

Classes of Airspace Description

NASA DFRC 2007 Fire Mission
UAS COA Application Attachment

NASA Dryden Flight Research Center (DFRC) has procured from General Atomics – Aeronautical Systems Incorporated, an MQ-9 Reaper aircraft and a Ground Control Station (GCS). DFRC has assigned the number “NASA 870” to the aircraft and renamed it “Ikhana” (pronounced ee-kah-nah , a Native American word from the Choctaw Nation meaning intelligent, conscious, or aware).

This attachment is intended to describe the Classes of Airspace required for the 2007 WSFM operations.

1. Classes of Airspace –

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|------------|------------|--|
| i. "A" | Yes | Entire mission in the NAS |
| ii. "B" | No | |
| ii. "C" | No | |
| iv. "D" | No | |
| v. "E" | No | |
| vi. "G" | No | |
| vii. "SUA" | Yes | R-2508 Complex for take-off, climb, descent, and landing |

2. FAA COA Checklist V-6 (Revision 5, 6-15-2005) questions

17. Classes of Airspace

- a. Will any unique separation standards be required for this UAS operation?
A : No.
- b. How does the UA perform in regard to wake turbulence from other heavier aircraft within 500 feet vertical? Within 1000 feet vertical? A : The aircraft performs similar to a Cessna 172, with a ceiling ~FL520 at 10,500 lb GTOW.
- c. What deviation should be expected by the UAS operations from normal aircraft operational characteristics? (I.e. climb/descent rates, turn rate, ability to maintain altitude, track conformance, etc.) A : Climb rate above FL350 may be below 500 ft/min.
- d. Are there any UAS unique requirements for communications and command/control link? A : NASA DFRC and the Ikhana project will provide the appropriate LOS C-band and OTH Ku band communications equipment and frequency approvals for aircraft command and control. In the event of lost communication between the pilot and ATC, use a telephone (see below).
- e. What contingencies will be used in the event of lost communication? A : Assuming this refers to pilot to ATC communications: Telephones are the primary backup plan. Refer to attachment NASA 2007 Fire Mission - Communication and Lost Communication Description Attachment for details.

- f. What contingencies will be used in the event of lost command/control link? **A:**
Reference the following attachments:
NASA 2007 Fire Mission - Mission and Lost Link Procedures Description Attachment,
NASA 2007 Fire Mission - Lost Link Aircraft Maneuvers Flight Manual 21 Aug 2006 Figure 1-61.doc,
NASA 2007 Fire Mission - Lost Link Datalink Recovery Flight Manual 21 Aug 2006 Figure 1-60.doc
- g. Are there any unique provisions necessary in the event of UAS failures? **A:**
Reference the following attachment: NASA 2007 Fire Mission - Emergency Procedures Description Attachment