

Also active on the rechargeable alkaline front is SLM Corp's Buddy L charging system. SLM claims it can charge *any* alkaline — but unlike Renewal, it will not bring batteries back up to full charge. It can give your drained alkalines a second life in low-cutoff devices, however. Some divers retire alkalines from their strobes after every dive and charge them in a Buddy L for use in dive lights.

Lithium cells have been very popular for several years due to their extremely long shelf life. Until recently, lithium cells have been available only in 3- and 6-volt designs in unique configurations. As a result, they were seldom used as replacement batteries except in devices built to use them. Last year Eveready introduced a lithium AA battery that shows some promise. Be forewarned, however, that the nominal output voltage of this battery is 1.7 volts. Nikon and other manufacturers are specifically advising against its use pending further testing. Many divers report outstanding results with this battery in halogen flashlights.

Notebook computer manufacturers have been promoting the development of higher-performance, memory-free, environmentally friendly replacements for the nicad battery. The most likely candidate is nickel metal hydride (NiMH). Now available in AA and C sizes, these do indeed have higher capacity than nicads and are completely free of heavy metals. Charging times are rather long, however, and the few AA models presently on the market have outsized terminals that don't properly fit many chargers and battery holders. As a new product with limited distribution, NiMH batteries are also quite expensive. In

time, however, NiMH batteries may see widespread use.

As divers, we have one additional complication that most topside battery users don't have: salt water. As batteries are built to yield higher and higher current, they become more and more of a risk under water. A leaking dive light can cause some batteries, like high-current gelcells, to generate enough heat during a saltwater-induced short circuit to cause an explosion. Check those O-rings!

On the Horizon

Touted by some as the next great portable power source, lithium-based batteries have, so far, failed to live up to their potential. Over time, lithium electrodes become unstable, making the batteries unsafe to recharge. Chemists at the University of Nantes, France, feel they have solved that problem in a new, recharge-

able, "rocking-chair" lithium battery. To charge and discharge the battery, lithium ions "rock" back and forth between the battery's two electrodes. Lithium-polymer batteries also show promise.

Air Energy Resources in Atlanta plans to introduce new zinc-air batteries this year. Using oxygen from the air to fuel a power-generating chemical reaction, the batteries should provide more energy per pound than conventional batteries. Zinc-air batteries have been shown to last four times longer than heavy-metal batteries and are significantly lighter.

The lesson to be learned about batteries today is that there is no single solution for all applications. By matching the available batteries to your needs, though, you can keep your dive lights bright and your strobes cycling quickly.



Readers Report

Sharks, Galapagos, and Tonga

They Still Have Sharks

The long-line fishermen have come through Stuart Cove's shark-feeding area a couple of times. However, longtime In Depth reader Bob Mugford, Chelsea, Massachusetts, reports that they still have sharks to spare.

Stuart Cove and his crew did their usual outstanding job providing us with some terrific photo opportunities. Sharks

and more sharks — bull, reef, nurse, and a cameo from an 8-foot scalloped hammerhead. Hand feeding silky sharks at the buoy. Will definitely go back.

Galapagos Aggressor

We've been hoping to hear from readers about the new Galapagos Aggressor. Readers Graeme and Kathy Eisenhofer, who were on board in May 1994, report on their experience.

Over the week we dove North Seymour, Marchena, Gordon Rocks, and the northernmost islands, Darwin and Wolf. The diving, especially at the latter two sites, was everything that we had been led to believe — spectacular scenery, prolific sea life, and action everywhere, including all kinds of pelagics and school fish, sea lions and fur seals, dolphins, turtles galore, and last but not least, hammer-head sharks in every direction.

The nine crew members were by far the nicest, most helpful, and friendliest that we have met on any live-aboard. The 90-foot launch is well appointed, with plenty of room above and below decks for the 12 paying passengers. A large work area and E-6 processing are available for the underwater photographer. Each twin stateroom has its own shower and toilet and plenty of stowage space. The upper two cabins are the best, if you are not prone to seasickness. This is comfort plus-plus-plus — and the food was great.

Charters are typically 1 to 2 weeks. One-week charters do not normally allow trips to Wolf and Darwin, where land visits (an important part of the itinerary) are not possible. We were lucky with the weather and to have fellow passengers who were all keen to visit the northernmost islands. Our one regret was not booking for 2 weeks; a week is just not long enough.

Strong currents (that is where the best action is), with the need for drift diving and the use of inflatables, makes this a location for fit and experienced divers. One final point: in the light of prior experience as well as recent tragedies in Palau, we were pleased to note that air horns and inflatable safety sausages were made freely available to those without.

Trouble in Tonga

In Vavua, Tonga, we were on a Moorings Sail boat and hooked up several times with Dolphin Pacific Divers. This was a most disappointing experience. First we rented six tanks at a hefty price, only to find them half empty. We were picked up at our anchorage for a morning dive, only to be

dropped in the water downcurrent of the dive site. We fought to exhaustion to complete the dive as outlined. The afternoon dive was almost as bad. We were instructed to do 40 feet for 40 minutes. We spent most of our time around 25–30 feet but at precisely 40 minutes were ordered out of the water with 2,000 psi left. — Chip Pough, Trooper, PA



Disk Jockeying

Everything You Ever Wanted to Know . . .

The computer on my desk lights up edge to edge with a brilliant color photo of an anemonefish. The music stutters a little, then picks up speed, turning into a mystic melody. A box in the lower left of the screen begins to play a movie of cruising sharks, schooling fish, and gliding manta rays. I've turned on and tuned into the world of interactive CD-ROMs.

When CD-ROMs (compact disk — read only memory) first appeared on the market, what impressed everyone most was the sheer amount of information that could be stored on a single disk — 600 times more than a conventional floppy. What could all this available memory be used for? The beginning rush targeted large reference works such as encyclopedias, phone books, and