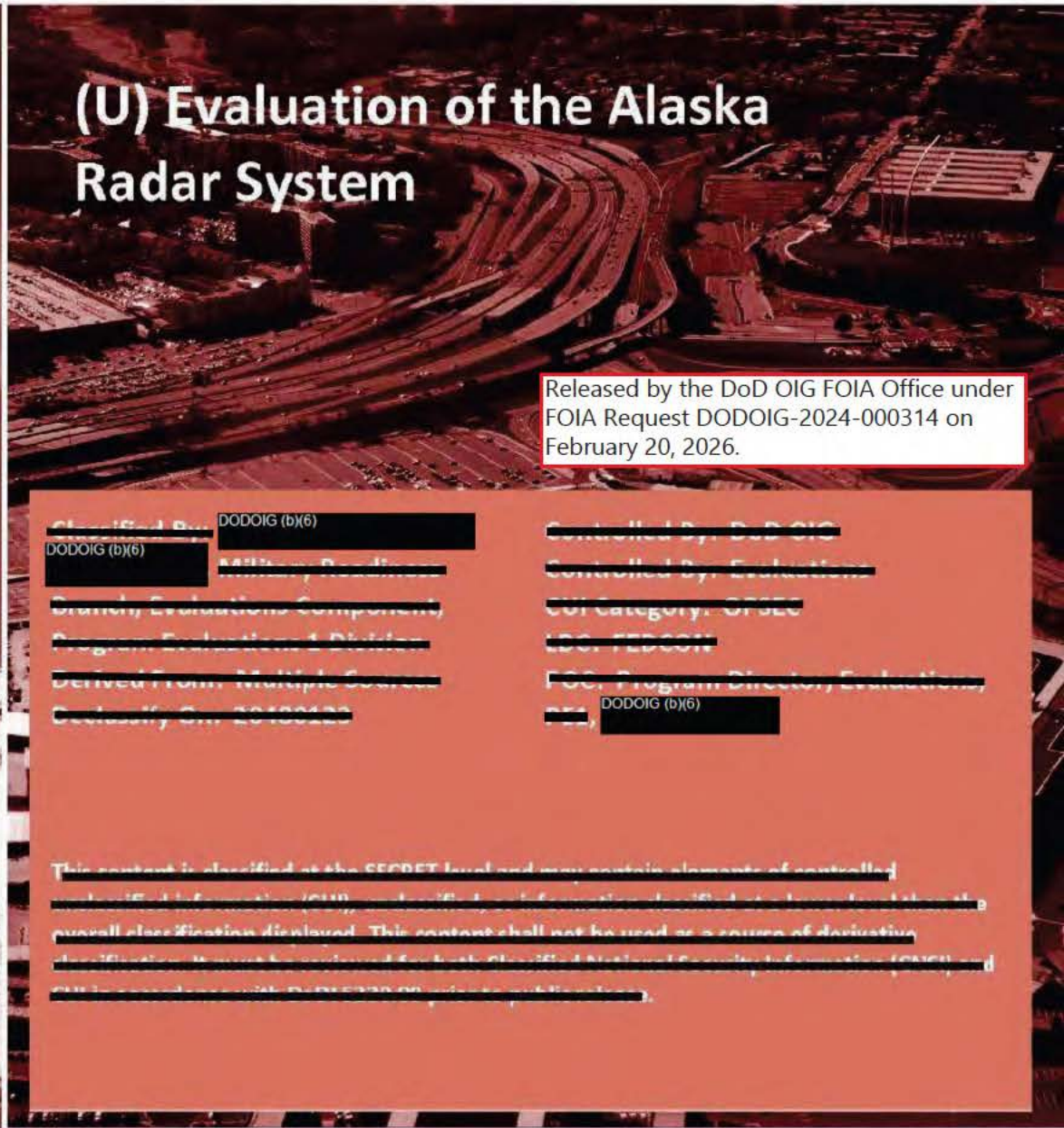


~~SECRET // REL TO USA, CAN~~

INSPECTOR GENERAL

U.S. Department of Defense

JANUARY 22, 2024



(U) Evaluation of the Alaska Radar System

Released by the DoD OIG FOIA Office under FOIA Request DODOIG-2024-000314 on February 20, 2026.

