

# The Cold War Frogmen of the Far North

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The September 2011 edition (Vol. 14, No. 27) of *The Maple Leaf* presented a remarkable underwater photo by Master Corporal Peter Reed. The photo illustrates two navy divers in pristine blue water inspecting a grounded iceberg off Resolute Bay in the Arctic. The divers were there as part of a team consisting of Canadian and American divers participating in *Operation Nanook 2011*. Interestingly, this is not the first time Canadian navy divers have been to Resolute Bay. Royal Canadian Navy (RCN) ‘frogmen’<sup>1</sup> have a notable history of being sent to the northern frontier, albeit a long time ago. Sadly, very little has been written on these operations despite their contribution to northern operations and the high praise they received by both US and Canadian authorities. In this article, the early exploits of RCN divers in the far north will be rediscovered to reveal a remarkable group of highly trained professionals that made a difference during the Cold War.

In the early 1950s, one of the greatest military threats to North America was Soviet long-range aircraft carrying nuclear bombs over the Arctic region. Their payloads promised devastation to North American cities many times that of Hiroshima and Nagasaki. To defend the continent, the United States convinced Canada that an array of radar sites cresting the northern landmass was the best way to obtain early warning of an attack. To this end, Canada and the United States completed one of the most secretive and complex radar systems the world had ever known: the Distant Early Warning (DEW) Line. The DEW Line was an intricate array of long-range radar stations largely designed, financed and manned by the United States, yet most of it was on Canadian territory. With growing American interest in the Arctic, Canada was faced with a dilemma – either assume a greater share of the effort, or allow its territory to become ever more populated by American forces. Within this context, a team of Canadian divers from the operational clearance diving unit in Halifax began a series of deployments that would last well into the next decade and span the length of the DEW Line from Tuktoyaktuk to Baffin Island.

Around the same time, the Clearance Diving Branch was formed from an amalgamation of the explosive disposal/clearance and standard deep-sea/salvage diving organizations in February 1954. The result was a strange combination of frogman and deep-sea diver, and an interesting mix of professional skills. By summer 1954, the first divers were deployed to the Arctic onboard the icebreaker HMCS *Labrador* for the ship’s legendary voyage through the Northwest Passage. Here, they gained valuable experience in operating in the Arctic environment. The follow-



Credit: DND Photo: HS-73957

Divers in Halifax Harbour showing typical gear for ice diving, 6 February 1964.

ing year, an Underwater Demolition Unit (UDU) sailed in *Labrador* to Foxe Basin north of Hudson’s Bay to help survey and clear landing sites for the initial construction of DEW Line stations. This second deployment was pioneering because it involved beach reconnaissance, hydrographic surveys and diving in unfamiliar conditions, including ice.

Arctic operations were (and still are) complicated by a lack of docking facilities so everything had to be done amphibiously, over the beach. Supplying these stations was a test of sea transportation in an inhospitable climate with very little support. There was a constant threat of freezing, heavy ice-choked harbours, inlets and bays, and perpetual darkness for six months of the year, leaving a very short window of opportunity for re-supply operations. For over 15 years, the UDUs cleared the way for large convoys of the US Navy’s Material Sea Transportation Service (MSTS) which faced hazards and hardship to deliver vital cargo by sea. These operations were complicated by the seasonal advance and retreat of pack ice, together with the



Credit: DND Photo LAB-1588

*The dive team embarked in HMCS Labrador with a tidal marker, circa 1955.*

normal tides and currents as well as regular freezing and thawing, that continually moves massive boulders and other obstructions around.

In light of these conditions, beach-clearing operations were an ongoing concern and one for which the skills of the UDU were uniquely suited. The Canadian divers had few references to guide them, so they developed their own techniques that were later added to the RCN's Diving Manual. A team was typically made up of six to seven divers including an officer-in-charge (OinC) plus a handful of Petty Officers, Leading Seamen and below. A team this size was small enough to be highly mobile, yet big enough to be divided into two if necessary. Initially, all the ice would be cleared from the site then it would be surveyed by a skiff or other boat equipped with booms and lines; this allowed divers to be pulled along in a prescribed search pattern. When obstructions were spotted, the swimmer would raise his hand and a weighted float would be heaved over the side of the skiff. Once the

survey had been completed, the team returned to each float, assessed the amount of explosives required and laid the necessary charge.

