

Launch & Recovery 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).

The flights for the NASA 2007 Western States Fire Mission (WSFM) will start and end at Edwards Air Force Base (EAFB) within the R-2508/R-2515 special use airspace (SUA). During these missions, there is no planned flight or maneuver in the National Air Space (NAS) below FL180 (Class A airspace).

1. **Launch & Landing Location** – NASA DFRC and specifically Edwards AFB (EDW 22/04) will be the start and end location for each flight in the 2007 WSFM flight program.
2. **Launch Type/Description** - The aircraft takes off like a similar sized manned aircraft (Cessna 210) from a runway of sufficient length under the control of the pilot in the GCS.
3. **Launch Procedure** – The NASA MQ-9 Ikhana is remotely controlled by a pilot for take-off from the NASA Ground Control Station (GCS) using procedures modified from the USAF MQ-9 Technical Order (TO) 1Q-9(M) A-1 Flight Manual and TO 1Q-9(M) A-1 CL-1 Flight Crew Checklist. Hardware differences between the operational USAF aircraft/GCS and the NASA aircraft/GCS drive the need for the modifications to the USAF procedures. These differences are mostly related to the lack of weapons systems in the Ikhana aircraft and in the NASA workstations installed into the GCS.
4. **Landing Type/Description** - The aircraft lands like a similar sized manned aircraft (Cessna 210) to a runway of sufficient length under the control of the pilot in the GCS.
5. **Landing Procedure** – The NASA MQ-9 Ikhana is remotely controlled by a pilot for landing from the NASA Ground Control Station (GCS) using procedures modified from the USAF MQ-9 Technical Order (TO) 1Q-9(M) A-1 Flight Manual and TO 1Q-9(M) A-1 CL-1 Flight Crew Checklist. Hardware differences between the operational USAF aircraft/GCS and the NASA aircraft/GCS drive the need for the modifications to the USAF procedures. These differences are mostly related to the lack of weapons systems in the Ikhana aircraft and in the NASA workstations installed into the GCS.

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6. **Contractor takeoff/landing/cruise pilots** – Contractor UAS pilots will be used to support long duration 2007 WSFM missions. Reference the NASA 2007 Fire Mission - Flight Aircrew Qualification Description Attachment for specific requirements.

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