

“No information was given concerning the origin of this torpedo”: A Soviet Weapon at the Canadian War Museum

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Since 1960, the Canadian War Museum’s collection has included a Soviet torpedo whose history long remained obscure. Archival research has uncovered its 1951 transportation to Canada as part of a cargo of Soviet-made torpedoes and naval mines captured in North Korea, destined for analysis and training purposes. It has also revealed the intricacies and the implications of the technical analysis of the mines. This article examines the history of these weapons, and suggests some of the wider implications of their acquisition and analysis for the early Cold War Royal Canadian Navy, including potential areas for further research.

La collection du Musée canadien de la guerre comprend depuis 1960 une torpille soviétique dont les origines ont longtemps été nébuleuses. Des recherches archivistiques ont permis de découvrir son transport au Canada en 1951 au cours d’un chargement de torpilles et de mines marines de fabrication soviétique capturées en Corée du Nord et destinées à des fins d’analyse et de formation. Ces recherches ont également révélé les subtilités et les implications de l’analyse technique des mines. Le présent article porte sur l’histoire de ces armes et décrit les répercussions plus larges de leur acquisition et leur analyse pour la Marine royale canadienne au début de la Guerre froide, y compris les domaines potentiels qui se prêtent à des recherches ultérieures.

Since 1960, the collections of the Canadian War Museum (CWM) have included a Second World War-era Soviet Type 53 torpedo whose history long remained obscure.¹ Archival research has furnished details of its provenance, including its 1951 transportation to Canada as part of a cargo of Soviet-made torpedoes and naval mines captured in North Korea, destined for technical analysis and training purposes. It has also shed light on the examination of the torpedo and its cross-Canada travels, and the reasons for the absence of its original warhead. This article will present aspects of the long and at times convoluted histories of the CWM's torpedo and the other torpedoes and mines brought to Canada, as well as suggesting some of the wider implications of their acquisition and analysis for the early Cold War Royal Canadian Navy (RCN), including potential areas for further research.



The torpedo on display in the Canadian War Museum courtyard at 330 Sussex Drive, Ottawa, July 1998. (Credit: Canadian War Museum, CWM2023-0015-0001-N)

The torpedo has been displayed by the museum at various times since 1960, including in the summer of 1998, when it was part of an outdoor display at the CWM during the exhibition *On Watch for Canada*, which marked the seventy-fifth anniversary of the naval reserve. At the time, while some basic

¹ Torpedo, Canadian War Museum (hereafter CWM) artifact number 19600007-001.

technical information was available, the history of the weapon was not.² It was subsequently displayed in Vimy House, the CWM’s off-site research and collections facility that was occasionally opened to the public prior to the opening of the new museum building on Ottawa’s LeBreton Flats in 2005, and has again been on display in the museum’s LeBreton Gallery since 2013. In 2009-2010, while working with the author on an online exhibition related to the centennial of Canada’s naval service, Alex Comber (now Military Archivist, Government Records Branch, Library and Archives Canada) reviewed the museum’s acquisition file for the weapon. It included a letter from the RCN that provided two file references, as well as the bill of lading, confirming shipment from Naval Armament Depot Dartmouth to Ottawa.³ The file references led to documents at Library and Archives Canada, and subsequently to other sources, and to the unfolding of the torpedo’s history, as well as the stories of the two other torpedoes and five magnetic influence mines brought to Canada at the same time. This assemblage of weapons also connected the torpedo to the postwar rebuilding and re-equipping of the Royal Canadian Navy, especially in the areas of mine countermeasures and clearance diving, as well as to Canada’s intelligence relationship with the United States.

The museum’s torpedo began its long voyage from the Soviet Union to Ottawa via the port of Wönsan, in North Korea. It may have been intended to arm the Soviet-made G5 torpedo boats that the Korean People’s Navy possessed by June 1950. Following the Battle of Chumonjin on 2 July 1950, the North Korean navy was left largely without torpedo boats, so opportunities to use such torpedoes were virtually non-existent. Alternately but perhaps less likely, the torpedoes may have been intended for Soviet submarines that reportedly called at North Korean ports including Wönsan before the war.⁴

² Daniel Glenney, at that time the CWM’s director of programs and collections, noted that the “25-year-old Russian torpedo was contributed by the Navy in Halifax and he didn’t know how it was obtained.” Dave Mullington, “Navy ‘well equipped’ for future,” *The Ottawa Citizen*, 1 July 1998, 6, <https://www.newspapers.com/image/465848492/>.

³ Commodore Superintendent Atlantic Coast to Naval Secretary, “Disposal of Captured Enemy Equipment,” 25 February 1960; Government Bill of Lading, 24 February 1960, artifact acquisition file AQN 19600007, CWM.

⁴ Malcolm W. Cagle and Frank A. Manson, *The Sea War in Korea* (Annapolis, MD: United States Naval Institute, 1957), 282-283; James A. Field, *History of United States Naval Operations: Korea* (Washington, DC: Department of the Navy, 1962), 61. A 1951 Canadian examination of one of the torpedoes concluded that its “arrangement of access fittings for adjustment and settings suggest the torpedo is suitable for both submerged and above water fire,” which leaves their intended weapons platform ambiguous. “Investigation of a Russian Torpedo held by H.M.C. Ordnance School, H.M.C.S. ‘Naden,’” 1, attached to Commodore, RCN Barracks, Esquimalt to Flag Officer Pacific Coast, “Enemy Torpedoes,” 13 July 1951, RG 24-D-1-c, volume 34594, file 5701-10, pt. 1, Library and Archives Canada (hereafter LAC).

