FAA FORM 8130-6, APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE

Form Approved O.M.B. No. 2120-0018
12/31/2010

U.S. Department of Transportation
Federal Aviation Administration

APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE

INSTRUCTIONS - Print or type. Do not write in shaded areas; these are for FAA use only. Submit original only to an authorized FAA Representative. If additional space is required, use attachment. For special flight permits complete Sections II, VI and VII as applicable.

I. AIRCRAFT DESIGNATION

1. REGISTRATION MARK	2. AIRCRAFT BUILDER'S NAME (Make)	3. AIRCRAFT MODEL DESIGNATION	4. YR. MFR.	FAA CODING
N2554B	Defense Technologies, Inc	Kestrel-T	2008	
5. AIRCRAFT SERIAL NO.	**6. ENGINE BUILDER'S NAME (Make)**	**7. ENGINE MODEL DESIGNATION**		
001	RCS	180		
8. NUMBER OF ENGINES	**9. PROPELLER BUILDER'S NAME (Make)**	**10. PROPELLER MODEL DESIGNATION**	**11. AIRCRAFT IS (Check if applicable)**	
1	Bambula	20" x 8"	IMPORT	

II. CERTIFICATION REQUESTED

APPLICATION IS HEREBY MADE FOR: (Check applicable items)

- A 1 — STANDARD AIRWORTHINESS CERTIFICATE (Indicate Category) — NORMAL | UTILITY | ACROBATIC | TRANSPORT | COMMUTER | BALLOON | OTHER
- B X — SPECIAL AIRWORTHINESS CERTIFICATE (Check appropriate items)
  - .7 — PRIMARY
  - .9 — LIGHT-SPORT (Indicate Class) — AIRPLANE | POWER-PARACHUTE | WEIGHT-SHIFT-CONTROL | GLIDER | LIGHTER THAN AIR
  - .2 — LIMITED
  - .5 — PROVISIONAL (Indicate Class) — 1 CLASS I; 2 CLASS II
  - .3 — RESTRICTED (Indicate operation(s) to be conducted) — 1 AGRICULTURE AND PEST CONTROL; 2 AERIAL SURVEY; 3 AERIAL ADVERTISING; 4 FOREST (Wildlife Conservation); 5 PATROLLING; 6 WEATHER CONTROL; 0 OTHER (Specify)
  - .4 X — EXPERIMENTAL (Indicate operation(s) to be conducted) — 1 ✓ RESEARCH AND DEVELOPMENT; 2 AMATEUR BUILT; 3 EXHIBITION; 4 AIR RACING; 5 ✓ CREW TRAINING; 6 ✓ MARKET SURVEY; 0 TO SHOW COMPLIANCE WITH THE CFR; 7 OPERATING (Primary Category) KIT BUILT AIRCRAFT; 8 OPERATING LIGHT-SPORT — 8A Existing Aircraft without an airworthiness certificate & do not meet § 103.1; 8B Operating Light-Sport Kit-Built; 8C Operating light-sport previously issued special light-sport category airworthiness certificate under § 21.190
  - .8 — SPECIAL FLIGHT PERMIT (Indicate operation(s) to be conducted, then complete Section VI or VII as applicable on reverse side) — 1 FERRY FLIGHT FOR REPAIRS, ALTERATIONS, MAINTENANCE, OR STORAGE; 2 EVACUATION FROM AREA OF IMPENDING DANGER; 3 OPERATION IN EXCESS OF MAXIMUM CERTIFICATED TAKE-OFF WEIGHT; 4 DELIVERING OR EXPORTING; 5 PRODUCTION FLIGHT TESTING; 6 CUSTOMER DEMONSTRATION FLIGHTS
- C .6 — MULTIPLE AIRWORTHINESS CERTIFICATE (check ABOVE "Restricted Operation" and "Standard" or "Limited" as applicable)

III. OWNER'S CERTIFICATION

A. REGISTERED OWNER (As shown on certificate of aircraft registration) — IF DEALER, CHECK HERE →

NAME	ADDRESS
Defense Technologies, Inc.	21795 North Shangri-La Drive Lexington Park, MD 20653

B. AIRCRAFT CERTIFICATION BASIS (Check applicable blocks and complete items as indicated)

AIRCRAFT SPECIFICATION OR TYPE CERTIFICATE DATA SHEET (Give No. and Revision No.)	AIRWORTHINESS DIRECTIVES (Check if all applicable AD's are compiled with and give the number of the last AD SUPPLEMENT available in the biweekly series as of the date of application)
N/A	✓ Bi-Weekly 2010-01
AIRCRAFT LISTING (Give page number(s))	**SUPPLEMENTAL TYPE CERTIFICATE (List number of each STC incorporated)**
N/A	N/A

C. AIRCRAFT OPERATION AND MAINTENANCE RECORDS

✓ CHECK IF RECORDS IN COMPLIANCE WITH 14 CFR Section 91.417	TOTAL AIRFRAME HOURS	3 EXPERIMENTAL ONLY (Enter hours flown since last certificate issued or renewed)
✓	2.74	2.74

D. CERTIFICATION - I hereby certify that I am the registered owner (or his agent) of the aircraft described above, that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 et seq. and applicable Federal Aviation Regulations, and that the aircraft has been inspected and is airworthy and eligible for the airworthiness certificate requested.

DATE OF APPLICATION	NAME AND TITLE (Print or type)	SIGNATURE
January 7, 2010	Donald R. Jackson, Senior Vice President	

IV. INSPECTION AGENCY VERIFICATION

A. THE AIRCRAFT DESCRIBED ABOVE HAS BEEN INSPECTED AND FOUND AIRWORTHY BY: (Complete the section only if 14 CFR part 21.183(d) applies.

- 2 — 14 CFR part 121 CERTIFICATE HOLDER (Give Certificate No.)
- 3 — CERTIFICATED MECHANIC (Give Certificate No.)
- 6 — CERTIFICATED REPAIR STATION (Give Certificate No.)
- 5 — AIRCRAFT MANUFACTURER (Give name or firm)

DATE	TITLE	SIGNATURE

V. FAA REPRESENTATIVE CERTIFICATION

(Check ALL applicable block items A and B)

A. I find that the aircraft described in Section I or VII meets requirements for
- ✓ THE CERTIFICATE REQUESTED
- 4 — AMENDMENT OR MODIFICATION OF CURRENT AIRWORTHINESS CERTIFICATE

B. Inspection for a special permit under Section VII was conducted by:
- FAA INSPECTOR
- CERTIFICATE HOLDER UNDER
- FAA DESIGNEE
- 14 CFR part 65
- 14 CFR part 121 OR 135
- 14 CFR part 145

DATE	MIDO/FSDO Office	4	DESIGNEE'S SIGNATURE AND NO.	1	FAA INSPECTOR'S SIGNATURE
1/7/2010	ANE-MIDO-44				Henry K. Cooper

VI. PRODUCTION FLIGHT TESTING

A. MANUFACTURER

NAME	ADDRESS

B. PRODUCTION BASIS *(Check applicable item)*

- ☐ PRODUCTION CERTIFICATE *(Give production certificate number)* →
- ☐ TYPE CERTIFICATE ONLY
- ☐ APPROVED PRODUCTION INSPECTION SYSTEM

C. GIVE QUANTITY OF CERTIFICATES REQUIRED FOR OPERATING NEEDS

DATE OF APPLICATION	NAME AND TITLE *(Print or Type)*	SIGNATURE

VII. SPECIAL FLIGHT PERMIT PURPOSES OTHER THAN PRODUCTION FLIGHT TEST

A. DESCRIPTION OF AIRCRAFT

REGISTERED OWNER	ADDRESS
BUILDER *(Make)*	MODEL
SERIAL NUMBER	REGISTRATION MARK

B. DESCRIPTION OF FLIGHT — CUSTOMER DEMONSTRATION FLIGHTS ☐ *(Check if applicable)*

FROM	TO	
VIA	DEPARTURE DATE	DURATION

C. CREW REQUIRED TO OPERATE THE AIRCRAFT AND ITS EQUIPMENT

☐ PILOT ☐ CO-PILOT ☐ FLIGHT ENGINEER ☐ OTHER *(Specify)*

D. THE AIRCRAFT DOES NOT MEET THE APPLICABLE AIRWORTHINESS REQUIREMENTS AS FOLLOWS:

E. THE FOLLOWING RESTRICTIONS ARE CONSIDERED NECESSARY FOR SAFE OPERATION: *(Use attachment if necessary)*

F. CERTIFICATION – I hereby certify that I am the registered owner (or his agent) of the aircraft described above; that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 et seq. and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is safe for the flight described.

DATE	NAME AND TITLE *(Print or Type)*	SIGNATURE

VIII. AIRWORTHINESS DOCUMENTATION (FAA/DESIGNEE use only)

✓ A. Operating Limitations and Markings in Compliance with 14 CFR Section 91.9, as applicable.	☐ G. Statement of Conformity, FAA Form 8130-9 *(Attach when required)*
✓ B. Current Operating Limitations Attached	☐ H. Foreign Airworthiness Certification for Import Aircraft *(Attach when required)*
✓ C. Data, Drawings, Photographs, etc. *(Attach when required)* INTRODUCTION LETTER	✓ I. Previous Airworthiness Certificate Issued in Accordance with 14 CFR Section 21.191a,c,f CAR _____ (Original Attached)
✓ D. Current Weight and Balance information Available in Aircraft	
☐ E. Major Repair and Alteration, FAA Form 337 *(Attach when required)*	✓ J. Current Airworthiness Certificate Issued in Accordance with 14 CFR Section 21.191a,c,f. *(Copy Attached)*
✓ F. This inspection Recorded in Aircraft Records	☐ K. Light-Sport Aircraft Statement of Compliance, FAA Form 8130-15 *(Attach when required)*

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

SPECIAL AIRWORTHINESS CERTIFICATE

A	CATEGORY/DESIGNATION **EXPERIMENTAL**		
	PURPOSE **Research & Development, Market Survey, Crew Tng.**		
B	MANU-FACTURER	NAME	N/A
		ADDRESS	N/A
C	FLIGHT	FROM	N/A
		TO	N/A
D	N- **2554B**		SERIAL NO. **001**
	BUILDER **Defense Technologies Inc.**		MODEL **Kestral - T**
E	DATE OF ISSUANCE **January 7, 2010**		EXPIRY **January 6, 2011**
	OPERATING LIMITATIONS DATED **01/07/10**		ARE PART OF THIS CERTIFICATE
	SIGNATURE OF FAA REPRESENTATIVE **Henry K. Cooper**		DESIGNATION OR OFFICE NO. **ANE-MIDO-44**

FEDERAL AVIATION ADMINISTRATION

COPY

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding $1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).

FAA FORM 8130-7 (07/04) *SEE REVERSE SIDE* *NSN: 0052-00-693-4000*

A	This airworthiness certificate is issued under the authority of Public Law 104-6, 49 United States Code (USC) 44704 and Title 14 Code of Federal Regulations (CFR).
B	The airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production flight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire: and/or (2) Carrying persons not essential to the purpose of the flight.
C	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
D	This airworthiness certificate certifies that as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable CFR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side: (1) except in accordance with the applicable CFR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate; (2) over any foreign country without the special permission of that country.
E	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in 14 CFR, Part 21, Section 21.181 or 21.217.

New Cumberland Manufacturing Inspection District Office
Bldg. 201, Rm. 102,
400 Airport Road
New Cumberland, PA 17070-3419

Operating Limitations
Experimental: Research and Development, Market Survey, and/or Crew Training

Registered Owner Name: Defense Technologies, Inc. **Registered Owner Address:** 21795 Shangri-La Dr Lexington Park Maryland 20653 **Aircraft Description:** Kestrel-T: Giant Scale Rc Size Standard Wing And Tail Configuration Tricycle Gear Configuration **Aircraft Registration:** N2554B **Aircraft Builder:** Defense Technologies, Inc.	**Year Manufactured:** 2008 **Aircraft Serial Number:** 001 **Aircraft Model Designation:** Kestrel – T **Engine:** RCS 180 **Propeller:** Bambula 20 x 8 wood

The following conditions and limitations apply to all unmanned aircraft system (UAS) flight operations for the Kestrel – T, RCS 180 while operating in the National Airspace System (NAS).

1. General Information.

a. Integrated system. For the purposes of this special airworthiness certificate and operating limitations, the Kestrel – T, RCS 180 operated by Defense Technologies, Inc., is considered to be an integrated system. The system is composed of the following:

(1) Kestrel – T, RCS 180, serial number 001,
(2) UAS control station(s), that is, fixed, mobile, ground-based, or airborne.
(3) Telemetry, launch, and recovery equipment.

(4) Communications and navigation equipment, including ground and/or airborne equipment used for command and control of the Kestrel – T, RCS 180.

(5) Ground or airborne equipment used for communication with the chase aircraft, other members of the flight crew, observers, air traffic control (ATC), and other users of the NAS.

b. Compliance with 14 CFR part 61 (Certification: Pilots, Flight Instructors, and Ground Instructors) and part 91 (General Operating and Flight Rules). Unless otherwise specified in this document, the UA pilot-in-command (PIC) and Defense Technologies, Inc., must comply with all applicable sections and parts of 14 CFR including, but not limited to, parts 61 and 91.

c. Operational requirements.

(1) No person may operate this UAS for other than the purpose of research and development, market survey, and/or crew training, to accomplish the flight operation outlined in Defense Technologies, Inc., program letter dated 12/30/2009, Rev. 1.6, which describes compliance with § 21.193(d), Experimental certificates: General, and has been made available to the UA PIC.

(2) This UAS must be operated in accordance with applicable air traffic and general operating rules of part 91 and all additional limitations herein prescribed under the provisions of § 91.319(i), Aircraft having experimental certificates: Operating limitations.

(3) Defense Technologies, Inc., must accumulate at least 50 flight hours under its experimental airworthiness certificate before customer crew training is permitted, in accordance with § 21.195(d), Experimental certificates: Aircraft to be used for market surveys, sales demonstrations, and customer crew training.

d. UA condition. The UA PIC must determine that the UA is in a condition for safe operation, and in a configuration appropriate for the purpose of the intended flight.

e. Multiple-purpose operations. When changing between operating purposes of a multiple purpose certificate, the operator must determine that the aircraft is in a condition for safe operation and appropriate for the purpose intended. A record entry will be made by an appropriately rated person (that is, an individual authorized by the applicant and acceptable to the FAA) to document that finding in the maintenance records.

f. Operation exceptions. No person may operate this UA to carry property for compensation or hire (§ 91.319(a)(2)).

g. UA markings.

(1) This UA must be marked with its U.S. registration number in accordance with part 45 or alternative marking approval issued by the FAA Production and Airworthiness Division, AIR-200.

(2) This UA must display the word *Experimental* in accordance with § 45.23(b), Display of marks, unless otherwise granted an exemption from this requirement.

h. Required documentation. Before conducting the initial flight of the Kestrel – T, RCS 180, Defense Technologies, Inc., must forward a copy of the Kestrel – T, RCS 180 program letter, special airworthiness certificate, and operating limitations to the following personnel:

(1) Peter Acevedo, FAA Air Traffic Representative, Eastern Service Center, System Support, 1701 Columbia Ave, College Park, GA 30337, telephone (404) 305-5598, email peter.k.acevedo@faa.gov.

(2) Richard Posey, Aviation Safety Inspector, Production and Airworthiness Division, AIR-200, 800 Independence Ave, SW, Washington, DC 20591, telephone (202) 267-9538, email richard.posey@faa.gov.

i. Change in registrant address. Section 47.45, Change of address, requires that the FAA Aircraft Registry be notified within 30 days of any change in the aircraft registrant's address. Such notification is to be made by providing AC Form 8050-1, Aircraft Registration Application, to the FAA Aircraft Registration Branch (AFS-750) in Oklahoma City, Oklahoma.

j. Certificate display and manual availability. The airworthiness and registration certificates must be displayed, and the aircraft flight manual must be available to the pilot, as prescribed by the applicable sections of 14 CFR, or as prescribed by an exemption granted in accordance with 14 CFR part 11, Investigative and Enforcement Procedures, to Defense Technologies, Inc.

2. Program Letter. The Kestrel – T, RCS 180 program letter, dated 12/30/2009, Rev.1.6, will be used as a basis for determining the operating limitations prescribed in this document. All flight operations must be conducted in accordance with the provisions of this document.

