"HELL BOATS" OF THE RCN: THE CANADIAN NAVY AND THE MOTOR TORPEDO BOAT, 1936-1941

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i

During the late 1930s, one of the most highly-publicized images of naval warfare was a picture of fast attack craft, known as Motor Torpedo Boats (MTBs), skimming at high speed over the sea with white wakes at their stern. The idea of a "mile a minute navy" composed of these "hell boats," "suicide squadrons," or "mosquito fleets" attacking larger conventional warships was a modern parallel to the story of David and Goliath and attracted the interest of not only civilians but also professional naval officers.

The reality, unfortunately, was much more prosaic. The MTB, which had originated from the mating of the torpedo with the internal combustion engine during the First World War, was still very much experimental at the beginning of the second conflict.[1] Many world navies, however, took a keen interest in its development and operational use - among them the Royal Canadian Navy. This study examines the RCN's involvement with MTBs between 1936 and 1941, assesses the role planned for these craft in the Canadian navy's wartime ship acquisition policies and discusses the effect that service's First World War experience had on those policies.

Canada's interest in MTBs was a direct result of the Royal Navy's experimentation with these craft in the immediate prewar period. The RN's interest in MTBs largely resulted from the efforts of one man, Hubert Scott-Paine. Originally a constructor of flying boats and a partner in the Supermarine Aircraft Company, Scott-Paine founded a new company, British Power Boat, in 1923 to build high-speed racing and pleasure boats. Utilizing aircraft design and manufacturing techniques, he constructed a series of successful racing craft with shallow, "chine" (sometime called "V bottom") hulls that dominated international competition.[2] Being a consummate entrepreneur, he began to look for new markets for his product.[3]

Aware of the growing threat to warships from aircraft, Scott-Paine proposed using motor torpedo boats, based on his racing designs, to control coastal waters in which capital ships were vulnerable to attack from land-based bombers. In 1934 he sold the idea of a fast

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attack craft with a chine hull, armed with two torpedoes and capable of speeds up to thirty-five knots, to senior officers of the Royal Navy. The following year, Rear Admiral Reginald Henderson, the RN Controller, ordered two 60-foot prototypes from British Power Boat and later increased this order to twelve boats. Unfortunately for Scott-Paine, Henderson placed these orders without consulting the RN's Director of Naval Construction (DNC) and the result was a long-standing enmity between the DNC and British Power Boat. This strained relationship was not aided by Scott-Paine's insistence on building boats his way rather than the navy's and by his obsession with keeping his manufacturing methods secret.[4]

Scott-Paine's success in selling fast attack craft to the RN was regarded with envy by his competitors in the British boatbuilding industry, the firms of Vosper, Thornycroft and White. Agitation on their part led to the Admiralty ordering prototype fast attack craft from all three companies to be compared with British Power Boat's 60-foot model. Vosper, which enjoyed particularly good relations with the RN seized the opportunity to construct a 68-foot MTB based on navy specifications that was superior to Scott-Paine's 60-foot type. In the spring of 1939, the RN selected this design as the standard British MTB type for future development. British Power Boat, on the other hand, was relegated to the construction of less sophisticated Motor Anti-Submarine Boats (MA/SB's).

Shut out of the potentially lucrative domestic MTB market, Scott-Paine decided to pursue export sales. His drawing card was Power Boat's impressive new 70-foot Private Venture MTB which was faster than Vosper's product and armed with four, as opposed to two, torpedoes. Scott-Paine advertised the Private Venture by taking it on a well-publicized double crossing of the Channel in May 1939 during which it maintained an average speed of forty-two knots. This feat attracted considerable interest and Power Boat was soon negotiating contracts with a number of foreign customers, among them the Royal Canadian Navy.[5]

II

The RCN's interest in fast attack craft can be traced back to 1936 when Power Boat sent brochures describing its 60-foot prototype MTB to Naval Service Headquarters. These brochures piqued the interest of the Chief of Naval Staff, Rear Admiral Percy Nelles. During a visit to London in June 1937, Nelles discussed MTBs with the Admiralty and met with representatives from Vosper and British Power Boat to investigate possible manufacture in Canada. He concluded that it was "too early to invest in these expensive toys" but resolved to follow their development, since they might become "suitable craft for harbour and coastal defence, or even fleet work."[6] To learn more about MTBs, he instructed Commander C.R.H. Taylor and Lieutenant Commander H.G. De Wolf, both attending courses in England, to make an inspection tour of Scott-Paine's factory at Hythe near Southampton.[7]

The two officers visited the plant in July 1937 but were unimpressed by the MTB as it stood at the time. Taylor reported that there was not much a flotilla of these craft could do that a squadron of torpedo bombers could not do better. He saw limited use for MTBs in the RCN because their armament was too weak for anti-submarine use and believed that although "the Admiralty stress the value of these craft for training young officers in handling small ships," the RCN, being composed entirely of small ships, had little need for this type of training.[8]

Nelles, however, continued to keep abreast of MTB development. In February 1938, he asked the Admiralty to evaluate their usefulness in wartime, receiving the reply that MTBs

were valuable for port defence but their offensive potential was limited by lack of seaworthiness and endurance. But the Admiralty was careful to note that MTBs were undergoing rapid development and that the most recent types were considerably faster than their predecessors. In point of fact, there was not much the Admiralty could tell Nelles about MTBs since, at this time, the RN had no fixed policy concerning them and almost no operational experience on which to base an assessment of their utility.[9]

