



CUI
DEPARTMENT OF THE ARMY
UNITED STATES ARMY FUTURES AND CONCEPTS COMMAND
950 JEFFERSON AVENUE
FORT EUSTIS, VIRGINIA 23604

TTHQ-FC

14 May 2026

MEMORANDUM FOR Under Secretary of the Army, Headquarters, Department of the Army, 200 Army Pentagon, Washington, DC 20310-0200

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport [CUI Extract]

1. References.

- a. Memorandum of Appointment, dated 31 January 2025.
- b. Army Regulation (AR) 15-6, Procedures for Administrative Investigation and Boards of Officers, dated 22 June 2025.
- c. AR 95-1, Flight Regulations, dated 22 March 2018.
- d. AR 700-138, Army Logistics Readiness and Sustainability, dated 23 April 2018.
- e. AR 750-1, Army Materiel Maintenance Policy, dated 2 March 2023.
- f. Department of the Army Pamphlet (DA PAM) 385-40, Army Accident Investigations and Reporting, dated 18 March 2015.
- g. DA PAM 738-751, Functional User Manual for the Army Maintenance Management System – Aviation, dated 28 February 2014.
- h. DA PAM 750-8, The Army Maintenance Management System (TAMMS) User Manual, dated 22 August 2005.
- i. Technical Manual (TM), 1-1520-237-10, Operator's Manual, Helicopter, Utility Tactical Transport, UH-60L, dated 30 April 2023.
- j. TM 1-1520-237-CL-1, Operator's and Crewmember's Checklist, Helicopter, Utility Tactical Transport, UH-60L, Change 2, dated 31 March 2022.
- k. TM 1-1520-237-MTF, Maintenance Test Flight Manual, Helicopters, Utility Tactical Transport, UH-60L, Change 2, dated 31 March 2022.
- l. TC 3-04.4, Fundamentals of Flight, dated 1 July 2022.
- m. National Transportation Safety Board (NTSB) Investigation Docket – DCA25MA108, Public Release dated 30 July 2025 at 0900 (Annex A)¹.
- n. NTSB Investigative Open Hearing, dated 30 July – 1 August 2025, and Media Release Briefings.²

2. Background.

¹ Annex A: NTSB Investigation Docket – DCA25MA108; includes 208 Docket Items (as of 16 December 2025 at 1419 EST). <https://data.ntsb.gov/Docket/?NTSBNumber=DCA25MA108>

² NTSB DCA Mid-air Collision – YouTube Channel:

https://www.youtube.com/playlist?list=PL5aVmmm4Qt9FNA7uKitGA0cD3_bDcpSQ

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

a. On 31 January 2025 LTG Laura Potter, Director of the Army Staff, appointed me as an investigating officer pursuant to AR 15-6. The purpose of the investigation was to determine the facts and circumstances surrounding the 29 January 2025 midair collision of a UH-60L "Black Hawk" (call sign "Priority Air Transport" 25 or PAT 25) assigned 12th Aviation Battalion (AVN BN), The U.S. Army Aviation Brigade (TAAB), and a civilian aircraft operated by PSA Airlines CRJ700, Flight 5342 (American Airlines, AA5342) (call sign "Bluestreak 5342"), near Ronald Reagan Washington National Airport (DCA), which resulted in the deaths of military and civilian personnel (Annex A).³

b. This investigation is an atypical Army Aviation accident investigation. The National Transportation Safety Board (NTSB), pursuant to 49 U.S.C. § 1132⁴, has jurisdiction over aviation accidents involving both civil and military aircraft (Exhibits CT, CU and Annex A). (As such, timely access to all evidence has not been available to the investigation team while the NTSB conducted its investigation into the collision.) For example, the NTSB maintained control of the PAT 25 Cockpit Voice Recorder (CVR) containing the crew's verbal communications within the aircraft on the night of the accident. On 24 February 2025 the NTSB allowed two members of the investigation team to listen to the recording but did not provide a copy of the recording or a transcript of the audio until just prior to the start of the public hearing on 29 July 2025 at 0900. On 30 July 2025, the team reviewed the public release of all Cockpit/Tower Voice Recorder Transcripts to further characterize crew actions on the night of the incident. On 27 January 2026, the NTSB conducted the Open Board Hearing⁵ which the NTSB Staff presented their findings to the Board Members who then voted on the causation and findings at the end. On 29 January 2026, the NTSB released 41 additional documents to the docket upon release of their findings, causation, and recommendations. This AR 15-6 investigation will reference the NTSB findings as needed and state when this investigation differs from the NTSB findings. Finally, the aircraft's data ordinarily used by the U.S. Army Combat Readiness Center (CRC) to build animations of the accident and to provide raw data to the AR 15-6 investigating officers conducting parallel administrative investigations was unavailable in this case. However, throughout this investigation, the Investigating Officer remained in constant contact with the U.S. Army's Senior Leaders and the Military District of Washington Commanding General (CG) and recommended several immediate change actions during the investigation. Several recommendations listed below, including some recommendations by the NTSB,

³ Annex A: 2-HELO-A Helicopter Operations and Human Performance Factual Reports, Pages 9-16.

Annex A: 2-AIR-A Airplane Operational Factors and Human Performance Group Chairman's Factual Report, PDF Pages 9-11.

⁴ 49 U.S.C. § 1132, Civil Aircraft Accident Investigations, effective 3 January 2024, <https://www.govinfo.gov/content/pkg/USCODE-2023-title49/pdf/USCODE-2023-title49-subtitleII-chap11-subchapIII-sec1132.pdf>.

⁵ NTSB Board Meeting - DCA Midair Collision Between PSA Airlines and Military Helicopter, 27 January 2026, <https://youtu.be/uR3CPcesQqM?si=MAC4jgxZPICNgUdp>.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

are already complete.

3. Executive Summary.

a. The International Civil Aviation Organization (ICAO) leverages three layers of conflict management to prevent midair collisions in congested airspace. Each layer – Airspace Structure, Air Traffic Control (ATC) Separation (Control), and Collision Avoidance Technology – exhibited critical vulnerabilities in this incident, which increased the aggregate risk of a collision and contributed to the fatal outcome.

b. The crew of PAT 25 was current, qualified, and trained to fly their assigned mission on 29 January 2025. The crew was properly medically cleared to fly the mission. The PAT 25 UH-60L aircraft did not suffer any independent catastrophic propulsion or drivetrain component failure. However, PAT 25 encountered broken radio communications, instrumentation inaccuracies, intense urban lighting while operating under night vision goggles (NVG), and gusty winds with turbulence. The combination of these effects significantly impacted the crew's ability to visually identify and maintain separation from AA5342. Simultaneously, the layers of structural, procedural and technical risk mitigation failed to prevent a collision.

c. The first layer of risk mitigation in the ICAO Operational Concept is Airspace Structure and designated Routes. Structure and Routes serve as common procedures to deconflict traffic and assure separation when executed as published. The Washington D.C. Helicopter Visual Flight Routes contain a combination of conflicting compulsory altitude requirements and a suggested route structure with no defined lateral boundaries (Exhibit CW and Annex B).⁶ Had the FAA defined the route's lateral boundaries, it would have assisted ATC in providing predictability and visual cueing to locate aircraft operating within the airspace (Annex B).⁷ A critical finding leading to this collision was the unusually narrow altitude margin between rotary wing aircraft on the Washington Helicopter Routes and the approach path for airliners landing on runway 33 at DCA. The NTSB determined the probable cause leading to this collision was the "Federal Aviation Administration's (FAA) placement of a helicopter route in close proximity to a runway approach path" (Exhibit CW).⁸ Helicopters operating on the published FAA route crossing under and possibly

⁶ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 77, 237-238, 297 and Figures 13.

Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Pages 23-24, "The Federal Aviation Administration provides charts that specify helicopter routes to facilitate operations in high traffic areas. The helicopter routes have no defined lateral boundaries, but they do have maximum altitude limits."

⁷ Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Pages 272-274.

⁸ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 330.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

through the approach path to runway 33,⁹ are directed to maintain the maximum¹⁰ allowed altitude of 200 feet for the route, leaving a maximum of 75 feet of vertical separation (ONLY at the eastern bank of the Potomac River)¹¹ from the precision approach path indicator (PAPI) glide path for the runway (Exhibits A, S, CW).¹² This narrow separation is less than the sum of allowable system errors in the UH-60L altimeter system (in the case of PAT 25, approximately 120 feet of instrument and position errors) and standard separation of 1.5 miles or 500 feet IAW FAA Order JO 7110.65AA, Section 7-9-4 (Exhibits CV, CW).¹³

d. The next layer of risk mitigation leverages ATC Separation by using clearance control measures on the FAA designated helicopter routes in the DCA airspace. Evidence from multiple interviews indicates that historically, air traffic controllers have held helicopter traffic either at Hains Point, north of DCA, or the water treatment plant near Woodrow Wilson Bridge, south of DCA, when commercial aircraft were landing or departing from runway 15/33 (Exhibit AR, CW and Annex A, B).¹⁴ The Baltimore-Washington Helicopter Route Chart depicts the Woodrow Wilson

⁹ The NTSB issued Aviation Investigation Report AIR-25-01, on 7 March 2025, in which the Board recommended to the FAA that the portion of helicopter Route 4 between Hains Point north of DCA and Wilson Bridge south of DCA be closed when runways 33/15 are being used for departures and arrivals. As justification the report notes that preliminary findings suggest “that the existing separation distances between helicopter traffic operating on Route 4 and aircraft landing on runway 33 are insufficient and pose an intolerable risk to aviation safety by increasing the chances of a midair collision.”

¹⁰ Annex A: 2-HELO-J Baltimore-Washington Helicopter Route Chart, PDF Page 2, reference the top center of the map; “NOTE: Pilots are Expected to Maintain the Maximum Altitude Charted when Ceiling Permits, Unless Otherwise Instructed by ATC.”

¹¹ Aviation Investigation Report AIR-25-01, Figure 3 (Page 6) depicts “the eastern shoreline of the Potomac River would have about 75 ft of vertical separation from an airplane approaching runway 33...”

¹² Exhibit A: DCA25MA108 – Aircraft Investigation Report AIR-25-01, PDF Page 6.

Exhibit S: Aviation Branch Operations SOP, 12th AVN BN Local Procedures Guide, dated 15 July 2024, PDF Page 43, 4-19: “Will fly no less than 100 feet below the maximum altitude for the route or zone to be flown”.

Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 75-77 and Figures 13 and 14.

¹³ Exhibit CV: Email – NTSB and SRD Correspondence – Altimeter Error Stack, PDF Page 2.

Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 151-152.

¹⁴ Exhibit Z: (b) (6) Sworn Statement, dated 10 February 2025, PDF Page 8-9.

Exhibit AR: (b) (6) Sworn Statement, 10 February 2025, PDF Page 31-34.

Exhibit CN: (b) (6) Sworn Statement, 19 February 2025, PDF Pages 33-38.

Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 82-85, 103, 189, and 283.

Annex A: 2-AIR-B Aircraft Operations and HP – Attachment 1 – PSA Interviews, PDF Pages 96-97, 111-112, and 124-125.

Annex A: 2-HELO-B Helicopter Operations Interview Transcripts, PDF Pages 23-25, 27, 51, 61, 98, 108, 151-152, 223, 258, 276-277, 583, 595-597, 678, and 860

Annex A: 2-HELO-D National Capital Region Operators Interview Transcripts, PDF Pages 15-17, 32-35, 50, 74-77, and 134-137.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

Bridge as a compulsory reporting and holding point. Conversely, the chart depicts Hains Point as a *non-compulsory* reporting and holding point requiring the controller to cancel previously issued clearance for visual separation, if held. At the time of the collision, the duties of the Helicopter Control (HC) and Local Control (LC) positions in the DCA ATC Tower were combined, adding additional workload to a single controller (Exhibit B and Annex A).¹⁵ The next crucial failure in ATC separation occurred with the issuance of visual separation clearance to PAT 25. In this case, PAT 25 aircrew requested and ATC issued clearance for Pilot-Applied Visual Separation, requiring the crew to correctly identify, distinguish the hazard traffic, and avoid its flight path. Conversely, AA5342's aircrew was never advised of helicopter traffic converging with their flight path on helicopter route 4 (Exhibit CW).¹⁶ Due to radio transmission interference, PAT 25 did not receive critical details of the traffic advisory, specifically that AA5342 was already in a circling pattern for runway 33 (Annex A).¹⁷ The receipt of a partial transmission coupled with the interference of ground lights on the eastern shore while under NVGs more likely than not caused the crew to misidentify traffic on approach to DCA runway 01 when acknowledging the traffic advisory. When circling for runway 33, AA5342's altitude was low over the Maryland side of the river, surrounded by "cultural lighting"¹⁸ creating significant challenges for both flight crews when attempting to distinguish aircraft lights from ground lights (Exhibit CF and Annex A).¹⁹ From the NTSB's final report, "the

Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Pages 161-165, 213-214, 258-259, and 261-264.

¹⁵ Exhibit B: NTSB Aviation Investigation Preliminary Report DCA25MA108, PDF Page 10.

Annex A: 3-A ATC Human Performance Group Chairman's Factual Report, PDF Page 35.

¹⁶ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 24-25 and 261-263.

Per FAA JO 7110.65AA, Traffic Advisories, 2-1-21, "Unless an aircraft is operating within Class A airspace or omission is requested by the pilot, issue traffic advisories to all aircraft (IFR or VFR) on your frequency when, in your judgment, their proximity may diminish to less than the applicable separation minima."

Per FAA JO 7110.65AA, Visual Separation, 7-2-1, 2., (d), "If aircraft are on converging courses, inform the other aircraft of the traffic and that visual separation is being applied."

https://www.faa.gov/documentLibrary/media/Order/7110.65AA_Bsc_w_Chg_1_2_and_3_dtd_9-5-24_READY.pdf

¹⁷ Annex A: 23-A CVR and ATC Combined Transcript, PDF Page 30 and 33.

¹⁸ Annex A: 3-II ATC/HP – Attachment 34 – FAA Aeronautical Information Manual (AIM), Section 10-2-2, PDF Pages 686-687. "Cultural lighting" refers to the manmade lighting found in the built-up urban areas of a city.

¹⁹ Exhibit CF: Aircraft Orientation Reconstruction – Prior to Mid-Air, dated 27 March 2025.

Annex A: 13-B Night Observation Report, Pages 10-14.

Annex A: Video of CRJ Observation Flight from DCA Tower.

Annex A: Video of UH-60 Observation Flight from DCA Tower.

Video: NTSB Animation – Aircraft Visibility Study, dated 27 January 2026,

<https://www.youtube.com/watch?v=LJ10ZOcWuC4>.

Video: NTSB Animation – Control Tower Visibility Study, dated 27 January 2026,

<https://www.youtube.com/watch?v=IpcPaBbvwnM>.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

airplane was on a collision course with the helicopter, it would have exhibited little relative motion” (Exhibit CW).²⁰ The presence of strong gusting winds from the northwest, moderate turbulence, and the reported presence of low-level windshear likely affected the aircraft’s crab angle to the right of course, shifting the crewmember’s sightlines more toward the southwest, further reducing the crew’s ability to identify AA5342 (Annex A).²¹ Based on training, route structure, visual cues, flight behavior, and radio communication, the investigation team concluded PAT 25 understood AA5342 to be aligned with the large volume of incoming aircraft approaching runway 01 and visually dominating the horizon. This is supported by the investigation team concluding the IP’s acknowledgement to DCA Tower using the word “aircrafts” following the final traffic advisory. After the NTSB released the aircraft CVR and audio files back to the U.S. Army, the investigation team listened again to the audio and concluded the IP stated “aircrafts” which contrasts slightly with the NTSB audio transcript stating “aircraft” (Annex A and Exhibit CW).²² In the moments following that final advisory, there is a distinct pause in PAT 25 crew communication – implying confusion with the advisory – before the IP directs the PI to “come left for me ma’am, I *think* that’s why he’s asking... we’re kinda... out towards the middle.”²³ A course correction to the left suggests the IP understood the traffic advisory was to deconflict with aircraft landing runway 01.

e. The PAT 25 UH-60L was not equipped with a Traffic Alert and Collision Avoidance System (TCAS). PAT 25 was equipped with a digital transponder²⁴ incorporating Automatic Dependent Surveillance-Broadcast (ADS-B)²⁵ Out capability. PAT 25’s ADS-B Out failed to transmit during the flight due to an incorrect time Source Reference Code (SRC) configuration (Exhibit CZ).²⁶ Despite ADS-B being inoperable, PAT 25’s Mode 3 A/C transponder, Mode S MLAT (multilateration) data, and radar acquisition by DCA Terminal Radar continued to populate the helicopter’s location on the Terminal Information System-Broadcast (TIS-B) which is transmitted to all aircraft equipped with ADS-B-In within range of the DCA broadcast (Annex A).²⁷ This kept PAT 25 in compliance with the FAA Aeronautical Information

²⁰ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Page 270.

²¹ Annex A: 5-A Meteorology Specialist’s Factual Report, Pages PDF Page 5, 11, 25, 29-31.

²² Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 39, 255, 262, 268, 406.

Annex A: 12-HELO-A CVR (Helicopter) Factual Report, PDF Page 116.

Annex A: 23-A CVR and ATC Combined Transcript, PDF Page 33.

²³ Annex A: 23-A CVR and ATC Combined Transcript, PDF Page 33

²⁴ Annex A: 7-HELO-A Helicopter Airworthiness Group Chairman’s Factual Report, Page 35.

²⁵ ADS-B Out works by broadcasting information about an aircraft’s GPS location, altitude, ground speed and other data to ground stations and other aircraft, once per second. Air traffic controllers and properly equipped aircraft can immediately receive this information.

²⁶ Exhibit CZ: PEO AV Response 5 – ADS-B INOP Aircraft 00-[REDACTED], 28 March 2025, Tab 3 – Meeting-ADS-B INOP Follow Up-8 APR 25, PDF Page 4.

