

## **SPECIAL REPORT, PART 2: The Deadliness Below**

**Overseas, fishermen have been hurt by chemical weapons the United States secretly sank, from the Riviera to Australia.**

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As World War II drew to a close, the Army was faced with scant storage space in ordnance depots at home and huge chemical weapons stockpiles overseas.

The solution: Dump the weapons off the coast of whatever country they were in.

The result: U.S.-made weapons of mass destruction litter the coasts of more than 11 countries - including Italy, France, India, Australia, the Philippines, Japan, Denmark and Norway, according to a 2001 Army report recently released to the Daily Press.

The chemical weapons remain there to this day. And they're extremely dangerous.

Some of them have washed up on shore or been dredged up by fishermen. At least 200 people have been seriously injured over the years.

The Army now admits that it secretly dumped at least 64 million pounds of chemical warfare agents, as well as more than 400,000 mustard gas-filled bombs and rockets, off the United States - and much more than that off other countries, a Daily Press investigation has found.

The Army can't say where all the dumpsites are. There might be more.

The Army is missing years of records on where it secretly dumped surplus chemical weapons from the close of World War II until 1970, when the practice was halted. It hasn't reviewed any records of post-World War I at-sea chemical weapons dumping but knows the practice was commonplace at the time.

More than 30 U.S.-created chemical weapon dumpsites are scattered off other countries, the newly released Army report indicated. It was created by the chemical weapon historical research and response team at Aberdeen Proving Ground in Maryland.

"It's a disaster looming - a time bomb, say," said Dr. Gert Harigel, a well-respected physicist active in Geneva who's been active in international chemical weapons issues. "The scientific community knows very little about it. It scares me a lot."

The United States isn't legally bound to do anything about the dangers that it created in the oceans, whether from its own weapons it dumped or those of captured enemy stockpiles.

A 1975 treaty signed by the United States prohibits ocean dumping of chemical munitions. But it doesn't address dump zones created before the treaty was signed.

And the overseas chemical dumpsites are presumed to be in international waters, inoculating the U.S. government from legal responsibility, Peter Kaiser said. He's a spokesman for the Organization for the Prohibition of Chemical Weapons, based at The Hague, Netherlands.

"Legally, nothing can be done," said Harigel, a member of the Geneva International Peace Research Institute.

"But from a humanitarian point of view, they need to be pressured to do something."

At the least, Harigel said, the U.S. government should monitor the chemical dumpsites that it created and spread warnings if environmental evidence shows they're leaking.

### **DUMPSITES IN FIVE MORE COUNTRIES**

In recent years, the Army quietly has gone through decades-old classified records and identified five other countries where U.S. chemical-laden bombs, rockets and grenades were thrown into the sea. The names of those countries remain classified, but records at the National Archives provide hints.

The Daily Press uncovered an Aug. 24, 1944, memo - classified at the time as "restricted" - that revealed in which other Allied countries the United States kept stockpiles of chemical

weapons during World War II.

Those countries include New Zealand, China, the former Soviet Union and unidentified "Latin American countries."

The United States used parts of Panama as chemical weapons bombing ranges for years. Other National Archives records detail two shipments of unidentified chemical weapons, totaling 20,000 pounds, in 1953 and 1954 from the United States to Fort Amador, Panama. The Army said it informed the governments of those five unidentified countries in recent years of the dangers lurking off their coasts. But, it said, it was asked by those governments not to release the information to the public.

Two summers ago, researchers for the New Zealand government searched U.S. government records at the National Archives, seeking information on chemical weapons ocean dumpsites, archivist Tim Nenninger said.

Harigel said residents of those unidentified countries should be told by someone - either their governments or the Army - of the potential dangers.

"Whether or not anything can be done at this point, the people there deserve to know," he said. "The danger increases with time. The shells are more and more corroding. The fishermen can easily get this stuff into their nets and get seriously hurt."

Scientists have determined that mustard agent damages DNA, causes cancer and survives for at least five years on the ocean floor in a concentrated gel. Nerve gas lasts at least six weeks in seawater, killing every organism it touches before breaking down into its nonlethal component chemicals.

Chemical-filled munitions now on seabeds are slowly leaking, and more surely will as years pass - depending on the depth of the water, the thickness of the containers and water temperature, according to a 2004 study by Jiri Matousek, a Czech scientist.

The hazard of leaking shells likely will last for "another tens to hundreds of years," he concluded. "It is also without doubt that long-term monitoring at areas of concern is needed as a categorical imperative."

The problem is so bad in the Baltic Sea, Denmark has covered parts of some shallow-water dumpsites with concrete to contain leakage.

#### OTHER COUNTRIES WEREN'T TOLD

The Army has known for decades of its overseas chemical weapons dumps, yet it left other governments to find and deal with the problem on their own.

Japan's problems from U.S. chemical weapons dumping did not come to light until a government inquiry in 1973, after more than 85 fishermen were injured by chemical warfare agents dumped by either U.S. occupation forces or the Japanese military at the close of World War II.

