SECTION 4

NORMAL PROCEDURES

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LOADING

Before each flight, make sure that the total weight and load balance are within the specified limits. To this end, use the weight and balance chart given in section 6.

NORMAL OPERATING SPEEDS

The speeds listed below are indicated airspeeds (IAS) recommended for normal operation of the aircraft.

These speeds are based on a standard aircraft, operated at maximum gross weight, in standard atmosphere and at sea level. They may vary from one aircraft to another depending on the equipment installed, the conditions of the aircraft and of the engine, the atmospheric conditions and the skills of the pilot.

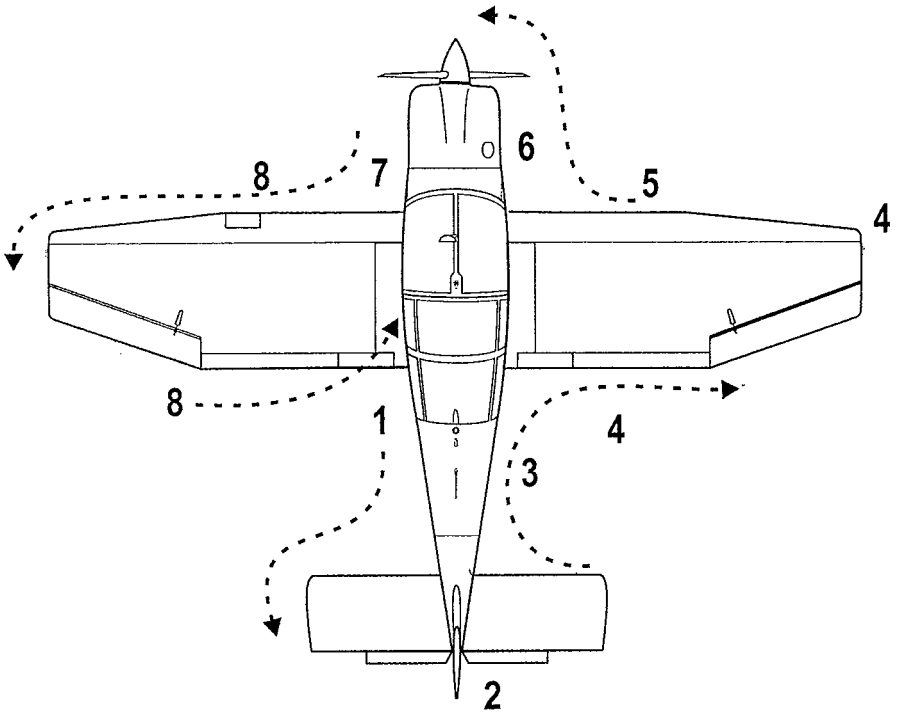
- Best rate of climb speed
  flaps in take-off position (1st notch)..... (75 kt) 140 km/h
  flaps up ..... (86 kt) 160 km/h

- Best angle of climb speed
  flaps in take-off position (1st notch) ..... (70 kt) 130 km/h
  flaps up ..... (75 kt) 140 km/h

- Maximum operating speed in turbulent air
  flaps up ..... (140 kt) 260 km/h

- Maximum speed
  flaps in landing position (2nd notch) ..... (92 kt) 170 km/h

- Landing speed, final approach
  flaps in landing position (2nd notch) ..... (62 kt) 115 km/h



PRE-FLIGHT INSPECTION

To be performed before each flight.
This inspection may be shortened after intermediate landings on route.

Magneto switch ..... off
Controls ..... free
Battery switch ..... on
Flaps ..... check operation
Fuel quantity ..... checked
Battery switch ..... off
Aircraft documents ..... on board
Baggage ..... securely stowed

Check the travel and direction of flight controls, and then make an aircraft walk-around inspection (see before) starting at the fuselage left side.

