SERVICING

SECTION VII

SERVICING

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The purpose of this section is to help you keep your Baron in top condition between visits to your BEECHCRAFT Parts and Service Outlet. This information will aid you in determining when the airplane should be taken to a shop for periodic servicing or preventive maintenance and also will guide you should you choose or be obliged by circumstances to do some minor servicing yourself. The procedures are in no sense a substitute for the services of your BEECHCRAFT Parts and Service Outlet.

If you should have a question concerning the care of your Baron, it is important that you include the airplane serial number in any correspondence. The serial number appears on the model designation placard attached to the side of the fuselage forward of the baggage door.

GROUND HANDLING

The three-view drawing shows the minimum hangar clearances for a standard airplane. Allowances must be made for any special radio antennas.

CAUTION

To insure adequate propeller clearance, always observe recommended shock strut servicing procedures and tire inflation pressures.

TOWING

One man can move the airplane on a smooth and level surface with the hand tow bar. Attach the tow bar to the tow lug on the nose gear lower torque knee.

CAUTION

Do not exert force on propellers, control surfaces, or horizontal stabilizer. When towing with a tug, observe turn limits to prevent damage to the nose gear.

Care should be used when removing the tow bar to prevent damage to the lubrication fittings on the landing gear.

CONTROL LOCK

The control column pin assembly is placarded with the installation instructions. The placard reads:

(On instruction side)

INSTALLATION INSTRUCTIONS
INSTALL OTHER SIDE FACING PILOT

1. **CLOSE THROTTLES, INSTALL PIN BETWEEN LEVERS, THROUGH COLLAR LOCK & CONTROL COLUMN. (ROTATE CONTROL WHEEL APPROX 12° TO THE RIGHT)**
2. **ROUTE CABLE & RUDDER LOCK AROUND RIGHT SIDE OF CONTROL COLUMN, POSITION PEDALS IN AFT POSITION & INSTALL LOCK IN RUDDER PEDALS.**

(On side facing pilot with lock properly installed).

CONTROLS LOCKED REMOVE BEFORE FLIGHT

TIE-DOWN

In high wind conditions it is advisable to nose the airplane into the wind. Three tie-down lugs are provided: one on the lower side of each wing and a third at the rear of the fuselage.

1. Install the control lock.
2. Chock the main wheels, fore and aft.
3. Using nylon line or chain of sufficient strength, secure the airplane at the three points provided. DO NOT OVERTIGHTEN; if the line at the rear of the fuselage is excessively tight, the nose may rise and produce lift due to the angle of attack of the wings.

MAIN WHEEL JACKING

1. Insert the main wheel jack adapter into the main wheel axle. (If the shock strut is not inflated to the recommended height, it will be impossible to insert the adapter into the axle.)
2. A scissors-type jack is recommended for raising and lowering the wheel.

3. When lowering the wheel, exercise care to prevent compression of the shock strut, which would force the landing gear door against the jack adapter.

EXTERNAL POWER

When using external power, it is very important that the following precautions be observed.

1. The airplane has a negative ground system. Exercise care to avoid reversed polarity. Be sure to connect the positive lead of the external power unit to the positive terminal of the airplane's external power receptacle and the negative lead to the negative terminal of the external power receptacle. A positive voltage must also be applied to the small guide pin.

2. To prevent arcing, make certain no power is being supplied when the connection is made.

3. Make certain that the battery switch is ON, all avionics and electrical switches OFF, and a battery is in the system before connecting an external power unit. This protects the electronic voltage regulators and associated electrical equipment from voltage transients (power fluctuations).

RECHARGING BATTERY USING AUXILIARY POWER

1. Battery switch - ON.
2. Alternators, Electrical and Avionics Equipment - OFF
3. Connect external power unit

4. Set the output of the external power unit at 27.0 to 28.5 volts.
5. External power unit - ON.

If the battery relay will not close, the battery must be removed from the aircraft for recharging. Check the battery relay control circuit for a malfunction.

CHECKING ELECTRICAL EQUIPMENT

Connect an auxiliary power unit as outlined in Starting Procedures. Ensure that the current is stabilized prior to making any electrical equipment or avionics check.

NOTE

If the external power unit has poor voltage regulation or produces voltage transients the equipment connected to the unit may be damaged.

