

The inside story of the government's secret development of the ultimate "biological weapon."

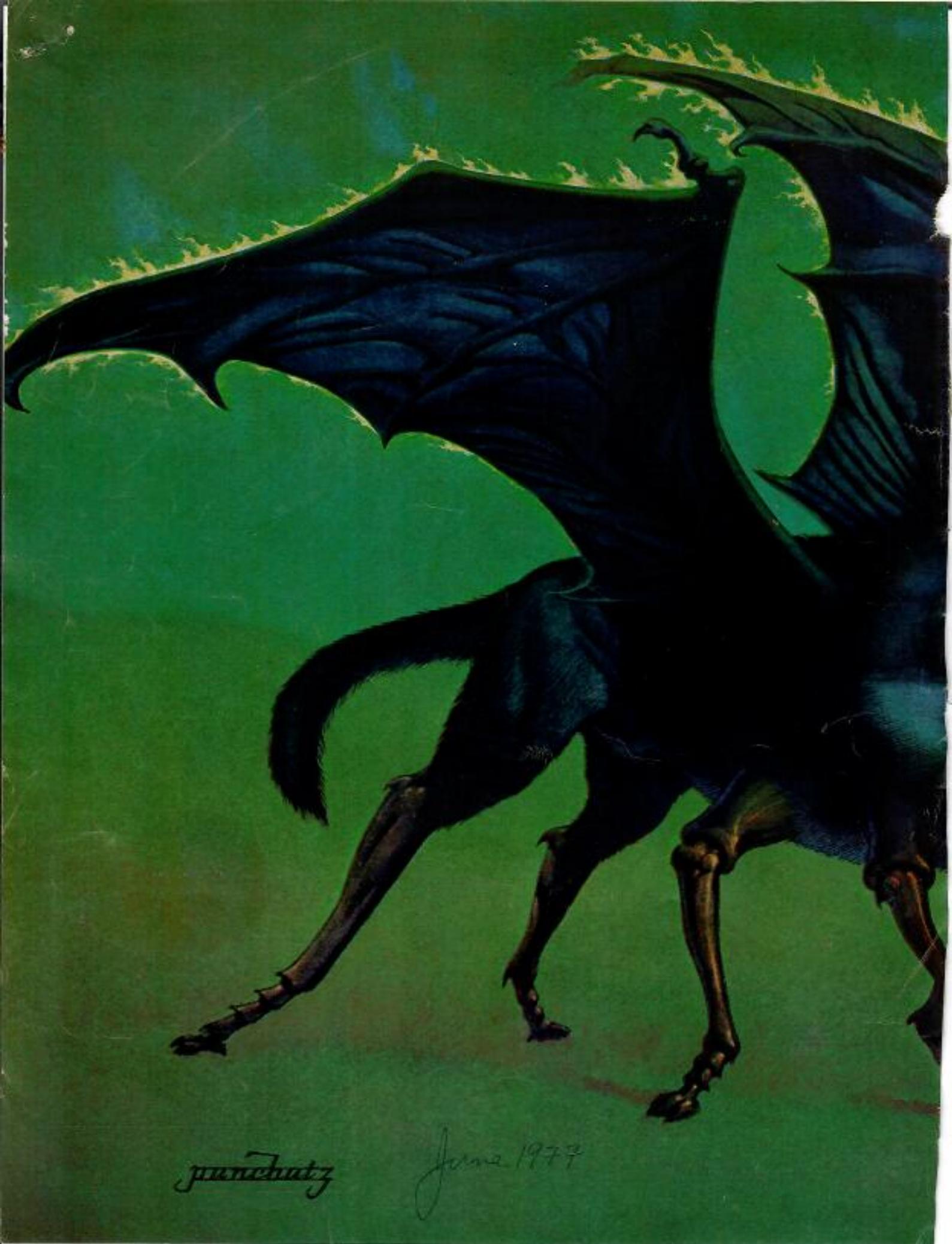
THE PENTAGON'S DEADLY PETS

The dawn is rising like a bright moon over Camranh Bay. It's 1971, and the strong, orange light of the sun on Asian waters glints off the dozens of huge American transport and cargo ships, destroyers, cruisers, and aircraft carriers that lie off the coast of Vietnam, waiting quietly to be unloaded. At dawn few sailors are walking the decks of their ships. Yet farther out, at the entrance to the harbor, six of the navy's newest recruits are hard at work scanning the water for Vietnamese frogmen who may be making the long underwater swim to the anchored fleet.