A December 1949 Central Intelligence Agency report had noted that Soviet submarines were “frequently observed” at Wõnsan and a number of other North Korean locations, while a July 1950 report noted that a flotilla of North Korean motor torpedo boats was based at the port, and that five of them had been destroyed in the Battle of Chumonjin; it also claimed that no Soviet ships or submarines had been seen at Wõnsan since 8 April.⁵

The naval war in Korea soon developed into inshore operations by the United Nations navies against irregular forces, the provision of naval gunfire support and interdiction missions, a range of naval aviation operations, blockades, and support for amphibious warfare. The latter included both small-scale raids and covert operations and larger-scale assaults, notably the September 1950 landing at Inch’õn, and the October 1950 landing at Wõnsan. At the latter, the extensive use of minefields prevented planned American amphibious landings from proceeding on schedule and inflicted serious losses on the mine clearance force. By the time US and Republic of Korea forces, augmented by Japanese mine clearance vessels and their crews, were able to clear the minefields and land on the beaches, the city had already been taken by Republic of Korea forces advancing by land.⁶

Wõnsan was the highest-profile situation in a series of events that made clear that even the simplest of naval mines, laid by small craft, created significant hazards and hindered operations in coastal waters, placing significant constraints on the use of naval forces. As Captain J.V. Brock of HMCS *Cayuga* noted in October 1950, “Because of the risk of floating mines, ships were generally kept well out at sea during the dark hours, and only operated close inshore by day.” He also explained that “The sudden laying of mines around the coasts of Korea by Communists has cast a new light on the Naval warfare, and has demonstrated conclusively the power that mines have of stopping coastal shipping. Haphazard minelaying by irregular forces has added an element that is most difficult to appreciate by Naval planning standards, and has been a constant thorn in the side of strategists since mines

⁵ Central Intelligence Agency (hereafter CIA) Information Report, “Soviet Naval Activity in North Korea,” 5 December 1949, CIA-RDP82-00457R003800320004-5; CIA Information Report, “North Korean Torpedo Boats,” 12 July 1950, CIA-RDP82-00457R005200540004-5.

⁶ Cagle and Manson, *The Sea War in Korea*, 107-151; Field, *History of United States Naval Operations: Korea*, 219-237; Nicholas A. Canzona and Lynn Montross, *U.S. Marine Operations in Korea, 1950-1953, Volume 3: The Chosin Reservoir Campaign* (Washington, DC: United States Marine Corps, 1957), 22. The use of Japanese minesweeping vessels and crews at Wõnsan has not been well described until quite recently; see Thomas B. Buell, *Naval Leadership in Korea: The First Six Months* (Washington, DC: Naval Historical Center, 2002), 35-36; Samuel P. Porter, “In Dangerous Waters: Japan’s Forgotten Minesweeping Operations in the Korean War,” *The Asia-Pacific Journal: Japan Focus* 20:17:1 (October 2022), article ID 5741.



The destruction of Republic of Korea Navy minesweeper YMS-516 at Wönsan, 18 October 1950. This sinking helped confirm the deployment of magnetic influence mines as part of the port's defences. (Credit: National Archives and Records Administration, 80-G-423625)

were discovered. The small number of mine casualties is not a reflection on the effectiveness of counter-mine warfare but upon the great reduction of shipping now being exposed to the mines.”⁷

UN and NATO forces were already familiar with some of these weapons. The Soviet M-26 contact mine, one of the models encountered in Korea, was similar to other types dating back to before the First World War. At least one example had drifted ashore in British Columbia, carried across the North Pacific by ocean currents; it fetched ashore at Dead Tree Point, Haida Gwaii, in January 1945. It was one of many floating mines, both enemy and allied, that the ocean carried to Canada during and after the war.⁸ Canadian destroyers

⁷ Report of Proceedings for HMC Ships *Cayuga*, *Sioux*, and *Athabaskan*, for month of October 1950, 1, RG 24, volume 11385, file DCA-1926-335/30, LAC. On the impacts of mine warfare in Korea more generally, see Tamara Moser Melia, *Damn the Torpedoes: A Short History of U.S. Naval Mine Countermeasures, 1777-1991* (Washington, DC: Naval Historical Center, 1991), 73-90. Repeated references to mines and their influence on RCN operations appear in Thor Thorgrimsson and E.C. Russell, *Canadian Naval Operations in Korean Waters, 1950-1955* (Ottawa, ON: Naval Historical Section, 1965).

⁸ Lt (j.g.) A.W. Glauer, USNR, District Mine Disposal Officer, to Chief of Naval Operations, 22 January 1945, “Mine, Russian, Recovery of”, R112, volume 34428, file 5530-166-11, pt. 1,

also encountered them frequently in Korean waters and transported at least one recovered example to Japan for analysis.⁹

What Wōnsan confirmed was the use of other types of mines, notably magnetic influence mines. Examples had been captured at Inch'ōn but had not been deployed there. These weapons used the disturbance in the earth's magnetic field caused by a ship to trigger the mine, rather than relying on direct contact with the ship's hull. More difficult to locate, since they were laid on the ocean floor, they were also considerably more difficult and dangerous to neutralize. The Soviet Union had provided thousands of contact, magnetic, and controlled mines soon after the North Korean invasion, along with mining experts who helped plan and establish substantial minefields at Wōnsan, Chinnampo and Hungnam, often located in conjunction with land-based artillery to be mutually reinforcing. They also trained North Korean personnel.¹⁰ Such magnetic mines were likewise a worry for NATO navies at a time when the Cold War seemed to be rapidly becoming hot, bringing with it possibility of Soviet forces and their allies laying them in harbour approaches and other coastal waters, both offensively and, as at Wōnsan, defensively.¹¹

The capture of Wōnsan yielded a range of Soviet-made naval equipment

LAC. See also "Russian Mine Mark M.26 - Description and Render Safe Procedure," attached to Naval Member, CJS (London), to Naval Secretary, Ottawa, "Russian Mines," 26 September 1950, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC. On the RCN and floating mines along the Pacific Coast in early postwar years, see David Zimmerman, *Maritime Command Pacific: The Royal Canadian Navy's West Coast Fleet in the Early Cold War* (Vancouver, BC: UBC Press, 2015), 20-25.

