



Unmanned Aircraft System (UAS) Flight Anomaly Report General Information and Instructions

The information on this tab provides general information about this workbook and instructions for generating the report customized to the anomaly being reported. Guidance regarding individual questions in the report is provided in the user guide and via tooltips within the form. The tooltips will appear when the answer field in the form is selected.

Public Burden Statement

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Introduction to the UAS Anomaly Report

The UAS Flight Anomaly Report is a way for the UAS Integration Office and other Federal Aviation Administration (FAA) offices with the responsibility of safely integrating UAS into the National Airspace System (NAS) to gather data about minor unexpected events that occur during normal UAS operations. This data, when aggregated, will assist with setting performance standards, will inform future rulemaking, and may reveal questions to address to improve the safety of UAS operations in the NAS. This data will not be used in a punitive fashion against any participant in the BEYOND program or Partnership for Safety Program (PSP). Participants will not submit this report for every flight, only for flights in which an anomaly occurred.

The UAS Flight Anomaly Report does not replace official accident and incident reporting requirements. If an accident occurs that results in at least serious injury to any person or any loss of consciousness, or if it causes damage to any property (other than the UAS itself) in excess of \$500 to repair or replace the property (whichever is lower), report the accident to the FAA within ten days using DroneZone or by contacting the nearest Flight Standards District Office. Will Carry operators must report any dangerous goods incidents, discrepancies, and apparent violations in accordance with the Hazardous Materials Regulations.

Design of the UAS Flight Anomaly Report

The UAS Flight Anomaly Report is a customizable report: the user identifies the anomalies that occurred during the flight and a form with only questions pertaining to the selected anomalies will be generated. The form contains a combination of multiple-choice questions using drop-down boxes and open-ended questions with open text boxes. The user can view quick tips about each question by left-clicking once in the response field.

Tour of the Report Workbook

The UAS Flight Anomaly Report is a Microsoft Excel macro-enabled workbook. To generate the report, the user must enable macros in Excel. To enable macros, complete these steps in Excel:

1. Click the File tab.
2. Click Options.
3. Click Trust Center, and then click Trust Center Settings.
4. In the Trust Center, click Macro Settings.
5. Select "Enable all macros." (The wording may differ slightly among different versions of Excel.)
6. Click OK.

The workbook contains multiple tabs:

- Instructions: This tab contains a summary version of the instructions in this user guide.
- Assess: This is the starting point for submitting a UAS Flight Anomaly Report. The user answers the questions on this tab to generate the custom report.
- REPORT: This is the custom UAS Flight Anomaly Report generated based on the user's responses on the Assess tab.
- Definitions: The definitions in Appendix A of the user guide are also provided in the workbook for ready reference.

Generate the Custom UAS Flight Anomaly Report

There are roughly 60 questions unique to specific types of anomalies. In order to prevent the user from searching through the entire set of questions in order to answer as few as 1 anomaly-specific question about a flight, the user begins the reporting process by customizing the report needed. To generate the custom report, complete these steps:

1. Open the Excel workbook titled "UAS Flight Anomaly Report."
2. Click the "Assess" tab.
3. Select all of the anomalies that occurred during the flight by clicking the checkboxes next to the applicable description.
4. If the answer to any of the seven shaded questions at the bottom of the form is yes, click the applicable checkbox.
5. Click the "Generate Form" button. The anomaly-specific questions will be appended to the standard questions on the "REPORT" tab.
6. Save the file with a different filename in order to preserve both the original file and the newly-generated report for future use.

Note: To clear all of the checkboxes at once, click the "Clear All Checkboxes" button near the top of the form.

Instrument/UAS Flight Anomaly Report (5/21)

Unmanned Aircraft System (UAS) Flight Anomaly Report Generator

Answer the questions on this sheet to generate a blank UAS Flight Anomaly Report form populated with questions applicable to the anomaly that occurred.