Every thirty seconds the recruits make a perfect 180-degree sonar sweep of certain approaches to Camranh Bay. It is a superhuman effort, but then the recruits are not human. They are dolphins. Like whales, seals, dogs, and bats, they are the Pentagon's pets.

The six drafted dolphins are housed in an elaborate pontoon boat provided with float-

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ing pens, a guardhouse, and a support team of trainers and researchers. The dolphin pens can be raised hydraulically out of the water and the boat moved if Vietnamese demolition divers have been spotted at other ports.

Dolphin sonar works in the water in much the same way that a bat's radar operates in the air. High-frequency pings are echoed and retrieved off objects. Dolphins make a few mistakes in spotting small tuna and butterfish. With targets as large as a swimmer, they are unerringly accurate up to 1,200 feet away.

If Camranh Bay is clear of scuba divers, the dolphins will hit a "normal response" paddle. But this morning a Vietnamese swimmer with a magnetic satchel charge in his diving pack is slowly moving toward the underwater hulls of the big, gray ships. Instantly sensing the intruder, one dolphin pokes its Coke-bottle nose into a cone conveniently placed in a water-level weapons rack. The lancelike cone is tipped with a heavy-gauge, hollow needle that is connected to a high-powered CO₂ cartridge similar to those that are used to blow up rubber rafts.

The dolphin weighs around 300 pounds; the Vietnamese frogman, about 130. It is no contest. As a CIA dolphin researcher once perceptively phrased it, "The dolphins are the ones in their natural habitat, and they're in control of the situation." When the dolphin reaches the underwater swimmer this morning, he plunges the needle easily into him. It is for the military, again, to provide the perfect medical description of death in this manner: "After ripping the muscle planes of the tissue apart," the "continuing expansion

of the gas brings about the prolapse of the colon through the rectal orifice, while the stomach in turn is caused to balloon out through the mouth."

In other words, the dolphin syringe explodes the frogman from within.

It has been reported that originally the navy, as well as the CIA in a rival program, had experimented with a switchblade apparatus in the nose lance. Later they planned to inject drugs. Neither procedure was developed, because, although lethal, neither confirmed the kills. The CO₂ syringe, first developed as an antishark weapon at the Navy Underseas Center in San Diego, ensured that the dead swimmers would float to the surface like so many harpooned whales to be toted up by navy scientists.

In a proud use of bureaucratized, the navy called death by dolphins "swimmer nullification." "They were deployed for fifteen months," said James Fitzgerald, one of the CIA's top civilian dolphin men, "and they had no swimmer attacks—no successful attacks."

Ironically, however, the navy's swimming assassins may have been too efficient. Two U.S. swimmers were reportedly nullified. Like the German shepherd dogs the Pentagon used on shore, the dolphins had not been taught to differentiate between friend and enemy.

The Navy Underseas Center here in San Diego is one research facility where dolphins are trained by Naval Intelligence. I am standing on my tiptoes at the fence surrounding the guarded compound at the end of Point Loma. A hundred feet beyond lies the Pacific, as beautifully blue here off San Diego as it is in Camranh Bay. Two PT boats

are charging up the deep water channel to the navy's fleet base at Coronado Island, and two miles out a gray whale—one of the first in the fall migration—is spouting.

Inside the compound I can see four dolphin pools. Like the pools in the backyards of retired naval officers all over San Diego, these pools are made of redwood and lined with turquoise-colored plastic. I don't know how bored a retired admiral gets, reminiscing over a margarita at poolside about Midway and Vietnam, but the dolphins look plenty bored in their little tanks.

