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The NORAD Command Centre, Colorado Springs.

AFTER THE SEPTEMBER ATTACKS: FOUR QUESTIONS ABOUT NORAD'S FUTURE

by Professor Joseph T. Jockel

“You hate to admit it, but we hadn't thought about this,” the new Chairman of the US Joint Chiefs of Staff, General Richard Myers, said about the terrorists' use of hijacked domestic airliners to commit atrocities in New York and Washington on September 11.¹ His admission was particularly striking because, among his previous postings, Myers had been Commander-in-Chief of the North American Aerospace Defence Command (NORAD) from 1998 to 2000. NORAD, the joint US-Canadian entity headquartered at Colorado Springs, Colorado, is responsible for continental air defence, as well as for warning of and assessing an attack from air or space on North America. His point was later echoed by Lieutenant-General Ken Pennie, CF, who only recently has taken up duties as NORAD's Deputy Commander-in-Chief. “We have been doing this job for 43 years,” he said, “and nobody anticipated what happened on the 11th of September.”²

Since the attacks, fighter aircraft have been patrolling in the vicinity of several North American cities, most notably, of course, New York and Washington. Americans and Canadians alike have learned that procedures are now in place in both countries for giving fighter pilots instructions to destroy any hijacked planes that threaten a repeat of the World Trade Center and Pentagon calamities.

Moreover, five NATO airborne warning and control system (AWACS) aircraft have been deployed from Germany to Oklahoma to bolster North American air defence operations, and to free US aircraft for operations overseas against terrorists. This is the first time in NATO's history that Alliance military assets have been deployed in the defence of the United States. Their deployment follows in the wake of NATO having evoked, also for the first time in its history, Article 5 of its charter, the North Atlantic Treaty, which provides that an attack on one member is to be considered an attack on the others, as well. Although both men obviously would have been horrified at the terrorist attacks, the deployment of the NATO aircraft would have heartened both John Diefenbaker, who claimed at NORAD's founding that there was an inherent link between it and NATO, and the late Canadian diplomat John Halstead, who argued that the Europeans should play an active role in North American air defence.

Before 11 September, NORAD's future was in doubt. To be sure, the US and Canadian governments renewed the NORAD agreement earlier this past year. This was accomplished relatively quietly, to prevent

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renewal from being entangled in the debates, which had already begun to intensify, over the two related issues that were expected eventually to affect NORAD's future the most: whether the US would deploy a National Missile Defence (NMD) with limited capabilities against such rogue states as North Korea and Iraq, and



whether Canada would agree to participate in the operation of such a system. By the next time NORAD was scheduled to come up again for renewal, in 2006, the US and Canada were expected to have come to a decision concerning NMD.

Two other trends were pointing towards a diminishing role for NORAD and Canadian involvement. First, Colorado Springs was increasingly focusing on space-based operations that were under the operational command of NORAD's twin, US Space Command. Canada has no military satellites and only a small military space program.

Second, air defence efforts, the operational control of which was NORAD's original mission when it was created in 1957, had dramatically decreased in scope. As a result, so had the strategic value of Canadian airspace and territory, from which those air defence efforts would be undertaken. Furthermore, no part of the proposed NMD was to be located on Canadian soil.

So it was easy before 11 September to envisage a situation in which both space-based operations and NMD would be mainstays, and Canada would remain increasingly marginal to North American aerospace defence, especially if it decided not to participate in NMD. NORAD could then even be done away with or, if necessary for appearance's sake, kept in existence and limited to the decreasingly important air defence operations.

A post-attack historical survey released by the US Defense Department noted that a direct US military connection to homeland defence had eroded in recent years "with the exception of NORAD."³ Now that homeland defence is a top priority for the US, can NORAD be expected to continue indefinitely in its present form? The answer to that question depends upon the answers to several others.

ARE THE NORTH AMERICAN ANTI-TERRORIST AIR DEFENCE OPERATIONS HERE TO STAY?

