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## THE CASE FOR CONTINENTAL AIR DEFENSE

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**THE  
CASE FOR  
CONTINENTAL  
AIR  
DEFENSE**

by

**R. RUSSELL BARBER**

**T**he decade of the seventies drew down on a troubled world, with freedom of the peoples of that world in peril. The leading nation of the free world, the United States, is beset on many fronts by communist-backed disorders, badgered by economic crises caused in part by nations controlling world oil supplies, and assailed by Third World countries as they struggle for international recognition. In these dangerous times, the preservation of peace depends upon a strong US, strong economically and strong militarily. For it is the US which has contained the Russian drive for world domination since the end of World War II.

In March of 1946, Winston Churchill came to the US to warn of Soviet aspirations to world conquest. Concurrent with that warning, the US created a mighty bomber strike force and gave birth to the Strategic Air Command. The warning was clear: an attack on the US or its allies would trigger a bomber strike against the USSR of such magnitude as to destroy that nation. By the mid-1950's, a second bomb delivery system—ICBMs—entered the SAC inventory. Shortly afterward, the US Navy achieved a ballistic missile strike capability with sea-launched ballistic missiles (SLBMs). The Soviets kept pace with these developments, also adopting the triad concept for offensive nuclear strike forces. Each nation was capable of destroying the other in a single sustained attack employing nuclear weapons delivered by bombers, by ground-based ICBMs, and by SLBMs—and of course both nations embarked on a program of systems development to provide defense against such attacks.

**I**n the beginning, defense against a bomber attack was the single concern. Air defense systems were created enabling the US to detect a bomber attack, intercept the attacking force, and destroy it before the bombs could be dropped on their targets. Canada and the US joined air defense forces under a binational command, the North American Air Defense Command. The NORAD Commander-in-Chief was charged by both national command authorities with

the responsibility for the defense of North America (excluding Mexico) from air attack. NORAD forces were structured and positioned to protect vital targets: SAC bases, command and control centers, national capital regions, and communications and industrial centers. Air defenses were deployed so that the attacking bomber force would be engaged by interceptors prior to reaching these targets. The strategic target area encompassed the continental US and the southern fringes of Canada; the battlefield itself would be the middle latitudes of Canada.

As ballistic missiles came into inventory, the list of protected targets expanded to include the missile launch control centers, submarine ports and communication nodes, and ground-based installations associated with terrestrial and space sensor systems. Basically, however, the strategic target area remains defined as the continental US and the southern part of Canada. Security of this area is essential to the survivability of US strategic retaliatory forces.

With the inclusion of ballistic missiles in their offensive weapons arsenals, both the US and Russia rushed into programs for the development of systems which would complement the anti-bomber defenses and which would neutralize the ballistic carriers before they could reach the target area. The development of a workable antiballistic missile system presented enormous technical problems because of the relatively short flight time of the incoming missiles as compared to that of strategic bombers; the costs of a complete system were astronomical—so costly that agreement was reached between the two powers to limit the deployment of antiballistic missile systems to two installations for each nation. Today, all that remains of the US system is the large antenna blockhouse at Concrete, North Dakota; Russia retains two systems deployed in the Moscow area.

US defense dollars were channelled instead into development and production of a missile detection and tracking system which is spread throughout the world and is fed data from terrestrial and space-based sensors. The

generation of heat during a missile launch provides the first indicator of the launch; then other sensors of varied technologies pick up the missile, determine its trajectory, and predict where it will impact on the earth.

All such data on missiles is fed into the NORAD Combat Operations Center in Cheyenne Mountain, Colorado, with one computer talking to another. Here, the NORAD Commander and his staff, with computer assistance, analyze the data and assess the situation to determine whether what they are viewing can be considered a strategic attack on North America. This attack assessment is flashed quickly to the national command authorities in both the US and Canada; a decision is then made at the presidential level as to whether the US strategic retaliatory forces should be unleashed. There have been more than 400 foreign missile launchings a year over the past several years; all have been detected, and each time the NORAD Commander has been called upon to provide an attack assessment.

Deterrence, based on early detection permitting timely retaliation, is the only defense against ballistic missile attack in existence in the US today. Our protection lies in the certain Soviet knowledge that a launch of any number of missiles aimed at North

Major General R. Russell Barber (Royal Canadian Air Force, Ret.) served from March 1978 to August 1979 as Deputy Chief of Staff for Plans and Programs at North American Air Defense Command headquarters, Colorado Springs, Colorado. He cited his disagreement with defense policies and "the continuing deterioration of North American air defenses" as reasons for his early retirement last year. General Barber enlisted in the RCAF in 1943; his early training qualified him as an air gunner, a radar technician, then as a radio navigator. In 1959 he was appointed Navigation and Electronics Instructor at the US Air Force Academy. In 1963 he attended the RCAF Staff College. After several subsequent command and staff assignments, he was promoted to Brigadier General in July 1976 and made Chief of Staff, Operations at Air Command Headquarters in Winnipeg. In September 1977, General Barber was transferred to Colorado Springs as Deputy Commander of the NORAD Combat Operations Center.



America will be detected and will trigger a strategic retaliatory response which will devastate the USSR; it is this absolute certainty which keeps Russia from attacking the US.

