainably sourced cotton and recycled plastic bottles. It's also made in a way that minimizes the shedding of microplastics and has an antimicrobial treatment to keep it feeling and smelling fresh.

\$50 | padigear.com

PADI X RASH'R RASH GUARD

Sustainable and stylish, this rash guard is made using Econyl nylon, a regenerated nylon sourced from ocean waste such as discarded fishing nets. Designed to maximize comfort and reduce friction on your body, with flat-lock stitching and four-way stretch fabric that further enhance comfort, this rash guard delivers a UPF of 50-plus, meaning it will protect you for up to eight hours against solar ultraviolet radiation.

\$60 | padigear.com



PADI X ECO-FRIENDLY TOWEL

Made from recycled plastic bottles and sustainably sourced cotton, this super soft, cozy towel is a pleasure to use and is environmentally friendly. Designed to minimize the shedding of microplastics during washing, the towel is made with tight cotton threading for durability. Available in two designs, it measures 58 by 33 inches [148 by 84 cm] and has an antimicrobial treatment.

\$30 | padigear.com



TIPS

READY, SET, BUY

Before you invest in extra gear, find out what you need for your type of diving.

>> Do you dive in caves, wrecks or other dark places? A good dive light is a no-brainer. You need a good primary for night diving too; a strong pocket light is useful as a backup.

>> Are you into kelp, wreck or other diving where the risk of entanglement is high? A good dive knife or cutting tool is imperative—it's an investment that could save your life someday.



>> Are you a DIY shore diver?

A cylinder, floating dive flag and other safety items are wise purchases.

>> Do you solo or drift dive? If you do, you can't have enough surface signaling devices. A lot of them don't take up much space, and many are pretty inexpensive—things like whistles, signaling mirrors and safety sausages.

>> Do you like unguided dives? If you don't have a compass on your console or an onboard one on your dive computer, then you need a separate one.

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BCs P46



CHOOSING BCs

ScubaLab's testing of BCs aims to evaluate how they perform at providing stable, comfortable support both at depth and on the surface while giving the diver—and potential buyer—control over trim and attitude.

Test divers rate BCs in 10 areas including ease of setup, range of adjustability, simplicity of loading and ditching integrated weights, and placement and design of cargo pockets and D-rings. Test divers also evaluate them for the performance of the inflation/exhaust system, with a focus on how well they allow a diver to control buoyancy and ascent rate. Two areas—a BC's stability and attitude control, and its overall comfort—get extra attention because they're key factors in a BC's performance.

We also conduct objective tests of important metrics for each BC. These include measuring buoyant lift (how much weight the fully inflated BC supports) and inherent buoyancy (how much weight it takes to sink the BC, which affects how much weight you need). We also test flow-rate performance—whether a BC's upper exhaust valves can release enough air to avoid a dangerous ascent if the power inflator sticks open.

BCs

1

Customizable jacket BC with dozens of size combinations and six color options



1] AQUA LUNG OMNI

The Omni takes the modular concepts popularized by Aqua Lung's Rogue and Outlaw BCs and introduces them in a jacket-style BC. You can customize the Omni's fit by choosing between interchangeable, different-size options for the back, shoulders and waist. A three-position bladder retraction system keeps the air cell streamlined and reduces drag. The BC is weight-integrated with cargo pockets and four stainless D-rings.

\$749 | aqualung.com

2] ATOMIC BC2

The BC2 brings to back-inflation BCs the same no-holds-barred philosophy that inspired the BC1 jacket. The laminated, coated waterproof fabric sheds water and resists tears, punctures and abrasion. From the titanium-coated D-rings and sand-resistant zippers to the patented integrated weight system and ratcheting tank band, the BC2 spares no detail. Available in five sizes.

\$1,399.95 | atomicaquatics.com

3] CRESSI AVIATOR

The Aviator's padded, semi-rigid back plate folds for travel, with a built-in Velcro strap hidden in a pocket to keep it wrapped up. The waistband can be swapped out and adjusted to adapt to different sizes, and has a swiveling mount and elastic panels for comfort and stability. The Aviator uses special air-net padding to reduce water retention, and has integrated weights.

\$484.95 | cressi.com

2

Made from the toughest, most durable materials available



3

Classic jacket-style BC with an emphasis on travel



BCs

1



Stable, comfortable BC with plenty of lift and stowage

2



Weighs just 4½ pounds [2 kilograms] in size medium for easy travel

1] CRESSI COMMANDER EVOLUTION

This back-inflation BC offers up to 42 pounds of lift in size medium. A wraparound bungee system envelopes the air cell and keeps things streamlined and stable. The harness features neutrally buoyant padding for a comfortable ride. Unlike some back-inflation models, the weight-integrated Commander offers plenty of stowage, with two large cargo pockets and eight D-rings.

\$549.95 | cressi.com

2] CRESSI LIGHTWING

Built with dive travel in mind, this back-inflation BC is lightweight and uses a semi-rigid soft back plate that allows you to easily fold and carry it. Special air-net padding in the shoulders and back increases comfort and reduces water retention. A drop-down cargo pocket provides stowage. Two supports integrated into the lower back minimize tank roll and improve trim.

\$439.95 | cressi.com

3] DIVE RITE HYDRO LITE

The tech-inspired Hydro Lite offers uncompromising performance in a streamlined, lightweight design ideal for warm-water diving. The tank-hugging cell provides 30 pounds of lift, and the pull-to-release integrated weights handle up to 12 pounds. With 2-inch webbing, padded shoulders and crotch strap, the backpack-style harness offers stability, while the soft back plate and a weight of 6.2 pounds make for easy packing.

\$589 | diverite.com

3



Perfect for air travel or warm-water diving

BCs

1



1] GENESIS ORIGIN

Aimed at new divers, this rugged jacket offers an integrated weight system and comfortable harness at an affordable price. With 38 pounds of lift (size medium), it has a lightweight rigid back plate, a pair of roomy zippered cargo pockets and a padded harness with a cummerbund. Integrated weight pockets hold 10 pounds each with secure pinch-to-release buckles.

\$460 | genesisscuba.com

2] HOLLIS KATANA 2

The minimalist, modular design of this new sidemount gives it a tremendous range of flexibility to customize for any diver's needs and preferences. The quick-fit harness can be configured in "Y" or "H" style, and options include single or dual bladder. Easy-reach attachments on the side of the wing keep accessories close at hand, while an innovative top dump lets you vent gas while maintaining trim.

\$599.95 | hollis.com

3] MARES MAGELLAN

Who says you can't take it with you? The Magellan boasts a comfortable harness, integrated weights, drop-down cargo pocket, plenty of D-rings, right shoulder exhaust and 38 pounds of buoyant lift (size medium) in its back-inflation air cell. Yet it still packs up as easy as any BC around, thanks to its ultra-light weight and a soft, foldable back plate.

\$440 | mares.com

2



3



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2019

BCs

1



1] MARES PSYCHO CALAVERA SINGLE BACKMOUNT SET

The Mares Extended Range technical diving product line is designed to help divers push their personal limits—and style. The Psycho Calavera buoyancy system includes a 16-liter single tank donut bladder, a 3 mm aluminum back plate, twin tank straps with black aluminum buckles and a tough nylon webbing harness with 6 mm black aluminum D rings and a black buckle.

\$800 | mares.com

2] SCUBAPRO HYDROS X

The Hydros X features the stability, comfort and versatility of Scubapro's popular Hydros Pro in a jacket-style BC. Built on the adjustable, body-hugging Monprene gel harness used in the Hydros Pro, it's matched with an air cell that provides wrap-around buoyancy and a pair of roomy cargo pockets. It's rapid-drying, and abrasion-resistant.

\$1,085 | scubapro.com

3] SCUBAPRO LEVEL

This new lightweight jacket is designed to provide a comfortable fit and support without squeezing your body when inflated. A solid back plate, swiveling shoulder straps and cummerbund waist strap keep it stable in any attitude. A pair of cargo pockets with Velcro flaps, an integrated weight system and Super-Cinch quick-attachment tank band provide ease and convenience.

\$639 | scubapro.com

2



3



BCs

1

Lightweight,
compact design is
great for travel



1] SEAC EQ-PRO

Packed with high-end amenities, the new EQ-Pro comes loaded with integrated weight pockets, eight stainless-steel D-rings, rear and shoulder dump valves, deep pockets, tank-mounted trim pockets, padded backpack and more. Its independent bladder configuration is designed to slide along the harness rather than bind, to eliminate unwanted abdominal squeeze.

\$499 | seacsub.com

2] SEAC MODULAR MAX

For divers who want to fully customize their BC, Seac's Modular Max can be outfitted with a wide range of components, including different size air bladders, weight systems, storage pockets, attachment points, a crotch strap and other accessories. It's all anchored by a rugged steel back plate mated to a padded backpack with a simple strap system that breaks down for travel convenience.

\$499 | seacsub.com

3] TUSA BC0502B T-WING

With a tec-style design, the t-wing provides a lightweight, stable platform that can be easily customized for a wide range of dive capabilities. The aluminum back plate ties together a donut-shaped air cell with 27 pounds of lift and a quick-adjust harness with a crotch strap. Options include removable weight pockets and an aluminum tank adapter set. One size fits XS-XL.

\$499 | tusa.com

2

Modular,
minimalist design
lets you build what
you need in a BC



3

Tec-inspired
design allows easy
customization



BCs

1



1] ZEAGLE RANGER

Versatility and durability are at the heart of the Ranger, from its single or dual-tank capability to its tough-as-nails ballistic nylon construction. The innovative RipCord integrated weight system holds up to 30 pounds ready for instant ditching, and the standard bladder provides 44 pounds of buoyant lift. Zippered cargo pockets and six stainless D-rings provide plenty of room to secure accessories.

\$799.95 | zeagle.com

HOOKING IT UP

An exciting thing about today's dive gear is the way designers are constantly bringing new ideas, materials and designs to the sport. That's true not only for sexy, tec-heavy products like dive computers, but across the whole spectrum of gear. In BCs, that means new fabrics that resist tears and abrasion and shed water, and harnesses with improved levels of comfort and stability. The innovation has spread

to even the humble BC tank band. Not long ago, one BC tank buckle was pretty much like any other tank buckle. But now there are quick-release stainless connectors that let you swap tanks in seconds, even on a pitching dive boat. There are buckle designs that prevent the dreaded cold-day finger pinch. And there are even ratcheting cam buckles that click securely into position with almost no effort.

TIPS

THE RIGHT BC



The dizzying range of choices can make it challenging to shop for a BC, especially for newer divers. But thinking about how—and where—you'll be diving can help pin down what you need and want in a BC. Here are some things to consider:

BC style It's still true that back-inflation BCs tend to have less-restrictive harnesses and pack up a bit smaller than jacket BCs, and that jackets usually provide a more stable surface floating position and are more likely to have cargo pockets. But the lines are blurring. There are now back-inflation models with big cargo pockets, and compact jackets that are surprisingly easy to pack. There also are hybrids with harness and air cells that fall somewhere between jacket and back-inflation, as well as back plate/wing models that range from stripped-down tec or travel rigs to full-featured models with integrated weights and even cargo pockets. Bottom line: It may be helpful to focus less on style categories and more on the specific qualities and capabilities that are important to you in a BC.

Buoyant lift This is the amount of weight a BC will support when

fully inflated. It may vary by BC size, and should be printed on the BC [ScubaLab also measures and publishes buoyant lift in BC reviews]. The "right" amount of lift depends on a diver's size and shape, dive conditions and exposure gear. But the important point is whether you're in a drysuit with 30 pounds of lead or in the tropics with 4 pounds, your BC needs sufficient lift to support you. At the same time, if all your diving will be in warm water with little weight, a BC with 50 pounds of lift may be just extra drag.

Features Whether it's integrated weights, cargo pockets or a cummerbund, having a clear idea of what features you want [or don't] in your BC will quickly help you narrow down the field. If you dive in a wide variety of conditions, many models now make it easy to add or remove components like integrated weight pockets to make a BC more travel friendly.

Traveling If most of your diving involves flying, a travel BC could be the ticket. There's a fast-growing selection of compact, lightweight travel models of all types with a full range of accessories from the works to minimalist, modular designs.

ACTION & ACTION HR

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MASKS, FINS AND SNORKELS

ScubaLab's testing of masks, fins and snorkels is designed to determine how well these essential pieces of gear allow us to see, swim and breathe.

For masks, test divers score in five areas including ease and security of buckles and straps, openness of field of view, and internal volume, which affects ease of equalizing and clearing. We give added weight to two factors—comfort and dryness—because they're critical to how your mask performs.

Test divers evaluate fins in 12 areas, from comfort and stability to maneuverability and ease of donning and doffing. Two key areas get extra attention: comfort/fit and power vs. stress—in other words, how much drive the fins provide relative to the amount of effort you put into kicking.

For snorkels, test divers evaluate each model in seven areas, including noise and security/convenience of the mask attachment. Added weight is given to a snorkel's scores for comfort and dry operation. While masks and fins are typically tested in freshwater springs, snorkels are tested in the ocean from the shore to better evaluate their ability to block water entry in swells and surf.

AQUA LUNG STORM

Made of lightweight, durable Monprene, this compact fin is well-suited for dive travel. The compact blade provides plenty of power, yet remains small for easy packing and transport. The Storm has an open-heel foot pocket, but is designed to be worn as a full-foot fin. The hybrid design helps prevent fatigue.

\$89 | aqualung.com

Strong compact blade provides efficient power transfer



Beefy drysuit fin designed for balance and propulsion

**GULL MANTIS DRY FIN**

Optimized for weight and balance, these rubber kickers provide strong, dynamic propulsion if you've got the leg strength to wield them. Primarily designed for dry-suit diving, they feature large foot pockets to accommodate drysuit boots and are on the heavier side. Available with spring straps or adjustable straps.

\$180, \$285 [with spring strap] | gull.kinugawa-net.com

GULL SUPER MEW

This full-foot fin uses a hybrid rubber that combines flexible and stiff compounds to optimize comfort and performance. The midsize blade is quick and responsive, with a blade tip designed to catch water throughout the kick cycle for smooth propulsion. Wraparound treads along the bottom reduce slippage on wet boat decks.

\$180 | gull.kinugawa-net.com

Foot pocket made of thin, flexible rubber material makes for easy donning and doffing



HOLLIS F1 LT

Blending power, comfort and high-grade materials, the F1 LT offers balanced performance and years of use. The spring straps, with finger loops, attach to the foot pocket with angled mounts for a smooth follow-through to get the most from every kick, and the strap attachments have multiple mounting positions for a custom fit.

\$174.95 | hollis.com



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TESTERS
CHOICE
2017

**TUSA SF0104 HYFLEX SWITCH**

Comfort, power and versatility are at the heart of this capable open-heel fin. The interchangeable blade unbolts from the foot pocket in seconds for easy packing or to swap for other compatible HyFlex fin blades. The angled blade provides power, and the easy-grip bungee straps can be adjusted without tools for a perfect fit.

\$199 | tusa.com

TUSA SF0107 HYFLEX SWITCH PRO

The HyFlex Switch Pro shares the same stable, comfortable foot pocket and adjustable bungee strap as the original HyFlex Switch, but with a blade that's 20 percent stiffer. Aimed at more experienced divers who prefer a bit more feedback from their fins, the Pro ensures maximum efficiency throughout the kick cycle.

\$219 | tusa.com



TUSA SF-22 SOLLA

The angled-blade design of the Solla extends the kicking cycle for maximum power from each stroke. The wide, vented blade is made of a compound designed to provide flexibility and rigidity where they're most needed. The generous foot pocket and the quick-adjust strap provide support and comfort, whether cruising along or powering through current.

\$119 | tusa.com

Now available in a choice of new colors



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Low weight, strong propulsion and big value

SEAC F1S

The blade of the F1S is made from advanced dual-density materials to blend the benefits of strong side rails with a deep, flexible channel in the center for improved thrust. The foot pocket is generous to accommodate even robust boots. A bungee strap ensures a custom fit. And it comes in six colors to coordinate with most any kit.

\$129 | seacsub.com

SEAC PROPULSION

The Propulsion S features a smart blade design with pronounced side rails to promote stability, plus a trio of strategically located soft channels that generate thrust and increase efficiency. The Sling Strap system, a boot-friendly bungee strap, offers a custom fit for any size foot.