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Results in Brief

Evaluation of the Alaska Radar System

January 22, 2024

(U) Objective

(U) The objective of this evaluation was to determine whether the Alaska Radar System (ARS) can detect and track current and emerging long-range air threats in the Alaskan Arctic Region in support of the guidance and requirements of the Commander of the North American Aerospace Defense Command (NORAD) and the Commander of the U.S. Northern Command (USNORTHCOM).

(U) Background

(S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted text]

(U) The ARS is a critical component of the layered sensing grid as it provides military radar coverage and air domain awareness of Alaska. NORAD and USNORTHCOM analyze the radar data for early threat warning, situational assessment, command and control surveillance, and aircraft identification and interception.

(U) Finding

(S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted text]

- (S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted text]

- (S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted text]

- (S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted text]

- (S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted text]

(S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted text]

(S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted text]

(U) Recommendations

(U) We recommend that the USNORTHCOM Commander identify the capabilities required to maintain air domain awareness in Alaska against current and emerging air threats, and provide the capabilities required to the Commander of the U.S. Air Force Air Combat Command (ACC). In addition, we recommend that the ACC



Results in Brief

Evaluation of the Alaska Radar System

(U) Commander, in coordination with the Under Secretary of Defense for Acquisition and Sustainment and the Commanders of USNORTHCOM and the U.S. Indo-Pacific Command, develop and implement a plan to:

- (U) modernize the ARS, and
- (U) sustain the ARS through 2035.

(U) Management Comments and Our Response

~~(C)~~ The USNORTHCOM Chief of Staff, responding for the USNORTHCOM Commander, neither agreed nor disagreed with the recommendation. The Chief of Staff stated that the command identified the capabilities required to maintain air domain awareness in Alaska against current and emerging air threats. This includes prioritizing future over-the-horizon radars and sustaining the ARS.

USNORTHCOM also identified the risk of a failure of an ARS radar and requested funding to procure nine Three-Dimensional Expeditionary Long Range Radars. The Chief of Staff stated that USNORTHCOM provided these capability requirements to the Air Force and the Office of the Under Secretary of Defense for Acquisition and Sustainment for procurement and sustainment.

(U) USNORTHCOM's actions meet the intent of the recommendation; therefore, the recommendation is resolved, but will remain open. We will close the recommendation after we verify that the requirements provided to the Air Force fully address the recommendation.

(U) The ACC Deputy Director of Operations, responding for the ACC Commander, neither agreed nor disagreed with the recommendations. The Deputy Director stated that the ACC will continue to coordinate with the Office of the Under Secretary of Defense for Acquisition and Sustainment and the Commanders of USNORTHCOM and the U.S. Indo-Pacific Command to develop and implement a plan to modernize and sustain the ARS through 2035. The Deputy Director of Operations stated that the ACC

(U) requested the procurement and installation of Digital Array Row Transceivers to replace existing ARS receivers, transmitters, and data registers, as well as new radar antenna radomes and Next Generation Advanced Long Range Radars.

(U) The ACC's planned actions meet the intent of the recommendations; therefore, the recommendations are resolved, but will remain open. We will close the recommendations after we verify that the ACC has developed a plan to modernize and sustain the ARS, including the roles and functions of supported and supporting organizations.

(U) Please see the Recommendations Table on the next page for the status of the recommendations.

(U) Recommendations Table

Management	Recommendations Unresolved	Recommendations Resolved	Recommendation Closed
Commander, U.S. Northern Command	None	1	None
Commander, U.S. Air Force Air Combat Command	None	2.a, 2.b	None

(U) Please provide Management Comments by February 22, 2024.

(U) The following categories are used to describe agency management’s comments to individual recommendations:

- (U) Unresolved – Management has not agreed to implement the recommendation or has not proposed actions that will address the recommendation.
- (U) Resolved – Management agreed to implement the recommendations or has proposed actions that will address the underlying finding that generated the recommendation.
- (U) Closed – The DoD OIG verified that the agreed upon correction action were implemented.



OFFICE OF INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500

January 22, 2024

(U) MEMORANDUM FOR COMMANDER, U.S. NORTHERN COMMAND
COMMANDER, NORTH AMERICAN AEROSPACE
DEFENSE COMMAND
COMMANDER, U.S. AIR FORCE AIR COMBAT COMMAND

(U) SUBJECT: Evaluation of the Alaska Radar System
(Report No. DODIG-2024-048)

(U) This final report provides the results of the DoD Office of Inspector General's evaluation. We provided copies of the draft report and requested written comments on the recommendations. We considered management's comments on the draft report when preparing the final report. These comments are included in the report.