⁹ Captain J.V. Brock, Commander, Canadian Destroyer Division, to Naval Secretary, 26 October 1950, "Russian Mine Mk. M.26," RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC.

¹⁰ Melia, *Damn the Torpedoes*, 72; James F. Schnabel, *Policy and Direction: The First Year, United States Army in the Korean War* (Washington: Office of the Chief of Military History, Department of the Army, 1972), 208; Cagle and Manson, *The Sea War in Korea*, 144-146; Arnold S. Lott, *Most Dangerous Sea: A History of Mine Warfare, and an Account of U.S. Navy Mine Warfare Operations in World War II and Korea* (Annapolis, MD: US Naval Institute Press, 1959), 276-278; Jason D. Menarchik, "North Korean Protective Mine Warfare: An Analysis of the Naval Minefields at Wonsan, Chinnampo and Hungnam during the Korean War" (Maxwell Air Force Base, AL: Air Command and Staff College, 2010), 8-11; Paul McElroy, "The Mining of Wonsan Harbor, North Korea in 1950: Lessons for Today's Navy" (Thesis, Marine Corps War College, Quantico, VA, 1999), 10-27; Commander in Chief U.S. Pacific Fleet, *Korean War, U.S. Pacific Fleet Operations, Interim Evaluation Report No. 1, Period 25 June to 15 November 1950*, Volume II, 104; Joseph H. Alexander, "Fleet Operations in a Mobile War, September 1951 – June 1951," in *The U.S. Navy in the Korean War*, ed. Edward J. Marolda (Annapolis, MD: Naval Institute Press, 2007), 205-216.

¹¹ For a general overview of these concerns and some of their implications for NATO naval forces, see Norman Friedman, *The Postwar Naval Revolution* (London: Conway Maritime Press, 1986), 175-187.

that included magnetic influence mines and torpedoes, and it also marked the next step in the CWM torpedo's long voyage to Ottawa. In 1958, Acting Captain James Verdon Steele noted that “both the mines and torpedoes were captured by the 1st Division of the United States Marines, the torpedoes in rail cars and the mines in a store, both in the WONSAN port complex.”¹² Cagle and Manson, in their 1957 *The Sea War in Korea*, note that fourteen Soviet torpedoes were captured in a tunnel near the Wönsan airstrip on 16 October, and these are perhaps the same weapons.¹³ Interestingly, while they mention that contact-type mines were found, there is no mention of magnetic mines being recovered, although their contemporaneous article on the mines at Wönsan in the United States Naval Institute's *Proceedings* mentions that a search coil from a magnetic mine, the central element of its detection system, was located. It also notes the recovery of influence mines at Inch'ön. The capture of contact mines and a search coil for a magnetic mine at Wönsan had already been publicly acknowledged in a widely-carried October 1950 United Press news report, along with references to a search being made for a cache the mines in the area; Associated Press coverage implied that correspondents had been shown a complete mine.¹⁴ In 1959, Arnold Lott's *Most Dangerous Sea* provided much the same story about the recovery of mine components, but not an entire mine, at Wönsan, and James Field's 1962 history of US naval operations in Korea provided a similar account, with some additional details.¹⁵

¹² Acting Capt. J.V. Steele to Commanding Officer, HMCS *Niagara*, Washington, DC, 3 February 1958, 1, RG 24-D-1-c, volume 34594, file 5701-10, pt. 2, LAC. Capitalization in original. Another source mentions a mine depot north of Wönsan located by ROK military intelligence personnel working with local inhabitants. Roy Edgar Appleman, *South to the Naktong, North to the Yalu (June-November 1950): United States Army in the Korean War* (Washington, DC: US Army Center of Military History, 1961), 635.

¹³ Cagle and Manson, *The Sea War in Korea*, 145. A May 1950 CIA report, based on unevaluated human intelligence sources, noted that the Soviet Union was building fortifications, including underground installations, around the airport at Wönsan. CIA Information Report, “Fortifications in the Wonsan Area,” 10 May 1950, CIA-RDP82-00457R004800520002-7.

¹⁴ Malcolm W. Cagle and Frank A. Manson, “Wonsan: The Battle of the Mines,” *United States Naval Institute Proceedings* 83:6 (June 1957), 607, 603; Frank Tremaine, “Wonsan Fields Show Reds Expert on Mine Technique,” *Dayton Daily News*, 23 October 1950, 2, <https://www.newspapers.com/image/401593365/>; Stan Swinton, “U.S. Admiral Says Russians Laid Mine Field off Wonsan,” *Tampa Tribune*, 23 October 1950, 3, <https://www.newspapers.com/image/327668706/>. The cache of mines may be the same as the one referred to in Appleman, *South to the Naktong, North to the Yalu*, 635.

¹⁵ Lott, *Most Dangerous Sea*, 276; Field, *History of United States Naval Operations: Korea*, 235. For additional details on the sensor coil story and other stories alluded to in these sources, see Walter Karig, Malcolm W. Cagle, and Frank Manson, *Battle Report: The War in Korea*, (New York: Rinehart and Company, 1952), 326-331, and Steven Dwight Blanton, “A Study of the United States Navy's Minesweeping Efforts in the Korean War” (MA Thesis, Texas Tech University, 1993), 50-52. <https://ttu-ir.tdl.org/bitstream/handle/2346/60894/31295007673907.pdf>

There seems to have been no explicit and credible mention of complete magnetic influence mines being recovered at Wõnsan, which may reflect continuing secrecy around the weapons' capture.¹⁶

The Canadian torpedoes and mines were obtained from United States Navy (USN) sources and arrived in Japan from North Korea by a route that currently remains unclear.¹⁷ In any event, HMCS *Sioux*'s preparations in Sasebo for its homeward voyage in January 1951 included removing "as much top weight as possible in anticipation of stowing a deck cargo of about 12 tons of captured war equipment on our return to Esquimalt."¹⁸ The destroyer then proceeded to Yokosuka, where the captured torpedoes and mines were embarked on the 17th. With the cargo securely stowed, *Sioux* headed for Esquimalt via Midway Island and Pearl Harbor, arriving in British Columbia on 4 February.¹⁹ There was no mention of the cargo in news coverage, which is not surprising given the secrecy that surrounded it, and it is not obvious from photographs and film footage of the arrival where the crates were stowed. They were presumably unloaded at the ammunition jetty as part of de-ammunitioning the ship on the 7th.²⁰