SERVICING

FUEL SYSTEM

FUEL CELLS

See Consumable Materials Chart for recommended fuel grades. The standard fuel system in the wing leading edge has a capacity of 106 gallons with a filler cap in each outboard leading edge. There are two optional fuel systems. One has a total capacity of 142 gallons with a filler cap in each wing box section, and the other has a total capacity of 172 gallons with a filler cap in each wing outboard leading edge. Refer to the LIMITATIONS section for the usable fuel in each system.

Ground the aircraft with a static line before refueling and secure the filler caps immediately after filling. Before letting the airplane stand for several days, it is a good practice to fill the wing fuel system to ensure that the cell inner liners do not dry out and crack, allowing fuel to diffuse through the cell walls. If the cells are to be drained before storage, a coating of light engine oil should be sprayed or flushed onto the inner liners of the cells as a preservative.

FUEL DRAINS

Open each of the snap-type fuel drains to purge any water from the system. The standard fuel system has a total of six drains and the optional systems have eight locations for draining the fuel system. The two sump drains extend through the bottom of each wing. There are two drains in each wing wheel well, one drain for the fuel strainer, and the other for the system low spot, which drains the interconnected fuel lines.

FUEL STRAINERS

To preclude the possibility of contaminated fuel, always cap any disconnected fuel lines or fittings. The fuel strainer in each wheel well should be inspected and cleaned with solvent at regular intervals. The frequency of inspection and cleaning will depend upon service conditions, fuel handling cleanliness, and local sand and dust conditions. At each 100-hour inspection the strainer plug should be removed from the fuel injection control valve and the fuel injection control valve screen washed in fresh cleaning solvent. After the strainer plug has been reinstalled and safetied, the installation should be checked for leakage.

CAUTION

Oil consumption tends to be higher during break-in periods on new engines. Prolonged flights should be avoided and oil level brought to full after each flight during this period.

Each engine has a sump capacity of 12 quarts. See Consumable Materials for specified oils. The oil system is replenished through an access door in the cowling; a calibrated dipstick attached to the filler cap indicates the oil level.

NOTE

Due to the canted engine installations, individual dipsticks are required for accurate measurement of the oil level in the left and right engine sumps. Each dipstick is marked for the proper engine.

The engine oil and oil filter should be changed every 75 hours under normal operating conditions. The engines should be at operating temperature to assure complete drainage.

1. Remove the cowling plug button below the aft inboard corner of the oil sump.
2. Open the oil drain valve.
3. Remove the oil filter and replace with a new unit. A torque of 18 to 20 foot-pounds should be applied to the nut of the oil filter.
4. Close oil drain valve and fill with oil.

The engine manufacturer recommends the use of ashless dispersant oils. In order to promote faster ring seating and oil control, a straight mineral oil may be used for the first change period or until oil consumption stabilizes. Dispersant oils must meet Continental Motors Corporation Specification MHS-24A.

Aviation Grade Oil	Average Ambient Air Temperature
SAE 50	Above 40°F
SAE 30	Below 40°F

BATTERY

LEAD ACID

Access to the battery is obtained by opening the forward utility compartment door and removing the battery box cover in the floor of the compartment. Check the battery electrolyte level after each 25 hours of operation; maintain the electrolyte level to cover the plates by adding distilled battery water. Avoid filling over the baffles and never fill more than one-quarter inch over the separator tops. Excessive water consumption may be an indication that the voltage regulators require resetting. The specific gravity of the electrolyte should be checked periodically and maintained within the limits placarded on the battery.

The battery box is vented overboard to dispose of electrolyte and hydrogen gas fumes discharged during the normal charging operation. To insure the disposal of these fumes the vent hose connections at the battery box should be checked frequently for obstructions.

NICKEL-CADMIUM

The two nickel-cadmium batteries connected in series are accessible by removing the battery cover located at floor level on the right side of the nose baggage compartment. The nickel-cadmium battery is highly valued because it has the potentional for years of reliable service; however, careful maintenance is required to obtain this service. Nickel- cadmium batteries are significantly different from lead acid batteries. When service is required for your nickel-cadmium battery, it is recommended it be serviced at a qualified Nickel-Cadmium Battery shop.