(U) The U.S. Northern Command Chief of Staff and the U.S. Air Force Combat Command Deputy Director of Operations neither agreed nor disagreed with the recommendations, but described actions taken or planned that satisfy the intent of the recommendations. Therefore, we consider the recommendations resolved and open. We will close the recommendations when you provide us documentation showing that all agreed-upon actions to implement the recommendations are completed. Therefore, please provide us within 90 days your response concerning specific actions in progress on the recommendations. Send your response to either followup@dodig.mil if unclassified or rfunet@dodig.smil.mil if classified SECRET.

(U) If you have any questions, please contact me at DODIG (b)(6) (DSN DODIG (b)(6)).

FOR THE INSPECTOR GENERAL:

A handwritten signature in black ink that reads "Maurice L. Foster".

Maurice L. Foster
Acting Assistant Inspector General for
Program Evaluations and
Combatant Commands

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(U) Introduction

(U) Objective

(U) The objective of this evaluation was to determine whether the Alaska Radar System (ARS) can detect and track current and emerging long-range air threats in the Alaskan Arctic Region in support of the guidance and requirements of the Commander of the North American Aerospace Defense Command (NORAD) and the Commander of the U.S. Northern Command (USNORTHCOM).¹

(U) Background

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / NDOPACOM (b)(1) (1.4a)
[REDACTED]

(U) Functions of the Alaska Radar System

(U) In 1985, the Air Force established the ARS to provide military radar coverage and air domain awareness of the air approaches of Alaska. The system consists of 15 Fixed Position Search (FPS)-117 Long Range Radar sites in Alaska, as well as infrastructure associated with communication, logistical, and personnel basing at each of the sites.³

¹ (U) Some emerging air threats include low radar cross-section cruise missiles, stealth aircraft, and hypersonic weapon systems.

² ~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1) (1.4a)
[REDACTED]

(U) USNORTHCOM's mission is to defend America's homeland—deter, detect, deny, and defeat threats to the United States. Integrated and aligned with NORAD, a binational command consisting of the United States and Canada, NORAD is responsible for aerospace warning, aerospace control and maritime warning. NORAD and USNORTHCOM are separate commands under the same commander. Both leverage the commander's singular vision and guidance, develop plans to meet challenges in the same strategic and operational environments, build complementary mission approaches, and share a common goal of defense of the United States and Canada.

³ (U) Three ARS radars in northern Alaska are also a part of the North Warning System (NWS). See Figure 1 for these locations; the NWS locations are in red text. The NWS is a joint U.S. and Canadian chain of staffed and remote unstaffed radar sites employed to detect and enable early response to potential threats on a northern approach to North America. The NWS was established in 1985 as part of a U.S.–Canada agreement on North American air defense modernization. The terms NWS and ARS are often used interchangeably when referring to the 15 Long Range Radar sites in Alaska.

(U) The ARS relays information on detected objects through a terrestrial and space-based communications network to an air operations center on Joint Base Elmendorf-Richardson near Anchorage, Alaska, as well as to NORAD and USNORTHCOM. NORAD and USNORTHCOM analyze the data for early threat warning, situational assessment, command and control surveillance, and aircraft identification and interception. The FPS-117s provide radar data to additional Federal and allied nation entities, including the U.S. Department of Homeland Security, the U.S. Federal Aviation Administration, and the Canadian Department of National Defence.

(U) Additionally, the North Warning System (NWS), which is similar to the ARS in design and mission, consists of a joint U.S. and Canadian network of 10 operational FPS-117 Long Range Radar sites with 36 operational FPS-124 Short Range Radar sites. The NWS radar sites were established to provide air domain awareness to NORAD along the northern air approaches to North America.⁴ Three additional NWS FPS-117 radars are in northern Alaska, in Oliktok, Point Barrow, and Barter Island. These three radars are funded by the ARS with the annual expenses captured in the binational cost-sharing agreement supporting the NWS, although their data are shared with both NWS and ARS stakeholders.⁵ See Figure 1 for details on the locations of the radars.