Before the September attacks, NORAD did have in place procedures to deal with both hijacked planes and what it calls "derelict objects." The most well-known example of the latter occurred in 1999, when a Learjet occupied by professional golfer Payne Stewart flew aimlessly before crashing in South Dakota. US fighter aircraft were sent to approach the plane, and observed the windows fogged over with apparently no one at the controls. They escorted the Learjet until its fuel ran out and it crashed into the prairie.

In the case of both hijacked aircraft and derelict objects, it was assumed that there would be time for senior officials to make any difficult decisions. Not in place were procedures to swiftly authorize the destruction of hijacked planes used by suicidal terrorists as flying bombs. On 11 September, after the attacks on the World Trade Center and a conversation with the Vice-President, President Bush authorized the destruction of any other threatening civilian aircraft.

Despite NORAD's binational status, the procedures which since then have been put in place very strikingly leave such authority in exclusively national hands. In US airspace, destruction of civilian aircraft can be authorized by either NORAD's Commander-in-Chief (who is always a US general or flag officer) or by the US Air Force generals commanding the Alaskan and continental US NORAD regions. In Canada, the procedures have not been made public, although it is evident that equivalent authority has not been given the military. As Art Eggleton, the Minister of National Defence told the House of Commons Standing Committee on National Defence and Veterans Affairs in October, "If this was to happen in Canada, the decision would be made by the Canadian government acting through me in consultation with the prime minister. In the United States that same authority is being delegated to members of the general staff, as I understand it."⁴

The current patrolling of urban areas reverses two long-standing trends in the development of North American air defences. The first, the steady decline in the resources devoted to air defence, has already been mentioned. It dates back to the 1960s as Soviet intercontinental and submarine-launched ballistic missiles supplanted bombers as the major threat, and was interrupted only by a brief up-tick in the 1980s in response to Soviet air- and sea-launched cruise missiles.

The second trend which has been reversed is the shift in geographic focus, from local defences to those pointing outward and increasingly northward. The patrols today over the skies of New York, Washington and southern Canada are reminiscent of the earliest air defence efforts against Soviet bombers. First mounted in the late 1940s, these patrols were also highly local operations focused on urban areas and nuclear installations. More warning time and the possibility of defence in depth were made available in the early 1950s by the great Permanent/Pinetree radar network, which extend-

ed across the continent and into the northern reaches of Canadian provinces. This trend was enhanced by the construction in the mid-1950s of the Mid-Canada Line, followed by the Distant Early Warning (DEW) Line in the high Alaskan and Canadian Arctic. The warning time which the DEW Line provided made possible a coordinated, continent-wide, northern-oriented air defence effort which was a major impetus for the creation of NORAD.

A 1985 overhaul of the continent's air defences further enhanced the outward and northern orientation. The last of the obsolete Permanent/Pinetree radars was dismantled, and coverage was largely reduced to the borders, with almost all ground-based military radars within the interiors of either the US or Canada. The DEW Line was replaced by a North Warning System. NORAD also made plans to conduct an air defence battle against Soviet bombers and the new threat posed by Soviet cruise missiles as far north as possible, relying on bases in Alaska, emergency forward operating locations in northern Canada, and AWACS aircraft. When the Cold War ended, these efforts were relaxed, although never entirely abandoned. NORAD's support for drug interdiction and other anti-smuggling efforts was also mainly focused outward, largely towards clandestine traffic entering the southern US. Despite some expectations in the early 1990s of a major NORAD role in the 'war on drugs', this never really materialized. By the end of the decade, NORAD officials were hoping to transfer tethered aerostat radars in the southern US to US Customs. It is no wonder, then, that North American air defenders were stunned on 11 September by the threat that had seemingly instantly emerged from within the continent.

In addition to the NATO AWACS aircraft already mentioned, the recent enhancements to continental air defence for anti-terrorist operations include mobile radars deployed at undisclosed locations (presumably to provide coverage within the coastal perimeter), enhanced links between NORAD and civil air authorities (especially with the US Federal Aviation Administration), and an increase in the number of fighter aircraft on stand-by alert.

