



NTSB

NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF AVIATION SAFETY

Advisory

July 29, 2016

Advisory to Operators of Civil Unmanned Aircraft Systems in the United States

INTRODUCTION

The use of small civil unmanned operating systems (sUAS) is growing rapidly, with changes happening on a nearly daily basis. In particular, the Federal Aviation Administration (FAA) and the Department of Transportation's Office of the Secretary issued a new final rule on the operation and certification of small unmanned aircraft systems¹ and the FAA recently issued a new "blanket Certificate of Waiver or Authorization (COA)" for commercial Section 333² and Public Aircraft operators.

FAA authorizations for UAS operation direct UAS pilots and operators to provide notification to the FAA in the event that any of a series of enumerated occurrences takes place during the operation of a UAS. Included in these instructions are reminders that the FAA procedures "are not a substitute for separate accident/incident reporting required by the National Transportation Safety Board (NTSB) under 49 CFR §830.5." By means of this Advisory, the NTSB reminds operators of any civil UAS, other than those operated for hobby or recreational purposes, of the NTSB's accident and incident reporting requirements in [Part 830 of title 49, Code of Federal Regulations](#).

BACKGROUND

In August of 2010, the NTSB revised its Part 830 regulations to clarify that its accident and incident notification requirements apply to unmanned aircraft as well as conventional manned aircraft.³ [Section 830.5](#) instructs operators of civil aircraft and certain public aircraft to immediately, and by the most expeditious means available, notify the NTSB when an accident or listed incident occurs.

An accident *will* result in the NTSB's initiating an investigation and report with a determination of probable cause. In order to minimize the burden on operators of a small UAS and the NTSB, we have exempted from the definitions of "aircraft accident" and "unmanned aircraft accident" in [section 830.2](#) of the NTSB regulations those events in which there is only substantial damage to the aircraft (no injuries), and the aircraft has a maximum gross takeoff weight of less than 300 pounds.

Although any of the incidents enumerated in section 830.5 would require the operator to notify the NTSB, the agency at its discretion may decide to conduct a full investigation with probable cause.

1 [See 81 Fed. Reg. 42063 \(June 28, 2016\)](#).

2 Section 333 of the FAA Modernization and Reform Act of 2012 provides that "[i]f the Secretary of Transportation determines that ... certain unmanned aircraft systems may operate safely in the national airspace system, the Secretary shall establish requirements for the safe operation of such aircraft systems in the national airspace system."

3 [75 Fed. Reg. 51955 \(August 24, 2010\)](#).

REQUIREMENTS

A civil UAS operator must immediately and by the most expeditious means, notify the NTSB of an accident or incident. An unmanned aircraft accident is defined in 49 C.F.R. § 830.2 as 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.

Section 830.2 also provides definitions of what constitutes “serious injury” and “substantial damage”.

Operators must consider that the rest of the reporting requirements for serious incidents listed in section 830.5 apply regardless of UAS weight. Listed serious incidents that apply to all UAS include the following events:

- Flight control system malfunction or failure: For an unmanned aircraft, a true “fly-away” would qualify. A lost link that behaves as expected does not qualify.
- Inability of any required flight crewmember to perform normal flight duties as a result of injury or illness. Examples of required flight crewmembers include the pilot, remote pilot; or visual observer if required by regulation. This does not include an optional payload operator.
- Inflight fire, which is expected to be generally associated with batteries.
- Aircraft collision in flight.
- More than \$25,000 in damage to objects other than the aircraft.
- Release of all or a portion of a propeller blade from an aircraft, excluding release caused solely by ground contact.
- Damage to helicopter tail or main rotor blades, including ground damage, that requires major repair or replacement of the blade(s).
- An aircraft is overdue and is believed to have been involved in an accident.

EXAMPLES

Below are examples of potential events.

- A small multirotor UAS has a fly-away and crashes into a tree, destroying the aircraft: Not an Accident, (though substantial damage, too small, and no injuries), but the operator is required to notify the NTSB of a flight control malfunction. NTSB **may** initiate an investigation and report with a determination of probable cause..
- A small multirotor UAS has a fly-away and strikes a bystander causing serious injury: Accident (resulted in serious injury). The operator is required to immediately notify the NTSB. The NTSB **must** investigate the accident and determine a probable cause.
- A small multirotor UAS hits a tree due to pilot inattention on a windy day: Not an Accident (too small, even if substantial damage). However, the operator is required to notify the NTSB if other criteria of 830.5 are met. NTSB **may** initiate an investigation and report with a determination of probable cause.
- A large, experimental UAS (400 lbs) has a structural failure and crashes in a remote area: Accident (substantial damage and gross takeoff weight of 300 lbs. or greater). The operator is required to immediately notify the NTSB. NTSB **must** investigate and determine a probable cause.

