

marily to deter the deployment of SLBM-armed submarines closer to shore than maximum range.

At present Canada has only a limited destruct capability with respect to SLBM-armed submarines in the CANLANT area and to a lesser extent in its Pacific area of responsibility. The Subcommittee considers that an extensive capability in this field is economically, if not technically, impossible, for reasons already summarized in the previous subsection.

10.4 Self-defence capabilities for maritime forces

The Subcommittee recommends that the surface vessels of Canadian maritime forces have some basic self-defence capabilities, which in practice may be most useful in connection with the exercise of police functions. In the light of the strategic considerations discussed and discounted in Section 6, the Subcommittee does not recommend highly sophisticated self-defence systems, such as anti-aircraft missiles.

10.5 Capabilities in the Arctic

The combination of oceanic conditions in the Canadian Arctic—year-round ice in some areas and seasonal ice in others, large areas of relatively shallow waters, and the archipelago itself consisting of numerous islands separated by relatively narrow bodies of water—provides a unique maritime problem, with respect both to maintenance of sovereignty and to defence against any threat to security originating in the Arctic.

Ice coverage limits the effectiveness of all maritime systems in more or less drastic ways. Surface vessels, other than heavy icebreakers, effectively cannot operate in the arctic. If they are strengthened to resist floating ice, they become too slow for open waters. Hovercraft provide a potential for such surface movement which is being explored, but their range will be, at best, limited. Maritime patrol aircraft can effectively detect surface activity, but movement of ships is virtually non-existent. Because of ice cover, such aircraft have no capability for underwater surveillance. The effectiveness of bottom-based detection systems is somewhat reduced by ice "noise". The nuclear-powered submarine is the one vessel capable of relatively free movement in arctic waters. With hull strengthening it can even break through the ice pack and surface.

The large areas of shallow waters less than 20 fathoms in depth limits the area of feasible submarine operations. Areas of water of more than 20 fathoms in depth are two types: (1) connecting channels from the Arctic Ocean (North West Passage and Nares Strait) to Baffin Bay as well as the Davis Strait from Baffin Bay to the Atlantic; and (2) cul de sacs and underwater bays from the perimeter of the archipelago, or from connecting channels, the largest and most significant being Hudson Strait and part of Hudson Bay.

The Subcommittee believes that the connecting channels have potential importance as transit routes through the Arctic archipelago for both military and non-military submarines. It sees some future possibility of the exploitation of the channels and of the cul de sacs and underwater bays for strategic or commercial purposes. The Subcommittee does not consider military exploitation of either the channels (other than for transit) or other areas is now taking place. But the unique character of Arctic waters and the unknown Arctic geography make it important that Canada develop further competence