3. Initial Flight Testing.

a. Requirements. Flight operations must be conducted within visual line of sight of the pilot/observer. Initial flight testing must be completed upon accumulation of 25 flight hours. Following satisfactory completion of initial flight testing, the operations manager or chief pilot must certify in the records that the aircraft has been shown to comply with § 91.319(b). Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement:

> *I certify that the prescribed flight test hours have been completed and the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation. The following aircraft operating data has been demonstrated during the flight testing: speeds Vx _____, and Vy _____, and the weight _____ and CG location _____ at which they were obtained.*

b. Aircraft operations for the purpose of market surveys, sales demonstrations, and customer crew training. These operations cannot be performed until 50 flight

hours have been accomplished. An entry in the maintenance records is required as evidence of compliance.

4. Authorized Flight Operations Area.

a. Description of the authorized flight operations area. The flight operations area is located in Clements, MD. Clements Field, 4MD4 is a private airport located at:

Latitude	38° 20.408N
Longitude	76° 44.432W

b. Flight test area. The flight operations area authorized for the UA will be referred to as the flight test area, and is depicted graphically below.

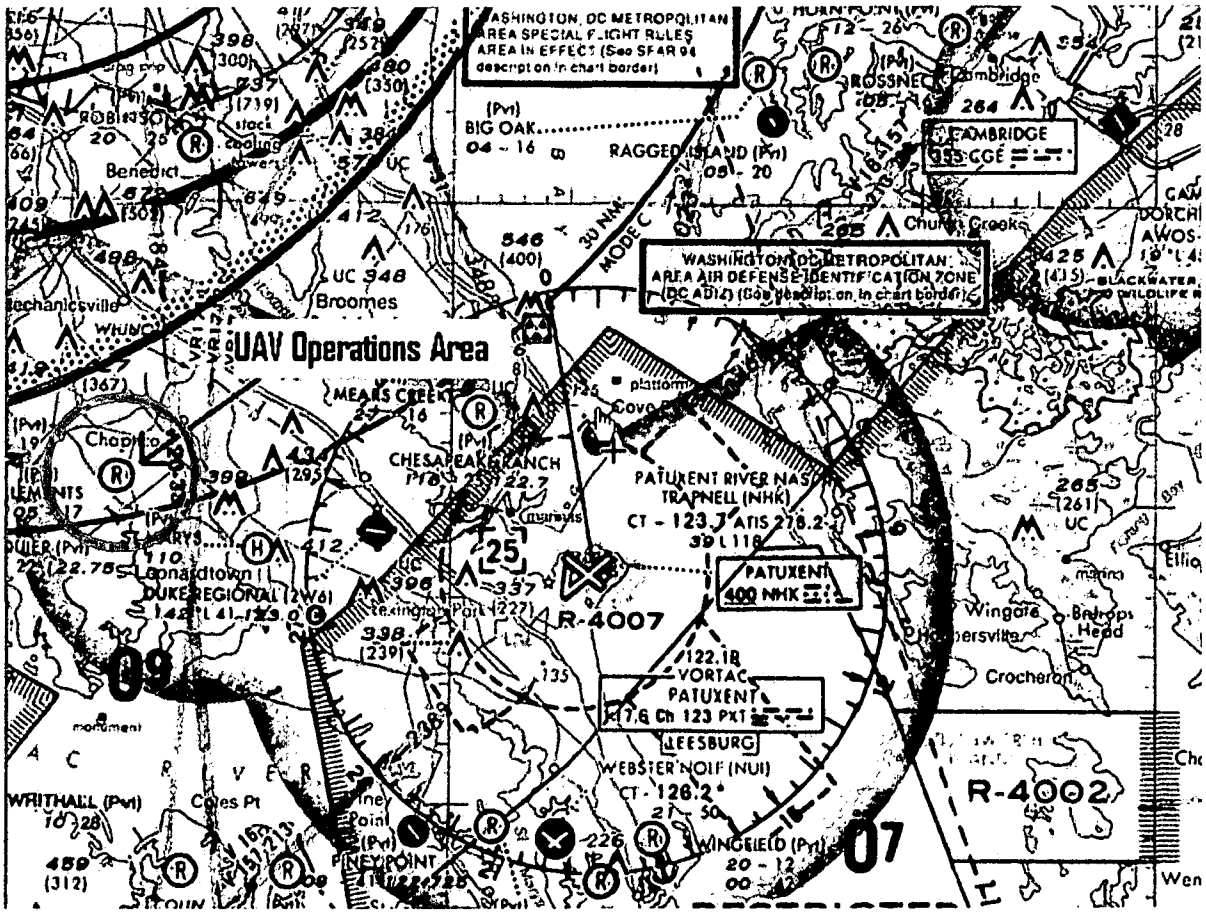


Figure 1. Aeronautical Chart

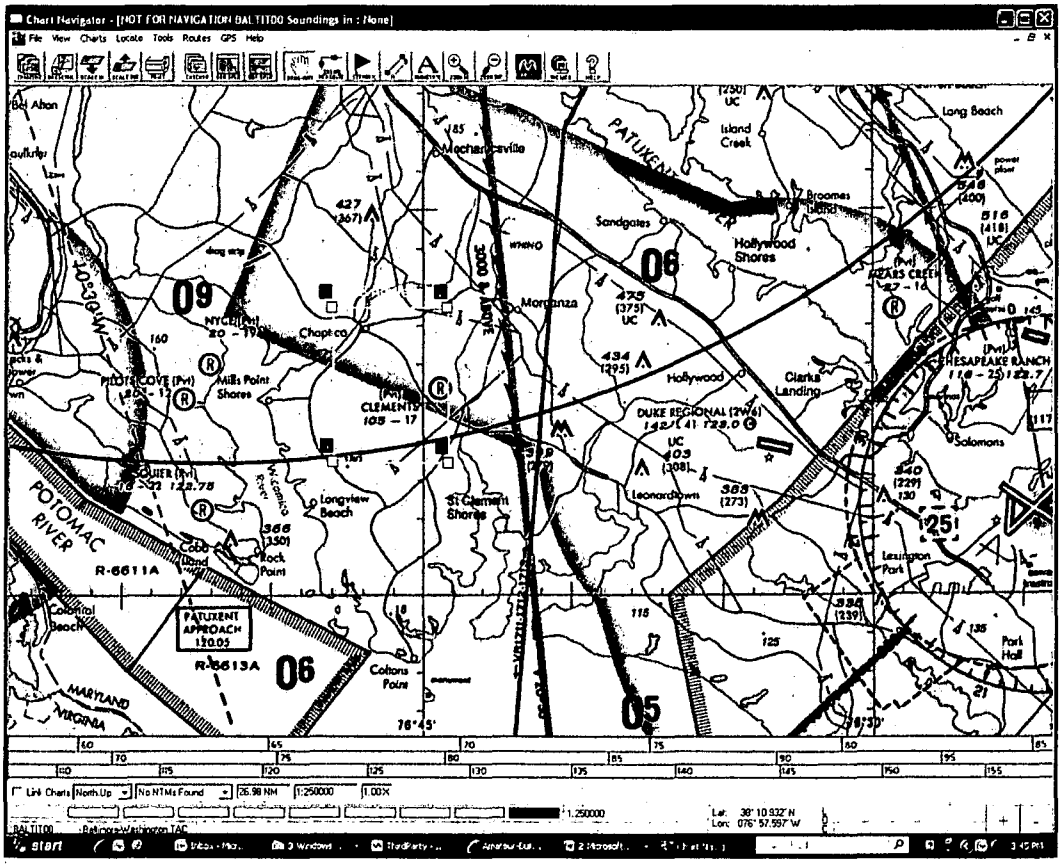


Figure 2. Kestrel – T Flight Test Area

Waypoints for Proposed Kestrel-T Experimental Flight Box - 4MD4 Operations		
Point Name	**Latitude**	**Longitude**
Point 1	**38° 18.418´ N**	**076° 44.136´ W**
Point 2	**38° 22.440´ N**	**076° 44.153´ W**
Point 3	**38° 22.448´ N**	**076° 47.988´ W**
Point 4	**38° 18.447´ N**	**076° 47.967´ W**

c. Authorized flight times and conditions. All flight operations must be conducted during daylight hours under visual flight rules (VFR). Potomac TRACN (PCT) will NOT be requiring VHF/UHF monitoring or communication. The following conditions will be included in your operating limitations.

(1) Operations shall be conducted below 1000 MSL.

(2) Flight operations shall be contained in an area west of 4MD4. The primary containment area is identified as being 2nm north, 2nm south, and 3nm west of the airport as identified in Figure 2 above. All flight operations must remain clear of the ADIZ.

(3) The UAS PIC must notify the PCT TRACON Operations Manager

at (540) 349-7541 and PAX River NAS at (301) 342-3740 at least 30 minutes prior to launch and immediately upon termination of operations each day. DTI must provide PCT with an on-site contact name and phone number for two-way communications with ATC for each flight.

(4) The Kestrel UAS shall transmit the assigned beacon code 0377 and altitude information (Mode-C) for the duration of the flight. Any failure of the transponder or inability to properly squawk the assigned code shall be reported to PCT and flight operations shall be terminated.

(5) The Kestrel pilot shall have the capability of maneuvering the UAS or suspending operations as instructed by PCT.

(6) At no time will the external pilot conduct his/her duties more than 1 mile laterally or 1000 ft vertically from the UA.

(7) A Notice to Airmen (NOTAM) shall be issued when UAS operations are being conducted. (Note: Do not use 'distant' or D here as the NOTAM classification and codes have recently been changed.) DTI shall contact the Automated Flight Service Station (FSS) no less than 48 hours prior to the operation and provide:

i) Name, address, and telephone number of the person giving notice.
ii) Nature of the activity.
iii) Date, time, and duration of the activity.
iv) Size of the affected area in nautical mile radius and affected altitudes.
v) Location of center of affected area in relation to airport.
vi) Location of center of affected area in relation to nearest VOR/DME or VORTAC.

d. Criteria for remaining in the flight test area. The UAS PIC must ensure all UA flight operations remain within the lateral and vertical boundaries of the flight test area. Furthermore, the UAS PIC must take into account all factors that may affect the capability of the UA to remain within the flight test area. This includes, but is not limited to, considerations for wind, gross weight, and glide distances.

e. Incident/accident reporting. Any incident/accident and any flight operation that transgresses the lateral or vertical boundaries of the flight test area or any restricted airspace must be reported to the FAA within 24 hours. This information must be reported to the Unmanned Aircraft Program Office, AIR-160. AIR-160 can be reached by telephone at 202-385-4636 and fax at 202-385-4651. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov. Further flight operations must not be conducted until the incident is reviewed by AIR-160 and authorization to resume operations is provided to DTI.

5. UA Pilots and Observers.

a. UA PIC roles and responsibilities.

(1) The UA PIC must perform crew duties for only one UA at a time.

(2) All flight operations must have a designated UA PIC. The UA PIC has responsibility over each flight conducted and is accountable for the UA flight operation.

(3) The UA PIC is responsible for the safety of the UA as well as persons and property along the UA flight path. This includes, but is not limited to, collision avoidance and the safety of persons and property in the air and on the ground.

(4) The UA PIC must avoid densely populated areas (§ 91.319) and exercise increased vigilance when operating within or in the vicinity of published airway boundaries.

b. UA PIC certification and ratings requirements.

(1) The UA PIC must hold and be in possession of, at a minimum, an FAA private pilot certificate, with either an airplane, rotorcraft, or powered-lift category; and single- or multiengine class ratings appropriate to the type of UA being operated.

(2) The UA PIC must have and be in possession of a valid second-class (or higher) airman medical certificate issued under 14 CFR part 67, Medical Standards and Certification.

c. UA PIC currency, flight review, and training.

(1) No person may act as pilot in command of an unmanned aircraft unless that person has made at least three takeoffs and three landings in manned aircraft within the preceding 90 days acting as the sole manipulator of the flight controls.

(2) The UA PIC must have a flight review in manned aircraft every 24 calendar months in accordance with § 61.56, Flight review.

(3) The UA PIC must maintain currency in unmanned aircraft in accordance with (applicant name) company procedures.

(4) The UA PIC must have a flight review in unmanned aircraft every 24 calendar months in accordance with Defense Technologies, Inc., procedures.

(5) All UA PICs must have successfully completed applicable (applicant name) training for the UAS.

d. Supplemental UA pilot roles and responsibilities.

(1) Any additional UA pilot(s) assigned to a crew station during UA flight operations will be considered a supplemental UA pilot.

(2) A supplemental UA pilot assists the PIC in the operation of the UA and may do so at the same or a different control station as the PIC. The UA PIC will have operational override capability over any supplemental UA pilots, regardless of position.

(3) A supplemental UA pilot must perform crew duties for only one UA at a time.

e. Supplemental UA pilot certification. The supplemental UA PIC need not be a certificated pilot, but must have successfully completed a recognized private pilot ground school program.

f. Supplemental UA pilot currency, flight review, and training.

(1) All UA pilots must maintain currency in unmanned aircraft in accordance with (applicant name) company procedures.

(2) All UA pilots must have a flight review in unmanned aircraft every 24 calendar months in accordance with Defense Technologies, Inc., procedures.

(3) All UA pilots must have successfully completed applicable Defense Technologies, Inc., training for the UAS.

g. Observer roles and responsibilities. The task of the observer is to provide the UA PIC(s) with instructions to maneuver the UA clear of any potential collision with other traffic. To satisfy these requirements:

(1) The observer must perform crew duties for only one UA at a time.

(2) At no time will the observer permit the UA to operate beyond the line-of-sight necessary to ensure maneuvering information can be reliably determined.

(3) At no time will the observer conduct his/her duties more than 1000 ft laterally or 1000 ft vertically from the UA.

(4) An observer must maintain continuous visual contact with the UA to discern UA attitude and trajectory in relation to conflicting traffic.

(5) An observer may be positioned in a chase aircraft. When a chase aircraft is used, it must maintain a reasonable proximity, and must position itself relative to the UA to reduce the hazard of collision in accordance with § 91.111, Operating near other aircraft. When the observer is located in a chase aircraft, the observer's duties must be dedicated to the task of observation only. Concurrent duty as pilot of the chase aircraft is not authorized.

(6) Observers must continually scan the airspace for other aircraft that pose a potential conflict.

(7) All flight operations conducted in the flight test area must have an observer to perform traffic avoidance and visual observation to fulfill the see-and-avoid requirement of § 91.113, Right-of-way rules: Except water operations.

h. Observer certification.

(1) All observers must either hold, at a minimum, an FAA private pilot license or military equivalent, or must have successfully completed specific observer training acceptable to the FAA. An observer does not require currency as a pilot.

(2) All observers must have in their possession a valid third-class (or higher) airman medical certificate issued under part 67. A valid second-class airman medical certificate is required after 9/10/2008.

i. Observer training.

(1) All observers must be thoroughly trained, be familiar with, and possess operational experience with the equipment being used. Such training is necessary for observation and detection of other aircraft for collision avoidance purposes as outlined in Defense Technologies, Inc., program letter.

(2) All observers must have successfully completed applicable Defense Technologies, Inc., training for the UAS.

6. Equipage.

a. The UAS must be equipped with an operable transponder with Mode C or Mode S, and two-way communications equipment allowing communications between the UA pilot, chase aircraft, observers, all UAS control stations.

b. The UA and chase aircraft must be equipped with operable navigation, position, and/or strobe/anti-collision lights. Strobe/anti-collision lights must be illuminated during all operations.

7. Communications.

a. Before UA flights. Before conducting operations, the frequency spectrum used for operation and control of the UA must be approved by the Federal Communications Commission or other appropriate government oversight agency.

b. During UA flights.

(1) Appropriate air traffic frequencies must be monitored during flight operations.

(2) All UA positions must maintain two-way communications with each other during all operations. If unable to maintain two-way communication, the UA PIC will expeditiously return the UA to its base of operations while remaining within the flight test area and conclude the flight operation.

8. Flight Conditions.

a. Daylight operations. All flight operations must be conducted during daylight hours in visual meteorological conditions (VMC), including cloud clearance minimums as specified in § 91.155, Basic VFR weather minimums. Flight operation in instrument meteorological conditions (IMC) is not permitted.

b. Prohibitions.

(1) The UA is prohibited from aerobatic flight, that is, an intentional maneuver involving an abrupt change in the UA's attitude, an abnormal acceleration, or other flight action not necessary for normal flight. (See § 91.303, Aerobatic flight.)

(2) Flight operations must not involve carrying hazardous material or the dropping of any objects or external stores.

(3) Each UA must be operated by only one control station at a time. A control station may not be used to operate multiple UAS.

c. Transponder requirements.

(1) The UA must operate an approved operational Mode C or Mode S altitude encoding transponder during all flight operations.

(2) Chase aircraft transponders must be on standby while performing chase operations flight with the UA.

d. Transponder failure.

(1) In the event of transponder failure on either the UA or the chase aircraft, the UA must conclude all flight operations and expeditiously return to its base of operations within the prescribed limitations of this authorization.