They are about eight feet long, and they swim round and round—two and sometimes three of them in their no-exit swimming holes—as if some Captain Queeg had restricted them to circular quarters. Every few minutes they stop their pacing to tap an orange flotation balloon, which is tethered like a baby's rattle to a pole over their tank.

To the right is a row of little dog cages, each of which is fitted with a cement hole about the size of a bathtub. This is the sea lion area. The sea lions are smiling and barking in a goofy manner just as they did on Don Ameche's televised circus show. They want a smelt or two, and a seaman first class, wearing faded blue fatigues and knee-length rubber boots, is tossing them morsels from a yellow bucket.

Here in its San Diego facility and in Hawaii at the more secret Kaneohe Bay research center, the navy has trained sea lions with grabber harnesses to recover costly practice torpedoes from depths up to 500 feet. In a similar program that has been code-named Deep Ops, naval scientists have taught pilot and killer whales to attach flotation devices to missiles and torpedoes that have been lost as far down as 2,000 feet.

But to me the dolphins, with their massive, tapered bodies and amazing sonar abilities, are more interesting. They remind me of streamlined trout as they rise to the surface. Next to me a lone surf fisherman with his small daughter is walking toward the isolated lighthouse. "Look at the big fish there, Daddy," the little girl says. The fisherman is in a hurry to catch high tide. He doesn't have time to explain to his daughter. Dolphins are not fish, like trout. They are mammals, like humans.

In fact, since the dolphin brain is 20 percent bigger than the human brain and the corrugated thinking matter is larger than the corresponding area in a human brain, several eminent marine biologists, such as Dr. John C. Lilly, believe that dolphins communicate and are as intelligent as humans.

I leave the research center and put in a call to Bill Powell, the head of the training program. I want to know what he'll say about his dolphins' spearing Vietnamese.

Mr. Powell turns out to be a nervous man when he comes to the phone. "Kamikaze porpoises? No, no, that's not well founded." What about recent disclosures before the Senate Select Committee on Intelligence? "No, I'm sorry, no CO₂ gases, no nullification." Things are very hectic under the lazy San Diego sun, it seems. Powell can't talk any longer.



"Just once I'd like to rob from the rich and blow it all on booze and broads."

ing U.S. sentries back at the base coop."

But Herrnstein's pigeon plan was rejected out of hand. "There isn't much openness to technical adventurism in the military establishment," sighs Herrnstein now, "unless it is an 'in' idea like McNamara's ground sensors." Still, maybe the good doctor is only naive. The Pentagon may simply have been unable to deal with the spectacle of a Harvard professor's recommending the elimination of thousands of ground troops. What would all those army officers do if they and their men were replaced by a single squadron of pigeons?

In this love affair with the biologically bizarre, it hardly seems possible that the trainers and their superiors in the animal warfare divisions of the navy and the army have any clearer idea of the "Communist enemy" than of the pigeons and crickets they train. No animal is considered too absurd for the Pentagon to use. The list is endless. Bats, beetles, crickets, pigeons, dogs, sea lions, whales, dolphins. It even includes geese (which squawk when sappers approach), goats (which are intentionally wounded to train combat medics), bedbugs (which scream with amplifiable hunger when human flesh presses near), and miscellaneous migratory birds (which are delivery systems for germ warfare and picture-snapping spies with tiny cameras inserted in their rectums). If earthworms could be electrified or kittens induced to carry napalm, the Pentagon would enlist them in its menagerie.

But of all the animals in the Pentagon zoo, the admirals and generals still love the dolphin best. With sonar capabilities and intelligence, grace of movement, and an emotional affinity for humans (unfortunate for the dolphin), it has become the biological weapon of choice.

The CIA was first into the sea with dolphins. In 1964, at a cocktail party in Annapolis, a CIA-connected research and development entrepreneur named James Fitzgerald joked to an admiral that dolphins might lend a hand in sonar experimentation. The admiral took Fitzgerald seriously and introduced him to a relative who was a CIA specialist in underwater warfare.

