



CANADIAN GLOBAL AFFAIRS INSTITUTE
INSTITUT CANADIEN DES AFFAIRES MONDIALES

Fighter Aviation and the Defence of North America

by Albert Johnson
July 2021

CONFERENCE REPORT

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- Col. (ret'd) **John Venable** – Senior Research Fellow, the Heritage Foundation
- Gen. (ret'd) **Mike Holmes** – Senior Advisor, The Roosevelt Group

Question: *What are the basic elements of providing continental defence with fighter aircraft?*

How has air defence evolved over the decades?

Col. John Venable

- Air defence has changed significantly over time, but largely remains the same. The differences relate to threats, increased ranges, as well as fires and weapons systems.
- NORAD has fewer than 15 squadrons devoted to continental defence today as opposed to 40 in the 1960s
- Threats today do not need to fly over their targets to fire their missiles, so fighters need to go out and engage small radar cross-section targets
- Distances of sorties must be extended for searching, finding, and engaging the threat
- Communications for directing aircraft stealthily are necessary as well

Question: *How does NORAD factor into continental defence?*

Col. Alan Stephenson

- NORAD focuses on control of the air out of two alert sites with CF-18s in Canada, incrementally increasing fighter capabilities in concert with USAF assets
- Operating out of forward operating bases and air-to-air refueling are consistent requirements, and deter, detect, and defeat are the core elements of NORAD operations
- Redesign of command and control (C2) systems on the part of the U.S. military will provide all-domain awareness which NORAD relies on
- RCAF's future fighter needs to be an integrated part of this digital evolution



Question: *How does the USAF contribute to continental defence?*

Gen. Mike Holmes

- Day-to-day operations provided by 1st Air Force that can respond to asymmetrical threats over all four corners of the United States
- Pentagon assigns forces to NORAD/NORTHCOM through 1st Air Force based on threat levels using total force units such as F-22s, as opposed to more mission-specific platforms
- The lines between active and reserve components are increasingly blurred, with squadrons mixed between active and reserve postures. There has been increasing flexibility due to the greater mobilization of Air National Guard in recent years

Question: *Are the primary roles played by fighter aircraft?*

LGen Pierre St-Amand

- For NORAD and continental defence, fighters remain in an air defence role, but how this is done has and will change
- NORAD presented high-cost for air offensive against North America when North America faced a single-axis threat. Today, new weapons ranges and adversary capabilities present a threat axis that is no longer one-dimensional; cruise/ballistic missiles, submarine-launched missiles, space, and cyber threats have emerged to complicate the threat environment
- The role of NORAD is no longer simple air-intercept. Prepositioning and queuing assets will be looked into, as well as an asset that can operate within the multi-domain operational picture by providing and interpreting information
- Fighters remain the best platform for air-intercept at increasing ranges, but northern communications infrastructure must be established to properly support these fighters
- Concerning point defence, the fighter remains the primary system, but ground-based intercept will need to be further developed

Question: *Considering the changing strategic landscape and threat dynamic, where is NORAD's geographic orientation due to growing missile and 360-degree threats?*

LGen Pierre St-Amand

- NORTHCOM provides the real strength here
- Canada is on the northern flank of a superpower, and its focus will remain to the north



- Increasing ranges will increase the importance of northern detection equipment, and render geographical barriers practically irrelevant. NORAD must manage massive distances of detection and engagement in new procurements
- Multi-domain aspect of NORAD operations will make threat response challenging

Col. Alan Stephenson

- With an adversary like Russia, we need to appreciate the joint-command structure of NORAD/NORTHCOM, wherein the CAF will be integrated into the joint-defence system and a particular asset will be selected to respond to a given threat
- For Canada to contribute, it must provide MDO information and be able to operate within the joint command structure

Col. John Venable

- The structure of continental defence force positioning remains largely the same
- Arctic distances present well-defended threats for NORAD to counter, so detection systems and connectivity between controllers and fighter assets are critical

Question: *Given the differences inherent to the region, how does the U.S. posture NORTHCOM compared to other combatant commands?*

Gen. Mike Holmes

- USAF's air components can be transitioned to other commands for multi-role operations; changes in deployment cycling of USAF squadrons will prioritize multi-role readiness
- The importance of artificial intelligence and machine learning in detection and early warning to position resources in time is increasing

Question: *With Strong, Secure, Engaged, there was an announcement of an 88 aircraft acquisition and a realignment of Canadian Arctic detection zones. What realignments for the RCAF have taken place? What challenges remain?*

Col Alan Stephenson

- Given the post-Cold War situation, Canadian squadron numbers were at a smaller level than normal after fighter upgrades, so 88 is more of a return to normalcy
- Air-to-air capabilities become the Achilles heel of continental defence, particularly without air-to-air refueling
- Training for Arctic operations is critical, and so is the retention of pilots capable of these operations post COVID-19



Question: *What are some enabling equipment (i.e., infrastructure, refuelling equipment, USAF equipment) that must be in place for NORAD operations?*

LGen Pierre St-Amand

- The developing system-of-systems is paramount, with fighters as a part of a chain of enablers which include sensors, tankers, and infrastructure
- Infrastructure in the High North contributes to sovereignty and enables continental defence
- Major conflicts will demand tankers and AWACs that must be pulled from NORAD/NORTHCOM, so Canadian contributions to provide depth here would be helpful

Col. John Venable

- An elevated threat situation would be met with plenty of assets. However, there is a challenge of detecting missile threats for land-based radars, so AWACs could help this
- A peer threat situation would require global sourcing for defence, placing significant stress on the system, and detection capabilities and queuing of response platforms will be the best preparation

Question: *Concerning connectivity, how will the US Joint All Domain Command and Control (JADC2) framework contribute to continental defence?*

Gen. Mike Holmes

- In the past, NORAD/NORTHCOM focused on the doomsday scenario of Russian nuclear attack with bombers and missiles flying over the Arctic. Today, limited attacks on the U.S. would be designed to keep America out of regional conflicts
- U.S.-Canada partnership is critical and technical alignment is part of this
- JADC2 requires platform and system alignment, relying on communicating together and the unity of concepts of operations
- U.S. forces face the challenge of inexperience in the Arctic and limited satellite network coverage

▶ **About the Author**

Albert Johnson XXXXXXXXXXXXXXXXXXXX

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