Nonetheless, Nelles decided that the MTB might be a suitable warship for the RCN. On 26 May 1938 he wrote to the Minister of Defence, Ian Mackenzie, informing him that he had been observing the development of the MTB and recommending that provision be made in the 1939-40 estimates for the construction of two prototypes for training purposes. Noting that the Admiralty had experienced problems with British Power Boat, he advised that either Vosper or the rival firm of Thornycroft be approached to build them in Canada under license. Mackenzie approved this recommendation with the stipulation that all construction be domestic. There is no evidence that, at this time, Nelles laid down any design specifications for these two prototypes.[10]

Nelles gave no reason for his decision to acquire MTBs but it is probable that he was influenced partly by his own service background and partly by a current re-evaluation of Canadian defence policy. During the First World War, Nelles had served as flag lieutenant to Vice Admiral Charles E. Kingsmill, director of the Canadian Naval Service. He had witnessed at first hand the problems the service had encountered trying to verify floods of reports of German submarine and surface raider sightings, rumours of secret enemy bases and the activities of saboteurs, using slow, poorly-armed patrol craft manned by overworked crews. Should war come again, it was likely that there would again be a need for intensive, wide-ranging inshore patrols and it was certain that there would not be enough capable warships such as destroyers or sloops to undertake this activity. To Nelles, remembering the difficulties the navy had faced in the earlier conflict, it appeared that the basic concept of the MTB, with its speed and striking power, made it the ideal craft to bolster the defence of Canada's Atlantic coast.[11]

Coastal defence also featured in discussions of a joint staff committee composed of senior officers from the three services that submitted a report on Canadian defence policy in June 1938. The committee considered that the primary naval threat to Canada was not posed by the Japanese on the west coast but by the Germans on the east. No doubt on Nelles's urging, they recommended that orders for two MTBs be placed with Canadian firms to gain construction experience that would serve the ultimate purpose of providing a flotilla of MTBs for each coast.[12]

Nelles now began to investigate the possibility of MTB production in Canada. In September 1938 he instructed Commander F.H. Jefferson, then stationed in the UK, to discuss Canadian manufacture with Vosper and Thornycroft. Jefferson was warned not to approach Power Boat but that firm, learning of his enquiries from contacts in the Admiralty, managed to present him with sales proposals. All three companies expressed interest in Canadian orders and Jefferson noted in his report that Canadian production, even at government dockyards, was feasible. He warned, however, that the engines used in the current crop of MTBs were either too heavy, too weak or of non-British manufacture.[13]

Naval staff reacted cautiously to Jefferson's report. Writing in late 1938, Captain G.C. Jones, Director of Naval Operations and Training, thought the MTB "can only be regarded as

experimental for the immediate present but...has great possibilities when suitable engines are developed and tested."[14] Captain Angus Curry, Director of Naval Engineering, noted that although MTBs could be built in Canada, the machinery, including engines, would have to come from the UK. He therefore recommended that if Canada were to produce these craft, the RCN should power them with North American-built diesel engines that were cheaper, safer and easier to maintain.[15] As subsequent events would demonstrate, this caution was justified.

At the end of 1938, the worsening situation in Europe led to a review and expansion of the RCN's ship acquisition policies. In November, Nelles requested $12.7 million for naval construction for fiscal 1939-40 and in January 1939 informed the Minister of Defence that among the minimum naval force needed to protect Canadian waters, eight MTBs would be required for service on the east coast. Nelles justified this request on the grounds that:

> The increasing development of this type of vessel by all Naval Powers shows the value attached to them for both offensive and defensive naval action. In the St. Lawrence area motor torpedo vessels should be of real value and a flotilla of eight, with a parent vessel, must be included in our ultimate Naval objective.[16]

The need for fast patrol craft was underscored in the spring of 1939 when a rash of false U-boat sightings by Nova Scotia fishermen strained the limited reconnaissance resources of the navy, air force and the Marine Section of the RCMP. The major source of worry was the Gulf of the St. Lawrence, the major shipping route from central to eastern Canada and a Canadian defence responsibility. This route was dominated by an isolated, indented and virtually unpopulated coastline that could provide shelter for enemy submarines and raiders. MTBs seemed to be the answer to this problem and a flotilla of these craft was therefore included in the estimates, but were among the items cut before the estimates were presented to parliament in April.[17]

Many members of the Naval staff were not upset by this particular cut. Only one month before the war began, the Director of Naval Operations summed up NSHQ's opinion when he stated that "M.T.B.'s were excellent weapons in the offense but lose value when being used in defence as they would be used in the R.C.N." The director again noted the problem with the engines, although he added that progress had recently been made in the development of a marine diesel that would both minimize the risk of fire and reduce the expense of operation. As a result, he concluded that "the Naval Staff is not pressing for the early purchase of this type of vessel" as they "can be procured at shorter notice than larger vessels in time of emergency and any delay will add to the efficiency when they are purchased."[18]

III

Canada's entry into the war on 10 September 1939 brought a change in attitudes. Nelles was determined to obtain funds not only for his peacetime acquisition programme but also for an additional programme, including MTBs, to meet the navy's wartime needs. On 17 September he requested $12,800,000 to build thirty-two MTBs at a cost of $400,000 each for "inshore naval reconnaissance of the Gulf of St. Lawrence and British Columbia coasts," a task that had been

"a very extensive commitment in the war of 1914-1918."[19] Again, it appears that Nelles's First World War experience was influencing his thinking. But financial constraints meant cutbacks, and again the MTBs were dropped when the navy's programme was reduced by cabinet on 18 September.[20]

Worried that the navy's wartime building programme was being based on financial rather than strategic grounds, the Chief of the Naval Staff insisted that the full wartime programme be carried out. In his opinion, MTBs,

> ...with adequate armament to attack any ship they might meet, would be very useful if stationed at strategic points, to investigate and confirm, or disprove quickly, numerous enemy reports and rumours. Though they cannot take the place of destroyers they would greatly reduce the work which would, in their absence, devolve upon the destroyers by quick investigation of reports...[21]

