

Bud Kunz raised the bomb in Spain in 1966

## How They Raised the Bomb

by

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Weekend Magazine No. 30, 1966, Pages 2-6

Transcribed by

Joyce Lee Kunz "Joy" Peck, daughter of DeVirl Alvin "Bud" Kunz

September 2009

For 81 days the eyes of the world were focused on a tiny patch of Mediterranean coast in the south of Spain. High above it, an H-bomb-laden U.S. B-52 jet bomber and a KC-135 tanker plane had collided as the bomber prepared to refuel. Seven airmen lost their lives in the tragedy. Lost, too, was one of the four unarmed multi-megaton nuclear bombs. Parachuted from the flaming bomber, three of the H-bombs landed near the village of Palomares. They were quickly found, virtually intact, by a task force rushed to the scene.

Not for more than a month did the U.S. Department of Defense admit the truth. One bomb was missing. The frantic, secret search for "Nuke 4" – "La Bomba", as the Spanish called it, the first atomic weapon ever officially listed as "missing" – centered on 25 square miles of ocean lying off Palomares. While navy frogmen hand-combed every inch of bottom in shallow water, an armada of search vessels (Task Force 65) probed the depths.

On the morning of March 15, the bottom-prowling two-man midget submarine Alvin came nose to nose with the Nuke – with "Contact No. 261" at a depth of 2,500 feet. It had come to rest on the murky, precipitous slope of an underseas canyon. During a week of stark drama Alvin, with its claw-like mechanical hand and the aid of surface ships, attempted to raise the bomb. On March 24, as success seemed close, a line parted. The Nuke plunged down the steep ocean slope. For a tense nine days the bomb was lost. Not until April 2 did Alvin again find it at a depth of 2,850 feet, poised on the very brink of the deep-sea canyon. Tumble into that 3,000-foot abyss, and Contact No. 261 might be lost forever.

Unable to raise the nuke, Alvin's plucky crew gave the bomb a deep-ocean voice: attached an audible marker – an electronic "beep" device – to its parachute with giant fish hooks. Now, every second, the Nuke "spoke" to the search armada above. Louder than words, its taunting "beep" . . . "beep" . . . "beep" challenged, "Here I am. Come get me."

The search was over. The bomb had been found. But ahead lay the trickiest job of all: raising Nuke 4 from the murky depths.

It was 68 days since the torpedo-shaped H-bomb, still tethered to its billowing parachute, had splashed into the Mediterranean off Palomares, Spain.

Now, at his command post aboard the missile cruiser U.S. S. Albany, lying a mile off the beach, Rear-Admiral William "Wild Bill" Guest, chain smoking and red-eyed from fatigue, faced the two men he had summoned the 6,300 miles from California, and asked bluntly.

"What can you do for us?"

The question in any other setting might have sounded blasé. But not aboard the Albany. The eyes of the entire world were on the flagship and on the bomb, lying tantalizingly beyond reach at a depth of 2,850 feet. Too deep for divers, too heavy to be lifted by the midget submarine Alvin which had found it, beyond grasp of the most sophisticated grappling gear, Nuke 4 had thus far defied the best efforts and technology of the U.S. Navy.

With his nuclear "fishing" expedition plagued by a run of bad luck, Admiral Guest had summoned two

of the navy's most expert deep-sea fishermen.

The Pentagon's urgent alert had roused DeVirl "Bud" Kunz, civilian chief of the Systems Operations Division at the Naval Ordnance Test Station, Pasadena, Calif., and the technical officer, Cmdr. Henry H. Schleuning, Jr., from their beds.

The summons had not been altogether unexpected.

As designers of the world's weirdest deep-sea robot, a missile retriever dubbed CURV (for "Cable-controlled Underwater research Vehicle"), they had been briefed, almost daily, on the mounting crisis and frustration off Palomares.

Sixteen hours later, airlifted by jet to Madrid, whisked by military helicopter to Palomares and escorted the final mile to the flagship, they were ushered before Admiral Guest.

Quickly, Kunz explained how the 13-foot-long, self-propelled robot, with TV and camera eyes, a sonar sense of direction and fitted with a detachable claw, might "swim" to the bottom and clamp its vise-like hand around the errant Nuke.

Having done so, CURV, much as a lobster extricates itself from a fisherman's trap, would free itself from its claw and from the half-mile of stout nylon line and the buoy attached to it. Buoy and line would bob to the surface, to be winched in, along with the bomb, by surface ships.