\$99 | seacsub.com

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Skirt is made of ultra-soft surgical silicone for top comfort and sealing

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2020

APEKS VX1

Frameless construction gives this single-lens mask a lightweight, low-volume profile for a leak-free fit, easy clearing and dive-all-day comfort. The ultra-soft surgical-grade premium silicone skirt is designed to minimize pressure on the face, and stainless-steel rollers in the quick-release buckles allow smooth adjustment even with heavy gloves.

\$169 | apeksdiving.com

AQUA LUNG PLAZMA

The wide single lens of this frameless mask is incorporated into a skirt of surgical-grade premium silicone for an enhanced fit and incredible comfort. Stability zones are incorporated into the skirt at strategic points to relieve the pressure of the mask on the face. The mask's strap uses a one-touch release buckle for easy adjustment and security.

\$129, \$139 [black with amber lens] | aqualung.com

Available amber lenses reduce surface glare and enhance red color when deep

AQUA LUNG SPHERA X

Thanks to its specially designed curved lenses, this lightweight low-volume mask provides a 180-degree, distortion-free field of view. The Sphera X touts a silicone skirt design that uses new materials and shape geometry to improve fit, comfort and feel. The mask strap has been redesigned to provide a more secure fit.

\$75 | aqualung.com

Panoramic view and low-volume design for freedivers and scuba divers alike

ATOMIC AQUATICS SUBFRAME

The name reflects this mask's clever construction, with an internal frame molded inside the skirt and an X-shaped stainless-steel nose piece creating a lightweight, robust design. Its one-button buckles attach to the skirt with flexible tabs that secure the strap. And the UltraClear lens offers superb viewing.

\$129.95 | atomicaquatics.com

Comfort and a wide, clear view in a tough and durable design

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ATOMIC AQUATICS SUBFRAME ASIAN FIT

Designers used human-factors engineering, based on research, scanning and modeling, to develop new mask-seal geometry to better fit different face shapes and sizes. This version uses the same SubFrame lenses, frame, straps and buckle, but with a skirt shaped for higher cheekbones, smaller and higher noses, and a narrower nose bridge.

\$129.95 | atomicaquatics.com



New skirt shape based on extensive market research and engineering



Frameless mask folds flat for easy fit in a BC pocket

CRESSI SF1

This frameless mask features a low-volume design that makes for easy clearing. The high-grade silicone skirt bonds directly to the lens and provides an effective seal with a comfortable fit that doesn't put annoying pressure on the forehead or nose. The wide, large lens is made of tempered glass and provides good visibility in all directions, especially on the sides.

\$79.95 | cressi.com

DIVE RITE ES170

The big, teardrop-shaped lenses of the ES170 offer wide-open visibility and a good downward view of gauges, but maintain a low internal volume that makes for easy clearing and equalizing. The two-button buckles are mounted to the skirt with flexible silicone tabs for comfort, and the rugged frame with frosted red insert provides durability and style.

\$59 | diverite.com



Combines wide field of view with low internal volume



Wide field of view and well-designed, comfortable skirt

GULL ABEAM

This basic scuba mask provides divers a crystal-clear view into the underwater world thanks to its single-lens design. The skirt is fringed with a curled lip that makes an effective seal less likely to leave an impression on your skin, and is optimized to maintain a comfortable fit and feel. Mask buckles are integrated into the skirt and are easy to adjust.

\$90 | gull.kinugawa-net.com

GULL COCO

Female divers looking for a comfortable, stylish mask will appreciate this single-lens offering from Gull. The silicone skirt is designed to reduce leaks, and the curled lip of the skirt ensures gentle but firm contact with the face that's less likely to leave impressions on your skin. The low-volume mask is easy to clear and features a nice field of view.

\$110 | gull.kinugawa-net.com



Soft dampeners in the mask skirt reduce pressure on the cheekbones.



Interlocking dual-lens frame easily accepts optical and UV lenses.

GULL LANZE

The frame of this dual-lens mask is held in place by a secure interlocking system: The frame is pressed down around the center of the bridge and then screwed in place. This holds the glass firmly in place and secures it against any movement. The skirt of the mask is optimized to maintain an effective, comfortable seal all the way around the face.

\$120 | gull.kinugawa-net.com

GULL MANTIS 5

The strap buckles on the Mantis 5 are attached directly to the skirt and can be operated easily, even while wearing thick gloves. The skirt features a curled edge for increased comfort, and its design improves water expulsion during clearing and minimizes water pooling at the bottom of the mask. The dual-lens frame is compatible with optical lenses.

\$115 | gull.kinugawa-net.com



No-nonsense mask is a good option for divers and snorkelers alike.



Dual-lens design delivers refined styling and top performance.

GULL MANTIS LV

The UV420-coated lenses of Gull's flagship scuba mask increase contrast underwater and protect your eyes from the sun's harmful high-energy rays. Skirt-mounted buckles are easy to adjust, and the rubber skirt is designed for increased comfort. The low-volume design, inclined angle and shape of the lenses extend the mask's vertical field of view.

\$190 | gull.kinugawa-net.com

GULL VADER

With a body designed entirely with curves, the Vader is a beautiful, functional single-lens mask. A low-volume design provides a wide-open field of view and makes for easy clearing. Soft dampeners and rounded edges on the rubber skirt relieve pressure on the cheekbones and improve comfort. This mask can be outfitted with optical lenses.

\$190 | gull.kinugawa-net.com



High-quality scuba mask provides a comfortable, water-tight seal

Comfortable women's mask with effective seal and expansive field of view

**GULL VADER FANETTE**

The women's version of the Vader mask features a skirt design that extends beyond the cheekbones for a more effective seal. The lip of the skirt has a curled edge to enhance comfort and reduce leakage. UV and super-clear lens options are available. Its low-volume design and forward inclination of 9.5 degrees produce a very wide field of view.

\$190 | gull.kinugawa-net.com

GULL VENTIA

The design of this super-low-volume mask makes it easy to clear and sets the lenses close to the eyes for an expansive field of view. The soft skirt has rounded edges for a comfortable and effective seal that is less likely to leave impressions on the skin. The mask's pinch buckles are easy to use with a single hand and are integrated into the skirt.

\$190 | gull.kinugawa-net.com



Freediving-oriented mask with a low profile and good field of view

Ultra-low-volume design for easy equalizing

**IST SPORTS ATUM**

The freediving-oriented Atum has a frameless design with an ultra-low internal volume for a close fit that makes equalizing almost effortless—and offers a shockingly wide field of view. A stiffened section molded into the skirt between the lenses allows the mask to bend as the strap's tightened, conforming to the face for an effective seal.

\$65 | istdivingsystem.com

MARES EDGE

The new Edge mask from Mares maintains stability with a rigid external frame made from two materials: a tough molded plastic for strength and a softer rubbery texture for improved grip. There's a supple silicone skirt to ensure seal integrity and comfort. And the frame-integrated buckles provide durability to ensure your investment pays off in the long run.

\$70 | [mares.com](https://www.mares.com)



Made to last, with a tough frame constructed of two materials for strength and durability

MARES PURE WIRE

The new Pure Wire mask empowers divers to customize their kit—and change their look easily—with the option to swap the colored frame. For comfort, there's a soft silicone skirt that maintains a positive seal for a variety of face shapes and sizes. And the interchangeable frame extends over the skirt in key positions for improved adjustment and clearing.

\$80 | [mares.com](https://www.mares.com)

A custom look made possible by an interchangeable frame that comes in six colors

**OCEANIC DISCOVERY**

Stylish, lightweight and loaded with features, this new dual-lens mask offers a comfortable fit and great value. The low-volume design features a silicone skirt attached to a frame whose field of view is unobstructed up, down or to the sides. The strap buckles have rotating quick-release connectors for a precise fit and convenience.

\$69.95 | [oceanicworldwide.com](https://www.oceanicworldwide.com)



Stylish design available in five color options



Solid entry-level mask available in seven color options

OCEANIC DUO

The Duo is designed for new divers who are just beginning their underwater adventures and are looking for an attractively priced mask that doesn't sacrifice performance. The full-frame design is solid and rugged without excessive weight, and features a silicone skirt with a comfortable, dry seal. The lenses offer a broad field of view.

\$49.95 | [oceanicworldwide.com](https://www.oceanicworldwide.com)

SEAC ITALICA

The Italica blends sleek Italian styling with smart performance features. The skirt is made from high-quality silicone, with textured sections placed strategically on the face for a more positive grip when clearing or adjusting the mask. The rigid frame is mated to four-way swiveling buckles with chrome-plated metal screws for durability and comfort.

\$62, \$69 [tinted lenses] | seacsub.com



Single-lens design offers wide field of vision



Ultra-low-volume design for quick, easy equalizing

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SEAC M70

Built for low-volume performance, the M70 has twin lenses designed with an inverted-teardrop shape to maximize field of vision and secured by an over-molded skirt wrapped around a rigid internal frame for stability. Push-button buckles ease adjustment, and the skirt-mounted hinges move in four directions to ensure the strap stays in position.

\$65 | seacsub.com

SCUBAPRO D-MASK

The D-Mask features a computer mount that clips on and securely locks in place in seconds for use with Scubapro's Galileo HUD computer. The frame and lenses are shaped maximize field of view and to provide optimal visibility of the HUD computer screen. The strap, with integrated snorkel mount, is secure and comfortable.

\$185 | scubapro.com



The perfect platform for Scubapro's Galileo HUD computer



Available in black, black silicone or Tiffany colorways

SHERWOOD SCOPE SLIM

Like the original Scope mask, the Scope Slim borrows design cues from the snow slopes: a goggle-like frameless mask with a comfortable elastic strap and unhindered field of view. But the Scope Slim comes in a slightly smaller shape for divers with a narrower face. The strap won't tangle even long hair, and has a loop for quick snorkel mounting.

\$115 | sherwoodscuba.com

TUSA M1003 FREEDOM ELITE

The Freedom Elite features a specially molded skirt with a round cross section on the outer edge where it seals on the skin, creating a low-pressure soft fit for a comfortable, dry seal. The strap has an anatomically curved split section that sits easily on the back of the head for secure comfort. The wide tempered-glass lens provides a superior field of view.

\$80 | tusa.com



Superior fit in a single-lens design favored by underwater photographers

TUSA M211 FREEDOM ONE

The Freedom One introduced Tusa's design philosophy that enhances the fit and performance of the skirt by allowing it to sit smoothly and comfortably on the face. The 3D strap contours to the head shape, and the low-profile buckle is streamlined and easy to adjust. The teardrop-shaped lenses offer a wide view and are treated to block harmful UV rays.

\$89 | tusa.com

Advanced technology for a comfortable, dry fit

**TUSA M2001S PARAGON**

The Tri-Mix frame of the Paragon sandwiches an internal metal crossbeam between polycarbonate and a polyurethane exterior for a tough but lightweight design. The angle strap adjuster has five adjustment points for precise placement, and the soft skirt has alternately dimpled and reinforced areas to soften and stiffen for the best fit.

\$200 | tusa.com



Available in black or white skirt with choice of color accents

TUSA M1007S PARAGON S

The new Paragon S brings the comfort, performance and advanced features of the Paragon mask to a single-lens design. Incorporating the strong, lightweight triple-layer frame and special fit technology that adds strength to the skirt for durability, the Paragon S has a wide UV 420 lens that blocks harmful rays and provides an unobstructed view.

\$200 | tusa.com

Tusa's most advanced fit and comfort features in a single-lens design





OTS SPECTRUM FULL-FACE MASK

This full-face mask can be used with a variety of regulators, allowing most divers to hook it up to their existing reg. The double seal provides a dry, comfortable fit, and the soft nose pocket makes for easy equalization. You can upgrade the mask with several accessories, including an ambient breathing valve, OTS's underwater communication system, and accessory brackets for lights and cameras.

\$409 |
oceantechnologysystems.com

TIPS

HOW TO FIND THE PERFECT MASK

First the Fit

When it comes to choosing your mask, your primary factor should be fit and comfort. That's why ScubaLab has developed the following six-step process for foolproof mask fitting that you can do without even having to get your face wet.

1. Look up toward the ceiling and place the mask on your face without using the strap. It may help to remove the strap if it gets in your way. The mask should rest gently on with no gaps between your face and the mask skirt.
2. Place a regulator or snorkel mouthpiece in your mouth. Does the mask still feel comfortable? Have any gaps appeared?
3. Now look forward. Place the mask on your face without using the straps and gently inhale through your nose. The mask should seal easily on your face. Make sure you don't suck too hard, as this distort the skirt and give a false seal. A properly fitting mask will seal with a



gentle touch.

4. Repeat step three with a regulator or snorkel mouthpiece in place.
5. If the mask maintains a seal, adjust the strap and put the mask on your face. Make sure that the nose pocket doesn't touch your nose and that the frame doesn't rub the bridge of your nose or putting uncomfortable pressure on your forehead.

6. Put the regulator mouthpiece in place once more time and make sure you can easily reach the nose pocket to equalize your ears.

Secondary Considerations

Once you've narrowed your options down to only include masks that fit, you can begin to look at secondary factors such as color and design. Here are a few key categories to consider.

Lenses Single-lens masks offer a wide, uninterrupted field of view. Dual-lens mask can often have a smaller volume, making them easier to clear and equalize. Dual-lens masks can often be outfitted with corrective lenses.

Skirt Clear silicone skirts let in a lot more light and can even increase field of view if it is transparent. Black silicone shades your eyes and reduces glare in bright, sunny environments.

Strap Standard silicone straps are secure and easy to adjust. Elastic straps are easy to get on and off and won't tangle in long hair.

TIPS

IN DEFENSE OF SNORKELS

It may not come as a surprise, but snorkels are not the most popular piece of scuba diving gear. In fact, many divers have chosen to forgo them completely. Often times divers

Waiting Game: If you're waiting for a boat pickup, a snorkel is a very comfortable way to do it. It allows you to easily keep an eye on critters and other divers without the



cite their decision on the entanglement hazard snorkels present in overhead environments, but many just dislike their dorky, unwieldy nature. But before you decide to ditch this valuable piece of equipment, consider the following points:

Free Air: Using a snorkel before and after shore dives allows you to breathe without draining your tank during long surface swims. This leaves more breathing gas for your actual dive, while allowing you to keep an eye on conditions, marine life and navigational aids below the waterline while swimming.

exhaust bubbles of a regulator. And in choppy conditions, it's a better alternative to swallowing seawater with each breath after you've emptied your tank.

Emergencies: If you're low on air upon surfacing, your snorkel will provide you with an easily-accessible, inexhaustible supply of fresh air. This can be especially important when faced with rough conditions or a long, unexpected surface swim. Snorkels can make it easier to breathe properly while assisting others in the water, especially when towing a fellow diver.

GULL CANAL STABLE

The Canal's streamlined tube reduces vibrations and discomfort by stabilizing the snorkel against current. The bottom section is corrugated on the outside to improve mouthpiece flexibility, but the interior is smooth so water drains quickly. The top of the snorkel tube is fitted with a splash guard to prevent water entry.

\$50 | gull.kinugawa-net.com



One-touch clip allows for quick removal and attachment of snorkel and mask



Large-bore snorkel tube enables high-volume airflow and smooth inhalation

GULL SUPER BULLET

This top-of-the-line snorkel has two exhaust valves for reliable clearing of water. After expulsion, any remaining water is diverted away from the mouth and channeled into the purge chamber. The rotating mouthpiece can be adjusted to find the most comfortable, natural angle. The one-touch snorkel keeper easily detaches from the mask strap.

\$70 | gull.kinugawa-net.com

1



Includes mask, snorkel and combination backpack/towel

2



Special-edition top-flight snorkel or scuba set with a commemorative case

3



The essentials for pursuing your freediving dreams

1] HEAD ADVENTURE COMBO

Designed for snorkelers who want to mix fun and convenience, this combo includes a mask and snorkel carried in a backpack that turns inside-out into a soft, absorbent towel. The full-frame mask has large dual lenses for a good view of the under-sea world and quick-adjust strap buckles. The J-style snorkel has a corrugated bottom tube for comfort. Adult version available in navy blue and lilac, junior version in light blue and lime.

\$50 | head.com

2] MARES 70TH ANNIVERSARY COMBO

This limited-edition set includes the X-Vision Ultra mask and Rebel Dry snorkel. The product of meticulous design and optical testing, the chrome-plated mask provides the widest view possible, while its soft skirt and X-shaped strap offer secure comfort. The Rebel Dry has a 100 percent dry top, a lower purge exhaust and a sliding snorkel keeper. The set comes in a padded commemorative case.

