

SECTION 8

AIRPLANE HANDLING, SERVICE AND MAINTENANCE

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INTRODUCTION

This section provides factory recommended general guidelines and procedures for proper ground handling, routine care and servicing of your Found FBA-2C2 Bush Hawk-XP. It also identifies certain maintenance and inspection requirements, which must be followed if your airplane is to maintain its original 'factory new' performance and dependability. It is recommended that a planned schedule of preventative maintenance, based on local climatic and flying conditions, be followed.

Every Found owner should keep in touch with Found's Customer Service Department to obtain the latest information available pertaining to their aircraft and to take advantage of their knowledge and experience. Any correspondence regarding your airplane should include the airplane serial number and model number found on the identification plate to ensure a proper response.

IDENTIFICATION PLATE

(For S/N 29 to S/N 48)

The Canadian identification plate displays the manufacturer's name, model designation, serial number, date of manufacture and type certificate number and is located on the port side of the center console.

For aircraft sold into the USA, there is an additional identification plate located on the port side of the aft fuselage forward of the horizontal stabilizer. It displays the manufacturer's name, model designation, serial number, date of manufacture, Canadian type certificate number, and US type certificate number.

(For S/N 49 and Up)

For aircraft S/N 49 and on, a single identification plate is located on the port side of the aft fuselage, forward of the horizontal stabilizer. It displays the manufacturer's name, model designation, serial number, date of manufacture, Canadian type certificate number, and US type certificate number.

PUBLICATIONS AND BULLETINS

The following log books and manuals are provided with each new aircraft.

- Journey Log
- Technical Log 1 – Airframe
- Technical Log 2 – Installations and Modifications
- Technical Log 3 – Engine
- Technical Log 4 – Propeller
- Pilots Operating Handbook
- Maintenance Manual
- Engine Operator Manual and Paperwork
- Propeller Owner Manual and Log Book

From time to time, Found Aircraft Canada Inc. may publish and distribute, to all aircraft owners, additional information that is relevant to the care of their aircraft. These publications will be in the form of either a SERVICE INSTRUCTION, or a SERVICE BULLETIN.

A SERVICE INSTRUCTION is not mandatory and may be carried out by the owner at their discretion. For example, a Service Instruction may contain information to owners who operate in salt water and wish to be advised of additional corrosion protection.

A SERVICE BULLETIN is mandatory and must be complied with by the owner within the time period specified.

PUBLICATIONS AND BULLETINS (CONTINUED)

ORDERING PUBLICATIONS

Any Found publications may be ordered by contacting Customer Service as follows:

Found Aircraft Canada Inc.
Customer Service
RR#2, Site 12, Box 10
Parry Sound, ON
P2A 2W8
Canada

Tel: (705) 378-0530
Fax: (705) 378-1264

AIRPLANE RECORDS AND CERTIFICATES

Transport Canada and the Federal Aviation Authority require that certain certificates and licenses be on board your aircraft at all times. The following is a list of those documents. Be sure to check applicable FARs and CARs occasionally to make sure your list is up to date. Found owners not operating within Canada or the United States should check with the registering authority in their region for additional requirements.

Required Documents:

1. Certificate of Airworthiness
2. Certificate of Registration
3. Aircraft Radio Station License – if Commercial
4. Pilot Operating Handbook
5. Weight and Balance Data plus Equipment List
6. Proof of Insurance
7. Intercept Orders
8. Journey Log – if Commercially operated
– if Privately operated, not required if returning to point of departure.

AIRPLANE INSPECTION PERIODS

The following are the required inspection time intervals for the propeller, engine and airframe.

Propeller Inspections (Hartzell)

- 100 hours
- Annual (maximum 365 days)

Engine Inspections (Textron Lycoming)

- New engine only – 10 hours
- New engine only – 25 hours
- All engines – 50 hours
- All engines – 100 hours
- All engines – 400 hours

Airframe Inspections (Found Aircraft Canada Inc.)

- Pilot - Preflight
- Maintenance – Weekly Inspection (maximum 7 days)
- Maintenance – 100 hours
- Maintenance – 200 hours
- Maintenance – 400 hours
- Maintenance – 1200 hours
- Maintenance – 5000 hours
- Maintenance – Annual (maximum 365 days)
- Maintenance – Fuselage Boroscope – 5 years
- Maintenance – Main Gear Leg Corrosion inhibit – 5 years
- The aircraft also has 'life' items which must be overhauled or replaced at specific times.

General

Aircraft, engine and propeller have various inspection procedures after a hard landing, immersion in water, propeller strike, lightning strike, exposure to fire or heat, high wind or propeller wash, corrosive substance spills, mis-fueling, inspections of opportunity, and cable inspection 25 to 50 hours or 15 to 30 days after replacement. Check Found Aircraft Canada's maintenance manual, and the appropriate Textron Lycoming and Hartzell documents for details.

