

Savage Cub Maintenance Manual



Aircraft Type & Model: Savage Cub 912 100hp

Aircraft Registration Number: 24-0000

Aircraft Serial Number: 07-1234

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Warning

Please carefully read this manual and the Flight Manual, along with the Engine Maintenance Manual before using the aircraft.

The Savage is a sturdy aircraft, easy to maintain, and with the help of this manual you will be able to apply correct procedures. Eventual or any further modifications or variations will be advised through bulletins (P.A). For further information or explanation call: ZLIN AVIATION s.r.o. at +420 608 381 525 or call your local distributor of your country.

Aircraft Maintenance

This manual contains instructions and materials information with reference to the operation and maintenance of the Savage Aircraft. Because of the fact this manual contains information that will be useful to any future owners of this aircraft; it is highly recommended to consider it as an integral part of the aircraft. Descriptions herein are based from experience and the FAA's general information synthesis in the aeronautical field.

Rotax 912 Engine Maintenance

Follow the manufacturers' manual in respect of all instructions and definitions and remember to check the following.

Daily

Lubricants

- Oil - Level and Leaks
- Cooling Liquid – Level and leaks.

Every 100 Hours

Lubricants

- Change oil and oil filter
- Clean air filter, clean carburettor

Accessibility

Items and components requiring inspection are accessible through the opening of inspection ports and panels placed on the wing and fuselage.

Wings

There are some easily removable round inspection panels kept in place by a spring allowing inspection of the wing attachment connections and optional strobe lights.

Fuselage

On the fuselage right side there is a large removable panel giving inspection access to the battery box and the complete tail internal structure. There is a removable panel giving access to tail control cables, pulleys, and the push rod connecting the control stick to the elevator. Under the horizontal right tail surface there is a small removable panel giving access to the tail leaf spring locking pin.

Special Note

No detergents are allowed for the cleaning of the lexan. Clean only with water!

Aircraft Maintenance

ALTA QUOTA/MORAVAN ZLIN considers the inspections described in the following chapters as mandatory/obligatory to ensure the safe operation of the Savage Aircraft.

Therefore strictly follow instructions as hereunder.

Schedule of Inspection Periods

- Daily inspection
- Every 50 hours or 6 months (whichever comes earlier)
- Every 100 hours or 12 months (whichever comes earlier)
- Every 200 hours or 18 months (whichever comes earlier)
- Every 600 hours
- Every 1200 hours.

Daily Inspections

Engine

- Check oil level – if necessary re-fill with fresh oil.
- Check for leaks in the engine bay,
- Check air filters, carburettor, and fuel line clamps,
- Check carburettor for leaks in the fuel pipes, clean the area around and change fuel filter if necessary.
- Check throttle and choke control cable ends securing devices and check cable condition.
- Inspect entire engine, such as bolts or nuts for security, check sleeves security and caps for correct torque.

- Check exhaust system and air cleaners for correct security and condition.
- Check engine mount and supporting bolt structures and check inert gas condition gauge (if fitted).
- Check oil, water, and fuel pipes for condition and security.

Wings, Control Surfaces, Fuselage, Cabin

- Check cabin windshield condition for cleanliness. Any small scratches must be polished out.
- Check tail wheel attachment to the fuselage. If necessary lubricate wheel axle.
- Check wing, fuselage and tail surfaces fabric. Clean and remove any mud or foreign objects or deposits.
- Check wing lift struts and their attachments for damage, deformation, denting and oxidation and ensure attachment bolts are correctly torqued.
- Check tail surface wire truss.
- Check for damage or freeplay in stabiliser trim control system

Propeller

- Check for damage and cracks on the propeller.
- Check for damage, wearing, or nicks or indentations on propeller metal leading edge.

Flying Controls

- Check aileron wires, pulleys, and turnbuckles for integrity, security and correct tension.
- Check aileron wires upper joins.
- Check aileron wires lower joins.

Landing Gear

- Check tyre condition and pressures
- Check landing gear structures, attachments, bolts, for condition and correct torque.
- Check bungee cords for fraying, oil, and grease contamination or other foreign matter.

Fuel System

- Check for damage and/or leaks and stains in aeroplane interior and exterior.
- Complete a proper drain to ensure fuel is not contaminated with water or other foreign material.
- Ensure vent holes are free and clear.
- If necessary, fill to proper level for flight plus required safety margins.
- Check fuel caps are correctly locked and secure.

Radio and Electrical System

- Check battery voltage (12 Volts)
- Check all wiring and terminals for deterioration or damage.