It wasn't until 2003 that Australia found on its own that the Army dumped more than 60 million pounds of chemical weapons off Brisbane. Australia pinpointed precise quantities and nautical coordinates.

The Australian government has posted the area off-limits to mariners and released a well-publicized report on its findings.

The Canadian Department of National Defence has worked for three years to identify offshore chemical weapons dumpsites created by either the U.S. or Canadian military. Three have been found, and the Canadians think the United States might have created one of them. The well-publicized Warfare Agent Disposal project began after a Halifax, Nova Scotia-area antiques dealer named Myles Kehoe learned that the Canadian military moved some of its post-World War II chemical munitions through Nova Scotia for disposal. When his fisherman father remembered hearing that the ordnance was loaded onto ships and dumped at sea somewhere, alarm bells went off in Kehoe's head.

"He laughed about it," Kehoe said. "They did it all the time, he said."

At Kehoe's insistent prodding, the Canadians are researching about 1,200 other underwater locations their records show might be ordnance dumps.

The Canadian government thinks the United States might have jettisoned chemical weapons about 100 miles off Vancouver Island in British Columbia, north of Washington state. The Army said it had no record that was done but wouldn't rule it out.

"I won't say there's nothing there that belongs to us," said William Brankowitz, a deputy

project manager in the Army Chemical Materials Agency. He's a leading authority on the Army's chemical weapons dumping.

The United States had an 18-ton stockpile of chemical weapons in Alaska after World War II, National Archives records reveal.

The Army doesn't know where it all went.

The two other chemical weapons dumpsites in Canadian waters are off Sable Island and Nova Scotia, near the Grand Banks - one of the world's best fisheries. One site is spread out over at least 30 nautical miles (35 statute miles). It's presumed to have been created by the Canadian government after World War II ended.

"Fisheries are dying. The sea bottom is going bare. It's terrible," Kehoe said. "We are finding crab mutations that no one can explain. Cod are dying at their larval stage. Most of that stuff is starting to leach now" from their steel containers into the sea.

Kehoe's campaign for information - and action - has spanned 13 years and is becoming increasingly frantic.

A few years ago, the U.S.-based Hunt Oil Co. was granted a license by the Canadian government to conduct seismic testing for potential petroleum deposits off Nova Scotia.

"There is absolutely no scientific documentation on what effect oil exploration has on these dumpsites," Kehoe noted.

"There is absolutely no research on it. The National Defence Department went public, on air, saying we don't know the impact of seismic testing on these sites.

"This nightmare is going to be happening to you over there. It's horrifying."

In the United States, Congress authorized gas and oil exploration off the East and West coasts several months ago, lifting a 22-year moratorium.

Exploration is conducted by bouncing huge blasts of air that penetrate up to six miles below the seabed. It's unclear whether the practice could disturb chemical weapons dumps, but it apparently hasn't in the Gulf of Mexico, where exploration and drilling have been going on for decades.

The Canadian government hasn't decided what to do about the chemical weapons sites off its coast, said Doug Drever, a senior public affairs adviser for the Defence Department.

"We haven't even come close to thinking about diving on those sites," he said.

"We may not. It may be better to leave them undisturbed. We're dealing with the sins of our fathers. We can't change what happened in the past. All we can do is make sure it doesn't happen again and we mitigate the damages. We are dealing with it."

#### DUMPSITES HAVE BEEN IGNORED

The United States never used chemical weapons in war, but it amassed a huge stockpile to be unleashed if enemy forces used them first. Their existence was a known - and ultimately successful - deterrent.

Some of those stockpiles remain in storage at a handful of Army bases, awaiting destruction as required by international treaty, primarily through incineration.

The chemical weapons that were tossed into the sea have been all but ignored by the Army. The Army admitted that it's physically examined only a few of the known dumpsites off the U.S. coast to see whether they're leaking - or whether they're more likely to be encountered as commercial fishing and oil exploration operations extended farther and farther offshore. No environmental problems were found, the Army said.

But only four of the 26 known U.S. sites were examined. And the last time was 30 years ago, in 1975.

That chemical weapons were dumped at sea by Allied forces after World War II is widely known - but not the extent or that it was done off so many countries.

In the most publicized of all chemical weapons dumps, British and U.S. forces loaded dozens of German ships with captured nerve and mustard gas from 1945 to

1947 and sank them in the Skagerrak Strait.

The wrecks are off Sweden, Norway and Denmark, as well as near the Danish island of Bornholm in the relatively shallow Baltic Sea.

It was called Operation Davy Jones Locker.

An estimated 170,000 tons of German chemical weapons went to the bottom. Most, but not all, went into deep water.

Russia also dumped some of its chemical weapons stockpile in the ocean. So did Australia, not far from the Great Barrier Reef. England dumped much of its stockpile in the North Sea. Some has washed ashore.