TIRES

An inflation pressure of 52 to 56 psi should be maintained on the 6.50x8 main wheel tires and 55 to 60 psi on the 5.00x5 nose wheel tire. Maintaining proper tire inflation will minimize tread wear and aid in preventing tire rupture caused from running over sharp stones and ruts. When inflating tires, visually inspect them for cracks and breaks.

SHOCK STRUTS

The following procedures may be used for servicing both the main and the nose gear shock struts.

To Inflate Struts:

1. Check to see that the airplane is empty except for full fuel and oil.

2. While rocking the airplane gently to prevent possible binding of the piston in the barrel, inflate the shock strut until the main gear piston is extended 3 inches (3-1/2 to 3-3/4 inches on the nose gear).

WARNING

Never fill shock struts with oxygen.

CAUTION

If a compressed air bottle containing air under extremely high pressure is used, exercise care to avoid over-inflating the strut.

3. Remove all foreign material from the exposed piston with a soft cloth moistened with hydraulic fluid.

To Replenish Strut Hydraulic Fluid:

1. Remove the air valve cap, depress the valve core, and allow the strut to fully compress.
2. Raise and block the strut 1/4 inch from the compressed position.

WARNING

Do not remove the valve body assembly until all air pressure has been released or it may blow off, causing injury to personnel or damage to equipment.

3. Carefully remove the valve body assembly.

4. Fill the strut to the level of the valve body assembly with hydraulic fluid.
5. Slowly extend the strut from the blocked position and replace the valve body assembly.
6. Depress the valve core and completely compress the strut to release excess air and oil.
7. Inflate the strut as described in the preceding inflation procedure.

BRAKES

The brake hydraulic fluid reservoir is accessible through the nose baggage compartment. A dipstick is attached to the reservoir cap. Refer to Consumable Materials for hydraulic fluid specification.

The brakes require no adjustments, since the pistons move outward to compensate for lining wear.

INDUCTION AIR FILTERS

The filters should be inspected for foreign matter at least once during each 50-hour operating period. In adverse climatic conditions or if the airplane is stored, preflight inspection is recommended.

To service the filters:

1. Remove the access plate in the top of the engine cowling.

2. Remove the filter and clean as noted by the manufacture's instructions on the filter.

3. Reinstall the filter and the plate.

PRESSURE PUMP AND INSTRUMENT AIR FILTERS

The filters should be inspected for foreign matter at least once during each 100 hour operating period. In adverse climatic conditions or if the airplane is stored, preflight inspection is recommended for the filter located on the rear baffle of the engine. If a decrease in normal pressure is noted on the pressure gage, the filters must be examined for possible blockage before adjustment is made to the pressure regulating valves.

PROPELLER ANTI-ICE TANK (FLUID)

The tank is located beneath the floor on the left side of the forward baggage compartment. The filler cap is accessible through an access door in the floor of the compartment. Capacity is 3 U.S. gallons of anti-ice fluid (see Consumable Materials). The tank should be drained and flushed twice a year.

OXYGEN SYSTEM

WARNING

Keep hands, tools, clothing, and oxygen equipment clean and free from grease and oil. KEEP FIRE AWAY FROM OXYGEN.

1. Read the pressure indicator on the left side panel. (The shutoff valve on the oxygen cylinder must be open.) If

the oxygen cylinder is equipped with a gage, system pressure may be checked at the cylinder.

CAUTION

Always open the cylinder shutoff valve slowly to prevent damage to the system.

2. Make certain that the oxygen control valve is closed (push in).

3. Close the cylinder shutoff valve, remove the cap from the filler valve, and attach the recharging outlet.

4. Open the cylinder shutoff valve and fill the cylinder to 1800 ± 50 psi (add 3.5 psi per degree above 70°F; subtract 3.5 psi per degree below 70°F).

5. Close the cylinder shutoff valve, remove the recharging outlet, and replace the filler valve cap.

6. Reopen the cylinder shutoff valve to prepare system for use.

OXYGEN CYLINDER RETESTING

Oxygen cylinders used in the airplane are of two types. Light weight cylinders, stamped "3HT" on the plate on the side, must be hydrostatically tested every three years and the test date stamped on the cylinder. This bottle has a service life of 4,380 pressurizations or fifteen years, whichever occurs first, and then must be discarded. Regular weight cylinders, stamped "3A", or "3AA", must be hydrostatically tested every five years and stamped with the retest date. Service life on these cylinders is not limited.