1 Fuel filler cap.....in place, locked
Static vent ..... clean, unobstructed

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2 Horizontal stabilizer..... surface condition, hinges without backlash
Rudder ..... check hinges and backlash

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3 Static vent ..... clean, unobstructed

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4 Flaps and ailerons..... check condition and hinges
Wing tip and navigation lights if installed (optional).....check Condition
Stall warning.....clean, check actuation

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5 Right main landing gear ..... check attachment
..... and condition of fairing
.....normal shock absorber compression
.....tyre inflated

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6 Oil level ..... checked, oil cap secured, door closed
Engine cowl attachments .....checked
Propeller.....clean, in good condition
Propeller spinner.....no play
Air inlets ..... clean, unobstructed

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7 Nose gear ..... check attachment and condition of fairing
..... normal shock absorber compression, tyre inflated
..... tow-bar removed
Exhaust pipe ..... rigid
Fuel drain valve..... actuated
Canopy cleanliness.....check

8 Left main landing gear..... check attachment
..... and condition of fairing
..... normal shock absorber compression
.....tyre inflated
Pitot.....clean, unobstructed
Lights if installed (optional)..... clean
Wing tip and navigation lights if installed (optional)check condition
Flaps and ailerons.....check condition and hinges

CABIN INTERIOR CHECK BEFORE START-UP

Canopy ..... closed and locked
Parking brake .....locked
Front seats..... adjusted and locked
Belts and harnesses .....adjusted and fastened
Flights controls .....free, without play or excessive friction
.....(check rudder during taxiing)
Elevator trim ..... check travel
..... then back to neutral position
Strobe light ..... on

STARTING THE ENGINE

Normal procedure

Carburettor heat ..... off (push)
Mixture ..... full rich (up)
Master switch ..... on
Gauges ..... checked
Fuel selector ..... check operation, open
Magneto switch L
Electric pump ..... on
Throttle ..... 2 or 3 injections, then 2 cm travel forward
Propeller area ..... clear
Starter ..... engage (30 sec. max)
Magneto switch ..... 1 + 2

Hot engine procedure

Same procedure as "normal", but without injections.

Warm weather procedure

Same procedure as "normal", but keeping successive injections up to 900 to 1000 rpm.

Engine "flooded"

Electric pump ..... off
Mixture ..... cut-off (down)
Throttle ..... full power (push)
Starter ..... operate for several seconds

As soon as the engine starts, push mixture to "rich" then resume the normal procedure, without injections.

CAUTION

Avoid operating the starter for more than 30 seconds.
Wait at least one minute before operating it again.

As soon as the engine is running, check the engine oil pressure.
If it is still at zero after 15 to 20 seconds, stop the engine and investigate the cause.

AFTER ENGINE START

Rpm ..... 1200 rpm
Electric pump ..... off
Alternator switch ..... on
Voltmeter ..... green arc
Vacuum gauge (if installed) ..... checked
Lights ..... tested
Radio, navigation aids ..... on
Altimeter ..... set
Flaps ..... retracted

TAXIING

Parking brake ..... unlocked
Brakes ..... tested
Turn and bank indicator (option) ..... checked
Directional gyro (option) ..... setting checked

Avoid exceeding 1200 rpm as long as engine temperature remains in the yellow range.

ENGINE RUN-UP

Parking brake ..... locked
Oil temperature and pressure ..... green range
Fuel pressure ..... green range
Mixture ..... full rich (top)
Carburettor heat ..... off (push)

Magneto check

Throttle ..... 2000 rpm
Magneto selection:
Max. drop between L or R and L + R ("Both") ..... 175 rpm
Max. difference between L and R ..... 50 rpm

Carburettor heat check

Carburettor heat ..... on (pull)
Check rpm drop (approx. 100 rpm)
Carburettor heat ..... off (push)

Mixture check

Lean until rpm reduction, then return to "full rich".

Engine idle check

Throttle ..... 600 to 650 rpm

BEFORE TAKE-OFF

Controls ..... free
Magneto switch ..... L + R ("Both")
Cabin (seats, belts, canopy) ..... check
Fuel selector ..... open
Electric pump ..... on
Elevator trim ..... neutral position
Engine instruments ..... checked
Flight instruments ..... set
Flaps ..... full down, then back to take-off position (1st notch)
Throttle ..... "holding" at 1200 rpm

TAKE-OFF

Normal take-off

Full throttle minimum rpm ..... 2400 rpm
Take-off speed ..... (53 kt) 100 km/h
Initial climb speed ..... (70 kt) 130 km/h