(2) In the event of UA transponder failure, a chase aircraft will operate its transponder in Mode C.

e. Notice to airman. Defense Technologies, Inc., must request the issuance of a Notice to Airman (NOTAM) through the Automated Flight Service Station at least 24 hours before flight operation.

9. Flight Termination and Lost Link Procedures.

a. Flight termination. In accordance with Defense Technologies, Inc., program letter, Rev. 1.6, dated 12/30/09, flight termination must be initiated at any point that safe operation of the UA cannot be maintained or if hazard to persons or property is imminent.

b. Lost link procedures. In the event of lost link, the UA must provide a means of automatic recovery that ensures airborne operations are predictable and that the UA remains within the flight test area. The chase aircraft or observer, all other UAS control stations, and the appropriate ATC facility will be immediately notified of the lost link condition and the expected UA response.

10. Maintenance and Inspection. (Ref.: DTI-UAS-MAIN-INSP-01, Kestral-T UAS Maintenance and Inspection Policy, Rev. 2.3, 12/28/2009, AEA-FSDO-27-accepted 12/30/2009)

a. General requirements. The UAS must not be operated unless it is inspected and maintained in accordance with the Defense Technologies, Inc., Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Aircraft Discrepancy Form, Rev. 2.3, dated 12/28/09, and Daily Ground Station Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Ground Station Discrepancy Form, Rev. 2.3, dated 12/28/09, or later accepted FAA revision. Defense Technologies, Inc., must establish and maintain aircraft maintenance records (see paragraph 10(d) below).

b. Inspections. No person may operate this UAS within the preceding 12 calendar months unless it has had a condition inspection performed according to the Defense Technologies, Inc., Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Aircraft Discrepancy Form, Rev. 2.3, dated 12/28/09, and Daily Ground Station Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Ground Station Discrepancy Form, Rev. 2.3, dated 12/28/09, or later accepted FAA revision. The UAS must also have been found to be in a condition for safe operation. This inspection will be recorded in the UAS maintenance records as described in paragraph 10(d) below.

c. Authorized inspectors. Only those individuals trained and authorized by Defense Technologies, Inc., and acceptable to the FAA may perform the inspections and maintenance required by these operating limitations.

d. Maintenance and inspection records. Maintenance and inspections of the UAS must be recorded in the UAS maintenance records. The following information must be recorded:

(1) Maintenance record entries must include a description of the work performed, the date of completion for the work, the UAS's total time-in-service, and the name and signature of the person performing the work.

(2) Inspection entries must contain the following, or a similarly worded, statement: *I certify that this UAS was inspected on (date), in accordance with the scope and detail of the Defense Technologies, Inc.,* Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Aircraft Discrepancy Form, Rev. 2.3, dated 12/28/09, and Daily Ground Station Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Ground Station Discrepancy Form, Rev. 2.3, dated 12/28/09, or later accepted FAA revision, *and was found to be in a condition for safe operation.*

(3) UAS instruments and equipment required to be installed must be inspected and maintained in accordance with the requirements of the *Defense Technologies, Inc.* Any maintenance or inspection of this equipment must be recorded in the UAS maintenance records.

(4) No person may operate this UAS unless the altimeter system and transponder have been tested within the preceding 24 calendar months in accordance with § 91.411, Altimeter system and altitude reporting equipment tests and inspections, and § 91.413, ATC transponder tests and inspections. These inspections will be recorded in the UAS maintenance records.

11. Information Reporting. Defense Technologies, Inc., will provide the following information to Donald.E.Grampp@FAA.GOV on a monthly basis. A copy of the report shall be provided to AIR-200.

a. Number of flights conducted under this certificate.

b. Pilot duty time per flight.

c. Unusual equipment malfunctions (hardware or software).

d. Deviations from ATC instructions.

e. Unintended entry into lost link flight mode that results in a course change.

12. Revisions and Other Provisions.

a. Experimental certificates, program letters, and operating limitations. The experimental certificate, FAA-accepted Defense Technologies, Inc., program letter, and operating limitations cannot be reissued, renewed, or revised without application being made to the New Cumberland Manufacturing Inspection District Office MIDO, in coordination with AIR-200. AIR-200 will be responsible for FAA Headquarters internal coordination with the Aircraft Certification Service, Flight Standards Service, Air Traffic Organization, Office of the Chief Council, and Office of Rulemaking.

b. Certificates of waiver or authorization. DTI shall immediately notify the Production and Airworthiness Division, AIR-200, and the New Cumberland MIDO, if there is any plan for requesting a Certificate of Authorization or Waiver (COA) for UAS operations during the time the experimental certificate is in effect. An entry in the aircraft logbook is required to document that the aircraft flight authority has been changed from the experimental certificate to COA. When COA operations are concluded and the aircraft resumes flying under the experimental certificate, a record entry will be made in the aircraft logbook by an appropriately rated person to document that the aircraft is in a condition for safe operation and appropriately configured.

c. Amendments and cancellations. The provisions and limitations annotated in this operational approval may be amended or cancelled at any time as deemed necessary by the FAA.

d. Reviews of revisions. (Ref.: DTI-UAS-MAIN-INSP-01, Kestral-T UAS Maintenance and Inspection Policy, Rev. 2.3, dated 12/28/09, AEA-FSDO-27-accepted 12/30/09)

All revisions to Defense Technologies, Inc., Kestral-T UAS UAS Maintenance and Inspection Policy, Rev. 2.3, dated 12/28/09, AEA-FSDO-27-accepted 12/30/09, Daily Aircraft Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Aircraft Discrepancy Form, Rev. 2.3, dated 12/28/09, and Daily Ground Station Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Ground Station Discrepancy Form, Rev. 2.3, dated 12/28/09, must be reviewed and accepted by the Washington Flight Standards District Office (FSDO).

13. UAS Modifications.

a. Software and system changes. All software and system changes will be documented as part of the normal maintenance procedures and will be available for inspection. All software and system changes must be inspected and approved per Defense Technologies, Inc., Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Aircraft Discrepancy Form, Rev. 2.3, dated 12/28/09, and Daily Ground Station Condition Inspection Checklist, Rev. 2.3, dated 12/28/09, reportable on the Ground Station Discrepancy Form, Rev. 2.3, dated 12/28/09, or later accepted FAA revision. All software changes to the aircraft and control station are categorized as major changes, and must be provided in summary form at the time they are incorporated.

b. Major modifications. All major modifications, whether performed under the experimental certificate, COA, or other authorizations, that could potentially affect the safe operation of the system, must be documented and provided to the FAA before operating the aircraft under this certificate. Major modifications incorporated under COA or other authorization needs to be provided only if the aircraft is flown under these authorizations during the effective period of the experimental certificate.

c. Submission of modifications. All information requested must be provided to AIR-200.

End of Limitations

Henry K. Cooper
Senior Aviation Safety Inspector
New Cumberland Manufacturing Inspection District Office
Bldg. 201, Rm. 102,
400 Airport Road
New Cumberland, PA 17070-3419

JANUARY 7, 2010
Issuance Date:

I certify that I have read and understand the operating limitations and conditions that are a part of the special airworthiness certificate, FAA Form 8130-7, issued on _____, for the purposes of research and development, market survey, and/or crew training. This special airworthiness certificate is issued for Kestrel – T, RCS 180, serial number 001, registration number N2554B.

Applicant (signature)

1-7-2010
Date:

Name (Printed): Donald Jackson

Title: Senior Vice President

Company: Defense Technologies, Inc.

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

SPECIAL AIRWORTHINESS CERTIFICATE

A	CATEGORY/DESIGNATION	EXPERIMENTAL (UNMANNED AIRCRAFT)	
	PURPOSE	Research & Development, Market Survey, Crew Tng	
B	MANU-FACTURER	NAME	N/A
		ADDRESS	N/A
C	FLIGHT	FROM	N/A
		TO	N/A
D	N- 2554B		SERIAL NO. 001
	BUILDER Defense Technologies, Inc.		MODEL Kestral - T
E	DATE OF ISSUANCE March 24, 2009		EXPIRY March 23, 2010
	OPERATING LIMITATIONS DATED 03-24-09		ARE PART OF THIS CERTIFICATE
	SIGNATURE OF FAA REPRESENTATIVE Henry K. Cooper		DESIGNATION OR OFFICE NO. ANE-MIDO-44

CANCELLED
JAN 07 2010

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding $1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).

FAA Form 8130-7 (07/04) SEE REVERSE SIDE NSN: 0052-00-693-4000

A	This airworthiness certificate is issued under the authority of Public Law 104-6, 49 United States Code (USC) 44704 and Title 14 Code of Federal Regulations (CFR).
B	The airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production fight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire: and/or (2) Carrying persons not essential to the purpose of the flight.
C	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
D	This airworthiness certificate certifies that as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable CFR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side: (1) except in accordance with the applicable CFR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate; (2) over any foreign country without the special permission of that country.
E	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in 14 CFR, Part 21, Section 21.181 or 21.217.

New Cumberland Manufacturing Inspection District Office
Bldg. 201, Rm. 102,
400 Airport Road
New Cumberland, PA 17070-3419

CANCELLED
JAN 07 2010

Operating Limitations
Experimental: Research and Development, Market Survey, and/or Crew Training

Registered Owner Name: Defense Technologies, Inc. **Registered Owner Address:** 21795 Shangri-La Dr Lexington Park Maryland 20653 **Aircraft Description:** Kestrel-T: Giant Scale Rc Size Standard Wing And Tail Configuration Tricycle Gear Configuration **Aircraft Registration:** N2554B **Aircraft Builder:** Defense Technologies, Inc.	**Year Manufactured:** 2008 **Aircraft Serial Number:** 001 **Aircraft Model Designation:** Kestrel – T **Engine:** RCS 180 **Propeller:** Bambula 20 x 8 wood

The following conditions and limitations apply to all unmanned aircraft system (UAS) flight operations for the Kestrel – T, RCS 180 while operating in the National Airspace System (NAS).

1. General Information.

a. Integrated system. For the purposes of this special airworthiness certificate and operating limitations, the Kestrel – T, RCS 180 operated by Defense Technologies, Inc., is considered to be an integrated system. The system is composed of the following:

(1) Kestrel – T, RCS 180, serial number 001,
(2) UAS control station(s), that is, fixed, mobile, ground-based, or airborne.
(3) Telemetry, launch, and recovery equipment.

(4) Communications and navigation equipment, including ground and/or airborne equipment used for command and control of the Kestrel – T, RCS 180.

(5) Ground or airborne equipment used for communication with the chase aircraft, other members of the flight crew, observers, air traffic control (ATC), and other users of the NAS.

b. Compliance with 14 CFR part 61 (Certification: Pilots, Flight Instructors, and Ground Instructors) and part 91 (General Operating and Flight Rules). Unless otherwise specified in this document, the UA pilot-in-command (PIC) and Defense Technologies, Inc., must comply with all applicable sections and parts of 14 CFR including, but not limited to, parts 61 and 91.

c. Operational requirements.

(1) No person may operate this UAS for other than the purpose of research and development, market survey, and/or crew training, to accomplish the flight operation outlined in Defense Technologies, Inc., program letter dated March 24, 2009, Rev. 1.4, which describes compliance with § 21.193(d), Experimental certificates: General, and has been made available to the UA PIC.

(2) This UAS must be operated in accordance with applicable air traffic and general operating rules of part 91 and all additional limitations herein prescribed under the provisions of § 91.319(i), Aircraft having experimental certificates: Operating limitations.

(3) Defense Technologies, Inc., must accumulate at least 50 flight hours under its experimental airworthiness certificate before customer crew training is permitted, in accordance with § 21.195(d), Experimental certificates: Aircraft to be used for market surveys, sales demonstrations, and customer crew training.

d. UA condition. The UA PIC must determine that the UA is in a condition for safe operation, and in a configuration appropriate for the purpose of the intended flight.

e. Multiple-purpose operations. When changing between operating purposes of a multiple purpose certificate, the operator must determine that the aircraft is in a condition for safe operation and appropriate for the purpose intended. A record entry will be made by an appropriately rated person (that is, an individual authorized by the applicant and acceptable to the FAA) to document that finding in the maintenance records.

f. Operation exceptions. No person may operate this UA to carry property for compensation or hire (§ 91.319(a)(2)).

g. UA markings.

(1) This UA must be marked with its U.S. registration number in accordance with part 45 or alternative marking approval issued by the FAA Production and Airworthiness Division, AIR-200.

(2) This UA must display the word *Experimental* in accordance with § 45.23(b), Display of marks, unless otherwise granted an exemption from this requirement.

h. Required documentation. Before conducting the initial flight of the Kestrel – T, RCS 180, Defense Technologies, Inc., must forward a copy of the Kestrel – T, RCS 180 program letter, special airworthiness certificate, and operating limitations to the following personnel:

(1) Peter Acevedo, FAA Air Traffic Representative, Eastern Service Center, System Support, 1701 Columbia Ave, College Park, GA 30337, telephone (404) 305-5598, email peter.k.acevedo@faa.gov.

(2) Richard Posey, Aviation Safety Inspector, Production and Airworthiness Division, AIR-200, 800 Independence Ave, SW, Washington, DC 20591, telephone (202) 267-9538, email richard.posey@faa.gov.

i. Change in registrant address. Section 47.45, Change of address, requires that the FAA Aircraft Registry be notified within 30 days of any change in the aircraft registrant's address. Such notification is to be made by providing AC Form 8050-1, Aircraft Registration Application, to the FAA Aircraft Registration Branch (AFS-750) in Oklahoma City, Oklahoma.

j. Certificate display and manual availability. The airworthiness and registration certificates must be displayed, and the aircraft flight manual must be available to the pilot, as prescribed by the applicable sections of 14 CFR, or as prescribed by an exemption granted in accordance with 14 CFR part 11, Investigative and Enforcement Procedures, to Defense Technologies, Inc.

2. Program Letter. The Kestrel – T, RCS 180 program letter, dated March 24, 2009, Rev. 1.4, will be used as a basis for determining the operating limitations prescribed in this document. All flight operations must be conducted in accordance with the provisions of this document.

3. Initial Flight Testing.

a. Requirements. Flight operations must be conducted within visual line of sight of the pilot/observer. Initial flight testing must be completed upon accumulation of 25 flight hours. Following satisfactory completion of initial flight testing, the operations manager or chief pilot must certify in the records that the aircraft has been shown to comply with § 91.319(b). Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement:

I certify that the prescribed flight test hours have been completed and the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation. The following aircraft operating data has been demonstrated during the flight testing: speeds Vx _____, and Vy _____, and the weight _____ and CG location _____ at which they were obtained.

b. Aircraft operations for the purpose of market surveys, sales demonstrations, and customer crew training. These operations cannot be performed until 50 flight hours have been accomplished. An entry in the maintenance records is required as evidence of compliance.

4. Authorized Flight Operations Area.

a. Description of the authorized flight operations area. The flight operations area is located in Clements, MD. Clements Field, 4MD4 is a private airport located at:

Latitude	38° 20.408N
Longitude	76° 44.432W

b. Flight test area. The flight operations area authorized for the UA will be referred to as the flight test area, and is depicted graphically below.

