

Statement on Battery Handling Rules for VTOL Aircraft Using Battery Power for Propulsion

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Introduction

The CAA welcomes the continued efforts by the aviation industry to deliver new and innovative products to the market. As part of its efforts to support the industry, the CAA is setting out its current approach to battery handling rules for VTOL aircraft using battery power for propulsion.

The intent of this statement is to apply an approach similar to battery handling that is already adopted for refuelling of conventional aircraft. This follows a call for input from industry that was open from 8th of January to 9th of February 2024. The call for input and response documents can be found on the CAA Citizen Space website.

Scope

This statement applies to aerodrome operators, groundhandling providers, maintenance facilities and aircraft operators of battery or hybrid powered VTOL aircraft that are engaged in the charging, deliberate discharging, maintenance or replacement of batteries of VTOL aircraft.

This statement covers Commercial Air Transport (CAT), Non-Commercial Operations using complex motor-powered aircraft (Part-NCC), and Specialised Operations.

Interpretation

In this document, references to EU regulations are to those regulations as assimilated into UK domestic law under the European Union (Withdrawal) Act 2018 and are referenced as “Assimilated Regulation (EU) year/number” or “Assimilated Regulation (EU) No. number/year”.

Definitions

Definitions included in this statement reflect those in the existing relevant regulations Assimilated Regulation (EU) 2018/1139 (the UK Basic Regulation) and Assimilated Regulation (EU) No. 1321/2014 (Continuing Airworthiness Regulation).

‘*apron*’ means a defined area of an aerodrome intended to accommodate aircraft for purposes of loading or unloading passengers, baggage, mail or cargo, fuelling/charging, parking or maintenance.

‘*groundhandling service*’ means any service provided at aerodromes comprising safety-related activities in the areas of ground supervision, flight dispatch and load control, passenger handling, baggage handling, freight and mail handling, apron handling of aircraft, aircraft services, fuel and oil handling, battery charging, and loading of catering; including the case where aircraft operators provide those groundhandling services for themselves (self-handling).

'*maintenance*' means any one or combination of the following activities: overhaul, repair, inspection, replacement, modification or defect rectification of an aircraft or component, with the exception of pre-flight inspection.

Regulations applicable to battery charging

Charging or deliberate discharging of an aircraft battery without removing it from the aircraft is considered to be a groundhandling service within the meaning of UK Reg (EU) 2018/1139 Art. 3(23). The procedure of charging the battery of VTOL aircraft will be deemed as energy replenishment similar to refuelling.

Service providers intending to offer a battery recharging or deliberate discharging service for battery powered VTOL aircraft on the apron should comply with the existing groundhandling and emergency response requirements contained in the Assimilated Regulation (EU) 2018/1139 (Basic Regulation) Annex VII section 2 OPERATIONS AND MANAGEMENT, in particular:

- (g) the aerodrome operator shall verify that organisations involved in storing and dispensing of fuel/energy for propulsion to aircraft have procedures to ensure that aircraft are provided with fuel/energy for propulsion which is uncontaminated and of the correct specification;
- (j) the aerodrome operator shall ensure, directly or through arrangements with third parties, that adequate aerodrome rescue and firefighting services are provided. Such services shall respond to an incident or accident with due urgency and shall include at least equipment, extinguishing agents and a sufficient number of personnel;

Procedure

An electrically powered aircraft must not have its batteries electrically recharged or deliberately discharged with persons on board unless this is done based on a risk assessment produced by the operator of the aircraft, approved by the CAA and with a system that is:

- approved
- approved for use with the specific aircraft type and model
- approved for the specific battery type
- is carried out using a CAA approved procedure by suitably qualified personnel.

Where an aerodrome operator intends to provide multiple refuelling options, a safety assessment should be conducted as part of their existing safety management system to evaluate the risks and implement appropriate mitigation methods.

Regulations applicable to battery replacement

The replacement of a battery on a VTOL aircraft is a maintenance activity and should be carried out by appropriately qualified and trained engineers.

Replacement, removal or installation of a battery is subject to maintenance requirements contained in UK Regulation (EU) No. 1321/2014 (the UK Continuing Airworthiness Regulation).

Organisations responsible for the replacement of batteries should ensure they have appropriate processes, procedures, and trained staff in place to ensure the replacement of batteries is carried out safely.

Using other battery types

Where a battery technology used is not lithium ion, the CAA may forego the process of approving risk assessments produced by an operator if key risks, such as that of thermal runaway, are not present and no new significant risks have been found, or if sufficient mitigation methods have been employed.

Reference Documents

You can add numbered bullets by selecting numbered bullets, numbered bullets level 2 and numbered bullets level 3 style:

- [Assimilated Regulation \(EU\) 2018/1139 \(the UK Basic Regulation\)](#)
- [Assimilated Regulation \(EU\) No. 965/2012 \(Air Operations\)](#)
- [Assimilated Regulation \(EU\) No. 1321/2014 \(Continuing Airworthiness Regulation\)](#)

Review of Statement

The CAA retains the right to review this statement on a discretionary basis to consider technological developments, rulemaking progress, own research, and new evidence that may affect its views and policy.

Point of Contact

Any queries or further guidance required on the content or implementation of this Statement should be addressed to:

[**aamenquiries@caa.co.uk**](mailto:aamenquiries@caa.co.uk)