In the year that CURV had scavenged the relatively shallow ocean floor off California for the navy, it had recovered nearly 300 spent torpedoes, the deepest from 1,740 feet.

But off Palomares, the robot would be literally in water over its head.

"CURV," Kunz frankly told the admiral, "will have to work deeper, by fully 1,200 feet, than it has ever worked before. And far deeper than its designed depth – a maximum 2,000 feet."

But – and Kunz clenched a fist – "I think it can do it."

Grimly the admiral nodded and turned to an aide.

"Have them send it. Order that robot flown here -- now."

And CURV, one of the last tricks in the Navy's nearly depleted bag of underseas magic, was all but airborne. That night two C-141 courier planes lifted off a west-coast runway. Aboard was the robot, its 10-man crew and 28 tons of gear, bound for Palomares.

Behind the Pentagon's urgent alert and the admiral's own quiet desperation lay a top-level decision. The bomb, having been found, must be recovered at any cost. Two decades of U.S. military strategy, and perhaps the very life of the nation, decreed it.

The decision, which had kept lights ablaze in the Pentagon, in offices of the Central Intelligence Agency, the Atomic Energy Commission and in the White house itself, had been reached only after weeks of top-secret debate.

On the one hand, the "leave it where it lies" advocates, including some nuclear experts, argued that unarmed Nuke 4 was, by any reckoning, harmless.

Lying at great depth, the bomb, for all practical purposes, had disposed of itself, just as the A.E.C. in earlier years, had disposed of atomic wastes simply by dumping the "hot stuff", in sealed containers, into deep ocean "graves" – some not as deep as Nuke 4's.

The bomb had even helped by burying itself in its own radiation-proof container – an aluminum casing 10 feet long and 2½ feet in diameter. Close-up photos by the midget submarine Alvin indicated that in all probability the casing was intact, thus a bulwark against atomic leakage.

Why then, argued the "leave its", spend millions and tie up 18 ships and their 2,200 crewmen merely to retrieve what was already dead and safely buried?

That was the practical matter of it. Strategically and politically, it was a far different matter.

To abandon the bomb, countered the "retrievers", would, in the short run, seriously tarnish the U.S. image of nuclear responsibility. In the long run, it might do far worse; destroy the nation's vital strategy of nuclear deterrence. Nuke 4 might also become the instrument of international blackmail on a scale never before attempted.

If nothing more, the bomb's mere presence, dead or atomically alive, would make it the rallying point for a world-wide campaign by the ban-the-bombers. Stirred by the Kremlin or by their own conscienc-

es, they would cry out that the bomb and the Strategic Air Command bombers carrying it must be scrapped.

Gravely, the “retrievers” pointed to Spain’s own quick and nervous reaction as typical of what might be expected on a global scale.

Spain had almost immediately (though it later rescinded the order) forbidden further overflights by SAC aircraft carrying H-bombs. Abandon the bomb and other nations – their atomic nerves jangled – might follow Spain’s example. One by one, the multitude of aerial roads leading to Russia’s heartland might be closed, politically. And thus SAC’s access restricted to a handful of vulnerable corridors. These Russia could easily defend, dropping SAC’s again and slow-going bombers like sitting ducks. Suddenly threatened by a single wayward H-bomb, Nuke 4, were two decades of U.S. strategy, the multi-route deterrent of surprise by which the Pentagon heavily counted on getting its bombers to target.

More immediate was the threat of international intrigue by any nation (perhaps a small, non-nuclear aggressor) or even a gang of atomic buccaneers who, by luck or pluck, might raise the bomb. Inevitably, with an international price of millions on its warhead, it would be dredge up. Fishermen, trawling off Palomares, would now set their nets for the prize catch of all.

Netted and brought to the surface, Nuke 4 might be peddled to the Soviet. To Moscow, eager to dissect its atomic secrets, Nuke 4 would be worth its weight (a rumored 6,000 pounds) in gold.

Nor would it be difficult for international renegades (conceivably even the Mafia) to devise a crude trigger (the bomb’s missing “plug”) and thus arm the bomb. As such, Nuke 4 might return a king’s ransom as a tool of global blackmail.

Should it fall into aggressive hands, Nuke 4 might literally overnight drastically alter the balance of power in such world trouble spots as Africa, the Middle East and Southeast Asia.

