

Government agrees) facing directly north. OTH-B provides radar coverage up to the ionosphere and at a distance of some 2,000 miles. There are disadvantages to this system, however — the size of its radar sites makes them extremely vulnerable to attack, and it is not even known if the system can operate in the Far North, given ionospheric disturbances at the North Pole. The primary advantage of the OTH-B system is that it would tremendously extend ground-based early warning, thereby precluding low-altitude penetration of enemy aircraft. Moreover, it is OTH-B that would give the warning for the AWACS not already in flight to go aloft.

The third system is referred to as IMI. While the F-106s would be retained, this new interceptor fighter would replace the F-101s and F-102s now being used by the U.S. in NORAD, probably with the Navy F-14 or F-15. The AWACS would direct these fighters in battle. Should the U.S. adopt the IMI, however, the rationale for Canada's replacing its CF-101 *Voodoos* would become more compelling, given dif-

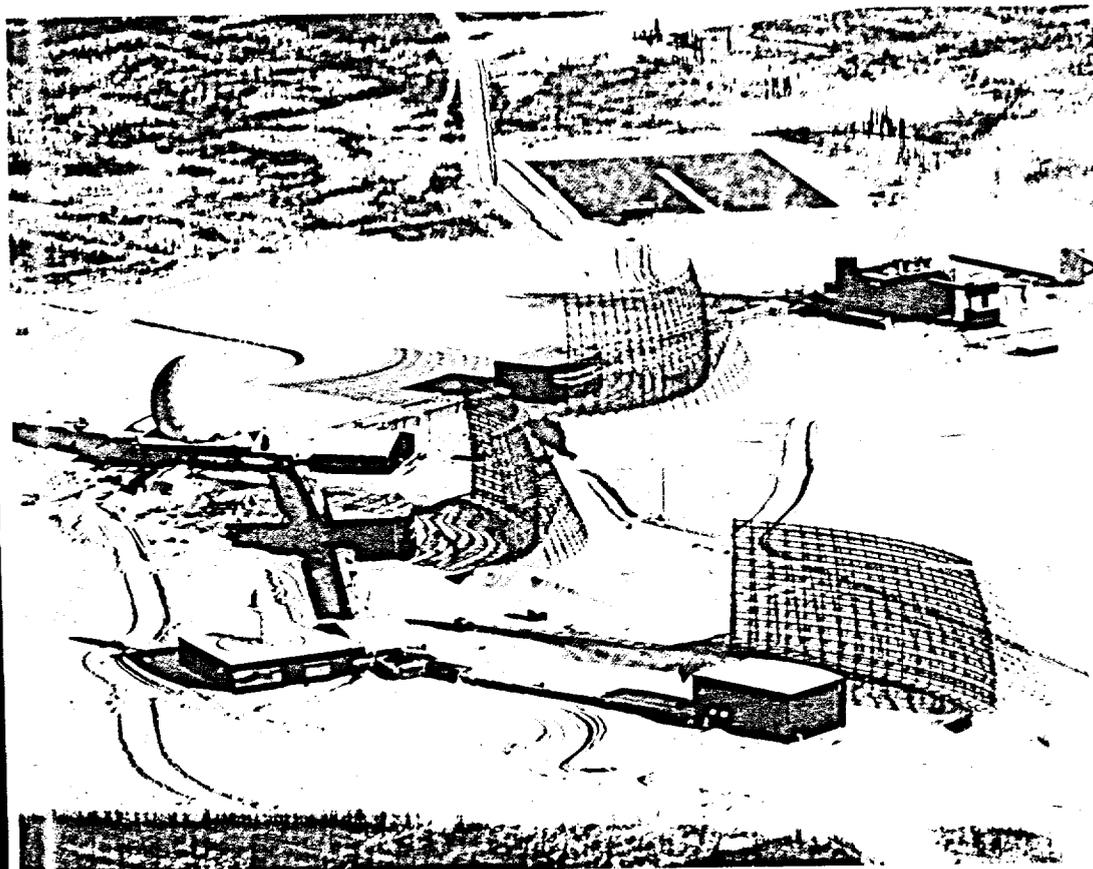
ferences in radar facilities and speed.

In addition to these three systems that are not yet operational, mention should also be made of the SAM-D (surface-to-air missile), which has already been developed by the U.S. Army. The SAM-D would, in effect, constitute the fourth system in the modernization of the U.S. air-defence system. The SAM-D is a highly-mobile battlefield air-defence weapon, which would serve as a substitute for the high-altitude *Nike Hercules* missiles and the low-altitude *Hawk* missiles to provide a terminal defence of key U.S. complexes.

#### Political, military factors

The impetus for both the continuation and modernization of NORAD comes from the U.S., not Canada. It is difficult to define clearly Canadian and U.S. considerations regarding NORAD's renewal, owing to the varied and diffuse political and military factors involved.

Politically, suffice it to say that several arguments have been put forward in Canada concerning the advantages and disadvantages of Canadian NORAD par-



NORAD Photo

*Radar antennas at one of the outposts in NORAD's Ballistic Missile Early Warning System cast shadows across the Alaskan landscape. These devices throw long radar beams 3,000 miles or more to spot an intercontinental ballistic missile strike*

*against North America and pass the alert to NORAD's Combat Operations Centre. This BMEWS station at Clear, Alaska, is part of a system with other radar sites at Thule, Greenland, and Fylingdales Moor in Northern England.*