

humanitarian nature and 225 involved assistance to civil authorities.

In late 1977, emergency locator transmitters (ELT) powered by lithium-base batteries were ordered removed from civil aircraft because of the hazard to safety which these batteries created. Although the beacons are gradually being returned to service, a significant proportion of civil aircraft are being flown without an ELT.

In all, Canadian Forces aircraft logged a total of 8,196 hours in SAR activities in 1979, representing 341 days. Civil registered and other government aircraft logged a further 2,208 hours, the equivalent of about 92 days.

Prevention and education

Canadian Forces SAR personnel, in conjunction with personnel of the Ministry of Transport and Department of Fisheries, are active in the field of accident prevention and education. In 1979, staffs of RCCs, squadron aircrews and safety technicians organized lectures in many communities and spoke to organized groups of fishermen, flying clubs, boating and sailing clubs, provincial emergency agencies and SAR-oriented organizations.

Subjects included the government's SAR organization and resources, defensive flying, safety and survival tips and techniques in both air and sea emergencies. Other initiatives, directed primarily at the marine public, were pursued by the Canadian Coast Guard.

The federal government has decided to provide an improved SAR capability in Canada. DND is in the process of upgrading 11 *Labrador* and *Voyageur* helicopters.

The SAR environment requires helicopters with capabilities for operations day and night, in adverse weather and in remote areas. To meet these requirements, the helicopters are being modified by the installation of improved navigation, radar and communication systems, high-intensity searchlights, and flight-safety associated items, such as automatic stabilization equipment.

Government departments assisted

As in previous years, the department was called on to provide support to a number of other federal government departments for a variety of purposes and events. The Department of the Secretary of State requested DND assistance in the preparation and conduct of the visits of the Prince of Wales, Queen Elizabeth the

Queen Mother and Princess Anne. The Canadian Forces were called upon to provide assistance in the conduct of the funeral arrangements for former Prime Minister John G. Diefenbaker. Assistance was also provided at the funeral of Lord Louis Mountbatten at the request of the Department of External Affairs.

Refugee operation

As a result of a decision by the government in July 1979 to accept a large number of refugees from Southeast Asia, Canadian Forces expertise acquired in OP MAGNET I (the reception of the "boat people" from the *Hai Hong* in 1978) was in demand. The lead government department, Canada Employment and Immigration Commission and Department (CEICD), immediately sought DND assistance to provide short-term emergency airlift to start the program and asked DND to establish two reception centres to process a monthly flow of some 2,000 refugees. This humanitarian operation was designated OP MAGNET II.

Longue Pointe in Montreal and Griesbach Barracks in Edmonton were designated as reception centres and planning quickly got under way for the reception of the first refugees scheduled for Longue Pointe in August 1979. Ten Boeing 707 flights were scheduled to transport the first 2,000 refugees from various locations in Southeast Asia to urban centres in Canada. By mid-August both reception centres were in operation providing full reception, messing and accommodation facilities to the refugees arriving on the last four Boeing flights.

By late 1979 almost 15,000 refugees had passed through the Defence department reception centres.

Flood assistance

Operation BOLSTER was the Canadian Forces response to Manitoba's request for assistance in combating the spring floods of 1979. During the period April 22 to May 19, 1979 up to 700 members of the regular and reserve force were deployed between Winnipeg and the U.S. border in an effort to contain the rampaging Red River.

The Second Battalion of Princess Patricia's Canadian Light Infantry reinforced by 60 Winnipeg militia, engineers from British Columbia, ten helicopters from as far away as Edmonton, a score of amphibious tracked vehicles and well over 100 cross-country vehicles made up the

task force for Operation BOLSTER. On the evening of April 25, the area of the Red River Valley which was most seriously affected was evacuated. Shortly thereafter the task force moved in.

An infantry company occupied each of the four key valley towns to patrol the dikes and to maintain the embankments which held back the flood waters. In most areas the united efforts of the military and the civil emergency agencies succeeded in the fight against the rising waters and kept flood damage to a minimum. During the final days of April the waters began to recede.

In comparison to the record flood of 1950 that inundated many parts of Winnipeg and which saw the use of over 4,000 troops, Operation BOLSTER, plus the flood control measures introduced over the past three decades, proved much more successful in containing the waters of the Red River.

Project LOREX

The specialized air delivery skills of the Canadian Forces were used to assist the Department of Energy, Mines and Resources (EMR) during project LOREX, a major scientific study in the high-Arctic. The purpose of LOREX was to investigate an underwater mountain range which extends from Greenland to Siberia, passing through Canadian territory near the North Pole. During April and May 1979, an international group of scientists under the direction of EMR studied the ocean floor from three slowly drifting ice islands.

Although the project had considerable civilian airlift support, the large quantities of fuel, explosives, prefabricated buildings and supplies which had to be delivered to small landing zones on the ice floes required an airdrop capability which could only be provided by the Canadian Forces. The technique used in such confined spaces is the Low Altitude Parachute Extraction System (LAPES). In a LAPES operation aluminum pallets carrying the payload are pulled from the aircraft by parachutes which also act as brakes as the cargo slides across the drop zone at well over 130 miles an hour. Initially 15 *Hercules* flights were required to deliver more than 200 tons of material using the LAPES system. In early spring one further LAPES airlift was flown to replenish dwindling fuel supplies. Project LOREX was successfully terminated in May 1979.