²⁷ Annex A: 7-HELO-A Helicopter Airworthiness Group Chairman’s Factual Report, PDF Page 70-71.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

Manual (AIM), AR 95-1, TAAB Policy Letter, and TAAB SOP, as the transponder was broadcasting Mode 3 A/C, which is mandatory for operations in and around Class B airspace, specifically at DCA (Exhibits S, BM, BQ, Annex A).²⁸ Prior to entering Helicopter Route 1, PAT 25 began to broadcast Mode S MLAT in the vicinity of Cabin John (Exhibit CW).²⁹ Transcripts from this segment of flight indicate that the Instructor Pilot, after transferring controls to the co-pilot, announced he was 'inside'³⁰ — suggesting he may have deliberately activated Mode S and ADS-B on the APX-123 control head³¹ to make his aircraft more visible to surrounding traffic in the busy airspace. In conformity with the agreements between the Department of Defense and FAA, AR 95-1, TAAB Policy Letter, and TAAB Standard Operating Procedure (SOP), the inhibition of the Mode S and ADS-B Out function during the training flight was authorized due to the sensitivity and classification of specific landing zones (Annex A, Exhibits S, BM, BQ).³² Significantly, AA5342's transponder was NOT equipped with ADS-B-In, thus did not receive TIS-B position reporting for PAT 25 in the cockpit (Annex B).³³ On 27 March 2025, the Senate Committee on Commerce, Science, and Transportation conducted a hearing about the NTSB's preliminary report about the midair collision. NTSB Chairwoman Jennifer Homendy testified the accident aircraft UH-60L 00-[REDACTED]'s transponder was not providing any ADS-B Out data to any FAA ground station for 730 days (Exhibit CZ).³⁴ Further investigation revealed systemic ADS-B configuration errors due to misapplied Work Order (MWO) instructions on Time SRC configurations (Exhibit CZ).³⁵ Aircraft with a specific MWO applied require a specific Time SRC manual entry of 059 to render the ADS-B operable on the UH-60L, while aircraft with other MWOs operate ADS-B with a Time SRC of 153 (Exhibit CZ).³⁶ The 15-6 Investigating Officer immediately recommended to the Army Aviation Airworthiness Authority, the Commanding General of the U.S.

²⁸ Annex A: 2-HELO-I ADS-B Policies and Agreements, Page 3.

Exhibit S: Aviation Branch Operations SOP, 12th AVN BN Local Procedures Guide, dated 15 July 2024, PDF Page 39.

Exhibit BM: AR 95-1, Flight Regulations, PDF Page 48.

Exhibit BQ: TAAB Commander ADS-B Out Operations Policy Letter, PDF Pages 2-3.

Annex A: 3-II ATC HP Factual Report – Attachment 34 FAA AIM, PDF Page 175.

²⁹ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Page 70.

³⁰ Annex A: 23-A CVR and ATC Combined Transcript, PDF Page 12.

³¹ Exhibit DE: Memorandum of Findings, APX-123 Functional Operations.

³² Exhibit S: Aviation Branch Operations SOP, 12th AVN BN Local Procedures Guide, dated 15 July 2024, PDF Page 39.

Exhibit BM: AR 95-1, Flight Regulations, Table 5-2, PDF Page 20.

Exhibit BQ: TAAB Commander ADS-B Out Operations Policy Letter, PDF Pages 2-3.

³³ Annex B: DCA25MA108 – Transcript – Public Hearing Day 3, 1 August 2025, PDF Page 134.

³⁴ Exhibit CZ: PEO AV Response 5 – ADS-B INOP Aircraft 00-[REDACTED] 28 March 2025, PDF Page 6, and Tab 1 – Senate Hearing Transcripts, PDF Page 114.

³⁵ Exhibit CZ: PEO AV Response 5 – ADS-B INOP Aircraft 00-[REDACTED] 28 March 2025, PDF Page 1, and Tab 3 – Investigation Meeting Transcripts, PDF Pages 8-10.

³⁶ Exhibit CZ: PEO AV Response 5 – ADS-B INOP Aircraft 00-[REDACTED] 28 March 2025, Tab 3 – Investigation Meeting Transcripts, PDF Page 4.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

Army Aviation and Missile Command (AMCOM) and the HQDA G-3/5/7 (DAMO-AV) Aviation Director release an urgent Aviation Safety Action Message (ASAM). The ASAM would direct an inspection of every Army aircraft transponder to verify the correct Mode S address and the correct Time SRC setting per the applied MWO, ensuring FAA regulatory compliance (Exhibit DD).³⁷ As of 31 July 2025, all 3,585 affected rotary wing aircraft were inspected for settings compliance with the ASAM to ensure proper ADS-B out functionality. The Electronic Flight Bag (iPad) employed by the crew of PAT 25 would have received TIS-B traffic information if the device had been powered on, paired with the STRATUS-B receiver, and connected to a network. The combination of instrument and position errors resident within the UH-60L barometric altimeter resulted in the crew seeing a lower altitude than the higher altitude they were actually flying (Exhibit CR, CV, CW).³⁸ Given the low-altitude profile and light-noise conditions hindering obstacle avoidance while operating under NVG, PAT 25 was likely not actively monitoring their iPads at the time of the accident (Annex B).³⁹ The NTSB recovered the crewmembers' iPads from the wreckage and concluded that "ForeFlight track data from one of the tablets indicated that it was connected to a STRATUS receiver" (Exhibit CW).⁴⁰

f. In considering the circumstances and facts of this case, and consistent with NTSB findings, I have determined by a preponderance of the evidence that breakdowns across all layers of conflict management caused this accident. The most salient contributing factor was the two broken radio transmissions resulting in the PAT 25 crew not receiving critical details from DCA Air Traffic Control (ATC) that could have enabled them to positively identify AA5342 circling to land on runway 33, not misidentify aircraft landing to runway 01, and maintain visual separation. The investigation team did not find evidence of information received to be consciously or unconsciously ignored by PAT 25 when applying visual separation. The request for and approval of pilot-applied visual separation by PAT 25 and ATC respectively, coupled with AA5342 accepting a visual approach to runway 33, directly contributed to the accident. Dense urban lighting and the merging of aircraft lights with the terrain, coupled with PAT 25 using NVGs and AA5342 flying unaided, prevented the crews from positively identifying each other. Lastly, ATC using non-standard terminology for directing air traffic and providing incomplete traffic advisories was also a contributing factor. Had ATC provided the appropriate traffic advisory IAW FAA

³⁷ Exhibit DD: ASAM – ADS-B Out Compliance – Combined, 27 April 2025, PDF Pages 4, 18, 27, 36, 46.

³⁸ Exhibit CS: STACOM 25-02 UH-60 Barometric Altimeter Error with ESSS.

Exhibit CV: Exhibit CV: Email – NTSB and SRD Correspondence – Altimeter Error Stack, PDF Page 2.
Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 39, 255, 262, 268, 406.

³⁹ Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Pages 124-126.

Annex B: DCA25MA108 – Transcript – Public Hearing Day 3, 1 August 2025, PDF Pages 42-47 and 124-126.

⁴⁰ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Page 69.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

Order JO 7110.65⁴¹ – azimuth; position; distance; direction of travel; and type of aircraft – the aircrew could have immediately turned their attention to the shoreline and the oncoming CRJ (Exhibit CW).⁴²

4. Overview. With the concurrence of Army senior leadership, the investigation timeline aligned with the NTSB investigation. Thus, this investigation was completed 14 days after release of the NTSB’s final report on 3 March 2026.

5. Facts and findings.

a. Timeline of the events leading up to the aircraft collision on 29 January 2025 (all times local).

1216 PAT 25 (Instructor Pilot) completed Risk Common Operational Picture (RCOP)⁴³
 1720 Flight plan submitted to 12th AVN BN Flight Operations by flight crew⁴⁴
 1724 DD Form 1801 DoD Flight plan emailed to Davison Army Airfield Base Operations⁴⁵
 1724 National Capital Region Coordination Center called⁴⁶
 1725 DAAF⁴⁷ Base Operations were called to confirm flight plan received⁴⁸
 1830 PAT 25 first Flight Data Recorder (FDR) readings⁴⁹
 1842 PAT 25 contacts DAAF Ground with ATIS information TANGO (altimeter 29.84) and taxi instructions⁵⁰
 1842 PAT 25 departs Visual Flight Rules (VFR) from DAAF⁵¹
 1922 PAT 25 wheels down at the “Greenhouse”, Airport ID 02VA, Culpepper, VA⁵²

⁴¹ Annex A: 3-LL ATC PC – Attachment 37 FAA Order JO 7110.65, “Air Traffic Control” paragraph 2-1-21, Traffic Advisories, PDF Pages 64-66.

⁴² Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 113-114.

⁴³ Annex A: 2-HELO-A Helicopter Operations and Human Performance Factual Report, Page 11.

⁴⁴ Annex A: 2-HELO-E Helicopter Crew Flight Planning, Flight Plan Checklist, PDF Page 3.

⁴⁵ Annex A: 2-HELO-E Helicopter Crew Flight Planning, Flight Plan Checklist, PDF Page 3.

⁴⁶ Annex A: 2-HELO-E Helicopter Crew Flight Planning, Flight Plan Checklist, PDF Page 3.

⁴⁷ DAAF – Davison Army Airfield, Ft Belvoir, VA.

⁴⁸ Annex A: 2-HELO-E Helicopter Crew Flight Planning, Flight Plan Checklist, PDF Page 3.

⁴⁹ Exhibit CX: DCA25MA108 - PAT 25 IVHMS Raw Data – 20250207

Annex A: 10-HELO-A Flight Data Recorder – Helicopter – Group Chairman’s Report, PDF Page 13.

⁵⁰ Annex A: 3-A ATC Human Performance Group Chairman’s Factual Report, Page 11.

Annex C: Transcript – DAAF TWR/GND Audio Recording with PAT 25, 29 January 2025.

ATIS: Automatic Terminal Information Service and provides automated essential but routine information to aviators, to include weather conditions and the current altimeter setting.

⁵¹ Annex C: DAAF TWR – PAT 25 Flight Strip Info – 29 January 2025.

⁵² Exhibit CX: DCA25MA108 - PAT 25 IVHMS Raw Data - 20250207

Annex A: 12-HELO-A CVR (Helicopter) Factual Report, PDF Page 24.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

1929 PAT 25 wheels up from the “Greenhouse”⁵³

2024 PAT 25 wheels down at a helipad in Maryland⁵⁴

2028 PAT 25 wheels up from the Maryland helipad⁵⁵

2030 PAT 25 heading south near Laytonsville, Maryland⁵⁶

2032 ATC⁵⁷ granted PAT 25 request to transition from helicopter Rte 1 to Rte 4; altimeter
29.89⁵⁸

2043 ATC requested inbound Bluestreak 5342⁵⁹ switch from DCA rwy 01 to rwy 33⁶⁰

2045 Reported “PAT 25 memorial” before crossing Arlington Memorial Brigade, Rte 1⁶¹

2046 DCA tower radioed PAT 25 that the CRJ was circling to rwy 33 (circling not heard)⁶²

2046 PAT 25 responded that they had the traffic in sight and requested visual
separation⁶³

2046 Tower approved request for visual separation

2047 CRJ began final approach to DCA RWY 33, “I got two white two red”.⁶⁴

2047 Tower asked PAT 25 if they had the CRJ traffic in sight⁶⁵

2047 PAT 25 responded to the tower that they had “aircrafts”⁶⁶ in sight

2047 Tower instructed PAT 25 to “pass behind” the CRJ⁶⁷

2047 IP pauses after advisory “come left for me... I think that’s why he’s asking”⁶⁸

⁵³ Exhibit CX: DCA25MA108 - PAT 25 IVHMS Raw Data - 20250207

Annex A: 12-HELO-A CVR (Helicopter) Factual Report, PDF Page 30.

⁵⁴ Exhibit CX: DCA25MA108 - PAT 25 IVHMS Raw Data – 20250207

Exhibit CY: DCA25MA108 – Radar Track Plots (kmz file); use Google Earth to upload file and view.

Annex A: 2-HELO-A Helicopter Operations and Human Performance Factual Report, Page 11.

Annex A: 12-HELO-A CVR (Helicopter) Factual Report, PDF Page 87.

⁵⁵ Exhibit CX: DCA25MA108 - PAT 25 IVHMS Raw Data – 20250207

Exhibit CY: DCA25MA108 – Radar Track Plots (kmz file); use Google Earth to upload file and view.

Annex A: 12-HELO-A CVR (Helicopter) Factual Report, PDF Page 91.

⁵⁶ Exhibit CY: DCA25MA108 – Radar Track Plots (kmz file); use Google Earth to upload file and view.

⁵⁷ ATC: Air Traffic Control

⁵⁸ Annex A: 12-HELO-A CVR (Helicopter) Factual Report, PDF Page 96.

⁵⁹ American Airlines (AA5342) (operated by PSA Airlines), call sign “Bluestreak 5342” was the CRJ700 commercial aircraft.

⁶⁰ Annex A: 23-A CVR and ATC Combined Transcript Factual Report, PDF Page 24.

⁶¹ 2-HELO-A Helicopter Operations and Human Performance Factual Report, PDF Page 14

⁶² Exhibit D: According to the 14 February 2025 NTSB press report, the words “circling runway 33” “may not have been received” by PAT 25. The report specifically notes that “circling” was not heard on PAT 25’s CVR data, Page 4.

⁶³ Annex A: 23-A CVR and ATC Combined Transcript Factual Report, PDF Page 30.

⁶⁴ Annex A: 23-A CVR and ATC Combined Transcript Factual Report, PDF Page 33.

⁶⁵ Annex A: 23-A CVR and ATC Combined Transcript Factual Report, PDF Page 33.

⁶⁶ “Aircrafts” is audible in the CVR but not transcribed in the plural form on the NTSB transcripts.

⁶⁷ Exhibit D: PAT 25 may not receive the “pass behind” statement due to keying the microphone to talk to the DCA tower personnel, Page 4.

Annex A: 23-A CVR and ATC Combined Transcript Factual Report, PDF Page 33; at 20:47:41.9 [TWR-A] “pass behind” is missing from the UH-60 CVR, but stated by ATC transmission recording [DCA-LA]

⁶⁸ Annex A: 23-A CVR and ATC Combined Transcript Factual Report, PDF Page 33.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

2048 PAT 25 collided with Bluestreak 5342 at a radio altitude of 278 feet⁶⁹

b. The mission and flight plan of the UH-60 on 29 January 2025. What were the Weather conditions at the time of the incident?

(1) **Mission.** PAT 25, a UH-60L Black Hawk aircraft, serial number 00 (b)(3) 10 U.S.C. 135a, was on a training evaluation mission conducted on the night of 29 January 2025. PAT 25 crew consisted of (b)(6), Pilot in Command, in the right seat; (b)(6) Pilot, in the left seat; and (b)(6) Crew Chief, in the left crew chief seat. The flight was (b)(6) Annual Standardization flight evaluation combined with an NVG flight evaluation. For training purposes PAT 25 was configured with the Crashworthy External Fuel System (CEFS), consisting of external 200-gallon fuel tanks installed on the left and right sides of the aircraft (Exhibits F, G and Annex A).⁷⁰ This training flight was scenario-based and associated with 12th AVN BN Continuity of Pentagon mission set. The flight plan/Risk Common Operational Picture (RCOP)/Mission Schedule were completed and submitted IAW all applicable regulations and unit SOP (Exhibit F and Annex A).⁷¹

(2) **Weather.** Weather conditions at the time of the incident were 10 statute miles of visibility with no clouds. Winds were generally from 300 degrees, varying between 270 and 330 degrees, at 14 knots gusting to 23 knots (peak of 33 knots), with a temperature of 10 degrees Celsius. On the crew's DD form 175-1, Flight Weather Briefing and Mission Execution Forecast (MEF), the presence of light to moderate turbulence was noted from the surface up to 10,000 feet (Annex A and Exhibit H).⁷² The high wind conditions and turbulence were a persistent issue for the crew as noted on the cockpit voice data recorder (CVDR) intercommunication system (internal crew communications) (Annex A).⁷³ The turbulence and low level windshear was also noted by multiple longline-disseminated pilot reports (PIREPS) by aircraft in the area and the NTSB does a

⁶⁹ Annex A: 13-A History of Flight Performance Study, Pages 34, 37, and 39.

⁷⁰ Exhibit F: Aviation Rotary-Wing Risk Common Operational Picture (RW-RCOP) – PAT 25, 29 January 2025.

Exhibit G: DD Form 365-4, AWBS Form F, Weight and Balance, Aircraft 00- (b)(3) 10 U.S.C. CEFS configuration, dated 6 November 2024

Annex A: 2-HELO-A Helicopter Operations and Human Performance Factual Report, Pages 9-10, 33, and Figure 6.

Annex A: 13-A Aircraft Performance Study – History of Flight, Pages 4-6 and Figure 2.

⁷¹ Exhibit F: Aviation Rotary-Wing Risk Common Operational Picture (RW-RCOP) – PAT 25, 29 January 2025.

Annex A: 2-HELO-E Helicopter Crew Flight Planning, PDF Pages 6-7.

⁷² Annex A: 2-HELO-E Helicopter Crew Flight Planning, PDF Page 8.

⁷³ Annex A: 12-HELO-A CVR (Helicopter) Factual Report, PDF Pages 9, 24, 39, 55, and 57.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

thorough analysis on turbulence noting it 7 times in their Factual report.⁷⁴ The wind conditions affected the aircraft's heading and position inducing a right crab angle, resulting in a shift in cockpit field of view further to the south (Annex A).⁷⁵ An aircrew while flying at low level or terrain flight⁷⁶ will struggle to maintain and hold a constant altitude during the presence of moderate turbulence, gusting winds, and low level windshear. The illumination data for this flight was 0% natural illumination (Exhibit H and Annex A).⁷⁷ At zero percent illumination level the presence of cultural lighting is more pronounced for helicopter aircrews with NVGs.

(3) Cultural lighting played a significant role in the accident (Annex A and Exhibit AR).⁷⁸ While flying under NVGs the crew was limited to a 40-degree field of view (FoV) according to the ANVIS⁷⁹ AN/AVS-6(V)3 technical manual (Exhibit J).⁸⁰ Developed in the 1980s, the Army began fielding AN/AVS-6 as a replacement to the AN/PVS-5 in 1994, with wide adoption and early lessons in mechanical limitations affecting field of view.⁸¹ The AN/AVS-6 40-degree field of view (FOV) is only achieved through precise eye-to-goggle distance; even a single degree of loss—often caused by suboptimal adjustments—results in a 10% reduction of the intensified image area.⁸² On 20 February 2025, the investigation team traveled to Fort McNair to simulate the same environmental conditions in which PAT 25 was operating on the night of 29 January 2025. Significant cultural lighting exists along the Potomac River including Washington DC, Virginia and Maryland suburbs. It is more likely than not that the crew of PAT 25 was unable to discern the aircraft lighting of AA5243 from the urban lighting while the CRJ700 was flying over Maryland's cultural lights (Exhibit K). This phenomenon is known as confusion with ground lights and is common in urban areas. It is likely PAT 25 identified another civilian aircraft located further south over the Potomac River and landing runway 01 at DCA believing it to be AA5342 (Exhibits A, CD and Annex A).⁸³

⁷⁴ Annex A: 5-A Meteorology Specialist's Factual Report, Pages 5, 24, and 28.

⁷⁵ Annex A: 12-HELO-A CVR (Helicopter) Factual Report, PDF Pages 114-115.