⁴ (U) Memorandum of Understanding, "Supplementary Arrangement to the Memorandum of Understanding on the Modernization of the North American Air Defence System between Department of National Defence of Canada and the United States Air Force," May 31, 2017. The memorandum establishes the roles and responsibilities of each party and a cost-sharing structure for these three radars.

⁵ (U) Memorandum, "Request for Revision to the Evaluation Plan of the North Warning System Evaluation (Project No. D2022-DEVOPB-0136.000)," August 4, 2022. The Deputy Inspector General approved the revision of the project objective to more accurately scope the project from the NWS to the ARS.

(U) Figure 1. The 15 Long-Range Radar Sites (in black dots) and 3 Radio Sites (in purple diamonds)



(U) Legend

(U) JBER Joint Base Elmendorf–Richardson

(U) Source: The 611th Air Operations Center.

(U) FPS-117 Radar Technical Information

(S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

~~(S//REL TO USA, CAN)~~ Figure 2: NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / NDOPACOM (b)(1) (1.4a)



(U) Legend

- (U) OOA Out of Area
- (U) ADIZ Air Defense Identification Zone
- (U) ISRD Intelligence, Surveillance, and Reconnaissance Division
- (U) JBER Joint Base Elmendorf–Richardson

~~(S//REL TO USA, CAN)~~ Source: The 611th Air Operations Center.

(U) The ARS communications network between the radar sites and the air operations center on Joint Base Elmendorf–Richardson consists of three satellites owned by three different contracted telecommunications companies. Additional terrestrial fiber optic cables serve as an alternate method for transferring the radar data and backup data in the event satellite communications are disrupted. However, the radar sites are in remote locations, including some sites, such as Barter Island, Oliktok, and Point Barrow, that are reachable only by aircraft. The remote location of the radar sites, coupled with Alaskan topography, presents significant challenges in routing and installing fiber optic cable. Given these challenges, fiber optic cables are impractical, and a small number are used.

(U) Alaska Radar System Roles and Responsibilities

(U) The U.S. Air Force Air Combat Command (ACC) provides funding to operate and maintain the ARS and procure necessary equipment. The ACC is also responsible for creating operations and maintenance policies and managing Program Element Code 12412 and 12325, the entity that directly supports the operations and maintenance of the radars to satisfy NORAD and homeland defense requirements for air domain awareness. An ACC official stated that annual operations and maintenance for the ARS, including transportation, fuel, and airlift, cost approximately \$70 million.

(U) The Air Force owns the FPS-117 radars that make up the ARS; however, the Air Force has delegated operations and maintenance responsibility of the ARS to Pacific Air Forces, which is air component of the U.S. Indo-Pacific Command (USINDOPACOM). Pacific Air Forces conducts these activities through the Pacific Air Forces Regional Support Center, which provides equipment for the radars and the communications network, and manages the contractor responsible for radar site staffing and repairs.

(U) The ARS provides NORAD and USNORTHCOM with air domain awareness information to respond to any threat the radars detect. The units responsible for responding to potential threats detected by the ARS are the 611th Air Operations Center and the 176th Air Defense Squadron at Joint Base Elmendorf-Richardson, which maintain a continuously operating 24-hour watch schedule. NORAD and USNORTHCOM headquarters are not involved in the day-to-day operations of the ARS; however, NORAD and USNORTHCOM are the recipients of the air domain awareness information collected by the ARS, and it is from this information that the Commander of NORAD and USNORTHCOM makes decisions regarding air threats detected in the USNORTHCOM area of responsibility. Although the Commander of NORAD and the Commander of USNORTHCOM are distinct positions within separate commands, the duties and responsibilities of these two positions are carried out by a single individual.