Several types of explosives were used, such as C3 obtained from American sources and PE3A from the British. These explosives were good for certain jobs like breaking up large chunks of grounded ice but the high rate of detonation made them unsuitable for other tasks such as removing boulders. If these explosives were used on a large boulder, it would shatter leaving numerous smaller fragments which then had to be cleared. To avoid this, the teams preferred a Canadian-made explosive called Nitrone – an ammonium nitrate-based explosive manufactured by Canadian Industries Limited. This explosive was favoured for several reasons: first, it had a detonation rate less than half that of other explosives; second, it was available in one pound canisters threaded on both ends that could be screwed together to make the required charge; and third, this packaging protected the explosive from moisture and freezing. A charge could be put together from the Nitrone supply in the skiff with the swimmer still in the water. Using these techniques, a landing site of 300 feet by 400 feet completely blocked with ice could be cleared by seven frogmen in two and a half hours.<sup>2</sup>

The capabilities of the Canadian divers became of such value that the US Navy requested the unit embark in its icebreaker, USS *Edisto*, to continue providing this service after *Labrador* was transferred out of the RCN in 1958. At this point, these deployments served as the navy's only contribution to northern operations other than providing communication facilities for American task groups



Credit: DND

*A frogman sits on the ice with DEW Line radar site PIN Main (Cape Parry, NWT) in the background, July 1967.*

operating in the area. UDU Bravo went aboard *Edisto* in July 1958 and proceeded into northern waters to conduct a preliminary survey of the DEW Line extension located along the northern coast of Newfoundland and Labrador (a series of radar sites known as the GAP/PINE sites). To complete the reconnaissance phase of the task, part of the team remained on the ship while the rest of the team was sent ashore using either the ship's helicopter or motor launch. The use of helicopters was preferred because a beach-clearing reconnaissance party could proceed ahead of the icebreaker while the ship remained underway. The OinC of UDU Bravo, Lieutenant-Commander J.C. Ruse, described the work in the summer of 1958 as follows:

The prime difficulty in examining these beaches turned out to be getting to them. It had been decided that airlifting divers from the ship would expedite their arrival at beaches and inconvenience the transporting ship for the least time. In fact, it was possible to lift in the OinC while the ship was still miles off, perform the examination, inform the ship by aircraft radio of the results of the examination, and, if work was not immediately contemplated, the ship continued on her course up the coast without deviation. It was adopted as policy that immediate beach clearance work would be indicated if the total estimated working time exceeded three or four hours. Anything less than that time could be done from a base in the sealift after its arrival, and before its craft were ready to hit the beach.<sup>3</sup>

After inspecting the sites, *Edisto* sailed to Resolution Island where the UDU waited for the US Coast Guard icebreaker *Westwind* to transport it to sites on Baffin Island. The US Commander of the summer re-supply operation had ordered a detailed beach survey of the Brevoort Island site including underwater hydrography so Ruse and his divers went to work.

Here, Ruse discovered, "the main problem in these northern waters is the management of divers, ice, strong currents and properly taking care of men operating from the beach." For the men of the UDU, the hardships of survival in the far north were, by now, fully understood, but the rigorous physical nature of the work made these deployments that much more challenging – indisputably, these men were tough. To say that the Brevoort Island site was inhospitable is an understatement, as heavy surf and harsh conditions took their toll leaving neither men nor equipment unscathed. Battered and bruised by the



Divers from *Esquimalt* preparing Nitron charges at DEW Line site PIN-3 (Lady Franklyn Point, Victoria Island, Nunavut), July 1967.

Credit: DND

cold, high winds and heavy surf, "PO Powers got a deep, ugly-looking bruise on the right quadriceps, which would have put a lesser man in Sick Bay for days," and "AB Line's back, already weakened from carrying too heavy loads of explosives at Resolution Island, gave out."<sup>4</sup> The young diver had actually ruptured an inter-vertebral disc and would later be sent home. In terms of equipment, two of the team's boats were holed and one outboard motor was submerged and damaged on the rocks during the Brevoort Island operation.

Despite this, the task was completed. In his Diving Progress Report, Ruse lauded his men.