The United States' ocean dumping of chemical weapons stockpiles, at home and overseas, made logistical sense at the end of World War II - and no one in those days really had much environmental awareness.

At the time, U.S. ordnance depots nationwide were packed with war supplies, including a stockpile of 60 million gas masks, National Archive records show.

Room had to be made for chemical weapons still in production but not delivered, and there was little space to put overseas stockpiles if they were brought back to the States.

By early 1945, a blizzard of memos out of the War Department - now the Defense Department - demanded that ordnance depots reduce unnecessary stock by emptying and burying drums of chemical warfare agents, as well as selling nonhazardous material to the public as war surplus, National Archives records show.

War surplus sales were so frenzied that in October 1945, a colonel in the Chemical Weapon Service issued a memo warning that bomb packing crates must be better inspected before being sold.

Buyers, it turned out, had found some crates that still had bombs inside.

Besides there being no room to put them, chemical weapons were dangerous to transport by ship and jeopardized sailors, the Army learned. Several shipments back to the United States resulted in leaks.

Leak detection was unsophisticated at the time: If nerve gas was shipped, for example, crates of rabbits were put on deck. If the rabbits died, the crew knew there was a serious problem.

Edward Aho of Astoria, Ore., was on the S.S. Isaac Wise as it was loaded in the spring of 1946 with captured German mustard and phosgene gas bombs.

During the trip from Antwerp, Belgium, to the former San Jacinto Ordnance Depot in Houston, 16 of the bombs leaked, and at least five people were burned, declassified Army records show.

Aho said the only precaution taken before the ship sailed was to build wooden bulkheads against the steel skin of the ship, in the hopes that the wood would cushion the blow if the ship's movement dislodged the bombs.

Aho, 78, said he was sent into the ship's hold once to look for a leak, protected only by a gas mask and armed only with a primitive gas-detection device that looked like a "battery with a gauge on it."

"I'll never know if what (nervous system) problems I have is related. I'll never know." he said in a telephone interview, declining to specify his health problems.

Those leaking bombs were destroyed in Texas. The rest of the bombs were taken by railcar to Pine Bluff Arsenal, Ark. During the trip, more of them leaked.

What happened to them after that is unclear from the sketchy Army records that still exist.

**HUNDREDS HAVE BEEN HURT**

Over the decades, many fishermen overseas have been seriously injured after being exposed to U.S. chemical weapons dumps created after World War II.

"Around the world, accidents have happened," the Army's Brankowitz said. "Fortunately, there has been nothing I would call colossal or catastrophic accidents."

Denmark's government estimates that chemical warfare agents dumped in the sea by either the United States or Britain have hurt 150 mariners and have been found washed up on shore. In 1984 alone, 11 Danish fishermen were burned by mustard gas while fishing in the Baltic.

Crews of fishing boats off the Danish island of Bornholm routinely wear chemical protection suits when near a known chemical weapons dumpsite. Vessels working other areas of the Baltic are required to keep gas masks and special medical kits aboard.

The problem is so bad in the relatively shallow Baltic, the seabed is surveyed every summer by Latvia, Russia and Finland to determine whether long-dumped chemical shells are leaking.

At least 52 Japanese were injured in 11 accidents off Japan at just one of eight known U.S. chemical ocean dumps, mostly of captured chemical weapons stockpiled by Japan.

When the Japanese government publicized the locations of those dump areas in the 1970s, the number of injuries dropped.

Since 1946, five Italian fishermen have died and 232 were burned by mustard dumped by the United States, according to Italian scientists at the University of Bari. The Army does not dispute the findings. An Australian fishing trawler in 1983 snagged a 1-ton steel container of mustard agent, dumped off Cape Moreton in Australia by the United States, and pulled it to shore, a 2003 Australian government report indicated. No one was injured.

The partially full container was snared in relatively shallow water not far from where the Army now admits it dumped an estimated 32,000 tons of mustard agent and toxic Lewisite in drums and hundreds of thousands of chemical-filled artillery shells.

It was the second time that a trawler in the area pulled up a 1-ton mustard gas container dumped by the United States. The first was Jan. 17, 1970.

A few years later, a similar, partly full container washed up on shore.

No one was injured in those two incidents.

In 2003, the Australian government created an in-depth report on what it calls chemical warfare agent - or CWA - dumps, identifying exact latitudes and longitudes of U.S.- and Australian-created chemical weapons dumps.

The information was released to the public and widely publicized in the news media there.

"The publication of this paper will, hopefully, prevent accidents occurring at the CWA dump sites where coordinates have been revealed," the report concluded.

"It will also, hopefully, encourage other governments to reveal locations of their CWA sea dumpsites for the same purpose."

That's something that the United States hasn't fully done - and should, out of simple decency to its citizens and residents of other countries where the Army created chemical weapons hazards, said Switzerland's Harigel.

"The government is not open to the public in the United States," he said.

"There should be pressure put on them."