RUBBER SEALS

To prevent sticking of the rubber seals around the windows, doors, and engine cowling, the seals should be coated with Oakite 6 compound. The compound is non-injurious to paint and can be removed by employing normal cleaning methods.

HEATING AND VENTILATING SYSTEM

The heater fuel pump strainers in the nose wheel well should be removed and cleaned after each 100 hours of airplane operation. Remove the fuel strainers by turning the base of each pump counterclockwise. Wash the strainers in clean unleaded gasoline and dry with compressed air.

The iris valve at the heater blower inlet should be lubricated occasionally with molybdenum disulfide (see Consumable Materials). The valve should never be lubricated with oil or any liquid lubricant which would collect dust.

Do not replace the overheat fuse until a thorough inspection of the system has determined the cause of its blowing and the malfunction has been corrected.

ALTERNATORS

Since the alternator and electronic voltage regulator are designed for use on only one polarity system, the following precautionary measures must be observed when working on the charging circuit or serious damage to the electrical equipment will result.

1. When installing a battery, make certain that the ground polarity of the battery and the ground polarity of the alternator are the same.

2. When connecting a booster battery, be sure to connect the negative battery terminals together and the positive battery terminals together.

3. When using a battery charger, connect the positive lead of the charger to the positive battery terminal and the negative lead of the charger to the negative battery terminal.

4. Do not operate an alternator on open circuit. Be sure all circuit connections are secure.

5. Do not short across or ground any of the terminals on the alternator or electronic voltage regulator.

6. Do not attempt to polarize an alternator.

MAGNETOS

Ordinarily, the magnetos will require only occasional adjustment, lubrication, and breaker point replacement. This work should be done by your BEECHCRAFT Parts and Service Outlet.

WARNING

To be safe, treat the magnetos as hot whenever a switch lead is disconnected at any point; they do not have an internal automatic grounding device. Otherwise, all spark plug leads should be disconnected or the cable outlet plate on the rear of the magneto should be removed.

PROPELLERS

Propeller operation, servicing, and maintenance instructions are contained in the propeller manufacturer Owner's Manual included in your service information kit.

WARNING

When servicing a propeller, always make certain that the magneto/start switch is off and that the engine has cooled completely. WHEN MOVING A PROPELLER, STAND IN THE CLEAR as there is always some danger of a cylinder firing when a propeller is moved.

CLEANING

EXTERIOR PAINTED SURFACES

CAUTION

Do not apply wax or polish for a paint cure period of 90 days after delivery. Waxes and polishes seal the paint from the air and prevent curing. Wash uncured painted surfaces with cold or lukewarm water and a MILD NON-DETERGENT SOAP. Any rubbing of the surface should be done gently and held to a minimum to avoid marring the paint film.

Prior to cleaning, cover the wheels, making certain the brake discs are covered. Attach the pitot cover securely, and plug or mask off all other openings. Be particularly careful to mask off both static air buttons before washing or waxing.

Flush loose dirt away with clean water, then wash with a mild soap and water. Avoid harsh, abrasive, or alkaline soaps or detergents which could cause corrosion or scratches. To remove stubborn oil and grease, use a cloth dampened with aliphatic naphtha (see Consumable Materials). After being cleaned with naphtha, the surface should be re-waxed and polished. To prevent scratches, use soft cleaning cloths or a chamois when cleaning and polishing. Any good grade of automotive wax or polish can be used on painted surfaces.

WINDSHIELD AND WINDOWS

The windshield and plastic windows should be kept clean and waxed at all times. To prevent scratches, wash the windows carefully with plenty of soap and water, using the palm of the hand to feel and dislodge dirt and mud. A soft cloth, chamois or sponge may be used, but only to carry water to the surface. Rinse thoroughly, then dry with a clean, moist chamois. Rubbing the surface of the plastic with a dry cloth builds up an electrostatic charge which attracts dust particles in the air.

Remove oil and grease with a cloth moistened with kerosene. Never use gasoline, benzine, alcohol, acetone, carbon tetrachloride, fire extinguisher fluid, anti-ice fluid, lacquer thinner or glass cleaner. These materials will soften the plastic and may cause it to craze.

