



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

# **Unmanned Aircraft System (UAS) Flight Anomaly Report**

*User Guide*

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## Introduction to the Unmanned Aircraft System (UAS) Anomaly Report

The UAS 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 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 Anomaly Report

The UAS 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 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 Anomaly Report. The user answers the questions on this tab to generate the custom report.
- **REPORT:** This is the custom UAS Anomaly Report generated based on the user's responses on the Assess tab.
- **Definitions:** The definitions in Appendix A of this guide are also provided in the workbook for ready reference.

Let's get started!

## 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 six 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.

## Macro-Free Version of the UAS Flight Anomaly Report

There is a version of the UAS Flight Anomaly Report that contains no macros. The questions are the same but generating the report is different.

The workbook contains multiple tabs:

- Instructions: This tab contains a summary version of the instructions in this user guide.
- Definitions: The definitions in Appendix A of this guide are also provided in the workbook for ready reference.
- Assess: This is the starting point for submitting a UAS Flight Anomaly Report. The user answers the questions on this tab to identify which tabs to populate.
- General Info: The user must populate this tab in addition to the tabs identified on the Assess tab.
- 1-20: These tabs contain questions specific to each type of anomaly.

To complete the report, complete these steps:

1. Open the Excel workbook titled “UAS Flight Anomaly Report Form\_no macros.”
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 six shaded questions at the bottom of the form is yes, click the applicable checkbox.
5. Complete the “General Info” tab and the tabs listed in Column D of the “Assess” 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.

## Populate the UAS Flight Anomaly Report

Once the custom UAS Anomaly Report is generated, the next step is to populate the form. Because each form is unique, the guidance in this section begins with the standard questions and then continues in the same order as the anomalies on the “Assess” tab of the workbook.

## Standard Questions

To clear all of the answers to the standard questions, click the “Clear First Section of Form” button.

1. Aircraft Nickname or Registration Number. Provide the unique identifier of the aircraft that experienced the anomaly. Depending on the weight of the aircraft and when the aircraft was registered, the unique identifier may be the nickname assigned to the aircraft when registering it in DroneZone or it may be the registration number assigned to the aircraft when registering it using AC Form 8050-1. The aircraft nickname/registration number, combined with the launch date and time, is used to link the anomaly report with the monthly flight report data to expand the analysis without the user providing the same information twice.
2. Launch Date. Enter the date that the flight departed from the launch location.
3. Launch Time. Enter the time that the flight departed from the launch location. If using a 12-hour clock, include am or pm to designate a morning or afternoon flight. In the drop-down box to the right of the launch time, indicate whether the time is local time or coordinated universal time (UTC) time.
4. Time of Anomaly. If known, enter the time that the anomaly occurred. If multiple anomalies occurred, enter the first known time of the first known anomaly. If using a 12-hour clock, include am or pm to designate a morning or afternoon flight. Use the same time format (local or UTC) as the launch time.
5. Geographical Coordinates of Anomaly. If known, enter the geographical coordinates where the anomaly occurred. If multiple anomalies occurred, enter the first known coordinates of the first known anomaly. The form allows the coordinates to be provided in any format but decimal degrees are preferred.
6. Anomaly Severity. Identify the severity of the anomaly as either minor or negligible. These are the least severe categories used in the risk matrix in Appendix A of [Advisory Circular \(AC\) 107-2, Small Unmanned Aircraft Systems](#). Events with higher severity categories are likely to be defined as accidents or incidents and require accident or incident reports (see the [introduction](#) to this guide).
  - a. Minor: Nuisance. Operating limitations. Use of emergency procedures.
  - b. Negligible: Little consequence.
7. Mission Type. Select the category that best represents the purpose of the mission/flight. If the mission type was not one of the types listed below, select “Other” in the drop-down box and then briefly describe the mission type in the line below. This field is not required if you use the Monthly Individual Flight Report instead of the Monthly Summary Flight Report.
  - a. Aeronautical Research: The purpose of the flight is to research unmanned aircraft systems and/or their components.
  - b. Agricultural Delivery/Application: The purpose of the flight is to apply fertilizer, pesticide, or other agricultural products to crops, to deliver bait to traps to capture animals that are destroying crops or preying on livestock, or to transport and/or apply other materials in support of agricultural programs.
  - c. Agricultural Operation: The purpose of the flight is to monitor the health of crops or livestock, or conduct other flights in support of agricultural programs that do not involve transporting cargo.
  - d. Environmental Survey: The purpose of the flight is to monitor the climate, soil, and/or living things by measuring atmospheric conditions, charting changes in soil conditions over time, counting wildlife, etc.
  - e. Infrastructure Inspection (Linear): The purpose of the flight is to inspect man-made constructions that extend in a nearly straight line. Examples include inspections of roads, power lines, railway lines, canals, pipelines, and fences.

