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Discarded War Munitions Leach Poisons Into the Baltic

By MARLISE SIMONS

TALLIN, Estonia - American teams may be struggling to find chemical weapons and other poisonous materials in Iraq, but tens of thousands of bombs and barrels filled with blistering agents and nerve gas lie scattered in the Baltic Sea and the eastern Atlantic.

American, British and Soviet military dumped them there after World War II. Entire ships full of weapons, most of them captured from Nazi Germany, were scuttled for disposal and forgotten. Now they have come back to haunt the environment.

Over time, scientists say, the weapon casings have corroded in the seawater and become brittle, allowing poisons like arsenic, lewisite, mustard gas and sarin to leach out. Scientists from the Baltic countries and Russia have found lethal material mixed in with sediments, and highly toxic sulfur mustard gas, transformed into brown-yellow clumps of gel, has washed ashore.

The problem is compounded by fishermen who have gone into risky areas to chase depleted fish stocks, using increasingly aggressive methods, including bottom tackle that snag the bombs. They routinely find mustard gas clumps among their catch and haul up whole or damaged chemical bombs in their nets.

"We had 10 cases of people finding bombs this year," said Begr Rasmussen, head of the Fishermen's Association of Bornholm, the Danish island close to one of the main dumping grounds. Denmark, which offers special incentives for reporting munitions to the military for retrieval, has recorded more than 400 such incidents in the last two decades.

Scientists believe that some of the poisons dissipate in the water, but others, like arsenic, can build up in the food chain. Little is known about their effect on marine biology, but people touching or inhaling them are likely to get hurt. Several fishermen have been treated for burns and other poisoning symptoms after handling leaking shells.

Fishing is now forbidden around the four main dumping grounds, which hold an estimated 300,000 tons of munitions. But in other areas, where sea currents and bottom tackle have dispersed many shells, vessels are required to keep gas masks, rubber gloves and special medical kits with antipoison powders and injections on board.

Either ignored or kept secret by governments until the 1980's, the dumps have now become a subject of debate among environmental and other concerned citizens' groups, some of whom have demanded urgent cleanups.

With four Baltic states - Poland, Estonia, Latvia and Lithuania - set to join the European Union next year, all types of pollution are coming under new scrutiny. But there is wide disagreement on what to do about the rusting chemical bombs.

Mr. Rasmussen, of the Bornholm fishermen's association, said it would help if governments from all nine Baltic countries would follow the Danish example. When a Danish captain finds a suspicious object, Mr. Rasmussen said, he calls a naval emergency number. A navy team boards the vessel to disinfect the crew and the ship and destroy the catch. The fishermen are reimbursed for their lost

income.

"It's the only way," Mr. Rasmussen said. "We know that Polish, Swedish and German fishermen use bottom nets and pull up bombs. Then they throw them back and they keep scattering them. I say: pay the fishermen, so they're not afraid to lose their catch, and the military will pick up the bombs."

But the Baltic and the North Sea are only part of the world's underwater chemical weapons graveyards. Large arsenals were also discarded in waters off the United States, Australia, Britain, Canada, Japan and Russia, according to the Organization for the Prohibition of Chemical Weapons in The Hague.

Others sites are still unaccounted for because marine dumping was required to be declared under the Chemical Weapons Convention only after 1985.

Compared with other ocean dumps, the Baltic Sea is particularly sensitive. It is shallower than most and its semi-enclosed, brackish waters are renewed only every 30 years.

Some scientists and politicians insist that the chemical bombs must be retrieved. Arnold Ruutel, the president of Estonia, told a recent meeting on the Baltic environment that the discarded munitions contained an estimated 60,000 tons of toxic agents, including 14 chemicals. He called for a regional plan "to neutralize this source of danger," adding that "this is our responsibility for future generations."

Vadim Paka, director of the Oceanography Institute in the Russian enclave of Kaliningrad, said surveys showed that "even deep waters are not safe for toxic materials because bottom currents can be turbulent and move the poisons around."

He said his team of marine scientists found mustard gas residues in the soil last year and arsenic up to 100 times higher than normal levels.

"I don't think we face a catastrophe," he said. "But any persistent highly toxic agent in the ecosystem is dangerous."

Others, including military experts, insist that it is best to let the weapons degrade in the water, allowing time and bacteria to break them down. Clearing the dumps, they argue, is very costly and risky because the munitions could explode or break up, causing additional damage.

"After numerous studies, the government concluded that it's safest to leave the munitions alone," Svend Auken, Denmark's former minister of environment, said.

One option being debated is a plan to entomb the deteriorating shells in cement. On the sea floor off the Norwegian and Swedish coasts lie some 40 ships filled with chemical and other weapons, retrieved from Nazi Germany and scuttled on American and British orders in the late 1940's. Mr. Paka said the ships' holds could be pumped full of concrete.

Far more complicated, he said, would be coating the large dumps near the islands of Bornholm and Gotland. There, he said, Soviet soldiers simply threw barrels and shells overboard with no containment, spilling them over large areas. They have been further dispersed by currents and fishermen.

Any solution, other than ignoring the weapons, is likely to cost millions of dollars, and it is not clear who would pay.

For now, the dumps are monitored sporadically by the Helsinki Commission, an international group

that looks after the health of the Baltic Sea. Its last assessment, in 1996, said that the chemical weapons "are not causing any appreciable harm to the Baltic environment" and that the situation "has neither improved nor deteriorated."

At the same time, the commission published detailed instructions for fishermen on the first aid equipment they should keep on board and how to quickly treat any contamination.

"It's an illusion to think we can clear up this mess," said Jean-Pierre Henriet, a geophysicist who has tracked dumps of mustard gas weapons in deep waters off the Belgian coast.

"This is a worldwide problem," he said, "and there's no easy way to destroy these munitions in bulk. It's done slowly, one by one." Farmers and fishermen still find them across northern Europe.

With stacks of such weapons from two world wars still waiting to be destroyed, he added, "it makes no sense to collect more from the sea."