



DEPARTMENT OF THE ARMY  
US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND  
AVIATION AND MISSILE RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER  
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RDMR-AEV

14 MAY 2009

AWR RQ-11AB20090514

MEMORANDUM FOR Project Manager, Unmanned Aircraft Systems (SFAE-AV-UAS),  
Redstone Arsenal, AL 35898-5000

SUBJECT: Airworthiness Release (AWR) for Operation of RQ-11A and RQ-11B Raven  
Unmanned Aircraft System (UAS) (RQ-11AB20090514) (TN 70124).

1. Scope: This memorandum constitutes an Airworthiness Release Qualification Level 3 authorizing operation of RQ-11A and RQ-11B Raven Unmanned Aircraft System within active restricted airspace and the Federal Aviation Administration (FAA) approved Certificate of Authorization (COA) area near Simi Valley, CA and near Taft, CA.
2. Validity: This AWR is new and terminates 14 MAY 2011, upon changes in configuration of the subject equipment, or upon issuance of a later AWR, whichever occurs first. This AWR is valid only for operations within active restricted airspace and the Federal Aviation Administration (FAA) approved Certificate of Authorization (COA) area near Simi Valley, CA and near Taft, CA.
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

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**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**

The RQ-11 Raven UAS has 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-11 Raven UAS does 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.

**WARNING**

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

**WARNING**

The RQ-11 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.

**WARNING**

The operator must coordinate frequencies with any other Raven operators in the area 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.

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**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.

**NOTE**

RQ-11 Unmanned Aircraft Systems are not compatible across variant designations. Refer to the manual issued with the system to determine system variant and compatibility.

**NOTE**

The Raven B Low Rate Initial Production (LRIP) Hand Controller is incompatible with the Full Rate Production (FRP) hub. The system will not initialize with this configuration.

1. The aircraft operating instructions, procedures, and limitations shall be in accordance with references D-1 through D-3 (as applicable by system), D-4 and this AWR. In the event of conflict between these documents, the information in this AWR shall prevail.
2. Flights shall avoid other Raven transmitters by at least 200 meters. Ground control stations shall be located at least 400 meters apart.
3. Emergency procedures: IAW the operator's manual.
4. The Rally waypoint shall be over an approved Autoland point.
5. Flight of the RQ-11 Raven UAS is restricted to Visual Meteorological Conditions (VMC).
6. Flight over populated areas shall be avoided.
7. All flight operations outside of the restricted airspace shall be IAW the FAA COA
8. Commander's Corner:
  - a. The RQ-11A and RQ-11B Raven Unmanned Aircraft Systems (UASs) have not completed the full airworthiness qualification process. An AWR has been granted through a Level 3 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.

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c. Coordination of channel selection with other systems operating in the area is critical to reducing accident rates.

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**Appendix B – Configuration and Installation Detail:**

1. Configuration details, other specific equipment, and drawings: The RQ-11 Unmanned Aircraft System is defined in reference D-1 or D-3 (as applicable by system).
2. Special installation instructions: NONE.
3. Installation verification and quality checks: NONE.

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**Appendix C – Inspections, Maintenance, and Logbook Instructions:**

1. Conduct inspections and maintenance as specified in reference D-1 or D-3 (as applicable by system).

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**Appendix D – References:**

1. 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, dated 28 March 2008, with latest updates.
2. Technical Manual 1-1550-695-CL, Operator's and Crewmember's Checklist, RQ-11B SUAS, dated 28 March 2008, with latest updates.
3. Raven RQ-11A Small Unmanned Aerial Vehicle Operator's Manual, P/N 54441-03\_E Version 2.7, July 2005.
4. "SUAV Flight Operations", AeroVironment controlled document QSP 7.5-4, dated 8 Dec 2004, with latest updates.