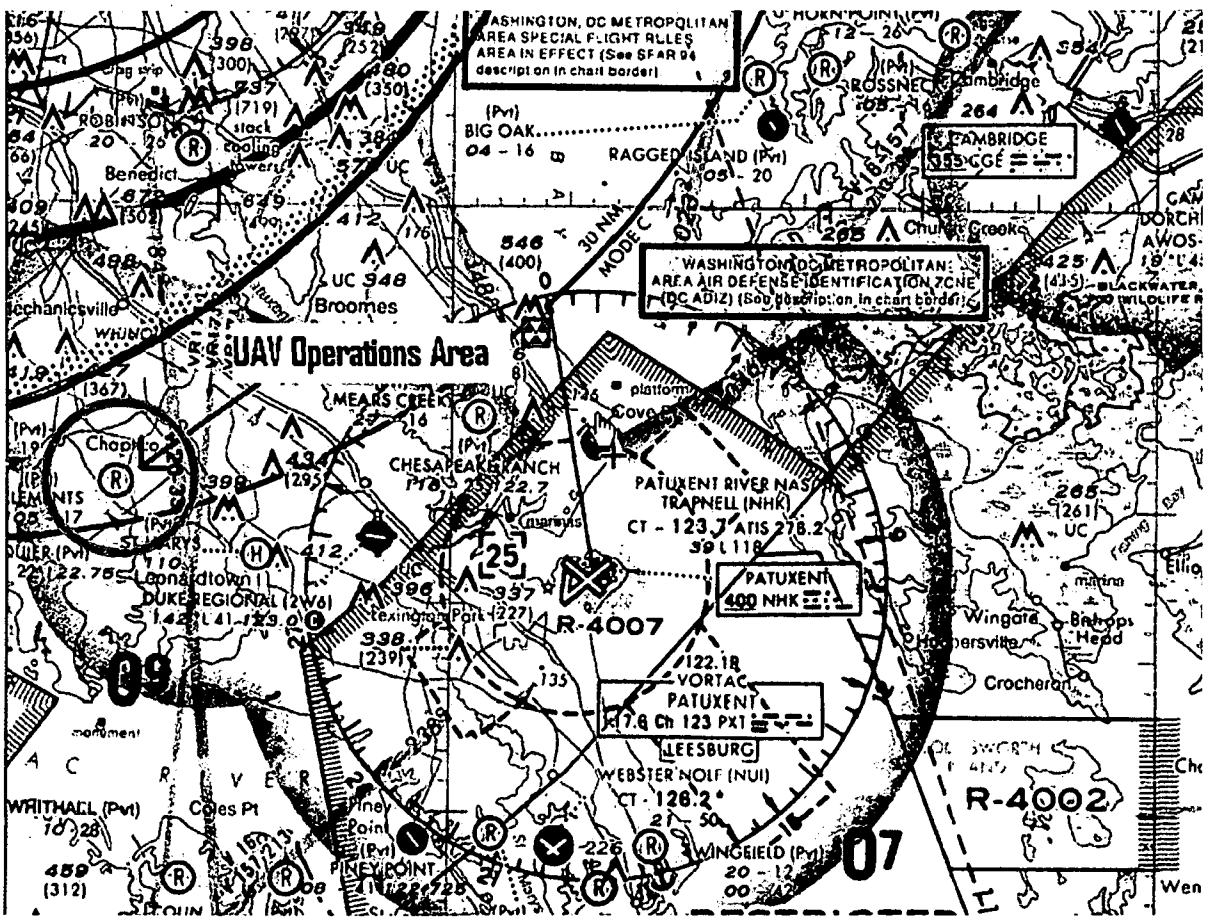


Figure 1. Aeronautical Chart

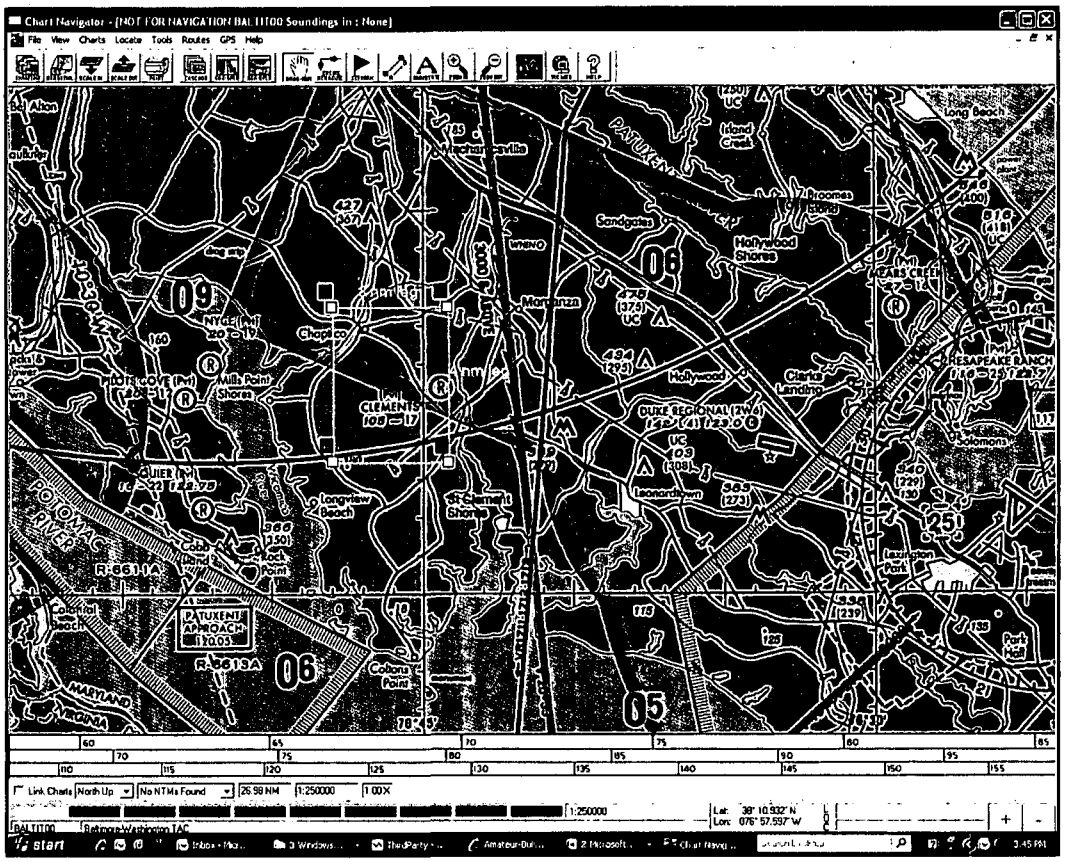


Figure 2. Kestrel – T Flight Test Area

Waypoints for Proposed Kestrel-T Experimental Flight Box - 4MD4 Operations		
Point Name	**Latitude**	**Longitude**
Point 1	**38° 18.418′ N**	**076° 44.136′ W**
Point 2	**38° 22.440′ N**	**076° 44.153′ W**
Point 3	**38° 22.448′ N**	**076° 47.988′ W**
Point 4	**38° 18.447′ N**	**076° 47.967′ W**

c. Authorized flight times and conditions. All flight operations must be conducted during daylight hours under visual flight rules (VFR). Potomac TRACN (PCT) will NOT be requiring VHF/UHF monitoring or communication. The following conditions will be included in your operating limitations.

(1) Operations shall be conducted below 1000 MSL.

(2) Flight operations shall be contained in an area west of 4MD4. The primary containment area is identified as being 2nm north, 2nm south, and 3nm west of the airport as identified in Figure 2 above. All flight operations must remain clear of the ADIZ.

(3) The UAS PIC must notify the PCT TRACON Operations Manager at (540) 349-7541 and PAX River NAS at (301) 342-3740 at least 30 minutes prior to launch and immediately upon termination of operations each day. DTI must provide PCT with an on-site contact name and phone number for two-way communications with ATC for each flight.

(4) The Kestrel UAS shall transmit the assigned beacon code 0377 and altitude information (Mode-C) for the duration of the flight. Any failure of the transponder or inability to properly squawk the assigned code shall be reported to PCT and flight operations shall be terminated.

(5) The Kestrel pilot shall have the capability of maneuvering the UAS or suspending operations as instructed by PCT.

(6) At no time will the external pilot conduct his/her duties more than 1 mile laterally or 1000 ft vertically from the UA.

(7) A Notice to Airmen (NOTAM) shall be issued when UAS operations are being conducted. (Note: Do not use 'distant' or D here as the NOTAM classification and codes have recently been changed.) DTI shall contact the Automated Flight Service Station (FSS) no less than 48 hours prior to the operation and provide:

i) Name, address, and telephone number of the person giving notice.
ii) Nature of the activity.
iii) Date, time, and duration of the activity.
iv) Size of the affected area in nautical mile radius and affected altitudes.
v) Location of center of affected area in relation to airport.
vi) Location of center of affected area in relation to nearest VOR/DME or VORTAC.

d. Criteria for remaining in the flight test area. The UAS PIC must ensure all UA flight operations remain within the lateral and vertical boundaries of the flight test area. Furthermore, the UAS PIC must take into account all factors that may affect the capability of the UA to remain within the flight test area. This includes, but is not limited to, considerations for wind, gross weight, and glide distances.

e. Incident/accident reporting. Any incident/accident and any flight operation that transgresses the lateral or vertical boundaries of the flight test area or any restricted airspace must be reported to the FAA within 24 hours. This information must be reported to the Unmanned Aircraft Program Office, AIR-160. AIR-160 can be reached by telephone at 202-385-4636 and fax at 202-385-4651. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov. Further flight operations must not be conducted until the incident is reviewed by AIR-160 and authorization to resume operations is provided to DTI.

5. UA Pilots and Observers.

a. UA PIC roles and responsibilities.

(1) The UA PIC must perform crew duties for only one UA at a time.

(2) All flight operations must have a designated UA PIC. The UA PIC has responsibility over each flight conducted and is accountable for the UA flight operation.

(3) The UA PIC is responsible for the safety of the UA as well as persons and property along the UA flight path. This includes, but is not limited to, collision avoidance and the safety of persons and property in the air and on the ground.

(4) The UA PIC must avoid densely populated areas (§ 91.319) and exercise increased vigilance when operating within or in the vicinity of published airway boundaries.

b. UA PIC certification and ratings requirements.

(1) The UA PIC must hold and be in possession of, at a minimum, an FAA private pilot certificate, with either an airplane, rotorcraft, or powered-lift category; and single- or multiengine class ratings appropriate to the type of UA being operated.

(2) The UA PIC must have and be in possession of a valid second-class (or higher) airman medical certificate issued under 14 CFR part 67, Medical Standards and Certification.

c. UA PIC currency, flight review, and training.

(1) No person may act as pilot in command of an unmanned aircraft unless that person has made at least three takeoffs and three landings in manned aircraft within the preceding 90 days acting as the sole manipulator of the flight controls.

(2) The UA PIC must have a flight review in manned aircraft every 24 calendar months in accordance with § 61.56, Flight review.

(3) The UA PIC must maintain currency in unmanned aircraft in accordance with (applicant name) company procedures.

(4) The UA PIC must have a flight review in unmanned aircraft every 24 calendar months in accordance with Defense Technologies, Inc., procedures.

(5) All UA PICs must have successfully completed applicable (applicant name) training for the UAS.

d. Supplemental UA pilot roles and responsibilities.

(1) Any additional UA pilot(s) assigned to a crew station during UA flight operations will be considered a supplemental UA pilot.

(2) A supplemental UA pilot assists the PIC in the operation of the UA and may do so at the same or a different control station as the PIC. The UA PIC will have operational override capability over any supplemental UA pilots, regardless of position.

(3) A supplemental UA pilot must perform crew duties for only one UA at a time.

e. Supplemental UA pilot certification. The supplemental UA PIC need not be a certificated pilot, but must have successfully completed a recognized private pilot ground school program.

f. Supplemental UA pilot currency, flight review, and training.

(1) All UA pilots must maintain currency in unmanned aircraft in accordance with (applicant name) company procedures.

(2) All UA pilots must have a flight review in unmanned aircraft every 24 calendar months in accordance with Defense Technologies, Inc., procedures.

(3) All UA pilots must have successfully completed applicable Defense Technologies, Inc., training for the UAS.

g. Observer roles and responsibilities. The task of the observer is to provide the UA PIC(s) with instructions to maneuver the UA clear of any potential collision with other traffic. To satisfy these requirements—

(1) The observer must perform crew duties for only one UA at a time.

(2) At no time will the observer permit the UA to operate beyond the line-of-sight necessary to ensure maneuvering information can be reliably determined.

(3) At no time will the observer conduct his/her duties more than 1000 ft laterally or 1000 ft vertically from the UA.

(4) An observer must maintain continuous visual contact with the UA to discern UA attitude and trajectory in relation to conflicting traffic.

(5) An observer may be positioned in a chase aircraft. When a chase aircraft is used, it must maintain a reasonable proximity, and must position itself relative to the UA to reduce the hazard of collision in accordance with § 91.111, Operating near other aircraft. When the observer is located in a chase aircraft, the observer's duties must be dedicated to the task of observation only. Concurrent duty as pilot of the chase aircraft is not authorized.

(6) Observers must continually scan the airspace for other aircraft that pose a potential conflict.

(7) All flight operations conducted in the flight test area must have an observer to perform traffic avoidance and visual observation to fulfill the see-and-avoid requirement of § 91.113, Right-of-way rules: Except water operations.

h. Observer certification.

(1) All observers must either hold, at a minimum, an FAA private pilot license or military equivalent, or must have successfully completed specific observer training acceptable to the FAA. An observer does not require currency as a pilot.

(2) All observers must have in their possession a valid third-class (or higher) airman medical certificate issued under part 67. A valid second-class airman medical certificate is required after 9/10/2008.

i. Observer training.

(1) All observers must be thoroughly trained, be familiar with, and possess operational experience with the equipment being used. Such training is necessary for observation and detection of other aircraft for collision avoidance purposes as outlined in Defense Technologies, Inc., program letter.

(2) All observers must have successfully completed applicable Defense Technologies, Inc., training for the UAS.

6. Equipage.

a. The UAS must be equipped with an operable transponder with Mode C or Mode S, and two-way communications equipment allowing communications between the UA pilot, chase aircraft, observers, all UAS control stations.

b. The UA and chase aircraft must be equipped with operable navigation, position, and/or strobe/anti-collision lights. Strobe/anti-collision lights must be illuminated during all operations.

7. Communications.

a. Before UA flights. Before conducting operations, the frequency spectrum used for operation and control of the UA must be approved by the Federal Communications Commission or other appropriate government oversight agency.

b. During UA flights.

(1) Appropriate air traffic frequencies must be monitored during flight operations.

(2) All UA positions must maintain two-way communications with each other during all operations. If unable to maintain two-way communication, the UA PIC will expeditiously return the UA to its base of operations while remaining within the flight test area and conclude the flight operation.

8. Flight Conditions.

a. Daylight operations. All flight operations must be conducted during daylight hours in visual meteorological conditions (VMC), including cloud clearance minimums as specified in § 91.155, Basic VFR weather minimums. Flight operation in instrument meteorological conditions (IMC) is not permitted.

b. Prohibitions.

(1) The UA is prohibited from aerobatic flight, that is, an intentional maneuver involving an abrupt change in the UA's attitude, an abnormal acceleration, or other flight action not necessary for normal flight. (See § 91.303, Aerobatic flight.)

(2) Flight operations must not involve carrying hazardous material or the dropping of any objects or external stores.

(3) Each UA must be operated by only one control station at a time. A control station may not be used to operate multiple UAS.

c. Transponder requirements.

(1) The UA must operate an approved operational Mode C or Mode S altitude encoding transponder during all flight operations.

(2) Chase aircraft transponders must be on standby while performing chase operations flight with the UA.

d. Transponder failure.

(1) In the event of transponder failure on either the UA or the chase aircraft, the UA must conclude all flight operations and expeditiously return to its base of operations within the prescribed limitations of this authorization.

(2) In the event of UA transponder failure, a chase aircraft will operate its transponder in Mode C.

e. Notice to airman. Defense Technologies, Inc., must request the issuance of a Notice to Airman (NOTAM) through the Automated Flight Service Station at least 24 hours before flight operation.

9. Flight Termination and Lost Link Procedures.

a. Flight termination. In accordance with Defense Technologies, Inc., program letter, dated 11/25/2008, flight termination must be initiated at any point that safe operation of the UA cannot be maintained or if hazard to persons or property is imminent.

b. Lost link procedures. In the event of lost link, the UA must provide a means of automatic recovery that ensures airborne operations are predictable and that the UA remains within the flight test area. The chase aircraft or observer, all other UAS control stations, and the appropriate ATC facility will be immediately notified of the lost link condition and the expected UA response.

10. Maintenance and Inspection. (Ref.: DTI-UAS-MAIN-INSP-01, Kestral-T UAS Maintenance and Inspection Policy, AEA-FSDO-27-accepted 6/10/08)

a. General requirements. The UAS must not be operated unless it is inspected and maintained in accordance with the Defense Technologies, Inc., Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 1.3, dated 6/9/08, reportable on the Aircraft Discrepancy Form, Rev. 1.1, dated 6/9/08, and Daily Ground Station Condition Inspection Checklist, Rev. 1.2, dated 6/9/08, reportable on the Ground Station Discrepancy Form, Rev. 1.1, dated 6/9/08, or later accepted FAA revision. Defense Technologies, Inc., must establish and maintain aircraft maintenance records (see paragraph 10(d) below).

b. Inspections. No person may operate this UAS within the preceding 12 calendar months unless it has had a condition inspection performed according to the Defense Technologies, Inc., Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 1.3, dated 6/9/08, reportable on the Aircraft Discrepancy Form, Rev. 1.1, dated 6/9/08 and Daily Ground Station Condition Inspection Checklist, Rev. 1.2, dated 6/9/08, reportable on the Ground Station Discrepancy Form, Rev. 1.1, dated 6/9/08, or later accepted FAA revision. The UAS must also have been found to be in a condition for safe operation. This inspection will be recorded in the UAS maintenance records as described in paragraph 10(d) below.

c. Authorized inspectors. Only those individuals trained and authorized by Defense Technologies, Inc., and acceptable to the FAA may perform the inspections and maintenance required by these operating limitations.

d. Maintenance and inspection records. Maintenance and inspections of the UAS must be recorded in the UAS maintenance records. The following information must be recorded:

(1) Maintenance record entries must include a description of the work performed, the date of completion for the work, the UAS's total time-in-service, and the name and signature of the person performing the work.

