

## **DISPOSAL OF ORDNANCE FROM HARWICH TO SCOTLAND 1945 to 1948**

### **THE DOWN RECORDER, NORTHERN IRELAND 8th June 2021**

The elderly couple walking on Murlough beach near Dundrum(NI) were curious about the rusty metal object lying half buried in a pool of water.

About ten inches long and four inches in diameter and cylindrical object was solid and resisted the man's attempts to move it with his walking stick. His efforts intensified until he was gripping the walking stick with both hands, trying to dislodge the object which was firmly ensconced in the wet sand.

Watching her husband's efforts, the woman recalled reading about increasing numbers of world war shells which were being washed up on County Down beaches and being discovered by members of the public. When she shared her thoughts with her husband his increasingly violent attack on the object immediately ceased and the couple quickly telephoned the Coastguard.

The object turned out to be a four inch mortar from the second world war which was part of over one million tonnes of military ordnance dumped in the Irish Sea in 1945. The South Down Coastguard team cordoned off the beach and an army bomb disposal team blew up the device where it lay.

The Coastguards quizzed the army experts about the likelihood of such devices exploding if disturbed on the beach .“You could hit a mortar like this 1,000 times and it wouldn't go off but you could hit the next one just once and it could explode,” said the bomb disposal sergeant, who quickly added there were no recorded incidents of members of the public being injured by exploding ordnance from underwater dumps.

The incident occurred last summer but in the past two weeks four more unexploded mortars have been found on local beaches — two on the beach between Tyrella and Ballykinlar and two on Murlough, including one last week.

It is accepted that the bombs have come from a deep trench in the Irish Sea into which massive quantities of munitions and ordnance were dumped at the end of the world wars.

In 1945 the UK government faced a huge post war problem in the shape of two million tons of army and RAF ordnance sitting in stockpiles in the UK and Europe which was no longer needed.

The government had used sea dumping at the end of the First World War and 27 years later it was decided again that underwater disposal was the safest and most efficient method of disposal.

There were several underwater ordnance dumps but by far the largest was in Beaufort's Dyke, a long narrow trough between Scotland and Northern Ireland. The trench measures almost 30 miles long and two miles wide with a depth in excess of 200 metres.

Nearby was the military port at Cairnryan which had been built during WW2 and which became a focal point for the sea-dumping of excess ordnance.

There are limited records of just what was dumped in the Dyke after WW2, and no records exist for the ordnance disposed after WW1, although it is accepted that shells containing deadly mustard gas were among the munitions disposed of.

However, a record does exist for 1945-46 which shows among the items dumped in the Irish Sea were 500lb high explosive bombs, many different sizes of mortars, grenades, rockets, cluster bombs, anti-aircraft shells and rockets containing the poisonous gas, phosgene. In July 1945 alone over 14,600 tonnes of phosgene-containing rockets were dumped in Beaufort's Dyke.

Also dumped were millions of rounds of small arms ammunition which were encased in concrete and which are regularly found by metal detectors on local beaches, particularly in the coves between Ardglass and Ballyhornan.

It is also believed that German munitions such as torpedoes and machine gun ammunition from captured German U-boats was also dumped.

The dumping was usually carried out by 24 tank landing craft along with four coasters and a number of former trawlers. Larger vessels were also used, several of which were scuttled with cargoes of chemical weapons in deep water to the west of Scotland and off Donegal. On occasion, cargoes destined for deep water disposal were diverted to Beaufort's Dyke because of bad weather.

There appears to be little doubt that many of the dumping operations were carried out by crews only too keen to get rid of their unwanted and hazardous cargo at the first opportunity. While they may not have just dumped them indiscriminately, the patterns seen in the present day charts do suggest they were offloaded at the earliest opportunity in a number of cases.

It should also be remembered that the locations were fixed by traditional sighting methods at the time, not by the highly accurate GPS methods used today. On moving vessels, with no land references in sight, positions would only have been known to within a few miles at best.

Although there are no accurate records, it is accepted that at least one million tonnes of munitions passed through Cairnryan for Beaufort's Dyke. As late as 1955 coasters were still bringing cargoes of munitions from dumps in Normandy in France to be disposed of in the north channel and this dumping did not end entirely until the early 1970s.

In the mid-1990s the first items from the undersea munitions dump began washing ashore on beaches in Galloway in Scotland and Co Antrim. These were phosphorous boiler lighters which are perfectly safe when submerged in water but which can spontaneously combust when they dry out.

The discovery of these stranded devices coincided with the laying of a submarine gas pipeline between Scotland and Northern Ireland. The pipe passes to the north of the Beaufort's Dyke explosives disposal site and it is believed the operation disturbed some of the ordnance.