(U) Finding

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)

[REDACTED]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)

[REDACTED]

- ~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)

[REDACTED]

- ~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)

[REDACTED]

- ~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)

[REDACTED]

- ~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)

[REDACTED].⁶

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)

[REDACTED]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)

[REDACTED]

⁶ (U) NORTHCOM (b)(1)(1.7e) / USAF (b)(1)(1.7e) / INDOPACOM (b)(1)(1.7e)

[REDACTED]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
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~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a), (b)(1)(1.4g)
[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)

[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)

[Redacted]

(U) Figure 3. NORTHCOM (b)(1)(1.7e) / USAF (b)(1)(1.7e) / INDOPACOM (b)(1)(1.7e)



(U) Source: NORTHCOM (b)(1)(1.7e) / USAF (b)(1)(1.7e) / INDOPACOM (b)(1)(1.7e)

[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)

[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)

[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)

[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)

[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)

[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)

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~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)

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~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted]

~~(EU)~~ The Air Force Has Not Developed an ARS Sustainment Plan

~~(EU)~~ Air Force personnel did not develop a plan to maintain current ARS capabilities. The ARS was installed in 1985 with a service life expectancy of 20 years. On January 10, 2017, the NORAD Director of Operations signed a memorandum requiring sustainment of the NWS radars, which include the three ARS radars along the northern coast of Alaska, through 2035. On October 15, 2019, the NORAD Office of Operations issued a memorandum restating that the NWS must be sustained until at least 2035, which is 30 years beyond its original life expectancy. According to NORAD and Air Force officials, although the memorandums are specific to the NWS, the memorandums apply to the ARS given the radar systems' similar mission and equipment.

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / NDOPACOM (b)(1)(1.4g)
[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted]. See Figure 4 for an outside view of an FPS-117 radar.

(U) Figure 4. Outside View of the FPS-117 Engineering Facility Radar at Hill Air Force Base, Utah



(U) Source: The DoD OIG.

(S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted text block]

(S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted text block]

(S//REL TO USA, CAN) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted text block]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted]

(U) Alaska Weather Presents ARS Maintenance Difficulties

(U) The harsh environment and remote operating locations limited PRSC officials' ability to maintain the ARS. According to an official from the Pacific Air Forces Regional Support Center, the radars receive quarterly periodic maintenance, which is often hindered by the weather. In 2019, one radar site had 30 feet of ice surrounding the radar dome, which is the fiberglass paneled dome that covers and protects the radar array from the environment. Furthermore, according to Pacific Air Forces Regional Support Center officials, severe weather limits the ability to deploy support vehicles to the remote radar sites, including aircraft and ocean-going barges responsible for transporting bulk shipments to ARS sites along the Alaska coast.

(U) To ensure compliance with the NORAD Director of Operations January 2017 memorandum, ACC officials, in coordination with the Under Secretary of Defense for Acquisition and Sustainment and officials from NORAD, USNORTHCOM, and USINDOPACOM, should develop and implement a plan to sustain the ARS through 2035, including the roles and functions of supported and supporting organizations.

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted]

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4g)
[Redacted]

(U) Recommendations, Management Comments, and Our Response

(U) Recommendation 1

(U) We recommend that the Commander of the U.S. Northern Command identify the capabilities required to maintain air domain awareness in Alaska against current and emerging air threats and provide the capabilities required to the Commander of the U.S. Air Force Air Combat Command.

(~~CS~~) U.S. Northern Command Comments

(~~CS~~) The USNORTHCOM Chief of Staff, responding for the USNORTHCOM Commander, neither agreed nor disagreed with the recommendation. The Chief of Staff stated that the command has identified the capabilities required to maintain air domain awareness in Alaska against current and emerging air and space threats and has prioritized these radars as a top priority over multiple years. This includes the prioritization of future OTHR, as mentioned in the report, but also includes sustainment of the ARS in FY 2024 and FY 2025 Program Objective Memorandum Advocacy Memorandums to the Air Force.

(~~CS~~) Additionally, the Chief of Staff stated that the command identified the risk of a failure of an ARS radar and requested funding to procure nine Three-Dimensional Expeditionary Long Range Radar systems to address an unplanned gap in the FY 2024 Unfunded Priority List. The ability of OTHR systems to provide early warning and cueing to legacy, maintained systems such as the ARS and airborne radar systems, and the redundancy provided by Three-Dimensional Expeditionary Long Range Radar systems, are the capabilities that NORAD and USNORTHCOM require to identify, track, and engage current and emerging air threats. These capability requirements have been provided to the Air Force and to the Office of the Under Secretary of Defense for Acquisition and Sustainment for procurement and sustainment.

(U) Our Response

(U) Although the Chief of Staff neither agreed nor disagreed with the recommendation, the actions taken to identify the capabilities required to maintain air domain awareness in Alaska against current and emerging air threats satisfied the intent of the recommendation. Therefore, the recommendation is resolved, but will remain open. We will close the recommendation after we verify that the requirements provided to the Air Force fully address the recommendation.

