



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
OFFICE OF MARINE AND AVIATION OPERATIONS
Uncrewed Systems Operations Center-UAS Division
3450 Flightline Drive
Lakeland, Florida 33811

29 November 2021

MEMORANDUM FOR: The Record

FROM: Commander Paul S. Hemmick, NOAA
Chief, Uncrewed Aircraft Systems Division (UASD)

SUBJECT: Airworthiness Release (AWR) of Coptersonde Uncrewed Aircraft System (AWR NOAA Coptersonde 2021R0)

Airworthiness Statement

This document constitutes an Airworthiness Release (AWR) for the Coptersonde Uncrewed Aircraft System (UAS) as described in the Technical Manual. The UASD finds the Coptersonde UAS to be airworthy In Accordance With (IAW) the UASD application of MIL-HDBK-516C. This aircraft is capable of operating in compliance with applicable requirements in 14 CFR Part 91 when operated IAW this document. The Coptersonde UAS is categorized as a developmental aircraft (USN Category 3, see NAVAIRINST 13034.1D) for which compliance to accepted engineering data cannot be determined. This release is valid as of November 2021 and will remain valid unless there are changes in configuration of the subject equipment.

Operating Conditions

Per MIL-HDBK-516C (Airworthiness Certification Criteria), Par. 1.2 Applicability, the Coptersonde UAS is considered expendable. This aircraft shall be operated under the conditions specified in this document, AOC UAS Policy 220-1-5, Original Equipment Manufacturer (OEM) instructions, Coptersonde Operating Procedures, FAA Certificate of Authorization (COA) if applicable, the appropriate Project Instructions, and the applicable Operational Risk Management (ORM) document. NOAA accepts that the UAS may be lost during operations and has determined that the associated risks are acceptable. The Pilot in Command (PIC) shall ensure that the following items are addressed prior to any operations and are followed during each operation. They shall be addressed in writing and may be contained in any of the above referenced documents. These requirements can only be waived by the Chief, UASD.

- Operations limited to ensure UAS maintains proper separation from crewed aircraft.
- Operations limited to a specific weather envelope for which the UAS have been tested.
- Ground Test prior to each flight.
- Routine maintenance checks before and after each flight.
- Replacement and charging of batteries as needed.

- Review of flight data from Ground Control Station after each flight as necessary to ensure safe operation for subsequent flights.
- PIC to maintain safe flight or terminate flight if unable.

Additional Restrictions and Warnings

The following restrictions and warnings are mandatory unless adequately mitigated or accounted for in the above referenced documentation and approved in writing by the Chief, UAS Division.

WARNING

The air vehicle is susceptible to radiated emissions. Loss of link, loss of GPS, loss of video, and possible loss of vehicle control are likely in proximity to emitters. Operators shall avoid known high intensity Electromagnetic Interference (EMI) areas.

WARNING

The Coptersonde UAS has not completed full airworthiness qualification. All flight operations shall be conducted in a manner to minimize exposure to crewed aircraft, watercraft, personnel, vehicles, populated ground areas, and other obstructions or hazards.

WARNING

The Coptersonde UAS does not have a sense and avoid system. Mid-air collision is a risk. All flight operations shall be conducted to ensure that crewed and uncrewed aircraft shall maintain proper separation.

WARNING

Accidental operation of the Coptersonde UAS outside of approved airspace shall be immediately reported to Air Traffic Control (ATC)/Range Control as applicable. The operator shall make immediate actions to correct the flight path and/or follow ATC / Range Control direction(s).

WARNING

The Coptersonde UAS has not undergone Safety of Flight (SOF) Explosive Atmosphere testing. A serious fire or explosion may result if the aircraft is powered while flammable vapors are present during ground or flight operations. Do not operate the system in the presence of flammable vapors. At a minimum, system operations must be at least 50 feet from flammable vapor sources.

NOTE

1. The aircraft operating instructions, procedures, and limitations shall be in accordance with the Technical Procedures referenced above and this AWR. In the event of conflict between these documents, the information in this AWR shall prevail.
2. Emergency procedures: IAW the operator's manual.
3. The Home waypoint shall be over an approved auto land point.
4. Flight over populated areas shall be avoided.
5. Launch of the Coptersonde UAS shall be directed away from ground personnel.

6. Ground personnel shall avoid being near the flight path of the UAS during launch and recovery.
7. The Coptersonde UAS has not completed the full airworthiness qualification process. This AWR has been granted through a Category 3A Airworthiness evaluation (developmental). A Category 3A AWR establishes a minimum level of safety for UAS operations. Strict adherence to the Operator's Manual, local Standard Operating Procedures for UAS, and this AWR is required to reduce the risk of loss of the aircraft, property damage and personal injury.
8. Coordination of channel selection with other systems operating in the area is critical to reducing accident rates.
9. The Coptersonde UAS software components have not undergone software safety verification testing. Software errors resulting in system anomalies may result in loss of the aircraft. The PIC shall ensure that the flight software is updated to the current OEM release(s).
10. The Coptersonde shipboard operations have not been verified by the UASD. Shipboard operations are to be approved on a case-by-case basis until verified by UASD personnel. Future changes to Coptersonde shipboard operations status will be reflected within the specific Operational Risk Management plan and/or changes to airworthiness documentation.