(2) Inspection entries must contain the following, or a similarly worded, statement: *I certify that this UAS was inspected on (date), in accordance with the scope and detail of the Defense Technologies, Inc.,* Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 1.3 dated 6/9/08, reportable on the Aircraft Discrepancy Form, Rev. 1.1 dated 6/9/08, and Daily Ground Station Condition Inspection Checklist, Rev. 1.2, dated 6/9/08, reportable on the Ground Station Discrepancy Form, Rev. 1.1, dated 6/9/08, or later accepted FAA revision, *and was found to be in a condition for safe operation.*

(3) UAS instruments and equipment required to be installed must be inspected and maintained in accordance with the requirements of the *Defense Technologies, Inc.* Any maintenance or inspection of this equipment must be recorded in the UAS maintenance records.

(4) No person may operate this UAS unless the altimeter system and transponder have been tested within the preceding 24 calendar months in accordance with § 91.411, Altimeter system and altitude reporting equipment tests and inspections, and § 91.413, ATC transponder tests and inspections. These inspections will be recorded in the UAS maintenance records.

11. Information Reporting. Defense Technologies, Inc., will provide the following information to Donald.E.Grampp@FAA.GOV on a monthly basis. A copy of the report shall be provided to AIR-200.

a. Number of flights conducted under this certificate.

b. Pilot duty time per flight.

c. Unusual equipment malfunctions (hardware or software).

d. Deviations from ATC instructions.

e. Unintended entry into lost link flight mode that results in a course change.

12. Revisions and Other Provisions.

a. Experimental certificates, program letters, and operating limitations. The experimental certificate, FAA-accepted Defense Technologies, Inc., program letter, and operating limitations cannot be reissued, renewed, or revised without application being made to the New Cumberland Manufacturing Inspection District Office MIDO, in coordination with AIR-200. AIR-200 will be responsible for FAA Headquarters internal coordination with the Aircraft Certification Service, Flight Standards Service, Air Traffic Organization, Office of the Chief Council, and Office of Rulemaking.

b. Certificates of waiver or authorization. DTI shall immediately notify the Production and Airworthiness Division, AIR-200, and the New Cumberland MIDO, if there is any plan for requesting a Certificate of Authorization or Waiver (COA) for UAS operations during the time the experimental certificate is in effect. An entry in the aircraft logbook is required to document that the aircraft flight authority has been changed from the experimental certificate to COA. When COA operations are concluded and the aircraft resumes flying under the experimental certificate, a record entry will be made in the aircraft logbook by an appropriately rated person to document that the aircraft is in a condition for safe operation and appropriately configured.

c. Amendments and cancellations. The provisions and limitations annotated in this operational approval may be amended or cancelled at any time as deemed necessary by the FAA.

d. Reviews of revisions. (Ref.: DTI-UAS-MAIN-INSP-01, Kestral-T UAS Maintenance and Inspection Policy, AEA-FSDO-27-accepted 6/10/08)

All revisions to Defense Technologies, Inc., Kestral-T UAS UAS Maintenance and Inspection Policy, AEA-FSDO-27-accepted 6/10/08, the Daily Aircraft Condition Inspection Checklist, Rev. 1.3 dated 6/9/08, Aircraft Discrepancy Form, Rev. 1.1, dated 6/9/08, Daily Ground Station Condition Inspection Checklist, Rev. 1.2 dated 6/9/08, and Ground Station Discrepancy Form, Rev. 1.1 dated 6/9/08, must be reviewed and accepted by the Washington Flight Standards District Office (FSDO).

13. UAS Modifications.

a. Software and system changes. All software and system changes will be documented as part of the normal maintenance procedures and will be available for inspection. All software and system changes must be inspected and approved per Defense Technologies, Inc., Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 1.3, dated 6/9/08, reportable on the Aircraft Discrepancy Form, Rev. 1.1, dated 6/9/08, and Daily Ground Station Condition Inspection Checklist, Rev. 1.2, dated 6/9/08, reportable on the Ground Station Discrepancy Form, Rev. 1.1, dated 6/9/08, or later accepted FAA revision. All software changes to the aircraft and control station are categorized as major changes, and must be provided in summary form at the time they are incorporated.

CANCELLED
JAN 07 2010

b. Major modifications. All major modifications, whether performed under the experimental certificate, COA, or other authorizations, that could potentially affect the safe operation of the system, must be documented and provided to the FAA before operating the aircraft under this certificate. Major modifications incorporated under COA or other authorization needs to be provided only if the aircraft is flown under these authorizations during the effective period of the experimental certificate.

c. Submission of modifications. All information requested must be provided to AIR-200.

End of Limitations

March 24, 2009

Henry K. Cooper
Senior Aviation Safety Inspector
New Cumberland Manufacturing Inspection District Office
Bldg. 201, Rm. 102,
400 Airport Road
New Cumberland, PA 17070-3419

Issuance Date:

I certify that I have read and understand the operating limitations and conditions that are a part of the special airworthiness certificate, FAA Form 8130-7, issued on (date), for the purposes of research and development, market survey, and/or crew training. This special airworthiness certificate is issued for Kestrel – T, RCS 180, serial number 003, registration number N2554V.

Applicant (signature)

3-24-09
Date:

Name (Printed): Donald Jackson

Title: Senior Vice President

Company: Defense Technologies, Inc.

FAA FORM 8130-6, APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE

Form Approved
O.M.B. No. 2120-0018
Exp. date: 12/31/2010

U.S. Department of Transportation
Federal Aviation Administration

APPLICATION FOR U.S. AIRWORTHINESS CERTIFICATE

INSTRUCTIONS - Print or type. Do not write in shaded areas; these are for FAA use only. Submit original only to an authorized FAA Representative.. If additional space is required, use attachment. For special flight permits complete Sections II, VI and VII as applicable.

I. AIRCRAFT DESIGNATION

1. REGISTRATION MARK	2. AIRCRAFT BUILDER'S NAME (Make)	3. AIRCRAFT MODEL DESIGNATION	4. YR. MFR.	FAA CODING
N2554B	Defense Technologies, Inc.	Kestrel-T	2008	
5. AIRCRAFT SERIAL NO.	**6. ENGINE BUILDER'S NAME (Make)**	**7. ENGINE MODEL DESIGNATION**		
001	RCS	180		
8. NUMBER OF ENGINES	**9. PROPELLER BUILDER'S NAME (Make)**	**10. PROPELLER MODEL DESIGNATION**	**11. AIRCRAFT IS (Check if applicable)**	
1	Bambula	20" x 8", 20" x 10"	IMPORT	

II. CERTIFICATION REQUESTED

APPLICATION IS HEREBY MADE FOR: (Check applicable items)

A	1		STANDARD AIRWORTHINESS CERTIFICATE (Indicate Category)		NORMAL		UTILITY		ACROBATIC		TRANSPORT		COMMUTER		BALLOON		OTHER
B		✓	SPECIAL AIRWORTHINESS CERTIFICATE (Check appropriate items)	Unmanned Aircraft													
	7		PRIMARY														
	9		LIGHT-SPORT (Indicate Class)		AIRPLANE		POWER-PARACHUTE		WEIGHT-SHIFT-CONTROL		GLIDER		LIGHTER THAN AIR				
	2		LIMITED														
	5		PROVISIONAL (Indicate Class)	1	CLASS I												
				2	CLASS II												
	3		RESTRICTED (Indicate operation(s) to be conducted)	1	AGRICULTURE AND PEST CONTROL		2		AERIAL SURVEY		3		AERIAL ADVERTISING				
				4	FOREST (Wildlife Conservation)		5		PATROLLING		6		WEATHER CONTROL				
				0	OTHER (Specify)												
	4	✓	EXPERIMENTAL (Indicate operation(s) to be conducted)	1	✓ RESEARCH AND DEVELOPMENT		2		AMATEUR BUILT		3		EXHIBITION				
				4	AIR RACING		5	✓	CREW TRAINING		6	✓	MARKET SURVEY				
				0	TO SHOW COMPLIANCE WITH THE CFR		7		OPERATING (Primary Category) KIT BUILT AIRCRAFT								
				8	OPERATING LIGHT-SPORT	8A		Existing Aircraft without an airworthiness certificate & do not meet § 103.1									
						8B		Operating Light-Sport Kit-Built									
						8C		Operating light-sport previously issued special light-sport category airworthiness certificate under § 21.190									
	8		SPECIAL FLIGHT PERMIT (Indicate operation(s) to be conducted, then complete Section VI or VII as applicable on reverse side)	1	FERRY FLIGHT FOR REPAIRS, ALTERATIONS, MAINTENANCE, OR STORAGE												
				2	EVACUATION FROM AREA OF IMPENDING DANGER												
				3	OPERATION IN EXCESS OF MAXIMUM CERTIFICATED TAKE-OFF WEIGHT												
				4	DELIVERING OR EXPORTING		5		PRODUCTION FLIGHT TESTING								
				6	CUSTOMER DEMONSTRATION FLIGHTS												
C	6		MULTIPLE AIRWORTHINESS CERTIFICATE (check ABOVE "Restricted Operation" and "Standard" or "Limited" as applicable)														

III. OWNER'S CERTIFICATION

A. REGISTERED OWNER (As shown on certificate of aircraft registration) — IF DEALER, CHECK HERE →

NAME	ADDRESS
Defense Technologies, Inc.	21795 Shangri-La Drive, Ste C Lexington Park, MD 20653

B. AIRCRAFT CERTIFICATION BASIS (Check applicable blocks and complete items as indicated)

AIRCRAFT SPECIFICATION OR TYPE CERTIFICATE DATA SHEET (Give No. and Revision No.)	N/A	✓ AIRWORTHINESS DIRECTIVES (Check if all applicable AD's are complied with and give the number of the last AD SUPPLEMENT available in the biweekly series as of the date of application)	BIWEEKLY 2009-06
AIRCRAFT LISTING (Give page number(s))	N/A	SUPPLEMENTAL TYPE CERTIFICATE (List number of each STC incorporated)	N/A

C. AIRCRAFT OPERATION AND MAINTENANCE RECORDS

✓	CHECK IF RECORDS IN COMPLIANCE WITH 14 CFR Section 91.417	TOTAL AIRFRAME HOURS: 0	3 EXPERIMENTAL ONLY (Enter hours flown since last certificate issued or renewed): 0

D. CERTIFICATION - I hereby certify that I am the registered owner (or his agent) of the aircraft described above, that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 et seq . and applicable Federal Aviation Regulations, and that the aircraft has been inspected and is airworthy and eligible for the airworthiness certificate requested.

DATE OF APPLICATION	NAME AND TITLE (Print or type)	SIGNATURE
March 24, 2009	Donald Jackson, Senior Vice President	

IV. INSPECTION AGENCY VERIFICATION

A. THE AIRCRAFT DESCRIBED ABOVE HAS BEEN INSPECTED AND FOUND AIRWORTHY BY: (Complete the section only if 14 CFR part 21.183(d) applies.

2	14 CFR part 121 CERTIFICATE HOLDER (Give Certificate No.)	3 CERTIFICATED MECHANIC (Give Certificate No.)	6 CERTIFICATED REPAIR STATION (Give Certificate No.)
5	AIRCRAFT MANUFACTURER (Give name or firm)		

DATE	TITLE	SIGNATURE

V. FAA REPRESENTATIVE CERTIFICATION

(Check ALL applicable block items A and B)

A. I find that the aircraft described in Section I or VII meets requirements for: 4 ✓ THE CERTIFICATE REQUESTED; AMENDMENT OR MODIFICATION OF CURRENT AIRWORTHINESS CERTIFICATE

B. Inspection for a special permit under Section VII was conducted by: FAA INSPECTOR; CERTIFICATE HOLDER UNDER; FAA DESIGNEE; 14 CFR part 65; 14 CFR part 121 OR 135; 14 CFR part 145

DATE	DISTRICT OFFICE	4 DESIGNEE'S SIGNATURE AND NO.	1 FAA INSPECTOR'S SIGNATURE
3/24/09	ANE MIDO-44		HENRY K. COOPER

FAA Form 8130-6 (10-04) Previous Edition Dated 5/01 May be Used Until Depleted, Except for Light-Sport Aircraft — NSN: 0052-00-024-7006

Accepted NV Apr/30/2009

VI. PRODUCTION FLIGHT TESTING

A. MANUFACTURER

NAME	ADDRESS

B. PRODUCTION BASIS *(Check applicable item)*

- ☐ PRODUCTION CERTIFICATE *(Give production certificate number)* ⟶
- ☐ TYPE CERTIFICATE ONLY
- ☐ APPROVED PRODUCTION INSPECTION SYSTEM

C. GIVE QUANTITY OF CERTIFICATES REQUIRED FOR OPERATING NEEDS

DATE OF APPLICATION	NAME AND TITLE *(Print or Type)*	SIGNATURE

VII. SPECIAL FLIGHT PERMIT PURPOSES OTHER THAN PRODUCTION FLIGHT TEST

A. DESCRIPTION OF AIRCRAFT

REGISTERED OWNER	ADDRESS
BUILDER *(Make)*	MODEL
SERIAL NUMBER	REGISTRATION MARK

B. DESCRIPTION OF FLIGHT — CUSTOMER DEMONSTRATION FLIGHTS ☐ *(Check if applicable)*

FROM	TO	
VIA	DEPARTURE DATE	DURATION

C. CREW REQUIRED TO OPERATE THE AIRCRAFT AND ITS EQUIPMENT

☐ PILOT ☐ CO-PILOT ☐ FLIGHT ENGINEER ☐ OTHER *(Specify)*

D. THE AIRCRAFT DOES NOT MEET THE APPLICABLE AIRWORTHINESS REQUIREMENTS AS FOLLOWS:

E. THE FOLLOWING RESTRICTIONS ARE CONSIDERED NECESSARY FOR SAFE OPERATION: *(Use attachment if necessary)*

F. CERTIFICATION – I hereby certify that I am the registered owner (or his agent) of the aircraft described above; that the aircraft is registered with the Federal Aviation Administration in accordance with Title 49 of the United States Code 44101 et seq. and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is safe for the flight described.

DATE	NAME AND TITLE *(Print or Type)*	SIGNATURE

VIII. AIRWORTHINESS DOCUMENTATION (FAA/DESIGNEE use only)

X	A. Operating Limitations and Markings in Compliance with 14 CFR Section 91.9, as applicable.	☐	G. Statement of Conformity, FAA Form 8130-9 *(Attach when required)*
X	B. Current Operating Limitations Attached	☐	H. Foreign Airworthiness Certification for Import Aircraft *(Attach when required)*
X	C. Data, Drawings, Photographs, etc. *(Attach when required)*	☐	I. Previous Airworthiness Certificate Issued in Accordance with 14 CFR Section _____ CAR _____ (Original Attached)
X	D. Current Weight and Balance Information Available in Aircraft		
☐	E. Major Repair and Alteration, FAA Form 337 *(Attach when required)*	X	J. Current Airworthiness Certificate Issued in Accordance with 14 CFR Section 21.191(a)(c) & (f) (Copy Attached)
X	F. This Inspection Recorded in Aircraft Records	☐	K. Light-Sport Aircraft Statement of Compliance, FAA Form 8130-15 *(Attach when required)*

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

SPECIAL AIRWORTHINESS CERTIFICATE

A	CATEGORY/DESIGNATION	EXPERIMENTAL (UNMANNED AIRCRAFT)	
	PURPOSE	Research & Development, Market Survey, Crew Tng	
B	MANU-FACTURER	NAME	N/A
		ADDRESS	N/A
C	FLIGHT	FROM	N/A
		TO	N/A
D	N- 2554B		SERIAL NO. 001
	BUILDER Defense Technologies, Inc.		MODEL Kestral - T
E	DATE OF ISSUANCE March 24, 2009		EXPIRY March 23, 2010
	OPERATING LIMITATIONS DATED 03/24/09		ARE PART OF THIS CERTIFICATE
	SIGNATURE OF FAA REPRESENTATIVE Henry K. Cooper		DESIGNATION OR OFFICE NO. ANE-MIDO-44

COPY

Any alteration, reproduction or misuse of this certificate may be punishable by a fine not exceeding $1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE TITLE 14, CODE OF FEDERAL REGULATIONS (CFR).

