

Flight Manual

Issue 3 Oct. 82 Avions Pierre Robin R 2160

FAA - APPROVED AIRPLANE MANUAL

ROBIN SPORT

Avions Pierre Robin

R2160

FAA APPROVED IN AEROBATIC CATEGORY BASED ON FAR 23. THIS DOCUMENT MUST BE CARRIED IN THE AIRPLANE AT ALL TIMES.

SERIAL NO. :

REGISTRY NO.:

FAA APPROVED BY:

DATE OF APPROVAL:

AVIONS PIERRE ROBIN Aerodrome de Darois
F-21121 FONTAINE LES DIJON FRANCE
TEL. No. (80) 31 61 01

MANROB
Manual Robin R2160
Retail: \$ 4.95



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R2160

This AFM is FAA approved for US registered airplane in accordance with the provisions of 14 CFR section 21.29, and is required by the FAA type certificate data sheet Nr.

This AFM is the English translation of a DGAC approved manual. The DGAC approved sections and pages are listed below.

DGAC - approved Sections and Pages:

| Section | Pages |
|---------|--------------|
| 2 | 2.1 to 2.8.3 |
| 3 | 3.1 to 3.7.5 |
| 5 | 5.1 |

Pilots Operating Handbook Log of Revisions

| Revision Number and Code | Revised Pages | Description of Revision | FAA Approval Date |
|--------------------------|---------------|-------------------------|-------------------|
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Lazy Eight.
Steep Turn

120 KIAS, 138 MPH
108 KIAS, 124 MPH

For aircraft not properly equipped Night VFR or IFR

**VFR FLIGHT by Day
In NON ICING Conditions**

NO SMOKING

For the aircraft equipped with aerobatic kit

INVERTED FLIGHT PERMITTED DURING 20 SECONDS

For non-equipped aircraft

INVERTED FLIGHT NOT PERMITTED

Near Airspeed Indicator:

MANEUVERING SPEED 127 KIAS

In baggage compartment, in full view on aft bulkhead

MAX. WEIGHT 77 LB.

NO LUGGAGE ALLOWED DURING AEROBATIC FLIGHTS

**SPIN-RECOVERY PROCEDURE
RUDDER IN FULLY OPPOSITE DIRECTION.
ELEVATOR CONTROL FULL AFT.
AILERONS NEUTRAL**

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4.10 CRUISING

Reference performance charts Avco-Lycoming Operator's Manual.

Normal Max. Power

75 %

Power SET PER POWER TABLE

Mixture ADJUST

4.11 BEFORE LANDING

- | | |
|--------------------------------------|-----------|
| 1. Electrical Fuel Pump | ON |
| 2. Mixture | FULL RICH |
| 3. Carburetor Heat | SET |
| 4. Flaps | SET |
| 5. Trim to | 75 KIAS |
| 6. Final Approach Speed (full flaps) | 65 KIAS |

SHORT LANDING:

- | | |
|---|---------|
| 1. Final Speed (Full flaps) | 60 KIAS |
| 2. Apply brakes as soon as touchdown, stick back and retract flaps. | |

CAUTION

- | | |
|----------------------|----------------|
| 3. Strong Turbulence | 70 KIAS |
| 4. Strong Crosswind | (MAX. 18 KIAS) |
| 5. Flaps | HALF |
| 6. Speed | 70 KIAS |

4.12 GO-AROUND OR MISSED APPROACH

- | | |
|--------------------|------------|
| 1. Throttle | FULL POWER |
| 2. Flaps | TAKE OFF |
| 3. Carburetor Heat | OFF |
| 4. Speed. | 70 KIAS |

4.13 AFTER LANDING

- | | |
|-------------------------|-----|
| 1. Flaps | UP |
| 2. Electrical Fuel Pump | OFF |
| 3. Carburetor Heat | OFF |

4.14 STOPPING ENGINE

- | | |
|---------------------------------|--------------|
| 1. Parking Brake | ON |
| 2. Radio & Electrical Equipment | OFF |
| 3. Throttle | 1000 RPM |
| 4. Mixture. | IDLE CUT-OFF |
| 5. Magnetos | OFF |
| 6. Alternator | OFF |
| 7. Master | OFF |

4.15 STALLS

An approaching stall is indicated by a stall warning between five and ten knots above stall speed. A gentle pitching indicates the stall. Stalling speed at gross weight is:

- | | |
|------------|---------|
| Flaps up. | 55 KIAS |
| Full Flaps | 46 KIAS |

At High angle of attack, pitching may be more pronounced.