Service Bulletins from Hartzell, Textron Lycoming or Found Aircraft Canada Inc. may supersede any of the above inspection items upon short notice.

Airworthiness Directives from Transport Canada or the Federal Aviation Authority may change any of the above times upon short notice.

GROUND HANDLING

TOWING

The airplane may be maneuvered or moved on the ground by use of the tail wheel tow bar or by power equipment that will not excessively strain or damage the tail gear assembly. Do not lift the empennage by the elevator or any portion of the horizontal stabilizer. Likewise, do not push sideways on the tail plane. It is also recommended that you do not push or pull on the propeller or any other control surface to maneuver the aircraft. Ground maneuvering may be safely assisted by the two ground maneuvering handles located on either side of the aft portion of the empennage just forward of the horizontal stabilizer.

PARKING AND TIE-DOWN

When parking the aircraft, ensure it is sufficiently protected from the weather and it poses no hazard to other aircraft. If the aircraft is parked overnight or for any length of time, or if severe weather is expected, ensure the aircraft is properly moored.

1. Face the aircraft into the wind, if possible.
2. Retract the flaps.
3. Set parking brake.

NOTE

Do not set brakes if the brakes are overheated or during cold weather as excess moisture may cause the brakes to freeze.

4. Chock the wheels.
5. Install control lock.
6. Install pitot head cover
7. Lock all doors, if leaving the airplane unattended.
8. Tie the aircraft down.

GROUND HANDLING (CONTINUED)

JACKING

Jack the aircraft on level ground. Jacking should be done in no wind conditions and with no passengers in the aircraft. The tail may be lifted by inserting a bar through the tail boom attachment bracket and lifting at both ends of bar or, by jacking at the 'jack pad' located at arm 180. The main gear may be jacked at the ski attachment bracket on the inner end of the axle or by removing the gear fairings and rigging a pad further up on the gear leg and jacking at that point.

LEVELING AND WEIGHING

Utilizing the aft passenger floor, level longitudinally by placing a two foot level or digital inclinometer parallel to the aft seat rail, then lift and support the aircraft in a level flight attitude.

Level laterally by placing the level parallel to the wing spar on the seat rails and blocking the aircraft's main wheels as required to attain a level position.

To weigh the aircraft, place the aircraft in the level flight attitude on scales under the main and tail wheel positions and record the weights of each location. Record the status of the aircraft as weighed and equipment on board – i.e. no fuel, full oil (12 qt), front seats, etc.

SERVICING

ENGINE OIL

Oil Specification

MIL-L-6082 Aviation Grade Straight Mineral Oil:

This oil is used when the airplane is delivered from the factory and should be used to replenish the supply during the first 25 hours. This oil should be drained and the filter changed after the first 25 hours of operation. Refill the engine with MIL-L-6082 Aviation Grade Straight Mineral Oil and continue to use until a total of 50 hours has accumulated or oil consumption has stabilized.

MIL-L-22851 Aviation Grade Ashless Dispersant Oil:

This oil conforms to Textron Lycoming Service Instruction No. 1014, and all revisions and supplements thereto, **must be used** after the first 50 hours or once oil consumption has stabilized.

Recommended Viscosity for Temperature Range

Temperature	MIL-L-6082 SAE Grade	MIL-L-22851 Ashless Dispersant SAE Grade
Above 27°C (80°F)	60	60
Above 16°C (60°F)	50	40 or 50
-1°C (30°F) to 27°C (90°F)	40	40
-18°C (0°F) to 27°C (80°F)	30	30, 40 or 20W-40
Below -12°C (10°F)	20	30 or 20W-30
All Temperatures	- - -	15W-50 or 20W-50

Capacity of Engine Sump

The capacity of the engine sump and oil filter is 12 US quarts. The engine must not be operated on less than 3 US quarts as measured on the dipstick. For normal operation, fill to the 9 US quarts indication on the dipstick. For operations longer than three hours, fill to 12 US quarts on the dipstick.

Oil and Filter Change

The engine oil sump should be drained after the first 25 hours and the filter replaced. The sump should be refilled with straight mineral oil and continue to use until a total of 50 hours has accumulated or oil consumption has stabilized. A complete change to ashless dispersant oil and a suitable filter can then be made. Subsequent oil and filter changes should be made at time intervals set by the engine manufacturer.