\$119.95 | mares.com

3] SEAC TRIS MOTUS

This all-in-one freediving package includes the full-foot Motus fin with a flexible technopolymer blade designed for maximum responsiveness married to a dual-density foot pocket that balances comfort and stability. The twin-lens One mask is made from hypoallergenic liquid silicone. The Jet snorkel's low-profile design minimizes drag. Available in four color-coordinated kits that come neatly contained in a handy travel bag.

\$119 [black], \$129 [camo] | seacsub.com



by guest Caroline H. in Sri Lanka



by guest John M. in Raja Ampat, Indonesia

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by guest Michele W. in Sri Lanka

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IMAGING

CAMERAS **P70** + LIGHTS **P71** + ACCESSORIES **P73**

EVALUATING CAMERAS AND THEIR ACCESSORIES

ScubaLab's testing of imaging gear is aimed at helping buyers identify the cameras, lights and accessories with the capabilities they need.

Testing of housings is designed to gauge how well each provides comfortable, easy access to a camera's functions and features. We evaluate housings for compatibility with accessories, ease of camera installation, and features such as glow-in-the-dark controls.

Testing of compact action cameras assesses each model's ability to capture high-quality underwater video, and its relative ease of operation. In-water testing includes rating ease of setup, intuitiveness of operation, ease of capturing video and effectiveness of features such as image stabilization or underwater color correction. Testers also rate the footage shot with each camera for clarity, color, stabilization and framing, and performance in low light.

Testing of underwater lights includes measuring output using an industry-standard integrating sphere operated by an accredited testing facility. We measure output with batteries charged, and after one hour of continuous use. The convenience and ease of operation of lights' controls and ergonomics are evaluated in the water by test divers.

For ScubaLab gear reviews, visit scubadiving.com/scubalab.

CAMERAS + LIGHTS + ACCESSORIES

1] SEA&SEA DX-6G PRO SET

The DX-6G can take 16mp images and shoot HD video at 30 frames a second. It features built-in macro shooting and underwater color modes, and is waterproof to 46 feet/15 meters; the compact underwater housing allows it to dive to depths of 180 feet/55 meters. The Pro kit includes a camera tray, wide angle lens and strobe.

\$699.99 [camera and housing];
\$1,299.95 [Pro Set] |
seaandsea.com

2] SEALIFE MICRO 3.0

SeaLife's compact, user-friendly camera is sealed and waterproof to 200 feet (60 meters). The ergonomic piano keys and intuitive operation are similar to previous models. The biggest change is the camera's ability to record 4K video at 30 frames per second. It also has image stabilization and can shoot 16mb RAW images. It has an internal 64gb memory.

\$599.95 | sealife-cameras.com

3] SEALIFE REEFMASTER RM-4K CAMERA

This powerful action camera was designed to be handheld, or tray-mounted. It is depth rated to 130 feet (40 meters) in the included housing, which uses a pressure-lock thumb-screw. It can capture 14 mega-pixel still images and 4K video at 30 frames per second. It has a wide-angle fisheye lens, but can be outfitted with an optional macro wet lens.

\$299.95 | sealife-cameras.com

4] SEALIFE REEFMASTER RM-4K CAMERA/LIGHT SET

This set comes with the powerful Sea Dragon 2000F photo/video light to capture vivid, natural-looking color when shooting with SeaLife's new ReefMaster RM-4K action camera. The light's wide beam angle complements the camera's field of view; the set includes the RM-4K camera, Flex-Connect Micro Tray, Grip and Sea Dragon 2000F.

\$599.95 | sealife-cameras.com

1

Compact camera rig with all the tools you need to get started in underwater photography



2

Sealed, floodproof design provides peace of mind for underwater shooters



3

Capture brilliant 4K video with this ultra-compact underwater camera



4

Combines a high-powered photo/video light and 4K action camera for complete rig



1



72-piece XML LED
create a powerful,
wide-angle beam

2



Set beam to 120
degrees for video or
10 degrees for
general use

3



Two-stage recycle
time function
provides priority
shutter availability

4



Wide angle beam
is ideal to pair with
compact action
cameras

1] BIGBLUE DIVE LIGHTS VL60000P

With 60,000 lumens of light, this professional, high-powered video light gives you your own underwater sun. The extra-wide, 160-degree beam angle keeps the lighting in your photos and videos free of any hard edges. It can run up to 1½ hours on high power and comes with rechargeable battery packs. Also included are an adjustable handle, a one-inch ball mount, and protective hardcase.

\$2,999.99 | bigbluedivelights.com

2] BIGBLUE DIVE LIGHTS VTL8000P MAX

One light, two beams. Illuminate your videos with a wide, 8,000-lumen flood light or switch to the narrow 2,600-lumen spot light for a penetrating beam. The one-button operation cycles between both beams and various power levels; there's also a 500-lumen red light mode for staging your camera. Made of anodized aluminum, this light is waterproof to 330 feet [100 meters].

\$787.99 | bigbluedivelights.com

3] SEA&SEA YS-D3

A large-capacity condenser and precision circuitry allow the YS-D3 to fire continuously without any interval time at lower power settings, and with barely any recharge time even when outputting at max capacity. This allows you to take more shots in quick succession. The target light has been upgraded with an aluminum heat diffuser and is now powerful enough to be used as a dive light. The strobe can be outfitted with a dome diffuser, snoot and other accessories.

\$849.95 | seaandsea.com

4] SEALIFE SEA DRAGON 2000F

This light delivers up to 2,000 lumens of light in a wide, 120-degree beam that is well-suited to underwater shooting. The light has a natural-looking 5000K color-temperature that gives your photos and videos vivid, realistic color. The corrosion-proof light head is rated to 330 feet [100 meters]. The single push button easily switches between three power modes and features a battery indicator light.

\$299.95 | sealife-cameras.com

1] SEALIFE SEA DRAGON 3000F AUTO

The 120-degree angle, 3,000 lumen beam cast by this light falls evenly without a hotspot. The simple one-button operation quickly cycles between power modes, including a red “stealth” mode and an emergency SOS flash. The light’s photocell can automatically regulate brightness based on proximity and features three manual power settings. The light uses auto flash detection. When using a rechargeable 3500mAh lithium ion battery, it will run for 60 minutes at full power or 240 minutes on low power.

\$499.95 |
sealife-cameras.com

2] SEALIFE SEA DRAGON 5000F AUTO

This 5,000-lumen light can be used with a strobe thanks to its Auto Flash Detection, which turns off the light for a second when a strobe flash is detected. Brightness can be manually adjusted on the Sea Dragon 5000F Auto to 100, 75, 50 and 25 percent power, or it can be automatically controlled by the built-in photocell light sensor. The COB LED is designed to mimic natural sunlight for realistically-colored images and video. Camera and tray not included.

\$799.95 |
sealife-cameras.com

3] SEALIFE SEA DRAGON MINI 1000F

The compact Mini 1000F offers an ultra-wide 130-degree angle beam and outputs up to 1,000 lumens. It pairs well with action cameras but it can also be used as a focusing light on larger cameras. A single push-button operation makes it easy to cycle between full power, half power, quarter power, flash and emergency SOS strobe. A built-in power indicator light keeps track of battery life, which will last up to 90 minutes at full power when using a rechargeable 3500mAh lithium ion battery.

\$149.95 |
sealife-cameras.com

1



Mimics natural
sunlight for
realistic color in
video and images

2



Red LEDs provide
a stealth mode for
approaching night-
time sea creatures

3



Compact solution
for photos, videos
and wide-area
illumination

**1] SEALIFE DC-SERIES
0.5X WIDE ANGLE DOME
LENS**

This wet lens provides an incredible perspective on the underwater world. Used with the DC2000, it increases field of view by 100 percent and has a 16mm effective focal length. Precision optics allow maximum light transmission. It fits all SeaLife DC series cameras and attaches underwater.

\$599.95 |
sealife-cameras.com

**2] SEALIFE DC-SERIES
0.75X WIDE ANGLE
CONVERSION LENS**

The 0.75x Wide-Angle Conversion Lens compensates for the magnification effect of water to increase the field of view by 33 percent. The universal 52mm wet lens can be mounted underwater and is compatible with all DC series SeaLife cameras and housings with a 52mm lens mount.

\$199.95 |
sealife-cameras.com

**3] SEALIFE DC-SERIES
SUPER MACRO LENS &
ADAPTER**

This wet lens can focus as little as 3½ inches away when set to macro and can enlarge your subject by 2.3X. This lens is compatible with all SeaLife DC series cameras and all housings with a 52mm lens mount. The lens features a two-element optical grade lens with anti-reflective coating.

\$129.95 |
sealife-cameras.com

**4] SEALIFE SUPER MACRO
CLOSE-UP LENS FOR MICRO &
RM-4K SERIES**

Used with SeaLife's Micro and RM-4K cameras, this allows you to capture details from 3 ½ to 7 inches [9 to 18 centimeters]. It features a two-element optical grade wet lens with anti-reflective coating and is made of anodized aluminum. Includes two removable focus distance sticks.

\$99.95 |
sealife-cameras.com

1



Wet lens is compatible with all SeaLife DC series and all cameras with 52mm threads

2



Stay within range of your strobes while keeping everything in frame

3



Capture sharp details of tiny sea creatures

4



Press-on lens mount is easy to attach and remove underwater

A REVOLUTIONARY APPROACH EXTEND YOUR HORIZON



- EXTENDED DIVE TIME
- LIGHTWEIGHT
- AS EASY AS NITROX DIVING
- CREATES A NATURAL DIVING POSITION
- FAIL-SAFE GAS OPERATION
- EASY TO ASSEMBLE AND PREPARE
- READY FOR ADVANCED DIVERS
- INTUITIVE INTERFACE
- CE APPROVED FOR NITROX MIXES
FROM 30% - 99% O₂ (MAXIMUM DEPTH: 40m)

mares | XRA
extended range

rEvo
TECHNOLOGY

POWERED BY

SSI

INSTRUMENTS

COMPUTERS **P76** + CONSOLE **P80**

CHOOSING DIVE COMPUTERS

Our computer testing is designed to evaluate two aspects of performance: how the computer's decompression algorithm compares to others, and how easily and effectively the computer interfaces with a potential new user in terms of intuitive operation, clarity of data and ease of reading.

To gauge algorithm performance, we conduct a series of four test dives, designed to simulate a full day of diving, at the University of Southern California Catalina Hyperbaric Chamber, recording no-decompression times at multiple stages during each dive. We use this data to gauge their performance as liberal, conservative or average among the test group.

Test divers evaluate each computer in nine categories including intuitiveness of operation, ease of reading underwater and at the surface, ease of navigating menus, and effectiveness of other features such as digital compass and alternate screen data. Divers also rate the effectiveness of a computer's controls as well as its overall ergonomics.

We also conduct simulated dives in a small pressure chamber to evaluate each computer's performance in situations not suitable for test dives, such as warnings, alarms and instructions displayed during rapid ascents or missed decompression.



JOHN MICHAEL BULLOCK

For ScubaLab gear reviews, visit scubadiving.com/scubalab.

1



Air-integrated, watch-sized computer pairs with up to three transmitters

2



Watch-sized computer is stylish and easy to use



3



Single-button operations is well-suited for newer divers

4



Smart-watch capability with advanced diving features and surface GPS

1] AQUA LUNG i470TC

With wireless air-integration and Bluetooth for downloading and sharing via the free Diverlog+ app, the i470TC offers a wealth of features in an ergonomic, watch-sized computer. For increased safety, it features programmable audible alarms (including a user-selectable deep stop) and an additional high-visibility LED warning light. It's powered by a user-replaceable battery.

\$499 | aqualung.com

2] CRESSI CARTESIO

The Cartesio combines user-friendly operation and a bold, legible screen. The two-button interface allows intuitive navigation; the screen is compact, but displays data clearly thanks to its bold characters. The computer features a backlight to further enhance visibility. The enriched-air-capable Cartesio can handle two nitrox mixes and includes a freediving mode.

\$449.95 | cressi.com

3] CRESSI MICHELANGELO

This robust computer features a high-contrast display and one-button operation, has two-tank switching and is nitrox compatible. The clearly separates data and makes it easy to check at a glance; a backlight boosts visibility. The computer is powered by a user-replaceable battery and can connect to Macs, PCs and smartphones with optional interface cables.

\$349.95 | cressi.com

4] GARMIN DESCENT MK1 STAINLESS STEEL

The Descent features multi-gas, trimix, apnea and CCR modes in a full-color smart watch. It also features a three-axis compass, surface GPS tracking, 200-dive onboard log and a heart-rate monitor. In addition, it touts several multisport functions for tracking everything from running and swimming to playing golf and skydiving.

\$999.99 | garmin.com

COMPUTERS + CONSOLE

1



Heart-rate monitor with multi-sport functionality and performance metrics

2



Simplified setting and function navigation for intuitive operation

3



Customizes to your physical condition and dive conditions

4



Large-format screen with air integration at an attractive price



1] GARMIN DESCENT MK1 TITANIUM

Outfitted with a sapphire crystal lens and titanium band, this computer is nitrox compatible and has modes for multi-gas, trimix, CCR and freediving. The three-axis compass can be accessed by double tapping the display while diving. Underwater alerts and alarms can be customized, and the computer operates for 40 hours in dive mode on a single charge.

\$1,499.99 | garmin.com

2] GENESIS CENTAURI

This new multi-mode wrist computer can handle air, nitrox or free diving duties and is comfortable and stylish enough for daily wear as a watch. Running the Buhlmann ZHL-16C algorithm with a choice of 3 conservative settings, it has audible and vibrating alarms and adjustable font size display. It's powered by a convenient rechargeable battery.

\$345 | genesisscuba.com

3] MARES GENIUS

This flagship computer features a full-color display in a platform that's surprisingly easy to operate. The high-resolution LCD screen, nearly 2.7 inches diagonally, lets you absorb data at a glance. Its highly customizable deco algorithm has gradient factors and predictive multi-gas functions. It pairs with up to 5 transmitters and operates for 40 hours on a full charge.

\$1,056 [\$1,356 w/ transmitter] | mares.com

4] MARES QUAD AIR

The generous 1 1/2-by-2 1/4-inch screen lets the Quad Air display data in a layout that makes all the info easy to see at a glance, with large characters and clear titles. The four-button operation and intuitive menu make it simple to navigate, and its powered by a user-replaceable battery. Despite its screen size, its ergonomic design makes it comfortable even on smaller wrists.

\$526 | mares.com

COMPUTERS + CONSOLE

1



Available in a choice of 5 strap colors

2



Ergonomic, watch-style computer with scuba, freedive and gauge modes

3



Value-oriented freediving computer for any breath-hold adventure

4



Bluetooth interface for quick, cable-free downloads to smartphone or other device

1] OCEANIC GEO 4.0

With a sporty new design, the Geo 4.0 has an updated display with Bluetooth connectivity for quick linking to your smartphone via the DiverLog+ app. Equipped with both DSAT and Pelagic Z+ algorithms, the Geo 4.0 lets you choose the decompression formula that suits your dive style. The 4-button controls allows quick and easy settings and selections.

\$399.95 | oceanicworldwide.com

2] SEAC ACTION/ ACTION HR

This compact package is available in a stainless finish or shock-resistant HR (high resistance) design. Divers can program up to two gas mixes and navigate a four-button interface on an adjustable intensity LCD screen. In freedive mode, you can control dive time and surface intervals, as well as track current and maximum depth during each submersion.

\$319, \$329 (HR); seacsub.com

3] SEAC DRIVER

This budget-friendly freediving computer empowers users to monitor data including descent/ascent rate, total dive time, temperature and depth on a single screen. It features the MSRT (Minimum Surface Recovery Time) function to increase safety, and there's internal memory for logging dives. It's all packed into a convenient, streamlined watch-style case.

\$199; seacsub.com

4] SCUBAPRO A1/A2

The new nitrox-compatible A1 is a simple and versatile recreational computer with an easy-to-read display and intuitive operation. Four-button control allows quick and easy navigation through menus and settings. The more advanced A2 provides additional functionality such as adaptive deco algorithm and 6 dive modes including sidemount, Trimix and CCR.