(U) Recommendation 2

(U) We recommend that the Commander of the U.S. Air Force Air Combat Command, in coordination with the Under Secretary of Defense for Acquisition and Sustainment, the Commander of the U.S. Northern Command, and the Commander of the U.S. Indo-Pacific Command, develop and implement a plan to:

- a. **(U) Modernize the Alaska Radar System, including the roles and functions of supported and supporting organizations.**
- b. **(U) Sustain the Alaska Radar System through 2035, including the roles and functions of supported and supporting organizations.**

(U) Air Combat Command Comments

(U) The ACC Deputy Director of Operations, responding for the ACC Commander, neither agreed nor disagreed with the recommendations. The Deputy Director stated that the ACC will continue to coordinate with the Under Secretary of Defense for Acquisition and Sustainment and the Commanders of USNORTHCOM and USINDOPACOM to develop and implement a plan to modernize and sustain the ARS through 2035.

(U) The Deputy Director stated that the ACC requested the modernization of the ARS with DARTs to improve performance and reduce maintenance. The ACC also requested the manufacture and replacement of radomes and the fielding of Next Generation Advanced Long Range Radars. Furthermore, the Deputy Director stated that a Small Business Innovative Research Phase II program is underway to analyze mission improvements from the integration of potential Active Electronically Scanned Array radars into the NWS to assess the feasibility, viability, and desirability of that technology.

(U) Our Response

(U) Although the Deputy Director neither agreed nor disagreed with the recommendations, the planned actions to develop and implement a plan to modernize and sustain the ARS through 2035 addressed the intent of the recommendations. Therefore the recommendations are resolved, but will remain open. We will close the recommendations after we verify that the ACC has developed a plan to modernize and sustain the ARS, including the roles and functions of supported and supporting organizations.

(U) Appendix A

(U) Scope and Methodology

(U) We conducted this evaluation from May 2022 through December 2023 in accordance with the "Quality Standards for Inspection and Evaluation," published in January 2012 by the Council of the Inspectors General on Integrity and Efficiency. Those standards require that we adequately plan the evaluation to ensure that objectives are met and that we perform the evaluation to obtain sufficient, competent, and relevant evidence to support the findings, conclusions, and recommendations. We believe that the evidence obtained was sufficient, competent, and relevant to lead a reasonable person to sustain the findings, conclusions, and recommendations.

(U) We planned and conducted this evaluation to align with the DoD OIG focus on maintaining the advantage in strategic competition, in the context of national defense and domain awareness. The evaluation addresses whether the ARS can provide sufficient air domain awareness in Alaska and in support of Commander, U.S. Northern Command, guidance and requirements. The evaluation addressed information current at the time of engagement with identified stakeholders.

(U) This report was reviewed by the DoD Component(s) associated with this oversight project to identify whether any of their reported information, including legacy FOUO information, should be safeguarded and marked in accordance with the DoD CUI Program. In preparing and marking this report, we considered any comments submitted by the DoD Component(s) about the CUI treatment of their information. If the DoD Component(s) failed to provide any or sufficient comments about the CUI treatment of their information, we marked the report based on our assessment of the available information.

(U) Sites Visited and Interviews with Officials

(U) We interviewed DoD officials and contractors to follow up responses provided to our written requests for information and to understand their concerns and challenges associated with the ARS. We met with officials from the following locations and entities.

(U) Joint Base Elmendorf–Richardson, Anchorage, Alaska

- (U) The Alaskan North American Aerospace Defense Command Region
- (U) 176th Air Defense Squadron
- (U) 611th Air Operations Center

- (U) 84th RADAR Evaluation Squadron
- (U) Maintenance Control and Communications Squadron
- (U) Alaska RADAR System Program
- (U) Pacific Air Forces Region Support Center
- (U) The North Warning System Office

(U) Joint Base Peterson, Colorado Springs, Colorado

- (U) NORTHCOM–NORAD Headquarters, including personnel from the following directorates:
 - (U) Directorate for Intelligence,
 - (U) Directorate for Operations,
 - (U) Directorate for Plans and Policy,
 - (U) Directorate for Architectures and Integration,
 - (U) Directorate for Training and Exercise and,
 - (U) Directorate for Programs and Resources
- (U) The North Warning System Office