- f. Infrastructure Inspection (Non-Linear): The purpose of the flight is to inspect man-made constructions that do not extend in a nearly straight line. Examples include buildings and aircraft.
  - g. Public Safety: The purpose of the flight is for law enforcement, fire, or emergency medical services departments/agencies to protect the welfare of the general public.
8. Flight Type. Select the purpose of the flight: operational, functional check, or training. This field is not required if you use the Monthly Individual Flight Report instead of the Monthly Summary Flight Report.
    - a. Operational: The purpose of the flight is to complete a routine business function.
    - b. Functional Check: The purpose of the flight is to check the performance of the UAS as part of an inspection process.
    - c. Training: The purpose of the flight is to increase the proficiency of the pilot and/or other crewmembers in flying the UAS.
  9. Description of Damage to Persons or Property. If known that anybody sustained any minor injuries or if any property was damaged, describe the injuries and/or property damage. Include, if known, the extent of the injuries and/or property damage. If no known injuries or property damage resulted from the flight, leave this question blank.
  10. Description of Damaged to Unmanned Aircraft. If the UA itself sustained any damage during the flight, describe the damage and the extent of the damage. If the UA did not sustain any damage during the flight, leave this question blank.

### **Planned Flight Path Deviation Questions**

#### **The UA deviated from the planned flight path.**

1. Cause of Unplanned Flight Path Deviation. Describe what happened that resulted in the UA straying from the planned flight path.
2. Did the UA exceed the approved altitude? Select No or Yes.
3. If the answer to the previous question is Yes, state the number of minutes and/or seconds that the UAS exceeded the approved altitude.
4. Was the horizontal deviation greater than 50 feet? Select No or Yes.

#### **The UA crossed the geofencing boundary.**

1. What action took place upon the UA crossing the geofencing boundary? Select one of the following actions in the drop-down box:
  - a. Automatic contingency system activated. The UAS detected the boundary crossing and initiated a pre-programmed response.
  - b. Flight outside geofence area terminated only when UA power supply was consumed. The UA continued its flight outside the geofence until it ran out of power. Note: True flyaways due to a flight control system malfunction or failure must be reported to the NTSB immediately.
  - c. RPIC initiated contingency procedures. Upon becoming aware of the UA crossing the geofencing boundary, either via the control station or a visual observer, the RPIC implemented the pre-defined response to the boundary crossing.
2. If the automatic contingency system activated, identify the contingency action. If you selected the first answer in the drop-down box for the previous question, select one of the following options in the drop-down box:
  - a. Landed at waypoint. The UA landed at a pre-determined intermediate geographical position on the flight path.
  - b. Landed in place. The UA landed at the geographical position where it detected that it crossed the geofencing boundary.
  - c. Returned to home. The UA returned to its launch location.

If the automatic contingency system was not activated, leave this question blank.

3. Did the UA return to within the geofencing boundary? Select No or Yes.
4. If No, identify any hazards or damage resulting from landing outside the geofencing boundary. If the UA landed outside the geofencing boundary, describe any potential or actual damage resulting from the landing. If left blank, it will be assumed that there were no hazards or damage.
5. How long was the UA outside the geofencing boundary? State the number of minutes and/or seconds that the UA spent outside the geofencing boundary before it returned to within the boundary or landed.

**The UA landed outside the designated landing area.**

1. How far from the designated landing area did the UA land? In the first box following this question, enter the number (using up to two decimal places) representing the distance between the designated landing area and the actual landing area. In the second box, select the unit of measure used (feet, inches, meters, nautical miles, etc.).
2. What caused the UA to land outside the designated landing area? Describe what happened that resulted in the aircraft landing outside its appointed area.

**Unplanned Flight Terminations**

**One or more critical aircraft components failed, resulting in terminating the flight.**

1. Which aircraft component(s) failed to operate as intended? List the parts of the UA that failed which caused an unplanned end of the flight. Systems or components in the category of aircraft failure include the frame, propulsion system, electrical system, aircraft-mounted safety-critical sensors, and cameras used for mitigation.
2. Describe the circumstances behind the aircraft failure. As much as is known, describe the factors that contributed to the failure of the aircraft component(s).