Starting at \$ 499; scubapro.com

COMPUTERS + CONSOLE

1



Advanced optics make view like that of a 25-inch TV from 12 feet away

2



Dual transmitter capability perfect for sidemount diving

SCUBALAB
TESTERS
CHOICE
2017

3



Advanced capabilities and easy operation in a stylish watch design

SCUBALAB
TESTERS
CHOICE
2018

4



Patented Gas Time Remaining displays shows real-time calculation

SCUBALAB
TESTERS
CHOICE
2019

1] SHEARWATER NERD 2

The NERD 2 keeps critical data in your line of sight throughout your dive with its advanced near-eye remote display. With air integration and 3-axis digital compass, the NERD 2 takes just a glance at the magnified micro LCD display to check no-deco time, gas pressure, heading and other info. The highly adjustable mount attaches easily to most regulator second-stage hoses.

\$1,550 | shearwater.com

2] SHEARWATER PERDIX AI

Its large screen and simplified operation make the Perdix AI a breeze to read, set up and operate for divers of all experience levels. Features include air integration, customizable screen layout and colors, 3-axis compass and 2-button control with clear, intuitive screen prompts for no-fuss menu navigation. Powered with any standard AA for quick, convenient battery changes.

\$935 | shearwater.com

3] SHEARWATER TERIC

With a full-color display, watch-sized ergonomics, intuitive operation and advanced capabilities, the Teric is equally at home on the wrist of the newest or the most experienced of divers. Wireless charging and Bluetooth log downloads to the free Shearwater Cloud app make the Teric as convenient as it capable. Now available in new strap and bezel color options.

\$1,095 | shearwater.com

4] SUUNTO D5

The air-integrated D5 is so intuitive that you can effortlessly navigate menus before you even glance at the manual. The high-contrast screen has a reflective technology that boosts visibility whether in full sun or pitch black, while the crisp, full color display and programmable audible and vibrating alarms let the D5 convey important info at a glance.

starting at \$879.95 | suunto.com

TIPS

HOW TO CARE FOR
A DIVE COMPUTER

PRE-DIVE

1 Check the battery indicator on your computer and follow manufacturer's instructions for when and how to replace the battery.

2 Dial in the basics if your dive computer is new. Set for feet or meters, Fahrenheit or Celsius, time and date.

3 Most computers offer ways to program in levels of conservatism with specific conservative-factor settings, personal settings or altitude settings. Other computers will usually have bar graphs that enable you to build in a safety factor by simply backing off on the NDL loading pixels.

POST-DIVE

1 Thoroughly rinse with fresh water and dry with a soft towel.

2 Pay special attention to metal contacts, cleaning occasionally with a soft toothbrush and mild detergent.

3 Most manufacturers recommend service checkups every one to

two years for calibration, seal check and function check. This will help avoid problems before your next dive.

REPLACE YOUR
DIVE COMPUTER
WHEN ...

>> Replacement parts are not available. You might find that it's not possible to replace a broken strap, missing button or dead battery, especially if the computer is older.

>> You begin a new type of diving. There are a plethora of options for rec divers, but if you get into tec diving, such as mixed-gas, you need a computer that can provide a more complicated set of data.

>> It's too conservative. All computers can be made more conservative by programming in safety factors or backing off on bar-graph pixels, but most can't be made more liberal.

>> You want an air-integrated model. If you want to cut down on gear, you can lose your pressure gauge by using an air-integrated dive computer.

1



Now available in new colors, including gun metal

2



Patented Gas Time Remaining displays shows real-time calculation

1] TUSA IQ1204 DC SOLAR LINK

The DC Solar Link means the end of battery replacements or missed dives because of a dead battery. With a solar panel built into its face, it recharges from sunlight or indoor fluorescent lighting, and has a power-level indicator on its display. It has dive, freedive and gauge modes, and pairs with Bluetooth for quick dive log downloads to smartphone or tablet via Tusa's free Diving Log app.

\$699 | tusa.com

2] SHERWOOD BEACON

Designed for ease of operation, the Beacon has a simplified, three-button operating system and straightforward menu for intuitive settings and adjustments. The transistor screen delivers outstanding color contrast for easy reading. Bluetooth allows wireless transfer of dive data to smartphone or tablet via the DiverLog+ app, and the Beacon can be configured for replaceable or rechargeable batteries.

\$1,150 | sherwoodscuba.com

SALT LIFE SLX

THUNDER JACKET + STORM PANTS



APPAREL, SUNGLASSES AND MORE AT SALT LIFE.COM

BARE®

BARE IT ALL

INTRODUCING THE NEW LIGHTWEIGHT AND LAYERABLE

EXOWEAR



PROTECTION

3-Layer Fabric with breathable membrane protects from the elements.

WARMTH

Omnired Technology delivers thermal warmth.

MIX & MATCH

Neutrally buoyant, modular and layerable to suit every adventure.



BARESPO RTS.COM

LIFE SUPPORT

REGS **P84** + REBREATHER **P87** + SAFETY GEAR **P88**

TESTING REGULATORS

Regulators are subjected to some of the most in-depth testing ScubaLab performs. Our testing focuses on two key elements of performance: measurement of how much effort is required to breath with a reg at depth, and how it compares in more subjective measures such as comfort, dryness of breathing and smooth, quiet gas delivery.

Breathing effort is measured at Dive Lab in Panama City Beach, Florida, using an industry-standard ANSTI breathing simulator. The device precisely measures the amount of effort (called “work of breathing”) required to inhale and exhale through the reg at a series of depths and breathing rates. The results can help inform buyers whether they’re looking for the best performance for the price in a recreational reg, or for a reg capable of supporting them and a buddy well beyond recreational depth.

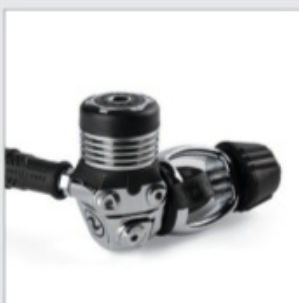
Ergonomic testing is done by a team of test divers who evaluate each reg in 14 areas including ease of breathing, comfort, dry operation, ease of clearing, noise and bubble interference.

We also evaluate whether a reg’s first stage high- and low-pressure port arrangement and features such as rotating turrets allow for convenient and streamlined arrangement of hoses.



COURTESY PADI

For ScubaLab gear reviews, visit scubadiving.com/scubalab.



AQUA LUNG LEG3ND ELITE

This top-shelf reg offers precision performance and enhanced ergonomics to match its good looks. Engineered to provide a comfortable, low-effort work of breathing in warm and cold water, the Leg3nd is ready for any environment. The knurled adjustment knob allows divers to easily tune the inhalation effort to their own preferences.

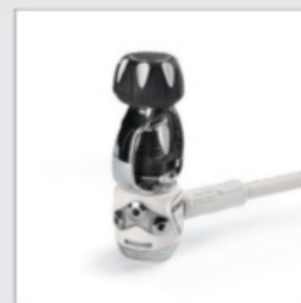
\$899 | aqualung.com



APEKS MTX-RC

The MTX-RC combines military-grade engineering with solid, silky-smooth breathing performance. The over-balanced diaphragm first stage features two angled high-pressure ports and has five medium-pressure ports on a rotating turret. The pneumatically balanced second stage uses a heat exchanger to dissipate cold and draw warmth from the water.

\$949 | apeksdiving.com

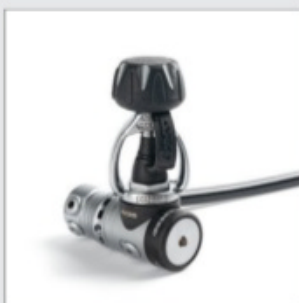


CRESSI AC2/COMPACT

With a robust first stage partnered to a featherweight second, this regulator is capable and comfortable. Made of nickel-plated brass, the simple piston first stage features a single HP port and four LP ports. The compact second stage is made of a lightweight elastomer that is easy on the jaw for all-day diving comfort.

\$249.95 | cressi.com

Sophisticated, high-performance regulator with all the amenities



CRESSI AC25 MASTER CROMO

This reg's second-stage features a laser-etched titanium front that's a thing of beauty. Its breathing adjustment knob and top-mounted Venturi switch give divers quick control of freeflows. The AC25 balanced piston first stage delivers constant intermediate pressure, with five LP ports on a rotating turret with two HP ports.

\$539.95 | cressi.com

Dry Air Demand design prevents first stage water entry

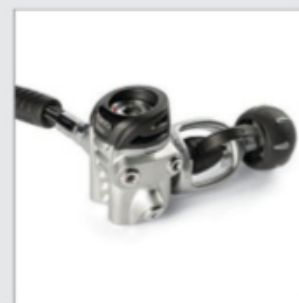


GENESIS PRANA

While the heritage of its predecessor the GS2000 is apparent, the new Prana aims to build on that reputation. The environmentally sealed piston first stage has a balanced design for consistent performance as tank pressure drops. The second stage has an ergonomic breathing control for adjustable performance, a top-mount Venturi control and a lightweight design.

\$405 | genesiscuba.com

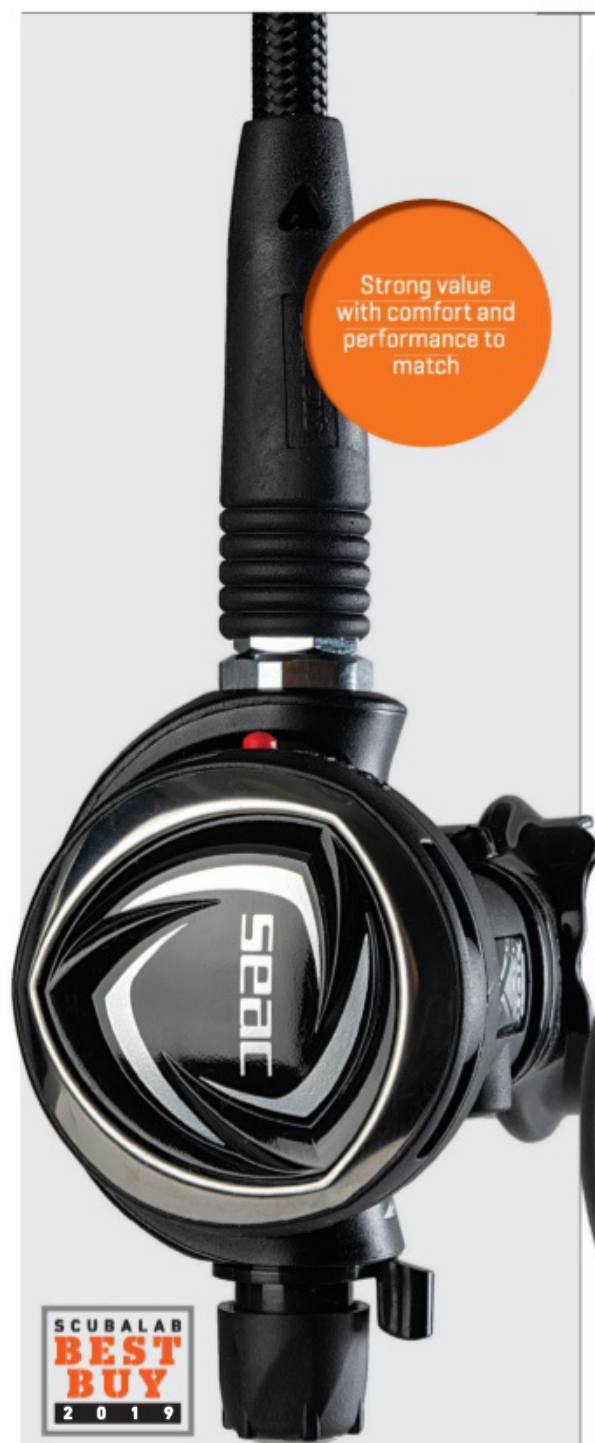
Designed to cope with the demanding dive conditions



MARES EPIC ADJ 82X

This rugged reg is built to meet the most demanding conditions for divers willing to take on challenges. With the Twin Power System, the reg's performance can be precisely tailored to meet conditions. Its metal construction and pneumatically assisted design make it a capable, reliable tool for cold water use.

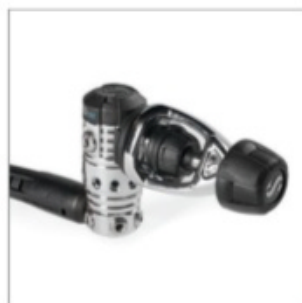
\$893 | mares.com



SEAC DX 200

Seac's flagship regulator features a high-performance balanced-diaphragm first stage constructed from chrome-finished forged brass, with angled HP and LP ports. The lightweight, compact second stage has an ergonomic breathing resistance control and an easy-reach Venturi lever. The front cover is scratch-resistant.

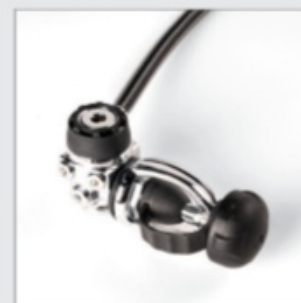
\$549 | seacsub.com



SCUBAPRO MK25 EVO/D420

This new reg builds on the concepts behind earlier D-series models. The D420 second stage locates the diaphragm below the mouthpiece intake for slightly higher ambient pressure, to reduce the valve-cracking effort. Paired with the capable MK25 EVO first stage, the D420 has an easy-reach top-mounted Venturi control.

\$999 | scubapro.com



TUSA RS-681

The compact, elliptical S-81 second stage features a sequential exhaust assist and has a ceramic moisture plate to prevent dry mouth. The click-spring adjustable control allows precise breathing adjustment, while the top-mounted Venturi lever is easy to reach. The lightweight R-600 balanced diaphragm first stage is sealed.

\$699 | tusa.com



First stage ports arranged for optimal hose placement



ZEAGLE F8

Combining Zeagle's balanced diaphragm first stage with a flagship 2nd stage, the F8 offers easy, dry breathing. The first stage has a dry-sealed spring chamber, with critical components protected behind the clear hydrostatic diaphragm. The low-profile first stage places the low-pressure hoses out to the sides.

\$629.95 | zeagle.com



Can be upgraded with Buddy Phone for underwater communication

OTS GUARDIAN FULL-FACE MASK WITH REGULATOR

The Guardian full-face mask provides a dry, comfortable diving experience thanks to its effective double seal and a design that permits divers to breathe naturally from the nose. Invaluable in cold or contaminated water, this mask can be outfitted with OTS's wired and wireless underwater communication systems. The built-in second stage is removable for easy cleaning and storage.

\$849 | oceantechnologiesystems.com

Reational rebreathers in a semi-closed model designed with safety foremost



MARES HORIZON

The Horizon offers the benefits of a rebreather—extended bottom time, almost no bubbles, and warm, moist breathing gas—in a streamlined package that operates with a single Nitrox cylinder and a head-up display. The included electronic controller features a 2.8-inch color screen that shows scrubber status, loop O2 level, a digital compass and more. And it's designed to be assembled and cleaned without tools for added convenience.

\$4,500 | mares.com

1



Easy to
assemble, fill
and travel with

2



Keeps your
emergency gas
supply close
at hand

1] SUBMERSIBLE SYSTEMS SPARE AIR 300

Known as “the diver’s reserve parachute,” the Spare Air is must-have equipment for the safety conscious diver. With 3 cubic feet of breathing gas, the 300 is 13.4 inches long and 2.25 inches in diameter, and is ready to breathe when you pull it from its easy-mount holster. Drain the tank, spin off the regulator, and it’s ready to fly.

\$330; spareair.com

2] SUBMERSIBLE SYSTEMS LIMITED EDITION 40TH ANNIVERSARY SPARE AIR PACKAGE

Four decades of helping divers safely reach the surface in an out-of-air emergency is a milestone—and one you can take note of with this limited-edition anniversary model. Available in 3 and 6 cubic foot sizes, it features a custom anodized blue tank and t-shirt, available with an optional dial pressure gauge.

\$330 [3 cubic-foot]; spareair.com

3] SUBMERSIBLE SYSTEMS SPARE AIR 600

With 6 cubic feet of breathing gas, you get double the supply of the 300 in a package that’s the same length and still just 3.25 inches in diameter. Like all Spare Air models, it’s easy to fill from any scuba tank using the included adapter—with no tools needed—and its safe and easy to fly with when empty.

\$400; spareair.com

3



Double the air
supply of the
standard
Spare Air



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- Water Survival/HUET (METS)
- API Approved Rigging
- DAN Diving First Aid for Professional Divers (DAN DFA Pro) which includes DAN Emergency Oxygen for Scuba Diving Injuries

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PROTECTION

WETSUITS **P92** + DRYSUITS **P96** + SHORTIES **P97** + WET/DRY ACCESSORIES **P98**



EXPOSURE GEAR

Test procedures for wetsuits, drysuits and other exposure gear are designed to gauge how well it does its job of providing comfortable, insulating protection.