Select the type of anomaly that occurred (select all that apply):

Planned Flight Path Deviations

- | | | |
|--|--------------------------|-----|
| The UA deviated from the planned flight path. | <input type="checkbox"/> | Yes |
| The UA crossed the geofencing boundary. | <input type="checkbox"/> | Yes |
| The UA landed outside the designated landing area. | <input type="checkbox"/> | Yes |

Unplanned Flight Terminations

- | | | |
|---|--------------------------|-----|
| One or more critical aircraft components failed, resulting in terminating the flight. | <input type="checkbox"/> | Yes |
| The control station malfunctioned, resulting in terminating the flight. | <input type="checkbox"/> | Yes |
| The flight termination system failed to deploy when needed. | <input type="checkbox"/> | Yes |

Mitigations Required

- | | | |
|---|--------------------------|-----|
| The cargo delivery system malfunctioned. | <input type="checkbox"/> | Yes |
| The agricultural application system malfunctioned. | <input type="checkbox"/> | Yes |
| The Global Navigation Satellite System (GNSS) link was lost long enough to trigger a mitigation response. | <input type="checkbox"/> | Yes |
| Communication between crewmembers was lost long enough to trigger a mitigation response, including the use of backup communication devices. | <input type="checkbox"/> | Yes |
| The Control and Non-Payload Communication (CNPC) link was lost long enough to trigger a mitigation response. | <input type="checkbox"/> | Yes |
| The parachute failed to deploy. | <input type="checkbox"/> | Yes |
| An anomaly, other than those listed above, triggered a mitigation response. | <input type="checkbox"/> | Yes |

Note: This includes lost communication with air traffic control. This also includes human errors that could lead to lessons learned regarding UAS design and/or flight procedures. (There will be no evaluation of individuals; the data will be analyzed at the aggregate level.)

- | | | |
|---|--------------------------|-----|
| Was unscheduled corrective maintenance required as a result of the anomaly? | <input type="checkbox"/> | Yes |
| Did the flight termination system deploy? | <input type="checkbox"/> | Yes |
| Did the flight termination system deploy unexpectedly? | <input type="checkbox"/> | Yes |
| Did the parachute deploy? | <input type="checkbox"/> | Yes |
| Did the parachute deploy unexpectedly? | <input type="checkbox"/> | Yes |
| Was the unmanned aircraft carrying hazardous materials (HAZMAT) cargo? | <input type="checkbox"/> | Yes |
| Was this a Part 135 flight? | <input type="checkbox"/> | Yes |

Note: If you change any responses after clicking the "Generate Form" button, you must click the "Generate Form" button again to reset the form.

Instrument/UAS Flight Anomaly Report (5/21)



Unmanned Aircraft System (UAS) Flight Anomaly Report

The data in this report will be used for trend analysis to identify lessons to apply as we continue to integrate UAS into the NAS.

Aircraft Nickname or Registration Number		
Launch Date		
Launch Time <i>(if using 12-hr clock, include "am" or "pm", as applicable)</i>		
Time of Anomaly (if known) <i>(if using 12-hr clock, include "am" or "pm", as applicable)</i>		
Geographical Coordinates of Anomaly (if known)		
Anomaly Severity		
Mission Type	<i>If Other, briefly describe.</i>	<i>These fields are not required if you use the Monthly Individual Flight Report instead of the Monthly Summary Flight Report.</i>
Flight Type		