**The control station malfunctioned, resulting in terminating the flight.**

1. Describe the circumstances leading to the control station malfunction, including the components involved if known (e.g., battery, software, sensor, etc.). Only include malfunctions of devices that have the ability, or potential, to control the aircraft. Do not include malfunctions of informational stations. As much as is known, describe the factors that contributed to the control station malfunction.

**The flight termination system failed to deploy when needed.**

1. Describe the flight termination system installed on the aircraft. Provide the characteristics of the flight termination system that are relevant to the anomaly that occurred.
2. Describe the circumstances leading to the failure of the flight termination system. If known, what caused the flight termination system to fail? As much as is known, describe the factors that contributed to the failure of the flight termination system.
3. What corrective action was taken to minimize the risk of the same type of failure occurring again? Describe the changes made to the flight termination system and/or procedures to try to prevent the same failure from reoccurring.

**Mitigations Required**

**The cargo delivery system malfunctioned.**

1. Weight of Cargo Transported During Flight. In the first box following this question, enter the number (using up to two decimal places) representing the weight of the package being delivered. In the second box, select the unit of measure used (grams, kilograms, pounds, or ounces). If the actual weight of the cargo is unknown, leave this question blank and answer the next question.
2. If the weight is unknown, what is the maximum cargo weight allowed by the UAS in order to launch? In the first box following this question, enter the number (using up to two decimal places) representing the maximum allowable cargo weight. In the second box, select the unit of measure used (grams, kilograms, pounds, or ounces). If the actual

- weight of the cargo that was transported is known, leave this question blank and answer the previous question.
3. Describe the cargo delivery system. Provide the characteristics of the cargo delivery system that are relevant to the anomaly that occurred.
  4. Describe the circumstances leading to the cargo delivery malfunction, including the components involved if known. As much as is known, describe the factors that contributed to the failure of the cargo delivery system.
  5. What corrective action was taken to minimize the risk of the same type of malfunction occurring again? Describe the changes made to the cargo delivery system and/or procedures to try to prevent the same failure from reoccurring.

**The agricultural application system malfunctioned.**

1. Weight of Cargo Transported During Flight. In the first box following this question, enter the number (using up to two decimal places) representing the weight of the agricultural material onboard the UA. In the second box, select the unit of measure used (grams, kilograms, pounds, or ounces). If the actual weight of the material is unknown, leave this question blank and answer the next question.
2. If the weight is unknown, what is the maximum cargo weight allowed by the UAS in order to launch? In the first box following this question, enter the number (using up to two decimal places) representing the maximum allowable cargo weight. In the second box, select the unit of measure used (grams, kilograms, pounds, or ounces). If the actual weight of the material that was transported is known, leave this question blank and answer the previous question.
3. Describe the application/delivery system. Provide the characteristics of the system used to transport and apply the agricultural material that are relevant to the anomaly that occurred.
4. Describe the circumstances leading to the application/delivery system malfunction, including the components involved if known. As much as is known, describe the factors that contributed to the failure of the system used to transport and apply the agricultural material.
5. What corrective action was taken to minimize the risk of the same type of malfunction occurring again? Describe the changes made to the agricultural application system and/or procedures to try to prevent the same failure from reoccurring.

**The Global Navigation Satellite System (GNSS) link was lost long enough to trigger a mitigation response.**

1. GNSS Lost Link Latency Threshold. State the number of minutes and/or seconds that the UAS can be without its GNSS link before the UAS initiates the programmed response to the absence of the link.
2. Number of GNSS Lost Link Occurrences. Enter the number of times during the flight that the GNSS link was lost long enough to trigger a mitigation response.
3. For each GNSS lost link occurrence, enter the last known geographical coordinates before the GNSS lost link occurred. **Note:** *If there was more than one GNSS lost link occurrence, click the “Add” button for each additional occurrence. For each click of the “Add” button, a supplementary section will be added to the end of the form to enter the last recorded geographical coordinates and the duration of the lost link for each additional lost link occurrence.*  
Enter the latitude and longitude in the first two boxes. (Any format of geographical coordinates is accepted but decimal coordinates are preferred [example: 38.820450,-77.050552].) In the third box, enter the number (using up to two decimal places) representing the altitude. In the fourth box, select the unit of measure used (feet, meters, nautical miles, etc.).