If the east coast were to have minimal protection, Nelles added, the navy would need not only the thirty-two MTBs he had requested but a further sixteen per year for two years as replacements. Nelles was going to make certain that there would be no repetition of 1914-1918 when the Canadian Naval Service, with very inadequate resources, was forced to respond to a plethora of coastal defence problems.[22]

These arguments met with a favourable response and the MTBs were given a new lease on life in the building programme drawn up in late October 1939 for construction through March 1943. Approved by Cabinet, this plan included sixty-four MTBs for which funds were to be allotted after construction contracts were ready to be signed. It now remained for NSHQ to decide what type of MTB it required, who would build it, and how it would be employed.[23]

There was little sense of urgency about making these decisions. In November discussions took place between K.S. Maclachlan, Deputy Minister of Defence, and D.B. Carswell, Controller of Ship Construction for the War Supply Board, on the merits of the Board taking over the manufacturing rights in Canada of both Vosper and British Power Boat's designs. Nothing concrete resulted but the same month a group of patriotic west coast citizens offered to build two Vosper-type MTBs by private subscription and donate them to the government in hopes of starting a production line in British Columbia for MTBs and other patrol craft. Although he welcomed this gesture, Nelles refused to "recommend any action that will morally tie" the RCN's limited supply of funds.[24]

It was during this period that Nelles admitted to Maclachlan that the RCN's wartime shipbuilding programme was based largely on educated guesses and that nowhere was this more evident than in the navy's approach to the acquisition of MTBs. It was clear that Nelles had no idea who should build these craft, although the leading contenders were Vosper and British Power Boat. Nor, it seems, did NSHQ have any idea as to what the design specifications for these craft should be, beyond that they should be "proven" designs already in service with the RN. Thus when the Minister queried as to who should construct these craft, Nelles replied only that he had obtained plans from both Vosper and Power Boat and noted that financial constraints would not allow construction to start until September 1940. Power Boat's position became stronger when Scott-Paine arrived in the United States to secure North American

manufacturing arrangements for his products. During a visit to Canada in October 1939 to discuss possible licensing with Canadian Vickers, Scott-Paine met with Nelles, whom he thought "an absolutely grand No. 1 fellow."[25] But, for the moment, NSHQ delayed making a decision.[26]

At this point, it appears that Nelles was having some second thoughts about the utility of the MTB. As was his custom when faced with a problem outside the ken of NSHQ, he sought advice from the Royal Navy. In late November 1939, he queried the Admiralty about the relative merits of Vosper and British Power Boat MTBs and "whether results obtained under war conditions" justified their continuance in service.[27] The reply was that both were excellent sea boats and either could be recommended, although the Admiralty leaned toward Vosper because it incorporated RN experience. The Admiralty refused to comment on the future employment of MTBs as they had not yet seen action. Pre-occupied with the procurement of other, more necessary, types of ships, Nelles, therefore, put the acquisition of MTBs low on his list of priorities.[28]

It was brought forward again by Carswell of the War Supply Board in February 1940. Faced with the RCAFs demand for nine "crashboats", air/sea rescue craft of about the same size and performance as MTBs, Carswell suggested that contracts be let for the construction of four prototypes by Canadian manufacturers and that, after a competition, the best be selected for full-scale production. Carswell felt that this process would at least provide a test of the Canadian boatbuilding industry and four boats for the RCAF. As the RCN was seeking a similar craft, he suggested that the navy support this competition as it might also provide a prototype MTB. But Nelles proved lukewarm and refused to back the idea of a competition unless proven designs by Vosper and British Power Boat were also acquired to be used as a "check" on the domestic product.[29]

Somewhat impatient, Carswell decided to go ahead. He announced that he would order ten examples of a proven design at $230,000 each for "crashboats;" four experimental types from Canadian manufactures at $200,000 each; and one Vosper and one Power Boat craft at $250,000 each as prototype MTBs. Still reluctant, Nelles noted on CarswelPs proposal that "owing to the impracticability of finding sufficient funds until such are voted by Parliament I would recommend we go slow on M.T.B.'s for the time being."[30]

Nelles, however, realized that the time was approaching when he would have to make a decision between Vosper and Power Boat. He turned again to the RN for advice and, in March 1940, directed Captain L.W. Murray, then in the UK, to contact the Admiralty and ascertain its opinion on the relative merits of the Vosper and Power Boat types and confirm that orders had been placed with both firms. Murray reported back that the prejudice in the RN against British Power Boat's products resulted not from technical shortcomings but from the Admiralty's dislike of Scott-Paine's determination to build according to his own concepts and not those of the Royal Navy. Murray also noted that the Admiralty had recently placed orders for British Power Boat's seventy-foot MTB. As for Vosper, its craft were highly regarded but Murray emphasized that they were equipped with Italian engines and supplies would end if that nation entered the war.[31]

By now, the matter of MTBs was beginning to concern Maclachlan, who felt that the RCN had no clear operational role for these expensive craft. He suggested that what was needed was a slower and cheaper vessel and asked Nelles to review the whole question of the employment of MTBs. Nelles delegated the matter to Commander J.W. Roy, Director of Operations at NSHQ, who reported back the following month. Roy was sceptical about MTBs,

feeling that they lacked endurance and reliability and that their offensive qualities were exaggerated. He did, however, see a need for small patrol craft in sheltered waters and harbour approaches and suggested that the new Fairmile B-Type Motor Launch coming into British service might be ideal for this purpose.[32]