¹⁶ The magnetic influence mines captured at Wõnsan were referred to by their American designation of RIA. This terminology appears in archival documents, contemporary accounts, and recollections. Information contained in various documents and photographs of the mines in Canada suggests that these were Soviet KMD-1000 mines, which could be deployed by surface vessels or submarines, but reliable information about Soviet influence mines remains difficult to obtain. Commander J.V. Steele, RCN, NID 5, to DNI, "Captured Soviet Magnetic Mine. Examination Report," 15 December 1950, 1-2, RG 24-D-1-c, vol. 34427, file 5501-22, pt. 1, LAC. Menarchik, "North Korean Protective Mine Warfare," 12; Samuel J. Cox, US Naval History and Heritage Command, "H-Gram H-054-1: Inchon Landing and Naval Action in the Korean War, September–October 1950," September 2020, 26, <https://www.history.navy.mil/about-us/leadership/director/directors-corner/h-grams/h-gram-054/h-gram-054-1.html>.

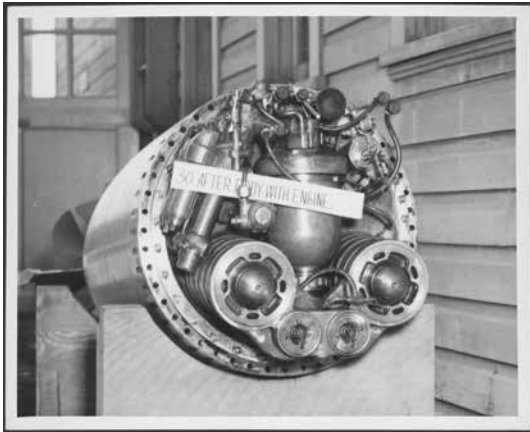
¹⁷ Memorandum, DGNO to DNI, "Captured Russian Mines and Torpedoes," 8 April 1953, RG 24-D-1-c, volume 34427, file 5501-22, pt. 2; Acting Capt. J.V. Steele, to Commanding Officer, HMCS *Niagara*, Washington, DC, 3 February 1958, RG 24-D-1-c, volume 34594, file NSS-5701-10, pt. 2, LAC. Canadian diver Don Loney later recalled some of the RCN's reactions in Canada at around the time of the mines' capture, including a cancelled plan to send him to Korea. Canadian Naval Divers Association, "Don Loney," *Dippers Digest* 7 (September 1991): 12, <http://navydiver.ca/cnda-library>.

¹⁸ Commanding Officer, HMCS *Sioux*, "Report of Proceedings for Period 1st to 31st January, 1951," 1, RG 24, volume 11384, file DDPC-1926-355/30, LAC.

¹⁹ Commanding Officer, HMCS *Sioux*, "Report of Proceedings for Period 1st to 31st January, 1951," 2-3; Ship's Log, HMCS *Sioux*, 16-17 January 1951, 4 February 1951, RG 24, volume 9075, LAC.

²⁰ Ship's Log, HMCS *Sioux*, 7 February 1951. Some correspondence associated with the torpedoes and mines brought to Canada includes references to manuals for Soviet Tamir-10 sonar equipment, which suggests that a captured example or examples may have been supplied to the RCN. Naval Secretary to Naval Member, CJS Washington, "Office of U.S. Naval Intelligence Report Serial No. 61-C-50," 19 October 1951; Naval Member, CJS Washington to

Analysis of these torpedoes and mines was integral to the justifications for bringing them to Canada, as was their use for training purposes. Even as they were headed to Canada discussions had begun about their handling and allocation.²¹ The events that followed their arrival revealed limited Canadian capacities for technical analysis of enemy equipment and for explosive ordnance disposal work. The torpedoes were similar to those in Canadian service; one example was thoroughly analyzed by RCN technical staff in Esquimalt, although there were some delays “due to the pressure of training activities and refit of ships from the Korean Theatre occupying competent technical staff and in production of certain tools necessary for stripping.”²² The evaluation noted that the torpedo had many features comparable to British examples that were or had been in Canadian service, but that “the general workmanship from a machinist point of view could not be considered good. The engine being the only component which appears to be well engineered.”²³



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One of the captured Soviet torpedoes being assessed at Esquimalt, showing the engine and after part of the weapon. (Credit: © Government of Canada. Reproduced with the permission of Library and Archives Canada (2023). Library and Archives Canada, Department of National Defence fonds, E-15419)

The more complex magnetic influence mines took longer to assess. In part, this was because removing the explosive charges from the torpedo warheads and mine casings took considerable time, a reflection of the need to acquire the appropriate equipment.²⁴ The torpedoes were relatively easy to assess because their warheads could be removed to render them safe, with the remainder of the

Naval Secretary, Ottawa, “ONI Report Ser. No. 61-C-50.” 18 December 1951; Memorandum, DSS to DNI, 4 April 1952, RG24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC.

²¹ Memorandum, Director of Underwater weapons to Director of Scientific Services, “Russian Magnetic Mines,” 26 January 1951, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC.

²² Commodore, RCN Barracks, Esquimalt, “Investigation of a Russian Torpedo,” 1.

²³ Commodore, RCN Barracks, Esquimalt, “Investigation of a Russian Torpedo,” 1, 5.