NOTE

After the first 25 hours of operation a general inspection of the overall engine compartment is required. The inspection should include all items not usually included in a pre-flight inspection, including : hoses, lines and fittings for security, leaks and wear; intake and exhaust systems for security and cracks; engine controls for freedom and security; electrics for security, signs of insulation failure and loose or corroded connections. Check the alternator belt for tension and adjust as required by the Maintenance Manual instructions.

It is recommended that that a periodic inspection be made of these items at subsequent servicing intervals for oil changes.

FUEL

Approved Fuel Grades

The minimum grade of aviation fuel for the airplane is 100LL (blue) or 100 (green). The use of lower grades of fuel can cause serious engine damage in a short period of time and may also invalidate your engine's warranty.

NOTE

Isopropyl alcohol or diethylene monomethyl ether (DiEGME) may be added to the fuel supply. Additive concentrations shall not exceed 1% for isopropyl alcohol or 0.1% to 0.15% for DiEGME of total volume. Refer to Fuel Additives later in this section for additional information.

Fuel Capacity

100.0 U.S. Gallons total : 50 U.S. Gallons per side.

Fuelling

Service the fuel system after each flight and keep the tanks full to minimize condensation.

When fueling the aircraft proper precautions should be taken to ensure appropriate safety requirements are met, such as grounding the aircraft. The fuel dipstick is calibrated to measure accurately in both the landplane and seaplane configurations. Ensure that the proper calibration scale is being used. (Refer to Section 7.)

After each fueling and prior to each flight, the fuel should be examined to ensure that there are no contaminants such as water, dirt, rust or fungal and bacteria growth.

Each fuel system drain should be sampled by draining a cupful of fuel into a clear fuel sample cup.

If contaminants are discovered, then the fuel must be drained sufficiently until all contamination is removed.

Fuel Additives

In order to eliminate any free water from the tank sumps, the preflight draining instructions of Section 4 must be adhered to strictly. Any small quantities of water remaining in the fuel will be consumed normally and unnoticed by the engine.

Under certain conditions of high humidity on the ground followed by flight at high altitudes and low temperatures, it is possible that small amounts of water may precipitate in the fuel and freeze. This may be in sufficient quantities to cause partial icing in the engine fuel system.

Such conditions are rarely found but where they arise they must be countered appropriately.

In such situations it is permissible to counteract the possibility of fuel icing by adding isopropyl alcohol or diethylene monomethyl ether (DiEGME) compound to the fuel supply. The benefits of alcohol or the DiEGME compound are twofold: 1) the dissolved water is absorbed from the fuel; 2) the freezing temperature of fuel is depressed.

NOTE

It is important to realise that the desired fuel to additive ratio must be present throughout the entire contents of the fuel system and not just in the new fuel being added. Thus the amount of additive used in each tank must be matched to the entire contents of that tank.

If alcohol is used it must be blended with the fuel to obtain a concentration of 1% by volume. Higher concentrations are to be avoided as they can be detrimental to the fuel system materials.

For greatest effectiveness the alcohol must be completely dissolved in the fuel. The following procedure is recommended to ensure correct mixing :

- a. The alcohol should be poured directly into the fuel stream as it emerges from the refuelling nozzle.
- b. Alternatively the complete amount of alcohol may be premixed with some fuel in a container of 2-3 gallons capacity. The resulting mixture is then transferred to the tank before fuelling commences.
- c. The amount of alcohol to be used in each tank is to be prorated from 128 fluid ounces per 100 U.S. gallons of fuel.

Diethylene monomethyl ether (DiEGME) compound must be very carefully mixed with the fuel in concentrations of 0.10% (minimum) to 0.15% (maximum) of the total volume. The corresponding volumes are :

- a. The amount of DiEGME to be used in each tank is prorated from a minimum amount of 13 fluid ounces volume per 100 U.S. gallon, to a maximum of 19 fluid ounces per 100 U.S. gallon of fuel.

WARNING

ANTI-ICING ADDITIVE IS DANGEROUS TO HEALTH WHEN ABSORBED INTO THE SKIN AND/OR BREATHED.

WARNING

CAREFUL MIXING OF DiEGME WITH FUEL IS HIGHLY IMPORTANT. EXCEEDING A CONCENTRATION GREATER THAN THE RECOMMENDED MAXIMUM OF 0.15% BY VOLUME WILL RESULT IN DAMAGE TO THE FUEL TANKS AND SEALANT, AND DAMAGE TO THE O-RINGS AND SEALS USED IN THE ENGINE AND FUEL SYSTEM. A CONCENTRATION LESS THAN THE RECOMMENDED MINIMUM OF 0.10% BY VOLUME WILL BE INEFFECTIVE. TO ENSURE CORRECT PROPORTIONING USE ONLY BLENDING EQUIPMENT THAT IS RECOMMENDED BY THE MANUFACTURER.