FAA Form 8130-7 (07/04) *SEE REVERSE SIDE* *NSN: 0052-00-693-4000*

A	This airworthiness certificate is issued under the authority of Public Law 104-6, 49 United States Code (USC) 44704 and Title 14 Code of Federal Regulations (CFR).
B	The airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production fight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire: and/or (2) Carrying persons not essential to the purpose of the flight.
C	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
D	This airworthiness certificate certifies that as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable CFR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side: (1) except in accordance with the applicable CFR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate; (2) over any foreign country without the special permission of that country.
E	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in 14 CFR, Part 21, Section 21.181 or 21.217.

New Cumberland Manufacturing Inspection District Office
Bldg. 201, Rm. 102,
400 Airport Road
New Cumberland, PA 17070-3419

Operating Limitations
Experimental: Research and Development, Market Survey, and/or Crew Training

Registered Owner Name: Defense Technologies, Inc. **Registered Owner Address:** 21795 Shangri-La Dr Lexington Park Maryland 20653 **Aircraft Description:** Kestrel-T: Giant Scale Rc Size Standard Wing And Tail Configuration Tricycle Gear Configuration **Aircraft Registration:** N2554B **Aircraft Builder:** Defense Technologies, Inc.	**Year Manufactured:** 2008 **Aircraft Serial Number:** 001 **Aircraft Model Designation:** Kestrel – T **Engine:** RCS 180 **Propeller:** Bambula 20 x 8 wood

The following conditions and limitations apply to all unmanned aircraft system (UAS) flight operations for the Kestrel – T, RCS 180 while operating in the National Airspace System (NAS).

1. General Information.

a. Integrated system. For the purposes of this special airworthiness certificate and operating limitations, the Kestrel – T, RCS 180 operated by Defense Technologies, Inc., is considered to be an integrated system. The system is composed of the following:

(1) Kestrel – T, RCS 180, serial number 001,
(2) UAS control station(s), that is, fixed, mobile, ground-based, or airborne.
(3) Telemetry, launch, and recovery equipment.

(4) Communications and navigation equipment, including ground and/or airborne equipment used for command and control of the Kestrel – T, RCS 180.

(5) Ground or airborne equipment used for communication with the chase aircraft, other members of the flight crew, observers, air traffic control (ATC), and other users of the NAS.

b. Compliance with 14 CFR part 61 (Certification: Pilots, Flight Instructors, and Ground Instructors) and part 91 (General Operating and Flight Rules). Unless otherwise specified in this document, the UA pilot-in-command (PIC) and Defense Technologies, Inc., must comply with all applicable sections and parts of 14 CFR including, but not limited to, parts 61 and 91.

c. Operational requirements.

(1) No person may operate this UAS for other than the purpose of research and development, market survey, and/or crew training, to accomplish the flight operation outlined in Defense Technologies, Inc., program letter dated March 24, 2009, Rev. 1.4, which describes compliance with § 21.193(d), Experimental certificates: General, and has been made available to the UA PIC.

(2) This UAS must be operated in accordance with applicable air traffic and general operating rules of part 91 and all additional limitations herein prescribed under the provisions of § 91.319(i), Aircraft having experimental certificates: Operating limitations.

(3) Defense Technologies, Inc., must accumulate at least 50 flight hours under its experimental airworthiness certificate before customer crew training is permitted, in accordance with § 21.195(d), Experimental certificates: Aircraft to be used for market surveys, sales demonstrations, and customer crew training.

d. UA condition. The UA PIC must determine that the UA is in a condition for safe operation, and in a configuration appropriate for the purpose of the intended flight.

e. Multiple-purpose operations. When changing between operating purposes of a multiple purpose certificate, the operator must determine that the aircraft is in a condition for safe operation and appropriate for the purpose intended. A record entry will be made by an appropriately rated person (that is, an individual authorized by the applicant and acceptable to the FAA) to document that finding in the maintenance records.

f. Operation exceptions. No person may operate this UA to carry property for compensation or hire (§ 91.319(a)(2)).

g. UA markings.

(1) This UA must be marked with its U.S. registration number in accordance with part 45 or alternative marking approval issued by the FAA Production and Airworthiness Division, AIR-200.

(2) This UA must display the word *Experimental* in accordance with § 45.23(b), Display of marks, unless otherwise granted an exemption from this requirement.

h. Required documentation. Before conducting the initial flight of the Kestrel – T, RCS 180, Defense Technologies, Inc., must forward a copy of the Kestrel – T, RCS 180 program letter, special airworthiness certificate, and operating limitations to the following personnel:

(1) Peter Acevedo, FAA Air Traffic Representative, Eastern Service Center, System Support, 1701 Columbia Ave, College Park, GA 30337, telephone (404) 305-5598, email peter.k.acevedo@faa.gov.

(2) Richard Posey, Aviation Safety Inspector, Production and Airworthiness Division, AIR-200, 800 Independence Ave, SW, Washington, DC 20591, telephone (202) 267-9538, email richard.posey@faa.gov.

i. Change in registrant address. Section 47.45, Change of address, requires that the FAA Aircraft Registry be notified within 30 days of any change in the aircraft registrant's address. Such notification is to be made by providing AC Form 8050-1, Aircraft Registration Application, to the FAA Aircraft Registration Branch (AFS-750) in Oklahoma City, Oklahoma.

j. Certificate display and manual availability. The airworthiness and registration certificates must be displayed, and the aircraft flight manual must be available to the pilot, as prescribed by the applicable sections of 14 CFR, or as prescribed by an exemption granted in accordance with 14 CFR part 11, Investigative and Enforcement Procedures, to Defense Technologies, Inc.

2. Program Letter. The Kestrel – T, RCS 180 program letter, dated March 24, 2009, Rev. 1.4, will be used as a basis for determining the operating limitations prescribed in this document. All flight operations must be conducted in accordance with the provisions of this document.

3. Initial Flight Testing.

a. Requirements. Flight operations must be conducted within visual line of sight of the pilot/observer. Initial flight testing must be completed upon accumulation of 25 flight hours. Following satisfactory completion of initial flight testing, the operations manager or chief pilot must certify in the records that the aircraft has been shown to comply with § 91.319(b). Compliance with § 91.319(b) must be recorded in the aircraft records with the following, or a similarly worded, statement:

COPY

I certify that the prescribed flight test hours have been completed and the aircraft is controllable throughout its normal range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation. The following aircraft operating data has been demonstrated during the flight testing: speeds Vx _____, and Vy _____, and the weight _____ and CG location _____ at which they were obtained.

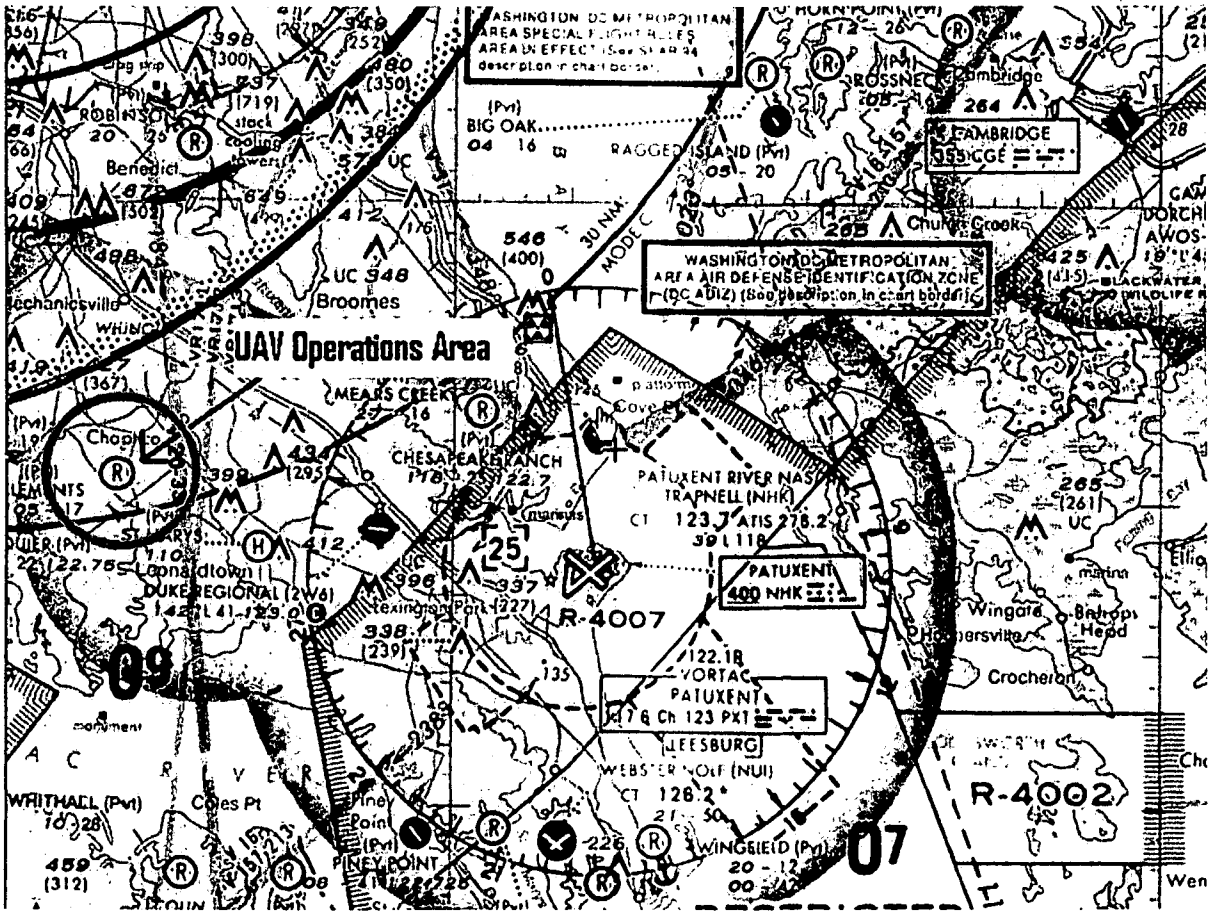
b. Aircraft operations for the purpose of market surveys, sales demonstrations, and customer crew training. These operations cannot be performed until 50 flight hours have been accomplished. An entry in the maintenance records is required as evidence of compliance.

4. Authorized Flight Operations Area.

a. Description of the authorized flight operations area. The flight operations area is located in Clements, MD. Clements Field, 4MD4 is a private airport located at:

Latitude	38° 20.408N
Longitude	76° 44.432W

b. Flight test area. The flight operations area authorized for the UA will be referred to as the flight test area, and is depicted graphically below.



COPY

Figure 1. Aeronautical Chart

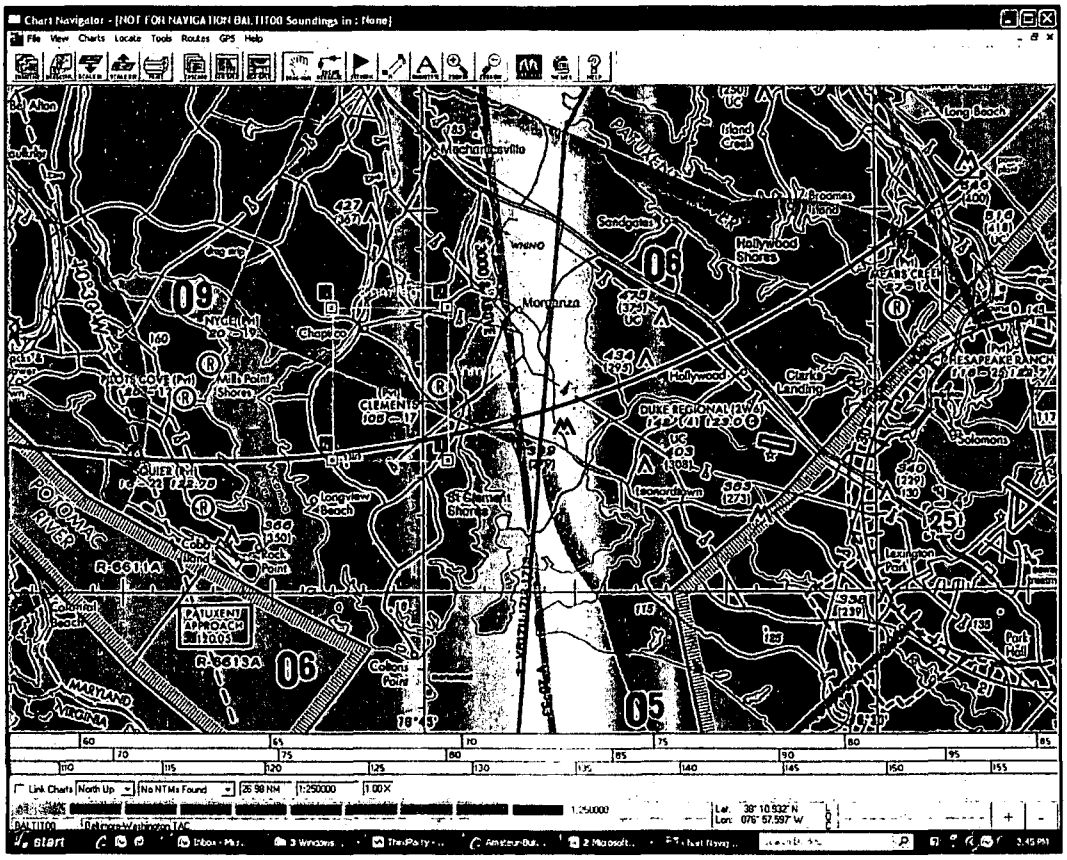


Figure 2. Kestrel – T Flight Test Area

Waypoints for Proposed Kestrel-T Experimental Flight Box - 4MD4 Operations		
Point Name	**Latitude**	**Longitude**
Point 1	**38° 18.418′ N**	**076° 44.136′ W**
Point 2	**38° 22.440′ N**	**076° 44.153′ W**
Point 3	**38° 22.448′ N**	**076° 47.988′ W**
Point 4	**38° 18.447′ N**	**076° 47.967′ W**

c. Authorized flight times and conditions. All flight operations must be conducted during daylight hours under visual flight rules (VFR). Potomac TRACN (PCT) will NOT be requiring VHF/UHF monitoring or communication. The following conditions will be included in your operating limitations.

(1) Operations shall be conducted below 1000 MSL.

(2) Flight operations shall be contained in an area west of 4MD4. The primary containment area is identified as being 2nm north, 2nm south, and 3nm west of the airport as identified in Figure 2 above. All flight operations must remain clear of the ADIZ.

(3) The UAS PIC must notify the PCT TRACON Operations Manager at (540) 349-7541 and PAX River NAS at (301) 342-3740 at least 30 minutes prior to launch and immediately upon termination of operations each day. DTI must provide PCT with an on-site contact name and phone number for two-way communications with ATC for each flight.

(4) The Kestrel UAS shall transmit the assigned beacon code 0377 and altitude information (Mode-C) for the duration of the flight. Any failure of the transponder or inability to properly squawk the assigned code shall be reported to PCT and flight operations shall be terminated.

(5) The Kestrel pilot shall have the capability of maneuvering the UAS or suspending operations as instructed by PCT.

(6) At no time will the external pilot conduct his/her duties more than 1 mile laterally or 1000 ft vertically from the UA.

(7) A Notice to Airmen (NOTAM) shall be issued when UAS operations are being conducted. (Note: Do not use 'distant' or D here as the NOTAM classification and codes have recently been changed.) DTI shall contact the Automated Flight Service Station (FSS) no less than 48 hours prior to the operation and provide:

i) Name, address, and telephone number of the person giving notice.
ii) Nature of the activity.
iii) Date, time, and duration of the activity.
iv) Size of the affected area in nautical mile radius and affected altitudes.
v) Location of center of affected area in relation to airport.
vi) Location of center of affected area in relation to nearest VOR/DME or VORTAC.

d. Criteria for remaining in the flight test area. The UAS PIC must ensure all UA flight operations remain within the lateral and vertical boundaries of the flight test area. Furthermore, the UAS PIC must take into account all factors that may affect the capability of the UA to remain within the flight test area. This includes, but is not limited to, considerations for wind, gross weight, and glide distances.

e. Incident/accident reporting. Any incident/accident and any flight operation that transgresses the lateral or vertical boundaries of the flight test area or any restricted airspace must be reported to the FAA within 24 hours. This information must be reported to the Unmanned Aircraft Program Office, AIR-160. AIR-160 can be reached by telephone at 202-385-4636 and fax at 202-385-4651. Accidents must be reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov. Further flight operations must not be conducted until the incident is reviewed by AIR-160 and authorization to resume operations is provided to DTI.

5. UA Pilots and Observers.

a. UA PIC roles and responsibilities.

(1) The UA PIC must perform crew duties for only one UA at a time.

(2) All flight operations must have a designated UA PIC. The UA PIC has responsibility over each flight conducted and is accountable for the UA flight operation.