After thoroughly cleaning, the surface should be waxed with a good grade of commercial wax. The wax will fill in minor scratches and help prevent further scratching. Apply a thin, even coat of wax and bring it to a high polish by rubbing lightly with a clean, dry, soft flannel cloth. Do not use a power buffer; the heat generated by the buffing pad may soften the plastic.

SURFACE DEICE BOOTS

The surfaces of the deice boots should be checked for indication of engine oil after servicing and at the end of each flight. Any oil spots that are found should be removed with a non-detergent soap and water solution. Care should be exercised during cleaning. Avoid scrubbing the surface of the boots as this will tend to remove the special graphite surfacing. The deice boots are made of soft, flexible stock which may be damaged if gasoline hoses are dragged over the surface of the boots or if ladders and platforms are rested against them.

ENGINE

Clean the engine with kerosene, solvent, or any standard engine cleaning solution. Spray or brush the fluid over the engine, then wash off with water and allow to dry.

INTERIOR

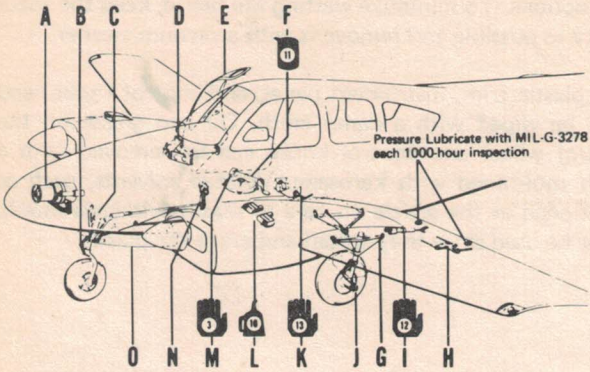
To remove dust and loose dirt from the upholstery, headliner, and carpet, clean the interior regularly with a vacuum cleaner.

Blot up any spilled liquid promptly with cleansing tissue or rags. Do not pat the spot; press the blotting material firmly and hold it for several seconds. Continue blotting until no more liquid is taken up. Scrape off sticky materials with a dull knife, then spot-clean the area.

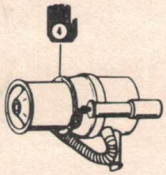
Oily spots may be cleaned with household spot removers, used sparingly. Before using any solvent, read the instructions on the container and test it on an obscure place on the fabric to be cleaned. Never saturate the fabric with a volatile solvent; it may damage the padding and backing materials.

Soiled upholstery and carpet may be cleaned with foam-type detergent used according to the manufacturer's instructions. To minimize wetting the fabric, keep the foam as dry as possible and remove it with a vacuum cleaner.

The plastic trim, instrument panel, and control knobs need only be wiped with a damp cloth. Oil and grease on the control wheel and control knobs can be removed with a cloth moistened with kerosene. Volatile solvents, such as mentioned in the article on care of plastic windows should never be used since they soften and craze the plastic.

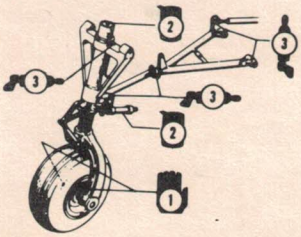


A



HEATER IRIS VALVE

B

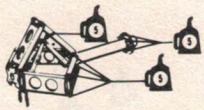


NOSE GEAR RETRACT

C

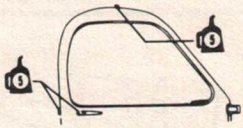
NOSE WHEEL STEERING

D



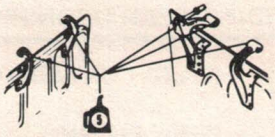
CONTROL COLUMN LINKAGE

E



CABIN DOOR

G

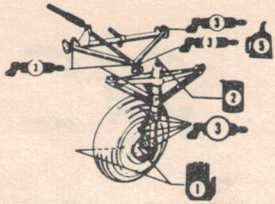


LANDING GEAR DOOR HINGES

H

AILERON BELL CRANKS

J

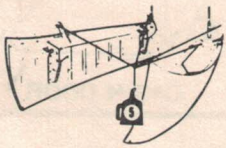


MAIN GEAR RETRACT

N

RUDDER PEDALS

O



LANDING GEAR DOOR HINGES

	FLUID CONTAINER
	ZERK FITTING
	HAND OR PACK
	SQUIRT CAN

NOTE

Letters are keyed to the Service Schedule; numbers refer to items in Consumable Materials.