(U) Langley Air Force Base, Newport News, Virginia

- (U) Air Combat Command, including personnel from the A3, A5, A6

(U) Hill Air Force Base, Ogden, Utah

- (U) Atmospheric Early Warning System, System Program Office
- (U) FPS-117 tour
- (U) 415th Supply Chain Management Squadron

(U) Data Collection

(U) To determine whether the ARS can detect and track current and emerging long-range air threats in the Alaskan Arctic Region in support of the guidance and

(U) requirements of NORAD and the Commander of USNORTHCOM, we reviewed the following documents:

- (~~SECRET//REL TO USA, CAN~~) NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)
[REDACTED]
- (U) Memorandum of Understanding, "Supplementary Arrangement to the Memorandum of Understanding on the Modernization of the North American Air Defence System between Department of National Defence of Canada and the United States Air Force," May 31, 2017; and
- (U//~~FOUO~~) North American Aerospace Defense Command (NORAD)/J3 memorandum, "North Warning System (NWS) Sustainment," October 15, 2019.

(U) Use of Computer-Processed Data

(U) We did not use computer-processed data to perform this evaluation.

(U) Prior Coverage

(U) During the last 5 years, the GAO issued one report related to national security discussing long-range emerging threats facing the United States as identified by Federal agencies. The Air Force issued one report related to the analysis of alternatives for assessing the sufficiency of northern air approaches. However, the DoD OIG is not aware of previous work specifically examining the topic of the Alaska Radar System at any oversight organization, including the GAO.

(U) Unrestricted GAO reports can be accessed at <http://www.gao.gov>.

(U) Unrestricted Air Force Audit Agency reports can be accessed from <http://www.afaa.af.mil/> by clicking on Freedom of Information Act Reading Room and then selecting audit reports.

(U) GAO

(U) Report No. GAO-19-204SP, "National Security: Long-Range Emerging Threats Facing the United States As Identified by Federal Agencies," December 2018

(U) A House committee report accompanying a bill for the FY 2018 National Defense Authorization Act included a provision for the GAO to identify emerging threats of high national security consequence. The report focused on long-range emerging threats that may occur in approximately 5 or more years, or those that may occur during an unknown timeframe, as identified by several respondents at the DoD.

(U) The DoD, among other departments, independently identified various threats to the United States or its national security interests. The report analyzed over 210 individual threats identified by across different organizations, including the DoD, as well as its review of national security strategies and related documents, and interviews with key agency officials, the GAO developed four broad categories for 26 long-range emerging threats that officials identified: Adversaries' Political and Military Advancements, Dual-Use Technologies, Weapons, and Events and Demographic Changes.

(U) Air Force

~~(S//REL TO USA, CAN)~~ NORTHCOM (b)(1)(1.4a) / USAF (b)(1)(1.4a), (b)(1)(1.4g) / INDOPACOM (b)(1)(1.4a)
[Redacted]
[Redacted]

(U) NORTHCOM (b)(1)(1.7e) / USAF (b)(1)(1.7e) / PACOM (b)(1)(1.7e)
[Redacted]
[Redacted]
[Redacted]
[Redacted]
[Redacted]

(~~CU~~) Management Comments

(~~CU~~) NORAD and U.S. Northern Commands Comments

~~CU~~



**NORTH AMERICAN AEROSPACE DEFENSE COMMAND
AND
UNITED STATES NORTHERN COMMAND**




MEMORANDUM FOR DEPARTMENT OF DEFENSE INSPECTOR GENERAL

FROM: Chief of Staff, NORAD and USNORTHCOM
250 Vandenberg St. Suite B016
Peterson SFB, CO 80914-3801

SUBJECT: DOD OIG Draft Report - Department of Defense Office of Inspector General (OIG) Evaluation of the Alaska Radar System - Project D2022-DEV0PB-0136.000

