

## Chapter II

### THE DEVELOPMENT OF NORTH AMERICAN AIR DEFENCE

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#### 1. The Early Years to the Mid-1960s: Bomber Focus

Until the 1950s Canada was protected by distance and a friendly relationship with the United States from the danger of anything but diversionary or nuisance raids from the air. However, following the explosion of a first Soviet atomic device in 1949 and a rapid build-up of Soviet long-range aviation, as indicated in Figure 1, Canada came under a major, direct aerial threat for the first time and moved into a more formal association with the United States in order to counter it. Agreements were established for a series of radar networks including the CADIN-Pinetree Line in 1951, the Mid-Canada Line in 1954, and the DEW Line in 1955. Canada joined with the United States to set up the North American Air Defence Command on an interim basis on August 7, 1957. Formal confirmation of the NORAD agreement was provided on May 12, 1958.

From the outset, NORAD relied on a variety of active and passive defence systems. At their height, the latter consisted of the three radar lines just mentioned: the DEW Line, made up of 78 stations strung along the 70th parallel and functioning essentially as a tripwire; the CADIN-Pinetree Line, with 39 radars along the 50th parallel, discharging a control as well as a surveillance function; and the Mid-Canada Line, with 98 stations, providing detection along the 55th parallel. These radars were backed up by a variety of American sensors designed to prevent "end runs" from either the Atlantic or Pacific, including long-range early warning aircraft, U.S. Navy picket ships, and United States Air Force (USAF) "Texas tower" surveillance radars. Active defence involved close to 3,000 interceptors, including 200 Canadian aircraft dedicated to this role, and approximately 90 Bomarc and Nike surface-to-air missile (SAM) formations. Canadian Bomarc squadrons were located at North Bay, Ontario, and LaMacaza, Quebec. Both the aircraft's weapons and the SAMs were nuclear-tipped to ensure the destruction of their targets. All these systems were linked together through the computerized regional control centres of the Semi-Automatic Ground Environment (SAGE) complex, later augmented by the Back-Up Interceptor Control (BUIC) communication network. Crude but elaborate civil defence procedures and mechanisms were put in place to protect urban populations. At that time, the Canadian land forces were also "assigned a role in national survival".<sup>1</sup>

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<sup>1</sup> *White Paper on Defence*, Minister of National Defence, Ottawa, March 1964, Queen's Printer, p. 9.