4. Duration of GNSS Lost Link Occurrence. For each lost link occurrence during the flight, state the number of minutes and/or seconds that the UAS was without the GNSS link. See the note in paragraph 3 above.
5. Source of Geographical Coordinates. Select what you used to identify the last known geographical coordinates before the lost link occurred. If the source was other than the flight log or Google Earth, select "Other" in the drop-down box and then list the source in the line below.
6. If the RPIC controlled multiple UA on the mission, how many UA were affected by the GNSS lost link? If multiple UAs were in flight simultaneously and controlled by the same control station, enter the number of UA that initiated lost link procedures due to the GNSS lost link.
7. GNSS Lost Link Procedure Performed. From the drop-down box, select the type of mitigation that the UA(s) performed in response to the GNSS lost link. If the procedure was something other than those listed in the drop-down box, select "Other" in the drop-down box and then describe the procedure in the line below.

**Communication between crewmembers was lost long enough to trigger a mitigation response, including the use of backup communication devices.**

1. What type of primary communication device did the crew use (cellphone, radio, etc.)? Describe the primary means of communication among the crewmembers.
2. If applicable, the crew used what type(s) of backup communication device? When the crew lost use of the primary communication device, describe the backup communication device(s) that the crew used to restore/continue communication.
3. Describe the circumstances leading to the loss of communication between crewmembers. If known, what caused the loss of communication? As much as is known, describe the factors that contributed to the failure of the primary communication device.
4. How did the communication loss affect the aircraft? From the drop-down box, select the programmed response initiated by the UAS when the communication loss reached the threshold. If the response was something other than those listed in the drop-down box, select "Other" in the drop-down box and then describe the response in the line below.
5. What corrective action was taken to minimize the risk of losing primary communication among crewmembers again? Describe the changes made to the primary communication device and/or procedures to try to prevent the same failure from reoccurring.

**The Control and Non-Payload Communication (CNPC) link was lost long enough to trigger a mitigation response.**

1. Number of CNPC Lost Link Occurrences. Enter the number of times during the flight that the CNPC link was lost long enough to trigger a mitigation response.
2. Longest Duration of CNPC Lost Link Occurrence. For the longest CNPC lost link occurrence during the flight, state the number of minutes and/or seconds that the UAS was without the link.
3. If the RPIC controlled multiple UA on the mission, how many UA were affected by the CNPC lost link? If multiple UAs were in flight simultaneously and controlled by the same control station, enter the number of UA that initiated lost link procedures due to the CNPC lost link.
4. CNPC Lost Link Procedure Performed. From the drop-down box, select the type of mitigation that the UA(s) performed in response to the CNPC lost link. If the procedure was something other than those listed in the drop-down box, select "Other" in the drop-down box and then describe the procedure in the line below.

**The parachute failed to deploy.**

1. Describe the parachute recovery system installed on the aircraft. Provide the characteristics of the parachute recovery system that are relevant to the anomaly that occurred.

2. Describe the circumstances leading to the failure of the parachute recovery system. If known, what caused the parachute recovery system to fail? As much as is known, describe the factors that contributed to the failure of the parachute to deploy.
3. What corrective action was taken to minimize the risk of the same type of failure occurring again? Describe the changes made to the parachute recovery system and/or procedures to try to prevent the same failure from reoccurring.

**An anomaly, other than those listed above, triggered a mitigation response.**

1. Describe the anomaly. Describe the equipment malfunction, lost communication with air traffic control, crewmember error, or other event that adversely affected the flight and required a mitigation strategy or resulted in the aircraft exceeding its operational boundaries.
2. If known, what caused the anomaly? As much as is known, describe the factors that contributed to the adverse event.
3. If applicable, what corrective action was taken to minimize the risk of the anomaly reoccurring? Describe the changes made to the UAS and/or procedures to try to prevent the same failure from reoccurring.

**Was unscheduled corrective maintenance required as a result of the anomaly?**

1. Type of Unscheduled Corrective Maintenance. From the drop-down box, select the type of unscheduled corrective maintenance that was required as a result of the anomaly: repair, replace, or ground check.
2. UAS Component(s) that Required Unscheduled Corrective Maintenance. List the components of the UAS that were repaired, replaced, or ground checked.
3. Description of Unscheduled Corrective Maintenance. Briefly describe the repair, replacement, or ground check that was performed after the anomaly occurred.