Recovery-- release stick forward with gentle nose down attitude: speed increases quickly.

4.16 SPIN

When the wing flaps are fully up, intentional spins are approved; however, no baggage should be carried since it may break loose during the spin. Before entering an intentional spin, the pilot should be sure that all loose equipment is stowed. Seat belts and shoulder harnesses should be fastened in such a manner

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that they do not hinder the pilot's moving the controls through their full travel. The spin should be initiated at an altitude, which will allow a safe full recovery. The loss of altitude per 1 turn is about 250 feet. Altitude for final safe recovery: 1500 feet.

Spins should be entered from a power-off full stall with slight nose up attitude. When close to the stalling speed:

- Pull the elevator control full back

- Ailerons neutral

- Full rudder in direction of rotation

- This control configuration should be held through the spin until recovery is initiated.

Spin recovery:

- Apply and maintain full opposite rudder

- Maintain stick back until rotation stops. (Stick back position accelerate the recovery)

- Ailerons neutral

- As rotation stops neutralize the rudder and smoothly recover from the dive. After 3 spin turns, recovery is performed in 3/4 of a turn.

NOTE

Only one action is important: Keep the rudder fully in the opposite direction!

For more than 3 turn spins, engine may stop. If propeller does not windmill in recovery procedure-Use starter. For 4 turn spins (or more) recovery takes 1.5 turns. During recovery, check Airspeed and G meter for staying in the operating limits.

4.17 USE OF MIXTURE CONTROL

- Do not LEAN at take off

- To LEAN the mixture:

1. Pull the Mixture control until the RPM drops or the engine runs rough

2. Push the knob back slightly, to obtain max. RPM. Check the cylinder temperature, in case of an increase, enrich the mixture.

With Exhaust Gas Temperature (EGT) LEAN until max. EGT reading, then enrichen the mixtures to 50 degrees drop from Peak or per the engine manual.

4.18 USE OF CARBURETOR HEAT

When taking off in wet and cold weather it is recommended to pull the carburetor heater control fully, when opening the throttle. As soon as the throttle is fully open, return the carburetor heat control to COLD.

Ensure, that the engine power increases. Never use the carburetor heat for take-off.

If, while cruising at a constant altitude and in smooth air, with a given power setting, there is a drop in RPM:

- Pull the carburetor heat control fully for a few dozen seconds. Note the effect on the RPM. If RPM increase, the carburetor was beginning to ice up. Close the carburetor heat and check that the initial RPM is recovered repeat this operation at regular times.

DO NOT SET THE CARBURETOR HEAT CONTROL IN AN INTERMEDIATE POSITION, AS THE HEATER IS ON OR OFF.

When landing in cold and wet weather, pull the carburetor heat control one or two minutes before let down.

4.19 AEROBATIC FLIGHTS

1. This aircraft is equipped with a carburetor engine, without inverted fuel system, and there is no inverted lubrication system for the engine. So prolonged inverted flight is not allowed.

2. An equipment option (Christen) is installed to prevent oil projecting on the windshield while doing aerobatic maneuvers.

3. An optional dry battery is mandatory for aerobatics.

4. Luggage compartment and cabin floor must be free from any object while doing aerobatics.

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| Authorized Aerobatic Figures | Initial Speed |
|------------------------------|------------------------|
| Positive Spin | Stall |
| Positive Loop | 130 KIAS |
| Roll | 108 KIAS |
| Stall Turn | 119 KIAS |
| 45° Half Roll & Dive Out | 119 KIAS |
| Half Loop & Roll Out | 135 KIAS |
| Flick Roll | 80 - 86 KIAS (92 Max.) |
| Chandelle | 119 KIAS |
| Lazy Eight | 119 KIAS |
| Turns at more than 60° bank | 108 KIAS |
| Immelman | 135 KIAS |

If during one of these figures the engine stalls, it is preferable to throttle during the recovery only. The above figures can be performed without priming the engine and at a load factor not exceeding 4 G's.

All these figures may be performed without engine stopping with a maximum of 4 Gs.

CAUTION

During aerobatic maneuvers application of negative Gs or zero Gs may stop the engine. In that case:

- Throttle back

- Recover in normal flight

- Power on after recovery

Normally, propeller windmills and engine restart immediately with positive "Gs". If not, use the starter.