



DEPARTMENT OF THE ARMY
US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND
AVIATION AND MISSILE RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER
5400 FOWLER ROAD
REDSTONE ARSENAL, ALABAMA 35898-5000

AMSRD-AMR-AE-V

AWR RQ-11AB20080123

23 JAN 2008

MEMORANDUM FOR Project Manager, Unmanned Aircraft Systems (HQ AFSOC/A3UI),
Hurlburt Field, FL 32544

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Unmanned Aircraft
Systems RQ-11A and RQ-11B at Ft. Story/Little Creek, Norfolk Virginia (RQ-11AB20080123)
(TN 52767).

1. Scope: This memorandum constitutes an Airworthiness Release (AWR), Qualification Level 3, authorizing operation of the Unmanned Aircraft Systems RQ-11A and RQ-11B for operations at Ft. Story/Little Creek, Norfolk Virginia, within the airspace defined in reference D-1. This AWR is valid only for operations within the Federal Aviation Administration (FAA) approved Certificate of Authorization (COA) area.

2. Validity: This AWR is terminated upon changes in configuration of the subject equipment, 2 years after date of issue, or upon issuance of a later Airworthiness Release, whichever occurs first. This AWR is valid only for operations within the COA airspace defined in reference D-1, at Ft. Story/Little Creek, Norfolk Virginia.

3. List of Appendices:

Appendix A - Restrictions and Operating Information
Appendix B - Configuration and Installation Detail
Appendix C - Inspections, Maintenance, and Logbook Instructions
Appendix D - References List

4. The point of contact (POC) is: (b) (6), (b) (3) 10 USC 130b
(b) (6), (b) (3) 10 USC 130b

USC
130b

(b) (6), (b) (3) 10 USC 130b



SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Unmanned Aircraft System RQ-11A and RQ-11B at Ft. Story / Little Creek, Norfolk Virginia (RQ-11AB20080123) (TN 52767)

Appendix A – Restrictions and Operating Information:

WARNING

The air vehicle is susceptible to radiated emissions. Loss of link, loss of GPS, loss of video, and possible loss of vehicle control are likely in proximity to emitters. Operators shall avoid known high intensity Electromagnetic Interference (EMI) areas.

WARNING

Accidental operation of the RQ-11A or RQ-11B Raven UAS outside of approved airspace shall be immediately reported to Air Traffic Control (ATC). The operator shall make immediate actions to correct the flight path and/or follow ATC direction.

WARNING

The RQ-11A and RQ-11B Raven UAS do not have a sense and avoid system. Mid-air collision is a risk. All flight operations shall be conducted to ensure that manned and unmanned aircraft shall maintain proper separation. Airspace deconfliction shall be accomplished using local ATC procedures and procedures identified in the FAA COA.

WARNING

The RQ-11A and RQ-11B Raven UAS have not completed full airworthiness qualification. All flight operations shall be conducted in a manner to minimize exposure to manned aircraft and populated ground areas.

WARNING

The RQ-11A and RQ-11B Raven UAS has not undergone SOF Explosive Atmosphere testing. A serious fire or explosion may result if the aircraft is powered while flammable vapors are present during ground or flight operations. Do not operate the system in the presence of flammable vapors.

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Unmanned Aircraft System RQ-11A and RQ-11B at Ft. Story / Little Creek, Norfolk Virginia (RQ-11AB20080123) (TN 52767)

WARNING

The operator must coordinate frequencies with any other Raven operators in the area In Accordance With (IAW) the operator's manual and Local Spectrum Manager procedures. Failure to coordinate frequencies with other users could result in loss of vehicle control and possible loss of the air vehicle.

CAUTION

Noise characterization testing has not been completed on this system. Prolonged exposure to engine noise at close proximity may contribute to hearing loss. It is recommended that ear plugs be worn while launching the air vehicle.

1. Operate RQ-11A IAW reference D-2, and operate RQ-11B IAW references D-3 and D-4 except as modified by this AWR.
 - a. Flights shall be conducted IAW local regulations and standard operating procedures IAW reference D-1.
 - b. Flights shall avoid other Raven transmitters by at least 200 meters. Ground control stations shall be located at least 400 meters apart.
2. Flight over populated areas shall be avoided.
3. The Rally Waypoint shall be inside the COA approved airspace over a suitable Autoland point.
4. The Observer's responsibility is to aid in visual air space deconfliction. Both the observer and operator shall be instructed on proper procedures, responsibilities, and voice commands for visual airspace deconfliction.
5. Emergency procedures: Certain deltas exist in the emergency procedures of the RQ-11A and RQ-11B. The RQ-11A Operator's Manual (reference D-2) was not published with emergency procedures (EP); however, EPs were released with reference D-5. Ensure that if operating the RQ-11A, reference D-5 is reviewed by the operator, and is properly kept with the aircraft. The RQ-11B EPs are IAW reference D-3.
6. Commander's Corner:
 - a. The RQ-11A and RQ-11B Raven Unmanned Aircraft Systems (UAS) have not completed the airworthiness qualification process. An AWR has been granted through a Level 3

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Unmanned Aircraft System RQ-11A and RQ-11B at Ft. Story / Little Creek, Norfolk Virginia (RQ-11AB20080123) (TN 52767)

Airworthiness evaluation. A Level 3 AWR establishes a minimum level of safety for UAS operations. Strict adherence to the Operator's Manual, local Standard Operating Procedures for UAS, and this AWR is required to reduce the risk of loss of the aircraft, property damage and personal injury.

- b. All flight operations shall be conducted to avoid populated areas.
- c. Coordination of channel selection with other systems operating in the area is critical to reducing accident rates.

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Unmanned Aircraft System RQ-11A and RQ-11B at Ft. Story / Little Creek, Norfolk Virginia (RQ-11AB20080123) (TN 52767)

Appendix B – Configuration and Installation Detail:

1. Configuration details, other specific equipment, and drawings: The basic RQ-11A Unmanned Aircraft System is defined in reference D-2. The basic RQ-11B Unmanned Aircraft System is defined in reference D-3.
2. Special installation instructions: NONE.
3. Installation verification and quality checks: NONE.

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Unmanned Aircraft System RQ-11A and RQ-11B at Ft. Story / Little Creek, Norfolk Virginia (RQ-11AB20080123) (TN 52767)

Appendix C – Inspections, Maintenance, and Logbook Instructions:

1. Conduct inspections and maintenance as specified in references D-2 and D-3.

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Unmanned Aircraft System RQ-11A and RQ-11B at Ft. Story / Little Creek, Norfolk Virginia (RQ-11AB20080123) (TN 52767)

Appendix D – References:

1. "Raven Unmanned Aircraft System Standard Operating Procedures for Fort Story Military Reservation, Virginia", dated 2 January, 2008.
2. Raven RQ-11A Small Unmanned Aerial Vehicle Operator's Manual, P/N 54441-03_E Version 2.7, July 2005, with latest updates.
3. Technical Manual 1-1550-695-13&P, Operator and Field Maintenance Manual Including Repair Parts and Special Tools List for Small Unmanned Aircraft System (SUAS) RQ-11 B 9 January, 2007.
4. Technical Manual 1-1550-695-CL, Operator's and Crewmember's Checklist, RQ-11B SUAS, 9 January, 2007.
5. ASAM RQ-11-07-ASAM-01 "Aviation Safety Action Message (ASAM), Operational, RCS CSGLD-1860(R1), All RQ-11 Aircraft, Loss of Link, RQ-11-07-ASAM-01," with Addendum, dated March, 2007.