



Australian Government

Civil Aviation Safety Authority

Instrument number CASA 65/16

I, MARK ALAN SKIDMORE, Director of Aviation Safety, on behalf of CASA, make this instrument under regulations 11.068 and 11.245 of the *Civil Aviation Safety Regulations 1998 (CASR 1998)*.

[Signed M. Skidmore]

Mark Skidmore AM
Director of Aviation Safety

28 June 2016

Conditions and direction concerning certain aircraft fitted with engines manufactured by Jabiru Aircraft Pty Ltd

1 Duration

This instrument:

- (a) commences on 1 July 2016; and
- (b) is repealed at the end of 30 June 2019.

2 Definitions

In this instrument:

CFI means, in relation to a flying school, the individual performing the functions of the chief flying instructor (however named) for the school.

engine grouping means one of the following engine group classifications:

Group	Description of configuration	Manufactured s/n range (4 cyl)	Manufactured s/n range (6 cyl)
A	Engines with flat-faced hydraulic valve lifters	22A2068 through 22A3595	33A0961 through 33A2539
B	Engines with solid valve lifters and 3/8" through bolts	22A0001 through 22A2067	33A0001 through 33A0960
C	Engines with roller or flat-faced hydraulic valve lifters and 7/16" through bolts	22A3596 and above	33A2540 and above

Note The serial number ranges in the table above are provided as a guide only, as engine grouping is defined by the description of configuration and the manufacturer's serial number depending on the post-modification status of an engine.

flight training means any operation of the kind described in *Jabiru Service Bulletin JSB031-3* as involving “*the increased number of takeoff and landing events as well as go-arounds, simulated engine failure and stall recovery operations. This subjects the engine to quick changes in throttle setting and relatively fast changes and extremes in temperature.*”.

flying school means any provider of flight training services.

Jabiru means Jabiru Aircraft Pty Ltd, Aviation Reference Number (ARN) 444128.

Jabiru-powered aircraft means an aircraft to which this instrument applies by operation of section 3.

manufactured by Jabiru, in relation to an engine, includes an engine that is wholly or partly manufactured by a person under licence from, or under a contract with, Jabiru.

populous area means an area that has, or is expected to have, during the period of operation of an aircraft, a sufficient density of population that the occurrence of a fault in, or failure of, the aircraft would pose an unreasonable risk to the life, safety or property of somebody who is in the area but is not connected with the operation.

student pilot means a person authorised to fly an aircraft who does not hold:

- (a) a pilot certificate issued by Recreational Aviation Australia Incorporated, ARN 224806, or a higher pilot authorisation; or
- (b) a pilot licence issued under Part 5 of the *Civil Aviation Regulations 1988*; or
- (c) a flight crew licence granted under Part 61 of CASR 1998.

suitable forced-landing area means an area on land that is not a populous area where, in the event of a forced landing, it is less likely that serious injuries or loss of life will result.

3 Application

- (1) Section 4 applies to the following classes of authorisation:
 - (a) experimental certificates issued under regulation 21.195A of CASR 1998 in respect of aircraft fitted with an engine manufactured by Jabiru;
 - (b) special certificates of airworthiness issued under regulation 21.176 of CASR 1998, to which the applicant was entitled under regulation 21.184 of CASR 1998, in respect of aircraft fitted with an engine manufactured by Jabiru;
 - (c) special certificates of airworthiness issued under regulation 21.176 of CASR 1998, to which the applicant was entitled under regulation 21.186 of CASR 1998, in respect of aircraft fitted with an engine manufactured by Jabiru;
 - (d) any other type of certificate of airworthiness issued under Part 21 of CASR 1998 in respect of aircraft fitted with an engine manufactured by Jabiru;
 - (e) special flight permits issued under regulation 21.200 of CASR 1998 in respect of aircraft fitted with an engine manufactured by Jabiru.

- (2) Section 5 applies to each aircraft fitted with an engine manufactured by Jabiru to which Civil Aviation Order 95.55 applies.

4 Condition on authorisations

For subregulation 11.068 (1) of CASR 1998, it is a condition that each Jabiru-powered aircraft, to which this section applies, is operated in accordance with the operating limitations set out in Schedule 1, unless the requirements in Schedule 2 have been complied with.