Wetsuits are rated in seven categories, including fit/comfort, range of motion and how warm the suit keeps a diver relative to other suits in the test. Drysuits are tested for those same factors as well as six others including valve placement/operation and buoyancy/attitude control.

Most suit testing is conducted in two phases, with the first in 72-degree F (22 C) freshwater springs and the second in ocean waters above or below that, depending on the level of protection being tested [such as 3 mm vs. 5 mm wetsuits].

Drysuit testing is typically conducted in freshwater springs. While it's true that drysuits are often used in much colder conditions, a drysuit's principal job is, of course, keeping a diver dry. We also evaluate each suit for the materials used in it, such as the comfort and warmth of the lining and the ability of patches and reinforcements to resist wear and abrasion. And we evaluate the materials used for factors including durability and flexibility, as well as construction methods.

AQUA LUNG HYDROFLEX

Made of 3 mm environmentally friendly nonpetroleum neoprene, the HydroFlex is a high-quality wetsuit designed for warm-water diving. Flat-lock stitching is durable and smooth against bare skin, and a V-shaped collar further enhances comfort. O-rings in the wrist and ankles effectively limit water entry.

\$199 | aqualung.com



Eco-friendly suit; printed images of coral represent conservation partnership with nonprofit Coral Guardian

BARE REVEL

With a design inspired by flexible watersports suits, the Revel features an anatomically correct pattern that hugs the body but allows easy movement with reduced pressure points. The laminate layers and high-stretch neoprene add soft, warm comfort and make the Revel easy to get on and off. Available in 3, 5 and 7 mm thicknesses.

Starting at \$159.95 | baresports.com



Cut to move with your body for maximum comfort and flexibility

CRESSI FAST

Stylish and warm, the Fast wetsuit uses a band of stretchy liquid seal forming a ring inside each cuff that keeps water entry to a minimum. The wetsuit includes high-stretch neoprene on the arms and calves, and preshaped legs for enhanced flexibility and easy donning and doffing.

\$149.95 [3 mm], \$289.95 [7 mm] | cressi.com



Anti-abrasion reinforcement on the knees protects suit and diver

CRESSI OTTERFLEX 5 MM

The Otterflex provides an excellent range of motion thanks to its ergonomic cut and a design that uses slightly thinner, more flexible materials in the arms and legs. Seals are watertight but also easy to get on and off. An elongated nape along the zipper closure bolsters the suit's warmth and comfort.

\$249.95 | cressi.com

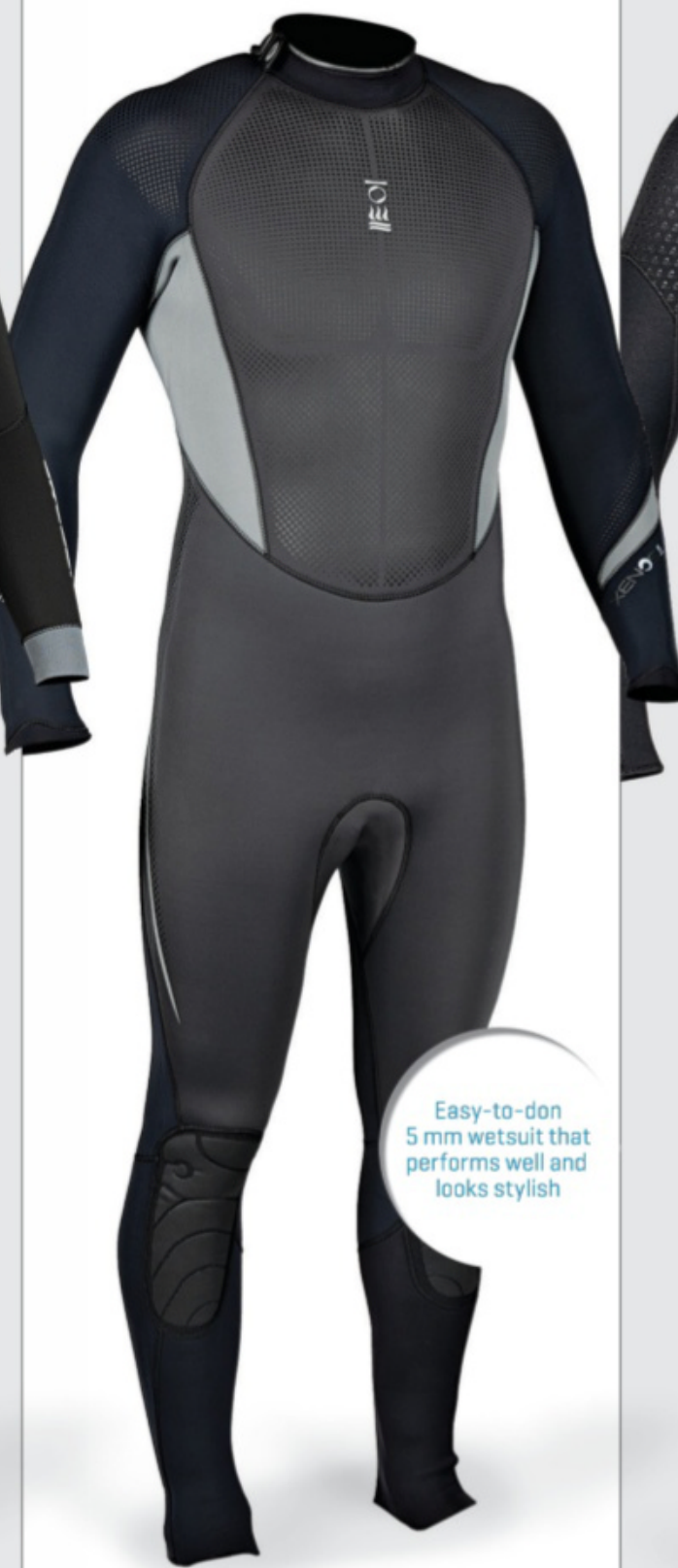


SCUBALAB
TESTERS
CHOICE
2019

FOURTH ELEMENT XENOS

Designed to meet the quick-change demands of repetitive diving, the Xenos has a smooth lining in the arms and legs, and thicker, quick-dry thermal lining in the torso. The suit has cone-shaped sections of smooth-skin just inside the cuffs that form an internal seal, and double-glued, blind-stitched seams minimize water entry.

\$398.95 | fourthelement.com

**IST SPORTS WS-805**

Zippered cuffs on the ankles and wrists of the WS-805 provide a snug barrier against water flushing into the suit, while also making it easy to don and doff. The 5 mm neoprene is double blind-stitched for comfort and to minimize water seepage. Knee pads and textured panels on the shoulders and chest add nonslip abrasion resistance.

\$210 | istdivingsystem.com



MARES GRAPH-FLEX 3

With a plush internal lining woven with fibers of graphene—an atom-thin, man-made carbon material—Mares' new Graph-Flex wetsuit takes high tech to a new level. It's built with minimal seams to reduce cold-water intrusion and ultrastretch neoprene to improve comfort, and comes in six men's and seven women's sizes.

\$380 | mares.com

**SCUBAPRO SPORT STEAMER 3 MM**

Designed for warm-water diving, the Sport is made of 3 mm high-stretch neoprene and provides warm, comfortable insulation by hugging the body like a second skin. The flexible material provides an excellent range of motion. A design that minimizes seams and a plush interior maximize comfort against bare skin.

\$180 | scubapro.com

**SEAC FEEL 3 MM**

Designed for divers in search of maximum bang for their buck, the Feel is built from 3 mm high-stretch neoprene, with a cut that provides plenty of flexibility. It features a heavy-duty rear zipper for easy donning and doffing, tough blind-stitching throughout, and a Velcro neck closure. It's available in six men's and six women's sizes.

\$219 | seacsub.com



SEAC KOMODA 3 MM

The Komoda is built with high-stretch neoprene for flexibility and warmth. It boasts zippered closures on the wrists and ankles, a smooth-on-smooth flap seal along the full length of the back zip, and nonslip appliques on chest, shoulders and knees. Available in 14 men's and nine women's sizes.

\$329 | seacsub.com

TRULI WETSUITS TRULI-FUL THE BEAUTIFUL

This women's 5.5 mm wetsuit has a sporty polka-dot design and an interior fleece lining for added insulation. The hidden front zip has no Velcro to catch on hair or a bathing suit and features a long ribbon sewn near the top to help pull off the suit. Available in 21 sizes.

\$549 | truliwetsuits.com



High-stretch neoprene is made from nonpetroleum natural rubber

Full-featured steamer with top materials and construction

WATERPROOF W5 3.5 MM

The 3.5 mm W5 has the same comfort and durability features as Waterproof's heavier suits, including a zipper at the neck and zippered openings at wrists and ankles. DuraTex pads protect against wear, and the right thigh pad is a mounting point for an optional zippered cargo pocket.

\$389 | waterproof-usa.com

Heavy-duty protection and durability in a lightweight, flexible suit



Well-made neoprene drysuit for durability and warmth

CRESSI DESERT 4 MM

Constructed of pre-compressed 4 mm neoprene, this drysuit offers great thermal protection and durability, with liquid-seal seams and reinforcements on high-wear areas. The suit is over-size for easy donning and doffing, and features an elastic lining for increased flexibility. It comes with soft neoprene booties and a zippered hip pocket.

\$1,150 | cressi.com



Tough construction designed to withstand heavy use

DIVE RITE 901 SERIES FRONT ZIP

The 901 combines Dive Rite's legacy of tough tec and rec gear with the convenience of front-zip donning and doffing in this rugged shell suit. Thick textured rubber pads protect the seat, elbows and the knees from midhigh to shin, and thigh cargo pockets have bungees, D-rings and daisy-chain web loops for gear stowage.

\$2,700 | diverite.com



A durable, comfortable neoprene suit at an attractive price

PINNACLE TAHOE

This neoprene drysuit is constructed using a method that creates a durable, comfortable interior seam that's easier to repair and reduces cost. The suit has a long chest zipper for easy self-donning, and a pair of roomy cargo pockets. It has a comfortable neoprene neck seal and zippered wrists for easy entry and streamlining.

\$1,199.95 | pinnacleaquatics.com



SEAC WARMDRY

Made of high-density 4 mm neoprene, the WarmDry lives up to its name even under extreme conditions. Fitted with semi-rigid boots that can be turned inside out for thorough drying, the suit features Aquastop closures at the wrists and a comfortable, effective smooth-skin neck seal.

\$949 | seacsub.com

Sporty, versatile suit that is comfortable and stylish

Robust construction with blind-stitched, neoprene-taped seams



CRESSI IDRA 2 MM

This stylish shorty is constructed out of 2 mm neoprene. It can be worn on its own for tropical excursions or as a base layer in colder water. The suit features a front-zip entry for easy donning and doffing. It is available in blue and pink.

\$89.95 | cressi.com



Eye-catching suit available in a wide range of women's sizes, including long torso and plus sizes

TRULI-HAPI 3 MM SHORTY

Fleece-lined for warmth and comfort, the 3.5 mm neoprene in this shorty is made from eco-friendly limestone rubber. The stretchy material and 21 sizes cater to all body shapes. The suit has a comfortable collar of rolled smooth-skin and a hidden front zipper closure for easy donning and doffing.

\$299 | truliwetsuits.com

1



Self-draining design
means no more
soggy feet

2



Well-made neo-
prene boots for
protection from cold
water and rough
terrain

3



Never again let
your pre-dive
hydration be a
concern during
a drysuit dive

1] AKONA SECO BOOT

Tiny holes in the sole of the Seco start draining as soon you exit the water after a dive, ending the annoying sloshing steps and sagging fit of other neoprene boots. These self-draining neoprene boots feature long zippers for easy donning and doffing. A thick nonslip sole protects the bottom of your feet while walking over difficult terrain, and panels on the ankle and top of the foot provide additional resistance to wear and tear. The Seco is available in men's and women's sizes in 3.5 mm or 6 mm thickness.

\$58 | akona.com

2] AQUA LUNG SUPERZIP BOOT

These neoprene boots feature a treaded 8 mm sole to protect against punctures, stings and slips. For additional protection and security, extra-thick panels cover the top of the foot, toe and heel cap. A heavy-duty, non-corroding zipper is used for long-term durability. The shaped foot bed and outsole match the profile of the foot to prevent excess water retention and to provide better support. The Superzip is available in sizes 3 to 14 in 3 mm, 5 mm and 7 mm thickness.

\$57 [3 mm], \$58 [5 mm], \$59 [7 mm] | aqualung.com

3] APEKS P-VALVE

Machined from solid Delrin, this high-flow-rate P-valve provides drysuit divers with relief during long dives and has one of the fastest flow rates of any P-valve on the market. It is balanced to reduce back pressure and uses chemical-resistant tubing. It is supplied with a quick disconnect for added convenience. The low-profile design features a rubber outer grip for easy operation when wearing gloves. The kit contains a rubber backing patch, stainless-steel fitting tool and instruction manual.

\$160 | apeksdiving.com



Layer with other suits or wear separately

BARE EXOWEAR

The advanced three-layer fabric in ExoWear garments is flexible, wind-proof, breathable and quick-drying for versatile thermal protection for scuba diving or any other watersport. Suitable for stand-alone use or layered with other garments, ExoWear is lined with a soft, warming inner fleece that wicks moisture from the body, dries quickly and fights stains and odors. ExoWear is available in men's and women's fullsuit, tops, bottoms, hoods and other garments.

Starting at \$39.95 | baresports.com



A°RGON technology provides warmth and flexibility without bulk

FOURTH ELEMENT HALO AR

Made with A°RGON, a low-conductivity material used in space exploration, the compression-resistant Halo undergarment provides incredible insulation without adding bulk or excessive buoyancy. An offset chest zip and baffles minimize heat loss from the torso when in horizontal trim to further enhance the suit's warmth. Comfortable thumb loops and stirrups assist in donning and doffing. The stretch outer layer is wind- and water-repellent.

\$629 | fourthelement.com

TIPS

A LITTLE SOMETHING EXTRA

Turns out your mother knew what she was talking about when she told you to wear layers. And what kept you warm in grade school not only still works, but is easier than ever with today's choice of exposure accessories.

non-neoprene accessories.

Made of synthetic or wool materials, often with soft fleece lining, these are available as full suits or separate tops and bottoms. Some are designed for use under wetsuits, drysuits or by



A thin neoprene shorty is handy for layering with a full suit when you need a little extra insulation. It can also be a welcome addition for those multi-dive days; if it cools off a bit between dives, pulling on a dry shorty first can take a lot of the sting out of donning your still-wet fullsuit.

Another option is layering with

themselves, and they're wind-proof, so they help keep you warm on the surface between dives as well. Plus, they don't add buoyancy, so you don't need to add lead when you layer them.

Another versatile option is layering with electrically heated gear, which lets you push up the heat when you feel a chill.

1



Soft slip-on
comfort and
protection for
your feet

2



Economical boot
built for temperate-
water diving

3



Provides chafe
protection and
increased comfort
inside full-foot fins

1] IST SPORTS FREEDIVING BOAT SOCKS

With a plush, fleecy lining, these boat socks are as comfortable as bedroom slippers—but a lot tougher. Designed for use under full-foot freediving fins, they work as a liner inside any fin for warmth and to prevent chafing or blisters. The nonslip sole and neoprene insulation make them great for use on a boat to keep your feet warm and protected.

\$32 | istdivingsystem.com

2] SCUBAPRO BASE DIVE BOOT 4 MM

Made for use in cooler waters, these boots are made of 4 mm neoprene. Rubberized armor on the top of the foot, toe cap and heel provide protection without sacrificing comfort. The heel pad features a fin-strap retainer, and a gusset zipper provides durability and comfort. Thin soles increase flexibility and provide an effective anti-slip tread, and a new color-coded logo differentiates sizes.

\$55 | scubapro.com

3] SCUBAPRO HYBRID SOCK

These dive socks are made from a 2.5 mm limestone-based neoprene. Everflex neoprene with a plush interior lining provides warmth, comfort and easy donning and doffing. A thin textured sole provides light nonslip protection. These socks can be used for added warmth or as a liner inside a full-foot fin. They can also be worn on a chilly boat deck during a surface interval.