After prolonged storage of the aircraft, water will build up and the additive will leach out of the fuel. This can be detected by observing an excessive amount of water accumulating in the sumps. The concentration of the additive can be measured using a differential refractometer. The manufacturer's technical manual must be followed explicitly to ensure accurate measurement of the additive's concentration.

Fuel System Drainage

The fuel system can be drained at four fuel tank drains, two header tanks drains and a fuel filter drain. The fuel tank drains are located on the underside of the wing at the inner and outer extremities of the fuel tanks. The two header tank drains are located at the starboard position of the forward belly pan. The fuel drain for the fuel filter is located at the center aft position of the engine exit cowl.

If system is to be dried out, wing tank covers would be removed and residual fuel swabbed or sponged dry; forward of fuel filter the fuel lines, pumps, injector and fuel flow manifold would have to be drained and purged of fuel.

UNDERCARRIAGE AND BRAKES

The standard tires used for the main undercarriage are 8.00 x 6 and are inflated to 35 psi (+ or – 2 lbs).

The tail-wheel is 10 x 3:50 x 4 inflated to 50 psi.

Suggested hydraulic fluid used for brakes is Aeroshell 81 or equivalent Mil Spec H5606G.

CLEANING AND CARE

WINDSHIELD AND WINDOWS

The plastic windshield and windows should be cleaned with an airplane windshield cleaner or mild soap and warm water. Rinse off all loose dirt with water before hand. Always apply the cleaning solution with a soft cloth or another non-abrasive material. Be sure to rinse off the solution thoroughly when you are done and dry the windows with a soft, clean, dry cloth or moist chamois. Once clean, a thin coat of wax should be applied, this will help fill in minor scratches and prevent further scratching.

NOTE

Never use gasoline, benzene, alcohol, acetone, carbon tetrachloride, anti-ice fluid or glass cleaner to clean the plastic.

PAINTED SURFACES

A clean exterior surface is important both to preserve the new look of your aircraft, as well as to achieve optimum flight characteristics. The airplane should be washed with a mild soap and water. Harsh abrasives or alkaline soaps or detergents should be avoided as they could scratch painted or plastic surfaces, or cause corrosion of metal.

To wash the airplane:

1. Rinse off any loose dirt with water
2. Apply cleaning solution with soft cloth or soft bristle brush
3. To remove exhaust stains, allow the solution to remain on the surface longer
4. Rinse all surfaces thoroughly
5. Dry aircraft with a soft absorbent cloth or chamois

To preserve the surfaces, any good silicone free wax may be used. Always use soft cloths or chamois to prevent scratching during cleaning or polishing. A heavier coating of wax on the leading edges of the wings and tail as well as the spinner and engine nose cap will help protect these surfaces from abrasion damage often encountered on these spots.

ENGINE AND ENGINE COMPARTMENT

Before cleaning the engine and engine compartment, it is important to cover up and protect certain elements of the engine to prevent the solvent from entering these areas. Particular care should be given to electrical equipment and intakes including; the engine magnetos, magneto vents, starter, alternator, induction air intakes and vacuum pump.

Once these areas are protected or removed before cleaning, ensure the engine is cold and then clean with a solvent or a mixture of solvent and degreaser. It may be necessary to brush the areas that were sprayed. Once the solvent has been applied, allow it to remain on the engine for 5 – 10 minutes, then rinse the engine with additional solvent and allow it to dry.

PROPELLER

Thorough preflight inspections of the propeller blades, as well as the spinner and backing plate for nicks, cracks and corrosion should be undertaken to assure safety. If any are found, they should be repaired as soon as possible by a licensed mechanic as they can cause vibrations leading to more serious cracks in the blade or loss of a propeller tip. It is recommended to keep the propeller clean to assure peak performance and to wax it periodically to prevent corrosion.

INTERIOR SURFACES

The interior of your aircraft has been designed with wear-resistant, lightweight durable surface materials designed for maximum usage with minimal upkeep. However, as with any interior or furnishing, its endurance and appearance is dependant upon the degree of care.

Loose dirt and dust on the floors can be picked up with a vacuum cleaner or easily swept out, as the doorsills on the Found are flush with the floor. Stubborn dirt on the floors or side panels may be wiped up with a cloth moistened in warm water. Mild soap may be used sparingly to remove grease. The soap may be removed with a clean damp cloth.

The seats and other upholstered furniture should be vacuumed regularly. When necessary, soiled upholstery (except leather) may be cleaned with good upholstery cleaner suitable to the material. Carefully follow the manufacturer's instructions. Avoid soaking or harsh rubbing.

The headliner, instrument panel, trim, and control knobs need only be wiped off with a damp cloth.

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