Like the fast attack craft or MTB, the Motor Launch (ML) also derived from the experience of the First World War. Operations in 1914-1918 had demonstrated the need for a slow, defensive patrol craft with long range. In 1939, as war threatened again, Noel Macklin of the Fairmile Engineering Company proposed the large-scale mass production of a pre-fabricated wooden ML that could be manufactured in small civilian boatyards. The Admiralty accepted the idea and, after experimentation, arrived at the design of the B-Type Motor Launch, a 112-foot craft with a maximum speed of 20 knots. Slower and less heavily armed than the MTB, the B-Type was cheaper, had a longer range and its deep, displacement type hull made it more seaworthy than the shallow, chine hulls of the fast attack craft. The B-Type went into British production in 1940 and was so successful that it was manufactured in great numbers throughout the war.[33]

Intrigued by Roy's suggestion, Nelles immediately contacted the Admiralty for information on Fairmiles. The RN replied that they could be built at one-half the cost of an MTB but were not really comparable craft. Moreover, the Admiralty indicated that it intended to use Fairmiles as anti-submarine vessels but had no experience at this point to evaluate their usefulness. Nelles asked for more details and requested Fairmile plans be sent as soon as possible to Canada.[34]

On 25 April 1940, Nelles reported to Maclachlan. Originally, he wrote, the navy had wanted thirty-two MTBs at $400,000 per boat, with a further thirty-two as replacements. Now he requested only twelve MTBs, equipped with torpedoes, machine guns and ASDIC, as a striking force. As for price, he noted that Scott-Paine had offered to construct MTBs in Canada for $225,000 each, a substantial saving. In addition, Nelles requested twenty-four Fairmile B-Type MLs, equipped with a gun, depth charges and ASDIC, for defensive patrols. The best estimate he was able to provide for domestic production of this type was about $125,000 per unit.[35] In response, the government entered into contracts to build Fairmile B-Type MLs but, because of delays in the receipt of plans and drawings from Britain, the first of these craft was not commissioned until the end of 1941. They proved useful and the RCN eventually commissioned eighty B-Types into service during the war.[36]

As far as MTBs were concerned, Scott-Paine's competitive pricing appears to have tipped the scale in favour of British Power Boat. At the end of May 1940, Maclachlan informed Carswell that the RCN wished to place an order with Scott-Paine's subsidiary, the Canadian Power Boat Company of Montreal, for twelve seventy-foot MTBs. As Scott-Paine's design was "quite in accordance" with the navy's requirements and "as no other prospective builder appears to be in sight," he recommended that contracts be issued to Canadian Power Boat.[37]

The Deputy Minister was actually being less than truthful when he stated that no other builder "appears to be in sight." In the previous months, NSHQ had been approached by a number of boatbuilding firms hoping to win contracts for MTBs and ASR craft. On 21 June 1940, however, the Canadian Power Boat Company submitted tenders for twelve MTBs and contracts were drawn up and signed on 18 July 1940. On Scott-Paine's advice, the War Supply Board had already tendered for seventy-two Packard 1350-horsepower super-charged engines to allow three for each boat plus a complete set of spares.[38]

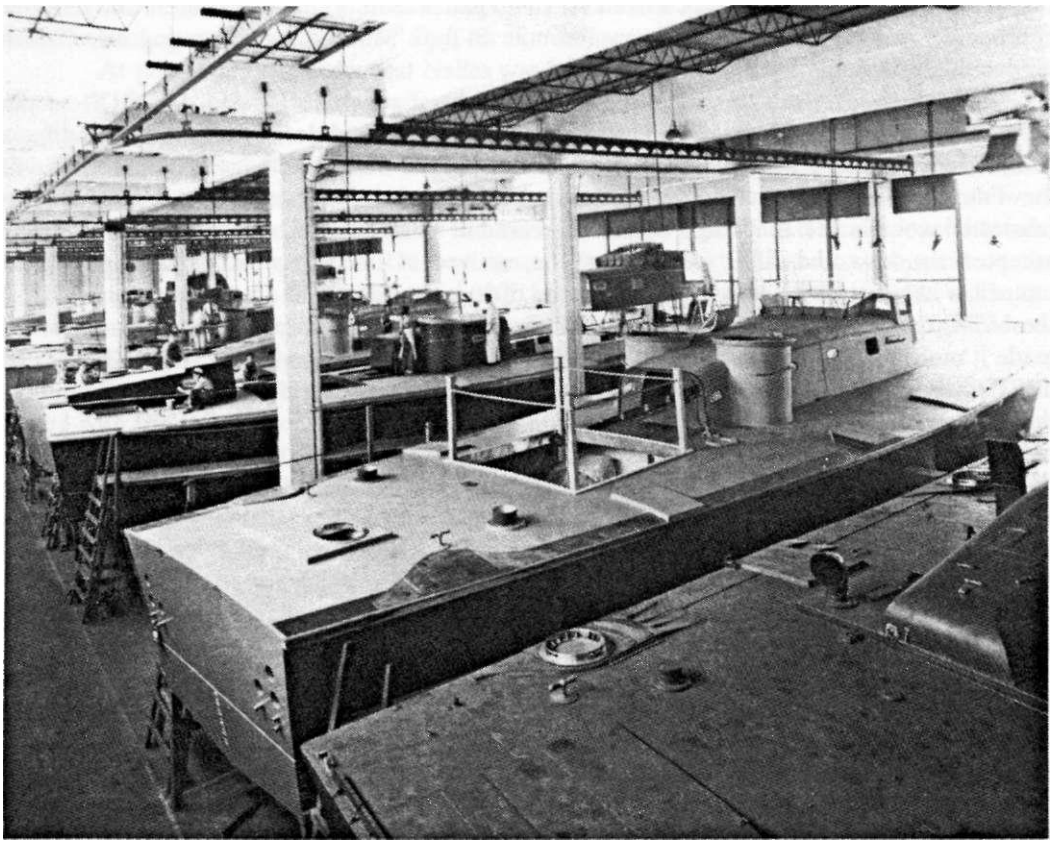

Figure 1: Interior of Canadian Power Boat Factory in Montreal. Several CMTBs are taking shape on a production line basis. Note the use of sub-component manufacture-the forward deckhouse of the third craft is being lowered onto the hull.