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RECOMMENDED SERVICING SCHEDULE

INTERVAL	ITEM	LOCATION (Letters refer to Lubrication Points Diagram)	MATERIALS (Numbers refer to Item in Consumable Materials)
Pre-flight	Drain Fuel Cell Drains	Lower wing surface	–
	Drain Fuel Strainer Drains	In main wheel wells	–
	Drain Fuel System Low Spot Drains	In main wheel wells	–
	Check Engine Oil Level	Access door on upper cowling	(6)
25 Hrs	Check Battery Electrolyte Level	Fwd baggage compartment under floor	Distilled water only

50 Hrs	Clean Engine Induction Air Filter	Air intake top of nacelle	(9) Clean per instructions on filter
75 Hrs	Change Engine Oil	Through cowl opening	(6)
	Replace Engine Oil Filter	Access plate on left cowling door	Hastings oil filter P-128
100 Hrs	Clean Fuel Strainers	In wheel wells	(9) Clean with solvent and blow dry with compressed air
	Clean Fuel Injection Control Valve Screen	Access door on side of nacelle	(9) Clean with solvent and blow dry with compressed air
	Clean Heater Fuel Pump Strainers	Nose wheel well	(9) Clean with solvent and blow dry with compressed air
	††Landing Gear Uplock Rollers	Main landing gear (J)	(3)
	Clean and Check Spark Plugs	Under cowl, both sides engine	—

INTERVAL	ITEM	LOCATION (Letter refers to Lubrication Points Diagram)	MATERIALS (Numbers refer to Item in Consumable Materials)
100 Hrs. (Cont'd)	Check Magneto Timing	Engine compartment	–
	Lubricate Landing Gear Door Hinges	Landing gear wheel wells (G) (0)	(5)
	Lubricate Nose Wheel Steering Mechanism	Nose wheel well (C)	(3)
	Lubricate Landing Gear Retract Mechanism	Nose wheel and main gear wheel wells, (B) (J)	(2)(3)(5)
	Lubricate Wheel Bearings	Landing gear (B) (J)	(1)
	Lubricate Cabin Door Mechanism	Cabin door latch (E)	(5)
	Lubricate Aileron Bell Cranks	Access panel underside wings (H)	(5)
	Lubricate Control Column Linkage	Forward of instrument panel (D)	(5)
	Lubricate Rudder Pedals	Cockpit (N)	(5)
	Drain Static Air Lines	Left forward cabin sidewall	–

300 Hrs	Landing Gear Motor Reduction Gears	Under floor, center of cabin (M)	(3)
	Service Landing Gear Actuator Gearbox	Under floor, center of cabin (F)	(11)
	Lubricate Flap Actuators	Forward of flap underside of wing (I)	(12)
	Lubricate Flap Motor Reduction Gears	Under floor, in cabin (K)	(13)
	Rod End Bearings	Control System and Landing Gear	Oil or Grease as req.
500 Hrs	Replace Pressure System Filters	Aft of engine firewall	Airborne IJ4-7
	Replace Pressure System Inlet Filter	Rear engine baffle	Airborne D9-14-1
As Req	Service Wing Fuel System	At wing fillers (1 each side)	(7)
	Service Propeller Anti-Ice Reservoir	Under left floorboard, forward baggage compartment	(8)
	Service Oxygen Cylinder	Nose baggage compartment	(19)
	Service Brake Fluid Reservoir	Nose baggage compartment	(2)

INTERVAL	ITEM	LOCATION (Letters refers to Lubrication Points Diagram)	MATERIALS (Numbers refer to Item in Consumable Materials)
As Req. (Cont'd)	Drain Moisture from Engine Oil Sump	Through cowl flap opening	–
	Service Main Gear Struts	Top of each strut (J)	(2)(3)(5)
	Service Nose Gear Strut	Top of strut (B)	(2)(3)
	Service Shimmy Dampener	Nose landing gear (B)	(2)
	Check Brake Lining Wear	Main landing gear wheels	–
	Lubricate Heater Iris	Forward nose compartment (A)	(4)

†† The uplock roller will require only greasing through the zerk installed in the bolt head, at each 100 hours.