⁷⁶ IAW the H-60 Aircrew Training Manual Task 2026: Perform Terrain Flight - *Note. Terrain flight is considered sustained flight below 200 feet AGL*

⁷⁷ Annex A: 2-HELO-E Helicopter Flight Planning Documents, PDF Page 8.

⁷⁸ Exhibit AR: (b) (6) Sworn Statement, 10 February 2025, PDF Page 8.

Annex A: 13-B Night Observation Report: Cultural lighting is the term used by the FAA to describe man-made lighting, such as city lights.

⁷⁹ AVNIS: Aviator's Night Vision Imaging System

⁸⁰ Exhibit J: TM 11-5855-313-10, Technical Manual AVNIS AN/AV-6(V)3, dated 30 August 2014, PDF Page 37.

⁸¹ In-Flight Field of View with ANVIS, by John C. Kotulak, US Army Aeromedical Research Laboratory, Fort Rucker, AL (1992) <<https://apps.dtic.mil/sti/citations/ADA259905>>

⁸² *Ibid.*

⁸³ Exhibit A: DCA25MA108 – Aircraft Investigation Report AIR-25-01; Footnote 3, Page 3; It is important to note that runway 33 landings only accounted for approximately 4% of arrivals at DCA between 2018 and

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

RECOMMENDATION 1: Recommend HQDA and the U.S. Army Aviation Center of Excellence (AVCOE) review the aviation night vision modernization plan.

RECOMMENDATION 2: Recommend the Military District of Washington (MDW), and The Army Aviation Brigade (TAAB) review NVG procedures, and human performance conditions for urban environments.

RECOMMENDATION 3: Recommend the U.S. Army through rapid action prototyping efforts and agile funding initiatives quickly procure more advanced night vision systems or degraded visual environment (DVE) technology to enhance aviator situational awareness.⁸⁴

c. Qualifications, Training, and Conditions of the Flight Crew. What was the experience level of the pilots and had they flown in and around Ronald Reagan Washington National Airport Before?

(1) A comprehensive review of all flight records for each crewmember found that the crew was qualified to execute the mission on 29 January 2025. (b) (6) was a qualified IP with (b) (6) in the accident aircraft, and he was authorized to conduct the Standardization/NVG evaluation for (b) (6) who had (b) (6) in the accident aircraft (Exhibits O, P).⁸⁵ (b) (6) was briefed as the Pilot in Command, and was responsible for having final authority for operating, servicing, and securing the piloted aircraft (Exhibit E, F and Annex A).⁸⁶

(2) All crewmembers had sufficient experience flying in the National Capital Region to include flights around Ronald Reagan Washington National Airport. The average flight time flown in the local Area of Operations was 388 hours between the three crewmembers (Exhibits L, M, N O, P, Q, R).⁸⁷ All crewmembers had been

2024.

Exhibit CD: DCA Perimeter Sector 6B Camera Image, 29 January 2025.

Annex A: 3-FF ATC/HP Factual Report – Attachment 31 DCA Airport Arrival Rate Information; Appendix F, PDF Page 46: Runway Utilization – Annual Runway Use; the chart depicts runway 33 had 7,824 (5.59%) compared to runway 01 had 77,873 (55.63%) approaches from February 2015 to January 2016.

⁸⁴ AVNIS AN/AV-6 was originally fielded to the U.S. Army Aviation between 1989-1990.

⁸⁵ Exhibit O: DA 759 Individual Flight Record – (b) (6).

Exhibit P: DA 759 Individual Flight Record – (b) (6).

⁸⁶ Exhibit E: e-Form 1801, DoD International Flight Plan – PAT 25

Exhibit F: Aviation Rotary-Wing Risk Common Operational Picture (RW-RCOP) – PAT 25, 29 January 2025.

Annex A: 2-HELO-E Helicopter Crew Flight Planning, PDF Pages 4-7.

⁸⁷ Exhibit L: DA Form 7122, Crew Member Training Record – (b) (6).

Exhibit M: DA Form 7122, Crew Member Training Record – (b) (6).

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

stationed at Davison Army Airfield for greater than 2 years during their careers (Exhibits L, M, N O, P, Q, R).⁸⁸

(3) Initial training for all new aviators arriving to 12th AVN BN involves a Washington, DC, Special Flight Rules Area (SFRA) Federal Aviation Administration (FAA) training and unit academics. These academics cover the local area and give pilots an understanding of the unique/complex regulatory requirements associated with the Washington area. This training is intended to be conducted prior to the local area orientation (LAO) flight to ensure the pilot is academically prepared and ready to fly in the area with an instructor pilot (Exhibit BZ).⁸⁹ SFRA training was completed by both aviators, (b) (6) completed this training on 14 Jun 2019 and (b) (6) 24 August 2021, this is currently a one-time course with no refresher requirement. An instructor pilot or Standardization Instructor (SI) then flies with the new crewmembers IOT orient them to the route structure used during the unit's missions sets. All crewmembers had LAO and SFRA training properly annotated in their training records (Exhibits L, M, N).⁹⁰

(4) On 5 August 2024, (b) (6) was medically qualified for pilot duties (Exhibit T). On 7 November 2024, (b) (6) was medically qualified for pilot duties (Exhibit U). On 21 November 2024, (b) (6) was qualified for crew duties (Exhibit V). The Armed Forces Medical Examiner System (AFMES) Division of Forensic Toxicology processed toxicology test samples from (b) (6), and (b) (6) after the mishap (Exhibits W, X, Y). Toxicology was not a factor for the mishap crew.

(5) Review of the crewmembers' flight schedules indicated no fighter management concerns. The rated crew members received a brief from their final mission approval authority (FMAA) at approximately 1600 on the day of the mishap. Crew fighter management and crew duty time were not factors in the mishap (Exhibits F, Z).⁹¹

Exhibit N: DA Form 7122, Crew Member Training Record – (b) (6).

Exhibit O: DA 759 Individual Flight Record – (b) (6).

Exhibit P: DA 759 Individual Flight Record – (b) (6).

Exhibit Q: DA 759 Individual Flight Record – (b) (6).

Exhibit R: Crew Member Experience Report

⁸⁸ Exhibit L: DA Form 7122, Crew Member Training Record – (b) (6).

Exhibit M: DA Form 7122, Crew Member Training Record – (b) (6).

Exhibit N: DA Form 7122, Crew Member Training Record – (b) (6).

Exhibit O: DA 759 Individual Flight Record – (b) (6).

Exhibit P: DA 759 Individual Flight Record – (b) (6).

Exhibit Q: DA 759 Individual Flight Record – (b) (6).

Exhibit R: Crew Member Experience Report

⁸⁹ Exhibit BZ: ABOS Annex D Pilot Development Guide v4, PDF Pages 6-8, Pilot Grading Criteria for LAO.

⁹⁰ Exhibit L: DA Form 7122-R, Crew Member Training Record – (b) (6), PDF Page 5.

Exhibit M: DA Form 7122-R, Crew Member Training Record – (b) (6), PDF Pages 1, 12.

Exhibit N: DA Form 7122-R, Crew Member Training Record – (b) (6), PDF Page 17.

⁹¹ Exhibit Z: (b) (6) Sworn Statement, dated 10 February 2025, PDF Page 50.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

RECOMMENDATION 1: Recommend TAAB and 12th AVN BN immediately update their SOP and training requirements for a more detailed SFRA and LAO training for the Washington D.C. and Baltimore areas. This training will consist of DCA, IAD, BWI, and ADW⁹² airspace to include commercial/military fixed-wing and rotary wing aircraft operations with associated instrument approach and departure procedures and charts. Training will be conducted annually to ensure changes are briefed across the formation. Training will be captured on the aircrew member's (ACM) Individual Aircrew Training Folder (IATF). Any changes between annual iterations will be reflected in the unit reading card file and covered during the pilot's briefs.

d. **Detail the maintenance record of the aircraft.**

(1) **FINDING.** The aircraft was Fully Mission Capable (FMC), see Paragraph 3 below, prior to departure from DAAF (Exhibit AA).⁹³ Consistent with NTSB findings, a contributing factor is the known instrument and position errors, known as the tolerance stack, that resided within the aircraft's pitot-static system, AAU-32/A barometric altimeter, and the air data transducer.⁹⁴ The AAU-32/A barometric altimeter provides altitude information to the pilot via the pointer, and the altimeter's encoder provides the altitude data to the aircraft's transponder (Exhibits AB, AC).⁹⁵

(a) IAW MIL-A-819-852A, paragraph 4.5.7, the tolerance between pressure-system indicated and transponder-encoded readings broadcast to ATC is a maximum of (b)(3) 10 U.S.C. 130e (Exhibit ABC).⁹⁶ During testing, the altimeter IAW Table III for product acceptance has a tolerance of (b)(3) 10 U.S.C. 130e (Exhibit ABC).⁹⁸ IAW TM 1-1520-237-MTF Check List, the required validation check for the altimeter conducted by a Maintenance Test Pilot is to check the setting against field elevation and is considered unreliable if more than a (b)(3) 10 U.S.C. 130e exists (Exhibits AB, ABA, ABB, AC).⁹⁹ Title 14

⁹² ADW: Joint Base Andrews' airfield identifier.

⁹³ Exhibit AA: DA Form 2408-13, Aircraft Status Information Record.

⁹⁴ Exhibit CW: AIR-26-02, NTSB Final Investigation Report, 27 February 2026, section 1.11.3.3, PDF Pages 148-152.

⁹⁵ Exhibit AB: TM 1-1520-237-10, Operator's Manual for Helicopter, Utility Tactical Transport, UH-60, PDF Pages 106 and 264.

Exhibit AC: PEO AV response to Flight Data Recorder (FDR) to NTSB and 15-6 Investigation, dated 13 February 2025, PDF Pages 3-4.

⁹⁶ Exhibit ABC: MIL-A-81852A, Military Specification Altimeter-Encoder AAU-32/A, dated 20 February 1986, PDF Page 27.

⁹⁷ In chemistry, 29.92 Hg (inches of mercury) is a unit of pressure, and 29.92 Hg is the average atmospheric pressure at mean sea level (MSL).

⁹⁸ Exhibit ABC: MIL-A-81852A, Military Specification Altimeter-Encoder AAU-32/A, dated 20 February 1986, Table III, PDF Page 40.

⁹⁹ Exhibit AB: TM 1-1520-237-10, Operator's Manual for Helicopter, Utility Tactical Transport, UH-60, PDF Pages 106 and 632.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

CFR Part 43, Appendix E, Testing Altimeters, and FAA Aeronautical Information Manual (AIM), para 7-2-3 a(1), Altimeter Errors, an allowable error from a known difference from airfield elevation is ± 75 feet, which is greater than the Army's tolerance (Exhibit AD and Annex A).¹⁰⁰ Therefore, the indication from the altimeter's pointer seen by either pilot may have a variation of ± 70 feet from either right or left side altimeters in relation to airfield settings.

(b) Deviation example: if the airfield is at 50 feet mean sea level and both pilots adjust their altimeters for the corrected pressure altitude in their Kollsman¹⁰¹ window (shift from standard 29.92 Hg atmospheric pressure), the left side could indicate 35 feet (15 feet below airfield elevation) and the right side could indicate 80 feet (30 feet above airfield elevation) creating a 45 foot variation between both altimeters. The aircraft can still fly in the national airspace (NAS) because the individual variations are within allowable tolerances of ± 70 feet (i.e. below 140 feet maximum difference).

(c) The NTSB's helicopter airworthiness addendum factual report stated:

Sikorsky Engineering Report (SER)-70418-1, titled UH-60A Post Maturity Pitot-Static System Development/Qualification Test Report, dated December 12, 1983, (b)(3) 10 U.S.C. 130e, (b) (4)

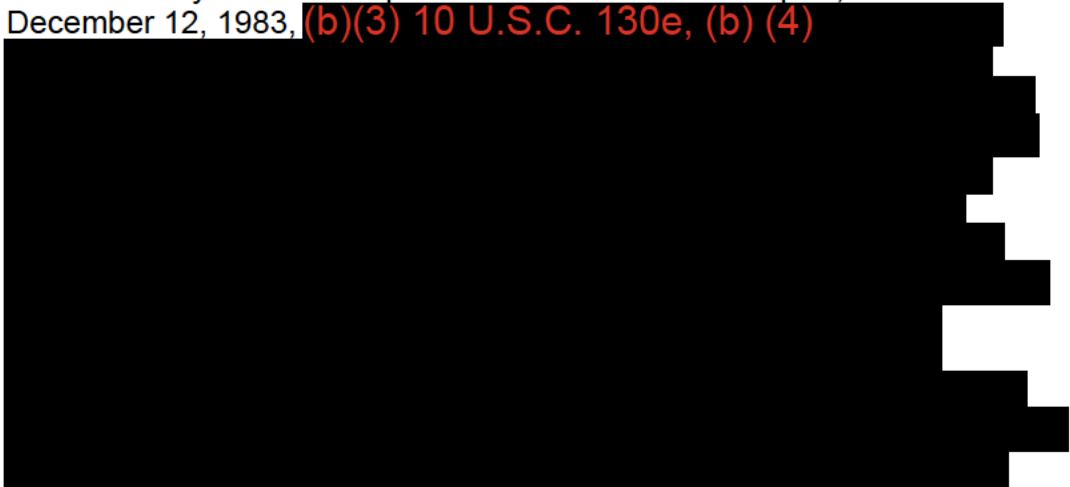


Exhibit ABA: TM 1-1520-237-CL, Operator's and Crewmember's Checklist for Helicopter, Utility Tactical Transport, UH-60, PDF Page 12.

Exhibit ABB: TM 1-1520-237-MTF, Maintenance Test Flight Manual for Helicopter, Utility Tactical Transport, UH-60, PDF Page 57.

Exhibit AC: PEO AV response to Flight Data Recorder (FDR) to NTSB and 15-6 Investigation, dated 13 February 2025, PDF Page 3.

¹⁰⁰ Exhibit AD: Title 14 CFR, Appendix E to Part 43 – Altimeter System Test and Inspection, dated 18 April 2025, Table II, PDF Pages 3-4.

Annex A: 7-HELO-A Helicopter Airworthiness Group Chairman's Factual Report, Footnote 40, PDF Page 68.

Annex A: 3-II ATC HP Factual Report – Attachment 34 FAA AIM, PDF Page 601.

¹⁰¹ U.S. Army UH-60 Technical Manuals term for Kollmans window is "Barometric Pressure Scale".

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

(b)(3) 10 U.S.C. 130e, (b) (4)

As testified during the NTSB's open hearing, the required 50-foot altitude correction with ESSS installed was not added into the original UH-60A's technical manual, only the airspeed issues with or without ESSS due to the placement of the pitot-static probe above the pilot and co-pilot positions (Annex A and B).¹⁰³ Based on the discovery of this investigation, on 5 August 2025, the U.S. Army issued a Standardization Communication (STACOM) 25-02 to make UH-60 operators aware of the error when ESSS are installed on a UH-60L (Exhibit CS).¹⁰⁴ In response to the NTSB inquiry about the UH-60L pitot-static system and ESSS configuration, the U.S. Redstone Test Center conducted an instrumented flight test evaluation on 11-19 August 2025 (Annex A).¹⁰⁵ Comparing the aircraft Integrated Vehicle Health Management System (IVHMS) data and noted by the NTSB altimeter study, (b)(3) 10 U.S.C. 130e

This anomaly was confirmed upon review of the accident aircraft's IVHMS data (Exhibit CX).¹⁰⁸ It is important to note the requirement for the IVHMS data collection was intended for predictive component based maintenance (CBM) and not as an aircraft FDR (i.e. "Black Box"). A later version of the IVHMS data recorder for UH-60L expanded the memory capacity for post-accident investigation but still lacks some of the recording accuracy as found in a civilian aircraft FDR.

(d) Deviation example: (b)(3) 10 U.S.C. 130e

¹⁰² Annex A: 7-HELO-H Helicopter Airworthiness Report – Addendum, PDF Pages 5-6.

¹⁰³ Annex A: 7-HELO-H Helicopter Airworthiness Report – Addendum, PDF Pages 4-6.

Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Pages 35-53.

¹⁰⁴ Exhibit CS: STACOM 25-02 UH-60 Barometric Altimeter Error with ESSS.

¹⁰⁵ Annex A: US Army UH-60L Barometric Altimeter Test Memorandum, 27 August 2025.

¹⁰⁶ Annex A: 13-HELO-A Altimeter Testing Report – The report provides 3 aircraft used in the NTSB altimeter testing trying to determine how the indicated altitude differs from the recorded IVHMS data.

¹⁰⁷ Annex A: 13-HELO-A Altimeter Testing Report – The report provides 3 aircraft used in the NTSB altimeter testing trying to determine how the indicated altitude differs from the recorded IVHMS data.

¹⁰⁸ Exhibit CX: DCA25MA108 - PAT 25 IVHMS Raw Data – 20250207, reference Tab: Notable Plot Lines to quickly scroll to the line in the raw data (Line 6505 & 28517). This anomaly occurs when the engine torque increases above 30% on both engines and the main rotor system begins applying adequate lifting force to bring the helicopter up to 10-foot hover. While this occurs, the "Altitude Baro" indicates an immediate negative altitude reduction between -40 to -100 feet below sea level.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

(2) As mentioned above, (b)(3) 10 U.S.C. 130e

(Exhibits AB, AC).¹⁰⁹

(b)(3) 10 U.S.C. 130e

(Exhibit ABC).¹¹⁰

(b)(3) 10 U.S.C. 130e

The aircraft transponder's Mode 3 A/C function was transmitting altitudes to the nearest 100 feet as verified by the NTSB's radar track files (Annex A).¹¹⁴ Comparing the

¹⁰⁹ Exhibit AB: TM 1-1520-237-10, Operator's Manual for Helicopter, Utility Tactical Transport, UH-60, PDF Pages 106 and 264.

Exhibit AC: PEO AV response to Flight Data Recorder (FDR) to NTSB and 15-6 Investigation, dated 13 February 2025, PDF Pages 4-5.

¹¹⁰ Exhibit ABC: MIL-A-81852A, Military Specification Altimeter-Encoder AAU-32/A, dated 20 February 1986, PDF Page 9.

¹¹¹ Exhibit ABC: MIL-A-81852A, Military Specification Altimeter-Encoder AAU-32/A, dated 20 February 1986, PDF Page 9.

¹¹² Exhibit AC: PEO AV response to Flight Data Recorder (FDR) to NTSB and 15-6 Investigation, dated 13 February 2025, PDF Pages 1, 2, 5.

Exhibit AE: Sikorsky Memorandum, AVO_25-MISC_DMC-001, dated 10 February 2025, PDF Page 6.

¹¹³ Exhibit AB: TM 1-1520-237-10, Operator's Manual for Helicopter, Utility Tactical Transport, UH-60, PDF Pages 115.