\$38 | scubapro.com



Insulating top is warm and neutrally buoyant

LAVACORE LONG-SLEEVE TOP

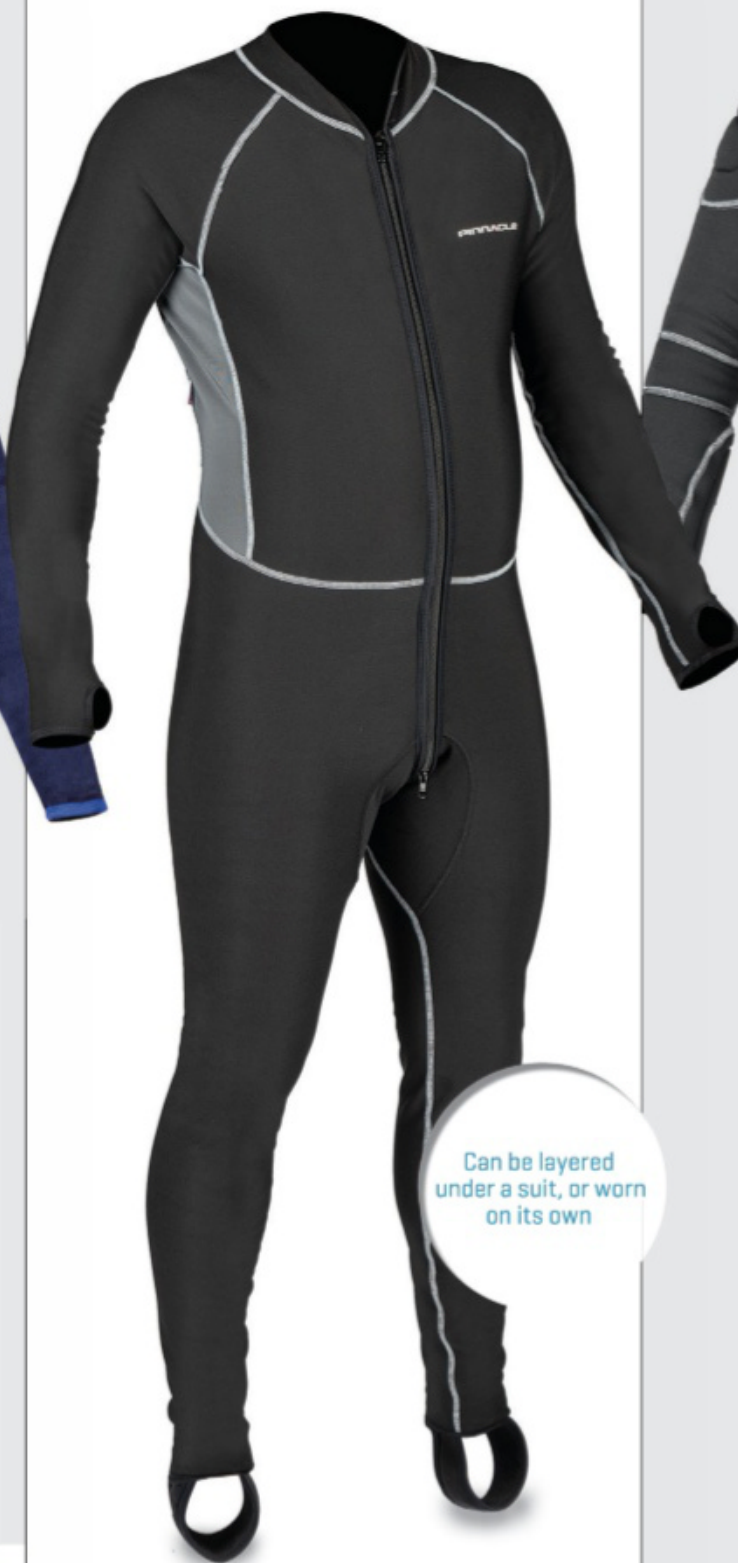
This versatile multisport top provides thermal protection for your core. It can be worn alone in mild conditions or layered beneath a wetsuit as temperatures drop. A fleece lining provides warmth and wicks moisture away from the body. Flexible merino-lined material under the arms improves comfort and breathability. The flexible outer layer is water-repellant and windproof.

\$129.95 | lavacoreinternational.com

READ THE LABEL

Some of the modern wonder fabrics used in dive wear provide a surprising amount of warmth for their light weight and stretchy comfort. But just as with wetsuits, to get maximum performance and wear from your exposure suit, check the label

for proper care before you pitch it in the washing machine. Some materials have specific instructions for laundering, including hand-wash only. Others specify not to use fabric softener, harsh detergents, hot water or clothes dryers.



Can be layered under a suit, or worn on its own

PINNACLE INFERNO FZ

The Inferno FZ is made of a triple-laminated material that provides thermal protection without adding buoyancy. Merino wool lining in the torso helps warm the body's core, while a breathable membrane adds wind resistance out of the water. A high-stretch Lycra outer layer provides flexibility and allows for a natural range of motion. The front zip and handy thumb and heel loops make for quick and easy self-donning. It can be worn alone, or under a drysuit or wetsuit.

\$279.95 | pinnacleaquatics.com



Breathable fleece material provides warm, dry comfort in a drysuit

SCUBAPRO K2 EXTREME

Designed for drysuit diving, this one-piece suit is made from a high-stretch breathable dual-fleece material designed to maintain maximum warmth while allowing unwanted moisture to escape. It has compression padding at the shoulders, chest and knees for comfort and protection. Elastic wrist loops and heel straps help avoid ride-up and make for easy donning. Secure zippered hip pockets are useful for keeping small items close at hand.

\$339 | scubapro.com

1



Also available in a model designed for use in a drysuit

2



Also available with wireless remote control

3



Design of air-filled fibers inspired by polar bear fur

1] VENTURE HEAT 40-WATT HEATED UNDERSUIT PRO

Electric heating panels in the front and rear of this vest keep you warm even in frigid dive conditions. Designed for wear under a wetsuit or drysuit, it's powered by a pair of rechargeable lithium batteries with rugged aluminum casings rated to 300 feet. Three power levels can be adjusted via the wrist-mounted remote control, with the power level indicated by a vibrating receiver on the vest.

\$699 | ventureheat.com

2] VENTURE HEAT 20-WATT HEATED UNDERSUIT WAVE

Featuring a heating element in the rear of the lightweight vest, the Wave model is designed for use by itself or under a wetsuit, with the specially designed compact, submersible batteries mounted in pockets under the arms. Rated to 300 feet, the suit operates for up to five hours on a single charge. Adjust between three power levels with the built-in temperature controller. Includes two battery packs with charger.

\$449 | ventureheat.com

3] WATERPROOF BODY X UNDERSUIT

Designed to provide maximum thermal protection without increasing weight or adding bulk, Body X undergarments are made of a hollow fiber polyester that functions like the fur of polar bears. The fabric wicks moisture away from the skin and pulls it to the suit's exterior, where it can evaporate. Separate top and bottom are gender-specific, and let you choose the right size and thickness of each.

\$80 [top], \$80 [pants] | waterproof-usa.com

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PADI'S NEWLY REVISED
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WATCHES

WATCHES **P106**

CHOOSING A DIVE WATCH

Whether your focus is on style, function or practicality, selecting the right dive watch is as much about you as it is the watch. Here are some things to take into account:

Size There's no foolproof formula for the "right" size, but consider lug-to-lug distance—the dimension between the strap or bracelet attachments from top to bottom. That distance should be slightly less than the width across the flat of your wrist, so the watch doesn't overhang. For men with wrists up to about 7 inches around, a case diameter up to about 46 mm often looks best.

Price You can spend a lot for a dive watch. But you can also buy a well-crafted, stylish model for a lot less than a smartphone—without worrying about it becoming obsolete with the next software update.

Movement Automatic (self-winding) and solar-powered dive watches are popular because they're accurate, robust and convenient. A handy feature in automatics is the ability to manually wind them.

Style Do you want a 200-meter diver that also looks at home peeking out from the cuff of your suit? Or something that only a diver would wear? It's all up to you.

WATCHES

1

Limited-edition watch inspired by vintage underwater timepieces



2

Dive-specific movement vibrates at eight beats per second for precision performance



3

Cool and capable, with 200-meter ruggedness and the ease of solar power



4

Cool look and advanced features with real movie-star cred



1] CRESSI SEA LION

A no-nonsense quartz dive watch that is waterproof to 300 meters, the Sea Lion features a screw-down crown and a unidirectional rotating bezel for tracking dive time. The casing is made of stainless steel and features a silicone strap. The dial is protected by sapphire glass. The dial features a date window and uses luminous material on the hands and markers.

\$649.50 | cressi.com

2] SEIKO PROSPEX SLA023

Displaying its credentials inside and out, this saturation diver features a precision movement designed specifically for dive watches. With date display, and automatic and manual winding capabilities, it has a power reserve of approximately 50 hours. The one-piece 44.3 mm stainless-steel case and bracelet have a super-hard coating to stand up to the most demanding conditions.

\$3,100 | seikoluxe.com

3] SEIKO PROSPEX SNE541

This fashionably cool solar-powered Prospex is part of Seiko's Street Series—timepieces for the urban adventurer combining style with dive watch durability. The watch has a 10-month power reserve when fully charged, and it is water-resistant to 200 meters. It has a lightweight matte-black case, patterned dial and silicone strap with contrasting silver bezel and accents.

\$400 | seikoluxe.com

4] SEIKO SNJ028

This is a new interpretation of the first hybrid analog/digital diver, known for decades as the "Arnie" for its prominent place on the wrist of a certain action-movie star and governor. This update remains true to the spirit of the 1982 original while adding solar power with a six-month reserve when fully charged. With a power-reserve display function, it includes a chronograph and alarm.

\$550 | seikoluxe.com

WATCHES

1



A faithful reissue of the Automatic Diver that became an icon

2



Award-winning style, with strength and performance to match

3



Locking stainless-steel bracelet with built-in extender

4



A design inspired by Seiko's 1968 Diver's Watch

1] SEIKO PROSPEX SPB071

In 1965, Seiko made an international splash with the introduction of Japan's first dive watch. More than 50 years later, Seiko has recreated that iconic Automatic Diver. The 200-meter reissue has updated technology but remains faithful to the original—a design so tough and accurate it would be selected for a grueling four-year Japanese Antarctic research expedition.

\$850 | seikoluxe.com

2] SEIKO PROSPEX SNR029

A 2019 winner of the prestigious Grand Prix d'Horlogerie award, this Prospex LX diver combines elegance and style with superior durability and performance. Water resistant to 300 meters, it has a titanium case and bracelet with a locking clasp. With automatic and manual winding, it features a proprietary Seiko Spring Drive movement for accuracy to within 15 seconds a month.

\$6,000 | seikoluxe.com

3] SEIKO PROSPEX SPB051

The compact case, wide hands and narrow rotating bezel mark this Prospex as a descendant of Seiko's 1965 Automatic Diver. With a stainless case and bracelet, this reinterpretation has automatic and manual winding capability, with a power reserve of about 50 hours. With LumiBrite hands and markers for legibility in the toughest conditions, it offers water resistance to 200 meters.

\$1,000 | seikoluxe.com

4] SEIKO PROSPEX SPB079

A new take on Seiko's cutting-edge 1968 Diver's Watch, this Prospex features a sleek stainless steel case with super-hard coating, luminous hands and markers, and blue one-way rotating elapsed timing bezel. Powered by a precision automatic movement, with water resistance to 200 meters, it includes an accordion-style silicone strap designed to provide a snug fit during dives.

\$850 | seikoluxe.com

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A SEA OF IDEAS

The ScubaLab Innovation Award celebrates trailblazers in the world of dive gear



For more than two decades, ScubaLab has recognized the best in dive gear with the Testers Choice award, selected based on head-to-head testing and featured in the pages of Scuba Diving.

But not all products are suited for ScubaLab testing. Often a good idea may be a single component of a product—a new style of fin strap, or a mask that won't fog. Or it simply might be a new and better way of doing things—dive gear made from recycled products, or biodegradable packaging.

So in 2019, we introduced the ScubaLab Innovation Award to recognize the breakthroughs—in products, practices and ideas—that can change the world of diving. Our hope is that the award calls attention to new concepts, designs and materials

that can enhance our experiences in the water today, and may change the way we dive in the future.

2019 SCUBALAB INNOVATION AWARD WINNERS

Scubapro Galileo HUD

With advanced optics and seamless ergonomics that deliver true hands-free diving, this mask-mounted computer might change the way divers think about head-up displays.

Tovatec Mera

The Mera combines an HD video camera and 1,000-lumen light in a versatile design that makes it simple and inexpensive to dive with a tool that lets you capture underwater images when things get epic.



WATCHES

1



This Automatic Diver is at home on the reef or in the boardroom

2



A contemporary take on Seiko's famous 1968 Diver's Watch

1] SEIKO PROSPEX SPB101

This Prospex Automatic Diver is known as Sumo—a nickname reflecting its generous 45 mm stainless-steel case, wide bezel and thick hands. The graceful, sweeping curves of its case and the rich, deep black of the dial and rotating bezel give it an understated look that's at home anywhere. With auto and manual winding capability and date display, it is water-resistant to 200 meters.

\$850 | seikoluxe.com

2] SEIKO PROSPEX SPB105

This Prospex features a deep-green dial with a shimmering sun-ray finish and luminous gold-accented hands, surrounded by a black bezel. At its heart beats a robust movement with manual or automatic winding. With a stainless case and bracelet with super-hard coating, this stylish watch offers water resistance to 200 meters.

\$1,050 | seikoluxe.com

WATCHES

1



Special edition lets you wear your love of the ocean for all to see

2



The Monster line gets a cool monochromatic treatment

1] SEIKO PROSPEX SRPD21

This special-edition Prospex features a dial of dancing blue waves, a distinctive case shape known as the “turtle” by its fans and a second hand in the shape of a great white’s fin. With automatic and manual winding, this durable watch features a power reserve of approximately 41 hours. Water-resistant to 200 meters, it has a stainless-steel bracelet with a built-in extension for wear over a wetsuit.

\$525 | seikoluxe.com

2] SEIKO PROSPEX SRPD29

The latest in what Seiko fans refer to as the “Monster” line ups the ante on the series’ aggressive aesthetics with a black sun-ray dial and black stainless-steel case and bracelet. The wide rotating bezel is boldly marked, and the markers and hands feature LumiBrite coating for high visibility. It has automatic and manual winding, and a power reserve of about 41 hours.

\$550 | seikoluxe.com

3] SEIKO PROSPEX SRPD23

Bearing a blue wave-patterned dial and shark fin-shaped second hand, this rugged special edition Prospex includes a gradient blue and grey one-way rotating elapsed timing bezel. It has automatic and manual winding capabilities, a date display, rotating bezel, and locking crown. The stainless-steel bracelet offers a tri-fold clasp with lock and a push-button release.

\$525 | seikoluxe.com

3



A warrior for the sea, this Samurai wears the deep blue of the ocean



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TIPS TO IMPROVE YOUR SAFETY, SKILLS AND BOTTOM TIME



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In this situation, the remaining dive team had to care for one of its own while also organizing and executing a search-and-rescue operation for the missing person.”

DON'T BE A HERO
PAGE 120

RON WATKINS

Knowing how best to outfit your photo rig for your needs is key, as this diver shooting under a pier in Bonaire surely knows. “A compact camera properly set up for underwater shooting will consistently outperform a \$10,000 SLR without the right accessories,” says our expert Imaging columnist Alex Mustard. **Read more tips for buying photo gear on page 112.**

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CHOOSE WISELY

What to consider when putting together your underwater photo rig

TEXT AND PHOTOS BY ALEX MUSTARD

Making images underwater is a technical branch of photography, and specific gear is essential for many shots. There is also no escaping that this is a pricey passion; the specialist gear is more expensive than we'd all prefer. But it gets even more costly when you buy the wrong things for the job. This article is here to help. I won't compare brands here, but hopefully will help you invest wisely.

Many underwater photographers are addicted to having the latest and greatest underwater camera. I know because I am one of these gear addicts! Nobody refutes that technology marches on, and it is pleasurable to own and use the latest tech. But despite what marketing sometimes tells us, the previous generation of gear is in no way obsolete. By far the cheapest way into underwater photography is to go for secondhand combos. Photography has always been a buyer's market, so scan specialist classifieds and make an offer.

That said, here's what you should know when you buy.



TIP 1**CAMERAS AND LENSES**

Perhaps surprisingly, the actual camera is one of the least important components in an underwater photo system. A compact camera properly set up for underwater shooting will consistently outperform a \$10,000 SLR without the right accessories. Image quality is greatly affected when shooting through water, and the correct lenses, housing and strobes are what give you standout shots. That said, the camera remains one of the most expensive parts of a system, and you'll want to choose the right camera for you.