5 Direction

For subregulation 11.245 (1) of CASR 1998, CASA directs each Jabiru-powered aircraft, to which this section applies, to be operated in accordance with the operating limitations set out in Schedule 1, unless the requirements in Schedule 2 have been complied with.

Schedule 1 Operating limitations for Jabiru-powered aircraft

- 1 The pilot in command of a Jabiru-powered aircraft must operate it only:
 - (a) by day and under the V.F.R.; or
 - (b) in accordance with an approval by CASA.
- 2 The pilot in command of a Jabiru-powered aircraft is only permitted to operate the aircraft over a populous area at a height:
 - (a) from which the aircraft can glide clear of all populous areas to a suitable forced-landing area; and
 - (b) that is at least 1 000 feet above ground level, except to the minimum extent necessary for the aircraft to safely climb after take-off or safely descend for a landing.

Note Paragraph (a), together with the definition of *populous area*, has the effect of prohibiting Jabiru-powered aircraft from departing from or landing at various places, including but not limited to Archerfield, Bankstown and Moorabbin Airports.
- 3 The pilot in command of a Jabiru-powered aircraft must only permit a passenger to be carried in the aircraft during a flight if:
 - (a) the pilot in command has received a statement substantially in the form of the statement in clause 6, signed not more than 3 calendar months before the flight by:
 - (i) subject to subparagraph (ii) — each passenger; and
 - (ii) if a passenger is aged under 18 or has a mental impairment — a parent or guardian of the passenger; and
 - (b) the pilot in command is reasonably satisfied, including after making necessary enquiries, that each person signing a statement under this clause understands the statement; and
 - (c) each signed statement is kept at a secure location that is not on-board an aircraft during flight; and
 - (d) the passenger is not carried for hire or reward.
- 4 The pilot in command of a Jabiru-powered aircraft, or their legal representative:
 - (a) may keep a statement under clause 3 for use in respect of future flights in a Jabiru-powered aircraft by the same passenger; and

- (b) may dispose of a statement kept under clause 3 at any time after the safe disembarkation of each passenger (but must obtain a new statement if the passenger is carried on a future flight); and
 - (c) must, as soon as practicable and by registered mail, send to CASA the statement signed by each passenger on a flight that involves a loss-of-engine-power event.
- 5 The CFI of a flying school must not permit a student pilot of the school to undertake a solo flight in a Jabiru-powered aircraft unless the CFI has:
- (a) before the first solo flight of the student pilot at the flying school:
 - (i) confirmed that the student pilot has competently completed engine-failure exercises at the school in the preceding 2 hours of flight time; and
 - (ii) noted the competence in subparagraph (i) in the student pilot's record, countersigned by the student; and
 - (iii) subject to subparagraph (iv) — placed, in a secure location not on an aircraft during flight, a statement signed by the student pilot that is substantially in the form of the statement in clause 6; and
 - (iv) in relation to a student pilot who is aged under 18 — placed, in a secure location not on an aircraft during flight, a statement signed by the parent or guardian of the student that is substantially in the form of the statement in clause 6; and
 - (v) determined on reasonable grounds, including after making necessary enquiries, that a person signing a statement under this clause understands the statement; and
 - (b) before subsequent solo flights by the student pilot at a flying school:
 - (i) confirmed that the student pilot has competently performed engine failure exercises at the school in either the preceding 2 hours of flight time or 7 days, whichever is the more recent, unless a more onerous recency requirement applies; and
 - (ii) noted the competence in subparagraph (i) in the student pilot's record, countersigned by the student.

- 6 The statement mentioned in clauses 3 and 5 is:

"I, *[insert name]* PROPOSE TO TAKE A FLIGHT IN THE AIRCRAFT IDENTIFIED AS *[insert registration information]* (THE *AIRCRAFT*). I AM AWARE THAT THE CIVIL AVIATION SAFETY AUTHORITY (*CASA*) HAS DATA INDICATING THAT THE TYPE OF ENGINE USED IN THE AIRCRAFT HAS SUFFERED A HIGH NUMBER OF FAILURES AND RELIABILITY PROBLEMS.