1. (U) NORAD and USNORTHCOM has reviewed the DOD OIG Draft Report regarding the Alaskan Radar System and provides this response to Recommendation 1, as requested in the Memorandum to the Commander, NORAD and USNORTHCOM.
2. (U) DoD OIG Recommendation 1: We recommend that the Commander of the U.S. Northern Command, identify the capabilities required to maintain air domain awareness in Alaska against current and emerging air threats and provide the capabilities required to the Commander of the U.S. Air Force Air Combat Command.
3. (~~CU~~) Response: NORAD and USNORTHCOM have identified the capabilities required to maintain air domain awareness in Alaska against current and emerging air and space threats and have prioritized these radars as a top priority over multiple years. This includes the prioritization of future Over the Horizon (OTH) radars as mentioned in the report but also includes sustainment of the Alaska Radar System (ARS) in FY24 and FY25 POM Advocacy Memorandums to the United States Air Force. Additionally, USNORTHCOM identified the risk of a failure of an ARS radar and requested funding to procure nine Three-Dimensional Expeditionary Long Range Radar (3DELRR) systems to address an unplanned gap in the FY24 Unfunded Priority List. The ability of OTH systems to provide early warning and cueing to legacy, maintained systems such as ARS and airborne radar systems combined with the redundancy provided by 3DELRR systems are the capabilities that NORAD and USNORTHCOM require to identify, track, and engage current and emerging air threats and these capability requirements have been provided to the USAF and to OSD for procurement and sustainment.
4. (U) My point of contact for this memorandum is ~~(b)(6)~~ ~~(b)(6)~~.


 ALLAN M. PEPIN
 Major General, USA
 Chief of Staff

~~Controlled by NSNORS~~
~~CU Category: OROSO~~
~~USC: For Only~~
~~(b)(6)~~ DODIG (b)(6)

~~(b)(6)~~

(U) U.S. Air Force Air Combat Commands Comments

CLASSIFICATION:
UNCLASSIFIED

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
JOINT BASE LANGLEY-EUSTIS VA



28 Nov 2023

MEMORANDUM FOR: DOD OIG
4800 Mark Center Drive
Alexandria, VA 22350

FROM: ACC/A3
205 Dodd Blvd, Suite 101
Joint Base Langley-Eustis, VA 23665

SUBJECT: (U) Response to DoD OIG Evaluation of the Alaska Radar System (ARS), Project D2022-DEV0PB-0136.000

1. (U) Thank you for your evaluation of the ARS and for our opportunity to comment on this report. Air Combat Command (ACC) will continue to coordinate with the Under Secretary of Defense for Acquisition and Sustainment, and the Commanders of USNORTHCOM and U.S. Indo-Pacific Command, to develop and implement a plan to modernize and sustain the ARS through 2035.
2. (U) The Commander of ACC is aware, and we have the following plans to modernize and sustain the ARS and North Warning System (NWS) through 2035:
 - a. (U) Modernization of the ARS and NWS has been requested with Digital Array Row Transceivers (DARTs) to improve performance and reduce maintenance.
 - b. (U) Manufacture and replacement of radomes have been requested.
 - c. (U) Fielding of Next Generation Advanced Long Range Radars will also be requested, and
 - d. (U) A Small Business Innovative Research Phase II program is in underway to analyze mission improvements from integration of potential Active Electronically Scanned Array (AESA) radars into the NWS to assess the feasibility, viability, and desirability of that technology.
3. (U) Program funding is determined by Presidential, Congressional, DoD, Headquarters Air Force, Combatant Command, and Major Command priorities. In a fiscally constrained environment, initiatives and disconnects may not be funded.
4. (U) Our POC for this subject is **DOD OIG (b)(6)**, ACC/A3C1, at DSN **DOD OIG (b)(6)**, or **DOD OIG (b)(6)** @mail.mil.

UCHIDA, TED FORMER REPORT BY UCHIDA, TED J. DODIG
 T **DOD OIG (b)(6)** Nov 2023 11:22 138004
 TED T. UCHIDA
 Senior Executive Service, DAF
 Deputy Director of Operations

CLASSIFICATION: **UNCLASSIFIED**
Agile Combat Power

(U) Acronyms and Abbreviations

ACC	Air Combat Command
AEWS SPO	Atmospheric Early Warning System, System Program Office
ARS	Alaska Radar System
CONPLAN	Concept Plan
DART	Digital Array Row Transceiver
FPS	Fixed Position Search
NORAD	North American Aerospace Defense Command
NWS	North Warning System
OTHR	Over the Horizon Radar
USINDOPACOM	U.S. Indo-Pacific Command
USNORTHCOM	U.S. Northern Command

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