**Did the flight termination system deploy?**

1. Describe the flight termination system installed on the aircraft. Provide the characteristics of the flight termination system that are relevant to the event that occurred.
2. Describe the circumstances leading to the deployment of the flight termination system. If known, what caused the flight termination system to deploy? As much as is known, describe the factors that contributed to the deployment of the flight termination system.

**Did the flight termination system deploy unexpectedly?**

1. What corrective action was taken to minimize the risk of the flight termination system unnecessarily deploying again? Describe the changes made to the flight termination system and/or procedures to try to prevent the same unintended deployment from reoccurring.

**Did the parachute deploy?**

1. Describe the parachute recovery system installed on the aircraft. Provide the characteristics of the parachute recovery system that are relevant to the event that occurred.
2. Describe the circumstances leading to the deployment of the parachute. If known, what caused the parachute to deploy? As much as is known, describe the factors that contributed to the deployment of the parachute.

**Did the parachute deploy unexpectedly?**

1. What corrective action was taken to minimize the risk of the parachute recovery system unnecessarily deploying again? Describe the changes made to the parachute recovery system and/or procedures to try to prevent the same unintended deployment from reoccurring.

**Was the unmanned aircraft carrying hazardous materials (HAZMAT) cargo?**

1. UN #. Enter the four-digit UN # that is used to identify the hazardous material.
2. Proper Shipping Name. Identify the standard technical name from the hazardous materials table in 49 CFR 172.101.
3. Packing Group. Select the applicable packing group from the drop-down box.
4. Inner Quantity. In the first box, enter the numerical value of the quantity in the individual inner package(s). In the second box, enter the unit of measure used to record the quantity.
5. Total Quantity. In the first box, enter the numerical value of the total quantity (the inner quantity x the number of inner packages). In the second box, enter the unit of measure used to record the quantity.
6. What happened to the package/container (i.e., was it a hard landing, did it fall from cruise altitude, etc.)? Describe what happened to the package/container and the resulting damage to the package/container.
7. Was any HAZMAT released? Select No or Yes.

**Was this a Part 135 flight?**

1. For each crewmember role, enter the number of crewmembers working the flight. If left blank, it will be assumed that the number is zero (0). If a crewmember role was not one of the types listed, enter the number of crewmembers in the "Other" role and then briefly describe the role in the line below
2. If the pilot to aircraft ratio was greater than one to one (1:1), enter the ratio using the format 1:n. If left blank, it will be assumed that the ratio is 1:1.

## Appendix A: Definitions and Acronyms

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.	

Term	Definition	Source
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
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 <a href="#">NTSB Advisory to Operators of Civil Unmanned Aircraft Systems in the United States</a> : 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

Term	Definition	Source
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
United Nations (UN) Number	Four-digit number used to identify hazardous chemicals or classes of hazardous materials worldwide.	<a href="#">MSDS Online</a>
Unmanned Aircraft (UA)	An aircraft operated without the possibility of direct human intervention from within or on the aircraft.	JO 7200.23A
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

<b>Acronym</b>	<b>Term</b>
AC	Advisory Circular
CNPC	Control and Non-Payload Communication
FAA	Federal Aviation Administration
GNSS	Global Navigation Satellite System
HAZMAT	Hazardous Material
NAS	National Airspace System
NTSB	National Transportation Safety Board
PSP	Partnership for Safety Program
RPIC	Remote Pilot In Command
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
UN	United Nations
UTC	Coordinated Universal Time

## Appendix B: Dangerous Goods (Hazardous Materials) Reporting Requirements

[49 CFR §171.15](#): As soon as practical but no later than 12 hours after the occurrence of any incident described in paragraph (b) of this section, each person in physical possession of the hazardous material must provide notice by telephone to the National Response Center (NRC) on 800-424-8802 (toll free) or 202-267-2675 (toll call) or online at the [National Response Center \(https://nrc.uscg.mil/\)](https://nrc.uscg.mil/).

[49 CFR §171.16](#): Each person in physical possession of a hazardous material at the time that any of the following incidents occurs during transportation (including loading, unloading, and temporary storage) must submit a Hazardous Materials Incident Report on [DOT Form F 5800.1 \(01/2004\)](#) within 30 days of discovery of the incident.

[49 CFR §175.31](#): Each person who discovers a discrepancy, as defined in paragraph (b) of this section, relative to the shipment of a hazardous material following its acceptance for transportation aboard an aircraft shall, as soon as practicable, notify the nearest FAA [Regional](#) or [Field Security Office](#) by telephone or electronically.