¹¹⁴ Annex A: 13-A History of Flight Performance Study, Figure 14, PDF Page 20.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

aircraft IVHMS data and the NTSB radar track files, PAT 25 at 20:47:55 local time (5 seconds before impact) indicated an “Baro ALT” of 184.68 feet and the transponder sent a reported altitude to DCA ATC at 200 feet. Impact occurred at a radar altitude of 278 feet (Exhibit B).¹¹⁵

(3) The aircraft’s total hours were last recorded at (b)(3) 10 U.S.C. 130e (Exhibit AA).¹¹⁶ On 29 January 2025 IAW the DA Form 2408-13, Aircraft Status Information Record, dated 27 January 2025, the aircraft was Fully Mission Capable (FMC) listed as (b)(3) 10 U.S.C. 130e condition in compliance with all applied Airworthiness Releases (AWR) IAW AR 95-1, AR 700-138, AR 750-1, DA PAM 738-751, and TM (Exhibit AA).¹¹⁷ The aircraft was configured to fly with the External Stores Support System (ESSS) with two CEFS to provide extended operational range (Exhibit G and Annex A).¹¹⁸

(4) IAW the DA Form 2408-13-1 (Open Faults), there were a total of (b)(3) 10 U.S.C. 130e faults (Exhibit AF).¹¹⁹ These open faults did not directly impact the aircrews’ ability to conduct the flight prior to the midair collision.

(5) On 29 January 2025, the aircraft was equipped with the following communications and navigation equipment (COM/NAV): (b)(3) 10 U.S.C. 130e or VIP internal communications (Exhibit AG, AI).¹²⁰ The aircraft was not equipped with TCAS.

(6) IAW the DA Form 2408-13-1 (Closed Faults), the only maintenance action recorded on 29 January 2025 was the (b)(3) 10 U.S.C. 130e and entered by a B Company crew chief (Exhibit AH).¹²¹ This action was completed by the previous duty crew, and the aircraft did not fly earlier that day. The previous duty crew chief recorded the Engine Health Indication Test (HIT) manually in the “paper” logbook

¹¹⁵ Exhibit B: NTSB Aviation Investigation Preliminary Report DCA25MA108, PDF Page 8.

¹¹⁶ Exhibit AA: DA Form 2408-13, Aircraft Status Information Record.

¹¹⁷ Exhibit AA: DA Form 2408-13, Aircraft Status Information Record.

¹¹⁸ Exhibit G: DD Form 365-4, AWBS Form F, Weight and Balance, Aircraft 00- (b)(3) 10 U.S.C. CEFS configuration, dated 6 November 2024.

Annex A: 7-HELO-A Helicopter Airworthiness Group Chairman’s Factual Report, PDF Pages 8.

Annex A: 13-A History of Flight Performance Study, Figure 2, PDF Page 5.

¹¹⁹ Exhibit AF: DA Form 2408-13-1 (Open Faults), Aircraft Inspection and Maintenance Record, PDF Pages 1-6.

¹²⁰ Exhibit AG: Configuration Data Sheet for UH-60L Black Hawk Helicopter, Tail #00- (b)(3) 10 U.S.C. Exhibit AI: DA Form 2408-17, Aircraft Inventory Record, PDF Pages 3, 20-22.

¹²¹ Exhibit AH: DA Form 2408-13-1 (Closed Faults), Aircraft Inspection and Maintenance Record, PDF Page 369.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

IAW the TM and Operator's Checklist (Exhibit BV).¹²² The HIT check information was not entered digitally into the electronic DA Form 2408-13 via the aircraft computer logbook before the training flight and was not relevant to the midair collision.

(7) Based on a preponderance of the evidence and the NTSB findings, all required COM/NAV equipment was functional for the 29 January 2025 flight, but for an improperly configured ADS-B (discussed below).¹²³ However, due to the operational nature of the flight, this did not impact the mission.¹²⁴ IAW AR 95-1, Table 5-2 with Correction Memorandum, dated 22 March 2018, and applied AWRs details the minimum COM/NAV equipment must be functional for Night and NVG modes of flight (Exhibit BM).¹²⁵ IAW Title 14 CFR Part 91 § 91.126, § 91.127, § 91.129, § 91.130, § 91.131, and § 91.135, all aircraft operating in or near Class A, B, C, and D airspace or with a control tower, including Class E and G, must have two-way radio communication with ATC (Exhibit CR).¹²⁶

(8) As discussed earlier, the APX-123A Transponder for the accident aircraft, UH-60L 00-26860, TIME SRC was improperly set to 153, inhibiting any ADS-B Out data from transmitting to the FAA ADS-B ground facility. The time SRC required for proper ADS-B out functionality is prescribed in the MWO instructions as determined by the MWO series applied to the aircraft (Exhibit CZ).¹²⁷ UH-60L helicopters receiving ADS-B upgrade MWO require manual (b)(3) 10 U.S.C. 130e. Prior to this investigation, this phenomenon was not accounted for in standard maintenance procedure, prompting immediate remediation through verification of 12th AVN BN transponder Mode-S addresses and TIME SRC settings, and a subsequent release of Aviation Safety Action Messages (ASAM). The 12th AVN BN inspected all of their UH-60L and UH-60M aircraft and discovered (b)(3) 10 U.S.C. 130e (Exhibit CZ).¹²⁸ The 15-6 Investigating Officer recommended the immediate release of the following ASAMs: H-60-25-ASAM-06, H-64-25-ASAM-03, H-47-25-ASAM-03, H-6-25-ASAM-01, and H-72-25-ASAM-02 (Exhibit DD).¹²⁹ The ASAMs included a recommended diagram change to help aircrews and maintainers understand how to manually change the TIME SRC from 000 to (b)(3) 10 U.S.C. 130e

¹²² Exhibit BV: Aircraft Engine Health Indication Test (HIT) – Recovered Paper Documents – Aircraft 00- (b)(3) 10 U.S.C. 130e PDF Pages 1-11.

¹²³ Exhibit BM: AR 95-1, Flight Regulations, Table 5-2, PDF Page 48.

¹²⁴ Exhibit BL: HQDA EXORD 107-20 Annex A - U.S. Army Aviation Operations Security (OPSEC) Guidance, PDF Page 1, Paragraph 6.

¹²⁵ Exhibit BM: AR 95-1, Flight Regulations, PDF Page 48.

¹²⁶ Exhibit CR: 14 CFR Part 91 - General Operating and Flight Rules, PDF Pages 34-39.

¹²⁷ Exhibit CZ: PEO AV Response 5 – ADS-B INOP Aircraft 00- (b)(3) 10 U.S.C. 130e 28 March 2025, Tab 3 - – Investigation Meeting Transcripts, PDF Pages 5-6.

¹²⁸ Exhibit CZ: PEO AV Response 5 – ADS-B INOP Aircraft 00- (b)(3) 10 U.S.C. 130e 28 March 2025, PDF Page 1.

¹²⁹ Exhibit DD: ASAM – ADS-B Out Compliance – Combined, 27 April 2025, PDF Pages 1, 15, 24, 33, 43.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

(Exhibit CZ).¹³⁰ By the end of July 2025, all 3,585 rotary wing aircraft were inspected for compliance.

(9) After reviewing **ALL** historical maintenance records, only the DA Form 2408-17, Aircraft Inventory Record contained administrative errors (Exhibit AI).¹³¹ IAW DA PAM 738-751, 3-10 and 4-10, the DA Form 2408-17 is used for records management and must be updated every 12 months or during the installation and removal of equipment or aircraft transfers. The administrative errors on the DA Form 2408-17 were not relevant to the midair collision nor did they inhibit the aircraft from operating safely.

RECOMMENDATION 1a: Recommend the immediate safety message release to address known and discovered errors in the UH-60L's (with and without the ESSS installed) pitot-static system, AAU-32/A barometric altimeter, encoding data to the APX-123A Transponder, AN/ASN-128D GPS, IVHMS, and corresponding transponder data (Modes 3A/C, S, and ADS-B Out) sent to air traffic services. The intent is to provide the Army with a total understanding of the complete error accumulation within the components and systems. (COMPLETE)

RECOMMENDATION 1b: Recommend immediate updates from the known errors discovered in UH-60 Operators Manual, Maintenance Test Flight Check List, Electronic Technical Manual (Maintenance Work Orders), and Air Worthiness Releases. Provide corresponding operator and maintainer training to corresponding changes to the technical manuals.

RECOMMENDATION 1c: Recommend U.S. Army Redstone Test Center, Utility Helicopter Program Office and Systems Readiness Division continue to conduct instrumented/telemetry test flights for all aircraft to identify pitot-static errors for rotary-wing aircraft in different external configurations. Conduct further test flight work for the UH-60L because the test flight did not demonstrate test runs during turbulent air, out-of-trim conditions, crab angles, and colder temperature similar to the weather condition on the night of the mid-air collision.

RECOMMENDATION 2: Recommend using the lessons learned from the UH-60L systems, avionics systems, and component errors to conduct an assessment for all other Army rotary wing aircraft. Any findings from other aircraft require an immediate safety message and updates to that aircraft's manuals and inspection criteria.

¹³⁰ Exhibit CZ: PEO AV Response 5 – ADS-B INOP Aircraft 00-(b)(3) 10 USC, 28 March 2025, Tab 5 – 123A Transponder Diagram.

¹³¹ Exhibit AI: DA Form 2408-17, Aircraft Inventory Record, PDF Pages 1-25.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

RECOMMENDATION 3: Recommend equipping all TAAB and 12th AVN BN's aircraft with the necessary avionics/mission equipment (i.e., transponder with ADS-B Out/In capability, TCAS II, etc.) suitable for all aircraft to operate in the Washington DC and Class B airspace in support of the unit's National Security mission.

RECOMMENDATION 4: Recommend the Army's Aviation and Missile Center (AvMC) conduct additional simulations and modeling research on the effects of pressure changes to pitot-static system (altitude and airspeed effects) due to rotary wash when power is applied from the ground to a hover, in-flight, and transitioning back to a hover.

RECOMMENDATION 5: Recommend the Army publish formal training material on how to properly conduct, record, and maintain an aircraft inventory record IAW DA PAM 738-751, Functional User Manual for the Army Maintenance Management System—Aviation, and DA Form 2408-17, Aircraft Inventory Record. In the interim, the 12th AVN BN must conduct formalized training to properly identify and record all installed and uninstalled equipment IAW DA Form 2408-17.

RECOMMENDATION 6: Recommend the AVCOE review and update Initial Entry Rotor Wing (IERW) with an enhanced Program of Instruction (POI) on barometric altimeter's defined instrument and position errors and error stack calculations based upon aircraft flight configurations with their effects while flying in visual or instrument flight rules. This is a combined effort with Recommendation 1 in Paragraph 5g.

RECOMMENDATION 7: Recommend the U.S. Army Aviation and Missile Command (AMCOM) release an Aviation Maintenance Action Message (AMAM) that clarifies the U.S. Army Aviation Enterprise that the TM-1-1520-237-10, UH-60A/L Operators Manual, Section 3-26. Transponder AN/APX-123(V) and AN/APX-123A(V) IFF, Paragraph b(8) is incorrect and "This information is normally supplied to the CXP by the air data transducer" should be removed from the manual. Recommend AMCOM, Utility Helicopter Program Office (UHPO), Aviation Mission System Architecture Program Office (AMSA), and Systems Readiness Division (SRD) release immediate change correction to TM-1-1520-237-10, UH-60A/L Operators Manual IAW TM 11-5895-1841-13&P, Transponder Set - AN/APX-123(C) and AN/APX-123A(C), and TM 1-1520-237-20&P Work Order Packages 0098, 3691, 3693, and 3694.

e. Detail unit training requirements and unit SOPs related to flying in and around Ronald Reagan Washington National Airport (DCA).

(1) **FINDING.** The Army Aviation Brigade (TAAB), to which 12th AVN BN belongs, has a critical mission within the Military District of Washington. IAW the TAAB's annual

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

training guidance, the 12th AVN BN uses a rotational training system IOT assign mission sets while simultaneously allowing subordinate units to train company level mission essential tasks (METs) throughout the year (Exhibit AJ).¹³² The unit trains the DC helicopter route structure daily through continuation training and mission scenario training. The 12th AVN BN is responsible for the Continuity of Government (COG), Continuity of Operations (COOP), and Pentagon missions. These missions have a robust aircraft resourcing requirement, which created the need for an additional Request for Forces (RFF) over the past 4 years since the unit assumed the U.S. Air Force's 1st Helicopter Squadron mission (Exhibits AK and AL).¹³³

(2) The 12th AVN BN routinely operates in the vicinity of the Ronald Reagan Washington National Airport (DCA). Local area orientations are conducted and recorded for newly arrived aviators assigned to the 12th AVN BN IAW the unit's SOP and potential "Pilot in Command candidates will have flown 50 hours in the local area" (Exhibit S).¹³⁴ A Pilot in Command is assigned to every Army flight and has final authority for operating, servicing and securing the piloted aircraft.¹³⁵ Assigned missions require flights into the Pentagon helipad (JPN) and within/around the P-56 prohibited area, generally over the National Mall during COG/COOP missions. Rapid response times – from notification to landing at pre-designated landing zones – necessitates near-direct flight paths from Davison Army Airfield to sensitive locations within Washington DC, utilizing routes 1, 4, and 5. The FAA Baltimore-Washington Helicopter Route Chart¹³⁶ provides the structure of air traffic flow, with known altitudes published to updated digital downloadable files on the FAA website.¹³⁷ The FAA Baltimore-Washington Helicopter route structure has been in existence since 1988, with minimal changes to routes 1 or 4 prior to 29 January 2025 (Exhibit CM).¹³⁸ Although these routes lack formally assigned lateral boundaries, pilots generally adhere to the routes as depicted on the FAA Baltimore-Washington Helicopter Route Chart. The chart includes the following note on its marginal data:

¹³² Exhibit AJ: TAAB Training Guidance for Fiscal Years (FY) 25-26, dated 1 October 2024, PDF Pages 2-4

¹³³ Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Pages 23-29, 35-36 and 56-59.

Exhibit AL: (b) (6), (b) (7)(C) Sworn Statement, dated 18 February 2025, PDF Pages 6 and 14.

¹³⁴ Exhibit S: Aviation Branch Operations SOP, 12th AVN BN Local Procedures Guide, dated 15 July 2024, PDF Pages 23 and 33.

¹³⁵ Exhibit BM: AR 95-1, Flight Regulations, PDF Page 36.

¹³⁶ Annex A: 2-HELO-J Baltimore-Washington Helicopter Route Chart, Reference upper center-right white margin of the map, PDF Page 3.

¹³⁷ FAA Website, Aeronautical Information Services, last visited 27 March 2026, https://www.faa.gov/air_traffic/flight_info/aeronav/productcatalog/vfrcharts/helicopter/

FAA Website, VFR Raster Charts, Helicopter Tab, digital downloadable charts, last visited 27 March 2026, https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/vfr/

¹³⁸ Exhibit CM: 1988 1st Edition Washington DC Helicopter Route Chart.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

NOTE: PILOTS ARE EXPECTED TO MAINTAIN THE MAXIMUM ALTITUDE
CHARTED WHEN CEILING PERMITS, UNLESS OTHERWISE INSTRUCTED BY
ATC

ALL ROUTES MAY BE ALTERED AT PILOT'S REQUEST OR AS DIRECTED BY
ATC.

ROUTE ALTITUDES ARE MAXIMUM (Annex A).¹³⁹

According to witness statements and the NTSB Open Hearing account of Government Accountability Office (GAO) report, the note is intended to keep aircrews at a higher altitude to reduce the potential for noise complaints (Exhibit AK, CN, and Annex B).¹⁴⁰ The 12th AVN BN SOP has added a no lower than 100' MSL below max route altitude restriction for the crews, this is to help prevent flight into terrain or other obstacles and prevent a perception of undisciplined flight patterns (Exhibit S).¹⁴¹

(3) The crew used current flight publications during the flight. The "paper pubs" bag was found in the debris field, and the DC Helicopter routes chart was present in the bag (Exhibit AM).¹⁴² The aircrew was not using the "paper" map at the time of the accident because it was discovered inside the pubs bag (Exhibit AM).¹⁴³ The crew possessed their unit issued iPads, which should have contained the current maps required for the flight. Per the 2-HELO-A NTSB report, "the IP and PI were issued iPad devices from B Company. Both of the devices were recovered from the wreckage area but could not be downloaded" (Annex A).¹⁴⁴ However, the NTSB subsequently released on 27 January 2026 a ForeFlightTrackLog.kml file with a report and stated in the AIR-26-02 final report, "recorded ForeFlight track data from one of the tablets indicated that it was connected to a STRATUS receiver during the accident flight" (Exhibit CW and Annex A).¹⁴⁵ This device showed a track consistent with STRATUS use but according to the

¹³⁹ Annex A: 2-HELO-J Baltimore-Washington Helicopter Route Chart, PDF Page 3.

¹⁴⁰ Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Pages 7-8.

Exhibit CN: (b) (6), (b) (7)(C) Sworn Statement, 19 February 2025, PDF Pages 4-5.

Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Pages 142-144, 241-244; GAO report about noise pollution from rotary aircraft.

¹⁴¹ Exhibit S: Aviation Branch Operations SOP, 12th AVN BN Local Procedures Guide, dated 15 July 2024, PDF Page 43.

¹⁴² Exhibit AM: Publications Bag – Recovered – Photo.

¹⁴³ Exhibit AM: Publications Bag – Recovered – Photo.

¹⁴⁴ Annex A: 2-HELO-A Helicopter Operations and Human Performance Factual Report, PDF Page 43.

¹⁴⁵ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Page 69.

Annex A: Personal Computing Device – iPad Mini 5 – Foreflight Tracklog .kml file, dated 27 January 2026. To view the data, the .kml file must be opened in Google Earth.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

NTSB the device stopped working 14 seconds before the accident (Annex A).¹⁴⁶ The investigation could not determine whether iPads were within crew view in the moments leading up to the collision.

(4) The 12th AVN BN SOP did not have sufficient information regarding the use of the STRATUS ADS-B in receivers. Due to the STRATUS being unit purchased equipment the organization should have had a training plan to educate ACMs on the effective use of the device. Furthermore, the unit tracking system was insufficient to ensure accountability of the unit property which led to confusion during the investigation as to what level of situational awareness the crew would have obtained from the ADS-B-IN signal.

(5) This investigation found that the TAAB RW Aviation Branch Operations SOP (ABOS) dated 15 NOV 24, Emission Control section, overapplied ADS-B Out waiver. Multiple interviewees were concerned about operational risk, and this created an environment where crews left ADS-B Out off when aviation safety could have been enhanced with the equipment transmitting (Annex B).¹⁴⁷ This over application did not directly contribute to the accident, however, because other UH-60 transponder modes populated TIS-B in the DCA radar service area.¹⁴⁸

RECOMMENDATION 1: Recommend the TAAB and 12th AVN BN create an iteration/currency tracker for the DC Helicopter routes. This will assist Mission Briefing Officers and crews by integrating currency into the planning process and allow for more detailed planning which will ensure adherence to established standards.