UAS Flight Anomaly Report Definitions

Term	Definition	Source
Accident [UAS]	An occurrence associated with the operation of any public or civil unmanned aircraft system that takes place between the time that the system is activated with the purpose of flight and the time that the system is deactivated at the conclusion of its mission, in which: (1) Any person suffers death or serious injury; or (2) The aircraft has a maximum gross takeoff weight of 300 pounds or greater and sustains substantial damage.	49 CFR 830.2
Anomaly [UAS]	An event (e.g., equipment malfunction or loss of a safety-critical communication or navigation link) that does not meet the reporting criteria of an accident, incident, or occurrence but adversely affects the operation of any public or civil unmanned aircraft system between the time that the system is activated with the purpose of flight and the time that the system is deactivated at the conclusion of its flight, in which (1) a mitigation strategy is executed (via application of technology and/or procedures); or (2) the aircraft exceeds its operational boundaries.	IPP Data Team 8/12/20
Cargo	Any property carried on an aircraft other than mail and accompanied or mishandled baggage.	UAS FY19 Implementation Plan
Control and Non-Payload Communication (CNPC)	The communication between the control station and the unmanned aircraft used to perform navigational functions, including mitigations and maneuvers.	IPP Data Team 6/4/20
Crewmember [UAS]	In addition to the crewmembers identified in 14 CFR part 1, a UAS flightcrew member includes pilots, sensor/payload operators, and VOs but may include other persons as appropriate or required to ensure safe operation of the aircraft.	N 8900.227 (cancelled)
Dangerous goods	See Hazardous material.	
Flight termination system	A system that terminates the flight of a UAS in the event that all other contingencies have been exhausted and further flight of the aircraft cannot be safely achieved, or other potential hazards exist that immediate discontinuation of flight.	ASTM F3298-19
Flight time	Pilot time that commences when an aircraft moves under its own power for the purpose of flight and ends when the aircraft comes to rest after landing	14 CFR 1.1
Flyaway	When the pilot is unable to effect control of the aircraft and, as a result, the UA is not operating in a predictable or planned manner.	JO 7200.23A
Hazardous material	A substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation law (49 U.S.C. 5103).	49 CFR 171.8

UAS Flight Anomaly Report Definitions

Term	Definition	Source
Incident	An occurrence, other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations. Examples of serious incidents from NTSB Advisory to Operators of Civil Unmanned Aircraft Systems in the United States: True "fly-away", inability of required flight crewmember to perform normal duties as result of injury or illness, inflight fire, aircraft collision in flight, >\$25K damage to objects other than the aircraft, aircraft is overdue and is believed to have been involved in an accident	49 CFR 830.2
Minor [severity definition]	Nuisance. Operating limitations. Use of emergency procedures. Minor incident.	AC 107-2
Negligible [severity definition]	Little consequence.	AC 107-2
Occurrence	An abnormal event, other than an accident or incident. Examples include: low speed aborts or air turnbacks.	FAA Order 8900.1
Parachute [UAS]	Any aerodynamic deceleration device designed to slow the descent of sUA when not under stable safe flight.	ASTM F3322-18
Parachute recovery system [UAS]	Summation of the components of a parachute recovery system that work to reduce descent velocity.	ASTM F3322-18
Remote Pilot in Command (RPIC)	Person who is directly responsible for and is the final authority as to the operation of the UAS; has been designated as remote pilot in command before or during the flight of a UAS; and holds the appropriate CAA certificate for the conduct of the flight.	ASTM F3266-18
Serious Injury	Any injury which: (1) Requires hospitalization for more than 48 hours, commencing within 7 days from the date of the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.	49 CFR 830.2
Substantial Damage	Damage or failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component. Engine failure or damage limited to an engine if only one engine fails or is damaged, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wingtips are not considered "substantial damage" for the purpose of this part.	49 CFR 830.2
Unmanned Aircraft (UA)	An aircraft operated without the possibility of direct human intervention from within or on the aircraft.	JO 7200.23A

UAS Flight Anomaly Report Definitions

Term	Definition	Source
Unmanned Aircraft System (UAS)	An unmanned aircraft and associated elements (including communication links and the components that control the unmanned aircraft) that are required for the pilot in command to operate safely and efficiently in the national airspace system.	JO 7200.23A
Will Carry	The certificate holder has authorization to transport dangerous goods in its OpSpec.	AC 121-40