# SECTION 4

# NORMAL PROCEDURES

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## INTRODUCTION

Section 4 contains checklists and the procedures for the conduct of normal operation.

## RIGGING AND DERIGGING ENGINE COWLING

UPPER COWLING:

I. Parking brake ON.

II. Fuel shutoff valves OFF.

III. Generator switch OFF, Master switch OFF, Magnetos OFF.

IV. Unlatch all four butterfly Cam-locks mounted on the cowling by rotating them 90° counterclockwise while slightly pushing inwards.

V. Remove engine cowling paying attention to propeller shaft passing through nose.

VI. To assemble: rest cowling horizontal insuring proper fitting of nose base reference pins.

VII. Secure latches by applying light pressure, check for proper assembly and fasten Cam-locks.

**WARNING**

*Butterfly Cam-locks are locked when tabs are horizontal and open when tabs are vertical. Verify tab is below latch upon closing.*

LOWER COWLING

I. After disassembling upper cowling, bring propeller to horizontal position.

II. Using a standard screwdriver, press and rotate 90° the two Cam-locks positioned on lower cowling by the firewall.

III. Pull out the first hinge pin positioned on the side of the firewall, then, while holding cowling, pull out second hinge pin; remove cowling with downward motion.

IV. For installation follow reverse procedure.

# PRE-FLIGHT INSPECTIONS

Before each flight, it is necessary to carry out a complete inspection of the aircraft starting with an external inspection followed by an internal inspection as hereby detailed.

CABIN INSPECTION

A Flight Manual: check that a copy is on board

B Weight and balance: check if within limits

C Safety belts used to lock controls: free

D Flight controls: activate flight controls to insure unhindered movement of control rods and surfaces.

E Parking brake: engage

F Throttle: adjust friction lock

G Magnetos: OFF

H Master switch: ON

I Voltmeter: check (10-12 V); Ammeter check (red).

J Generator switch: ON, check generator switch is illuminated.

K Fuel pump: ON, check light ON, audible sound and correct operation of fuel pressure indicator.

L Avionics switch: ON, check operation; when finished, reposition switch to OFF

M Flaps control: activate control to full extension checking travel limits and instrument indication.

N Trim control: activate control to full scale checking travel limits and instrument indication

O Acoustic stall warning: check operation

P Navigation lights and strobe-light: check operation

Q Landing light: check operation

R Generator switch: OFF

S Master switch: OFF

T Fuel level: check level on the basis of flight plan

U Baggage: check for proper stowage with tie-down net.

**WARNING**

*Fuel level indicated by the fuel quantity indicators (on the instrument panel) is only indicative. For flight safety, pilot should verify actual fuel quantity embarked before takeoff.*

EXTERNAL INSPECTION

To carry out the external inspection it will be necessary to follow the checklist below with the station order outlined in fig. 4-1.

**WARNING**

*Visual inspection is defined as follows: check for defects, cracks, detachments, excessive play, unsafe or improper installation as well as for general condition. For control surfaces, visual inspection also involves additional check for freedom of movement and security.*

A Left hand fuel filler cap: check visually for desired fuel level and secure. Left tank vent: check for obstructions.

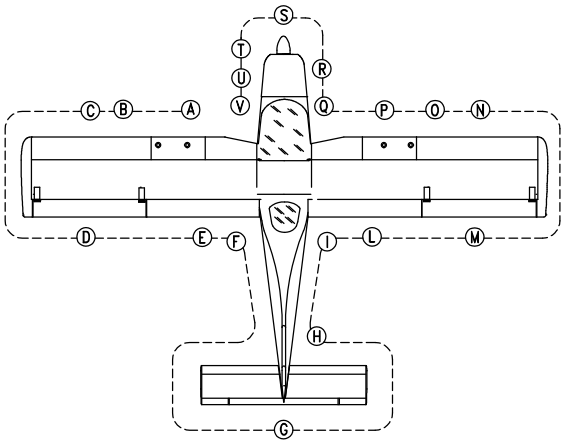


FIG. 4-1

B Remove protection cap and check pitot mounted on left strut is unobstructed, do not blow inside vents, place protection cap inside aircraft.

C Left side leading edge and wing skin: visual inspection

D Left aileron: visual inspection

E Left flap and hinges: visual inspection

F Left main landing gear; check inflation 40 psi (2.8 bar), tire condition, alignment, fuselage skin condition.

G Horizontal tail and tab: visual inspection.

H Vertical tail and rudder: visual inspection.

I Right side main landing gear; check inflation 40 psi (2.8 bar), tire condition, alignment, fuselage skin condition.

L Right flap and hinges: visual inspection.

M Right aileron: visual inspection.

N Right leading edge and wing skin: visual inspection.

O Check freedom of movement of stall detector microswitch on right side leading edge, activate Master switch and check cabin acoustic warning signal is operative, deactivate Master switch.

P Right side fuel filler cap: check visually for desired fuel level and secure. Right side tank vent: check for obstructions.

Q Right side static port: check for obstructions, do not blow inside vents (read note).

R Nose wheel strut and tire: check inflation 32 psi (2.2 bar), tire condition and condition of rubber shock absorber discs.

S Propeller and spinner condition: check for nicks and security.

T Open engine cowling and perform the following checklist:

I. Check no foreign objects are present.

II. Check the cooling circuit for losses, check coolant reservoir level, insure radiator honeycomb is unobstructed.

III. Check lubrication circuit for losses, check oil reservoir level, insure radiator honeycomb is unobstructed.

IV. Open both fuel shutoff valves, inspect fuel circuit for losses, check integrity of fireproof protection braids, drain circuit using a cup to collect fuel by opening the specific drainage valve located on the firewall, close shutoff fuel valves. Check for water or other contaminants.