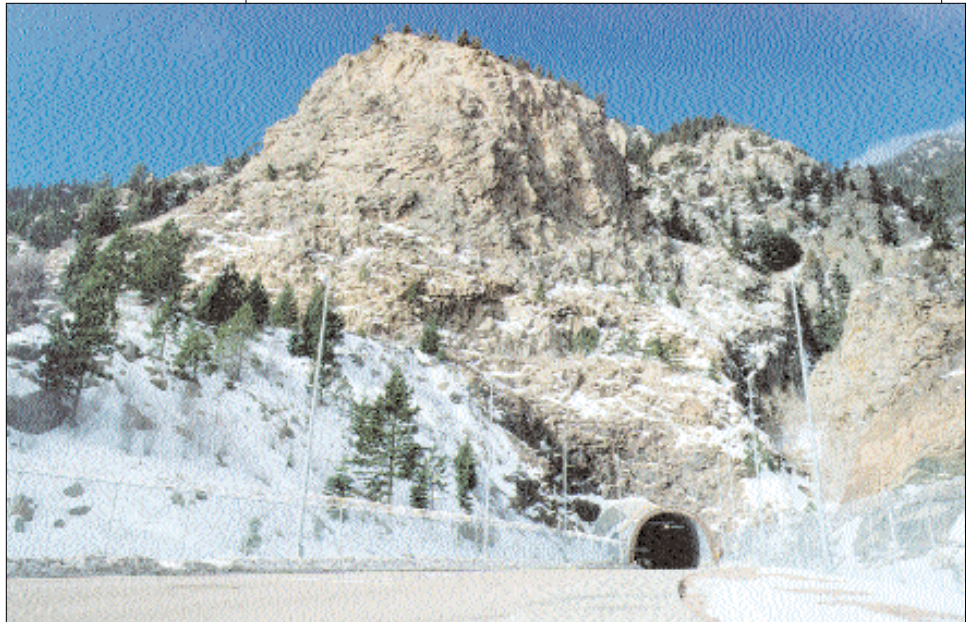
Before the attacks, NORAD had roughly 20 fighter aircraft on stand-by alert; in October there were more than 100. Ottawa has not released the exact number of CF-18s aircraft put on alert; before the attacks there usually were only a couple of such aircraft at both CFB Cold Lake and CFB Bagotville. However, NDHQ confirmed that CF-18s had been moved to the bases at Comox, B.C., Goose Bay, Labrador, and Trenton, Ontario. Canadian air defence plans have long included deployment as needed to the coastal bases of Comox and Goose Bay; the deployment to Trenton to protect south-

ern Canada is unusual. If they continue, these deployments will in all probability put a significant strain on the small Canadian Air Force.

Whether such patrols will continue for long, and, if so, at what level of intensity, are simply impossible to say today. They may remain an essential element in the long struggle against terrorism. On the other hand, they may be rendered unnecessary by improvements in airport security arrangements, intelligence and law enforcement successes, and progress in the war against terrorism being waged overseas.

WILL AIR DEFENCE EFFORTS BE ENHANCED TO INCLUDE A NATIONAL CRUISE MISSILE DEFENCE (NCMD)?

For the past several years, North American air defence planners have been concerned about US vulnerability to low-technology, land-attack cruise missiles (LACMs), especially those which might be acquired by terrorist or rogue states. Such missiles would be equipped with a conventional explosive, or a chemical, biological or nuclear warhead, and a GPS-based guidance system. They are relatively cheap to build or even to buy as 'off the shelf' items. As the International



The entrance to NORAD's underground headquarters complex, Cheyenne Mountain, Colorado.

Institute of Strategic Studies recently observed, "Perhaps the easiest way to acquire highly-sophisticated LACMs is to buy them from a growing list of industrial-world manufacturers. A more worrying source of proliferation is the conversion of unarmed UAVs (unmanned aerial vehicles) including reconnaissance and target drones into LACMs."⁵

With respect to North America, a December 2000 study by the MIT Lincoln Laboratory argued that "the LACM or surrogate is a credible threat for the near-term." Such near-term threats would have a range of about 500 km. The study also identified LACMs with a 1000 km range as a "far-term threat". Although these ranges are not great, such LACMs could be launched

from aircraft or vessels, including merchant ships, off North America's long Atlantic and Pacific coasts.