RECOMMENDATION 2: Recommend the TAAB and 12th AVN BN create a unit SOP covering specific use of the electronic flight bags (EFB). SOP should also cover the use of STRATUS ADS-B receivers as a situational awareness tool and cover known limitations of EFB. This will ensure crews are familiar with limitations of Foreflight and associated operational limitations. Recommend AVCOE review the Aviation SOP to be updated across all Army Aviation organizations for EFB and STRATUS use.

RECOMMENDATION 3: HQDA G3/5/7 (DAMO-AV) revise AR 95-1 to allow mounting of EFB to the aircraft IOT increase aircrew situational awareness. An operational test evaluation should be conducted to find the most effective way to mount EFBs in current Army aircraft.

¹⁴⁶ Annex A: Personal Electronic Devices – Portable Computing Devices, PDF Page 6.

¹⁴⁷ Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Pages 194-198, 226-228, 266-269.

¹⁴⁸ Annex A: 2-HELO-I ADS-B Policies and Agreements, Page 10.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

f. Were there any organizational issues, such as inadequate maintenance, insufficient resources, or lack of unit/individual training?

(1) **FINDING:** Yes, there are organizational, mixed fleet maintenance, and unit training challenges with resource constraints at the 12th AVN BN. The 12th AVN BN has a generally positive command, training, and maintenance culture. Through various witness interviews and dialogue with the unit, they are highly mission focused, enjoy being assigned to the unit, and the tasks they are assigned (Exhibits AK, AL, AN, AO, AP, AQ, AR, and AS).¹⁴⁹ The unit Commander must carefully balance the number of aircrews and aircraft assigned to their daily missions set, while finding ways to conduct continuation training. The 12th AVN BN is a Tables of Distribution and Allowances (TDA) unit and is not manned/fielded at the same design as a Modified Tables of Organization and Equipment (MTOE) UH-60 helicopter battalion (Exhibits CG, CH).¹⁵⁰ The Battalion is comprised of three helicopter companies (1x UH-60M Company and 2x UH-60L Companies). The UH-60M Company has (b) (6), (b) (7)(C) VH-60M (VIP Black & Gold painted aircraft) and (b) (6), (b) (7)(C) UH-60M aircraft. The Maintenance Company is predominately manned by Department of the Army Civilians (DACs) to conduct aircraft maintenance and Officers and Noncommissioned Officers (NCO) to manage the maintenance. The 911 Engineer Company is assigned as part of the Battalion's special mission requirement and is not common to any other helicopter battalion. Daily, the Battalion allocates 60% of the available force to mandatory mission sets, which does not include standard training flights, readiness level progression flights, Operational Support Airlift (OSA) missions, and/or air mission requests (AMR). The Battalion has a self-imposed constraint on how far away aircrews can fly away from home station to train because they must remain within proximity to support their mission sets (SOP uses the term "Long Leash" and "Short Leash" to describe the mission set limitations) (Exhibits S).¹⁵¹

(2) Per Army Human Resources Command's (HRC) Aviation Branch Talent Management Office, the unit is manned at the prescribed TDA, but this does not reflect the unit's challenges. The Battalion has a specific number of 15T Black Hawk Mechanics, to conduct both aircraft maintenance and flight duties as crew chiefs. Not all available 15Ts on-hand are medically qualified for flight duty, which limits the total number of available crew chiefs to fly (Exhibits AK, AL, and AR).¹⁵² The Battalion

¹⁴⁹ Exhibits AK, AL, AN, AO, AP, AQ, AR, AS are all sworn statements from 12th AVN BN unit members.

¹⁵⁰ Exhibit CG: W0Y4AA – 12 AV BN – Position and Equipment, approved 2 October 2023.

Exhibit CH: W0Y4AA – 12 AV BN – Position and Equipment, approved 4 January 2025.

¹⁵¹ Exhibit S: Aviation Branch Operations SOP, 12th AVN BN Local Procedures Guide, dated 15 July 2024, PDF Page 49-50.

¹⁵² Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Pages 14-16 and 37-

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

submits their manning challenges monthly on the Unit Status Report (USR) (Exhibit AK).¹⁵³ The unit must have medically qualified 15Ts above the current number assigned to perform crewmember duties. During certain classified missions, to maximize available seats for passengers, the aircrew will only fly with one crew chief to allow placement of a passenger in the second crew chief's seat. However, the unit should not have this constraint for manning NVG training flights.

(3) In 2018, the Joint Staff tasked 12th AVN BN to conduct the U.S. Air Force's 1st Helicopter Squadron (HELI SQD) missions during their fleet modernization window. The 1st HELI SQD's existing UH-1N helicopters no longer met their customer's mission requirements. Because the 12th AVN BN also lacked the required capabilities, a Request for Forces (RFF) was approved to attach a rotational guard or reserve component UH-60 helicopter company for 9-month intervals. This rotational support has now continued for over seven years—two years beyond the planned modernization window for the 1st HELI SQD (Exhibit AK, AQ).¹⁵⁴ Each new Army National Guard (ARNG) rotational unit brings additional operational risk and management burdens for the 12th AVN BN. In a previous Global Force Management Allocation Plan (GFMALP) submission, the Army non-concurred with continuing RFF support, and the issue was returned to the Joint Staff for adjudication. The Joint Staff adjudication outcome required the Army to continue to conduct the mission with RFF support, inducing recurring changes in command relationships through rotational Army National Guard Aviation augmentation. To build and gain operational efficiencies in training, manning, maintenance, and logistics, the TAAB has submitted requests to HQDA to change the TDA to equip the 12th AVN BN with UH-60M Black Hawk helicopters. These requests have been disapproved after each submission (Exhibits AT, AU, AV, AW).¹⁵⁵ Based on discoveries enabled by this investigation, on 26 September 2025, the Army released HQDA EXORD 294-25 for the immediate transfer of 16 UH-60M helicopters to 12th AVN BN to replace their 16 UH-60L helicopters. These 15 UH-60L helicopters, which did not

39.

Exhibit AL: (b) (6), (b) (7)(C) Sworn Statement, dated 18 February 2025, PDF Pages 8-10 and 14.

Exhibit AR: (b) (6), (b) (7)(C) Sworn Statement, dated 10 February 2025, PDF Pages 18-19, 25-27, and 30-31.

¹⁵³ Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Pages 14-17 and 38-39.

¹⁵⁴ Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Pages 23-26 and 53-55.

Exhibit AQ: (b) (6), (b) (7)(C) Sworn Statement, dated 20 February 2025, PDF Pages 3-7.

¹⁵⁵ Exhibit AT: TDA Personnel Comparison from FY2024 to FY2025.

Exhibit AU: TAAB UH-60M Pure Fleet Request Packet.

Exhibit AV: HQDA Equipment Review and Validation Board (EVRB) Decisions, dated 20 November 2024, PDF Pages 1-2 and 9.

Exhibit AW: Email Correspondence for EVRB submission for MWD.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

include the accident aircraft were delivered to the Black Hawk Exchange Sales Program (BEST) to be officially divested from the Army's inventory. The transfer of the UH-60M helicopters was completed on 2 February 2026.

(4) Beyond the 12th AVN BN's mandated missions from the OSD, Joint Staff, U.S. Northern Command (NORTHCOM), and Joint Task Force–National Capital Region (JTF-NCR), it is the only active-duty utility helicopter unit within a 200 nautical mile radius from the NCR. On 10 July 2007, U.S. Army Training and Doctrine Command's (TRADOC) Flight Detachment (FLT DET) at Ft. Eustis, VA changed their UH-60A helicopters for LUH-72A helicopters. On 8 September 2015, the TRADOC FLT DET was deactivated, and those aircraft were repositioned to Ft. Rucker, AL during the Aviation Restructure Initiative (ARI).¹⁵⁶ The Air Mission Requests previously assigned to TRADOC shifted to the 12th AVN BN for support.

(5) The 12th AVN BN is a mixed H-60 helicopter variant Battalion (Exhibit AK, AP).¹⁵⁷ The VH-60M aircraft is a specially modified aircraft used to support U.S. government officials. The VH-60M aircraft has a specialized Air Worthiness Release (AWR) to operate in its current configuration. All six H-60M variant aircraft are the only aircraft in the battalion with an 1994-1999 released commercial-off-the-shelf (COTS) purchased Bendix/King Traffic Collision and Avoidance System (TCAS) I with an associated AWR to operate (Exhibit AP, BA, CE).¹⁵⁸ During this investigation, only one TCAS system was operational due to a lack of repair components, as the original vendor, Bendix/King, sold to Honeywell Aerospace. The remaining aircraft are older UH-60L helicopters with multiple AWRs and Modification Work Orders (MWO) to meet all regulatory safety and operational compliance requirements. The UH-60L involved in the midair collision was one of two aircraft configured with an external range fuel system (i.e. CEFS/ESSS) to extend the aircraft's range for mission support or training.¹⁵⁹ The unit's UH-60L and UH-60M airframe ages range from 36 to 12 years in service. (Exhibit DC).¹⁶⁰

¹⁵⁶ Joint Base Langley-Eustis Website, Article: TRADOC Flight Det. Deactivates, dated 9 September 2015, <https://www.jble.af.mil/News/Article-Display/Article/843454/tradoc-flight-det-deactivates/>

¹⁵⁷ Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Page 19.

Exhibit AP: (b) (6), (b) (7)(C) Sworn Statement, dated 20 February 2025, PDF Pages 5-8.

¹⁵⁸ Exhibit AP: (b) (6), (b) (7)(C) Sworn Statement, dated 20 February 2025, PDF Pages 8-12 and 61-62.

Exhibit BA: AWR for Specified UH-60M MDW Aircraft (AWR 1711), 10 January 2024, PDF Pages 2-3.

Exhibit CE: Bendix/King (Honeywell) - CAS 66A Pilot's Guide: Bendix/King TCAS I Collision Avoidance System, Revision 7, dated February 2006.

¹⁵⁹ All U.S. Army H-60 variants possess the ability to install and deinstall the extended range fuel system (ERFS) IAW applicable technical manuals. All U.S. Army H-60 pilots must conduct formalized training to operate a H-60 with ERFS installed IAW H-60 Series Aircrew Training Manual (ATM), Task 1066.

¹⁶⁰ Exhibit DC: 12th AVN BN Helicopter Fleet Data, Excel Spreadsheet, tabs C154 (89-26154) and A636 (13-2036).

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

(6) Aircraft maintenance challenges occur periodically due to parts availability and supply chain management (Exhibit AP).¹⁶¹ The Battalion's Force or Activity Designator (F/AD)¹⁶² status was changed from III to II in August 2022 to help increase its prioritization for parts procurement (Exhibit AX).¹⁶³ An additional challenge remains, however, as the rotational unit may send either UH-60L or UH-60M aircraft and their aircrews and maintainers are at varying stages of readiness. The Battalion has augmented other support activities by borrowing fuel trucks, personnel, and other mission support equipment due to mission expansion not supported by the RFF (Exhibit AK, AL).¹⁶⁴

(7) Unit personnel interviewed did not indicate any concern regarding poor maintenance practices or safety concerns operating their aircraft. Additionally, an initial indicator that the Battalion would have concerns maintaining Army regulations, policies, and directives would have been highlighted during the U.S. Army Forces Command (FORSCOM) Aviation Resource Management Survey (ARMS). (b) (6), (b) (7)(C) first FORSCOM ARMS inspection as the BN CDR was completed on 22 November 2024, in which the BN scored SATISFACTORY (Exhibit AY).¹⁶⁵ This was a marked improvement over a prior Site Assistance Visit (SAV) by the FORSCOM ARMS Team on 18 May 2021, when the BN, under a prior commander, received an overall score of UNSATISFACTORY (Exhibit AZ).¹⁶⁶

RECOMMENDATION 1: Change 12th AVN BN from TDA unit to a MTOE organization to meet all classified National Security missions.

RECOMMENDATION 2: Recommend HQDA G-3/5/7 equip the 12th AVN BN as a MTOE unit to simplify training, manning, maintenance, and supply parts stockage.

RECOMMENDATION 3: Recommend the Joint Staff re-adjudicate the 1st HELI SQD mission set requirements and conduct a risk assessment of the current ad hoc command

¹⁶¹ Exhibit AP: (b) (6), (b) (7)(C) Sworn Statement, dated 20 February 2025, PDF Pages 39-41, 68-71.

¹⁶² F/AD is a Roman numeral (I to V) that the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, or a DoD component assigns to a unit, organization, installation, project, or program to indicate its relative mission essentiality. F/ADs are used to establish a matrix of priorities used for supply requisitions. F/ADs are ranked with F/AD I being the highest and F/AD V being the lowest priority. CJCSI 4110.01F, Joint Materiel Priorities and Allocations.

¹⁶³ Exhibit AX: FAD Upgrade GO Memo (MDW and DAMO-FM), 17 August 2022.

¹⁶⁴ Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Pages 40-43.

Exhibit AL: (b) (6), (b) (7)(C) Sworn Statement, dated 18 February 2025, PDF Pages 6-9.

¹⁶⁵ Exhibit AY: FORSCOM FY25 Aviation Resource Management Survey, PDF Page 13.

¹⁶⁶ Exhibit AZ: FORSCOM FY21 ARMS Site Assisted Survey, PDF Page 10.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

and control relationship associated with the use of multi-COMPO augmentation for 12th AVN BN.

RECOMMENDATION 4: Recommend HRC resource 12th AVN BN by manning the unit with pre-screened 15T Black Hawk Mechanics that meet AR 40-501 aeromedical requirements. The unit must be manned to support 2x crew chiefs per aircraft due to operations in high traffic national airspace.

g. Were there any communication issues, such as an inability to transmit or receive voice or data transmissions, including transponder altitude reporting, Automatic Terminal Information Service (ATIS) broadcasts, and positive two-way communications with Air Traffic Control.

(1) **FINDING.** Yes, the PAT 25 aircrew was managing significant communication issues while communicating with DCA Tower. The Washington DCA Class B airspace uses two separate frequencies to enable local controllers to communicate with both fixed wing and helicopter route traffic. The radio frequency for helicopter operations on route 4 is VHF [REDACTED] and DCA TWR landing/departing fixed wing traffic monitor VHF 119.1 (Annex A).¹⁶⁷ The tower local controller dual transmits on both frequencies, but fixed wing and helicopter traffic do not hear the other frequency (Annex B).¹⁶⁸ There is no requirement to monitor both frequencies (Annex A and B).¹⁶⁹ This split frequency system may have contributed to the accident. Hearing the other aircraft on a shared frequency might have prevented the collision.

(2) PAT 25 was monitoring [REDACTED] the night of 29 January 2025 from 7 miles north of Cabin John until the accident. During the portion of the flight along the DC helicopter route from Cabin John to the accident site, the IP and PI had trouble hearing transmissions from tower which could be due to a multitude of factors to include antenna positioning, terrain masking, or additional aircraft transmitting on frequency. The crew changed radios to alleviate the poor reception, but the CVDR data reveals the crew was unable to hear critical information about AA5342 (Exhibits B and Annex A). In agreement with the NTSB, the inability to hear clear and concise radio transmissions did directly contribute to the accident.¹⁷⁰

¹⁶⁷ Annex A: 2-HELO-J Baltimore-Washington Helicopter Route Chart, PDF Page 3.

¹⁶⁸ Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Pages 150-154 and 205-207.

¹⁶⁹ Annex A: 2-HELO-J Baltimore-Washington Helicopter Route Chart, PDF Page 3.

Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Pages 150-154 and 205-207.

¹⁷⁰ Exhibit B: NTSB Aviation Investigation Preliminary Report DCA25MA108, Page 5, 7.

Annex A: 12-HELO-A CVR (Helicopter) Factual Report, PDF Pages 9, 38, 59, and 93.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

(3) Due to radio transmission interference, the PAT 25 crew did not receive critical information about aircraft landing at DCA. When ATC advised PAT 25 of landing traffic to runway 33, CVDR data confirms that the portion of the transmission from ATC stating “circling” was not received by the PAT 25 crew due to interference (Exhibits B, D and Annex A).¹⁷¹ This radio call also corresponded to a critical phase of flight where PAT 25 was executing a series of steep turns between Memorial Bridge and the Jefferson Memorial. Specifically, according to the NTSB briefing, dated 14 February 2025, a radio transmission from the DCA tower at 20:46:01, just under two minutes before the collision, audible on AA5342’s CVDR, attempted to inform PAT 25 that aircraft traffic “just south of the Woodrow Wilson Bridge was a CRJ at 1200 feet circling to runway 33” (Exhibit D).¹⁷² The NTSB report further states that the word “circling” was not heard on PAT 25’s CVR data (Exhibit CW).¹⁷³ It is reasonable to conclude that during this portion of the flight the Pilot in Command looked south towards Woodrow Wilson Bridge and saw multiple lights and could not clearly distinguish AA5342 from other lights at that distance under NVGs (Exhibit CD, CF).¹⁷⁴

(4) The final communication exchange from the DCA TWR LC and PAT 25 occurred over approximately 5 seconds between 20:47:39 and 20:47:44 (Annex A).¹⁷⁵ During this exchange the crew of PAT 25 did not receive key information that may have cued them into the presence of AA5342 on final for RWY 33. During the exchange DCA LC transmitted, “PAT two five do you have that C-R-J in sight?”, and prior to receiving an answer from PAT 25, the Controller proceeded to transmit, “PAT two five pass behind that C-R-J”. PAT 25 CVR shows that the call stating, “PAT two five pass behind that C-R-J” was interrupted by 0.8 second mic key. It is reasonable to infer that this mic key was to respond to the first call and inadvertently blocked out the important detail of “pass behind”. The IP requested to maintain visual separation from traffic, which this investigation can only assess was in reference to aircraft on the horizon lined up for RWY 01. This miscommunication combined with the previous radio exchange outlined in paragraph 5g(3) above led to a situational awareness gap. The NTSB determined, “expectation bias”¹⁷⁶ likely played a role in the instructor pilot’s (IP) ineffective scan

¹⁷¹ Exhibit B: NTSB Aviation Investigation Preliminary Report DCA25MA108, Page 5, 7.

Exhibit D: NTSB Briefing Points on Mid-Air Collision near DCA, PDF Page 4.

Annex A: 23-A CVR and ATC Combined Transcript Factual Report, PDF Page 30, Line: 20:46:01.6

¹⁷² Exhibit D: NTSB Briefing Points on Mid-Air Collision near DCA, PDF Page 3-4.

¹⁷³ Exhibit B: NTSB Aviation Investigation Preliminary Report DCA25MA108, PDF Page 5.

Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Page 267.

¹⁷⁴ Exhibit CD: DCA Perimeter Sector 6B Camera Image, 29 January 2025.

Exhibit CF: Aircraft Orientation Reconstruction – Prior to Mid-Air, dated 27 March 2025.

¹⁷⁵ Annex A: 23-A CVR and ATC Combined Transcript Factual Report, PDF Page 33.

¹⁷⁶ Williams, J.B., D. Popp, K.A. Kobak, and M.J. Detke. “P-640 - the Power of Expectation Bias.” *European*

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

following the controller's traffic callouts" (Exhibit CW).¹⁷⁷ The investigation team concurs with the NTSB that PAT 25 had an expectation of traffic approaching runway 01 but disagrees with their determination of "expectation bias".

RECOMMENDATION 1: Recommend the AVCOE review and update IERW POI to include both pilot and controller applied visual separation. This is a combined effort with Recommendation 6 in Paragraph 5d.

RECOMMENDATION 2: If the aircraft is capable, 12th AVN BN SOP should require dual monitoring of VHF (b)(3) 10 U.S.C. 130e and 119.1 while operating near DCA final approach corridors. This would include the portion of Helicopter Routes 1 and 4 from Cabin John to Fort Washington, and Helicopter Route 3 along Woodrow Wilson Bridge. The SOP should also allow for crews to frequency change as required for communication with Pentagon Tower when required.

h. Was the aircraft equipped with the Traffic Alert and Collision Avoidance System (TCAS) and whether it was functioning properly? If neither, why was that?¹⁷⁸

(1) **FINDING.** No, UH-60L (tail #00 (b)(3) 10 U.S.C. 130e) aircraft was not equipped with a Traffic Alert and Collision Avoidance System (TCAS). TCAS is not a standard avionics system applied to Army rotary-wing aircraft and has not been validated through the requirements process into a program of record (PoR).¹⁷⁹ The UH-60L (tail #00- (b)(3) 10 U.S.C. 130e) involved in the accident was not equipped with TCAS (Exhibits AI, AG).¹⁸⁰ The 12th AVN BN's H-60Ms are the only aircraft with AWR 1711-R13, dated 10 January 2024, for the following tail numbers: (b)(3) 10 U.S.C. 130e (Exhibits BA).¹⁸¹ Those assigned tail numbers are the only aircraft equipped with the Bendix/King TI-66D TCAS I. The TI-66D is a COTS purchased 1994-1999 manufactured version of TCAS (Exhibit CE, CI).¹⁸² IAW the AWR, there are limitations to the installed equipment,

Psychiatry 27, no. S1 (2012): 1–1. [https://doi.org/10.1016/S0924-9338\(12\)74807-1](https://doi.org/10.1016/S0924-9338(12)74807-1). "Expectation bias (EB) occurs when an individual's expectations about an outcome influence perceptions of one's own or others' behavior".

¹⁷⁷ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Page 272.

¹⁷⁸ Exhibit CC for comprehensive overview of this section's information related to ADS-B Out operations.

¹⁷⁹ A program of record, or "PoR" is a formal acquisition program that has been approved and authorized by the appropriate level of authority within the Department of the Army or Department of War.

¹⁸⁰ Exhibit AI: DA Form 2408-17, Aircraft Inventory Record; TCAS is not listed on the aircraft inventory.

Exhibit AG: Configuration Data Sheet for UH-60L Black Hawk Helicopter, Tail #00- (b)(3) 10 U.S.C. 130e; TCAS is not listed as a configuration equipment for AWR or MWO installation.

¹⁸¹ Exhibit BA: AWR for Specified UH-60M MDW Aircraft (AWR 1711), 10 January 2024, PDF Pages 2-3.

¹⁸² Exhibit CE: Bendix/King (Honeywell) - CAS 66A Pilot's Guide: Bendix/King TCAS I Collision Avoidance

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

as it did not complete Army AWR qualification testing as a PoR (Exhibit BA).¹⁸³ During the investigation, only one TCAS equipped aircraft has an operational TCAS due to lack of component repair parts and the original vendor, Bendix/King, was sold to Honeywell Aerospace (Exhibits AP, AR).¹⁸⁴ Honeywell Aerospace only offers TCAS II equipment.¹⁸⁵ Due to sensitivity levels associated with low-level flight profiles the system downgrades a target from Resolution Alert (RA) to a Traffic Alert (TA) (Exhibit BB, BC, BD).¹⁸⁶ As referenced during the NTSB Public Hearing in July 2025 and PSA Policy, airline pilots alter their response to a TA based upon their flight profile, "if receiving a TA; do not maneuver based on a TA alone; attempt to see the reported traffic" (Exhibit CW).¹⁸⁷

(2) The PAT 25 UH-60L (tail #00 [REDACTED]) was equipped with an AN/APX-123A Digital Transponder (CXP) which meets the FAA's Automatic Dependent Surveillance—Broadcast (ADS-B) Out¹⁸⁸ mandate (Exhibits AI, AG, BE).¹⁸⁹ In May 2010, the FAA issued Title 14 CFR Part 91, §91.225 and §91.227 mandating that all aircraft operating in the NAS will be ADS-B equipped NLT 1 January 2020 (Exhibits BE, CJ).¹⁹⁰ IAW 14 CFR, Part 91 § 91.225, after January 1, 2020, unless otherwise authorized by ATC, no person may operate an aircraft in Class A airspace unless the aircraft has ADS-B equipment installed. ADS-B is required for aircraft to operate in Class A, B, C, and D airspace, as well as all class E airspace at or above 10,000 feet mean sea level (Exhibit BE).

(3) In response to Title 14 CFR Part 91, § 91.225, the then DOD coordinated with the FAA to meet or request exemptions for the ADS-B mandate.

(a) In 2010, the FAA started the proposed rulemaking for Federal Register

System, Revision 7, dated February 2006.

Exhibit CI: PEO AV Response 2 to 15-6 Questions, 21 February 2025, PDF Pages 4-5.

¹⁸³ Exhibit BA: AWR for Specified UH-60M MDW Aircraft (AWR 1711), 10 January 2024.

¹⁸⁴ Exhibit AP: (b) (6), (b) (7)(C) Sworn Statement, dated 20 February 2025, PDF Pages 11-12.

Exhibit AR: (b) (6), (b) (7)(C) Sworn Statement, dated 10 February 2025, PDF Pages 6 and 20.

¹⁸⁵ Honeywell Aerospace Technologies; Traffic Awareness,

<https://aerospace.honeywell.com/us/en/products-and-services/products/cabin-and-cockpit/terrain-and-traffic-awareness/traffic-awareness>.

¹⁸⁶ Exhibit BB: FAA Introduction to TCAS II, PDF Pages 22, 28,

Exhibit BC: HQDA G-3/5/7 TCAS-ADSB Memorandum, PDF Pages 1-2.

Exhibit BD: FAA TCAS II Tutorial - Presentation, PDF Page 8.

¹⁸⁷ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 189-190.

¹⁸⁸ ADS-B Out works by broadcasting information about an aircraft's GPS location, altitude, ground speed and other data to ground stations and other aircraft, once per second. Air traffic controllers and properly equipped aircraft can immediately receive this information.

¹⁸⁹ Exhibit AI: DA Form 2408-17, Aircraft Inventory Record, PDF Pages 1 and 4.

Exhibit AG: Configuration Data Sheet for UH-60L Black Hawk Helicopter, Tail #00 [REDACTED].

Exhibit BE: CFR, Title 14, Part 91 § 91.225, ADS-B Out Equipment and Use.

¹⁹⁰ Exhibit BE: CFR, Title 14, Part 91 § 91.225, ADS-B Out Equipment and Use.

Exhibit CJ: CFR, Title 14, Part 91 § 91.22, ADS-B Out Equipment Performance Requirements.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

(FR), Volume 75, Number 103 - Automatic Dependent Surveillance—Broadcast (ADS-B) Out Performance Requirements to Support Air Traffic Control (ATC) Service (Exhibit BF).¹⁹¹ IAW FAA Docket Number: FAA-2007-29305, Amendment No. 91-314, the US Air Force, ISO DOD, submitted comments to address safety, efficiency, security, and affordability to the proposal (Exhibit CK).¹⁹² On 30 June 2010, the FAA made changes to the FR: “The FAA will collaborate with the appropriate U.S. Government departments or agencies (including but not limited to DOD, and the Department of Homeland Security) to develop Memorandums of Agreement to accommodate their National defense mission requirements while supporting the needs of all other NAS users” (Exhibit BH).¹⁹³

(b) On 26 July 2018, on behalf of the DOD, the Secretary of the Air Force and the Administrator of the FAA signed a Memorandum of Agreement (MOA). The MOA outlines responsibilities the “Parties” (FAA and DOD) will do to reach accommodations for the DoD prior to the 1 January 2020 mandate for ADS-B Out. The Parties acknowledge operational security was the lead discussion point given the nature of missions conducted by DOD aircraft. The FAA and DOD provides accommodation for DOD aircraft that are not equipped with ADS-B Out or transmitting ADS-B Out after January 1, 2020, what may take a different form and therefore require further discussions (Exhibit BI).¹⁹⁴

(c) On 3 January 2018, the Fiscal Year (FY) 2019 National Defense Authorization Act (NDAA), Section 1046, Mitigation of Operational Risk posed to Certain Military Aircraft by Automatic Dependent Surveillance-Broadcast Equipment, stated the Secretary of Transportation may not directly or indirectly require special mission aircraft to install ADS-B equipment. Section 1046 required the Secretary of Transportation and Secretary of Defense to jointly submit to the congressional committee any MOA or other similar agreement providing special mission aircraft not equipped or not yet equipped with ADS-B equipment that will be reasonably accommodated for safe operations in the NAS and provided with necessary air traffic control services (Exhibit BJ).¹⁹⁵

(d) On 9 August 2019, the FAA Airspace Services Director sent a letter to the DoD Policy Board on Federal Aviation (PBFA) Executive Director due to the DOD requesting a national letter of authorization from the FAA to be exempted from 14 CFR Part 91, § 91.225, prior to the 1 January 2020 mandate for specific aircraft to not be ADS-B equipped and operate in the NAS with ADS-B Out OFF due to operational security and other concerns (Exhibit BK).¹⁹⁶

¹⁹¹ Exhibit BH: Exhibit BH: Federal Register, Vol. 75, No.103, 28 May 2010.

¹⁹² Exhibit CK: FAA Docket No. FAA-2007-29305, Amendment No. 91-314, PDF Page 2.

¹⁹³ Exhibit BH: Federal Register, Vol. 75, No.103, 28 May 2010.

¹⁹⁴ Exhibit BI: DoD/FAA ADS-B Memorandum of Agreement, July 2018, PDF Page 2.

¹⁹⁵ Exhibit BJ: NDAA, Public Law 115-232, Section 1046: Mitigation of Operational Risks posed to Certain Military Aircraft by Automatic Dependent Surveillance-Broadcast Equipment, 13 August 2018.

¹⁹⁶ Exhibit BK: FAA Letter of Authorization for Non ADS-B Equipped DoD Aircraft, PDF Pages 1-2.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

(e) On 14 July 2020, the Army released Headquarters, Department of the Army (HQDA) Execution Order (EXORD) 107-20 ISO Issuing U.S. Army Interim Operations Security (OPSEC) and Transponder Emission Guidance for Aviation Operations. Directs rapid revision of AR 95-1 to adjust Paragraph 2-14b(2)(j) by adding collision avoidance and other onboard systems to mitigate operational risk. It adjusts Paragraph 2-14b(2)(k) by adding "Commanders¹⁹⁷ with Moderate Risk Approval Authority will determine when ADS-B Out Off operations, TCAS OFF operations, or ADS-B Out OFF and TCAS OFF operations are required. Authorizations may be delegated to the Low-Risk Approval Authority. (b)(3) 10 U.S.C. 130e

(Exhibit BL).¹⁹⁸ Post release of HQDA EXORD 107-20, AR 95-1 has not been updated and the new version is still in draft form. Currently, AR-95-1, para. 2-14b(2)(j) Step 2 – mission planning and briefing, reads: "Mitigate operational security risks for sensitive or classified aviation operations when the aircraft is assigned a unique address code and/or the location is broadcast by Automatic Dependent Surveillance-Broadcast (ADS-B), Mode S Transponders, or personal electronic devices" (Exhibit BM).¹⁹⁹ The approval for ADS-B Out is at the discretion of the aircrew and discussed with the Mission Briefing Officer (MBO), not with the risk approval authority.

(f) On 8 June 2023, a congressional response letter from the Vice Director of the Joint Staff was sent to the Honorable Eleanor Norton, U.S. House of Representatives delegate from the District of Columbia. Honorable Norton sent a letter to the Secretary of Defense on 17 May 2023 requesting clarification about military aircraft utilizing ADS-B Out during mission within the National Capital Region (NCR). The response stated, "the [TAAB] at Fort Belvoir and Marine Helicopter Squadron One execute (b)(3) 10 U.S.C. 130e" (Exhibit BO-BP).²⁰⁰ Following the accident, the Honorable Norton sent a letter to the Secretary of Defense on 14 February 2025 requesting clarification of the 2023 response letter and conflicting information about ADS-B enabled in the NCR. A response was requested NLT 11 March 2025 (Exhibit BO-BP).²⁰¹

(g) On 10 May 2024, the Memorandum of Agreement (MOA) between the DoD and FAA was signed by both agencies (Exhibit BN).²⁰² Due to OPSEC concerns, the 2019 NDAA authorizes certain aircraft appropriately equipped with ADS-B Out to not

¹⁹⁷ IAW AR 95-1 the moderate risk approval authority is generally the Battalion Commander (LTC/O-5).

¹⁹⁸ Exhibit BL: HQDA EXORD 107-20, Annex A – US Army OPSEC Guidance, PDF Pages 1-3.

¹⁹⁹ Exhibit BM: AR 95-1, Flight Regulations, PDF Page 20.

²⁰⁰ Exhibits BO-BP: Congressional Correspondence, PDF Page 2.

²⁰¹ Exhibits BO-BP: Congressional Correspondence, PDF Page 1.

²⁰² Exhibit BN: FAA/DOD ADS-B Accommodations MOA, PDF Page 7.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

transmit ADS-B Out data (Exhibit BJ).²⁰³ Paragraph 4.2.3 of the MOA contains a provision for DOD to maintain a list of airframes the DoD will not equip with ADS-B Out due to imminent retirement or mission requirements that do not align with the broadcast nature of ADS-B Out, such as when there are OPSEC concerns (Exhibit BN).²⁰⁴

(4) TAAB, ADS-B Out OFF Operations within the National Air Space (NAS) memorandum, signed 9 August 2024 by the Brigade Commander:

Policy: Aircrews conducting ADS-B Out off operations in the NAS must meet the following conditions (Exhibit BQ)²⁰⁵:

A) Commanders with moderate risk approval authority will determine when ADS-B Out off operations are required. Authorization may be delegated to the low-risk approval authority. Authorizations shall not be granted for routine, non-sensitive or non-classified missions.

(b)(3) 10 U.S.C. 130e

(5) TAAB Rotary Wing Aviation SOP, signed 15 November 2024, Chapter 4, Emission Control (Exhibit S)²⁰⁶:

4-3. Aircrews conducting sensitive or classified operations shall consider flight identification emissions during pre-flight planning.

4-4. Sensitive and/or classified missions include but are not limited to flights conducted ISO:

- Simulated and actual named contingency lines.
- Planned JTF-NCR exercises.
- DV/VIP operations in which the itinerary is known/suspected to be known as public knowledge.
- LAO and training flights conducted to mission sites and/or utilizing

²⁰³ Exhibit BJ: NDAA, Public Law 115-232, Section 1046: Mitigation of Operational Risks posed to Certain Military Aircraft by Automatic Dependent Surveillance-Broadcast Equipment, 13 August 2018, PDF Page 2.

²⁰⁴ Exhibit BN: FAA/DOD ADS-B Accommodations MOA, Paragraph 4.2.3, PDF Page 4.

²⁰⁵ Exhibit BQ: TAAB Commander ADS-B Out Operations Policy Letter, PDF Pages 2-3.

²⁰⁶ Exhibit S: Aviation Branch Operations SOP, 12th AVN BN Local Procedures Guide, dated 15 July 2024, PDF Page 39.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

mission routing.

(b)(3) 10 U.S.C. 130e

(6) In response to Title 14 CFR Part 91, § 91.225, in 2011 the Army submitted the Global Air Traffic Management (GATM) Capability Production Document (CPD) into the requirement process (Exhibit BR).²⁰⁷ The CPD is Increment Two of the Operational Requirement Document (ORD), dated 12 Jun 2000. BAE Systems was awarded the contract to produce the AN/APX-123A(V). BAE Systems previously produced the AN/APX-118(V) and AN/APX-123(V), which were previous CXP upgrades for Mode S and 5 (Exhibit CI).²⁰⁸ On 6 February 2020 and 12 October 2022, the AN/APX-123A(V) received Radio Frequency Authorization (RFA) from the National Telecommunications and Information Administration (NTIA) (Exhibit CI).²⁰⁹ The U.S. Department of Defense (DoD) International Air Traffic Control Radar Beacon System, IFF, Mark XII/Mark XIIA, Systems (AIMS) Program Office (AIMS PO) certifies the transponder complies with necessary military performance standards and interoperability requirements (Exhibit CI).²¹⁰

(7) PAT 25 was emitting Mode 3 A/C IAW FAA/DOD MOA, AR 95-1, and unit policy during the flight (Annex B and Exhibit E, S, BQ).²¹¹ The CRJ700 was equipped with TCAS 7.0 and ADS-B Out avionics while the UH-60L was NOT equipped with TCAS (Annex B).²¹² The CRJ700 was NOT equipped with ADS-B In capability, as testified by PSA Airlines (b) (6) during the NTSB's Open Hearing (Annex B and Exhibit CW).²¹³ TCAS and ADS-B avionic systems data do not communicate with each other between aircraft and do not correlate traffic avoidance information to pilots, as testified during the NTSB Open Hearing (Annex B).²¹⁴ DCA ATCT was equipped with ASDE-X²¹⁵ surface surveillance radar system that provides fused information from radar,

²⁰⁷ Exhibit BR: Global Air Traffic Management (GATM) Capability Production Document, PDF Pages 2, 6-11.

²⁰⁸ Exhibit CI: PEO AV Response 2 to 15-6 Questions, 14 February 2025, Enclosure 1.

²⁰⁹ Exhibit CI: PEO AV Response 2 to 15-6 Questions, 14 February 2025, Enclosure 5.

²¹⁰ Exhibit CI: PEO AV Response 2 to 15-6 Questions, 14 February 2025, Enclosure 4.

²¹¹ Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Page 227.