Fitzgerald set up shop on a small finger key just off the naval base at Key West, Fla., where the United States had stored its nuclear warheads during the Cuban Missile Crisis. Astounding results came quickly. Dolphin sonar could tell the difference between aluminum and copper, could acoustically "see" a three-inch ball 200 yards off underwater in total darkness, and could be quickly taught to tow or push 110-pound payloads through a hundred miles of open sea. Dolphins also learned to plant magnetic satchels on the hulls of ships, although they often misplaced their dummy explosives underneath the yachts of some very surprised sportsmen. The CIA covered these mistakes by explaining that the dolphins were part of an experiment for the Bureau of Marine Fisheries.

All in all, the venture was proceeding nicely. James Fitzgerald was happy to trans-

late the dolphins' capabilities into Pentagonese, referring to the dolphins as living, breathing submarines. "For operational purposes," he bubbled, "you can consider a cruising speed of five knots, an operating speed of ten, and a flying speed of twenty. They develop the shaft horsepower of perhaps one horsepower at cruising speed... with a fuel rate of fifteen pounds of fish a day."

Apparently satisfied, the CIA went ahead with its first scheme. Anchored off Havana like a rumrunner, a disguised CIA yacht released a dolphin from a special stern porthole beneath the surface. The dolphin swam down an acoustic "path" that was laid by sonar beams sent from the dolphin ship to the harbor. The dolphin helped obtain information about the power plant of a Russian nuclear-powered ship by placing instruments against the hull of the vessel.

Dolphins continued to be draped in the Stars and Stripes. They were secretly sent to locate a nuclear warhead that had acciden-

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tally been dropped in shallow water off Puerto Rico. The mishap had occurred soon after a similar incident near Palomares, Spain, in 1966. "The Pentagon never informed the American people of the Puerto Rico incident," commented a former CIA dolphin researcher, "because it did not want to alarm public opinion or own up to the bumbling breakdown of its 'fail-safe' system."

The warhead was found by underwater divers and electronic devices, but the dolphins demonstrated that they could locate the acoustic signature of sunken bombs in the future, and that they could be helicoptered to unfamiliar territory almost like paratroopers, without becoming disoriented.

Fitzgerald continued his own Florida operation. He even made overtures, possibly with CIA and navy knowledge, to sell dolphin torpedoes or "open-ocean weapons systems" to Mexico, Peru, Colombia, Chile, Argentina, and Brazil. This private merchandising astounded one of Fitzgerald's associates, who observed: "The work in Key West had been top secret, with only a small handful of people in the whole country knowing of its existence, not to mention its purpose." Yet Fitzgerald wanted to make

some fast bucks on the side by turning small countries "into instant naval powers." The Pentagon couldn't possibly object for fear of exposing its whole operation.

But by 1970 Naval Intelligence had won the dolphin rivalry. Vietnamese frogmen were mining U.S. ships in South Vietnamese harbors. A reliable underwater defense—Swimmer Nullification—was a necessity that the navy was willing to fund at high cost.

With the development of the Polaris missile, which can be launched underwater, submarines—especially nuclear-powered submarines—gained tremendous destructive potential. The navy and the Pentagon placed passionate emphasis on research for submarine defense and, at the same time, for systems that could locate Russian submarines. When the United States withdrew from Vietnam, the dolphin underwater-defense team was sent to guard a submarine base in the Philippines. Plans were also made to deploy a second squadron around the nuclear submarines in Holy Loch, Scotland. Navy admirals believed that dolphins should be mass trained to find Russian submarines. On an important inspection of the secret Hawaiian dolphin-training center, an admiral from Pearl Harbor ordered researchers to "immediately produce a demonstrable prototype system capable of being delivered to open ocean sites, via air, surface ship, or submarine, that would be able to locate, identify, and tag Russian submarines" with underwater sound transmitters.