The government commissioned a survey to determine the distribution of the munitions within and around Beaufort's Dyke and then establish whether the dumping had contaminated the seabed, fish or shellfish.

The survey confirmed that munitions were distributed over a wide area which extended outside the boundary of the charted dump site. Samples of the seabed sediment and fish and shellfish were analysed but none contained the chemical warfare agent's phosgene or mustard gas or explosive or propellant residues.

The survey means the restricted area around Beaufort's Dyke has been extended and any new cables or pipelines will have to pass further north or south to avoid the area.

In early 1997 the Beaufort's Dyke munitions dump attracted controversy when researchers uncovered documents indicating that small quantities of low or intermediate level radioactive waste was dumped in the Dyke between 1953

and 1957. The material, mainly contaminated laboratory waste and radioactive luminous paint applied to clock hands, was put in metal drums and encased in concrete before being dumped.

It is believed that the mortar bombs which have been coming ashore along the Northern Ireland coast for several years were dumped in their original wooden storage boxes which have now corroded away leaving the individual bombs at the mercy of the strong tides in the north channel.

The discoveries in Co Down have all occurred within a few days of a storm and experts predict such finds will continue for the foreseeable future.

From the Coastguard the advice is simple. If you spot something on the beach which you're not sure about don't touch it. Dial 999 and ask for the Coastguard who can call on the army bomb disposal experts to either blow up the suspicious object or simply remove it from the beach.

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## **NEW SCIENTIST NEWSLETTER 18th November 1995**

*This article, originally published in November 1995, was updated on 10 February 2020. We changed the headline and created a new graphic due to the government's investigation of a proposed bridge between Scotland and Northern Ireland.*

In the past month, more than 4500 incendiary bombs from the Second World War have washed up on beaches around the west coast of Scotland. They are made of phosphorus, benzene and cellulose, and were designed to ignite on contact with air. Four-year-old Gordon Baillie picked one up while playing in his uncle's garden near Campbeltown on the Mull of Kintyre. It burnt his hand and leg, and made his clothes smoke.

The phosphorus bombs are the clearest warning so far of the dangers of using the sea as a dump for military waste. The bombs were dropped into the North Channel between Scotland and Northern Ireland fifty years ago, but are now washing up on land and starting to burn. Worryingly, the phosphorus bombs are just a tiny fraction of the 1.15 million tons (1.17 million tonnes) of conventional and chemical weapons known to have been dumped in the sea around Britain since the Second World War. They could be the heralds of more to come.

Discovery of the first phosphorus bombs on 6 October at Saltcoats on the Firth of Clyde prompted a major clean-up operation. Every day for the following two weeks army bomb disposal teams picked up hundreds of them along the length of the Clyde coastline, round the Mull of Kintyre and on the islands of Arran, Islay, Jura and Gigha. Children were told to keep away from the beaches, farmers advised not to gather seaweed for fertiliser, and warning signs appeared on beaches.

At first, the Ministry of Defence insisted that the bombs had no "UK military origin", and that no evidence existed that they had ever been dumped at sea. But after a cross-party group of Scottish MPs met defence secretary, Michael Portillo, the story changed. On 2 November, the MoD admitted that the devices came from decayed 30 pound (13.6 kilogram) incendiary bombs of a type dropped from British aircraft in the Second World War.

The implication, not yet confirmed by the MoD, is that the bombs had been sent for dumping in Beaufort's Dyke, an underwater trench 50 kilometres long, 5 kilometres wide and about 250 metres deep, which runs within 10 kilometres of the Scottish coast. Between 1945 and 1976, the MoD dropped about 1 million tons of munitions into and around the trench, making it by far the largest known British military dump.

But why should obsolete munitions suddenly start emerging from the dump? The most likely answer is an undersea gas pipeline linking Scotland and Northern Ireland. After consulting the MoD, British Gas decided to divert the pipeline immediately to the north of the designated dumping area around Beaufort's Dyke. Its contractors began ploughing a 60-centimetre deep trench for the pipeline in the seabed just three days before the phosphorus bombs started to come ashore. Workers quoted anonymously in The Scotsman newspaper blamed the ploughing operation, although this was denied by British Gas. "We have no evidence connecting our operations with the appearance of these munitions," says a British Gas spokesman.

Scientists at the Scottish Office's Marine Laboratory in Aberdeen, however, say British Gas is wrong. They say that the crew of the barge which helped to lay the pipeline submitted official reports to the coastguard describing how they had seen objects identical to the phosphorus bombs floating in the sea. Underwater video footage taken by British Gas's contractors and studied by the scientists also clearly shows the bombs, and a host of other metallic wastes, next to the pipeline.

