



Australian Government

Civil Aviation Safety Authority

Instrument number CASA 39/19

I, CHRISTOPHER PAUL MONAHAN, Executive Manager, National Operations & Standards, a delegate of CASA, make this instrument under regulations 11.068 and 11.245 of the *Civil Aviation Safety Regulations 1998*.

[Signed Christopher P. Monahan]

Christopher P. Monahan
Executive Manager, National Operations & Standards

26 June 2019

CASA 39/19 — Operating Limitations (Aircraft Fitted with Engines Manufactured by Jabiru Aircraft Pty Ltd) Instrument 2019

1 Name

This instrument is *CASA 39/19 — Operating Limitations (Aircraft Fitted with Engines Manufactured by Jabiru Aircraft Pty Ltd) Instrument 2019*.

2 Duration

This instrument:

- (a) commences on 1 July 2019; and
- (b) is repealed at the end of 30 June 2022.

Note For regulation 11.250 of CASR, the direction stated in subsection 6 (1) ceases to be in force at the end of 30 June 2022.

3 Definitions

Note In this instrument, certain terms and expressions have the same meaning as they have in the Act and the Regulations. These include: *certificate of airworthiness, experimental certificate, flight time, flying training, passenger, pilot certificate, pilot in command, special flight permit, student pilot* and *V.F.R.*

In this instrument:

CFI, of a flying school, means 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 serial no. range (4 cylinder)	Manufactured serial no. range (6 cylinder)
A	Engines with flat-faced hydraulic valve lifters	22A2068 through 22A3595	33A0961 through 33A2539
B	Engines with solid valve lifters and 3/8" engine through bolts	22A0001 through 22A2067	33A0001 through 33A0960

C	Engines with roller or flat-faced hydraulic valve lifters and 7/16" engine through bolts	22A3596 and above	33A2540 and above
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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.

flying school means a provider of flying training services.

Jabiru means Jabiru Aircraft Pty Ltd, ARN 444128.

Jabiru-powered aircraft means an aircraft fitted with an engine manufactured by Jabiru.

JEM0001 means Jabiru Engine Overhaul Manual JEM0001-7, or later issue.

JEM0002 means Jabiru Engine Maintenance Manual JEM0002, as it exists from time to time.

JSB031 means Jabiru Service Bulletin JSB031-3 (Engine Through Bolt Replacement and Upgrade), or later issue.

JSL008 means Jabiru Service Letter JSL008-1 (Valve Spring Washer Adverse Wear), or later issue.

JSL010 means Jabiru Service Letter JSL010-1 (Service Time Intervals), or later issue.

JSL014 means Jabiru Service Letter JSL014-3 (Jabiru Cylinder Head Inspection), or later issue.

manufactured by Jabiru includes wholly, or partly, manufactured by a person under a licence from, or a contract with, Jabiru.

populous area means an area of ground 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 or safety of a person who is in the area but is not connected with the operation.

relevant operation means an operation involving an increased number of take-off and landing events, go-arounds, simulated engine failure operations or stall recovery operations, which subjects an engine, within an engine grouping, to quick changes in throttle setting and relatively fast changes, and extremes, in temperature.

Note This definition is concerned with a Jabiru-powered aircraft that is mainly used for flying training or that is exposed to other types of operation that have similar characteristics to flying training.

student means a person who:

- (a) holds a student pilot certificate granted by Recreational Aviation Australia Limited, ARN 224806; or
- (b) is a student pilot.

suitable forced landing area means an area of ground where, in the event of a forced landing of an aircraft in the area, there is a reasonable expectation that there would be no injuries to a person in the aircraft or on the ground.

4 Application

- (1) Section 5 applies to the following classes of authorisations, issued in relation to a Jabiru-powered aircraft:
 - (a) an experimental certificate;
 - (b) a certificate of airworthiness;
 - (c) a special flight permit.
- (2) Section 6 applies to a Jabiru-powered aircraft to which *Civil Aviation Order 95.55* applies.

5 Condition on authorisations

- (1) For subregulation 11.068 (1) of CASR, it is a condition that the aircraft is operated in accordance with the operating limitations stated in Schedule 1.
- (2) However, subsection (1) does not apply if all the requirements stated in Schedule 2 have been met.

6 Direction

- (1) For subregulation 11.245 (1) of CASR, CASA directs that the aircraft must be operated in accordance with the operating limitations stated in Schedule 1.
- (2) However, subsection (1) does not apply if all the requirements stated in Schedule 2 have been met.