Source: Department of National Defence, PMR 82-670.

The Power Boat contracts drew heavy criticism from the Canadian boatbuilding industry. Coming under fire, the Minister of Defence, Norman Rogers, posed four questions to Maclachlan:

1. How does Scott-Paine stand with the Admiralty?
2. Could a Canadian firm manufacture these craft?
3. Were public tenders called for in this matter?
4. Has the Scott-Paine seventy-foot boat been tried in service and, if so~ was it successful?[39]

Figure 2: Canadian Power Boat fitting-out basin, 1941. Four CMTBs are moored ahead of an RCAF Air/Sea Rescue Launch.

Source: Department of National Defence, PMR 82-661.

Maclachlan passed the buck back to Nelles, who justified the decision to contract only with Power Boat because "to have accepted a boat of unproven design would have been a waste of money, time and effort" and the navy "simply could not afford to waste any of these."[40] While admitting that Scott-Paine had a history of difficulties with the Admiralty, Nelles insisted that no Canadian firm was capable of producing craft of equal quality and added for good measure that although Sorel Industries, the Vosper licensee in Canada, had been asked for tenders, it had not responded. This satisfied Rogers and the contracts went ahead.[41]

IV

The "Canadian Motor Torpedo Boat," or CMBT, contracted for with Canadian Power Boat was a seventy-foot craft powered by three 1350-horsepower Packard engines. It was to be equipped with ASDIC and armed with two eighteen-inch torpedoes in forward-firing tubes, four 50-calibre machine guns in twin-powered turrets and four depth charges. Specifications called for the boat to be capable of a continuous speed of thirty-five knots, an emergency speed of thirty-eight knots and a range of two thousand miles. With the exception of the substitution of Packard for Rolls Royce Merlin engines, the reduction in the number of torpedoes and the addition of depth charges and ASDIC, the CMBT was substantially Scott-Paine's 70-foot Private

Venture boat. The addition of these two items demonstrate that the RCN's intention was to use the CMBT not so much as a fast attack craft but as a patrol craft - basically a fast motor launch. Canadian Power Boat was to commence delivery of the first Canadian-built craft thirty-nine weeks and the last fifty-nine weeks after signing at a price of $139,449 per craft.[42]

Figure 3: Another view of Canadian Power Boat's fitting-out basin in Montreal. The craft at the left is an Air/Sea Rescue Launch; note the lack of gun turrets.

Source: Department of National Defence, PMR 82-678.

Scott-Paine had created his Canadian subsidiary only in May 1940 and his new plant in Montr6al was not completed when he signed the CMBT contracts. For a prototype, he used the original Private Venture boat which, with some foresight, he had shipped from the United Kingdom in February 1940, although it did not arrive in Montreal until July. On 30 August the RCN requested that the prototype be delivered before the ice formed on the St. Lawrence so that it could be sent to Halifax for training. The company worked day and night to comply and

CMTB 1 was ready on 16 November 1940. The next day, with Scott-Paine at the helm, she was put through her trials and managed to achieve a top speed of forty-two knots on the St. Lawrence before one of her engines failed. Nonetheless, she was officially accepted by the RCN and set out for Halifax. Unfortunately, she ran aground off Richibucto on 27 November but was salvaged and finally arrived at Halifax on 17 December. Lacking guns, torpedoes or ASDIC, she served as the training vessel for the 1st RCN MTB Flotilla.[43]

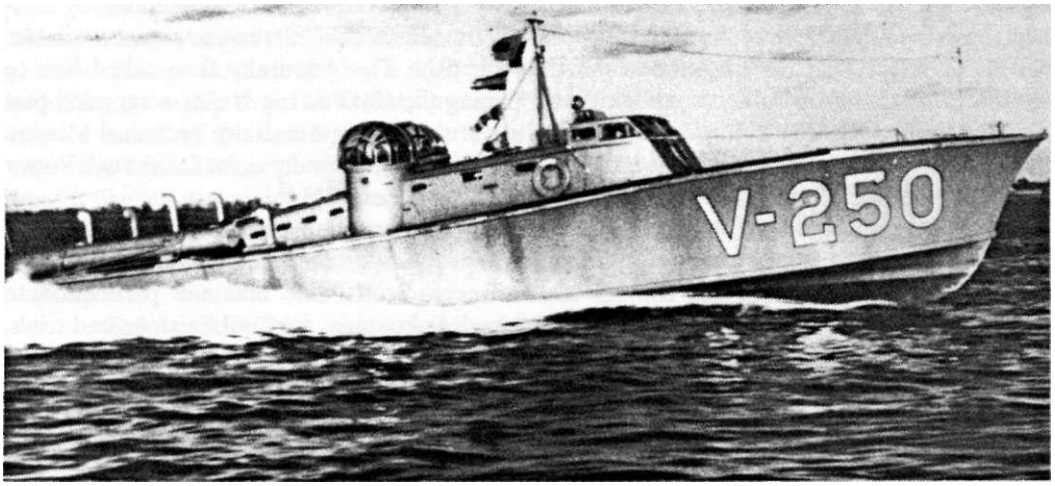

Figure 4: Canadian Motor Torpedo Boat *V-250* undergoing trials on the St. Lawrence in the autumn of 1941. This was the original British Power Boat Private Venture seventy-foot prototype which was shipped to Canada. Note the twin .50 calibre M.G. turrets without weapons.