LAMP BULB REPLACEMENT GUIDE

LOCATION	*NUMBER*
Dome light, cabin	1864
Electrical panel light	327
Flap position indicator light	327
Fuel selector panel light	327
Ice light	A-7796A-24
Instrument light, flood	313
Instrument light, post	327
Landing gear position light	327
Landing light	4596
Map light	303
Navigation light, tail	1203
Navigation light, wing	MS 25309-7512
Alternator out light	327
Reading light	303
Rotating beacon	A-7079B-24
Tab position indicator light	1819
Taxi light	4626

CONSUMABLE MATERIALS

ITEM	*MATERIAL*	*SPECIFICATION*
1.	Lubricating Grease, High Temperature	MIL-G-3545
2.	Hydraulic Fluid	MIL-H-5606
*3.	Lubricating Grease, General Purpose	MIL-G-7711
4.	Molybdenum Disulfide	MIL-M-7866
5.	Lubricating Oil	SAE No. 20
**6.	Engine Oil	SAE 30 (Below 40°F) SAE 50 (Above 40°F)
***7.	Engine Fuel	Grade 100/130 (Green)
8.	Anti-Ice Fluid	MIL-F-5566
9.	Solvent	Federal Specification, PD680
10.	Lubricant	Scintilla 10-86527
11.	Lubricant	Mobil Compound GG
12.	Lubricating Oil, Gear	MIL-L-6086, Grade M
13.	Grease, Aircraft and Instrument	MIL-G-3278
†14.	Lubricant, Rubber Seal	Oakite 6 Compound
15.	Naphtha, Aliphatic	Federal Specification, TT-N-95

16.	Thread Compound, Anti-Seize and Sealing, Oxygen Systems	MIL-T-5542
††17.	Tape, Antiseize, Tetrafluorethylene	MIL-T-27730
18.	Leak Test Compound, Oxygen Systems	MIL-L-25567
19.	Oxygen, Aviator's Breathing	MIL-O-27210

* In extremely cold climates use MIL-G-3278 grease in place of MIL-G-7711. (These greases harmful to paint.)

** Ashless dispersant oil (Continental Motors Corp. Spec. MHS-24A) recommended; a straight mineral oil is acceptable for break-in period. See servicing data

*** If 100/130 grade fuel (green) not available, use 115/145 grade fuel (purple).

† Product of Oakite Products, Inc., New York, New York.

†† For sealing threads on high pressure oxygen lines.

APPROVED ENGINE OILS

COMPANY	*BRAND NAME*
BP Oil Corporation	B/P Aero Oil D65/80
Castrol Limited (Australia)	Grade 40, Castrolaero AD, Type III Grade 50, Castrolaero AD, Type II
Continental Oil Co.	*Conoco Aero S No. 65 (SAE 30) *Conoco Aero S No. 80 (SAE 40) Conoco Aero S (SAE IOW30)
Delta Petroleum Co.	Delta Avoil - Grades 30, 40 & 50
Gulf Oil Corporation	*Gulfpride Aviation Series D
Humble Oil & Refining Co.	Esso Aviation & Enco Aviation in Grades E65, E80, E100, E120, & A100
Kendall Refining Company	*Kendall Aviation Oil, Type D
Pennzoil Company	Pennzoil Aircraft Engine Oil Heavy Duty Dispersant, Grades 30, 40, & 50
Phillips Petroleum Co.	Phillips 66 Aviation Oil Type A (Replaced HD Aviation Oil)
Quaker State Oil & Ref. Corp.	Quaker State AD Aviation Engine Oil Grades 20W/30, 40, & 50