"I ACKNOWLEDGE THAT CASA HAS IMPOSED LIMITATIONS ON THE AIRCRAFT TO PROTECT PERSONS ON THE GROUND NOT ASSOCIATED WITH THE OPERATON OF THE AIRCRAFT, UNINFORMED PASSENGERS AND TRAINEE PILOTS. THOSE LIMITATIONS ALSO HELP PASSENGERS AND TRAINEE PILOTS TO MAKE AN INFORMED DECISION ABOUT WHETHER TO ACCEPT THE RISK OF FLIGHTS IN THE AIRCRAFT.

“I NOTE CASA’S ADVICE THAT, ALTHOUGH MOST JABIRU ENGINES OPERATE NORMALLY, THERE IS AN ABNORMAL RISK THE ENGINE IN THE AIRCRAFT WILL MALFUNCTION.

“I ACCEPT THE RISK OF AN ENGINE MALFUNCTION DURING FLIGHT, NOTING THAT:

“(A) THE AIRCRAFT MUST BE FLOWN AWAY FROM PEOPLE ON THE GROUND (AND BUILDINGS), EVEN IF THAT MEANS AN EMERGENCY LANDING AT A LOCATION THAT IS LESS SAFE FOR THAT PURPOSE; AND

“(B) THE SAFETY OF AN EMERGENCY LANDING CANNOT BE GUARANTEED EVEN IF THERE IS A SUITABLE LANDING LOCATION.

“I NOTE CASA’S ADVICE THAT I SHOULD NOT FLY IN THE AIRCRAFT IF I AM NOT PREPARED TO ACCEPT THE HEIGHTENED RISK INVOLVED.

“I ACCEPT THE RISK NOTING THAT THE ENGINE MANUFACTURER IS WORKING TO IDENTIFY AND FIX THE ENGINE ISSUES AS SOON AS POSSIBLE.

“I AM AWARE THAT CASA REQUIRES MY SIGNATURE ON THIS STATEMENT BEFORE THE FLIGHT MAY COMMENCE.

“SIGNED: _____ DATE: _____”.

Schedule 2 When Schedule 1 operating limitations do not apply

The operating limitations in Schedule 1 do not apply if:

- (a) the aircraft’s engine grouping is identified by a review of its engine serial number and maintenance records to confirm configuration based on through bolt and valve lifter type; and
- (b) the registered owner of Jabiru-powered aircraft adopts, and uses, the manufacturer’s maintenance schedule for the engine, if that schedule is not already being used; and

Note If CASR 1998 already requires the manufacturer’s maintenance schedule for the engine to be used, this instrument does not alter any such requirement.

- (c) the engine’s top valve spring washers are inspected in accordance with *Jabiru Service Letter JSL008-1 or later issue* and any worn washers are replaced with the current washer configuration and installed in accordance with engine overhaul manual *JEM0001-7 or later issue*; and

Note When the manufacturer’s maintenance schedule is used, Jabiru Service Letter JSL008-1 will also become a recurring inspection requirement.

- (d) the cylinder heads are inspected in accordance with *Jabiru Service Letter JSL014-3 or later issue* and any requisite corrective action required by the service letter is completed; and

Note When the manufacturer’s maintenance schedule is used, Jabiru Service Letter JSL014-3 requires further inspections in certain circumstances.

- (e) all engine through bolts are replaced in accordance with the technical content in *Jabiru Service Bulletin JSB031-3 or later issue*, with any replacement parts being current through bolt, nut and washer configuration installed in accordance with engine overhaul manual *JEM0001-7 or later issue* by the following time:
- (i) for Group A engines with 3/8" through bolts that have engaged in any flight training prior to reaching 500 hours Hobbs time since last through bolt replacement, or for engines which have exceeded 500 hours, replace through bolt before further flight;
 - (ii) for all engine groups that have not engaged in flight training, at or before 1 000 hours Hobbs time since last through bolt replacement.

Note Jabiru Service Letter JSL010-1 explains Hobbs time is the correct method of recording engine hours. It also explains what Hobbs time mean. If that method of recording has not been used, an adjustment to the engine hours will need to be made. This may bring forward other maintenance requirements.