### **Beyond reasonable doubt**

According to the scientists in Aberdeen, it is now "beyond reasonable doubt" that the phosphorus bombs were dislodged by the ploughing operation. They floated to the surface and were blown north into the Firth of Clyde and round the Mull of Kintyre by the prevailing winds, say the scientists. This week, the Marine Laboratory began an urgent two-week survey of the seabed around Beaufort's Dyke. It will sample fish and sediment, and scan the seabed using sonar and video cameras.

The survey is likely to confirm what British Gas discovered by accident: that many of the munitions meant for Beaufort's Dyke never got there. Instead, they were dumped in shallow waters en-route to the dyke by ships from Stranraer and Cumbria. Two seamen from Stranraer who sailed on dumping expeditions in the 1940s, John Balfour and Alfie Shingleston, have said that in poor weather, the ships discharged their cargoes no more than a few hundred metres off shore. "There is credible evidence that a significant amount of material never made it to the site," says one scientist from the Marine Laboratory. He believes that munitions ended up in unauthorised dumps to the north and south of the dyke and possibly in the Solway Firth. "Out of sight, out of mind was the prime criterion at the time," he says.

According to a letter sent by the MoD in June to researchers at the University of Liverpool, the MoD dispatched vast amounts of old weapons to Beaufort's Dyke. The ministry dumped some 14,000 tons of 5-inch artillery rockets filled with poisonous phosgene gas in the trench between July and October 1945. Over the following three years, it consigned 135,000 tons of conventional munitions there, and every year "into the late 1950s" another 20,000 tons ended up in the dyke.

By the early 1970s, the discharges had reduced to about 3000 tons a year, says the MoD. "In most cases" the dumped munitions were defused, although some weapons may still have been live. The MoD thinks the area of Beaufort's Dyke was "probably" used before 1945, "possibly" as early as 1920. Disposal then may not have been confined to the site defined in 1945, it says. The dyke was last used for "general munitions dumping" in 1973, although the MoD reveals that "one emergency dump of a small number of 40 millimetre shells took place in 1976".

The phosphorus bombs are not the first objects to return to land. Over the past five years, spring tides have washed up about 700 antitank grenades and other weapons on the Isle of Man and the coast of Northern Ireland. David Long, a marine geologist from the British Geological Survey in Edinburgh, says that this lethal jetsam is carried by strong south-easterly currents that flow from the southern end of Beaufort's Dyke. Similarly, strong currents, reaching 1.5 metres a second, flow north from the dyke's northern end.

Beaufort's Dyke is not the only military dump off Scotland's west coast. Statements from the MoD also reveal that between 1945 and 1957 it scuttled 24 ships packed with 137,000 tons of chemical weapons at two sites in the Atlantic. One is 1600 kilometres southwest of Land's End, around Hurds Deep, but the other is a large area beginning 100 kilometres northwest of Northern Ireland and southeast of Rockall Deep. Eight of the ships are sitting at depths of less than 2000 metres, and the shallowest is in 500 metres of water. Both sites are also home to thousands of tons of radioactive waste from Britain's nuclear programme.

Late last month, the armed forces minister Nicholas Soames told Parliament that the material dumped in the Atlantic includes 17,000 tons of captured German bombs filled with the nerve gas tabun. The scientists at the Marine Laboratory in Aberdeen say that another nerve gas, sarin, together with phosgene, tear gas and mustard gas, have also been dumped.

The MoD has always maintained that there is no scientific evidence to suggest any significant harm to human health or the marine environment from its dumps – so long as they remain undisturbed. "The combined effects of dilution, dispersion, hydrolysis and low temperatures act to reduce the toxic potential of munition materials," says a senior MoD official.

"There is no evidence because no one has looked for any," says the scientist from the Marine Laboratory in Aberdeen. He says fishermen in the Baltic, another dumping site for Second World War chemical weapons, have been severely burnt by mustard gas. "If canisters were raised from the seabed and leaked, they could kill fishermen," he warns. Fishermen in the Firth of Clyde and the North Channel say they often find munitions in their nets.

Although phosgene, tabun and sarin should be hydrolysed in seawater into relatively harmless by-products, mustard gas is likely to persist. It is heavier than water and comparatively insoluble, so that when it leaks it tends to form an oily layer on the seabed. According to the Marine Laboratory, it could contaminate fish.

In the post-war years, the MoD chose its dumping zones partly because they were far away from commercial fisheries. Since then, however, declining populations of more easily caught species combined with advances in fishing technology have driven fishermen to further and deeper waters. Prawns are now fished just north of Beaufort's Dyke and there is a hake fishery in the dyke itself. Farther out to sea, fishermen trawl down to 1800 metres for deep sea species such as the orange roughy.