It would be inappropriate here to attempt a true operational analysis of the relative merits of these purchases. It is evident, however, that many of the same considerations that affect decisions about surveillance systems also apply. For example, progress in quieting Soviet submarines (to say nothing of the US state of the art) would be a major factor in considering nuclear submarine purchases.[29] Whether the British and French Governments would be willing to reveal such highly sensitive information in response to a general expression of interest to purchase would no doubt be an open question. More broadly, there is the danger that Canada might enter an Arctic contest with equipment purchases made at a great cost, only to be immediately outmatched by the technological progress of the superpowers.

Nor could it be assumed that, other than the US Seawolf or the later types of Los Angeles class, it would be possible to purchase off the shelf without making major and costly modifications to improve the ice-capabilities of the smaller nuclear submarines. Nevertheless, the purchase of nuclear submarines would perhaps provide Canada with its only opportunity to acquire a limited number of boats and achieve a three-ocean navy, particularly since nuclear submarines would have the capability to ply all three oceans in a single patrol.

The alternative is to buy larger numbers of cheaper but highly capable diesel submarines whose main activity would be patrol on the East and West coasts, but not in the Arctic. Not all commentators dismiss the potential of the diesel in ice conditions, and some have even suggested that extended patrol under ice could be achieved by combining diesel power with the small 'Slowpoke' Canadian nuclear reactor. In this proposal, a standard diesel submarine of, say, German or British design would be modified and probably expanded to take the low power reactor, which would allow under-ice operations for extended periods of time at very slow speeds.[30] It is doubtful, however, if this constitutes a realistic compromise for Canada. First, the hazards of under-ice operations demand wide safety margins which may not be available in a modified diesel submarine. Second, as with space-based radar, the unforeseen problems of an independent weapons development programme weigh heavily in a context where budget pressures allow little room for experiment or misjudgement.

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[29] For an authoritative but much deleted survey of trends in Soviet submarine technology, see the US House Armed Services Committee, Hearings before the Seapower and Strategic and Critical Materials Subcommittee (HASC 99-33), 1985, pp. 134-153. For a provocative assessment, see Capt. J.E. Moore, Foreword, *Jane's Fighting Ships, 1985-86*.

[30] For a discussion of the 'slowpoke' option, see Commander E.J.M. Young, "Submarines for the Canadian Maritime Forces", *Canadian Defence Quarterly*, Summer 1986, pp. 25-36.