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OSA-1058-64

20 MAR 1964

MEMORANDUM FOR: Chief, Technical Services Division, DDP

SUBJECT: Shark Repeller Device

1. It is requested that the Hicks Electronic Shark Repeller as described in the attached newspaper article by Fred Blumenthal be evaluated for operational use.

2. If the repeller is found to be effective, OSA/DDS&T will require two of the devices for special environmental tests and equipment compatibility studies.

3. Contingent upon the results of these tests, OSA anticipates a requirement for approximately thirty repellers.

4. The miniature version of the unit mentioned in the final paragraph of the Blumenthal article would be best suited for OSA operations.

5. Funds are available for purchase of the test models. Funding information will be provided upon receipt of definite cost of these items.



25X1A

JACK C. LEDFORD
Colonel USAF
Assistant Director
(Special Activities)

Attachment - 1

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OSA-1058-64

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ID/OSA/ [redacted] (18 March 1964)

Distribution:

- Orig & 1 - TSD/DDP (w/att)
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SHOCKING THE SHARK

A NEW WAY TO SAVE LIVES

BY FRED BLUMENTHAL

WORKED ON HIS OWN

SHARKS PROWL BEACH AREA... ATTACK BATHER
... MAN'S ARM LOST... SWIMMER KILLED.

These are headlines from newspapers around the United States last year. And only recently there was another headline saying that sharks had attacked skin divers off San Francisco, ripping the legs of one of them.

Tragically, these headlines have increased in frequency over the past few years, not necessarily because the shark population has increased, but because more and more people go into the water for sports, research and exploration.

Headlines of the future may be different, however, and shark waters made safer because of the development of an electronic unit called the Hicks Electronic Shark Repeller.

The device, operated by the wearer, has been hailed as the first effective shark repellent. World War II Navy hero Rear Admiral Dan Gallery says: "I'm convinced it works. It should be provided for all Navy pilots and frogmen for foolproof protection."

Invented by John Hicks, a 37-year-old zoology graduate of the University of Miami, the repeller operates on batteries housed in a waterproof casing from which extend two miniature antennas. Like a flashlight, the device is effective as long as the batteries are kept charged. The unit, which weighs about four pounds, operates on the principle that electronic impulses of the proper rate, duration and amplification can be tuned in on a shark's nervous system. When the switch on the repeller's casing is flipped on, electric energy from the batteries sends out shock

waves through the antennas, and the waves are strong enough to send the shark thrashing wildly off.

"This won't kill the shark," Hicks says. "We don't want to do that. It just repels him." Although the jolt received by sharks is not fatal, the scare lasts a long time. Some of the sharks used in tests of the repeller have refused food—including liver, which is a favorite—for three or four days.

The repeller is effective up to 75 feet in all directions. And the bigger the shark the greater the deterrent action because of its larger and more highly sensitive nerve network.

Hicks notes that the repeller has no effect on the person using it, or on other fish near-by. "Each major species of fish," he explains, "is vulnerable to a specific electromagnetic wave length." The device has already been used to help rid some of Florida's waterways of gar fish, but it has had no effect on the game fish. And in South Africa, used on a different frequency, it has driven off crocodiles.

Millions of dollars have been spent by the United States government over the years to develop repellents that would offer complete protection. However, Hicks did not have the benefit of a government research grant or outside financing in developing his device. He used his own limited funds, and he employed the know-how of Miami electronics expert, Norman Bean. It took about nine years to develop it, he says.

Other repellents in use today do not provide the necessary protection. Chemical repellents dissipate in the water, and killing a shark with knife or gun only serves to draw other sharks to the scene.

Last June, J. Manson Valentine, a member of the board of the Miami Museum of Science and Natural History, told the Navy that Hicks' repeller is "extremely effective in warding off prowling sharks, sharks lured to bait, even sharks engaged in actual feeding."

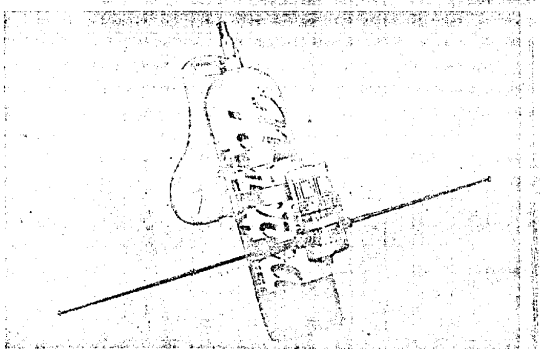
"During scores of tests conducted in the shark channel of the Miami Seaquarium," Dr. Valentine's report continued, "... sharks, many over six feet in length, were thrown into typical convulsive movements, followed by rapid escape turns, the instant the repeller was activated in their proximity."

In a recent demonstration of the unit—shown in these photographs—Hicks sat in an inflatable rubber raft about four feet long. He waited until the shark nosed the raft, ready to attack, and then activated the repeller. Its nerve network overloaded, the shark churned away.

WILL BE AVAILABLE TO PUBLIC

The Hicks repeller, which will be available to the public through sporting goods stores after it is in full production, will sell for about \$100. It can be used in a wide variety of ways for many purposes. At beaches with shark or barracuda problems, for example a number of units could be strung around the swimming area to ward off sharks. With this arrangement batteries would not be used, and the unit would be hooked up to a permanent power supply. Tuna fishermen, whose nets are often attacked by sharks and who thus lose thousands of dollars every season, could attach the repeller to their nets.

The armed forces and the National Aeronautics and Space Administration are interested. The Coast Guard is considering using the units for air-sea rescue work. And NASA is testing astronauts with a miniature version of the repeller. It weighs one pound and a half, with the antennas running down the leg. It would operate for a straight 12 hours. Said one astronaut, "I'd hate to go into orbit only to splash into the water and get eaten by a shark. What an anticlimax!"



Four-pound repeller is small enough to be attached to skin-diving unit (above) and will sell for about \$100.