

» the burning battery. When it comes into contact with human tissue it becomes hydrofluoric acid and causes serious chemical burns.”

A test pilot for the electric autonomous vehicle Cora project, Ice says it’s extremely important to stick to manufacturer instructions when charging, using/ discharging and storing lithium batteries.

“Get advice from the battery designer and/or its manufacturer when something abnormal happens, because battery designs, and what they’re intended to power, may and do differ.

“When in doubt,” he says, “swap it out.”

Gliding NZ’s National Airworthiness Officer Mike Strathern says the massive amount of energy stored in aircraft batteries means maintenance providers and operators have to be “very, very careful with their care”.

“They’ve got a fuse of up to 300 amps – far more than in a vehicle battery – you can short them out really easily. They’re very expensive, pilots are not typically trained electricians, and battery care is an area that even most engineers are not used to working in.

“For all these reasons, batteries must be handled ‘by the book’.”

## Early detection

The safety investigation found the Kaikohe glider’s *Flight manual and maintenance manual* provided the following guidance on battery system fires, “Land and abandon the aircraft as soon as possible”.

So the CAA is also calling for participants, when they’re maintaining or modifying their aircraft, to give some thought to early fire detection, containment and fire proofing systems.

David Oliver says pilots are fairly limited in what they can do if any sort of a fire breaks out.

“If a battery-related event occurs in flight it can be the smoke that’s the danger – even without any fire present.”

Doug Hamilton says that an inflight battery fire presents the pilot with a critical problem.

“Most gliders and microlights, for instance, are made of highly flammable composite material. It melts quickly, and at the same time produces highly toxic fumes.

“But if you can identify what’s happening earlier, it may give you life-saving moments to get out, or even make an emergency landing,” he says. ➤

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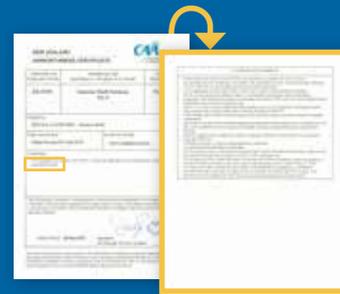
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# TWO SIDES TO AN AIRWORTHINESS CERTIFICATE



A surprising number of aircraft owners don’t realise the back of an airworthiness certificate contains important information.



➤ Always read the rear of a certificate of airworthiness listing all the aircraft’s operating limitations and requirements.

If you’re the owner or operator of an aircraft with a special category airworthiness certificate, there’ll be a list of conditions printed on the rear of the certificate of airworthiness. And there’s a reference to them on the front.

Those conditions include operating limitations and requirements you need to comply with to be able to operate your aircraft.

CAA aviation safety advisor John Keyzer recalls that a couple of years ago the owner of a limited category aircraft wanted to change his three-bladed propeller to a four-bladed propeller. His mate had done this, and a later model of his aircraft had also been manufactured with a four-bladed prop.

The owner had no idea there was a list of conditions on the rear of the aircraft’s airworthiness certificate that he had to comply with, to modify his aircraft and continue operating it.

“When I pointed this out,” says John, “he quickly realised there was a process that had to be followed.

“In some circumstances, changes like this may require the aircraft going back on a test programme under a special category experimental airworthiness certificate.”

If you’re the owner or operator of a type-certificated aircraft, you probably don’t need to worry too much.

There are no such conditions on the back of the airworthiness certificates for type-certificated aircraft, which are issued in the standard or restricted categories. ➤

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