Cameras with lots of physical buttons and dual command dials (separate finger and thumb dials for shutter speed and aperture) are much easier to use in a housing. Cameras that require you to navigate through on-screen menus or press multiple buttons to change basic settings will lead to missed shots.

Always make sure any camera you plan to purchase is fully compatible with all the lenses you want to use. A high flash synchronization speed, the fastest shutter speed a camera can use with strobes, is valuable both for producing clean black backgrounds in macro and controlling sunlight in tropical wide-angle shots.

Cameras that offer thumb focus, or back-button focus—in which autofocus is deactivated on the shutter release and assigned to a button that falls right beneath your right thumb on the rear of the camera—are valuable for shooting action, split levels and supermacro.

Most of the best underwater photographs are taken within touching distance of the subject, so close-focusing lenses are essential. At minimum, you'll need an ultra-wide-angle or fisheye and a close-up or macro lens. Most cameras come with zoom lenses, but these are neither wide enough nor close focusing enough to be useful alone underwater.

Compact cameras are transformed by adding supplementary wide-angle and close-up lenses. Known as wet lenses because they are waterproof, they make it possible to photograph a wide range of subjects on a single dive. SLR and mirrorless cameras require ultra-wide-angle and macro lenses and the appropriate ports to fully realize their potential.

For me, the fisheye is the most



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important lens underwater, where there are few straight lines and we want to shoot as big a scene from as close as possible. Wet diopters for supermacro are very popular and can be used on almost every system to capture the tiniest subjects.

All lenses are not created equal, and it is important to do some research to ensure appropriate quality. Generally, you get what you pay for.

TIP 2

HOUSINGS AND STROBES

One strength of an underwater rig is its modular design, which makes it adaptable. The key to making outstanding images is to be able to swap out ports, strobes, strobe arms and more to get the perfect tool for the shot.

All underwater housings are designed to do the same job: keep a camera dry while it takes underwater photos. But that doesn't make them equal. A reliable and ergonomic housing could be the



Evenly illuminating a large scene like this, inside Cayman's Kittiwake, demands a lot from underwater strobes.



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difference between capturing a fish in a perfect pose or leaving you snapping at its tail. Rather than choose among every brand out there, my recommendation is to find a retailer you like and choose from the brands they support. Also, consider brands that your buddies use—you'll benefit from their knowledge and even be able to share accessories and spares.

The most important features on a housing are the shutter release, aperture and shutter speed dials, which you'll use for almost every shot. All need to fall easily at your fingertips and be easy to adjust. Some people have big hands, some small; some dive in thick gloves—even if someone recommends a housing that doesn't feel right, it's not right for you.

Light is the very medium of photography, and almost every underwater photo is taken with strobes (underwater flashes), so they should be one of your most calculated purchases. Serious underwater photographers have two strobes, which helps them achieve a more natural illumination and also produces creative lighting effects. Ideally, strobes should be a matched pair so that a click up of the power of one and down on the other will maintain the total power output.

Underwater photos are taken from close range, making wide, diffused light highly desirable for achieving natural-looking lighting, free from hot spots. This is far more important than absolute power. Strobes with large, circular flash tubes will generally produce a wider, more even spread of light than those with short, straight tubes, and are easier to aim. Diffusers soften and spread strobe light farther, but also reduce penetration in the water. There is no perfect underwater strobe. Big strobes have the power and coverage to light large scenes, and can pack in big batteries for quicker recycling. But they are expensive and bulky, both in your luggage and when you're trying to position them close to the camera for macro work. Smaller strobes might struggle to light scenes or big animals in bright conditions, and usually produce a harsher light. But they are easy to travel with and great for macro.



ALEX MUSTARD, an award-winning shooter who dives all over the world, has a Ph.D. in marine ecology.

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9

PHOTO GEAR BAG

HOT NEW UNDERWATER
PHOTOGRAPHY PRODUCTS

BY BRENT DURAND



NAUTICAM WWL-C

PRICE \$1,035 CONTACT nauticam.com

A new generation of water-contact optics is disrupting the traditional lens-and-dome-port optic solution for underwater photographers, offering more versatility and stunning image quality in a single gear configuration. To date, compact camera wet lenses have been primarily designed around a 28mm wide-angle focal length, and since most modern compacts zoom to 24mm, there is a need to zoom in slightly to avoid vignetting. The WWL-C changes that. "It offers 24mm focal length compatibility without vignetting, and improved image quality across a range of compact cameras—from 1-inch sensors to smaller sensors like the Olympus TG-6," says Kevin Palmer, of Reef Photo & Video.

FROM TOP: TOBIAS FRIEDRICH; COURTESY NAUTICAM



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9

PHOTO GEAR BAG



ANGLERFISH REMOTE TRIGGER V3.0

PRICE \$259.99 CONTACT anglerfishlighting.ca

Remote strobe triggers are used to create many underwater wreck and cave photos because they allow strobes to be triggered off-camera without a physical connection. This trigger simplifies the process of setting up a remote strobe, making it an essential accessory for the serious photographer. The trigger's new features have earned praise from industry experts: "This clever unit offers much improved performance, a wide-angle coverage optical sensor and the option to trigger strobes remotely by electrical sync or fiber optic—a first in the industry," says Kevin Palmer, of Reef Photo & Video.



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PRICE \$110 CONTACT sagadive.com

Take your creative macro shooting to the next level with the Saga Magic Tube. This long tube creates artistic swirling ring effects around the image subject, reflecting colors and patterns into a circular border. Each subject will be framed by these swirls and reflections when photographed through the Magic Tube, making it a great accessory for those who like to experiment with creative images. The more color in the subject, the more vibrant the effect. Adding some of these photos to your trip portfolio is a sure way to make it stand out from the rest.



BRENT DURAND is a professional writer and underwater photo instructor. Find his in-depth video tutorial series at brentdurand.com.

FROM TOP: COURTESY ANGLERFISH CREATIVE LIGHTING; COURTESY SAGA [2]



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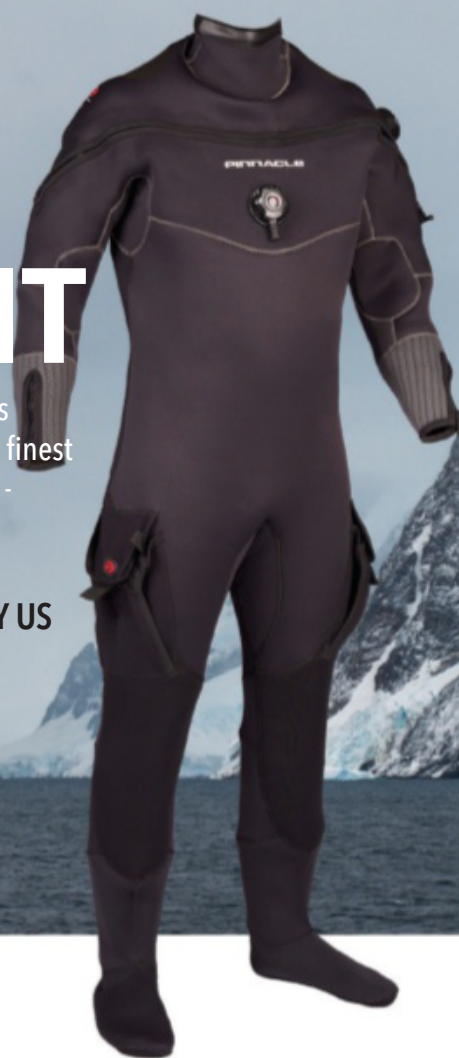
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ERIC DOUGLAS co-authored the book *Scuba Diving Safety* and has written a series of adventure novels, children's books and short stories—all with an ocean and scuba diving theme. Check out his website at www.booksbyeric.com



DON'T BE A HERO

Heart attack leads to death of public safety diver who failed to wait for backup

BY ERIC DOUGLAS

The call went out: A person might be missing in a local lake. Butch was the first to arrive at the scene and quickly prepared to dive. He knew time was of the essence. His dispatcher told him the rest of the dive team was on its way and that he should wait, but he decided to enter the water to search for the missing person.

THE DIVER

Butch was a 52-year-old diver with his local volunteer fire department dive team.

He was in fair health but took medication for high blood pressure.

THE DIVE

When the call came in about a missing

person, Butch was at home having a cookout with friends. He had been drinking but decided to respond to the emergency. He lived near the lake and believed he could help. Butch grabbed his dive gear and headed out.

Butch was the first responder at the lake. He jumped on the emergency radio to find out how long it would be until

ILLUSTRATION: STEVEN P. HUGHES

the rest of the team arrived. The dispatcher told Butch the team was on its way but it was going to be 15 minutes. Judging that might be too long to save the person in the lake, Butch geared up, donning extra lead in his weight belt, and entered the water without his fins.

THE ACCIDENT

When the rest of the dive team arrived at the lake and surveyed the scene, they saw Butch's truck, but he wasn't anywhere to be found. Minutes later, a member of the dive team saw Butch floating unconscious on the surface. The team immediately entered the water and pulled him to the shore. When they reached him, Butch's regulator was out of his mouth. Medics on scene attempted to resuscitate Butch, but their efforts were unsuccessful.

ANALYSIS

One of the first things a professional rescuer learns is to put their own safety first. That includes wearing protection, such as gloves and masks, against potential body substances, but it also means waiting until a scene is secure, and making sure it's safe to begin—in this case having the appropriate surface support.

Considering the lack of a reliable witness to show Butch where the person went missing and the time that had elapsed, this should have been treated as a recovery, not a rescue. The rest of the team was in that mode.

In Butch's case, he did a number of things wrong. The autopsy indicated that he had a blood alcohol level of 0.25 percent. That is more than three times the legal limit to drive a vehicle in most states. It is likely the alcohol in his system clouded his judgment when he decided to enter the water and begin the search alone. He shouldn't have even driven to the lake, much less donned his dive gear and attempted a rescue.

Public safety diving, the underwater work of fire and police dive teams, comes with a number of risks. They often dive in situations with low visibility and underwater entanglements. They often face cold water and currents.

Well-trained teams work in groups, with surface support and backup divers ready to enter the water at a moment's notice if the divers in the water have any trouble. Butch entered the water



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alone. This is not necessarily unusual, depending on conditions, but there should have been surface support, spotters and backup present. Typically, the diver wears a harness with a rope attached, so if the diver gets in trouble, the surface support can locate the diver quickly. Depending on the dive team and the situation, divers may wear full-face masks and communications gear so they can coordinate the search with the diving supervisor. It isn't unheard of for a diver to enter the water without fins, but it doesn't make much sense either.

The autopsy determined that Butch's cause of death was a cardiac event due to hypertensive cardiovascular disease. In other words, he had a heart attack in the water.

The investigation into his death also determined there was an elevated level of carbon monoxide in his breathing gas and that his equipment was poorly maintained and unsafe. The elevated CO in his tank could have come from an improperly set up compressor that allowed automobile exhaust (or exhaust from a gas-powered compressor) to enter the compressor intake.

In this case, Butch could have had a heart attack walking down the street or at his family cookout. But diving alone in a strange environment with poorly maintained gear and bad breathing gas might have pushed his body over the edge.

In this case, Butch could have had a heart attack walking down the street or at his cookout. But diving alone in a strange environment with poorly maintained gear and bad breathing gas might have pushed his body over the edge.

Had he been wearing a full-face mask, he would not have lost his regulator, and there is a greater chance he might have survived the incident. Even after losing consciousness, he could have continued to breathe. There is also a chance that he might have gone into sudden cardiac arrest on the bottom and died. We will

never know exactly what happened. Regardless, Butch never should have entered the water alone or with poorly maintained gear.

Ultimately, there are two big issues here. One is general health and fitness to dive. Especially as we age, it is vitally important to maintain an acceptable level of fitness. There is some debate among diving physiologists about what level is appropriate, but all divers should be healthy enough to respond to underwater emergencies, unexpected currents and long swims in full gear. High blood pressure is not an absolute contraindication to dive, but you need to make sure you are fit and stay in close touch with your doctor. Your doctor should understand the unique situations and stresses the diving environment puts on your body.

Public safety divers need to be able to function at an even higher level. They are diving in stressful situations with heavy gear in less than ideal environments.

The second point is training and proper execution of the dive and search. There are many well-trained and properly outfitted volunteer and professional public safety dive teams. They dive regularly, taking specialized search-and-rescue training. Butch was intoxicated. He was using poorly maintained gear, and he broke every public safety diving protocol to do it.

In this situation, the remaining dive team had to care for one of its own while also organizing and executing a search-and-rescue operation for the missing person. That person had drowned and was found later at the bottom of the lake.

Thanks to retired deputy fire chief Bob Sharp, a PADI Master Scuba Diver Trainer with 27 years of public safety diving experience, for his assistance with this Lessons for Life column.

LESSONS FOR LIFE

- **Be healthy to dive.** This applies to every diver, every dive.
- **Consult a diving physician.** This is especially important if you have been diagnosed with a medical condition that might make diving unsafe.
- **Training.** Do not enter a dive environment that you aren't prepared for.

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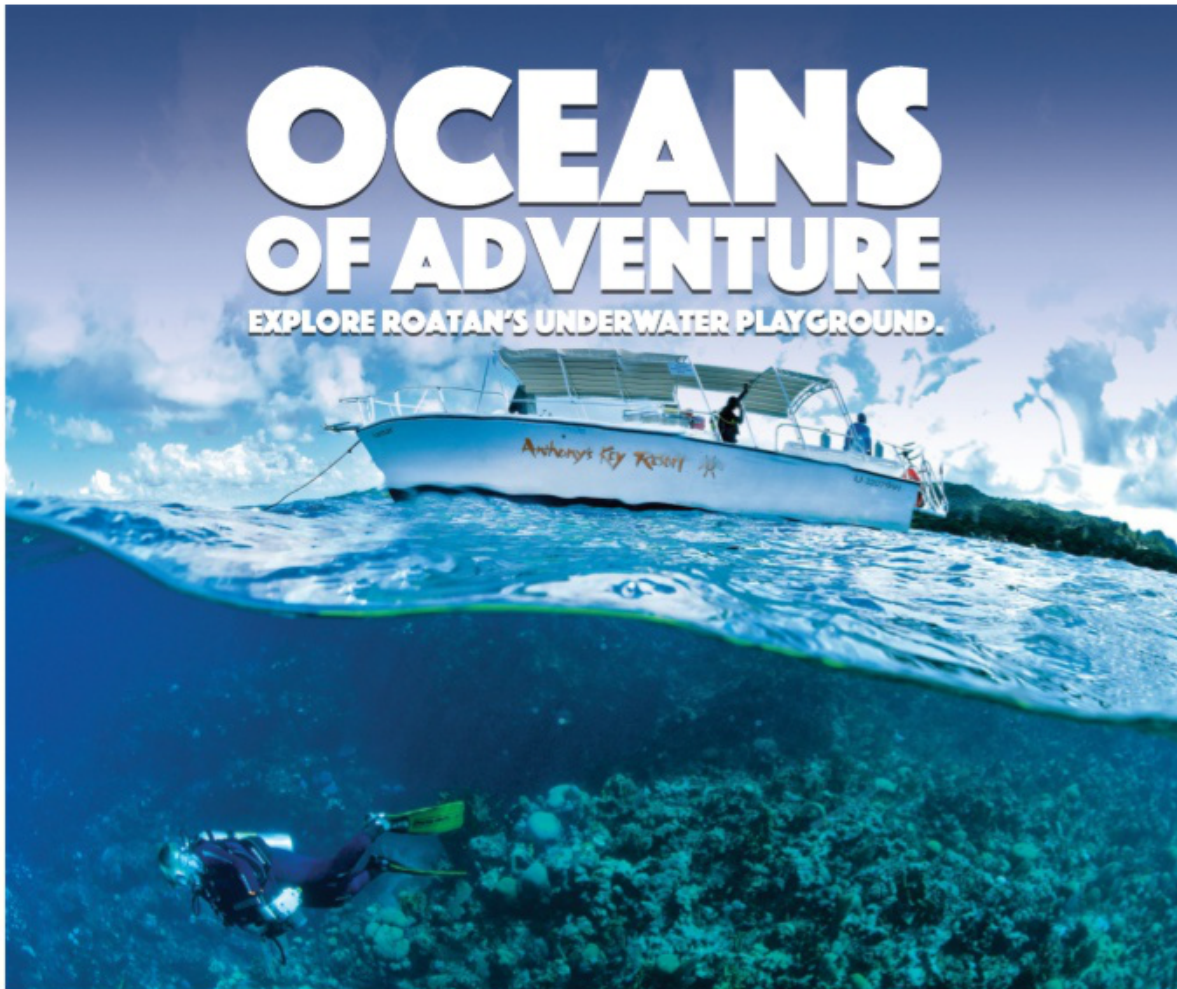
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NEAT FREAK

Five tips to streamline your gear for easier diving



1. CARRY ONLY WHAT YOU NEED Loading down the D-rings with so much gear you look like a Christmas tree is a common mistake. Instead of clipping on every gadget you own, be selective. Shallow reef? Leave the stage bottle behind. Wreck penetration? Trade your fish ID cards for a reel and dive lights.