If successful, the program would solve the central problem of the navy's silent warfare, tracking missile-firing submarines. A by-product would be the development of techniques that would mask the noise of operating U.S. submarines by disguising them as schools of dolphins. Since dolphins are able to dive about only a thousand feet, the navy also wanted to enlist the services of killer and pilot whales.

But if the full deployment of dolphins and whales as a mobile underwater DEW line would solve a defense problem for the Pentagon, it would only create one for whales and dolphins themselves. In the twisted linear logic of the Pentagon, a weapons system like the dolphins can be blocked only by a countersystem or by elimination of the original system. So far, no word has leaked out that the admirals are drafting the dolphin's only natural enemy, the shark. If the Soviets are forced to build an armada of whales and dolphins to counter ours—as one admiral has stated—the logic of the Pentagon leads to a clear Orwellian solution: liquidate dolphins and whales in pre-emptive strikes. As early as 1956 *Naval Aviation News* reported "another successful mission against killer whales off the coast," which "destroyed hundreds of killer whales with machine guns, rockets, and depth charges."

A dramatic example of what could happen occurred off Hawaii in 1971, when researchers lost a large killer whale instrumented with a radio pack. "He swam away," recalls Michael Greenwood, a dolphin sci-

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entist then working for the navy. "And at that time the Russians sailed through the Molokai Channel—which was all of twenty miles from where we were working—their largest and newest cruiser shadowed by half the American navy. If that animal had indulged in its instinctive behavior of homing on that ship as we have trained whales to do, to ride a bow wave or follow astern, what would a ship's captain have done? He could surely have fired a shot which could have been heard around the world."

Michael Greenwood is on the verge of becoming the navy's Daniel Ellsberg. In 150 carefully worded pages of confidential testimony before the Church Committee on Intelligence, Greenwood has exposed the well-publicized navy and CIA "man-in-the-sea" experiments as benign public-relations covers for dolphin and whale programs designed to murder enemy frogmen, track Russian submarines, and spy inside Chinese and Cuban waters.

Greenwood first saw dolphins when he was a boy rowing on Scotland's Holy Loch, now a submarine base. Dozens of cart-wheeling dolphins jumped and dived around his small boat. "In my fear I saw clumsiness, where I was later to see a perfection of form and grace." He was a cadet in the English merchant marine. After reading the writings of Jacques Cousteau, however, he decided to become a scientist. With its advanced technology, the United States seemed the place for a serious scientist to move. Greenwood moved here in 1952, and, faced with the draft, enlisted in the U.S. Air Force. At the end of his tour he was asked to participate in his first CIA research project: developing scanning devices for America's U-2 spy planes.

"Naively, but enthusiastically, I threw myself into my work. Never once did I question or even think of questioning the purpose or necessity of what I was doing. The words 'top secret' seemed in themselves to be the highest possible form of authentication," he says. Soon the scope of his work broadened to include the study of underwater-diving techniques and, later, the training of marine mammals. He was in a position to realize his dream as a boy among dolphins. One afternoon a dolphin returned him a favor. Diving deep, the dolphin caught an eighteen-pound tuna and tail-walked a hundred feet to the stern of the research boat where Greenwood stood spellbound. Its body almost completely out of the water, looking eye-to-eye at Greenwood, the dolphin cleaved the tuna in two neat halves, which fell to the deck. Only a reasoning animal could have made a gift of such a delicious snack, decided Greenwood.

But his navy superiors had little appreciation for the dolphin's nonmilitary abilities. They saw dolphins only as "circus performers" to be turned into weapons systems. "According to our sponsors," Greenwood bitterly told the Church Committee, dolphin

training "should involve nothing more than putting a whistle around your neck, taking a bucket of dead smelt and rowing yourself out into the middle of the bay with Flipper following along, and getting the animal to start doing his tricks."

