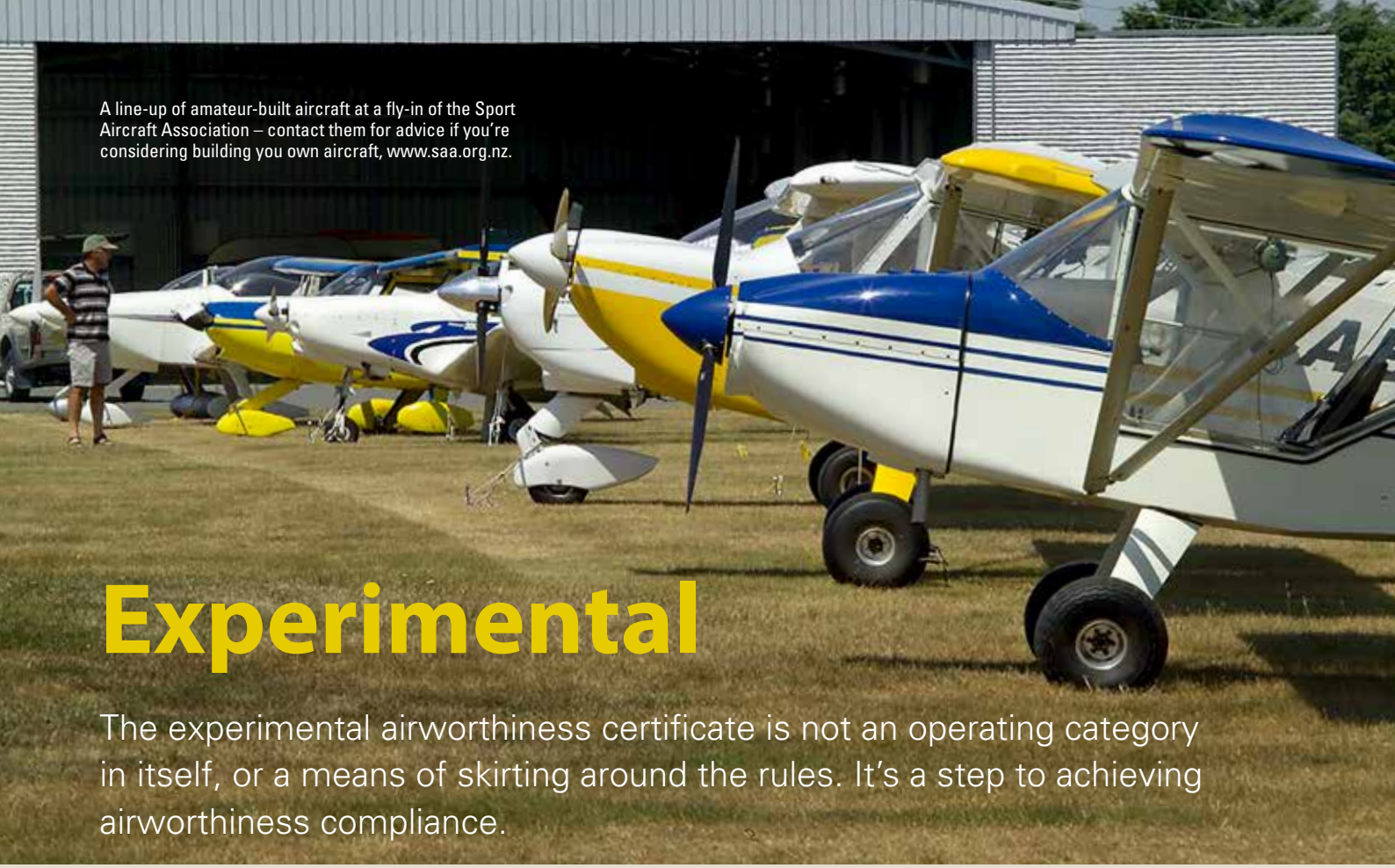

A line-up of amateur-built aircraft at a fly-in of the Sport Aircraft Association – contact them for advice if you're considering building you own aircraft, www.saa.org.nz.

Experimental

The experimental airworthiness certificate is not an operating category in itself, or a means of skirting around the rules. It's a step to achieving airworthiness compliance.

A special category experimental airworthiness certificate can be issued to any aircraft for the purpose of flight evaluation, research and development, or showing compliance with the rules.

For type-certificated aircraft, a special category experimental airworthiness certificate is needed when the aircraft is not in an approved configuration, and therefore cannot be released to service. This usually means they have an unapproved modification embodied, which is being developed and needs flight testing to complete the process.

For all special category aircraft (except light sport aircraft), a period of flight testing is required to show they have no unsafe characteristics, before they are issued with a non-terminating airworthiness certificate in their specific category. This flight testing is carried out using a special category experimental airworthiness certificate.

CAA airworthiness specialist, John Bushell, thinks some confusion has arisen around the experimental and amateur-built categories because the FAA (United States) system uses the 'experimental' category as the non-terminating equivalent of New Zealand's amateur-built category.

And, of course, it used to be like that here as well. But in December 2009, Part 21 was changed, creating six special category airworthiness certificates: experimental; exhibition; amateur-built; primary; light sport aircraft (LSA); and limited.

"Our experimental airworthiness certificate is only a stepping stone, issued for a set period of time, aiming to move an aircraft up to a more permanent airworthiness certificate," says John.

The experimental certificate will also contain a range of conditions and limitations, which will include an area of operation, limit the number of people who may be carried, and require both an approved test pilot and a flight test schedule.

Amateur builders need to be aware of the requirements for the initial issue of a special category amateur-built airworthiness certificate.

Among other things (see rule 21.197 *Special category – amateur-built certification)*, the approval of a maintenance programme in accordance with rule 91.607 *Approval of maintenance programmes* is required.

Then, at the beginning of the maintenance programme – that is, before your aircraft flies – it must be inspected in accordance with rule 43.303 (1).

Modifications

The amateur-built category is very flexible, allowing an amateur builder a great deal of freedom to design and build their own aircraft. It is only applicable where the builder has constructed at least 51 per cent of the aircraft themselves and for their own education and recreation, not for commercial purposes.

Because the aircraft airworthiness is proven solely by flight test – after inspection by the CAA for workmanship and good design practice – then any subsequent change to the aircraft must be re-assessed.

Before making any modifications, the CAA recommends that the constructor engages the services of a qualified aeronautical engineer, or consults with the designer of the plan or kit.

You must notify the CAA before flying your aircraft after any major modification or repair is embodied. They will decide if further inspection or flight testing is required. The maintenance implications of a design change will also be considered.

For more information on the certification of amateur-built aircraft, see AC21-4. ■