Drainage operation must be carried out with aircraft parked on level surface.

V. Check integrity of silent-block suspensions.

VI. Check connection and integrity of air intake system, visually inspect that ram air intake is unobstructed.

VII. Check that all parts are secure or safetied.

U Close engine cowling.

V Check left side static vent is unobstructed.

Z Remove tow bar and chocks.

**NOTE**

*Avoid blowing inside left strut mounted pitot and inside airspeed indicator system's static vents as this may damage instruments.*

## CHECKLISTS

BEFORE STARTING ENGINE (after preflight inspection)

I. Flight planning, fuel consumption, refueling.

II. Check correct aircraft loading and correct CG position (see section 6).

III. Seat position and safety belts adjustment

IV. Doors secured

V. Parking brake ON.

**CAUTION**

*Avionics general switch must be OFF during engine startup to avoid damage to avionics instrumentation.*

STARTING ENGINE

I. Circuit Breakers: check IN

II. Master switch ON. Check Voltmeter and Ammeter

III. Fuel shutoff valves: both ON.

IV. Electric fuel pump ON; (check for audible pump noise and fuel pressure)

V. Engine throttle to idle.

VI. Choke as needed.

VII. Set Magnetos switch to: BOTH.

VIII. Propeller area: CLEAR

**WARNING**

*Check to insure no person or object is present in the area close to propeller.*

IX. Ignition key set to: START.

X. Generator switch "ON" and check Ammeter "green".

XI. Propeller rpm: 1000-1100 rpm

XII. Choke OFF

XIII. Check engine instruments

XIV. Check oil pressure rise within10 sec. (maximum cold value 7 bar)

XV. Electric fuel pump: OFF

XVI. Check fuel pressure

XVII. Electric fuel pump: ON

BEFORE TAXIING

I. Radio and utilities ON.

II. Altimeter: reset.

III. Navigation lights: as required

IV. Request control tower O.K., parking brake OFF and taxi.

TAXIING

I. Brakes: CHECK

II. Flight instruments: CHECK

PRIOR TO TAKE-OFF

I. Parking brake ON.

II. Turn on navigation lights, strobe light, and landing light

III. Check engine instruments:

- Oil temperature 50-110 °.
- Cylinder heads temperature max 135 ° or Coolant temperature max 120° (if Rotax SB912-066 is applicable on engine SN).
- Oil pressure 2-5 bar.
- Fuel pressure 2.2 – 5.8 psi or 7.2 psi (if fuel pump part no. 893115 and 893114 is installed)

IV. Check ammeter to insure alternator is charging.

V. Propeller at 1700 rpm and test Magnetos (speed drop with only one ignition circuit must not exceed 130 propeller's rpm).

VI. Check fuel level indicators.

VII. Flaps at 15° (takeoff)

VIII. Stick free and zero trim

IX. Seat belts fastened and doors secured.

TAKEOFF AND CLIMB

I. TWR: OK for takeoff

II. Check for clear final and wind on runway.

III. Parking brake OFF,

IV. Carburetor heat: OFF

V. Taxi to line-up

VI. Full throttle (approx. 2100 ± 100 propeller rpm)

VII. Rotation speed Vr=47 Kts for 550 kg MTOW and Vr=48 Kts for 600kg MTOW.

VIII. Rotation and takeoff

IX. Slight braking to stop wheel spinning.

X. Flaps retracted

XI. Landing light OFF.

XII. Trim adjustment

XIII. Establish climb rate

XIV. Electric fuel pump: OFF

CRUISE

I. Reach cruising altitude

II. Set power and engine rpm's for cruise.

III. Check engine instruments

- Oil temperature 90°-110 ° C.
- Temperature cylinder heads 90° ÷ 135 °.C or Coolant temperature 90° ÷ 120°
- Oil pressure 2 - 5 bar.
- Fuel pressure 2.2 – 5.8 psi or 2.2 – 7.2 psi

IV. Carburetor heat as needed, see paragraph on carb. heat in Section 3.

**NOTE**

*Compensate unpredicted asymmetrical fuel consumption between left and right fuel tanks acting, if possible, only on LH fuel selector appropriately to avoid erroneous closing of both fuel valves.*

BEFORE LANDING

I. Contact TWR.

II. Electric fuel pump ON

III. Fuel shutoff valves: both ON

IV. Turn on landing light.

V. Check runway final and establish descent and approach to final.

VI. Extend flaps gradually to maximum deflection of 38°.

VII. Optimal touchdown speed: 44Kts for 550kg MTOW and 45Kts for 600kg MTOW

BALKED LANDING

I. Full throttle

II. Flaps position: TO

III. Speed: 60 KIAS (63KIAS) for 550kg MTOW (600kg)

NORMAL LANDING

I. Land and taxi.

II. Flaps to 0°.

III. Parking brake ON.

IV. Turn off landing, navigation and strobe lights.

ENGINE SHUT DOWN

I. Keep engine running at 1200 rpm for about two minutes in order to reduce latent heat.

II. Electric fuel pump: OFF

III. Turn off all electrical utilities.

IV. Set magnetos switch to OFF.

V. Set Generator switch and Master switch to OFF.

VI. Set both fuel shutoff valves to OFF.

POSTFLIGHT CHECK

I. Insert hood over pitot tube on left side wing strut.

II. Lock controls using seat belts.