After obstacles clearance,

Reduce angle of climb to reach ..... (81 kt) 150 km/h
Electric pump ..... off
Fuel pressure ..... checked (green range)
Flaps ..... up

Short take-off

Flaps ..... (1st notch) take-off position
Apply full power, brakes applied,
then release the brakes ..... 2400 rpm mini
Take-off speed ..... (53 kt) 100 km/h
If needed to clear an obstacle,
proceed at best angle of climb speed ..... (70 kt) 130 km/h

Crosswind take-off

Flaps..... (1^{st} notch) take-off position
Ailerons ..... into the wind

Take-off at a slightly higher airspeed than normal. Correct drift in the normal way (max bank angle close to the ground: 15°).

Demonstrated crosswind capability ..... (22 kt) 40 km/h.

CLIMB

Normal climb (flaps up)

Set climb speed 160 km/h (86 kt) below 7 000 ft; 140 km/h (75 kt) from 7 000 ft.
Keep full throttle.
Above 5000 ft, adjust mixture.

Best angle of climb

A better rate of climb is obtained at 130 km/h (70 kt), flaps in take-off position (1^{st} notch) and at 140 km/h (75 kt) flaps up.

NOTE
This type of climb should only be used exceptionally, due to poor engine cooling.
Last 10 litres of fuel remaining in the main tank are not usable during climb.

CRUISE

Refer to section 5 for rpm setting and cruise performance.

Use of the mixture control

Set and keep the mixture control on the "full rich" position for take-off and climb at more than 75 % of maximum continuous power.

In certain conditions (high altitude take-off, long climb above 5000 ft), this setting may be too rich and lead to irregular engine operation or loss of power.
In these situations, adjust the mixture to obtain a regular engine operation and not the best fuel economy.

Mixture adjustment in stable cruise (above 5 000 ft and with rpm lower or equal to 75 % of maximum continuous power):
Progressively lean the mixture to obtain a slight reduction in rpm, then slightly enrich the mixture to regain power and normal operation of the engine.

NOTE

Be careful not to lean the mixture too much,
this would cause engine overheating.

ALWAYS ENRICH THE MIXTURE
BEFORE INCREASING POWER.

DESCENT

Quick descent

Power ..... as needed to maintain the desired descent path
Carburettor heat ..... on
Each 1500 ft, apply power to avoid excessive engine cooling, and to clean the spark plugs.

Approach or down wind

Mixture ..... full rich (up)
Electric pump ..... on
Carburettor heat as required ..... on or off
Cabin (seats, belts) ..... checked
Flaps ..... under 170 km/h (92 kt) take-off position (1^{st} notch)
Speed ..... (81 kt) 150 km/h
Elevator trim ..... set
Roll stabilizer or autopilot (if fitted) ..... off

Final

Carburettor heat ..... off (push)
Flaps ..... under (81 kt) 150 km/h landing position (2^{nd} notch)
Approach speed ..... (62 kt) 115 km/h
Elevator trim ..... set

LANDING

Short landing

Flaps ..... (2^{nd} notch) landing position
Approach speed ..... (set with throttle) (62 kt) 115 km/h

After touchdown, brake heavily keeping nose up with elevator and retracting the flaps.

Landing in crosswind or strong gust conditions

Flaps ..... (1st notch) take-off position
Approach speed ..... (70 kt) 130 km/h + 1/2 gust speed
Drift ..... correct in the normal way
Demonstrated crosswind ..... (22 kt) 40 km/h

Going around procedure

Carburettor heat off ..... check
Throttle ..... full power (push)
Speed ..... (65 kt) 120 km/h
Flaps ..... progressively raise flaps to the take-off position (1st notch)
Normal climb speed ..... (75 kt) 140 km/h

AFTER LANDING

Electric pump ..... off
Flaps ..... up
Navigation instruments ..... off

ENGINE SHUT-DOWN

Parking brake ..... tight
Flaps ..... down
Radio and electrical equipment ..... off
Check magneto cut-off at idle ..... off, then L+R ("Both")
Rpm ..... 1000 rpm
Mixture ..... idle cut-off (down)

After the engine stops

Magneto switch ..... off
Alternator switch ..... off
Battery switch ..... off
After setting the wheel chocks ..... release the parking brake