Source: Department of National Defence, PMR 82-691.

Construction of the remaining eleven vessels was hampered by shortages of power turrets, torpedoes and engines which had to come from American sources. Problems that paralleled those experienced by the RN and USN when they tried to equip their MTBs with ASDIC also cropped up. The RN had discovered that there was little possibility of obtaining good ASDIC reception at speeds above twenty knots; since for A/S purposes, the deeper the draught the better, the shallow chine hulls of the MTBs proved less effective than the deeper hulls of the motor launches. Another problem was that the MTB hulls were unwieldy at slow speeds and it was thus difficult for the crew to follow sensitive ASDIC bearings. The USN found that engine noise interfered with ASDIC reception; if the engines were shut down, the boat developed a short, sharp roll that further affected reception. As if all this was not bad enough, running high performance engines at speeds low enough for good ASDIC reception

tended to burn out their clutches. Dissatisfied, both navies had converted their ASDIC-equipped craft to motor torpedo or motor gunboats and the RCN soon followed suit. When Power Boat informed NSHQ that the fitting of an ASDIC dome to the CMBT would reduce its top speed to thirty knots, it was instructed to remove ASDIC from all craft under construction.[44]

Despite Canadian Power Boat's best efforts, it fell behind schedule. With the exception of the prototype, none of the CMTBs were completed by 1 July 1941, the day that NSHQ received a signal from the British C-in-C, Mediterranean, Vice Admiral A.B. Cunningham, requesting the boats of the 1st RCN MTB Flotilla, with or without crews, for service in that theatre. By now, satisfied that the cheaper Fairmile B-Type MLs under construction in Canada would perform better than the expensive CMTBs, Nelles agreed to this request. On 4 July, he signalled the Admiralty that five craft would be available by the end of August, three by mid-September and four by the following spring, but as trained Canadian crews were not available, NSHQ preferred that the boats be manned by the RN. The Admiralty then asked him to approach the Canadian cabinet with a view to loaning the CMTBs but Nelles responded that the best method of transferring the craft would be for the British Admiralty Technical Mission in Canada to take over Canadian Power Boat's contract. The Admiralty agreed, although Power Boat was not officially notified of the change until September 1941.[45]

Completion of the CMTBs was now delayed further by numerous changes requested by the BATM, which was critical of the craft when it inspected them. Faced with further obstacles and the threat of the coming winter freeze, Scott-Paine obtained permission to transfer the CMTBs, as they were ready, to an American boatyard for final finishing and trials. In sequence, the twelve vessels proceeded via inland canals to Greenwich, Connecticut for completion and shipment overseas for service in the Royal Navy.[46] The short-lived history of the Canadian Motor Torpedo Boat came to an end-although Canadian sailors would man MTBs throughout the war, they would serve in attack craft built in Britain, not Canada.

V

The RCN's interest in Motor Torpedo Boats during the prewar period has been overshadowed by the attention paid to the navy's acquisition of larger and more well-known ship types. This is not surprising as, in the planned naval defence of Canada, MTBs were to play only a relatively minor role. But the CMBT saga is of greater interest when viewed in the broad context of the RCN's prewar acquisition policies, as it illustrates and reinforces two themes that run throughout those policies.

First and foremost is the effect played by the RCN's experience during the First World War on its planning for the second—in essence, NSHQ in 1936-1939 was preparing to re-fight the previous conflict. This was natural, since like any armed service, the RCN had to base its planning on the experience it possessed. The importance of previous experience in the acquisition of MTBs was possibly more marked because of the personal interest shown by Nelles to whom the problems of maintaining the security of the Atlantic coast seemed to demonstrate the need for a fast, heavily-armed patrol craft. To the chief of the naval staff, the MTB, although very much still in the experimental stage, seemed to fit the bill. Other members of the naval staff, particularly the technical officers, were sceptical of the utility of these craft.

Their doubts were valid. The MTB of the late 1930s was an expensive and fragile warship unsuitable for the role NSHQ envisioned. NSHQ's decision to acquire it underscores

a second theme of the RCN's acquisition policies—dependence on the RN for information and technology. Despite any misgivings they may have had about MTBs, Nelles and NSHQ had no other option but to trust the Admiralty's assessment of these craft even though the RN itself had no real experience on which to base such an assessment for, ironically, that service had adopted the fast attack craft without any firm idea of what its wartime role would be. The RCN's state of dependency meant that it had to maintain good liaison, especially technical liaison, with the Admiralty to ensure acquisition of the proper ships and equipment. Unfortunately, during the period under examination this liaison was, at best, intermittent. It was only by accident that Nelles and NSHQ learned of the existence of the craft they really needed-the Fairmile B-Type Motor Launch-before contracting for large numbers of unsuitable MTBs.

In retrospect, NSHQ's decision to acquire fast attack craft can be seen as a case in which a navy planned the acquisition of a sophisticated weapons system for all the wrong reasons. Rather than identifying a needed function in the naval defence of Canada and then acquiring a warship to perform that function, NSHQ, and especially Nelles, almost fell into the trap of selecting the warship and then searching for its role. What NSHQ wanted was an expensive fast attack craft with limited range for coastal defence—only later did it realize that what it needed was an inexpensive-patrol craft with long range. The CMTB did not meet these requirements; the Fairmile did and fortuitously was selected for large-scale production. Thus, although the RCN flirted with the acquisition of MTBs, it chose almost by accident the ideal warship.

Before the RCN is criticized, it must be remembered that the RN actually acquired the MTB without any real idea of how to use it. It was to take nearly four years of war before that service developed a proper role for the large numbers of fast attack craft in its inventory. In sum, it appears that the RCN was not the only navy to be entranced by the dramatic image of the "hell boat"~the MTB.