I feel very strongly that in the field of Naval diving particularly, the character of the effort produced over a sustained period depends more upon the outlook of the men, both individually and as a group, than any other single factor. The divers of the UDU BRAVO were all volunteers. One man was married six days before the team left Halifax. Several left families for a period known in advance to be in excess of five months. It was also known there would be no rum issued, cigarettes or exposure ration carried. The reasons for their attitude are not the hope of financial gain since allowances where payable were meagre and most permanent labourers on the DEW Line by comparison, draw more pay than the OinC of the unit. I think these men pulled long and hard because they felt that they were working for an organization who appreciated their value, insisted upon their being adequately equipped, and was not afraid to spend a dollar on them to save ten in the long run.<sup>5</sup>

With the supply convoy on its way, the UDU moved farther north to Cape Dyer. As the terminus of the Foxe Basin extension, Cape Dyer acted as a staging site with access to



The dive team embarked in HMCS *Labrador* preparing to dive in ice, circa 1955.

Davis Strait and open water. Almost immediately upon arrival, the team got to work clearing two large boulders. Overzealous and perhaps agitated by the beating they took at Brevoort Island, extra explosives were used resulting in a blast sizeable enough to elicit “complaints from representatives of every operating group in the area.”<sup>6</sup> With this abrupt introduction, the team transferred ashore to a tent as *Westwind* departed for Thule, Greenland.

The results achieved in the summer of 1958 earned the Canadian divers a solid reputation. The US Commander sent the following message to the flag officer in Halifax: “I wish to extend my sincere thanks and appreciation for the use of the RCN UDU Bravo and their outstanding contribution to MSTS Arctic Operations/East/1958.”<sup>7</sup> The commanding diving officer added:

The mobility, zeal and effectiveness of this team in many arduous tasks called forth high praise from these [MSTS] authorities and considerable information was brought back by the Officer-in-Charge. Indications are that this will be a continuing commitment for the Unit as long as there is work to be done in the Arctic area.<sup>8</sup>

These efforts eventually involved divers from both Atlantic and Pacific operational Clearance Diving Units working across the entire archipelago. But, they did not work alone. They plied their skills alongside the Underwater Demolition Teams (UDTs) of the US Navy – frogmen who would eventually serve as the basis for the formation of the vaunted Sea, Air and Land (SEAL) teams in 1962.

Whereas the American frogmen were less than enthusiastic about the bitter cold and kept out of the water as much as possible, their Canadian counterparts

immersed themselves, not just in the frigid water, but in the inhospitable climate ashore. Lieutenant-Commander Ruse insisted that “every effort was made to keep the men ‘cold-water acclimatized’ by encouraging sleeping in the open, the wearing of light clothing, and exercise rather than sweaters and parkas, as a means of keeping warm.”<sup>9</sup> Whether or not this practice was the right one, it was adopted by UDU Bravo that summer and no cases of hypothermia or fatigue were reported. Canadian divers apparently looked forward to swimming in the pristine waters and felt quite comfortable in their Pirelli wetsuits owing to special long underwear worn underneath, developed by the Defence Research Board.<sup>10</sup>

On the other side of the Canadian Arctic, the West Coast team began operations in 1959 and on its second deployment travelled a total of 5,000 miles in two months as it moved east along the line from Tuktoyaktuk to the Boothia Peninsula.<sup>11</sup> The operations grew from single deployments to multiple ones and teams would often be called upon for some emergency that required their expertise. During the 1964 deployment, part of the UDU from Halifax was flown from base camp at Cape Dyer to Resolute Bay where a late thaw rendered the main beach unusable. The Canadian Department of Transport summer re-supply convoy had arrived to find the bay blocked by ice as much as five feet thick. Despite the best efforts of the escorting icebreaker, the shoreline remained unreachable by landing craft. Using over 3,000 pounds of explosives from a stockpile



Divers about to lay Nitrone charges to blast an obstruction at DEW Line site PIN-3 (Lady Franklyn Point, Victoria Island, Nunavut), July 1967.