Instruments

- Check for deterioration, damage, or moisture invasion.
- Make sure instrument glasses are clean.
- Ensure instruments are correctly calibrated. If not they must be repaired, serviced, or re-calibrated, before any further flight is contemplated.
- Ensure Pitot tube and static ports are free.

50 Hour or Six Monthly Inspection (whichever comes earlier)

General

- Clean up entire aircraft and check all inspection ports or openings.

Fuselage

- Check aircraft fabric and confirm soundness. Note any deterioration or weaknesses and refer for maintenance if serious.
- Check windscreens and all windows for cleanliness and damage. Ensure door hinges are in good condition. Lube hinges.
- Check access panel security.
- Check bolts and nuts security and correct torque on wing support struts.
- Check bolts and attachments, wing leading and trailing edges to fuselage.
- Ensure ailerons and flap hinge pins are correctly fastened and locked.
- Check baggage sack condition and attachments for security.
- Verify the tail surface supporting struts and attachment pins to fuselage are secure and in good condition.
- Check vertical stabiliser (fin) attachment pins to fuselage, stabiliser pins and locking pins for security and correct torque.
- Check rudder control cables, attachments, and rudder pins. Verify horizontal trip pins secure. Verify trim control cable attachment and return spring tension (if your model is so equipped).

Cabin

- Check both pilot seats and condition of safety belts. Inspect safety belt attachments for security.
- Check instruments condition, hoses, and switches.
- Remove any dirt as accumulated in the cabin and ensure cleanliness between fabric cover and fuselage frame.
- Remember to inspect the fuselage lower beam near the tail for deterioration, corrosion and/or deformation due to heavy landing damage.

Engine

- Remove engine cowling and check engine general condition.
- Check engine mounts, attachments, and dampeners.
- Inspect oil and cooling liquid tanks for condition, ensure vent holes are free and clean.
- Inspect ignition harnesses, spark plug caps, and inspect the entire electrical harness condition.
- Eliminate any oil marks, verify accessories attachments are secure.
- Check muffler and exhaust system for fractures, corrosion. In event exhaust gas residue is found, it is obvious fractures or cracks have occurred and the entire muffler and exhaust system must be dismantled and any abnormalities repaired before any future flight is contemplated.
- Check the rubber manifold seals between the engine and carburetors.

Propeller

- Check propeller bolts. Verify attachment bolts are in good condition and correctly torqued.
- Check propeller blades and metal leading edge for condition, indentation, stone chips. Any major damage noted will prevent any further flight until damage is rectified and/or propeller replaced.

Landing Gear

- Check main landing gear attachment bolts for security.
- Verify tyres are correctly inflated to 1.1 bar.
- Check bungee rubbers for condition, and lube with a silicon base product.
- Check brakes for action, corrosion, check brake reservoir oil level. If necessary purge system.
- Check tail wheel attachments for security and check tail wheel for excessive play or defects. Lube tail wheel swivel components.
- Check tail wheel tyre pressures 2.0 bar and check steering spring tension. Verify all bolts are correctly secured.
- Check tail wheel spring leaves for fractures, damage, or deformation.

Controls

- Check control stick and pedal for condition.
- Lube the crank placed behind the rear seat.
- Check cable turnbuckles for security and locking.
- Inspect aileron control cables and lube them with acceptable lubricating oil.
- Check trim control friction and security. Lube as required.
- Check bolts securing the entire elevator control system.
- Inspect condition of the elevator universal joint placed behind the rear seat.
- Verify there is no free play or excessive friction in the control system and lube it.

Note - If necessary adjust ailerons.

Engine Running Check after Inspection

- Check fuel pump,
- Check fuel pressure and fuel level gauges,
- Check oil pressure and temperature,
- Check generator,
- Check parking brake,
- Check magnetos,
- Check magneto drop and note RPM variation. Check also at idle.
- Check throttle control operation, paying attention to engine response at power changes.

100 Hour or Twelve Monthly Inspection (whichever comes earlier)

In addition to all the inspections required at 50 hours, the following must also be inspected.

General

- Clean the entire aircraft and open all panels to allow access for inspection.

Fuselage

- Check aircraft external covering for rents, tears, in the fabric covered parts.
- Check windscreen and all windows for condition. Verify all glasses correctly open and close, and ensure door hinges are in good condition. Grease hinges.
- Check wing support attachment pins and bolts for correct torque.
- Inspect wing covering, check leading and trailing edges for damage or deformation.
- Inspect aileron and flap hinges and attachments. Check attachment pins for security and locking.
- Inspect spar compression rod attachments. These attachments are fastened with steel bolts which must be inspected for wear or corrosion. Even in the case of minute wear, replacement must be carried out immediately.
- Check wing compression rods attachment plates for wear or corrosion.
- Verify the tail surface attachment pins and supporting struts are secure and in good condition.