NOTES

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1. On British experience with motor torpedo boats in the First World War, see J.E. Thornycroft and Lt. Bremner, "CM.B.'s (Coastal Motor Boats): Their Design and Service During the War," ***Transactions*** of the Institution of Naval Architects, LXV (1923), 32-40; Augustus Agar, ***Footprints in the Sea*** (London, 1961), 68-138.

2. To reach high speeds, racing craft must "skim" over, rather than through, water. There are a number of hull forms that can achieve this effect-the hydrofoil, the stepped or skimmer hull and the chine or V-bottom hull. The chine hull form cuts through water as easily as the stepped hull type, but with more manoeuverability. The drawback of all these fast hull forms is that they are only truly effective at high speeds and provide a very rough ride. Larger warships, needing a stable gun platform, utilize the more traditional displacement hull which can only achieve high speed through engine power but is more stable, more seaworthy and more manoeuverable at slow speeds.

3. On Hubert Scott-Paine, see Adrian Ranee, ***Fast Boats and Flying Boats. A Biography of Hubert Scott-Paine, Solent Marine and Aviation Pioneer*** (Southampton, 1990).

4. ***Ibid.,*** 70-92; National Archives of Canada (NAC), Record Group (hereafter RG) 24, Box 3830, File NSS 1017-1-15(1), British Power Boat to Taylor, 24 September 1937; RG 24, Box 3830, File NSS 1017-1-15(1), Jefferson to Nelles, 26 September, 1937.

5. Ranee, ***Fast Boats and Flying Boats,*** 85-107; W J. Holt, "Coastal Forces Design," ***Selected Papers on***

British Warships Design in World War II (Annapolis, 1983), 127-166.

6. NAC, RG 24, Box 3830, File NSS 1017-1-15(1), Nelles to Taylor, June 1937.

7. NAC, RG 24, Box 3830, File NSS 1017-1-15(1): Beach, Commander (D) to Naval Secretary, 1936; Curry to Nelles, 21 April 1937; DN1 to Nelles, 8 June 1937; Memorandum to LaFleche from Nelles, 11 June 1937; Barker (British Power Boat) to Nelles, 10 June 1937; Nelles to Barker, 14 June 1937; Nelles to Taylor, 14 June 1937.

8. NAC, RG 24, Box 3830, File NSS 1017-1-15(1), Taylor to Naval Secretary, 23 June 1937.

9. NAC, RG 24, Box 3830, File NSS 1017-1-15(1), Admiralty to Nelles, 23 April 1938. According to Ranee, ***Fast Boats and Flying Boats,*** 88-89, Admiralty policy on MTBs had only been finalized in November 1937.

10. NAC, RG 24, Box 3830, File NSS 1017-1-15(1): Memorandum to Minister and notation on Memorandum by LaFleche, 26 May 1938; LaFleche to Nelles, 14 June 1938.

11. For a recent examination of the RCN Patrol Service during the First World War, see Michael Hadley and Roger Sarty, ***Tin-Pots and Pirate Ships: Canadian Naval Forces and German Sea Raiders, 1880-1918*** (Montreal, 1990).

12. NAC, RG 24, File HQS 5199-F, pt. 1, Joint Staff Committee Plan for the Defence of Canada, 27 June 1938.

13. NAC, RG 24, Box 3830, File NSS 1017-1-15(1), Nelles to LaFleche, 1 September 1938; Power Boat to Jefferson, 17 September 1938; Jefferson to Nelles, 20 and 26 September 1938; Jefferson to Power Boat, 26 September 1938; Jefferson to Naval Secretary, received 18 October and 27 December 1938.

14. NAC, RG 24, Box 3830, File NSS 1017-1-15(1), Jones to Nelles, 8 November 1938.

15. NAC, RG 24, Box 3830, File NSS 1017-1-15(1): Curry to Nelles, 30 December 1938 and 23 January 1939.

16. Directorate of History, Department of National Defence (DHist), Naval Historical Section files (NHS), File 1650-1, transcribed from NSS 1017-10-34(1).

17. NAC, RG 26 J-1, vol. 254, File 667, Objective of the Canadian Naval Service, 17 January 1939; DHist, File 1650-1, transcribed from File NSS 1017-10-34(1); File 181.002 (D40); Nelles to Deputy Minister, 16 May 1939, File NS 1062-13-2(7) cited in Gilbert Tucker, ***The Naval Service of Canada*** (2 vols., Ottawa, 1952), II, 29.

18. NAC, RG 24, Box 4047, File NSS 1078-6-1(1), Memorandum to Honourary Naval Advisory Committee, 8 August 1939.

19. NAC, RG 24, Vol. 2685, File HQS 5199, pt. 6, participation by RCB Instructed to Work in Closest Co-operation with H.M. Forces, Appendix A to Combined Staffs Committee to Minister, 17 September 1939.

20. DHist, Nelles Biography File, Nelles Diary, Entry for 19 September 1939; NAC, RG 24, Box 3830, File NSS 1017-1-15(1), Nelles to Minister, 13 October 1939.

21. DHist, NHS, File 1650-1(1), Review of the Naval Requirements of Canada and the Existing Situation, 29 September 1939.

22. NAC, RG 24, Vol. 3841, File NSS 1017-10-22(1), Nelles to Maclachlan, 12 October 1939; NAC, RG 24, Vol. 2826, File HQC 8215, pt. 1, Nelles to Maclachlan, 30 October 1939. For a description of the coastal panics during the First World War, see Hadley and Sarty, ***Tin Pots and Pirate Ships,*** chapters 4-5.