Little wonder, then, that the Pentagon, with White House concurrence, beamed a directive to Admiral Guest and his Task Force 65:

“Retrieve the bomb . . . at any cost.”

As dawn broke on Monday, April 4, CURV and its hastily-assembled crew, flown in from California, were set for the big go.

“Bud” Kunz and technical officer Hank Schleuning, with their pick of the task force, had chosen the U.S.S. Petrel, a weathered submarine-rescue ship, as operational base for their robot.

Its skipper, Lt.Cmdr. Max A. Harrell, had been briefed on his part in the mission. Once over the bomb site, he would have to hold the Petrel without the benefit of her engines, since their propellers might foul the robots, tether cable, precisely on a fixed position. And perhaps, for a matter of hours or even days. To do it, Petrel had recruited two motorized landing craft. One with a line to the Petrel’s stern, the other at the bow, would become Harrell’s “motors.” Tugging and pulling at his radio command, they would keep the Petrel anchored over the Nuke 4.

As the Petrel readied for action, Kunz put the robot to practice. Two dummy bombs, precise duplicates of the Nuke, were dropped to depths of 2,400 feet. The robot retrieved them handily.

Next, they tested the robot’s homing instincts - - the ability of its sonar to fix on a sound (on the “beeper” Alvin had attached to the Nuke) and lead the robot to it. A duplicate of the Nuke’s electronic beeper was dropped to the ocean floor. CURV, with an assist from its shipboard tenders, swam unerringly to the sound device.

Fitted with a new fish-hook-like claw (designed to hook into the Nuke’s parachute), CURV was ready. At 9 A.M. on April 4 CURV headed for the bottom.

“Go get that bomb!” Bud Kunz murmured, his eyes on the complex of TV screens, sonar scopes and depth meters which would monitor and guide the robot every foot of the way.

Slowly, thrust by its three propellers, its TV eye recording the descent under the eerie illumination of two 250-watt lights, CURV swam deeper. As it did, Kunz’s men paid out its 3,100 feet of power cable which controlled the robot and through which its TV pictures and sonar sounding were relayed back to the Petrel.

Above the taunting “beep” . . . “beep” of the Nuke’s beeper droned the chant of CURV’s shipboard controllers . . . “Starboard” . . . “A little to port now” . . . “O.K., vertical thrust.”

Swimming, but really “flown” like a buoyant balloon, the robot dropped deeper. The console clock showed nearly two hours since the start of the descent as CURV neared the ocean floor.

“Bottom!” rasped dive-monitor Larry Brady, his eyes on the depth gauge. And the robot was down. Poised a few inches above the murky bottom, it was ready to seek out the bomb.

And now unexpected trouble set in. What caused it was the bottom’s rugged, canyoned terrain. Lying as it was far down the precipitous slope, the Nuke’s “beeper” voice, through loud to those aboard the Petrel, was lost to the robot.

For four tension-filled hours, Kunz and his men skillfully played their robot like a puppet, lifting it above hidden obstructions so its sonar could home on the elusive beeper, guiding it cautiously through blind undersea canyons, lifting it again for new bearings on the bomb’s beeper. Slowly, cautiously, they closed the gap.

“The bomb!” somebody shouted. And there it was, plain on the console’s TV screen, and looking like a cylindrical corpse, shrouded in its silted grey parachute.

The bomb which had galvanized the world, and whose presence threatened the life of nations, lay still as in death, half a mile deep and five miles off the Spanish coast. A school of fish played around its 20-megaton warhead. Its parachute moved eerily, fanned by deep-ocean currents. And around Nuke 4’s open grave poised a river of shifting mud, threatening to complete the burial.

Quickly, the robot began the task of “hooking up” of fish-hooking the Nuke’s parachute. The job took 40 minutes. Once hooked, CURV detached its claw and watched through TV eyes as the claw’s half-mile of line and buoy bobbed to the Petrel.

One hook was set. But there were still two to go.

Setting the second, tedious as the first, consumed most of a day. Not until just after dawn, on Wednesday, April 6, was the robot back aboard the Petrel, the second hook-up made.

“One more to go,” Kunz grimaced, as CURV was lowered – hopefully for the last time – over the Petrel’s stern.

