

as to be virtually undetectable. While submerged at shallow depths, they are able to communicate with ships and aircraft through a fin-mounted radio antenna and when more deeply submerged, by means of a floating very low frequency antenna. Should they wish to minimize possibilities of detection, they can release a canister containing data and messages programmed to transmit after a time-delay.

Conventionally powered submarines are suitable for a wide variety of roles. They are highly effective as ASW platforms; perhaps the most dangerous opponent for surface warships; and extremely effective against other surface traffic. They are also extremely useful in surveillance and reconnaissance and in mine-laying. As ASW vehicles, they would be especially useful in barrier and choke-point operations and in maintaining sanitized zones of modest size. They are also highly useful for training friendly surface and air ASW units.

Their major disadvantage is that they are quintessentially weapons of war and would be able to contribute little to the accomplishment of the ancillary duties assigned to MARCOM in peacetime. Their peacetime contribution would consist of their significant deterrent capability, underwater surveillance, and the training of surface and air ASW forces. Should Canada decide to acquire some of these vessels, they ought to be equipped with modern torpedoes and submarine-to-surface missiles. Depending upon cost, some or all should probably be equipped with towed-array sonar. A data link to facilitate their co-operation with surface and air units would also be a high-priority requirement. The three older but still capable Oberon submarines currently operated by Canada need to be equipped with more modern torpedoes and submarine-to-surface missiles.

(d) Attack aircraft.

The suggestion has been made earlier that, based upon the Falklands experience, it would be useful to acquire missile-armed attack aircraft. This could be a costly proposition even if older designs were purchased off the shelf. Nevertheless, in the Sub-committee's considered view, this requirement deserves a hard look. In the interim, it would be advisable to equip some of the CF-18s already ordered with a U.S. Navy modification which would permit them to carry and fire Harpoon missiles. Canadian-based squadrons of Tactical Air Group and Fighter Group could be equipped with aircraft so fitted. Flights of two of the CF-18 squadrons will be regularly deployed to Comox and Goose Bay, areas where they might serve in an anti-shipping role. If more aircraft were required, additional units could be dispersed from Cold Lake and Bagotville to air bases on the Atlantic and Pacific coasts. However, range considerations would preclude the CF-18 from operating at significant distances off-shore.

(e) Patrol vessels and their systems.

Small high-speed patrol vessels, useful for Regular Force and Reserve training purposes, Naval-Officer-In-Charge (NOIC) duties, coastal patrol, sovereignty surveillance and control, and rounding up enemy fishing and merchant vessels in time of war, would require for those duties little more than a good radar, good communications systems and a small-calibre gun. Equipped, at more expense, with a more sophisticated radar and surface-to-surface missiles, they could provide significant opposition to surface intruders, since they are hard to detect, and the missile would give them significant punch at long-range.