While participating in *Operation Nanook* 2011, divers survey the wreckage of a C-54 Skymaster that crashed near Resolute Bay in 1951.

left by the Department of Mines and Technical Surveys, the OinC of the UDU, Lieutenant A. Sagar, accompanied by two of his divers, cleared the beach after more than 18 hours of continuous blasting.<sup>12</sup> For this effort and countless others, the Deputy Minister of Transport, J.R. Baldwin, later wrote:

I would like to express my appreciation for the work done by the Naval underwater demolition teams. These teams, which have been provided by the RCN for a number of years, are employed in both the Eastern and Western Arctic in clearing rocks, boulders and ice from the beaches and their approaches and on emergency underwater repairs to ships and are an essential element in the success of annual resupply of Arctic stations.

While it is difficult for me to single out any particular aspect of the work of these teams, which is always most efficiently carried out, I believe that the Resolute incident this year merits particular commendation for the highly professional, competent and expeditious execution of the task.<sup>13</sup>

The letter was passed to the East Coast command with the added note that the UDU had earned the appreciation of the first post-integration Chief of the Defence Staff, Air Chief Marshall F.R. Miller.

When it was first constructed, the DEW Line was the most remote and difficult array of radar sites to build and re-supply. Eventually, many of the radar sites were converted to unmanned stations virtually eliminating the need for annual re-supply operations but the sites initially required massive sealift operations involving large numbers of ships that had a small window of opportunity

during the summer months to get the job done. Not only did these re-supply operations involve tons of material, vehicles and provisions, they required icebreaking services and a clear path to the shore. In a majority of cases, the beaches were cleared by Canadian frogmen.

The RCN deployed its first dive team into the Arctic just after the trade had been amalgamated in 1954 and, thus, these activities are an integral part of the early history of the branch. The men of the UDUs felt they were contributing to an important cause and were appreciated by their superiors. Moreover, this small, but important contribution to the Cold War effort was both frequently sought and highly praised by American authorities. One could say that the sealift operations essential to building and maintaining one of the world's most intricate radar networks depended on a handful of exceptional Canadian divers: the RCN's Cold War frogmen of the far north. To survive in the Arctic in small groups with little support, they had to be the best of the best – highly motivated and physically fit – anything less would result in failure. In the end, the RCN frogmen who deployed to the Arctic in the 1950s and 1960s were a remarkable group of highly trained men that made a difference during the Cold War – and they were the right men for the job. 🐸

#### Notes

1. The word 'frogman' is used to describe a diver/swimmer engaged in activities other than traditional deep-sea diving. Usually, these activities are amphibious in nature involving inshore or water-to-shore operations. The term has been in use since the Second World War. Although the term is not gender-neutral, the author hopes reader accept the terms used in this article as part of the lexicon of the day, in this case the 1950s and 1960s. Perhaps a more contemporary word might be 'frogs.'
2. Diving Progress Report, 1 April 1957-31 March 1958, Library and Archives Canada (LAC), R112, vol. 33625, file 1425-9.
3. Diving Progress Report for the period 31 March to 31 November 1958, LAC, R112, vol. 33625, file 1425-9.
4. *Ibid.*
5. *Ibid.*
6. *Ibid.*
7. Message from CTF 6 to CANFLAGLANT, 29 October 1958. DHH, 81/520/1650-239/2, box 105, file 7.
8. Diving Progress Report, 31 March to 31 November 1958, p. 5. Reports of these Arctic diving operations generated much interest among Canada's allies, particularly the Royal Navy and US Navy. Memo from Naval Secretary to Flag Officer Atlantic Coast and Flag Officer Pacific Coast, 30 September 1957, LAC, R112, vol. 33625, file 1425-9.
9. Diving Progress Report, 31 March to 31 November 1958.
10. Lieutenant-Commander B.F. Ackerman, "Labrador's Divers Spend Busy Summer: Frogmen Towed Beneath Sea in Harbour Surveys," *Crowsnest*, Vol. 9, No. 1 (November 1956), pp. 14-15.
11. Beach Clearance Canadian Arctic 1960, 21 July to 9 September 1960, 21 September 1960, LAC, R112, vol. 33625, file 1425-10, pt. 3.
12. Report of northern diving operations by Lieutenant A. Sagar, 9 December 1964, LAC, R112, vol. 33625, file 1425-10, vol. 4.
13. Letter of Appreciation, 17 September 1964.

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