Close to exhaustion and blurry-eyed from hours of peering at their scopes and gauges, Kunz’s men faced two new worries: the weather, which was threatening to turn bad, and the two buoyed lines which, now hooked to the Nuke’s chute, might tangle the robot’s spinning swim propellers.

CURV began its final dive in the darkness of 1 A.M., April 7. An hour and a half later the robot was on the bottom, and working toward the bomb. Then, as the console clock’s luminous hands showed 3:15 A.M., it happened.

“We’ve lost horizontal power!” a controller suddenly announced.

Their worst fears had become fact. The Nuke’s parachute had become tangled in a propeller.

For a frantic hour, CURV’s haggard crew tried to free the robot from the entangling chute. But it was hopeless. CURV was a captive of the bomb.

From his cabin aboard the Petrel, where for hours he had been watching the TV screen monitoring the show below, Admiral Guest made his decision.

They would wait for daylight, then raise both the Nuke and the captive robot.

At 7 A.M., as the first light showed off Palomares, the Petrel’s squealing winches began the lift. The two lines hooked to the Nuke’s chute and the robot’s own strained – and held – as the Nuke was pulled from its murky resting place.

As the bomb edged ever closer to the surface, frogmen in rubber boats swarmed near the spot where the robot, first, then the bomb, would break water. Close by, too, hovered nuclear experts clad to protect them from radiation. If the Nuke’s casing were split, the bomb might be too “hot” for even the Petrel to handle, its lethal load of plutonium a deadly danger.

And suddenly, the robot surfaced.

On the Petrel, there was an audible gasp. Less than 30 feet beneath the surface, its crewmen knew, lurked the bomb itself.



The winches were stopped as the frogmen dived, knives in hand, to inspect the Nuke for leakage, and, should they find the bomb sound, to cut away the parachute still holding the robot captive. "Intact – no visible leakage," came back the report. And the winches began the last few feet of lift. Out it came, the blunt-nosed, torpedo-like bomb, its metallic casing dazzling in the sunlight. Moments later, as CURV's console clock showed 8:30 A.M., Nuke 4 was laid on the Petrel's deck. Around it, like doctors over a stricken patient, swarmed radiation experts. Nuke 4 had been delivered, after 81 elusive days, into the hands of those who had created it. For "Bud" Kunz, Hank Schleuning and their men a week of all but unbearable tension was snapped. "I think that robot can do it," Kunz had told Admiral Guest. CURV, the world's weirdest deep-sea scavenger, had done just that. It had raised the bomb.

THURSDAY, JUNE 8, 1967

## Bern Native Cited For Bomb Recovery



D. A. Kunz

Deverl A. Kunz, born and raised in Bern, has received the Navy Department's Superior Civilian Service Award for his vital contribution to the recovery of the nuclear device off the coast of Spain last year.

Kunz received his award at a banquet of the 4th US Navy Symposium on Military Oceanography held earlier this month in Washington, D.C.

Rear Admiral L. V. Swanson, Director of Fleet Operations Division, presented the award, with Rear Admiral O. L. Waters, Oceanographer of the Navy, reading the award citation honoring Mr. Kunz.

An accompanying letter from Robert A. Frosch, Assistant Secretary of the Navy (Research and Development), read in part:

"This operation represented the United States Navy's response . . . to conduct a co-ordinated surface and subsurface operation in the vicinity of Palomares, Spain. Its purpose was to detect, identify and recover the nuclear weapon associated with the aircraft collision of January 17, 1966. The Cable-Controlled Underwater Research Vehicle (CURV) developed by the US Naval Ordnance Test Station was instrumental in the final recovery of the weapon. Your foresight, initiative and personal participation contributed materially to the ultimate success of this operation."

With the US Naval Ordnance Test Station in Pasadena, California, Kunz heads the Systems

Operations Division of the Underwater Ordnance Department, responsible for development of recovery capabilities of torpedoes with the CURV vehicle. He and a crew of six other men from the Pasadena Naval Station, participated in the recovery of the bomb.

Kunz' Navy career has been highlighted by many firsts. He participated in establishing the Underwater Ordnance Department of the Naval Ordnance Test Station through the development of ranges. He was responsible for the placement of the nuclear bomb on the Wigwam test.

He was chairman of the ASROC (Anti Submarine Rocket) Coordinating Committee, with responsibility for development of the depth charge.

He was Project manager for the Polaris underwater launch program which involved the firing of the first underwater launchings of a Polaris missile, both unpowered and powered. He was responsible for development tests of the SUBROC weapon system.