Right now, as the Lincoln Laboratory study also warned, "The United States and Canada do not possess a viable defensive counter to the postulated LACM threat."⁶ Although LACMs would be launched from sea towards NORAD's coastal radar perimeter, they would be too small and fly too low to be detected readily, rendering fighter aircraft useless against them. (This has led NORAD officials to describe the command's current capabilities as being able to detect, but not destroy incoming ballistic missiles, while at the same time being able to destroy, but not detect incoming cruise missiles.)

NORAD has identified responding to the LACM threat as one of its priorities, although many air defenders remain skeptical that anything approaching a full-scale National Cruise Missile Defence that could ensure all but no fatalities will ever be put into place. It would face a difficult task in being able to detect and destroy such small moving objects over a vast area, and be built at considerable expense. Of course, more money will be available for homeland defence purposes. But the risks of LACM attacks and the cost of defending against them will have to be weighed against the costs of defending against other threats.

tems could include unmanned combat air vehicles and surface-to-air missiles.

Because the LACM threat is largely sea-based, putting into place any effective defence against it will require new forms of cooperation between the air defenders and naval forces, as well as the Coast Guard, not to mention law enforcement and intelligence agencies. The new US focus on homeland defence should make this easier. As will be discussed below, a reshuffling of the US military command structure could also eventually play a role.

IS NATIONAL MISSILE DEFENCE — AND CANADIAN PARTICIPATION IN IT — NOW INEVITABLE?

Any discussion today of the inevitability of NMD will no doubt come as a surprise to some. For at first glance, it would seem that the 11 September attacks undermined the logic of NMD deployment. What good is a missile defence system if terrorists could strike such grievous blows with domestic airliners this time, and perhaps with 'suit case bombs' the next?

Yet in at least three ways the arguments for NMD have been strengthened by the attacks. First, in the wake of the shock they have produced, the US can be expected in the coming years to attempt to defend itself against a full range of threats, including both missiles and suit case bombs. Second, it is now evident that all threats cannot be deterred if the attackers are prepared to commit suicide; an active defence is necessary.

Third, no President of the US will ever want his country to suffer again as it just has, so the possession by a hostile country of just a few missiles tipped with weapons of mass destruction could very well be enough to deter the US from intervening abroad militarily, except where its most vital interests are at stake. Since ballistic missiles were first acquired by the Soviet Union, their chief purpose has been to be brandished, in a way that terrorist weapons such as suitcase bombs cannot be by their very nature. To take one example, could South Korea still be certain that the US would come to its aid if North Korea were credibly able to threaten the death of tens of thousands of Americans? An NMD in place could make all the difference.

To be sure, the US will in all probability remain much more willing to use force abroad in its own defence, as it has been doing in Afghanistan. So one strong option to deal with such now-hypothetical North Korean weapons would be to strike out pre-emptively and to destroy them on the ground. However, there are at least two drawbacks to such an approach. First, it could require the US to open hostilities. And second, there would remain the danger that not all such missiles could be destroyed.

Whatever the strategic arguments, however, the Bush administration is as determined as ever to proceed with NMD, or a variant of it, and in the current climate it will find little opposition in Congress. Strikingly,



Canadian and American duty officers in the NORAD Command Centre.

More limited goals for such a system might make sense. These would range from the simple ability to identify correctly the source of a LACM launch, to providing warning time to high-value targets and regional defences, thereby reducing potential fatalities.

Still, the ground-based radars upon which NORAD depends for air defence will need to be replaced over the next two decades; replacements and enhancements for fighter aircraft will also have to be considered. The replacement programmes could include capabilities against LACMs. Future detection systems could include a new generation of over-the-horizon radar, (long-anticipated) space-based radars, tethered aerostats and high-altitude (stratospheric) airships, while interception sys-

opposition on the part of the Russian government has been melting away, as President Putin has both yielded to the inevitable and moved since 11 September to align his country closer to NATO, and to the US in particular. While Putin did not agree to an amendment of the 1972 Anti-Ballistic Missile Treaty, he reacted nonchalantly to Bush's December announcement that the US was withdrawing from the treaty, saying that the step did not threaten Russian security.