(3) The UA PIC is responsible for the safety of the UA as well as persons and property along the UA flight path. This includes, but is not limited to, collision avoidance and the safety of persons and property in the air and on the ground.

(4) The UA PIC must avoid densely populated areas (§ 91.319) and exercise increased vigilance when operating within or in the vicinity of published airway boundaries.

b. UA PIC certification and ratings requirements.

(1) The UA PIC must hold and be in possession of, at a minimum, an FAA private pilot certificate, with either an airplane, rotorcraft, or powered-lift category; and single- or multiengine class ratings appropriate to the type of UA being operated.

(2) The UA PIC must have and be in possession of a valid second-class (or higher) airman medical certificate issued under 14 CFR part 67, Medical Standards and Certification.

c. UA PIC currency, flight review, and training.

(1) No person may act as pilot in command of an unmanned aircraft unless that person has made at least three takeoffs and three landings in manned aircraft within the preceding 90 days acting as the sole manipulator of the flight controls.

(2) The UA PIC must have a flight review in manned aircraft every 24 calendar months in accordance with § 61.56, Flight review.

(3) The UA PIC must maintain currency in unmanned aircraft in accordance with (applicant name) company procedures.

(4) The UA PIC must have a flight review in unmanned aircraft every 24 calendar months in accordance with Defense Technologies, Inc., procedures.

(5) All UA PICs must have successfully completed applicable (applicant name) training for the UAS.

d. Supplemental UA pilot roles and responsibilities.

(1) Any additional UA pilot(s) assigned to a crew station during UA flight operations will be considered a supplemental UA pilot.

(2) A supplemental UA pilot assists the PIC in the operation of the UA and may do so at the same or a different control station as the PIC. The UA PIC will have operational override capability over any supplemental UA pilots, regardless of position.

(3) A supplemental UA pilot must perform crew duties for only one UA at a time.

e. Supplemental UA pilot certification. The supplemental UA PIC need not be a certificated pilot, but must have successfully completed a recognized private pilot ground school program.

f. Supplemental UA pilot currency, flight review, and training.

(1) All UA pilots must maintain currency in unmanned aircraft in accordance with (applicant name) company procedures.

(2) All UA pilots must have a flight review in unmanned aircraft every 24 calendar months in accordance with Defense Technologies, Inc., procedures.

(3) All UA pilots must have successfully completed applicable Defense Technologies, Inc., training for the UAS.

g. Observer roles and responsibilities. The task of the observer is to provide the UA PIC(s) with instructions to maneuver the UA clear of any potential collision with other traffic. To satisfy these requirements—

(1) The observer must perform crew duties for only one UA at a time.

(2) At no time will the observer permit the UA to operate beyond the line-of-sight necessary to ensure maneuvering information can be reliably determined.

(3) At no time will the observer conduct his/her duties more than 1000 ft laterally or 1000 ft vertically from the UA.

(4) An observer must maintain continuous visual contact with the UA to discern UA attitude and trajectory in relation to conflicting traffic.

(5) An observer may be positioned in a chase aircraft. When a chase aircraft is used, it must maintain a reasonable proximity, and must position itself relative to the UA to reduce the hazard of collision in accordance with § 91.111, Operating near other aircraft. When the observer is located in a chase aircraft, the observer's duties must be dedicated to the task of observation only. Concurrent duty as pilot of the chase aircraft is not authorized.

(6) Observers must continually scan the airspace for other aircraft that pose a potential conflict.

(7) All flight operations conducted in the flight test area must have an observer to perform traffic avoidance and visual observation to fulfill the see-and-avoid requirement of § 91.113, Right-of-way rules: Except water operations.

h. Observer certification.

(1) All observers must either hold, at a minimum, an FAA private pilot license or military equivalent, or must have successfully completed specific observer training acceptable to the FAA. An observer does not require currency as a pilot.

(2) All observers must have in their possession a valid third-class (or higher) airman medical certificate issued under part 67. A valid second-class airman medical certificate is required after 9/10/2008.

i. Observer training.

(1) All observers must be thoroughly trained, be familiar with, and possess operational experience with the equipment being used. Such training is necessary for observation and detection of other aircraft for collision avoidance purposes as outlined in Defense Technologies, Inc., program letter.

(2) All observers must have successfully completed applicable Defense Technologies, Inc., training for the UAS.

6. Equipage.

a. The UAS must be equipped with an operable transponder with Mode C or Mode S, and two-way communications equipment allowing communications between the UA pilot, chase aircraft, observers, all UAS control stations.

b. The UA and chase aircraft must be equipped with operable navigation, position, and/or strobe/anti-collision lights. Strobe/anti-collision lights must be illuminated during all operations.

7. Communications.

a. Before UA flights. Before conducting operations, the frequency spectrum used for operation and control of the UA must be approved by the Federal Communications Commission or other appropriate government oversight agency.

b. During UA flights.

(1) Appropriate air traffic frequencies must be monitored during flight operations.

(2) All UA positions must maintain two-way communications with each other during all operations. If unable to maintain two-way communication, the UA PIC will expeditiously return the UA to its base of operations while remaining within the flight test area and conclude the flight operation.

8. Flight Conditions.

a. Daylight operations. All flight operations must be conducted during daylight hours in visual meteorological conditions (VMC), including cloud clearance minimums as specified in § 91.155, Basic VFR weather minimums. Flight operation in instrument meteorological conditions (IMC) is not permitted.

b. Prohibitions.

(1) The UA is prohibited from aerobatic flight, that is, an intentional maneuver involving an abrupt change in the UA's attitude, an abnormal acceleration, or other flight action not necessary for normal flight. (See § 91.303, Aerobatic flight.)

(2) Flight operations must not involve carrying hazardous material or the dropping of any objects or external stores.

(3) Each UA must be operated by only one control station at a time. A control station may not be used to operate multiple UAS.

c. Transponder requirements.

(1) The UA must operate an approved operational Mode C or Mode S altitude encoding transponder during all flight operations.

(2) Chase aircraft transponders must be on standby while performing chase operations flight with the UA.

d. Transponder failure.

(1) In the event of transponder failure on either the UA or the chase aircraft, the UA must conclude all flight operations and expeditiously return to its base of operations within the prescribed limitations of this authorization.

(2) In the event of UA transponder failure, a chase aircraft will operate its transponder in Mode C.

e. Notice to airman. Defense Technologies, Inc., must request the issuance of a Notice to Airman (NOTAM) through the Automated Flight Service Station at least 24 hours before flight operation.

9. Flight Termination and Lost Link Procedures.

a. Flight termination. In accordance with Defense Technologies, Inc., program letter, dated 11/25/2008, flight termination must be initiated at any point that safe operation of the UA cannot be maintained or if hazard to persons or property is imminent.

b. Lost link procedures. In the event of lost link, the UA must provide a means of automatic recovery that ensures airborne operations are predictable and that the UA remains within the flight test area. The chase aircraft or observer, all other UAS control stations, and the appropriate ATC facility will be immediately notified of the lost link condition and the expected UA response.

10. Maintenance and Inspection. (Ref.: DTI-UAS-MAIN-INSP-01, Kestral-T UAS Maintenance and Inspection Policy, AEA-FSDO-27-accepted 6/10/08)

a. General requirements. The UAS must not be operated unless it is inspected and maintained in accordance with the Defense Technologies, Inc., Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 1.3, dated 6/9/08, reportable on the Aircraft Discrepancy Form, Rev. 1.1, dated 6/9/08, and Daily Ground Station Condition Inspection Checklist, Rev. 1.2, dated 6/9/08, reportable on the Ground Station Discrepancy Form, Rev. 1.1, dated 6/9/08, or later accepted FAA revision. Defense Technologies, Inc., must establish and maintain aircraft maintenance records (see paragraph 10(d) below).

b. Inspections. No person may operate this UAS within the preceding 12 calendar months unless it has had a condition inspection performed according to the Defense Technologies, Inc., Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 1.3, dated 6/9/08, reportable on the Aircraft Discrepancy Form, Rev. 1.1, dated 6/9/08 and Daily Ground Station Condition Inspection Checklist, Rev. 1.2, dated 6/9/08, reportable on the Ground Station Discrepancy Form, Rev. 1.1, dated 6/9/08, or later accepted FAA revision. The UAS must also have been found to be in a condition for safe operation. This inspection will be recorded in the UAS maintenance records as described in paragraph 10(d) below.

c. Authorized inspectors. Only those individuals trained and authorized by Defense Technologies, Inc., and acceptable to the FAA may perform the inspections and maintenance required by these operating limitations.

d. Maintenance and inspection records. Maintenance and inspections of the UAS must be recorded in the UAS maintenance records. The following information must be recorded:

(1) Maintenance record entries must include a description of the work performed, the date of completion for the work, the UAS's total time-in-service, and the name and signature of the person performing the work.

(2) Inspection entries must contain the following, or a similarly worded, statement: *I certify that this UAS was inspected on (date), in accordance with the scope and detail of the Defense Technologies, Inc.,* Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 1.3 dated 6/9/08, reportable on the Aircraft Discrepancy Form, Rev. 1.1 dated 6/9/08, and Daily Ground Station Condition Inspection Checklist, Rev. 1.2, dated 6/9/08, reportable on the Ground Station Discrepancy Form, Rev. 1.1, dated 6/9/08, or later accepted FAA revision, *and was found to be in a condition for safe operation.*

(3) UAS instruments and equipment required to be installed must be inspected and maintained in accordance with the requirements of the *Defense Technologies, Inc.* Any maintenance or inspection of this equipment must be recorded in the UAS maintenance records.

(4) No person may operate this UAS unless the altimeter system and transponder have been tested within the preceding 24 calendar months in accordance with § 91.411, Altimeter system and altitude reporting equipment tests and inspections, and § 91.413, ATC transponder tests and inspections. These inspections will be recorded in the UAS maintenance records.

11. Information Reporting. Defense Technologies, Inc., will provide the following information to Donald.E.Grampp@FAA.GOV on a monthly basis. A copy of the report shall be provided to AIR-200.

a. Number of flights conducted under this certificate.

b. Pilot duty time per flight.

c. Unusual equipment malfunctions (hardware or software).

d. Deviations from ATC instructions.

e. Unintended entry into lost link flight mode that results in a course change.

12. Revisions and Other Provisions.

a. Experimental certificates, program letters, and operating limitations. The experimental certificate, FAA-accepted Defense Technologies, Inc., program letter, and operating limitations cannot be reissued, renewed, or revised without application being made to the New Cumberland Manufacturing Inspection District Office MIDO, in coordination with AIR-200. AIR-200 will be responsible for FAA Headquarters internal coordination with the Aircraft Certification Service, Flight Standards Service, Air Traffic Organization, Office of the Chief Council, and Office of Rulemaking.

b. Certificates of waiver or authorization. DTI shall immediately notify the Production and Airworthiness Division, AIR-200, and the New Cumberland MIDO, if there is any plan for requesting a Certificate of Authorization or Waiver (COA) for UAS operations during the time the experimental certificate is in effect. An entry in the aircraft logbook is required to document that the aircraft flight authority has been changed from the experimental certificate to COA. When COA operations are concluded and the aircraft resumes flying under the experimental certificate, a record entry will be made in the aircraft logbook by an appropriately rated person to document that the aircraft is in a condition for safe operation and appropriately configured.

c. Amendments and cancellations. The provisions and limitations annotated in this operational approval may be amended or cancelled at any time as deemed necessary by the FAA.

d. Reviews of revisions. (Ref.: DTI-UAS-MAIN-INSP-01, Kestral-T UAS Maintenance and Inspection Policy, AEA-FSDO-27-accepted 6/10/08)

All revisions to Defense Technologies, Inc., Kestral-T UAS UAS Maintenance and Inspection Policy, AEA-FSDO-27-accepted 6/10/08, the Daily Aircraft Condition Inspection Checklist, Rev. 1.3 dated 6/9/08, Aircraft Discrepancy Form, Rev. 1.1, dated 6/9/08, Daily Ground Station Condition Inspection Checklist, Rev. 1.2 dated 6/9/08, and Ground Station Discrepancy Form, Rev. 1.1 dated 6/9/08, must be reviewed and accepted by the Washington Flight Standards District Office (FSDO).

13. UAS Modifications.

a. Software and system changes. All software and system changes will be documented as part of the normal maintenance procedures and will be available for inspection. All software and system changes must be inspected and approved per Defense Technologies, Inc., Kestral-T UAS, Daily Aircraft Condition Inspection Checklist, Rev. 1.3, dated 6/9/08, reportable on the Aircraft Discrepancy Form, Rev. 1.1, dated 6/9/08, and Daily Ground Station Condition Inspection Checklist, Rev. 1.2, dated 6/9/08, reportable on the Ground Station Discrepancy Form, Rev. 1.1, dated 6/9/08, or later accepted FAA revision. All software changes to the aircraft and control station are categorized as major changes, and must be provided in summary form at the time they are incorporated.

COPY

b. Major modifications. All major modifications, whether performed under the experimental certificate, COA, or other authorizations, that could potentially affect the safe operation of the system, must be documented and provided to the FAA before operating the aircraft under this certificate. Major modifications incorporated under COA or other authorization needs to be provided only if the aircraft is flown under these authorizations during the effective period of the experimental certificate.

c. Submission of modifications. All information requested must be provided to AIR-200.

End of Limitations

March 24, 2009

Henry K. Cooper
Senior Aviation Safety Inspector
New Cumberland Manufacturing Inspection District Office
Bldg. 201, Rm. 102,
400 Airport Road
New Cumberland, PA 17070-3419

Issuance Date:

I certify that I have read and understand the operating limitations and conditions that are a part of the special airworthiness certificate, FAA Form 8130-7, issued on (date), for the purposes of research and development, market survey, and/or crew training. This special airworthiness certificate is issued for Kestrel – T, RCS 180, serial number 003, registration number N2554V.

Applicant (signature)

3-24-09
Date:

Name (Printed): Donald Jackson

Title: Senior Vice President

Company: Defense Technologies, Inc.

U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

JUL 3 0 2007

Exemption No. 9430
Regulatory Docket No. FAA-2007-28667

Mr. Donald R. Jackson
Maryland Unit
Defense Technologies, Inc.
21795-C Shangri-La Drive
Lexington Park, MD 20653

COPY

Dear Mr. Jackson:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

The Basis for Our Decision

On July 2, 2007, you petitioned the Federal Aviation Administration (FAA) on behalf of Defense Technologies, Inc. (Defense Technologies), for an exemption from §§ 91.9(b) and 91.203(a)(1) and (2) of Title 14, Code of Federal Regulations (14 CFR). That exemption, if granted, would allow Defense Technologies to operate unmanned aircraft systems (UASs) that do not carry and display the aircraft's airworthiness, certification, and registration documents required by part 91.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to Defense Technologies.

The FAA has issued a grant of exemption in circumstances similar in all material respects to those presented in your petition. In Grant of Exemption No. 8607 (copy enclosed), the FAA found that it is unnecessary to carry and display the airworthiness, certification, and registration documents in UASs for the operations described by the petitioner. The original

intent of the subject regulations was to display the airworthiness and registration documents so they would be easily available to the FAA inspectors and passengers.

Having reviewed your reasons for requesting an exemption, I find that—

- they don't differ materially from those presented by the petitioner in the enclosed grant of exemption;
- the reasons stated by the FAA for granting the enclosed exemption also apply to the situation you present; and
- a grant of exemption is in the public interest.

Our Decision

Under the authority contained in 49 U.S.C. 40113 and 44701, which the FAA Administrator has delegated to me, I hereby grant Defense Technologies, Inc., an exemption from 14 CFR §§ 91.9(b) and 91.203(a)(1) and (2) to the extent necessary to operate UASs without carrying the airworthiness, certification, and registration documents required by part 91, subject to the conditions and limitations described below.

Conditions and Limitations

1. The documents required under §§ 91.9 and 91.203 must be available to the pilot in command of the UASs anytime the aircraft is operating.
2. Those documents required under §§ 91.9 and 91.203 must be made available within 10 days to any FAA, U.S. Department of Defense, or law enforcement official.

This exemption terminates on July 31, 2009, unless sooner superseded or rescinded.