Earlier, as director of the ocean-floor program of Sealab III, the navy's project to set up a deep-ocean habitat, Greenwood had cautioned against a dangerous 600-foot dive. Preparations were rushed and inadequate. Greenwood was overruled by the Sealab commandet and a veteran diver, civilian engineer Barry Cannon, died a horrible death, "stumbling and convulsing in clear view of our underwater television cameras" 600 feet below the support vessel.

Greenwood then learned that Sealab's stated goals were only a public-relations cover. The navy's real intent was the development of deep-water techniques for salvaging downed Russian fighter planes and nuclear submarines. Divers could be ejected from the torpedo wells of U. S. sub-

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marines within Russian waters, where the CIA's top-secret salvage ship, the *Glomar Explorer*, would have been spotted.

"After Cannon died, I vowed that never again would I sit down out of fear or career interest, when I had something important to say relating to the integrity of research that I was in any way involved with," Greenwood explains. When Naval Intelligence suggested that he train his dolphins to retrieve advanced harbor mines from Chinese waters and tag Russian submarines, he balked.

Then the boom fell. First he was offered a transfer to any research facility of his choice—anywhere in the world. He was given two months to decide where next to move. In return he had to submit a letter of resignation—as security—which would be held until he decided where to go. Greenwood rejected this offer. Next he was threatened with demotions, forced to give up his office, and ordered to report to the fish-storage lockers to defrost and cut fish all day. He again refused and requested that a formal hearing be held. He was told that that would never happen. Fraudulent documents appeared in his personnel file.

"I demanded an investigation of the dolphin program by the navy assistant secre-

tary for research and development, Dr. Frosch," Greenwood told me. When Frosch turned him down, he decided to speak at a closed-door session of the Church Committee. Greenwood's secret revelations made some waves, but the committee side-stepped the issue by labeling the testimony a "military matter."

Speaking of the issues at stake, Greenwood observed, "The point to me was that the CIA and the Pentagon were successfully throttling scientific research by channeling it to classified military ends." "The implications and findings" of dolphin research "would be revolutionary to psychological thinking and theorizing"—if only the research were decontrolled. Greenwood decided that a cause célèbre would be necessary. Like Daniel Ellsberg, he went public.

Other animal researchers, however, have fewer problems with logic. B. F. Skinner, for one, would rather dolphins be destroyed than men. In an attack on "dolphin lover" Ashley Montagu in the letter column of the *New York Times*, Skinner wrote, "Porpoises are no doubt especially friendly creatures, but has Professor Montagu never made friends with a draftee?" Skinner's reservations about the use of animals by the Pentagon are really very minor. "Nothing could be more painless than my pigeons hitting the target in their nose cone," he told me. "Is it wrong for us to eat meat? Is it evil to raise chickens in breeder machines? Do we consider that beef cattle are clubbed to death with baseball bats?" Skinner states his views with a weird passion. He is convinced that the distinction between animals and humans is the central ethical question.

Yet dolphin and whale researchers like Dr. John Lilly dismiss Skinner's distinction with a wry smile. "Skinner thinks that any non-human animal can only feed, fight, and run away," says Lilly. Lilly, the author of *Man and Dolphin* and *The Mind of the Dolphin*, is the scientist who served as the model for George C. Scott in *The Day of the Dolphin*, the fictional movie about the Pentagon's corruption of dolphins for war-making purposes. When I talked to him in his functional desert home high above Malibu Beach, he spelled out his disagreements with behaviorists like Skinner. "Not only are whales and dolphins as intelligent as we are," said Lilly, "but their ethics are also more highly developed than those of most humans." Lilly feels that whales operate under a "negative Golden Rule." They act toward humans as they want humans to act toward them. When the navy bombs them, they do not retaliate with human vengeance—an eye for an eye,—but rather try to teach by example.

Lilly told the story of a large yacht that had been rammed and sunk by killer whales. When the owners climbed into their tiny life raft, the whales did not harm them. If these whales had been bombed, conjectured Lilly, they were only showing humans what it felt like. I thought back to the dolphins swimming in circles at the navy's underwater center in San Diego. It would be a long time, I decided, before the Pentagon would ask them any ethical questions. ○—