**T**he development and operation of the US ballistic missile warning systems has been given top priority, shared only by funds allotted to development and upkeep of the strategic retaliatory weapon systems themselves, and rightly so. Former Secretary of Defense Schlesinger once said, "If you cannot defend against the ballistic missile, why worry about the manned bomber?" But Mr. Schlesinger's observation, while useful to describe priorities, should not be pressed too far. We should recall that the doctrine of mutually assured destruction depends upon eliminating the element of surprise. Following detection of an incoming missile attack, some finite span of time is necessary to launch the retaliatory forces. As a result of preoccupation with the problems associated with missile attack, bomber defenses may have withered to such a degree that a large-scale bomber attack could be accomplished with no warning to us whatever. We might thus be in the ironic position of inviting an initial bomber attack because our deterrent against an initial missile attack is so effective.

The deterioration of bomber defenses began in the early 1960's. The results have been well described by former NORAD Commander General James E. Hill:<sup>1</sup>

- Reliance on fighter interceptors of 1958 vintage.
- Reduction of long range radars by 70.3 percent in the last 20 years.
- Reduction of Distant Early Warning (DEW line) radars by 61.7 percent.
- Reduction in air defense control centers by 83.3 percent.
- Reduction of air defense manpower by 75.2 percent.

To the list above add the loss of 300 Bomarc interceptor missiles and reduction of interceptor squadrons from 69 to 19—19 squadrons of obsolete aircraft, including squadrons from the Air National Guard, the Air Reserve, and Canada.

Air defenses are in such a sorry state that a Soviet bomber attack on the strategic retaliatory forces and command and control centers is now a valid option. With the element of surprise, such an attack might now destroy US retaliatory forces to the extent that the Soviets could willingly absorb the reduced US response.

The sensor systems which are so effective in the detection of missile launching are blind to aircraft movement. The current air defenses which guard the approaches to strategic targets in North America have been thinned to such a degree that significant numbers of bombers could penetrate the target area under cover of darkness with impunity.

To defend against a bomber attack, NORAD must first detect the intruder (using radars); it must then direct interceptors to the site of the bombers (using control centers and ground radars); and it must finally attack and destroy the bombers (using interceptors and interceptor weapon systems). NORAD is now deficient in most aspects of these essential elements of air defense.

It has been alleged that the Airborne Warning and Control System (AWACS) aircraft eliminate the requirement for full radar coverage and for control centers. But there are insufficient numbers of these aircraft to meet day-to-day worldwide assignments. How then do you prevent a surprise attack? In actual combat, AWACS, which emanates tremendous electromagnetic radiation, would be quickly knocked out by state-of-the-art air-to-air missiles. That is not to say that ground radars and ground control centers are invulnerable to attack, but their destruction provides the very advance notice of attack necessary to alert the strategic retaliatory forces.

Though the USSR has fewer long-range bombers than the US, it does have a bomber force capable of striking the US in a major preemptive attack. Furthermore, intelligence reports confirm the development of new and improved bombers, with cruise missiles adding to the effectiveness of the manned bomber. Both the US and Russia subscribe to the triad concept for delivery of nuclear weapons, and both nations have assigned a

significant percentage of nuclear weapons to bomber forces. Continued neglect of bomber defenses represents an open invitation to the Soviets to use that system as a priority option.

Russia has promised not to employ the Backfire bomber as a strategic intercontinental weapon delivery system. On the basis of such assurances, US negotiators have concurred in the Backfire's exclusion from the total of nuclear weapon carriers negotiated under SALT II. The fact remains that the Backfire and other newly developing bombers are capable of striking targets anywhere in the US.<sup>2</sup> A defense planner must plan on the basis of enemy capability, not on perceived intent.

**T**he answer to the problem here described necessitates a fresh look at defense policy. The cornerstone of that policy is to maintain the ability to detect and warn of an attack on the strategic target area of North America, be it by missiles or bombers. Warning of a bomber attack can be assured by deployment of over-the-horizon radars on the east, west, and south periphery. Since such radar cannot function in the north, the primary bomber threat corridor, new-technology radars must be strategically placed to force aircraft to fly below 5000 feet to escape detection. The increased fuel consumption encountered at this altitude would prevent the bomber from reaching its target.

These minimally attended radars are available; Alaska Command has embarked

on a replacement program using this new technology. Savings of more than 75 percent in operating costs, reduction of personnel by 90 percent, and significant improvements in performance and maintainability are all achievable goals.

The first step in refurbishment of the air defenses has been taken in the Alaskan NORAD Region. This radar-enhancement program must now be extended to provide replacement of the obsolescent equipment on the DEW line across the continent's northernmost frontier and on the Pinetree radar line across mid-Canada. The second element in the defense system, control centers, is currently being upgraded. Obsolete interceptor aircraft, the third element, must be replaced as a priority program. The new radars, control centers, and interceptor aircraft would provide a level of defense sufficient to deny a bomber attack as a reasonable option for the USSR.

As the US enters a new decade, it faces serious challenges on all sides. It is vitally important that the US homeland be defended and the strategic retaliatory forces in the United States be protected. Bomber defense represents an important element in a complete defense policy. Prudence dictates that we not continue to ignore it.

#### NOTES

1. "Neglect of Bomber, Missile Defense Hit," *Aviation Week & Space Technology*, 20 August 1979, p. 64.
2. Without aerial refueling, the Backfire would have insufficient fuel to return to Russian bases and would have to recover in Cuba or further south in the Americas.

