Experimental certificate

A new category of certificate will streamline experimental designs to be developed.

IN OCTOBER, NEW LEGISLATION CAME into effect which deals with introduction and certification of aircraft into the Australian fleet.

The new Civil Aviation Regulation (1998) Part 21 includes the experimental certificate, which has been implemented to encourage the development of new aircraft.

The experimental certificate is not a certificate of airworthiness. Its purpose is to permit an aircraft which is under development to operate under certain conditions while it does not meet the airworthiness requirements of a design standard. An experimental certificate can be issued for:

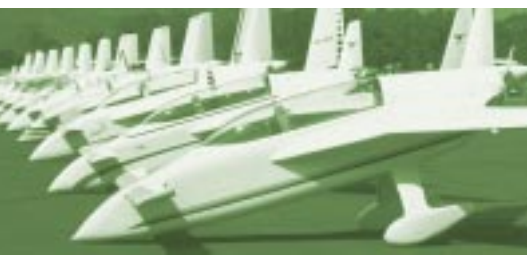
- Research and development.
- Demonstrating regulatory compliance.
- Training of aircrew.
- Exhibiting the aircraft.
- Air racing.
- Market surveys to determine the viability of further development of the aircraft.
- Operating an amateur-built aircraft.
- Operating a kit built aircraft, built without supervision.
- Private operations of a prototype.

The aircraft must be Australian registered. To apply for an experimental certificate you need to contact an authorised person or your CASA district office (*see page 2 for contact details)*. The experimental certificate may be issued with operational and airworthiness conditions related to safety.

Experimental certificates are issued on condition that all maintenance required by the regulations is complied with at all times.

The experimental designation allows an aircraft to be designed and developed to the point where it is a marketable product. Further information is available from AAC 21.10 (0), and by ringing 131 757 and asking for the Parts 21-35 helpline.

– Steve Bell, airworthiness specialist, safety promotion, CASA.



Cessna 206 emergency exit

A recent incident has reinforced concerns about the use of the emergency exit rear doors in Cessna 206 aircraft.

UPON TOUCHING DOWN ON WATER in Sydney recently, an amphibian Cessna 206 flipped and rapidly sank. The 3 occupants escaped without injury and were rescued.

With only 3 on board, the rear double door was not required for the emergency evacuation. However, in 3 previous accidents in Canada and Australia a total of 9 persons were not so lucky – all drowned.

The Cessna 206 has a double cargo/passenger door at the rear of the cabin. The forward half can only be opened about 8cm if the wing flaps are in the lowered position. However, the rear half can only be opened by first opening the forward half. If the flaps are lowered, the sequence of events required to open the rear half is as follows:

- Open the forward door as far as possible.
- Rotate the red lever in the leading edge of the rear door and unlatch/open the door.
- Restow the red lever.
- Force the rear door open.

In Australian registered aircraft, there is a placard explaining the sequence on the forward pillar of the rear door (Airworthiness Directive AD/CESSNA 206/47 refers). However, for escape after a ditching or turnover, with the cabin rapidly filling with water and in the dark, this sequence of actions would test the coolest of passengers.

At the very least, passengers need to be given a thorough briefing on how to open the exit in emergency conditions.

A recent tragic accident in Canada has highlighted the issue of escaping from an inverted floatplane. Pierre Meloche, president of the Quebec bush pilot's association, died while trying to save 6 passengers after his Cessna 206 flipped when he was attempting a rough-water take-off.

Pierre managed to rescue 2 of the passengers before he drowned: the other 4 passengers also drowned.

The accident prompted at least 1 pilot to improve his escape planning.

He wrote to the Canadian *Aviation Safety Letter* with a list of the steps he decided on:

- Installation of Citabria-type, emergency door-hinge releases on all floatplane doors. Had these been in place in the subject 206, the tragedy reported might have been reduced to the level of an embarrassment.
- Replacement of the lap-belt-only restraint system with front- and rear-seat harnesses. It will do no good to install quick-release door mechanisms if the occupants are knocked unconscious during roll-over.
- Outfitting each occupant with CO_2 type PFDs (personal flotation devices). Once inverted, it is too late to locate and don life vests. The pilot's personal PFD is equipped with first aid supplies, matches, space blankets, and so on, and a two-way radio.
- No longer using a hand-held GPS with wires dangling all over the cockpit. Connectors have been installed for the GPS so there is no risk of becoming entangled during egress. The pilot's portable intercom is due for the same treatment.
- Giving every passenger a thorough preflight briefing on egressing an inverted floatplane, including practice in removing seat belts and opening doors. (Passengers should also be instructed not to inflate PFDs until outside the aircraft.)
- Installing and utilising baggage tiedown anchors to secure ballast for centre of gravity. Any safety steps would be useless if a 15kg chunk of concrete were to smash into the back of the pilot's head during roll-over.
- The next time that this pilot faces high winds, rough water, short take-off, a heavy load, and so on – his decisions will be more conservative.

– Bruce Byers, crashworthiness specialist, CASA.

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