²⁴ See discussions of how the steaming out of the charges would be handled in RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC.

weapon then being studied in straightforward fashion. The integrated nature of the mine casing, its explosive charge, parts of its detection systems, and any potential anti-handling devices, however, presented a greater challenge. These weapons had to be rendered safe, including having their explosive charges completely removed by steaming them out, before a full analysis could begin. As J.S. Johnson, Director of Scientific Services, noted in a letter to Dr. J.E. Keyston at the Naval Research Establishment in Halifax, "I am sure you would like to receive the mine with the main charge intact, however, with the best interest of Halifax in mind it has been decided that the main charge will be steamed out before you receive it."²⁵ Initial plans were for this to take place within a few months, but it would require much longer.

In the meantime, preliminary information was forthcoming from the United States, which had greater capacities and capabilities in these fields, including the services of former German mine warfare experts such as Dr. Julius Hagemann.²⁶ The analysis of these magnetic mines noted that they were substantially more dangerous than wartime German examples – with a sensitivity "at least eighteen times greater than that of the best German magnetic mine used during the Second World War," as Steele explained. This raised significant questions about their potential threat in coastal waters, as well as doubts about the safety and suitability of the RCN's Bay-class minesweepers which were being procured, and the equipment and training of clearance divers who were expected to deal with such mines.²⁷ As Steele noted, "This matter will have to be given much careful thought, preferably by those persons who may have to deal with these weapons."²⁸ The RCN was already familiar with magnetic mines and with minesweeping, but this news prompted concerns about the navy's ability to handle this new threat.²⁹ Captain Ernest P. Tisdall,

²⁵ J.S. Johnson, Director of Scientific Services to Dr. J.E. Keyston, Chief Superintendent, Naval Research Establishment, HMCS *Stadacona*, Halifax, 8 February 1951, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC. Parts of the arming and firing systems of the mines were contained in a tail assembly, sometimes called the "top hat" due to its shape. Based on reports and photographic evidence, the "top hats" and the components they contained appear to have been removed before the mines were steamed out.

²⁶ Described by Steele as "ex-Chief Mining Scientist to the Third Reich," Hagemann had come to the United States postwar, and would play an important role in the development of side scan sonar as well as in other areas of mine warfare. Steele, "Captured Soviet Magnetic Mine," 1.

²⁷ Steele, "Captured Soviet Magnetic Mine. Examination Report," 5; Memorandum, Capt. E.P. Tisdall, Director of Weapons and Tactics, to EEC, NCC, EinC, SACNS, DNPO, VCNS, "Appreciation of Captured Soviet Magnetic Mine and its Effect On Canadian Minesweeping Requirements," 27 December 1950, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC.

²⁸ Steele, "Captured Soviet Magnetic Mine," 5-6.

²⁹ The RCN had had limited experience in countering enemy mining operations in Canadian and Newfoundland waters during the Second World War; these were confined largely if not



RCN Bay-class minesweeper HMCS Gaspé under construction at Davie Shipbuilding, 1951. The photograph shows the composite wood and aluminum hull, intended to help reduce the ship's magnetic signature. (Credit: CWM 19650068-009_58, George Metcalf Archival Collection, Canadian War Museum)

the RCN's Director of Weapons and Tactics, noted that this information “throws grave doubts on the validity of the present staff requirements for the ship safety of RCN New Construction minesweepers against Magnetic Mines.”³⁰ These comments, and the subsequent correspondence relating to them, suggest areas for further research into the early Cold War history of the RCN, including shipbuilding, plans for minesweeping, and the training, operations, and disposition of RCN's minesweepers and clearance divers from

entirely to the laying of mines off Halifax and St. John's by two separate U-boats in 1943. A series of fortuitous events and dedicated and daring work by mine clearance personnel prevented more substantial shipping losses. W.A.B. Douglas et. al., *A Blue Water Navy: The Official Operational History of the Royal Canadian Navy in the Second World War, 1943-1945, Volume II, Part 2* (St. Catharines, ON: Vanwell Publishing, 2007), 67-71, 97. RCN personnel had also gained mine warfare and explosive ordnance disposal experience while serving overseas, sometimes with the Royal Navy. Among them was Steele, awarded the George Medal for his role in the recovery of a German miniature submarine while serving with the RNVR; he transferred to Canadian service in 1945.

³⁰ Memorandum, Capt E.P. Tisdall, Director of Weapons and Tactics, to NCC, EEC, NCC, DNPO for info, VCNS for info, “Safety of Minesweepers Against Magnetic Mines,” 14 December 1950, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC.

the 1950s onwards, including the re-organization of diving that took place at this time.

In the meantime, Canadian authorities attempted to press ahead with plans for domestic testing and assessment of the mines. This included the National Research Council (NRC), which was to provide “information on the sensitivity of the mine, the standard of design involved by the designers, details of the equipment and trip mechanism and any other general or specific information which you think might be of use,” as well as using the mine to help develop underwater X-ray photographic equipment.³¹ The mines and possibly the torpedo warheads were shipped to Canadian Arsenals Limited in Montreal, which held them as of May 1951.³² They had still not been steamed out by January 1952, when arrangements were initiated to ship two torpedo warheads and three mines to the Naval Armament Depot at Renous, New Brunswick, for handling there once the appropriate equipment arrived. The remaining torpedo warhead and the other two mines were to be shipped to Naval Armament Depot Kamloops, for the same procedure. Once the mine casings were cleared, their detection circuits were to be returned to operable condition, with two torpedo warheads and three mines to be sent to Halifax, and the remainder to be sent to Esquimalt. One of the Halifax mines was intended for analysis and experimental work by the NRC in its Ottawa laboratories.³³ A mine complete with its casing was required to properly evaluate the weapon, in part because the casing affected the sensitivity of the search coil, and consequently the functioning of the mine.³⁴ Related NRC research reflected the concerns these mines had raised within the RCN; at least nine reports in the mid-1950s directly addressed questions relating to the magnetic fields that Canadian minesweepers could create, including the modelling and evaluation of different designs for

³¹ J.S. Johnson, Director of Scientific Services, to B.G. Ballard, Director, Radio and Electrical Engineering Division, National Research Council, 8 February 1951; Director of Scientific Services to DUW, “Russian Magnetic Mines,” 8 February 1951 and subsequent correspondence, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC.