Fearful of arms control implications, Ottawa has all along refused to say whether it would participate in operating NMD. The Russian acquiescence, coupled with the unilateral cuts in strategic weaponry which the US also has announced and which Russian will in all probability reciprocate, should open the door to Canadian participation. This will, in turn, remove a shadow that has been hanging over NORAD's future.

Without Canadian participation in NMD, NORAD has no real future. The joint command's very heart is the process by which it would warn of and assess an attack on this continent. To do so, it relies on data from Canadian and US air defence operations, as well as from the systems, entirely operated by the US, which detect and track ballistic missiles and activity in space. Confirmation of the attack and the assessment of it would be given by an 'assessor', an officer of general or flag rank. The NORAD staff responsible for warning and assessment is composed of Canadians and Americans, and Canadian generals rotate with US generals and admirals as assessors.

The US plans to link operational command of the NMD system to the warning and assessment process which NORAD undertakes. This only makes sense, since just minutes would be available for decision-making. So, if Canadians could not participate in the operation of the NMD system, they could no longer fully participate in the warning and assessment process, and NORAD would lose its real *raison d'être*.

WILL NORAD DISAPPEAR IN A RESHUFFLING OF US COMMANDS?

NORAD's existence as a bi-national command has been threatened in the past by, on the one hand, the decreasing importance of Canadian and US continental air defence operations, and on the other, by the increasing importance of two efforts undertaken almost exclusively by the US military: detection and tracking of ballistic missiles, and a host of space-based operations. There is overlap between these two US efforts, inasmuch as satellites would first detect ballistic missile launches. However, while missile detection and tracking logically is a close complement to NORAD's traditional air defence function, the command and control of space-base operations are not.

In the late 1970s and early 1980s, as the US Department of Defense sought to provide a new command structure for its space operations, one strong possibility being considered was to move air defence operations — and along with them, Canadian personnel — out of Colorado Springs, leaving behind an all-US command

focused on space. Instead, what emerged in 1982 was an all-US Space Command closely linked to the bi-national NORAD. They share a commander-in-chief and facilities in Colorado Springs, including the famous combat operations center under Cheyenne Mountain. The joint command, NORAD, in order to undertake its central warning and assessment function, relies on both information provided by its own air defence operations, and information provided by US Space Command on activity in space and on any missiles which have been launched. At the same time, US Space Command also plans for and operationally commands US military space operations.

As originally conceived two decades ago, there was to be a firm organizational boundary between NORAD and US Space Command. In essence, only US personnel were to work for Space Command. At the time, this reflected both a reluctance to involve foreigners, even Canadians, too closely in US space efforts, and worries in Ottawa that the NORAD-US Space Command relationship would be seen as dragging Canada through a back door into the US Strategic Defense Initiative. Since then, concerns on both sides have eased, and so has the boundary between the two commands. Today there are several joint NORAD/US Space Command staffs, as well as Canadians working in US Space Command staffs. There remain, however, Space Command operations that are still limited to US personnel.



An interceptor missile being prepared for a test launch at the Kwajalein Missile Range, December 2001.

US Department of Defense Photo 011203-D-4667S-002

The close relationship between the two commands has suited Canadian interests splendidly. It has allowed Canada to continue to share command and control costs for air defence with the US, and has also provided the Canadian military with access to US space plans and operations. To be sure, a senior Canadian general officer has taken to warning against the idea that “Canadians are in Colorado Springs just to infiltrate Space Command for Canadian purposes.” But the US has benefitted from the Canadian presence as well, if only because of the high quality of the personnel that Canada tends to send there.

Before 11 September, there already were three potential challenges to the NORAD/Space Command relationship. The first has already been mentioned, namely the possibility that Canada would decide not to participate in NMD.