23. Tucker, ***The Naval Service of Canada,*** II, 29.

24. NAC, Rg 24, Box 3830, File NSS 1017-1-15(1): Nelles to Minister, 13 October 1939; Maclachlan to Carswell, 1 November 1939; Carswell to Maclachlan, 7 November 1939; Christie to Secretary of State, External Affairs, 9 January 1940.

25. Ranee, ***Fast Boats and Flying Boats,*** 115.

26. NAC, RG 24, vol. 3841, File NSS 1017-10-22, pt. 1, Nelles to Maclachlan, 16 November 1939; NAC, RG 24, Box 3830, File NSS 1017-1-15(1): Scott to Nelles, 17 November 1939; Nelles to Scott, 22 November 1939.

27. NAC, RG 24, Box 3830, File NSS 1017-1-15(1), Nelles to Admiralty, 17 November 1939.

28. NAC, RG 24, Box 3830, File NSS 1017-1-15(2), Admiralty to Nelles, 19 November 1939.

29. NAC, RG 24, Box 3830, File NSS 1017-1-15(2): Carswel! to Campbell, 15 February 1940; Carswell to Maclachlan, 15 February 1940; Memorandum by Croil, 21 February 1940; Maclachlan to Nelles, 27 February 1940; Curry to Nelles, 28 February 1940.

30. NAC, RG 24, Box 3830, File NSS 1017-1-15(2): Carswell to Maclachlan, 5 March 1940 and Nelles's notation on the letter.

31. DHist, NHS 8000, File MTBs General (2): Nelles to High Commissioner, 16 March 1940; Murray to Nelles, 21 March and 1 April 1940.

32. NAC, RG 24, Box 3830, File NSS 1017-1-15(2): Maclachlan to Nelles, 23 March 1940: Roy to Nelles, 3 April 1940.

33. On the Fairmile B-Type, see John Lambert and Al Ross, ***Allied Coastal Forces of World War II. Vol. I, Fairmile Designs and U.S. Sub-Chasers*** (London, 1990), 9-79.

34. DHist, NHS 8000, File MTBs General (2): Nelles to Admiralty, 29 March 1940; Admiralty to Nelles, 2 April 1940; Nelles to Admiralty, 2 April 1940. This exchange of correspondence was the genesis of the construction of Fairmile B-Type Motor Launches in Canada.

35. NAC, RG 24, Box 3830, File NSS 1017-1-15(2): Nelles to Maclachlan, 25 April 1940. British Power Boat had offered to construct MTBs in Canada if a minimum order of ten was obtained, see NAC, RG 24, Box 3830, File NSS 1017-1-15(1), Blake to Murray, 25 April 1939.

36. Tucker, ***Naval Service,*** II, 48-51, 509-511.

37. NAC, RG 24, Box* 3830, File NSS 1017-1-15(2): Maclachlan to Carswell, 31 May 1940.

38. NAC, RG 24, Box 3830, File NSS 1017-1-15(2): Maclachlan to Carswell, 31 May 1940; NAC, RG 24, Box 5608, NSS 29-27-1(1), Tender, Specifications and Contract for the CMTB, 18 July 1940; Ranee, ***Fast Boats and Flying Boats,*** 126; NAC, RG 24, Box 3830, File NSS 1017-1-15(2), Memorandum by Carswell, 29 May 1940. During the period May to June 1940, at least four firms approached the government with sales proposals to build MTBs and Air/Sea Rescue Launches, see details of proposals from Higgins Industries, Albert Hickman Sea Sleds, Miami Shipbuilding and Vivian's of Vancouver in NAC, RG 24, Box 3830, File NSS 1017-1-15(2).

39. NAC, RG 24, Box 3830, File NSS 1017-1-15(2), Notation attributed to Minister's secretary, stamped 3 August 1940.

40. NAC, RG 24, Box 3830, File NSS 1017-1-15(2): Nelles to Maclachlan, 24 July 1940.

41. NAC, RG 24, Box 3830, File NSS 1017-1-15(2): Nelles to Fenton, 2 August 1940.

42. NAC, RG 24, Box 5608, File NSS 29-27(1), Tender, Specifications and Contract for CMTB, 18 July 1940.

43. DHist, NHS 8000, File MTB's General (1): Canadian Power Boat, "Diary of Events" and "The Founding and Building of the Canadian Power Boat Co. Ltd..."; Naval Superintendent (Halifax) to Naval Secretary, 4 February 1941; Ranee, ***Fast Boats and Flying Boats,*** 127-128, 137-140.

44. DHist, NHS 8000, File MTB's General (1), Director of Naval Equipment and Construction to Chief of Naval Equipment and Construction, 5 August 1942; Robert J. Bulkeley, ***Al Close Quarters: PT Boats in the United Slates Navy*** (Washington, 1962), 52; author's interview with Cdr. CA. Law, RCN (Retd.), 4 May 1988; DHist, Naval Staff Minutes, 10 December 1940 and 14 January 1941; DHist, NHS 8000, File MTBs General (1), Canadian Power Boat Diary; Ranee, ***Fast Boats and Flying Boats,*** 127-128,137-140. The problems encountered by Canadian Power Boat in constructing the CMTBs in wartime Canada is documented in NAC, RG 24, Boxes 5608-5609, Files 29-27-1(1) to (4).

45. Ranee, 100-105; DHist, NHS 8000, File MTBs General (1), Canadian Power Boat Diary; NAC, RG 24, Box 5608, NSS 29-27-1(3), C. in C, Mediterranean to Nelles, 1 July 1941.

46. DHist, NHS 8000, File MTBs General (1), Canadian Power Boat Diary; Admiralty to British Admiralty, Supply and Repairs, Washington, 8 August 1941; Superintendent of Shipbuilding to Engineer-in-Chief, 1 September 1941.