³² Message, CANAVHED to SUPYARD ESQUIMALT for NAVARMDEP, 31 May 1951, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC.

³³ Naval Secretary to Commodore, RCN Barracks, Halifax cc Superintendent, HMC Dockyard, Halifax, “Captured Russian Influence Mine Cases and Torpedo Warheads,” 2 January 1951, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC; Naval Secretary to Commodore, RCN Barracks, Esquimalt, copied to Superintendent, HMC Dockyard, Halifax, “Captured Russian Influence Mine Cases and Torpedo Warhead,” 16 January 1952, RG 24-D-1-c, volume 34594, file 5701-10, pt. 1, LAC.

³⁴ The NRC had initially been provided with a search coil and associated electronics, and was later provided with another search coil and mine casing. D.M. Murray, “Response of mine R type 1A to sine-wave fields and other magnetic signals,” Report (National Research Council of Canada. Radio and Electrical Engineering Division: ERB), no. ERB-350 (December 1955), 2, <https://doi.org/10.4224/21273206>.

the vessels’ aluminum structures.³⁵

It would take a few months more for the relevant equipment to be made available, and it was not until May and June of 1952 that the RCN was able to steam out the mines and torpedo warheads. Given the limited knowledge of the weapons, and the potential for anti-handling measures and traps, especially in the mines, considerable caution was exercised in the process. Samples of the explosive charges and other materials were also taken for analysis. Experience showed that the explosive was more challenging to steam out than had been expected, and both official reports and first-hand reminiscences from those involved noted its noxious fumes and atypical characteristics when being melted and burned. Participants later recalled the fumes’ laxative effects on personnel, a reminder of the toxic hazards created by these processes, and of the limited effectiveness of the personal protective equipment that was available. While the report on work at Renous mentions measures taken to avoid contaminating the immediate site due to its planned use as a proving range, these activities in both locations would have contributed to longer-term contamination due to the burning of explosive residues and the disposal of “pink water” created during the steaming process.³⁶ In the case of the procedures at Kamloops, located on Tk’emlúps te Secwépemc territory situated within the unceded ancestral lands of the Secwépemc Nation, photographs of the process include images documenting the disposal by burning of the explosives at the worksite.

³⁵ See, for instance, E.R. Epp, N.L. Kusters, and R.M. Morris, “Eddy-current magnetic field due to pitching of Minesweeper MCB 159 and Class,” Report (National Research Council of Canada. Radio and Electrical Engineering Division : ERB), no. ERB-321 (July 1953), <https://doi.org/10.4224/8899341>; N.L. Kusters and R.M. Morris, “Eddy-current magnetic field measurements on Class AMc. 143 aluminum-framed minesweeper HMCS ‘Cowichan,’” Report (National Research Council of Canada. Radio and Electrical Engineering Division : ERA), no. ERA-231 (July 1952), <https://doi.org/10.4224/8898971>.

³⁶ American sources had reported similar challenges with steaming out the explosive from mines in their possession. The report from Renous mentions that “The use of the [Pattern] 230 smoke mask proved quite useless.... Dustite respirators were used and proved very useful, it was necessary to avoid the gases but prevented splash and blow-backs from penetrating the nose and mouth.” Steele, “Captured Soviet Magnetic Mine,” 2; Memorandum, Explosive Disposal Officer, HMC Ordnance School, HMCS *Naden*, to Senior Mine Disposal Officer, HMC Ordnance School, HMCS *Naden*, “Steaming out of High Explosive from Russian Mines and Russian Torpedo Head,” 6 June 1952, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC; Commander J.C. Ruse, Explosive Disposal Unit, to Commodore, RCN Barracks, Halifax, 26 June 1952, RG 24-D-1-c, volume 34427, file 5501-22, pt. 1, LAC. The comment on protective equipment is on pages 3-4 of Ruse’s report. For an unofficial account of the rendering safe of the mines and torpedo warheads at Renous, see Canadian Naval Divers Association, “Rod Petty & Bill Lawrence,” *Dippers Digest* 8 (December 1991): 3-4, 6, 8, <http://navydiver.ca/cnda-library>. “Pink water” is a widely-used generic term for water contaminated with TNT and related explosives, including RDX; it assumes this colour following exposure to light.



Ordnance Lieutenant Commander Edward Litchfield Borradaile and a steam generator at Kamloops Naval Armament Depot, 28 May 1952. Borradaile would be killed two weeks later while dealing with a wartime Japanese mine that had washed ashore at Lax Kul (Bonilla Island). (Credit: © Government of Canada. Reproduced with the permission of Library and Archives Canada (2023). Library and Archives Canada, Department of National Defence fonds, E-19102-1)

The warhead of the Esquimalt torpedo being steamed out on 28 May 1952. The steam hose has been inserted into the base of the warhead, and melted explosive is running out beside it. (Credit: © Government of Canada. Reproduced with the permission of Library and Archives Canada (2023). Library and Archives Canada, Department of National Defence fonds, E-19100-2)





One of the two Esquimalt mines at the end of being steamed out on 29 or 30 May 1952. This photograph shows more details of the process, including the large container used to receive the melted explosive, and the boxes (right) used to haul it away for burning. (Credit: © Government of Canada. Reproduced with the permission of Library and Archives Canada (2023). Library and Archives Canada, Department of National Defence fonds, E-19108-1)

The mines seem to disappear from currently available archival records at LAC by the end of 1953, at which time they were all apparently in naval custody. They had a reason to stay with the RCN; as relatively recent examples of Soviet weapons that might be used against NATO and in Canadian waters, ongoing access for evaluation and training made sense. There are references to the East Coast mines being used for training after they were rendered safe: naval diver Rod Petty recalled them as “deadly bastards”.³⁷ The torpedoes were less useful for such purposes. Easily assessed, and roughly analogous to Canadian examples, they represented already-familiar technology and consequently offered relatively little utility for further evaluation, and little to no training value. Starting in 1951, the RCN had been seeking disposal