Schedule 1 Operating limitations

- 1 The pilot in command of the aircraft must operate it only:
 - (a) by day and under the V.F.R.; or
 - (b) otherwise — in accordance with an approval given by CASA.
- 2 The pilot in command of the aircraft is only permitted to operate the aircraft over a populous area at a height:
 - (a) from which the aircraft can glide clear of any populous area 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 **populous area** in section 3, has the effect of prohibiting the 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 the aircraft must only permit a passenger to be carried in the aircraft during a flight if:
 - (a) the pilot in command has perused a statement substantially in the form of the statement in clause 7, signed not more than 3 months before the date of the flight by:
 - (i) subject to subparagraph (ii), the passenger; or
 - (ii) if the 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 the person signing the statement understands it; and
 - (c) the passenger is not carried for hire or reward.

- 4 The pilot in command of the aircraft must keep a statement, for a passenger on a flight of the aircraft, under clause 3 at a secure location, not being on board the aircraft during the flight.

Note The pilot in command may, after the flight, keep the statement for use in relation to future flights in the aircraft by the passenger during the 3-month period mentioned in paragraph 3 (a). Otherwise, the pilot in command may dispose of the statement at any time after the safe disembarkation of the passenger from the aircraft after the flight.

- 5 If there is a loss-of-engine-power event during a flight of the aircraft, the pilot in command of the aircraft, or the pilot in command's legal representative, must as soon as practicable after the event and by registered mail send the statement, for a passenger on the flight, under clause 3 to CASA.
- 6 The CFI of a flying school must not permit a student, who is being trained at the school, to undertake a solo flight in the aircraft unless the CFI has:
- (a) before the first solo flight of the student at the school:
 - (i) confirmed that the student has competently completed engine-failure exercises at the school in the preceding 2 hours of the student's flight time as a pilot; and
 - (ii) noted the competence mentioned in subparagraph (i) in the student's record, countersigned by the student; and
 - (iii) perused and placed in a secure location, not being on board the aircraft during the flight, a statement substantially in the form of the statement in clause 7, signed by:
 - (A) subject to sub-subparagraph (B), the student; or
 - (B) if the student is aged under 18 — a parent or guardian of the student; and
 - (iv) 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 at the school:
 - (i) confirmed that the student has competently performed engine-failure exercises at the school in either the preceding 2 hours of the student's flight time as a pilot or 7 days, whichever is the more recent, unless a more onerous recency requirement applies; and
 - (ii) noted the competence mentioned in subparagraph (i) in the student's record, countersigned by the student.

- 7 The statement mentioned in clauses 3 and 6 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 OPERATION 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 Requirements

- 1 The engine grouping, for the aircraft’s engine, is identified by reviewing the engine’s serial number and maintenance records to confirm engine configuration, based on through bolt and valve lifter type.
- 2 The registered owner of the aircraft adopts, and uses, the maintenance schedule, for the aircraft’s engine, stated in JEM0002.
Note If CASR already requires the maintenance schedule, for the aircraft’s engine, in JEM0002 to be used, this instrument does not change any such requirement.
- 3 The aircraft engine’s top valve spring washers are inspected in accordance with JSL008, and any worn washers are replaced with the current washer configuration and installed in accordance with JEM0001.
Note When the maintenance schedule, for the aircraft’s engine, in JEM0002 is used, JSL008 will also become a recurring inspection requirement.
- 4 The aircraft’s cylinder heads are inspected in accordance with JSL014, and any requisite corrective action required by the service letter is completed.
Note When the maintenance schedule, for the aircraft’s engine, in JEM0002 is used, JSL014 requires further inspections in certain circumstances.
- 5 All the aircraft engine’s through bolts are replaced in accordance with JSB031, with any replacement parts being the current engine through bolt, nut and washer configuration, installed in accordance with JEM0001:

- (a) for an engine with 3/8” through bolts, within the Group A engine grouping, which has engaged in a relevant operation:
 - (i) before 500 hours Hobbs time since the last engine through bolt replacement; or
 - (ii) as soon as practicable after reaching 500 hours Hobbs time since the last engine through bolt replacement, but before another flight; or
- (b) for an engine with 3/8” through bolts, within the Group A engine grouping, which has not engaged in a relevant operation — at, or before, 1 000 hours Hobbs time since the last engine through bolt replacement; or
- (c) for any other engine within an engine grouping — at, or before, 1 000 hours Hobbs time since the last engine through bolt replacement.

Note 1 Paragraph (c) applies whether or not the engine has engaged in a relevant operation.

Note 2 JSL010 explains “Hobbs time” is the correct method of recording engine hours. It also explains what “Hobbs time” means. If that method of recording engine hours has not been used, an adjustment to the engine hours will need to be made, which may bring forward other maintenance requirements.