Cabin

- Check pilot and passenger seats for security condition. Inspect safety belt connections and attachments.
- Check instruments for condition and all attachments, hoses and switches for efficiency.
- Remove any dirt accumulated in cabin between fuselage frame and fabric covering.

- Inspect the fuselage lower beam adjacent to the tail for corrosion damage or deformity through heavy landing.
- Verify aileron and flap cables, splices and pulleys and turnbuckles for condition and security.
- Check fuel piping and clean fuel filters. Check all unions secure and correctly torqued.
- Check flap recovery rubbers and command lever.
- Check throttle lever for freedom of movement. Check friction control is in good condition and working.

Engine

- Dismantle and clean carburettor air filter,
- Inspect spark plug harnesses, check caps ends and conductors shielding and insulation.
- Inspect the entire electrical wiring system and harness, and check magneto harnesses and their attachments.
- Inspect fuel filter bowl. Empty and clean internal gauze.
- Verify oil, water, fuel, tubing claps are secure.
- Check engine mount bolts, verify rubber dampers are not worn and are correctly secured.
- Check muffler springs for security.
- Check regulator-electric starter-engine bonding harness.
- Check and adjust if necessary throttle and choke cables for correct operation.

Propeller

- Check propeller and its attachment bolts.
- Check blades and the metal leading edge condition for chipping, indentations, excessive wear.
- Check spinner for security and alignment.

Landing Gear

- If it is found the tyres are wearing unevenly, reverse them with the aim of evening up the wear rate.
- Verify the main gear clamping bolt attachments are secure.
- Verify tyre pressures are correct.
- Check braking action. If required purge (bleed). Ensure hydraulic reservoir oil level is correct.
- Check tailwheel connections for excessive free play or faults. Lubricate junction pin.

Controls

- Check pedals and control stick condition.
- Lube the crank located behind the rear seat.
- 200 Hour or Eighteen Month Inspection (Whichever comes earlier)

In addition to the checks carried out on the daily, 50 hour and 100 hour inspections, the following checks are mandatory.

Fuselage

- Check the fuselage main welds at the wing connections, landing gear, pedals, hinges and engine mount, for stress cracking. Note any displacement of paint that would indicate a problem exists.

Engine

- Check engine mount aluminium plates.
- Check oil, water, and brake fluid tanks for security and unions are correctly torqued.
- Verify firewall condition. Any deformation would indicate heavy landing damage and must be referred to the approved maintenance organisation for further inspection and action/rectification.
- Verify muffler and exhaust system condition for security and defects. Rectify if necessary.

600 Hour Inspection

In addition to all previous inspections the following must be carried out.

Engine

- Advise the idle and synchronise the carburettors.

Controls

- Check and adjust control cable for stiffness, security, and freedom of movement. Rectify and adjust as required.

Fuselage

- Dismantle the wing from the fuselage; check all attachments and attachment bolts for condition and wear. Any free play must be eliminated and if necessary fit new wing connection bolts.
- Check wing support struts for security, damage, and corrosion.
- Check wing forward and rear spars for condition, security and corrosion.
- Check fuselage for deformation and corrosion.
- Check tail surfaces, attachments, for security damage and/or corrosion.
- Check electrical wiring contained in the fuselage. Check strobe lights for correct operation (if fitted). Check landing light for correct operation. Replacement bulb if necessary.

Landing Gear

- Dismantle main landing gear and tail wheel leaf spring to verify condition and the presence of any free play. If required, replace main landing gear attachment bolts and locking devices.
- Dismantle main wheel for cleaning. Check tyres for defects, abrasions, cracking. Clean main wheel hub and bearings and re-grease/lube.

1200 Hour Inspection

In addition to the previous inspections carried out the following must be achieved at 1200 hours total airframe time.

Repeat all previous inspection schedules, and in particular the 600 hour inspection. Remove all aircraft external fabric and examine the fuselage frame for corrosion and oxidation evidence. Clean, rectify, and re-paint fuselage. Dismantle, clean, all tanks, i.e. fuel, oil, water, and hydraulic reservoir.

Overhaul Rotax 912S Engine in accordance with manufacturers' recommendations.

