The defensive actions taken by NORAD forces in emergencies are defined in terms of degrees of alert, and no change can be made in the status of either country's forces until the requisite level of alert has been declared. Given the task of providing early warning, it is CINCNORAD's responsibility to inform each of the two governments when an attack is taking place or might be expected. The two governments then decide, after consultation, what action should be taken—what new level of alert, if any, should be declared. This decision is, however, a national one. A change in the alert status of the Canadian forces assigned to NORAD can be ordered only with the approval of the Prime Minister.

It is possible for United States forces—or Canadian forces for that matter—to be placed on a higher level of alert by purely national action. In the case of U.S. forces, they would operate in this situation under the U.S. Continental Air Defence Command (CONAD), rather than under NORAD. This arrangement is possible because CONAD's command and control facilities also constitute NORAD facilities located in the United States and because CINCNORAD is also the Commander-in-Chief of CONAD.

In the past, when higher alerts where declared in the United States, but not in Canada,—and this has happened only twice since NORAD was established, once during the Cuban crisis in 1962 and once during the Middle East war in 1973—Canadian officers assigned to the integrated NORAD headquarters in Colorado Springs were sometimes placed in the anomalous position of having to carry out their responsibilities, as NORAD officers, at the American alert level. This problem last occurred in October, 1973 when the United States forces were put on "DEFCON 3" alert as a result of developments in the Middle East. The Canadian government was not asked to join this purely United States move, and the Canadian deputy-commander of NORAD was not involved. In this instance, the deputy-commander was the deputy-commander of CONAD. However, there was a problem with Canadian officers in command centres. The Committee has been informed that arrangements have since been made for Canadian officers to be replaced immediately by Americans should such circumstances recur.

There are two other important areas where the Canadian government must give its approval before action can be taken under NORAD. First, Canadian interceptor aircraft can be armed with nuclear air-to-air missiles only if the Canadian government, along with that of the United States, decides that this should be done. Otherwise, these aircraft remain armed, as they are now, with conventional weapons. Secondly, CINCNORAD cannot deploy American forces on higher alert over Canadian territory without the prior approval of the Prime Minister.

New policies announced by the Canadian and American governments will result in significant changes in NORAD's organization. Both governments are in the process of developing national radar systems for the joint use of civil and military organizations. For this and other reasons, the United States government has decided to divide the contiguous 48 states into four regions for joint military and civilian air traffic control purposes. Alaska would remain, as it is now, a separate command. (*See Map Annex 2*).

In Canada's case, Mr. Richardson told your Committee that a consequence of developing the joint-use radar system would be "the assumption in due course by Canadian agencies of the responsibility of the control of all military and civilian air traffic in Canadian air space from centres located in this country." He also said that, although no decision had been made, proposals were under consideration to have two entirely Canadian Norad regions established which would, together, include all of Canada's territory. One, roughly similar to the existing 22nd NORAD region, would cover Eastern Canada, while another would be established in the West. (*See Map Annex 3*)

The result of these policies, if they are implemented, will be that Canadian forces exclusively will carry out the peacetime surveillance and, to a lesser extent, control functions over the whole of Canada.

C. Forces and Facilities

At the present time, there are 61,200 Canadian and American military personnel assigned to NORAD, compared to a high of 248,000 in 1961. Canada now contributes 8,500 military personnel, of which 190 are assigned to NORAD in the United States. 200 United States military personnel are assigned to NORAD facilities in Canada.

NORAD has three systems specifically designed to provide detection and warning of attack by ballistic missiles. The first consists of three BMEWS (Ballistic Missile Early Warning System) units, located at Thule in Greenland, Clear in Alaska, and Fylingdales Moor in England. The second system, designed for the detection of SLBMs, consists of several radars located around the coast of the United States. These are older radars, difficult to maintain and with limited range. In light of the 4,000-mile range of the newer Soviet SLBMs, the United States has therefore decided to replace this system with newer, phased-array radars. One is now under construction on the New England coast, and a second may be built on the Pacific coast of the United States. These radars will also provide substantial coverage off Canada's coasts.

The third system consists of satellites in synchronous orbits and equipped with infrared sensors for the detection of both ICBMs and SLBMs. Together, these three systems provide NORAD with a flexible, comprehensive and reliable system for the detection of missile launchings anywhere in the world.

NORAD's facilities for detection of aircraft, including manned bombers, consist first of the radars in the DEW (Distant Early Warning) line. There are now four major stations and seventeen auxiliary stations in this line situated in the Canadian Arctic, Alaska and Greenland. These stations were constructed by the United States and are maintained by the U.S. Air Force through civilian contract. The military commander at each main station in Canada is a Canadian, exercising operational control for NORAD.

The second element of the air space surveillance and control system is the PINETREE line of long-range radars located in Southern Canada and the United States. There are at present twenty-five long-range radars manned and operated by the CAF Air Defence Command in Canada.