Sincerely,

John M. Allen
Acting Director, Flight Standards Service

Enclosure

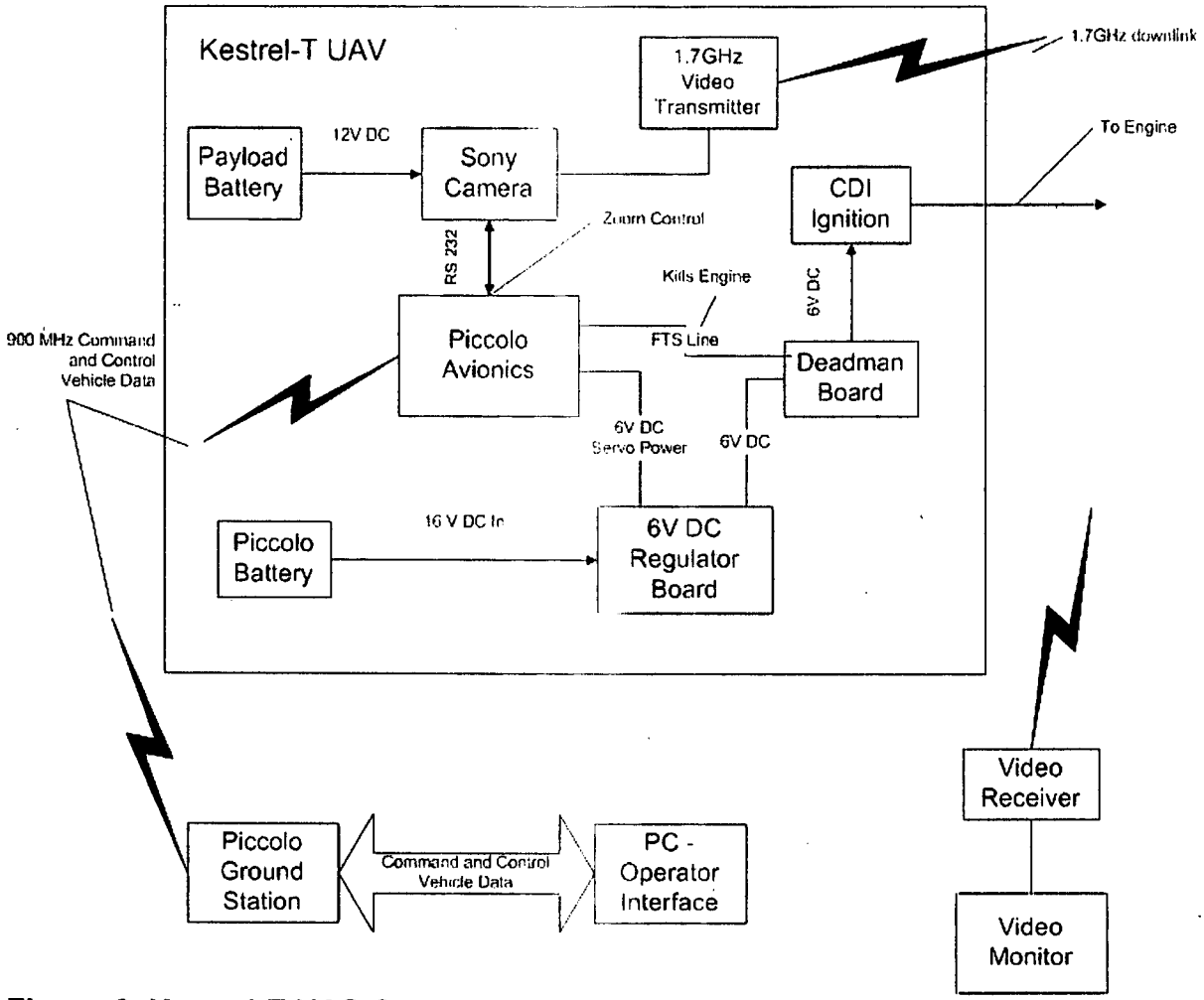


Figure 6. Kestrel-T UAS Communications Block Diagram

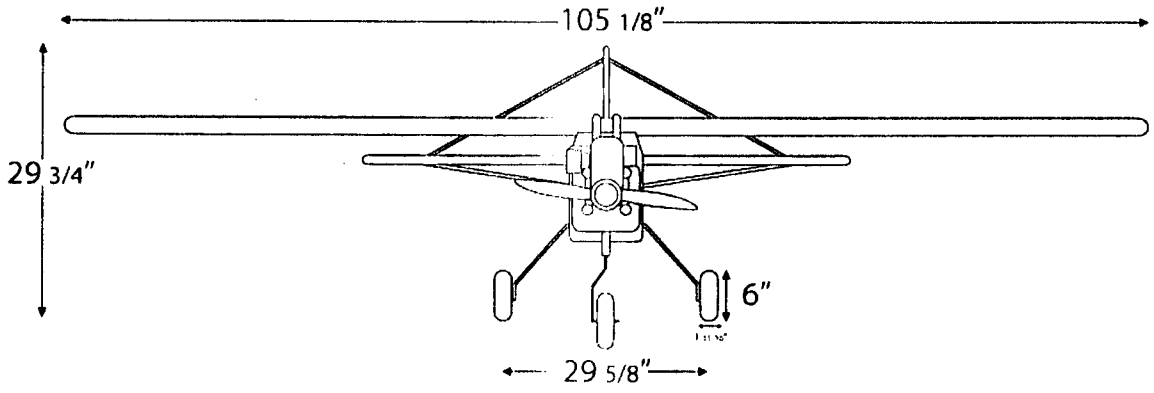


Figure 7. Front View – Short Wing Configuration

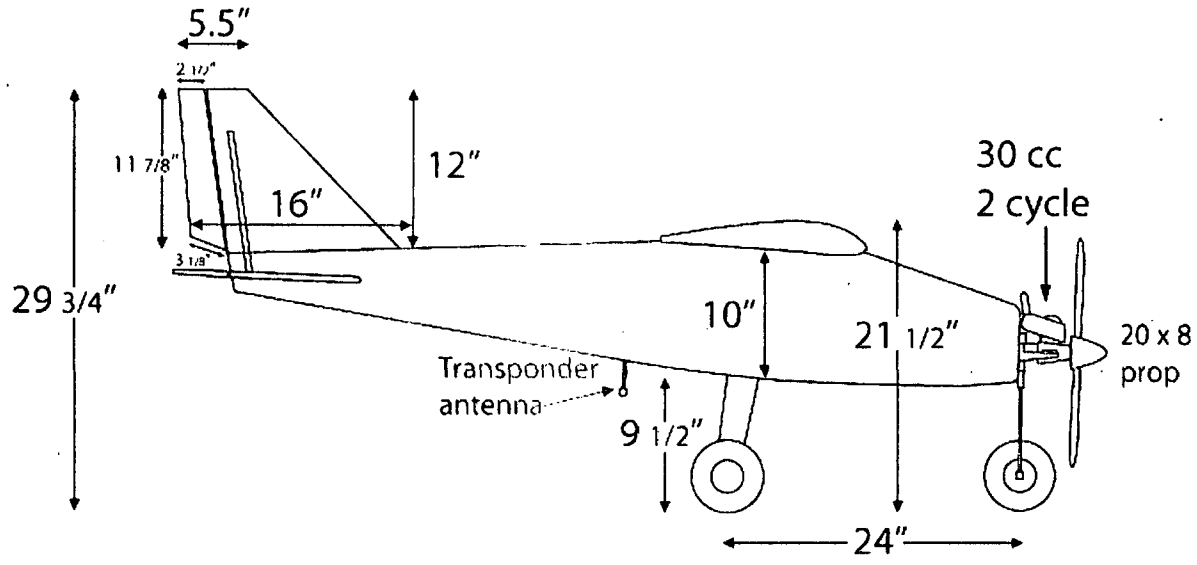


Figure 8. Side View – Short Wing Configuration

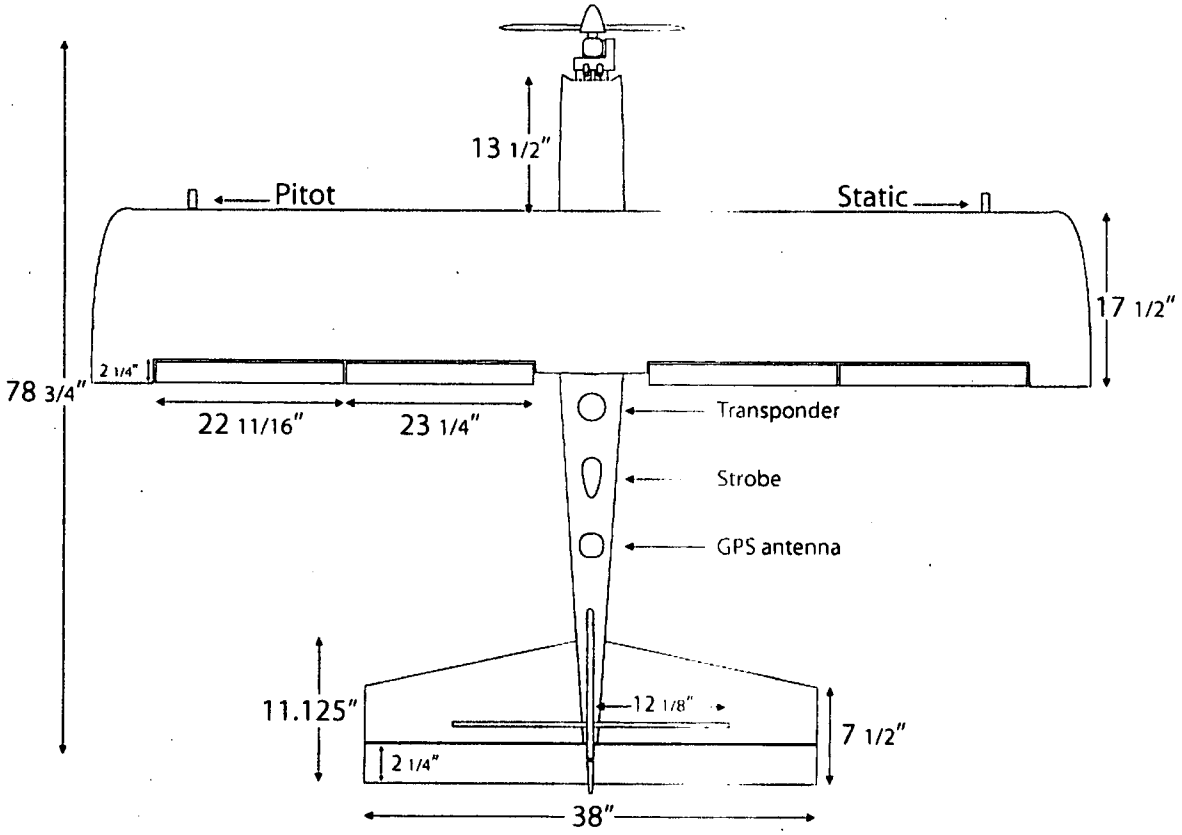


Figure 9. Top View – Short Wing Configuration

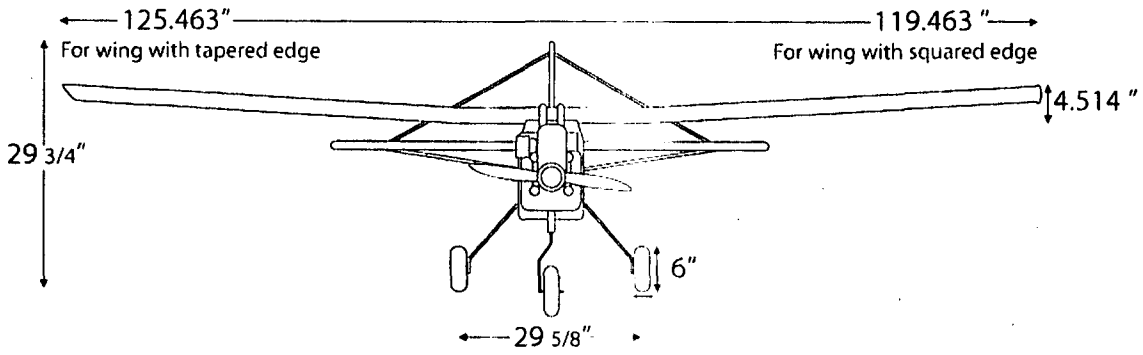


Figure 10. Front View – Long Wing Configurations
Right Wing Showing Shaped Wing Tip, Left Wing Showing Flat Plate Wing Tip

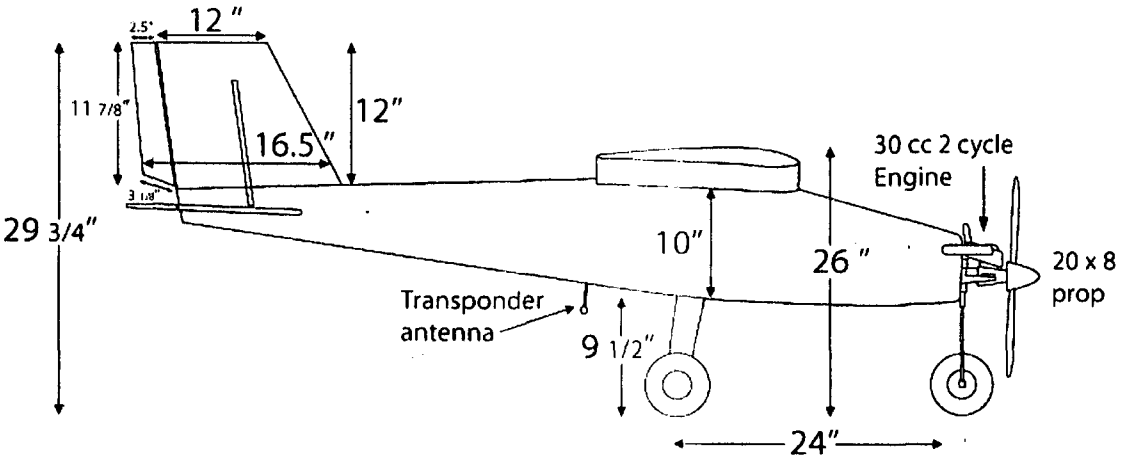


Figure 11. Side View – Long Wing Configurations Illustrating Larger Vertical Stabilizer Area

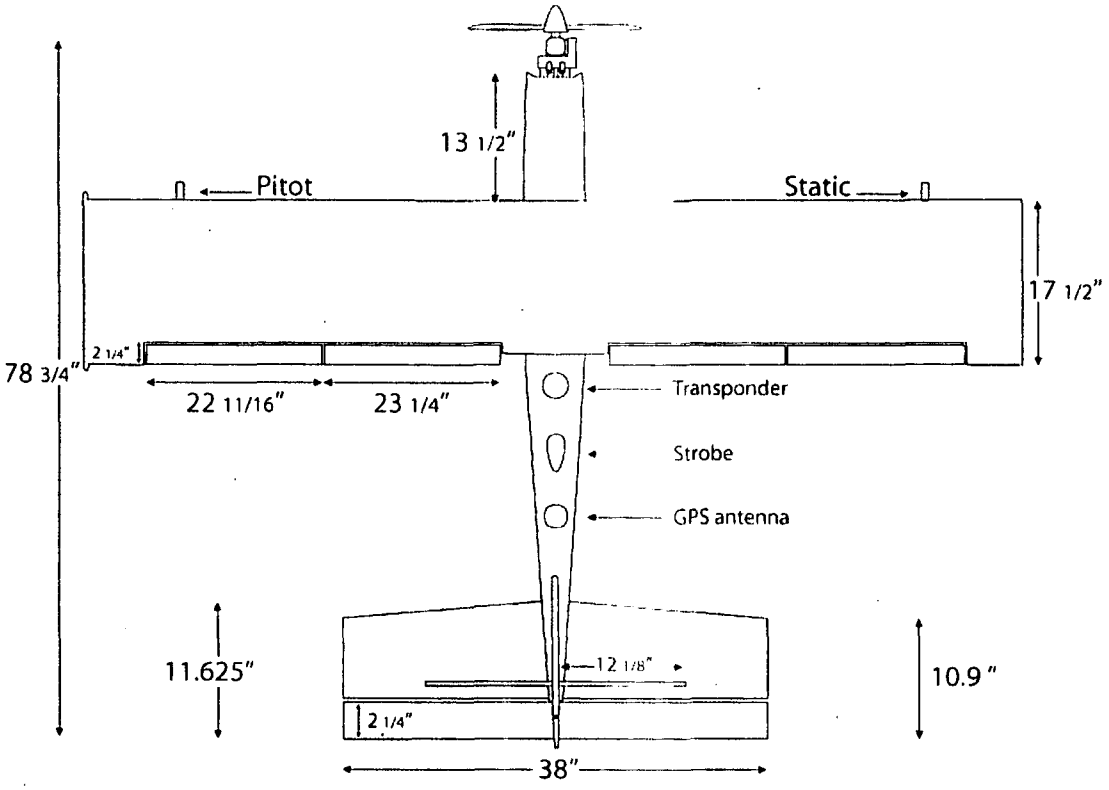


Figure 12. Top View – Long Wing Configurations Illustrating Larger Horizontal Stabilizer Area