The second was a growing concern in the US, which has not disappeared, that the military was not taking its space-based operations seriously enough and that a restructuring might be necessary. Secretary of Defense Donald Rumsfeld has shared these concerns. In fact, it seemed that requiring the US military to focus more on space might be one of the early hallmarks of his second tenure at the Defense Department, until the war on terror broke out. For now, only small steps have been taken with respect to US Space Command. Until he left to take office as secretary, Rumsfeld was chairman of the Commission to Assess United States National Space Management and Organization, a bipartisan entity with members appointed by the previous Secretary of Defense and both parties in Congress. In January 2001 the commission reported that in general, “the US Government — in particular, the Department of Defense and the Intelligence Community — is not yet arranged or focused to meet the national security space needs of the 21st century. Our growing dependence on space, our vulnerabilities in space and the burgeoning opportunities from space simply are not reflected in the present institutional arrangements.” Among its many recommendations, it urged that the Commander-in-Chief of US Space Command “continue to concentrate on space as it relates to warfare in the mediums of air, land and sea, as well as space.”⁷ This, it went on to say, would “leave less time for his other assigned duties”. The Bush administration soon implemented two changes to the Commander-in-Chief’s position which the commission recommended. One was ending the practice, which had its roots in NORAD’s original air defence orientation, of appointing only Air Force pilots to head the two commands. Henceforth, any officer from any US service with an understanding of combat and space is eligi-

ble. Second, the commander-in-chief will no longer wear a ‘third hat’ as commander of the Air Force Space Command.

The third potential challenge to the NORAD-US Space Command structure was the growing concern for homeland defence, which of course is now an overwhelming US priority. There were tentative discussions within the US Defense Department, even before the September attacks, about the desirability of creating a ‘homeland defence command’ to which NORAD’s air defence functions might be transferred. Immediately after the attacks, Rumsfeld was reportedly considering a major reshuffling of the US command structure. In one reported variant, the Joint Forces Command, headquartered at Norfolk, Virginia, was to be placed in charge of the land, maritime and air defence of the continental US. However, as an announcement released on 26 October made evident, Rumsfeld had decided, at least for the time being, to make no major command changes.

Still, it would be hard to believe that the issue of US command structure is dead. And the Bush administration’s emphasis on improving both space and homeland defence capabilities continues to leave NORAD vulnerable to being dismantled, inasmuch as what could emerge might be a Space Command and a Homeland Defence Command. The Canadian Air Force will go wherever the air defence responsibilities go in the US command structure. But if this is in a Homeland Defence Command with broad responsibilities, there could be several problems for Canada. First, it would bring to an end the privileged Canadian military access to US space programs. Second, it could raise a very tricky question of participation: would a Canadian Deputy Commander-in-Chief and other senior Canadian officers on the NORAD model be acceptable — to both Washington and Ottawa — in an essentially US Homeland Defence Command, with air, land and maritime responsibilities? If not, what would the relationship be between such a command and the Canadian military? If so, would such a command then also directly involve the Canadian Navy and Army?

This is not to argue, however, that the creation of a Homeland Defence Command with air, land and sea responsibilities, as well as Canadian participation, is inevitable. The US may decide that Canadian and US air defence operations (potentially including an NCMD), warning and assessment of aerospace attack, and command and control of NMD, preferably should be bundled together, in which case NORAD will survive.



NOTES

1. “Myers and Sept. 11: ‘We Hadn’t Thought About This.’” *American Forces Information Service*, News Articles, 23 October 2001.
2. *Toronto Star*, 23 October 2001, p. A10.
3. Jim Garamone, “A Short History of Homeland Defence,” *American Forces Information Service*, News Articles, 25 October 2001.
4. House of Commons, Standing Committee on National Defence and Veterans Affairs, *Minutes of Proceedings*, October 2001.
5. “Cruise missile proliferation: meeting a growing threat,” IISS, *Strategic Comments*, Vol. 7, Issue 5, June 2001, p.1.
6. Briefing slides, Lee O. Upton, “National Cruise Missile Defense Study,” Lincoln Laboratory, Massachusetts Institute of Technology, December 2000.
7. *Report of the Commission to Assess United States National Security Space Management and Organization*, 11 January 2001, pp. 9, 33.