Exhibit E: e-Form 1801, DoD International Flight Plan – PAT 25, see Section 10. Equipment.

Exhibit S: Aviation Branch Operations SOP, 12th AVN BN Local Procedures Guide, dated 15 July 2024, PDF Page 39.

Exhibit BQ: TAAB Commander ADS-B Out Operations Policy Letter, PDF Pages 2-3.

²¹² Annex B: DCA25MA108 – Transcript – Public Hearing Day 3, 1 August 2025, PDF Pages 134-137.

²¹³ Annex B: DCA25MA108 – Transcript – Public Hearing Day 3, 1 August 2025, PDF Pages 134-137, 161.

Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 299, 327.

²¹⁴ Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Page 223.

Annex B: DCA25MA108 – Transcript – Public Hearing Day 3, 1 August 2025, PDF Page 161.

²¹⁵ ASDE-X: Airport Surface Detection Equipment – Model X

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

multilateration (MLAT), and satellite technology (Annex A).²¹⁶ Evidence the DCA Tower monitored PAT 25's Mode 3 A/C transponder radar return was both testified during the NTSB Open Hearing and an audible Collision Alerts heard per the DCA Tower transcripts (Annex A and B).²¹⁷ An audible traffic alert "Traffic, Traffic" was heard by AA5342's TCAS from the CRJ's CVR data (Annex B and Exhibit D).²¹⁸

(8) As of 23 January 2026, the Department of Transportation and the FAA announced the temporary airspace restrictions surrounding DCA's Class B airspace will become permanent.²¹⁹ The FAA released Docket No. FAA-2026-0199; Amendment. No. 93-105 to change 14 CFR Part 93.²²⁰ The interim rule states, "helicopters or powered-lift operating in the vertical-lift flight mode may only conduct essential operations in the area between the Memorial Bridge, Hains Point, and the Wilson Bridge as defined in new §93.373" (Exhibit CQ).²²¹ When vertical-lift are operating within the special flight rules area, DCA ATC will "restrict the use of Runways 15/33 or 4/22 for arrivals or departures when excepted helicopter/powered-lift aircraft are operating within the area" (Exhibit CQ).²²² "FAA recognizes the following operations as essential: lifesaving medical, active law enforcement, active national security, continuity activities for the Federal government, or transportation for the President or Vice President of the United States (U.S.). Routine training, proficiency evaluation flights, and other flights for transportation of personnel that are not involved in an essential operation, as previously described, are not essential operations" (Exhibit CQ).²²³

RECOMMENDATION 1: Recommend HQDA require all flights in heavy urban environments to have a commercial-off-the-shelf (COTS) receiver to receive ADS-B In data to their EFB while in flight which would enhance aircrew situational awareness.

²¹⁶ 3-A ATC Human Performance Group Chairman's Factual Report, Page 13 and Footnote 15.

²¹⁷ Annex A: 23-A CVR and ATC Combined Transcript Factual Report, PDF Pages 33-34.

Annex B: DCA25MA108 – Transcript – Public Hearing Day 1, 30 July 2025, PDF Page 228.

Annex B: DCA25MA108 – Transcript – Public Hearing Day 2, 31 July 2025, PDF Page 205.

Annex B: DCA25MA108 – Transcript – Public Hearing Day 3, 1 August 2025, PDF Page 134-137.

²¹⁸ Annex B: DCA25MA108 – Transcript – Public Hearing Day 3, 1 August 2025, PDF Page 82-83.

Exhibit D: NTSB Briefing Points on Mid-Air Collision near DCA, PDF Page 4.

²¹⁹ U.S. DoT, Newsroom, "Trump's Transportation Secretary Formalizes Permanent Restrictions for Aircraft in Reagan National Airport Airspace", dated 22 January 2026, <https://www.transportation.gov/briefing-room/trumps-transportation-secretary-formalizes-permanent-restrictions-aircraft-reagan#:~:text=WASHINGTON%2C%20D.C.%20%E2%80%94%20U.S.%20Transportation%20Secretary,unless%20these%20aircraft%20are%20conducting.>

²²⁰ Federal Register, Docket No. FAA-2026-0199; Amendment No. 93-105, as of 23 January 2026, [https://www.federalregister.gov/documents/2026/01/23/2026-01226/flight-restrictions-in-the-vicinity-of-ronald-reagan-washington-national-airport-dca.](https://www.federalregister.gov/documents/2026/01/23/2026-01226/flight-restrictions-in-the-vicinity-of-ronald-reagan-washington-national-airport-dca)

²²¹ Exhibit CQ: 4 CFR Part 93 - Interim Rule - Flight Restrictions in the Vicinity of DCA, PDF Page 3.

²²² Exhibit CQ: 4 CFR Part 93 - Interim Rule - Flight Restrictions in the Vicinity of DCA, PDF Page 3.

²²³ Exhibit CQ: 4 CFR Part 93 - Interim Rule - Flight Restrictions in the Vicinity of DCA, PDF Page 3.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

RECOMMENDATION 2: Recommend the TAAB and 12th AVN BN (after departure from classified sites) crews turn Mode S and ADS-B Out on immediately. Use will be mandatory while operating in the Washington DC helicopter route structure except when supporting an actual national security contingency.

RECOMMENDATION 3: Recommend HQDA expedite fielding of the new transponder to all Army aircraft. By expediting the fielding, units will have an ADS-B In and ACAS-X capability. This increased ADS-B in capability will give crews real time traffic symbology in the aircraft's multi-functional display allowing more situational awareness of non-participating aircraft. 12th AVN BN should be the first unit equipped due to their proximity to Class B airports.

RECOMMENDATION 4: Recommend HQDA establish a fielding policy for TCAS II or more advanced version of a collision avoidance system for units that operate in highly congested national airspace.

RECOMMENDATION 5: Recommend HQDA release the new AR 95-1, Flight Regulations, incorporating all previously and newly released HQDA EXORDS, ALARACTS, and STACOMS, and these recommendations post mid-air collision within 90 days of this report and in parallel with any additional Congressional mandates.

i. What was the unit's post-accident response to the incident? Do any notification changes need to be made?

(1) Yes, the unit's post-accident response was sufficient and executed as prescribed by each unit's SOP and leadership guidance. The crash between a civilian and a military aircraft occurred in DCA's controlled airspace in proximity to the airfield. The post-accident response coordination and responsibilities for emergency services resided with DCA, local, and state emergency and law enforcement agencies. Post accident recovery efforts were led by the NTSB and were executed by multiple federal and state agencies that took 11 days to complete (Annex A).²²⁴

(2) **Davison Army Airfield (DAAF) Tower.** At 2100 on 29 January 2025, Potomac Consolidated Terminal RADAR Approach Control (PCT)²²⁵ informed DAAF Tower that PAT 25 collided with a CRJ700 aircraft and both aircraft were in the Potomac River. At 2126, PCT notified the DAAF Tower that PAT 25 had been instructed to "pass behind" the CRJ before the collision, and that all DCA runways were closed via Notice to

²²⁴ Annex A: 21-A Recovery Group Chairman's Factual Report, PDF Page 17.

²²⁵ PCT provides air traffic control service to the Baltimore-Washington and Richmond-Charlottesville areas.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

Airmen (NOTAM).²²⁶ The DAAF Tower closed operations at 2130 in accordance with the DAAF tower standard procedure. The DAAF ATC Manager instructed the Tower personnel to consolidate all information relating to PAT 25 prior to closing the tower.²²⁷

(3) **DAAF Base Operations.** At 2103, DAAF Tower informed DAAF Base Operations that PAT 25 crashed into the Potomac River off DCA runway 33. Base Operations then immediately notified the airfield manager (Exhibit BT).²²⁸

(4) **12th AVN BN.** At 2115 the BN Flight Operation Specialist, received a phone call from the National Capital Region Crisis Center with a request to confirm if PAT 25 was the accident aircraft (Exhibits C, BU).²²⁹ BN Flight Operation Specialists, attempted to reach PAT 25 by radio and their personal cell phones with no response (Exhibit BU).²³⁰ At 2121, BN Flight Operation Specialist notified the BN CDR via telephone of the accident IAW the 12th AVN BN Pre-Mishap Plan (Exhibits C, BU).²³¹ BN CDR ordered an Emergency Actions Meeting (EAM) for 2145, to include unit representatives from the BN S3, BN Flight Operations, and Headquarters and Headquarters Company. Pursuant to the Pre-Mishap Plan, a detailed DA Form 1594, Duty Log, was maintained and the accident crew flight records and aircraft maintenance records were secured by Flight Operations Officer-in-Charge (OIC), and Production Control Officer (PC), respectively (Exhibit BU).²³²

(a) After multiple witness interviews across the Battalion, there is a general understanding of the BN's Pre-Mishap Plan. Several witnesses commented on the efficacy of conducting quarterly pre-mishap training suggesting that the unit was well-prepared to execute the pre-accident plan for this event (Exhibits C, AN, AR, AS).²³³

²²⁶ A Notice to Airmen (NOTAM) is a notice containing information essential to personnel concerned with flight operations but not known far enough in advance to be publicized by other means. NOTAMs indicate a real-time and abnormal status of a part of the national airspace system.

²²⁷ Annex C is the consolidated information provided to the 15-6 Investigating Team.

²²⁸ Exhibit BT: DA Form 1594 – DAAF Base OPS Log, 29-30 January 2025.

²²⁹ Exhibit C: (b) (6), (b) (7)(C) Joint Sworn Statement, PDF Page 12.

Exhibit BU: DA Form 1594 – 12 AVN BN FLT OPS Log, 29-30 January 2025, PDF Page 1.

²³⁰ Exhibit BU: DA Form 1594 – 12 AVN BN FLT OPS Log, 29-30 January 2025, PDF Page 1.

²³¹ Exhibit C: (b) (6), (b) (7)(C) Joint Sworn Statement, PDF Page 22-25.

Exhibit BU: DA Form 1594 – 12 AVN BN FLT OPS Log, 29-30 January 2025, PDF Page 1.

²³² Exhibit BU: DA Form 1594 – 12 AVN BN FLT OPS Log, 29-30 January 2025, PDF Page 1.

²³³ Exhibit C: (b) (6), (b) (7)(C) Joint Sworn Statement, PDF Pages 23, 28-29.

Exhibit AN: (b) (6), (b) (7)(C) Sworn Statement, 13 February 2025, PDF Pages 47-48.

Exhibit AR: (b) (6), (b) (7)(C) Sworn Statement, 10 February 2025, PDF Pages 23-25.

Exhibit AS: (b) (6), (b) (7)(C) Sworn Statement, 20 February 2025, PDF Pages 20-22.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

(b) For BN alerts, mission execution, and during actions conducted the night of midair collision, the BN utilized a secure text message called OnSolve.²³⁴ The unit uses OnSolve because not every Soldier is provided with a government cellphone. This secure text messaging platform was used multiple times when the BN CDR conducted synchronization meeting with the BN leadership to good effect (Exhibit BU).²³⁵

(c) Both the TAAB and 12th AVN BN lack a Chaplain at the brigade and battalion levels, however, the Chaplain resides at MDW headquarters (Exhibit AK, CH).²³⁶ The TAAB has an assigned Flight Surgeon only at the brigade level, while the 12th AVN BN does not (Exhibit AK, CH).²³⁷ Both the lack of a Chaplain and Flight Surgeon at the battalion level were highlighted as a concern by the battalion commander (Exhibits AK).²³⁸ The B Company First Sergeant stated during his interview that one of the family members came to the airfield to search for answers about their servicemember (Exhibit AN).²³⁹ He conveyed the value of having an assigned chaplain to help bring peace and emotional support during periods of uncertainty that loom during initial incident response and activation of the Casualty Notification Officer (CNO) (Exhibit AN).²⁴⁰ The lack of a battalion level Flight Surgeon adds to the workload for patient throughput to a single brigade level provider. Additionally, during any flight related accident, the Flight Surgeon is required to provide any supporting medical information about the aircrews' physical fitness, to include drawing urine and blood samples. In a standard MTOE aviation battalion, both the Chaplain and Flight Surgeon are assigned to the unit, but in the case of 12th AVN BN they are not authorized on the TDA.

RECOMMENDATION 1: Recommend the TAAB and 12th AVN BN continue to conduct quarterly Pre-Accident Plan (PAP) rehearsals / exercises IAW Army regulations and ARMS requirements.

RECOMMENDATION 2: Recommend HQDA and Human Resources Command (HRC) assign a dedicated Flight Surgeon and Chaplain to the 12th AVN BN. This action should not wait for the TDA to MTOE conversion due to the critical enabling support they provide during a crisis.

²³⁴ OnSolve is a secure mass notification messaging service owned by CRISIS24, <https://www.crisis24.com/lp/onsolve>.

²³⁵ Exhibit AS: (b) (6), (b) (7)(C) Sworn Statement, 20 February 2025, PDF Pages 20-22.

Exhibit BU: DA Form 1594 – 12 AVN BN FLT OPS Log, 29-30 January 2025, PDF Pages 1-2.

²³⁶ Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Pages 42-46.

Exhibit CH: W0Y4AA – 12 AV BN – Position and Equipment, approved 4 January 2025.

²³⁷ Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Pages 45.

Exhibit CH: W0Y4AA – 12 AV BN – Position and Equipment, approved 4 January 2025.

²³⁸ Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, dated 19 February 2025, PDF Pages 42-46.

²³⁹ Exhibit AN: (b) (6), (b) (7)(C) Sworn Statement, 13 February 2025, PDF Pages 31.

²⁴⁰ Exhibit AN: (b) (6), (b) (7)(C) Sworn Statement, 13 February 2025, PDF Pages 31.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

RECOMMENDATION 3: Recommend transition from OnSolve to WickrGov. OnSolve works efficiently but is a service the unit must fund. WickrGov is the approved text and audio/video call service for all government computers and cellphones. The service can be downloaded to a servicemembers personal device. The Army also provides the Army BYOD with Hypori for servicemembers to access their Army enterprise accounts from their personal device.

j. What are the lessons learned from the incident that the Army should implement to prevent this from occurring again?

(1) It is important to note that this accident occurred in the Nation's Capital and resulted in a significant loss of life, from 29 January 2025 to 29 January 2026 this has been one of the most covered tragic events in recent history. In her opening remarks at the 27 January 2026 Open Board Meeting, Chairwoman Homendy stated:

"Today, you will hear how deep, underlying systemic failures – system flaws – aligned to create the conditions that led to the devastating tragedy on January 29, 2025:

- From design of our airspace around Ronald Reagan Washington National Airport;
- To the limitations of see-and-avoid, which we've been warning about for over five decades;
- To failures of entire organizations to evaluate and act on readily available data, heed repeated recommendations, and foster safety cultures; and much, much more."²⁴¹

This investigation has compiled several findings identifying several systematic failures that led to this accident and recommendations to prevent it from occurring again. Utilizing Reason's Causation Model (Swiss Cheese Model)²⁴² to articulate the systematic breakdown of the layers of protection (aka "cheese slices") represented by the (1) environment, (2) policies, (3) procedures, (4) safety, (5) flight conditions, and (6) human performance, we can identify how the alignment of "latent holes" allowed the accident to occur (Exhibit DA).²⁴³ This investigation concurs with the NTSB recommendations the

²⁴¹ Opening Remarks on the Investigation into the Midair Collision over the Potomac River PSA Airlines Flight 5342 CRJ700 U.S. Army Priority Air Transport Flight 25, Sikorsky UH-60L, dated 27 January 2026, <https://www.nts.gov/Advocacy/Activities/Pages/Homendy-20260127.aspx>.

²⁴² US Army Safety Center, The Human Factors Analysis and Classification System (HFACS), dated January 2024, <https://safety.army.mil/Portals/0/Documents/REPORTINGANDINVESTIGATION/REGULATIONSGUIDANCE/Standard/HFACS-Handbook-2024.pdf>.

²⁴³ Exhibit DA: US Army HFACS – Reason's Model of Causation – 15-6 Analysis.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

U.S. Army must implement and continue to grow as a learning organization and strengthen its safety culture.

(2) The U.S. Army Aeronautical Services Agency (USAASA) positioned at Fort Belvoir has regionally assigned Department of Army Representatives (DAR) across the U.S. and Europe, along with Army-FAA HQ Liaison Officers embedded at and working at FAA Headquarters. The USAASA is the primary interface between the U.S. Army and the FAA. Originally, USAASA was assigned under AVCOE as a subordinate unit and then later moved under HQDA G-3/5/7 (DAMO-AV) as a direct reporting unit to strengthen their position and make effective changes in support of Army Aviation. The USAASA is predominately focused on Army airfield designations, certifications, approaches, navigation aids, and liaise potential airspace violations between the Army and the FAA. Prior to the accident, USAASA's involvement with the FAA and recommending changes to the NAS, especially the Baltimore-Washington helicopter route structure, was lacking. The DCA Helicopter Working Group (HWG), hosted by DCA ATC, brought together several helicopter operator stakeholders, including the TAAB and 12th AVN BN, to discuss multiple topics. These topics ranged from noise complaints, route altitude changes, heat maps of helicopter traffic, lighted power line markers, and zone boundaries (Annex A).²⁴⁴ Neither a USAASA leader nor DAR was present for each meeting, and the DAR that attended was not of the appropriate rank to affect change (Annex A).²⁴⁵

(3) The DCA HWG did not discuss airspace violations, near-miss reports, or pilot deviations. During a 12 January 2020 meeting, there was only one topic discussed regarding helicopters and fixed wing aircraft in close proximity to DCA airport, but nothing further (Annex A).²⁴⁶ The Army-FAA HQ Liaison Officer provided a calendar year 2020 to 2025 report of U.S. Army pilot deviations in the National Capitol Region (Exhibit DB).²⁴⁷ There were only 11 deviations reported, which the TAAB had only four helicopter deviations (Exhibit DB). Of those four deviations, only one occurred between a fixed winged aircraft and a TAAB helicopter, however, a commercial fixed winged aircraft landing at DCA was not involved (Exhibit DB). The definition of "near-miss" is subjective as it defines proximity of aircraft to one another. This proximity is different for fixed wing versus rotary wing aircraft due to differing flight profiles, airspeeds, distance and altitudes. The Army lacks a formal near-miss definition and reporting system.

²⁴⁴ Annex A: 3-NN ATC HP Report – Attachment 39, DCA Helicopter Working Group, PDF Pages 4-9, 29-39, 46, 50-52, 60-67, 76-91, 156-158.

²⁴⁵ Annex A: 3-NN ATC HP Report – Attachment 39, DCA Helicopter Working Group, PDF Pages 100-101.

²⁴⁶ Annex A: 3-NN ATC HP Report – Attachment 39, DCA Helicopter Working Group, PDF Page 164.

²⁴⁷ Exhibit DB: US Army Pilot Deviations in the NCR, CY2020-2025.

