



## Safety recommendation no. 572

<b>Date of the publication</b>	27.04.2021
<b>Number of the final report</b>	2369
<b>Safety deficit</b>	<p>During an emergency landing outside the aerodrome area, which was due to a loss of motor power, the Pipistrel Alpha Electro 167 made a hard impact with the ground and then flipped over. In the current accident, the two main batteries were not damaged and there was no fire.</p> <p>In the context of the investigation it was revealed that an electrically powered aircraft involved in an accident poses specific hazards. Extinguishing a fire on an electrically powered aircraft requires special precautions and procedures on the part of the emergency services. This is due to the built-in high-performance batteries. The wreckage of an electrically powered aircraft also poses a particular hazard due to the high electrical voltage and current of the main batteries.</p>
<b>Safety recommendation</b>	<p>The FOCA should, in cooperation with aerodrome operators and the emergency services which are usually involved in accidents involving aircraft, take measures to raise awareness of the hazards posed by electrically powered aircraft and how these can be countered.</p>
<b>Addressees</b>	BAZL Bundesamt für Zivilluftfahrt; BAZL Bundesamt für Zivilluftfahrt; BAZL Bundesamt für Zivilluftfahrt
<b>Stage of the implementation</b>	<p>Implemented. In its letter dated 5 August 2021, the FOCA declared its agreement with Safety Recommendation No 572 in an initial statement. A second statement on the status of implementation was received on 25 August 2022 and a third on 25 August 2023.</p> <p>In order to increase collective awareness of the dangers posed by accidents involving electrically powered aircraft and how they can be averted, the FOCA has implemented sustainable measures, particularly with regard to training and the exchange of information.</p> <p>With regard to the implementation of the measures listed in Section 4.3.1. of the STSB's final report, the FOCA describes the situation as follows:</p> <p>"The new version of Directive AD I-001 entered into force on 6 May 2022 and is available on the FOCA website.<sup>3</sup> All aerodrome managers and aerodrome fire brigade commanders in Switzerland have been informed that a new version of the directive is now in force.</p> <p>Annex 6 of the Directive refers specifically to electric aircraft. Furthermore, the new version of the directive requires all aerodromes to have an emergency plan, and that this must include a section on electric aircraft. To facilitate the work of aerodrome operators, a template for a simple emergency plan has been created and is available on the FOCA website.<sup>4</sup> The directive requires that the aerodrome's emergency plan be drawn up in cooperation with</p>

the local rescue services; this will also make the latter more aware of the risks of electrically powered aircraft, as required by SE-572. A transitional period until 1 December 2022 was set for airfields to prepare their emergency plans.

New section on the FOCA website on the dangers of electrically powered aircraft

The FOCA has added a new section to its website with information on the dangers of electrically powered aircraft: Electric aircraft. This is still partly under construction and is updated on an ongoing basis.

Information brochure on electric aircraft

After weighing up the pros and cons, the FOCA decided not to produce an additional information brochure on electric aircraft. To ensure that the information sent out to the industry is up to date, information for the emergency services has been added to the website: Electric aircraft (admin.ch) integrated in German, French, Italian and English. In the section entitled 'Information for first responders in case of incidents or accidents', there is a reference to the Swiss Aircraft Register. This is to ensure that all emergency services concerned have access at all times to the existing rescue sheet for electrically powered aircraft registered in Switzerland. Example HB-SYE: Swiss Aircraft Register.

Raising awareness among aerodrome managers of the dangers of battery charging and electric aircraft in hangars

No incidents during battery charging have been recorded to date. We therefore consider this measure to be somewhat less critical than the others at the current time. Nevertheless, FOCA Directive AD I-007 (Fuel installations and refuelling at aerodromes) has been updated with information regarding charging stations:

"Charging stations for electric aircraft may be located and used inside buildings provided that the provisions of SN 411000:2015 [Swiss technical norm on low-voltage installations] are complied with."

Exchanging information with aerodrome managers and aerodrome fire brigade commanders on dealing with electric aircraft

At the annual meeting of Swiss aerodrome fire brigade commanders held on 22–23 November 2022 at Zurich Airport, Zurich Search and Rescue (SRZ) gave presentations on the dangers of electric aircraft. The Swiss Aerodrome Association (VSF) organised two events (on 2 November 2022 in Zurich and on 7 March 2023 in Neuchâtel) on the dangers of electric aircraft. The speakers were professional fire fighters from Zurich (SRZ) and Geneva (SSLIA) airports. Besides FOCA staff, the participants were mainly aerodrome managers, although a number of emergency services were also represented. The measure is therefore considered implemented, although there will continue to be an established exchange of information with aerodromes on the subject of dealing with electric aircraft."

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the safety recommendation**

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