³⁷ Memorandum, DNI to JIB, “Arrangements to Examine and Photograph Russian Mines and Torpedoes,” 30 December 1953, RG 24-D-1-c, volume 34427, file 5501-22, pt. 2; “Rod Petty & Bill Lawrence,” 4.

options.³⁸

One torpedo remained in Esquimalt. After being offered up unsuccessfully for expenditure as a training aid, it was ultimately provided to the magazine at Rocky Point for display purposes, although with requirements that “no information is to be publicly disclosed as to the time, place and circumstances of the torpedo’s capture.”³⁹ It was mentioned in a 1963 newspaper article, which referred to “a post-Second World War Russian torpedo and a dummy Russian mine” being displayed at the Pacific National Exhibition, although it is not clear if the dummy mine was one of the disarmed magnetic mines, or another Soviet mine recovered from Korea or along the British Columbia coast. In his 1958 account of the origins of the torpedoes and mines, Steele suggested that the Esquimalt torpedo might have been displayed to the public at other times, along with “other captured ordnance from the Second World War,” which leaves this matter unclear for the time being. The torpedo was displayed afterwards; an early 1990s photograph shows it at Rocky Point, and it is still installed there today.⁴⁰

The two other torpedoes were retained on the East coast at Naval Armament Depot Dartmouth. Initial plans in 1951 were to deliver one to the Explosive Disposal Unit, as it was called at the time, and to offer the other to the Maritime Museum in Halifax.⁴¹ The museum was in the process of relocating

³⁸ See correspondence and minutes starting with Commodore, RCN Barracks, Esquimalt (Commodore RES Bidwell), to Flag Officer, Pacific Coast, re “Enemy Equipment,” 13 September 1951, RG 24-D-1-c, volume 34594, file 5701-10, pt. 1, LAC.

³⁹ Commodore RCN Barracks Esquimalt to Naval Secretary, 7 March 1958; Naval Secretary to Flag Officer, Pacific Coast, cc Commodore, RCN Barracks, HMCS *Stadacona*, Commodore Superintendent Pacific Coast, 26 May 1958, RG 24-D-1-c, volume 34594, file: 5701-10, pt. 2, LAC.

⁴⁰ “Exhibit to Feature War Weapons,” *Nanaimo Daily News*, 26 July 1963, 4, <https://www.newspapers.com/image/325981837>; Acting Capt. J.V. Steele, to Commanding Officer, HMCS *Niagara*, Washington, DC, 3 February 1958, RG 24-D-1-c, volume 34594, file NSS-5701-10, pt. 2, LAC. A report on the RCN’s participation in the 1952 Pacific National Exhibition notes that objects on display included “a torpedo,” without providing further details. Documents relating to the 1963 exhibition make no mention of the torpedo or mines being displayed. Commanding Officer, HMCS *Discovery*, to Naval Secretary, “Pacific National Exhibition, 1952,” 24 November 1952, 2, RG 24-D-1-c, volume 31099, file 1206-19, “Exhibitions & Displays: Pacific National Exhibition,” pt. 1, LAC. Correspondence about the 1963 exhibition can be found on RG 24-D-1-c, volume 31100, file 1206-19, “Exhibitions & Displays: Pacific National Exhibition,” pt. 2. The 1990s photograph is Department of National Defence, image number ETC91-1932. I am indebted to Chris Perry, RCN Command Historian, for taking photographs of the torpedo *in situ* at Rocky Point in September 2023.

⁴¹ Chairman, Maritime Museum (Commodore H.F. Pullen), to Superintendent, HMC Dockyard, Halifax, 8 November 1951, RG 24-D-1-c, volume 34594, file 5701-10, pt. 1, LAC. The report on the rendering safe of the torpedo warheads and mines at Renous in June 1952 noted that one warhead was destined for the museum in Halifax. Commander J.C. Ruse, Explosive Disposal



The Soviet torpedo at Rocky Point, September 2023. (Credit: Image courtesy of Chris Perry, RCN Command Historian)

from the Naval Dockyard to the Halifax Citadel, but the lack of space in its new quarters ultimately meant that these plans for a transfer were put aside.⁴² Consequently, a decision was made to offer a torpedo and warhead to the Canadian War Museum. The upcoming fiftieth anniversary of Canada’s naval service may have played a role, along with a perception that the CWM had relatively limited holdings of naval material. The offer followed on a larger-scale transfer of naval weapons, equipment, and documents that was being discussed and implemented at around this time. RCN veteran Lee Murray, the museum’s curator, accepted the offer passed along on the navy’s behalf by naval historian E.C. Russell in July 1959.⁴³ Russell noted in a memorandum to

Unit, to Commodore, RCN Barracks, Halifax, 26 June 1952, 4.

⁴² Naval Secretary to Superintendent, HMC Dockyard, Halifax, 2 January 1952; G.G. Reid, Ordnance Commodore, RCN, DG of Naval Ordnance, to Superintendent, Naval Armament Depot, Dartmouth, re “Disposal – Captured Enemy Equipment,” 27 November 1956, RG 24-D-1-c, volume 34594, file 5701-10, pt. 1, LAC. The museum had relocated from the Halifax Dockyard in February 1952 and opened to the public in May of that year. “Preserving the Past,” *Crowsnest* 5:3 (January 1953): 6.