2. MINIMIZE AND SECURE HOSES Never leave your hoses hanging, and cut out extra hoses when you can; using a computer with a remote air sensor will eliminate the need for a high-pressure hose. Make sure your octopus and gauges are clipped securely to your BC, with the hoses routed properly under your arms.

3. STOW THE SNORKEL On some dives, like wrecks or those with high current, a snorkel can be cumbersome or a snag hazard. But it is required equipment (and we never dive without one). In rough conditions, opt for a collapsible model that fits in your BC pocket. This way you'll still have it at the ready when you want to save air at the surface.

4. DIAL IN YOUR WEIGHT Wearing too much weight forces you to overinflate your BC, which causes drag and burns air. Wear just enough weight that when you exhale completely at the surface, you sink to eye level. You'll have to work a little to descend at first, but once you're 5 to 10 feet down, you'll have near-perfect buoyancy without adding any air to your BC.

5. GET THE RIGHT FIT Comfortable, well-fitting gear is another key to staying streamlined, and the most important pieces to consider are your wetsuit and BC. The best way to get the right fit is to visit your local dive shop, where you can take your time to find the make, model and size that suit you perfectly.

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ASK DAN

Why is redundancy important for recreational divers?

BY DIVERS ALERT NETWORK

Redundancy is a hotly debated topic among technical divers, and the debates are often over whether two pieces of gear are enough or three are needed. These discussions are less common among recreational divers, although they run into trouble underwater as well. Too often the extent of divers' efforts to include redundant gear is leaving a spare computer on the boat or putting a whistle and signal mirror in the pocket of their surface marker buoy. Talk redundancy with your buddy this year, and take a look at how you can reduce risk during your dives.

REDUNDANCY ISN'T A BAD WORD

Redundancy is not a new concept, and it's

relevant no matter what kind of diver you are. Whether you realize it or not, you've been employing redundancy on your dives since you were first certified. In PADI Open Water Diver training, students are taught to assemble their gear, check it and then go over it again during pre-dive checks with a buddy. This form of redundancy helps keep problems from going unnoticed, enabling divers to prevent incidents before they even hit the water. In fact, the buddy system—a cornerstone of diving—is all about having a second pair of eyes, a second set of equipment and a second brain to solve any problems that arise.

REDUNDANT EQUIPMENT

Almost every recreational diver carries

an octopus on their regulator—that's one widely accepted piece of backup equipment. The likelihood of a primary second-stage failure is small, but that's part of what redundancy is about. Incidents in diving are thankfully rare, but when they do occur they can be serious. Redundancy is about bringing enough equipment to provide a margin of safety in the event of the most common or serious failures, but not so much that the diver's safety is compromised or their enjoyment of the dive is unduly diminished. Striking the right balance requires some thought and consideration.

Some dive gear has inherent redundancy. Your BCD likely has several ways to vent gas: one on the shoulder (either

a vent or an inflator hose] and another lower on the vest or wing. The typical regulator configuration and BCD dump redundancy are common because they address two possible problems: second-stage regulator failure and loss of buoyancy control. These are a good start, but there's room for more redundancy in our equipment choices and practices.

REDUCING YOUR RISK

There are a wide range of options you can consider to prepare for serious and common incidents. Whether your favorite dive is a deep, dark wreck or a shallow quarry, a spare mask is an excellent thing to have. Mask failures, leaks and losses are not unusual, and unexpected mask loss generally means the end of an otherwise lovely dive. It may even cause panic or an uncontrolled ascent. A spare mask can fit in a pocket and will make a world of difference if you really need it. The same applies to lights for a night or wreck dive—it can be disorienting to suddenly find yourself with a dead light, and signaling the boat in an emergency becomes much more difficult. Tuck a small, inexpensive light in your pocket (next to your spare mask!), and you'll be covered for most eventualities.

Many redundancy considerations will be based on the diving you're doing. While a diver exploring a multi-sump cave project might bring a second rebreather to facilitate a safe exit from their farthest point of exploration, such a thing would clearly be out of place on a daytime dive on a shallow reef. If your dive involves current or a trip offshore, bring a surface marker and several additional ways to signal for rescue (lights, dye packets, radios in dive canisters, etc.). Many deep dives warrant a redundant gas supply. You might bring a spare regulator and mask on your next liveaboard trip in case yours are lost in transit, but you might be able to get away with just your bare necessities on a local shore dive.

Choosing how to apply redundancy will involve a serious look at what's most likely to cause problems in the specific type of diving that you're doing. As long as additional equipment doesn't pose a hazard itself in the form of task loading or entanglement, it's a good bet that bringing it along will help keep you safe on your next dive.

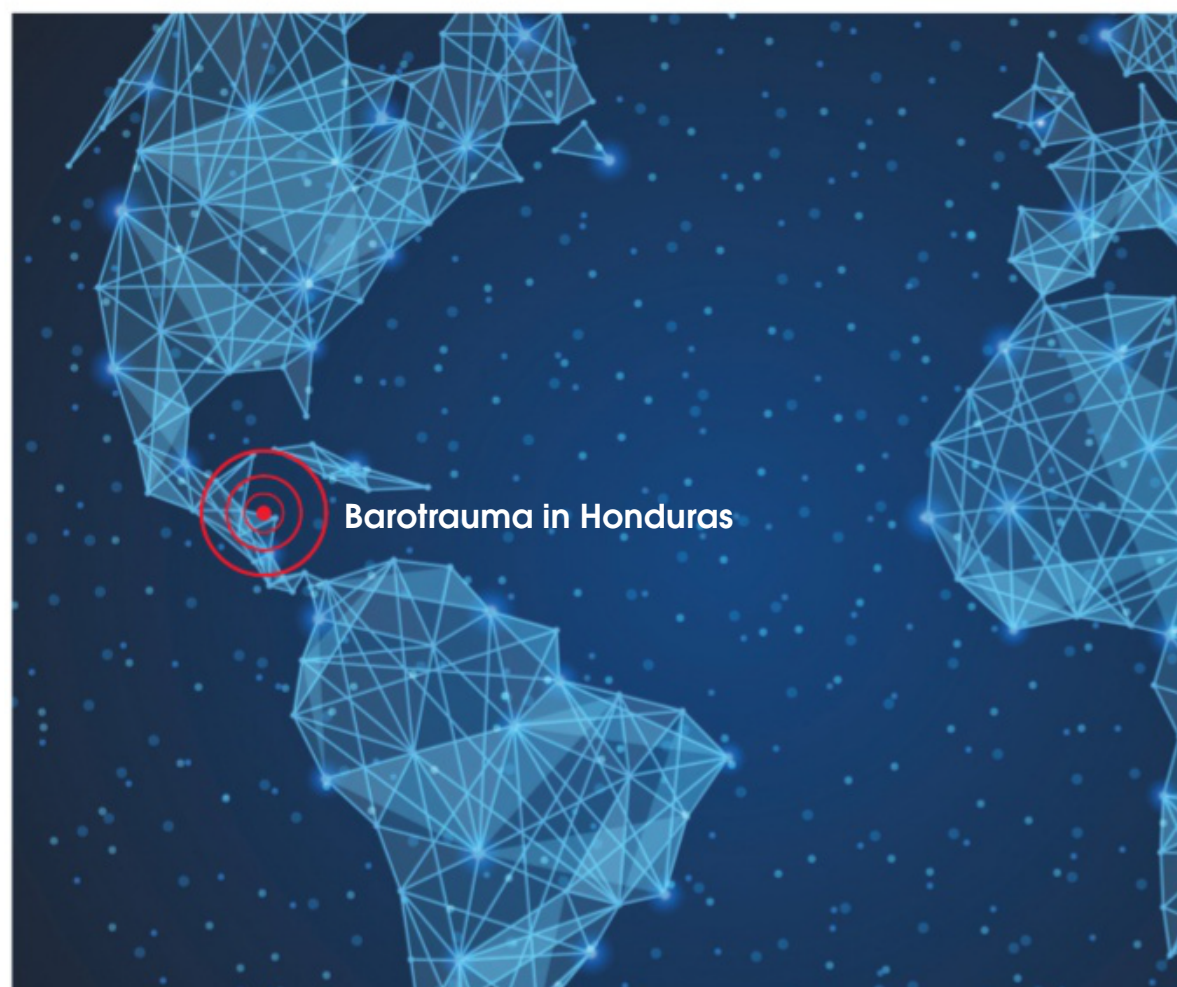
For more information on safe diving practices, visit dan.org.



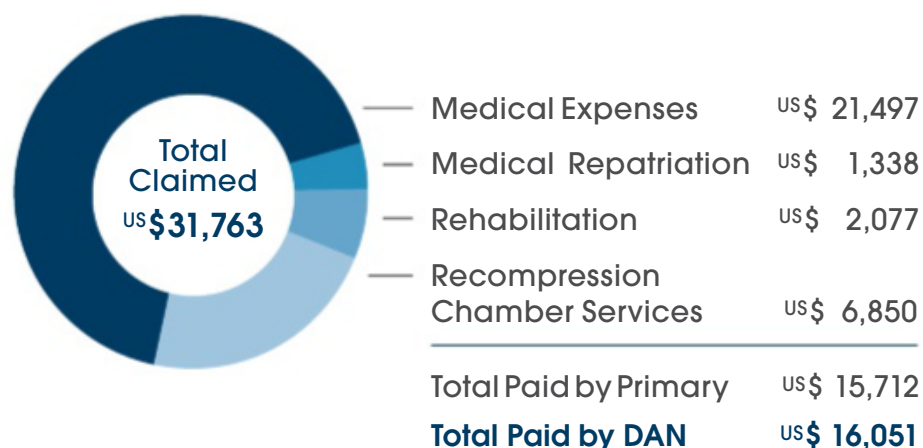
A WORLD OF DIFFERENCE

Your primary insurance may be oceans away from what you need. That's when DAN dive accident coverage can help.

DAN.org/Join-DAN



A diver injured in Honduras relied on DAN's Preferred Plan to cover expenses not paid by primary coverage. See the full story at DAN.org/Claim-Stories.



The scenario summarized above is offered only as an example. Coverage depends on the facts of each case and the terms, conditions and exclusions of the policy. Depending on the state of residence, insurance is underwritten by either The United States Life Insurance Company in the City of New York or National Union Fire Insurance Company of Pittsburgh, Pa. Coverage may not be available in all states or outside the U.S. Visit DAN.org for complete details.



DISCOVER TECHNICAL DIVING

BY TRAVIS MARSHALL

WHAT YOU'LL LEARN

The decision to learn technical diving requires a serious commitment to continuing education and a significant investment in specialized dive gear. PADI's Discover Technical Diving experience gives curious divers an opportunity to experience the basics of technical diving in a controlled environment to help them decide if a course like PADI Tec 40 is right for them.

"Discover Technical Diving is primarily about the equipment and the philosophy of technical diving," Synowiec says. "I usually do the dive on a platform in a quarry, and I'll set them up with gear—like a Hollis harness and back plate, double tanks, and a 7-foot regulator hose—so they can take it for a spin."

Synowiec also conducts a 45-minute presentation covering everything from different gear configurations to decompression diving, mixed gas, and the philosophy of precision, practice and constant improvement that is required for safe technical diving.

In the Discover Technical Diving experience, student divers get comfortable with the equipment and practice skills like switching to stage bottles, all in shallow water no more than 40 feet deep. "I like to end the dive with a gas switch on normal nitrox and simulated decompression with a 10-minute safety stop at 15 feet," Synowiec says. "That's the maximum decompression time for the Tec 40 level, so it's a good test run to see if technical diving is right for you."



TRAVIS MARSHALL is a Los Angeles-based writer and diver covering scuba diving training and travel.

COURTESY PADI

If you're the type of diver who dreams of diving deeper and longer than recreational diving allows, PADI's Discover Technical Diving experience is a great way to get an introduction to the equipment, skills and underlying philosophy of technical diving.

BENEFITS

Technical divers can seem like superheroes of diving, with the skills and discipline to do things regular divers can't. They may dive far beyond the 130-foot recreational depth

PREREQUISITES

To experience PADI's Discover Technical Diving course, you must be an open-water diver, at least 18 years old and have a minimum of 10 logged dives. You will also need your mask, fins and exposure suit.

limit. Planned decompression gives them bottom time that dwarfs what's allotted by no-decompression dive tables. And their dive equipment is purpose-built and finely tuned for spending hours underwater.

"I get a lot of divers who are interested in Discover Technical Diving because they see my photos of immaculate wrecks in the Great Lakes or shots of tropical reefs at 150 feet," says Rich Synowiec, a PADI Course Director and technical diving instructor who owns Divers Incorporated in Ann Arbor, Michigan.

"They're passionate about diving, and they want to go deeper, but they're not sure if they're ready to make the commitment to technical diving," Synowiec says.

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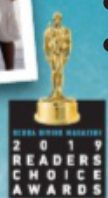
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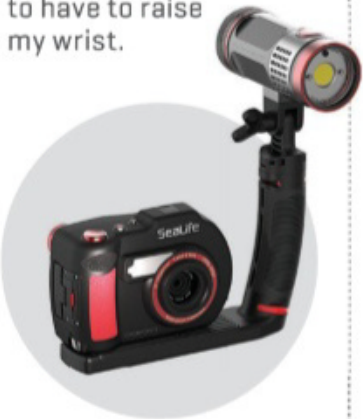
HERE'S THE GEAR THAT LEFT SUCH A GOOD IMPRESSION
OUR EDITORS COULDN'T KEEP THEIR HANDS OFF IT



Roger Roy
ScubaLab Director

SCUBAPRO GALILEO HUD

Diving is full of those sublime moments when you ask yourself, *What could be better than this?* The answer offered up by the Galileo HUD was: How about not having to take your eyes off the action? After just a few dives with the tiny, mask-mounted computer, I was so used to getting all my dive data without lifting a finger that it seemed like an unwelcome interruption to have to raise my wrist.



Becca Hurley
Digital Editor

SEALIFE SEA DRAGON 5000F

"Powerful" and "simple" are just two reasons the Sea Dragon 5000F lights have become my go-to video lights, especially for travel. I've found the



compact design to be lightweight compared to other video lights on the market, and the one-button operation makes shooting underwater in changing conditions effortless. The cherry on top is the travel adapters that come with the lights, making it easier to get up and go without having to purchase a new adapter for every overseas trip.

Robby Myers
Associate Gear Editor

CRESSI FAST
The Fast 7 mm wetsuit uses a band of stretchy liquid seal to form a ring



inside each cuff. Simple and effective, the seals keep water entry to a minimum. The seals are also very easy to get on and off, which came in handy while diving numerous times a day aboard *Galapagos Aggressor III*. Even after a week's worth of diving in water temps ranging

from 58 to 75 degrees, I was never uncomfortable in the water.

Dave Carriere
Associate Editor

TUSA HYFLEX SWITCH

I never feel like I have to struggle against these fins to maneuver



underwater—they feel like a natural extension of my feet. The foot pocket is comfortable and snug when paired with a nice set of boots, and I find the blades have just the right stiffness for comfortable, efficient kicking.



Mary Frances Emmons
Editor-in-Chief

AKONA COLLAPSIBLE MESH BACKPACK

Set in my ways? Me? I have a rep with our young staff of sometimes being overly attached to my ancient and highly reliable gear, but my immediate fondness for the Akona Collapsible Mesh Backpack has proved them wrong. Yes, it has all the classic features I require: sturdy construction, wide drawstring mouth, full-length interior pocket and side zipper, fat front pocket. But it also offers some surprises, such as the clever zippered bottom compartment—big enough to stow a nylon boat coat and a quick-drying towel—that reverses to become a nearly flat case for the backpack when not in use.



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