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

(4) Throughout the course of the investigation, circumstantial findings not unique to the crew of PAT 25 generated internal IO team discussion on systemic vulnerabilities in Army Aviation in the years following the Global War on Terror. Previously routine deployments to high operational tempo theaters generated high-time, experienced aviators with advanced skills and airmanship very early on in a pilot's career. The investigation team assessed the total cockpit time for the crew of PAT 25 to be approximately 1,427 hours, over a combined aviation career of 97 months (Exhibits O, P).²⁴⁸ Army Aviation has had to reconcile the flight hour decline of crews executing semi-annual minimums following an era where it was common to fly 6 to 8 times the published minimum while deployed. The team deduces – prior to the Army Transformation Initiative – there was a pattern of crews failing to fly their semi-annual minimums, leading to an aggregate decline in Army Aircrew experience over time.

RECOMMENDATION 1: Recommending within the scope of this investigation's questions and findings, to apply the recommendations from the NTSB.

NTSB's Recommendation to the U.S. Army by their numbered order (Exhibit CW):²⁴⁹

Revise training procedures for flight crews assigned to operate in the Washington, D.C., area to ensure that they receive initial and recurrent training on fixed-wing operations at Ronald Reagan Washington National Airport, including approach and departure paths, runway configurations, and the interaction of those traffic flows with published helicopter routes. (A-26-41)

Develop and implement a recurring procedure, at an interval not to exceed 18 months, to verify the continued accuracy of recorded flight data. (A-26-42)

Incorporate information within the appropriate operator's manual for all applicable aircraft on the potential total error allowed by design that could occur in flight on an otherwise airworthy barometric altimeter, including the increased position error associated with the external stores support system configuration. (A-26-43)

Develop and implement a transponder inspection procedure on all aircraft with transponders capable of transmitting Mode S and Automatic Dependent Surveillance—Broadcast (ADS-B) and operated in the National Airspace System (NAS), at least annually and upon each aircraft's entry into service in the NAS,

²⁴⁸ Exhibit O: DA 759 Individual Flight Record – (b) (6), (b) (7)(C).

Exhibit P: DA 759 Individual Flight Record – (b) (6), (b) (7)(C).

²⁴⁹ Exhibit CW: DCA25MA108 – Aircraft Investigation Final Report AIR-26-02, PDF Pages 335-336. NTSB Website: DCA25MA108, <https://www.nts.gov/investigations/Pages/DCA25MA108.aspx>

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6 Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian Aircraft Near Ronald Reagan National Airport

that ensures 1) the transponder ADS-B settings are correct, 2) the transponder is transmitting ADS-B, and 3) the transponder is transmitting the correctly assigned address. (A-26-44)

Establish a flight data monitoring program for rotary-wing aircraft the U.S. Army operates in the National Airspace System. (A-26-45)

Survey U.S. Army helicopter pilots to identify barriers to the utilization of flight safety reporting systems, develop a plan to address the identified barriers, and implement that plan across Army aviation units. (A-26-46)

Revise the method for allocating resources to ensure the development of a robust safety management system that will, at a minimum, identify and monitor the potential for midair collisions between Army aircraft and civil air traffic operating in the National Airspace System. (A-26-47)

Develop and maintain a flight safety management capability that is independently resourced and functionally separate from its occupational and environmental health management system and ensure that this capability is both culturally and functionally integrated with units conducting sustained flight operations in the National Airspace System. (A-26-48)

RECOMMENDATION 2: Recommend HQDA G-3/5/7 (DAMO-AV), AVCOE, U.S. Army Aeronautical Services Agency (USAASA), Department of Army Representative (DAR), and Army-FAA HQ Liaison Officers integrate further with the FAA for all matters relating to civilian-military airfields, heliports, ATC, rules, regulations, aeronautical charts, publications, and information releases. Meetings, working groups, and status reports should at a minimum be conducted monthly and data must be provided to HQDA G-3/5/7 (DAMO-AV), to include the U.S. Army Combat Readiness Center for safety reporting when applicable.

RECOMMENDATION 3: Recommend HQDA G-3/5/7 (DAMO-AV) task the US Army Aeronautical Services Agency (USAASA), Department of Army Representative (DAR), and Army-FAA HQ Liaison Officers conduct an analytical study of all heavy traffic in or within the vicinity of large cities that Army rotary wing aircraft operate. The analysis should provide "Heat Map" survey, near-miss data, near-miss reporting requirements, and coordination with the FAA. The analysis should not only encompass U.S. airspace given U.S. Army Aviation operates in multiple foreign countries near or within large cities (i.e., Germany, Korea, Japan, etc.).

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

RECOMMENDATION 4: Recommend HQDA G-3/5/7 (DAMO-AV) ICW AVCOE conduct an assessment on semi-annual flying hour compliance across aviation units. This assessment should be inclusive of a review of all non-flying related duties or extra duties for junior aviation officers and warrant officers as defined in TC 3-04.11, paragraphs 7-25, 7-38 through 7-42, PDF pages 56-58. Include a review of duties covering both assigned and volunteer to ensure junior aviators are actively and routinely flying, maintaining proficiency, and sustaining their flying hour programs IAW TC 3-04.11. Assess trends in percentages of authorized Flight Activity Category (FAC) 1 and 2 aviators filing waivers, proration and extensions. Consider revision of Aircrew Training Manuals to include data-informed categories of semiannual flying hours for each Mission Design Series to better inform leaders of risk as it relates to proficiency in Army aircrews.

RECOMMENDATION 5: Recommend AVCOE update TC 3-04.11, Local Area Orientation (LAO), paragraphs 8-91, 8-92, and 8-98 to be more detailed and specific durations for LOA training for highly dense urban environments and considerations for commercial fixed-wing aircraft operations at major U.S. airports, including, but not limited to, approach and departure procedures and charts. Training will be conducted annually to ensure changes are briefed across the formation. Training will be captured on the ACM IATF.

RECOMMENDATION 6: Recommend the US Army Aeronautical Services Agency (USAASA), TAAB, 12th AVN BN, and Army-FAA Liaison Officers actively participate in all FAA working groups relating to aviation operations within the NCR. Meetings, working groups, and status report results must be provided to HQDA G-3/5/7 (DAMO-AV), to include the U.S. Army Combat Readiness Center for safety reporting, when applicable. Information will be released to the U.S. Army Aviation Enterprise through either HQDA EXORD, ALARACT, or STACOM.

6. The point of contact for this memorandum is the undersigned.

19 Encls

1. Appointment Memo dated 31 JAN 25
2. Administrative Investigation Ext. Req., approval dated 1 MAR 25
3. Administrative Investigation Ext. Req.,


MICHAEL C. MCCURRY
Lieutenant General, USA
Investigating Officer

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

- approval dated 12 MAY 25
4. Administrative Investigation Ext. Req.,
approval dated 21 AUG 25
 5. Administrative Investigation Ext. Req.,
approval dated 19 FEB 26
 6. Appt. Order – Asst. IO (b) (6), (b) (7)(C)),
approval dated 4 FEB 25
 7. Appt. Order – Asst. IO (b) (6), (b) (7)(C)),
approval dated 5 FEB 25
 8. Appt. Order – Asst. IO (b) (6), (b) (7)(C)),
approval dated 4 FEB 25
 9. Appt. Order – Asst. IO (b) (6), (b) (7)(C)),
approval dated 4 FEB 25
 10. Appt. Order Change Request - Asst. IO,
approval dated 18 JUL 25
 11. Appt. Order – Asst. IO (b) (6), (b) (7)(C)),
approval dated 23 JUL 25
 12. Protective Material Agreement: CVR Transcript
(LTG McCurry), dated 18 JUL 25
 13. Statement of Nondisclosure, Army Party Agreement;
CVR Audio Booth Access (LTG McCurry), effective 24 FEB 25
 14. Statement of Nondisclosure, Army Party Agreement;
CVR Audio Booth Access (b) (6), (b) (7)(C)), effective 24 FEB 25
 15. Memorandum for Record, Witness List,
Dated 3 MAR 26
 16. Memorandum for Record, Interview List,
Dated 3 MAR 26
 17. Memorandum for Record, 60 CVR Audio,
Dated 3 MAR 26
 18. Chronology
 19. Referenced Annexes and Exhibits:
 - Annex A: NTSB Investigation Docket – DCA25MA108, 30 July 2025
 - Annex B: NTSB Open Hearing Transcripts, 30 July – 1 August 2025
 - Annex C: Davison Army Airfield (DAAF), Fort Belvoir – Documents and Recordings
 - Annex D: Aircraft Recovery and Wreckage – Images
 - Annex E: UH-60L 00-^{(b)(3) 10 U.S.C. 130} Maintenance and Historical Records
 - Exhibit A: NTSB Aviation Investigation Report AIR-25-01, 7 March 2025
 - Exhibit B: NTSB Aviation Investigation Preliminary Report (Accident # DCA25MA108)
 - Exhibit C: (b) (6), (b) (7)(C) Joint Sworn Statement, 13 February 2025
 - Exhibit D: NTSB Briefing Points on Mid-Air Collision near DCA, 14 February 2025
 - Exhibit E: e-Form 1801, DoD International Flight Plan - PAT 25, 29 January 2025
 - Exhibit F: PAT 25 RCOP/Mission Schedule/Brief
 - Exhibit G: DD Form 36-5, AWBS Form F, Weight and Balance, 6 November 2024

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

Exhibit H: DD Form 175-1, Flight Weather Briefing, 29 January 2025
Exhibit I: Mission Execution Forecast
Exhibit J: TM 11-5855-262-10, Technical Manual, AN/VS-6(V)3, 30 August 2014
Exhibit K: PPT Documenting Re-creation of Mishap Flight
Exhibit L: DA Form 7122-R Crew Member Training Record – (b) (6), (b) (7)(C)
Exhibit M: DA Form 7122-R Crew Member Training Record – (b) (6), (b) (7)(C)
Exhibit N: DA Form 7122-R Crew Member Training Record – (b) (6), (b) (7)(C)
Exhibit O: DA Form 759 Individual Flight Record – (b) (6), (b) (7)(C)
Exhibit P: DA Form 759 Individual Flight Record – (b) (6), (b) (7)(C)
Exhibit Q: DA Form 759 Individual Flight Record – (b) (6), (b) (7)(C)
Exhibit R: Crew Member Experience Report, 1 March 2024 to 4 February 2025
Exhibit S: Aviation Branch Operations SOP, 12th AVN BN Local Procedures Guide
Exhibit T: DD Form 2992 Medical Recommendation for Flying Duty – (b) (6), (b) (7)(C)
Exhibit U: DD Form 2992 Medical Recommendation for Flying Duty – (b) (6), (b) (7)(C)
Exhibit V: DD Form 2992 Medical Recommendation for Flying Duty – (b) (6), (b) (7)(C)
Exhibit W: (b) (6), (b) (7)(C) Autopsy Examination Report
Exhibit X: (b) (6), (b) (7)(C) Autopsy Examination Report
Exhibit Y: (b) (6), (b) (7)(C) Autopsy Examination Report
Exhibit Z: (b) (6), (b) (7)(C) Sworn Statement, 10 February 2025
Exhibit AA: DA Form 2408-13, Aircraft Status Information Record
Exhibit AB: TM 1-1520-237-10 (Technical Manual for UH-60L)
Exhibit ABA: TM 1-1520-237-CL, Operator's Checklist for UH-60
Exhibit ABB: TM 1-1520-237-MTF, Maintenance Test Flight Manual for UH-60
Exhibit ABC: MIL-A-81852A, Military Specification Altimeter-Encoder AAU-32/A
Exhibit AC: PEO AV Response 1 to NTSB and 15-6 Investigation, 13 February 2025
Exhibit AD: CFR, App. E to Part 43, Title 14, Altimeter System Test and Inspection
Exhibit AE: Sikorsky Memorandum AVO 25-MISC_DMC-001, 10 February 2025
Exhibit AF: DA Form 2408-13-1 Aircraft Inspection and Maintenance Record (Open)
Exhibit AG: Configuration Sheet Data UH-60L 00- (b) (6), (b) (7)(C)
Exhibit AH: DA Form 2408-13-1 Aircraft Inspection and Maintenance Record (Closed)
Exhibit AI: DA Form 2408-17 Aircraft Inventory Record
Exhibit AJ: TAAB Training Guidance for FY 25-26, 1 October 2024
Exhibit AK: (b) (6), (b) (7)(C) Sworn Statement, 19 February 2025
Exhibit AL: (b) (6), (b) (7)(C) Sworn Statement, 18 February 2025
Exhibit AM: Photograph of recovered publications bag with maps
Exhibit AN: (b) (6), (b) (7)(C) Sworn Statement, 13 February 2025
Exhibit AO: (b) (6), (b) (7)(C) Sworn Statement, 18 February 2025
Exhibit AP: (b) (6), (b) (7)(C) Sworn Statement, 20 February 2025
Exhibit AQ: (b) (6), (b) (7)(C) Sworn Statement, 20 February 2025
Exhibit AR: (b) (6), (b) (7)(C) Sworn Statement, 10 February 2025
Exhibit AS: (b) (6), (b) (7)(C) Sworn Statement, 20 February 2025
Exhibit AT: TDA – Personnel FY24 – FY25
Exhibit AU: TAAB UH-60M Request

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

Exhibit AV: Equip Review and Validation Board (ERVB) Decision, November 2024
Exhibit AW: Army G8 SSO Email Regarding 2024 ERVB Submission
Exhibit AX: F/AD III to II Approval Memorandum, 17 August 2022
Exhibit AY: Aviation Resource Management Survey Out brief, FY25
Exhibit AZ: Aviation Resource Management Survey Out brief, FY21
Exhibit BA: Airworthiness Release (AWR) 1711-R13, 10 January 2024
Exhibit BB: FAA Introduction to TCAS II, v7.1, 28 February 2011
Exhibit BC: Army G-3/5/7 TCAS-ADSB Memorandum, 31 January 2025
Exhibit BD: FAA TCAS II Tutorial – Presentation, 8 August 2024
Exhibit BE: CFR, Title 14, Part 91 §91.225, ADS-B Out Equipment and Use
Exhibit BF: Federal Register, Vol. 75, No. 125, 30 June 2010
Exhibit BG: SECAF/ FAA MOA on ADS-B, Email Correspondence, 16 July 2018
Exhibit BH: Federal Register, Vol. 75, No.103, 28 May 2010
Exhibit BI: DoD/FAA ADS-B Memorandum of Agreement, July 2018
Exhibit BJ: 2019 National Defense Authorization Act, Section 1046
Exhibit BK: FAA, Airspace Services Director Memorandum
Exhibit BL: HQDA EXORD 107-20, Annex A, 22 January 2022
Exhibit BM: Army Regulation 95-1, Flight Regulations, 22 March 2018
Exhibit BN: DoD/FAA Memorandum of Agreement, 2024
Exhibit BO: Vice Director, Joint Staff, Congressional Response Letter, 8 June 2023
Exhibit BP: Honorable Norton Letter to Secretary of Defense, 14 February 2025
Exhibit BQ: TAAB Commander ADS-B Out Operations Policy Letter, 9 August 2024
Exhibit BR: Global Air Traffic Management (GATM) Capability Production Document
Exhibit BS: DAAF Tower DA Form 3502, Daily Report, 29 January 2025
Exhibit BT: DAAF Base Operations DA Form 1594, 29-30 January 2025
Exhibit BU: DA Form 1594, Duty Log, 29 January 2025
Exhibit BV: Aircraft Engine HIT Log - Recovered Documents
Exhibit BW: [Redacted] COOP/COG
Exhibit BX: [Redacted] COOP/COG
Exhibit BY: [Redacted] COOP/COG
Exhibit BZ: [Redacted] COOP/COG
Exhibit CA: DA Form 2823, SPC Dearborn, signed 7 March 2025
Exhibit CB: DA Form 2823, SPC Salinas, signed 7 March 2025
Exhibit CC: ADS-B Regulatory Compliance History Chart
Exhibit CD: DCA Perimeter Sector 6B Camera Image, 29 January 2025
Exhibit CE: Bendix/King – TCAS I - CAS 66A Pilot's Guide, February 2006
Exhibit CF: Aircraft Orientation Reconstruction – Prior to Mid-Air, 27 March 2025
Exhibit CG: (b)(3) 10 U.S.C. 130e – 12 AV BN – Position and Equipment, 2 October 2023
Exhibit CH: (b)(3) 10 U.S.C. 130e – 12 AV BN – Position and Equipment, 4 January 2025
Exhibit CI: PEO AV Response 2 to 15-6 Questions, 21 February 2025
Exhibit CJ: CFR, Title 14, Part 91 §91.22, ADS-B Out Equipment Performance
Exhibit CK: FAA Docket No FAA-2007-29305, Amdt No 91-314 - 28 May 2010
Exhibit CL: FY2026 NDAA – 119th Congress, Section 1071, 18 December 2025

TTHQ-FC

SUBJECT: Findings and Recommendations for Army Regulation (AR) 15-6
Investigation of the 29 January 2025 Collision of a UH-60 Black Hawk and Civilian
Aircraft Near Ronald Reagan National Airport

Exhibit CM: 1988 1st Edition - Washington DC Helicopter Route Chart
Exhibit CN: (b) (6), (b) (7)(C) Sworn Statement, 19 February 2025
Exhibit CO: 119th Congress, Section 2503 – ROTOR Act (proposed)
Exhibit CP: NTSB Chair, Homendy – Letter to HASC and SASC, 10 December 2025
Exhibit CQ: 14 CFR Part 93 - Interim Rule - Flight Restrictions in the Vicinity of DCA
Exhibit CR: 14 CFR Part 91 - General Operating and Flight Rules
Exhibit CS: STACOM 25-02, UH-60 Barometric Altimeter Error with ESSS
Exhibit CT: AF PAM 91-206, Participation in Military or Civil Aircraft Investigations
Exhibit CU: AR 385-10, The Army Safety and Occupational Health Program
Exhibit CV: Email – NTSB and SRD Correspondence – Altimeter Error Stack
Exhibit CW: AIR-26-02, NTSB Final Investigation Report, 27 February 2026
Exhibit CX: DCA25MA108 – PAT 25 IVHMS Raw Data, 7 February 2025
Exhibit CY: DCA25MA108 – Radar Track Plots (kmz file) and Rendering PPT
Exhibit CZ: PEO AV Response 5 – ADS-B INOP Aircraft 00- [REDACTED] 28 March 2025
Exhibit DA: US Army HFACS – Reason's Model for Causation
Exhibit DB: US Army Pilot Deviations in the NCR, CY2020-2025
Exhibit DC: 12th AVN BN Helicopter Fleet Data
Exhibit DD: ASAM – ADS-B Out Compliance – Combined, 27 April 2025
Exhibit DE: Memorandum of Findings, APX-123 Functional Operations