COMPANY	*BRAND NAME*
Shell Oil Company	Aeroshell Oil W Aeroshell Oil W (in 4 grades) Grade 120 (Nominal SAE 60)- Military Grade 1120 Grade 100 (Nominal SAE 50)- Military Grade 1100 Grade 80 (Nominal SAE 40)- Military Grade 1080 Grade 65 (Nominal SAE 20 or 30) Military Grade 1065
Sinclair Refining Co.	Sinclair Avoil 20W 40
Socony-Mobil	*Aero Red Band HD (SAE 50) *Aero Gray Band HD (SAE 40) *Aero White Band HD (SAE 30) Mobil Aero Oil 65 Mobil Aero Oil 80 Mobil Aero Oil 100 Mobil Aero Oil 120 (Ashless Dispersant Aviation Engine Oil)
Std. Oil of California	*RPM Aviation Oil (Compounded)
Texaco, Inc.	*Texaco Aircraft Engine Oil D100 *Texaco Aircraft Engine Oil D80 Texaco Aircraft Engine Oil Premium AD, Grades 65, 80, & 100
Union Oil of California	Union Engine Oil HD Grades 80 & 100

The oil designated with an * are residue type oils.
The balance of the oils are ashless.

OVERHAUL AND REPLACEMENT GUIDE

With the exception of power plant components, all overhaul and replacement times are considered a guide only, and are not mandatory. Various climatic and other conditions may either extend or decrease these times. When inspections and service experience indicate, overhaul or replacement periods may be adjusted accordingly. All items not included in this listing are to be overhauled or replaced when necessary.

COMPONENT	OVERHAUL OR REPLACE
LANDING GEAR	
Brake master cylinder	On Condition
Parking brake valve	On Condition
Wheel brake assembly	On Condition
Main gear assembly	Every 2000 hours
Nose gear assembly	Every 2000 hours
Shimmy dampener	Every 1000 hours
Landing gear actuator assembly and motor	Every 2000 hours
All hose	On condition
WING FLAPS	
Flap motor and gear box	Every 2000 hours
Flap actuator	Every 2000 hours

COMPONENT	OVERHAUL OR REPLACE
POWER PLANT	
Engine	*Every 1500 hours
Propeller	At engine overhaul or at engine failure but do not exceed 1500 hours or 3 years
Propeller governor	At engine overhaul but not to exceed 1500 hours or 3 years
All hose	On Condition
All hose carrying flammable fluids	Replace at engine overhaul or every 5 years
FUEL SYSTEM	
Fuel selector valve	Inspect every 500 hours, overhaul every 1200 hours
Auxiliary fuel pump	Every 1200 hours
Fuel line check valve	On Condition
Fuel cell vent line check valve	On Condition
Fuel line drain valve	On Condition
Fuel cell drain valve	On Condition
All hose	On Condition
All hose carrying flammable fluids	Replace at engine overhaul or every 5 years

COMPONENT	OVERHAUL OR REPLACE
ELECTRICAL SYSTEM	
Landing gear dynamic brake relay	On Condition
Battery master relay	On Condition
Voltage regulator (generator only)	On Condition
Paralleling relay	On Condition
Heater vibrator points	Replace after each 2000 hours of heater operation
UTILITY SYSTEMS	
Cabin heater	Overhaul and pressure test each 500 hours of heater operation
Heater blower	On Condition
Heater fuel pump	On Condition
Heater fuel shutoff valve	On Condition
Vacuum regulator	Replace when vacuum-driven instruments operate erratically
Propeller anti-ice pump	On Condition

COMPONENT	OVERHAUL OR REPLACE
UTILITY SYSTEMS (Cont'd)	
Oxygen regulator	Every 2000 hours or 48 months
Oxygen cylinder	Overhaul and hydrostatically test every 5 years
All hose	On Condition
INSTRUMENTS	
Manifold pressure indicator	On Condition
Multiple engine instrument	On Condition
Fuel pressure indicator	On Condition
Airspeed indicator	On Condition
Altimeter	Every 24 months per FAA Directive
Directional gyro	On Condition
Attitude gyro	On Condition
Tachometer	On Condition
Suction gage	On Condition
Turn coordinator	On Condition
Deice pressure gage	On Condition
All hose	On Condition

*The recommended engine overhaul period applies only to engines with nickel coated exhaust valves or nimonic exhaust valves, provided that normal periodic inspections are properly carried out. Engines that should conform to a shorter TBO period are listed in Continental Motors Corporation Service Bulletin M68-15, dated September 25, 1968. Continental recommends a maximum of 1200 hours TBO on engines employed in aerial top dressing, dusting, or spraying.

With particular attention to throttle response, smooth power and oil consumption, a qualified certificated mechanic must determine that the engine is operating normally at the time of each periodic inspection.