⁴³ Commodore Superintendent Atlantic Coast to Naval Secretary, “Disposal - Captured Enemy Equipment,” 9 July 1959; Minute sheet, DGNO to Naval Historian, “Disposal - Captured Enemy Equipment,” 17 July 1959; Memorandum, E.C. Russell to DGNO, “Disposal - Captured Enemy Equipment,,” 23 July 1959, RG 24-D-1-c, volume 34594, file 5701-10, pt. 2, LAC. Murray reported to the CWM Board in May 1958 that “the Navy had taken steps to supply the Museum with some Royal Canadian Naval Equipment and captured enemy equipment.” Proceedings of the 27th Meeting, Canadian War Museum Board, 13 May 1958, 2, Corporate Archives, CWM. On the transfers of RCN material in the late 1950s and early 1960s, see correspondence in R112,

the Director General Naval Ordnance that “I made it quite clear to Mr. Murray that it would be in order to display this torpedo with the particulars contained in the Naval Secretary’s letter.... No information was given concerning the origin of this torpedo.”⁴⁴

Russell’s comments, echoing the conditions for the display of one of the torpedoes at Rocky Point, reflected ongoing security considerations and the RCN’s intelligence relationship with its American counterpart. Since these weapons had initially been obtained through the USN, the Americans were consulted about what could be said about the origins of the torpedo. It is worth noting that the Director of Naval Intelligence’s comment that there was “no objection to mentioning that the torpedoes were captured by UN forces during the Korean War and no objection to release of the details of the torpedoes themselves” does not seem to have been fully implemented; at the least, there is no indication in the limited CWM documentation that the museum was told the torpedo was captured by UN forces in Korea. This is consistent with Russell’s memorandum on his conversation with Murray. In this respect it is worth remembering, as mentioned above, that the capture of torpedoes in North Korea had been publicly acknowledged since at least 1957.⁴⁵ A further challenge was locating an empty warhead in order to complete the weapon for display. Thorough searches failed to establish the whereabouts of either example. Ultimately, the decision was made to fit a collision head from a Canadian 21-inch torpedo, which is the warhead still associated with this weapon today.⁴⁶ The weapon data provided by the RCN at the time formed the basis for an English-only information plate that is still attached to the weapon, though it is unclear who added it, or when.⁴⁷

volume 33629, file 1440-8, pt. 4, LAC. Murray had joined the CWM staff in 1944 following discharge from the RCN as a result of wounds suffered in action, and became curator upon H.A. Reiffenstein’s retirement in 1957. V.A. Bower, “Interesting War Museum Features are Corvette and Destroyer Models,” *Ottawa Evening Citizen*, 2 September 1944, 6, <https://www.newspapers.com/image/456538078/>; Proceedings of the 25th Meeting, Canadian War Museum Board, 19 February 1957, 1, Corporate Archives, CWM.

⁴⁴ Memorandum, E.C. Russell to DGNO, “Disposal - Captured Enemy Equipment,” 23 July 1959, RG 24-D-1-c, volume 34594, file 5701-10, pt. 2, LAC.

⁴⁵ Memorandum, E.C. Russell, Naval Historian, to DNI, “Security Classification, Captured Russian Torpedo,” 28 September 1960; Minute sheet, R.H. Burch for DNI to E.C. Russell, 4 October 1960, RG 24-D-1-c, volume 34594, file 5701-10, pt. 2, LAC; Torpedo artifact file, AN 19600007, CWM; Cagle and Manson, *The Sea War in Korea*, 145.

⁴⁶ Memorandum, E.C. Russell to DGNO, “Disposal - Captured Enemy Equipment,” 23 July 1959; Naval Secretary to Commodore Superintendent, Atlantic Coast, 15 September 1959; Commodore Superintendent, Atlantic Coast to Naval Secretary, 25 February 1960, RG 24-D-1-c, volume 34594, file 5701-10, pt. 2, LAC; Torpedo artifact file, AN 19600007, CWM. The torpedo at Rocky Point appears to have retained its original warhead.

⁴⁷ The data is included in Naval Secretary to Commodore Superintendent, Atlantic Coast,

With these issues settled, one of the Halifax torpedoes was transferred to the CWM in February 1960 and in due course became part of the RCN’s fiftieth anniversary exhibition, which formally opened in late August. The limited contemporary press coverage unfortunately seems to make no mention of the torpedo, or where it was displayed in or near the museum’s confined quarters at 350 Sussex Drive, although it does mention other items that have since become part of the museum’s collection, such as a Mark 43 anti-submarine



The data plate attached to the CWM’s torpedo. (Credit: CWM 19600007-001b, Canadian War Museum)

torpedo.⁴⁸ This Soviet weapon has remained part of the collection ever since, but for most of this time its deliberately obscured history meant that its provenance was unknown. No information may have been given about the origin of this torpedo, but it has fortunately been possible to reconstruct its complex and convoluted past through archival documents, publications, and personal recollections. There is still more to be learned about it and about the other torpedoes and mines brought to Canada from Korea, including their connections to the postwar rebuilding and re-equipping of the RCN, the development of mine countermeasures capacity, and aspects of Canada’s intelligence relationship with the United States.

“Disposal - Captured Enemy Equipment,” 5 January 1959, RG 24-D-1-c, volume 34594, file 5701-10, pt. 2, LAC, and seems to be based on the information provided by the 1951 technical analysis of the torpedo in Esquimalt. It was also transcribed into the CWM collections ledger at the time the torpedo was transferred; a photocopy of the entry can be found in artifact acquisition file AQN 19600007, CWM.

⁴⁸ The museum’s exhibition space in 1960 was the structure at 350 Sussex Drive originally built in the 1920s as the War Trophies annex to the Public Archives of Canada (later the National Archives, now part of Library and Archives Canada), which at the time was located at 330 Sussex. In 1967, the CWM expanded into the building at 330 Sussex, following the Archives’ relocation to 395 Wellington Street. The museum retained the annex at 350 Sussex until the structure was demolished in the 1980s to make room for construction of the National Gallery of Canada. “Show Rare Weapons On Anniversary,” *The Ottawa Citizen*, 29 August 1960, 10, <https://www.newspapers.com/image/456956683/>; Len Carter, “A New Look at Old Wars,” *The Ottawa Journal*, 26 August 1967, 33, <https://www.newspapers.com/image/42983268/>. The Mark 43 torpedo is CWM artifact number 19610005-001.

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