

Arctic surveillance and security, therefore, must be squarely faced, and will surely be at the centre of the Canadian defence policy review, for until the requirements of continental security are dealt with, it is difficult to see how the NATO pieces of the Canadian defence puzzle can be put in place.

In regard to surveillance of airspace, therefore, it seems evident that the limited capability to monitor the northernmost areas of Canada now lies with the United States. To establish a greater national capability, Canada must either extend the NWS, acquire AWACS, or initiate an SBR programme. Of these choices, and given that initial decisions about NWS have already been made, the immediate option is to extend the NWS if that is a technically feasible course of action.

To deal with the possibly more serious problem of increasing submarine use of the Canadian Arctic, it is clear that the factors affecting major defence procurement issues need to be clarified. Of these, the crucial one is whether Canada should acquire a capacity for under-ice operations. Here a distinction should be made between an active and a passive capability. An active capability requires the purchase of ice-capable submarines, since submarines are the only platform able to seek out other submarines which are themselves operating in the deep Polar basin, in the marginal ice zone, or in the ice-covered waters of the Canadian archipelago. Since, at present diesel submarines are inherently limited in their ability to operate under ice for extended periods of time, the need for an under-ice capability leads inexorably to consideration of nuclear attack submarines.

If Canada were to consider such a purchase, it would presumably not design its own, but buy them off the shelf. There is only a limited range of options. In the United States, the present Los Angeles class SSNs cost in the order of US \$800 million each. The new US Seawolf (SS-N-21) is reputed to cost US \$1.3 billion, with follow-on submarines at around US \$1 billion. This is obviously too expensive for Canada. The British Trafalgar class submarine is much smaller than the Los Angeles class but it is considered to be competitive, and comes at a much reduced price (around US \$300 million per unit). And the French have produced a still smaller submarine, the Rubis, which may cost around Cdn \$350 million per unit, at which point the price starts to be comparable with that of the unit cost of the Canadian patrol frigate programme.²⁸

²⁸ The conversion of the Poseidon from the SSBN to SSN role has been proposed and is a matter of some debate in the United States. In a curt response to a Congressional request for a feasibility study of the cost of the conversion, Secretary of Defense Weinberger agreed that technically the Poseidons could be converted to SSNs or cruise missile submarines, but that cost and military effectiveness militated against it. (See *Defence News*, Monday May 26 1986; *Defense Daily*, June 11 1986 and the *Washington Times*, June 11, 1986 for a discussion of this issue). On the matter of cost, the *Trafalgar* is not in dispute, but estimates of the *Rubis* vary considerably. William Winegard, Chairman of the House of Commons Committee on External Affairs, has implied that the *Rubis* cost could be around \$350 million, presumably per unit copy (Speech to the Highland Fusiliers, Kitchener 13 November 1986); James Bagnall, *Financial Post*, 15 December, claims that the unit cost is \$400 million per copy.