We'd also like to remind unmanned aircraft operators that none of Part 830 is intended to apply to hobbyist or recreational operators as described in section 336 of the FAA Modernization and Reform Act of 2012⁴ and applicable FAA guidance.

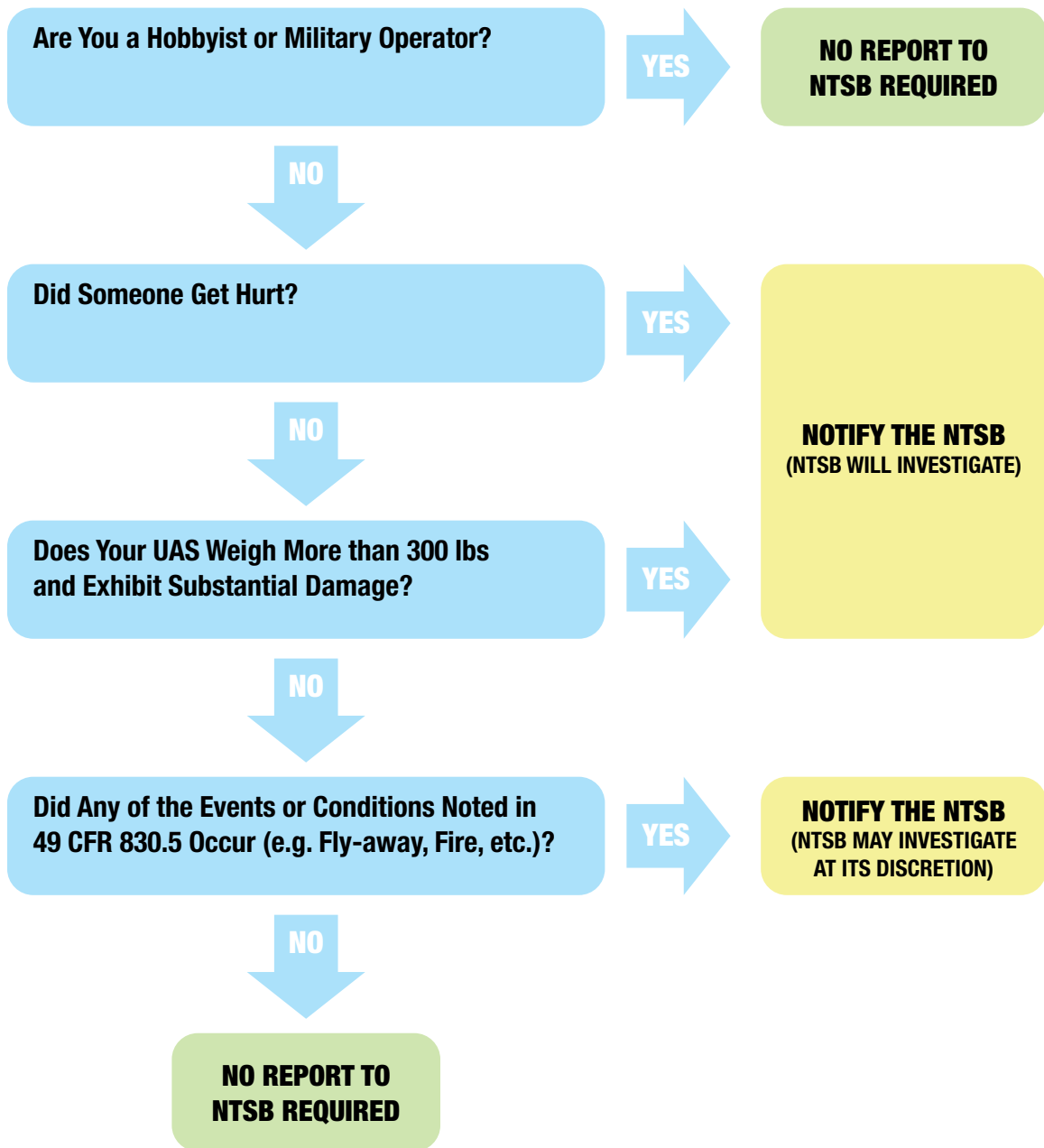
We hope this advisory serves as a useful reminder to the UAS community that the NTSB remains committed to performing its long-standing mission to support air safety through accident and incident investigation, while placing a minimum burden on this growing industry.

For further information or questions, you may contact:

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⁴ Section 336(c) states that the term the term "model aircraft" means an unmanned aircraft that is—
(1) capable of sustained flight in the atmosphere;
(2) flown within visual line of sight of the person operating the aircraft; and
(3) flown for hobby or recreational purposes.

Figure 1 – Determining UAS Occurrence Reporting Requirements to NTSB⁵



⁵ Figure 1 applies to any unmanned aircraft operated under Part 107, 333, civil COA, experimental certificate, etc. UAS operators should note that they may have additional reporting requirements to the FAA, military, or other government agencies depending on the applicable regulations under which they are operating.