From Bern, he graduated from Montpelier High School with the Class of 1936, attended Utah State University, graduating in 1940 with a BS degree in Civil Engineering. He worked for the US Army Engineers prior to joining California Institute of Technology in 1943. He has been with the Naval Ordnance Test Station since 1945.

He and his wife, Virginia, reside in Arcadia, California. They are the parents of four daughters. His parents are Mr. and Mrs. Alvin Kunz of Bern.

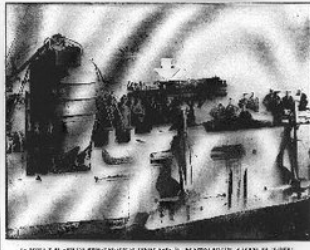




# OPERACION RESCATE EN PALOMARES



Julia Camarero y Antonio Alenza, ERMADOS ESPECIALES

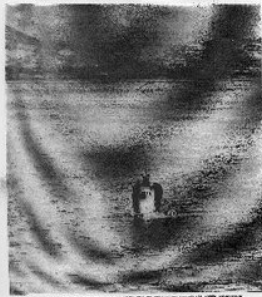


LA BOMBA EN EL MOMENTO DE SER RESCATADA POR EL BUQUE INTREPID. A LA DERECHA: EL RESCATE.

El artefacto nuclear y los artífices del rescate fueron presentados a los periodistas de todo el mundo



EL COMANDANTE EN JEFE DE LA FUERZA DE TROPAS MARINERAS DE LOS ESTADOS UNIDOS, EL GENERAL DE CORPORALES ROBERTO C. MCINNES.

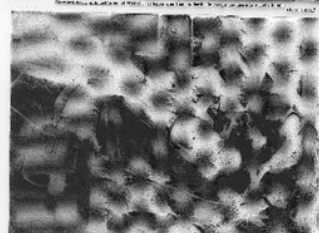
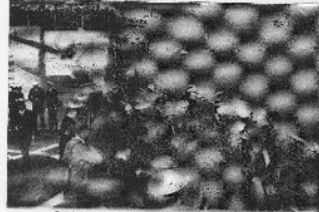


El artefacto nuclear y los artífices del rescate fueron presentados a los periodistas de todo el mundo

PUEBLO  
Sábado, 9 de abril 1966

TECNIFAX FILEABLE TRANSPARENCY MOUNT  
7 1/2" x 10" MASK — USE 8 1/2" x 11" FILM

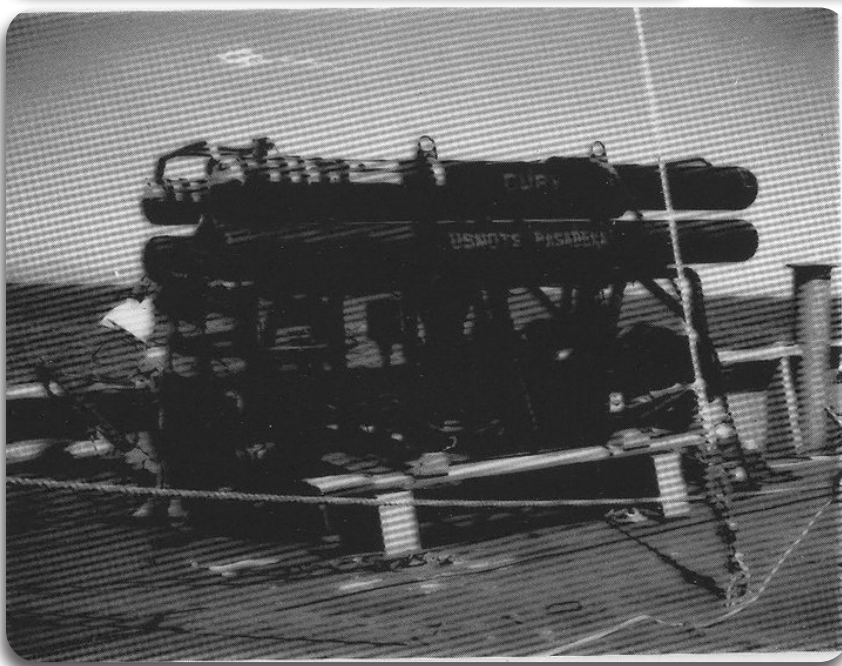
# PALOMARES: Así fue el rescate de la bomba



