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US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND
AVIATION AND MISSILE RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER
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AMSRD-AMR-AE-V

AWR Kestrel-T-20080229

29 FEB 2008

MEMORANDUM FOR Airfield Manager, Blossom Point Research Facility (BPRF)
La Plata, MD

SUBJECT: Airworthiness Release, Qualification Level 3, for operation of the Kestrel-T
Unmanned Aircraft System at Blossom Point Research Facility (AWR Kestrel-T-20080229)
(TN 54501).

1. Scope: This memorandum constitutes an Airworthiness Release (AWR), Qualification Level 3, authorizing operation of the Defense Technology Inc. (DTI) Kestrel-T Unmanned Aircraft System for operations at Blossom Point Research Facility (BPRF), MD, 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 at BPRF.

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 AWR, whichever occurs first. This AWR is valid only for operations within the COA airspace defined in reference D-1, at Blossom Point Research Facility, MD.

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) commercial (b) (6) or e-mail:
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for [redacted] of Aviation Engineering

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Defense Technologies Inc. Kestrel-T Unmanned Aircraft System at Blossom Point Research Facility, MD. (Kestrel-T-20080229) (TN 54501)

Appendix A – Restrictions and Operating Information:

WARNING

The air vehicle may be 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 Kestrel-T 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 Kestrel-T 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. Airspace deconfliction shall be accomplished using local ATC procedures and procedures identified in the FAA COA.

WARNING

The Kestrel-T 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 Kestrel-T 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.

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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 during ground operations and while launching the air vehicle.

1. Operation of the Kestrel-T UAS shall be IAW reference D-2, D-3, and D-4,
 - a. Flights shall be conducted IAW local regulations and standard operating procedures IAW reference D-5.
 - b. Flights shall avoid other known transmitters by at least 200 meters.
2. Flight over populated areas shall be avoided.
3. The Return Home Waypoint shall be inside the COA approved airspace over a suitable ditching 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. UAS observers shall not lose visual contact with the Kestrel-T air vehicle. If visual contact is lost, Lost Link procedures shall be initiated until visual contact is reestablished.
6. Operations shall not be conducted below 200ft above ground level (AGL), except for launch and recovery operations.
7. Flight operations shall not leave the Line of Sight (LOS) of the External Pilot (EP).
8. Flight operations shall be conducted IAW the approved FAA COA. Flight outside of the approved COA airspace is prohibited.
5. Emergency procedures shall be conducted IAW D-1, D-3, D-4, and D-5.
6. Frequency coordination shall be processed through the local Spectrum Manager.

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(Kestrel-T-20080229) (TN 54501)

7. Commander's Corner:

a. The Kestrel-T Unmanned Aircraft Systems (UAS) have not completed the 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.

b. All flight operations shall be conducted to avoid populated areas.

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Defense Technologies Inc. Kestrel-T Unmanned Aircraft System at Blossom Point Research Facility, MD. (Kestrel-T-20080229) (TN 54501)

Appendix B – Configuration and Installation Detail:

1. Configuration details, other specific equipment, and drawings: The Kestrel-T Unmanned Aircraft System configuration is defined in reference D-6, and D-7.
2. Special installation instructions: NONE.
3. Installation verification and quality checks: NONE.

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Defense Technologies Inc. Kestrel-T Unmanned Aircraft System at Blossom Point Research Facility, MD. (Kestrel-T-20080229) (TN 54501)

Appendix C – Inspections, Maintenance, and Logbook Instructions:

1. Conduct inspections and maintenance as specified in references D-8.

SUBJECT: Airworthiness Release, Qualification Level 3, for Operation of Defense Technologies Inc. Kestrel-T Unmanned Aircraft System at Blossom Point Research Facility, MD. (Kestrel-T-20080229) (TN 54501)

Appendix D – References:

1. “COA Checklist Attachments,” dated 20 September, 2007.
2. “Piccolo System User’s Guide,” Cloud Cap Technology, dated 9 February, 2006
3. “Kestrel-T UAS Information for AWR,” Defense Technologies, Inc., dated 4 February, 2008.
4. “DTI Test Plan, Defense Technologies, Inc., Project: FAA Certification, Revision 1.1,” dated 18 July, 2007.
5. “Blossom Point Research Facility Kestrel-T Unmanned Aerial Vehicle Flight Regulations,” dated 24 September, 2007.
6. “WFF Kestrel-T UAS Configuration Procedure for HF Studies,” dated 10 September, 2007.
7. “Software Configuration Management Plan (CMP) v1.1,” dated 28 August, 2007.
8. “Daily Aircraft Condition Inspection Checklist,” dated 20 September, 2007.
9. “Kestrel-T UAS Specifications,” Defense Technologies Inc., dated January 2008.