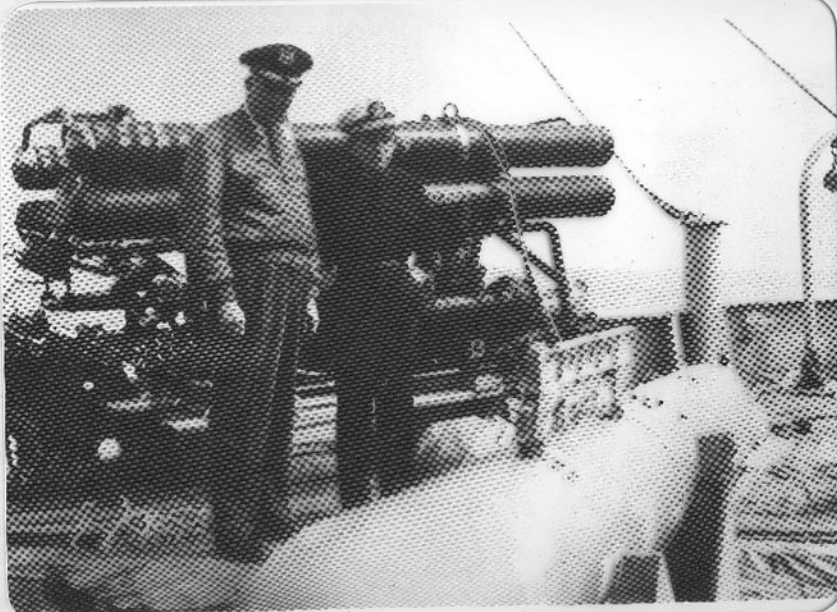
## PERO DIOS NO HA MUERTO

El artefacto nuclear y los artífices del rescate fueron presentados a los periodistas de todo el mundo

BLAS PINAR







TECHNIFAX

# AIRSEAOPS/ME/CURY NOTES

Sun- 3/28/66- Completed modifications to CURV and tested to 2,700'

Fri- 3/25/66- Completed packing and left California for Spain

Sat- 3/26/66- 2100 - Arrived in Cartagena, Spain

Tues- 3/29/66- Completed installation on USS PETREL, ASR 14 and left for OPW area

Thur- 3/31/66- 1400 - Recovered test dummy from 1,950' using claw

Fri- 4/1/66- 2400 - Recovered pinger in barrel from 2,400'

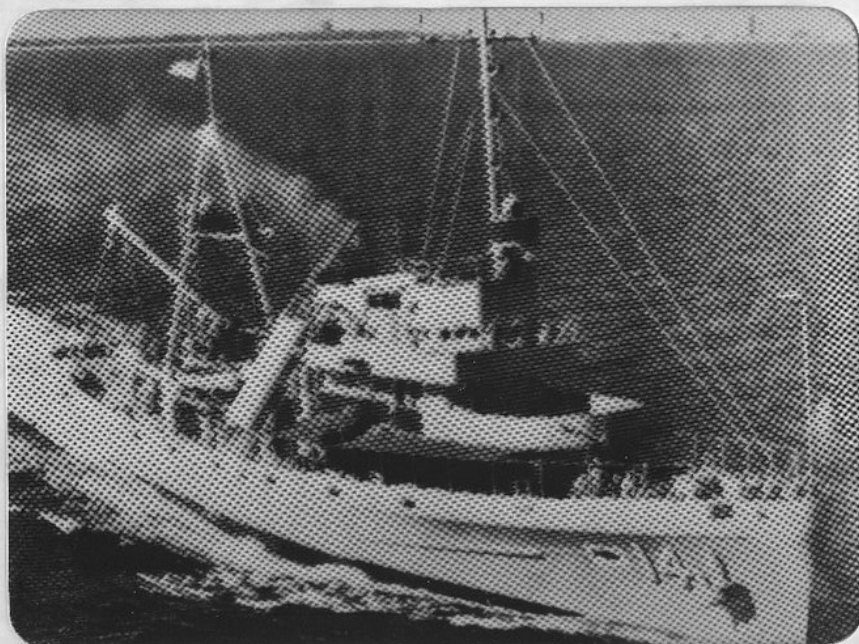
Mon- 4/4/66- Completed tests and planning - Made first dive  
 0900 - Started dive  
 1050 - On bottom - Started sonar search for unit (2,800')  
 1125 - Located transponder and chute by active and passive sonar  
 1230/1530 - Placed first grapple in spill hole of chute and secured  
 1700 - Back on deck

Tues- 4/5/66- 2350 - Started second dive  
 0130 - On bottom - Started search for unit (2,850')  
 0350 - Located unit by active and passive sonar  
 0500/0530 - Placed second grapple in shroud lines and straps of chute -  
 Saw "Robert" for first time, mostly covered by chute  
 0730 - Back on deck

Thur- 4/7/66- 0100 - Started third dive  
 0230 - On bottom - Started sonar search  
 0315/0600 - Located unit - Fouled chute in propellers of CURV  
 0700 - Started lift of unit - Monitored by GUMV  
 0800 - CURV on surface  
 0830 - Unit on deck - Operation completed

Fri- 4/8/66- 0900 - Review past Albany - Spanish General aboard  
 1200 - Disassembled "Robert"  
 1700 - Off-loaded bomb on USS CASCADE  
 2130 - Retained in Cartagena

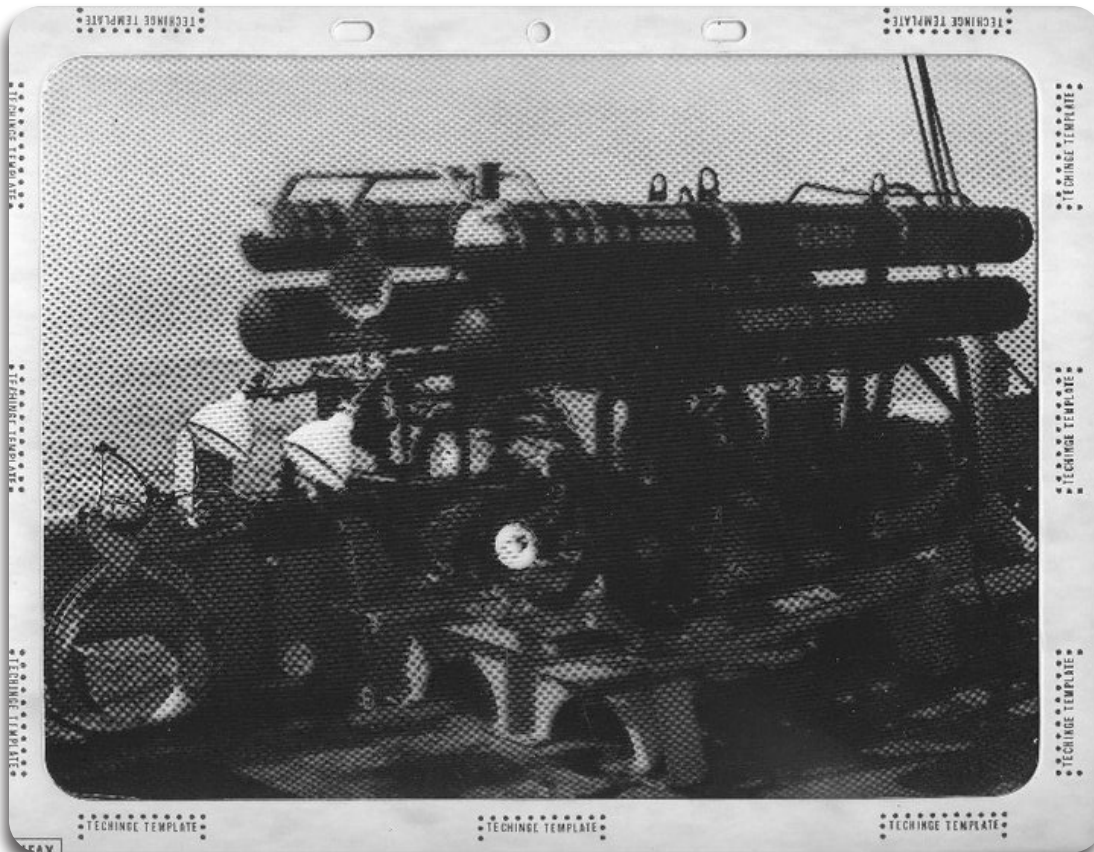
Sat- 4/9/66- 1200 - Packed equipment and started shipment to San Javier











#### MIZAR RECOVERY ATTEMPT

