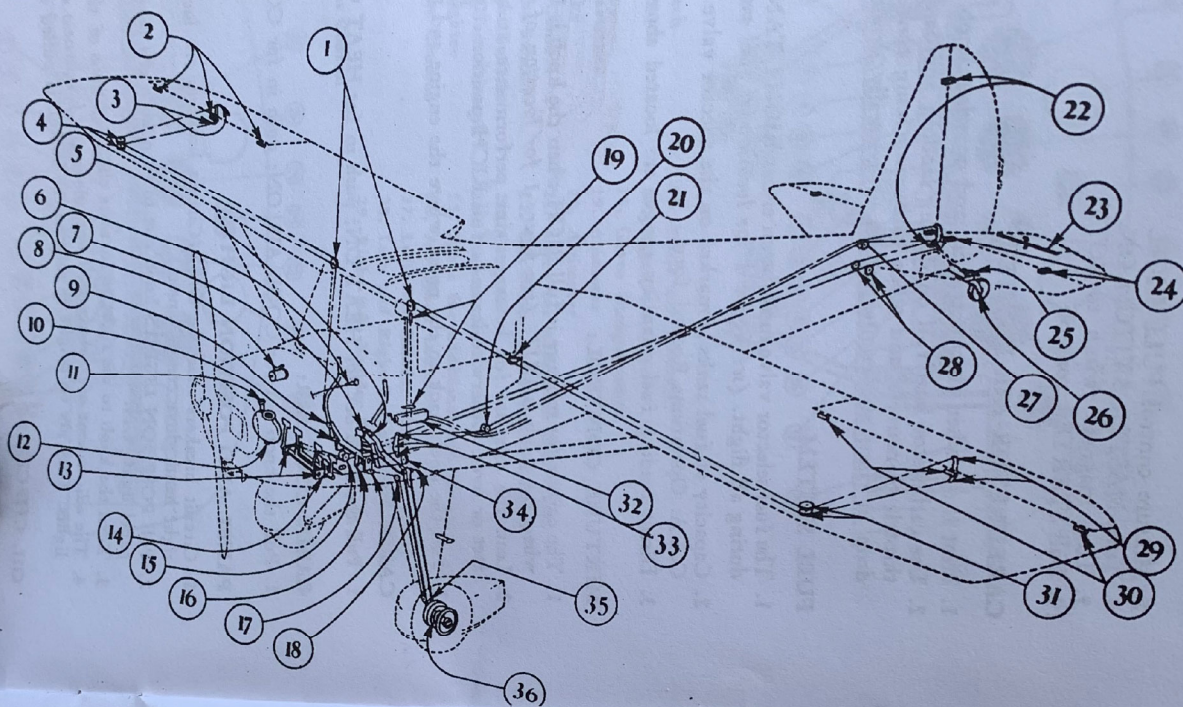


LUBRICATION CHART

LUSCOMBE SILVAIRE MODEL 8E



	Lubricant	Hrs.
1. Upper Aileron Cable Pulleys.....	AN-O-6	100
2. Aileron Hinge Bearings.....	AN-O-6	25
3. Cable Clevis Pins.....	AN-O-6	25
4. Aileron Cable Pulleys.....	AN-O-6	100
5. Oleo Cylinder (See Note Below).....	AN-O-6	100
6. Instrument Panel Controls.....	AN-O-6	25
7. Landing Gear Center Bolt.....	AN-O-6	25
8. Starter Shift Arm (Model 8E only).....	AN-O-6	25
9. Control Stick Bearings, (Left and Right).....	AN-O-6	25
10. Control Stick Support Bearings, (Left and Right).....	AN-O-6	25
11. Engine Oil Filler.....	AN-O-6	25
(Check before each flight)		
(Drain & Refill every 25 hours).	AN-O-8	
(See chart for Grade).		
12. Engine Oil Drain.....		25
13. Rudder Pedal Bearings, (2 Left, 2 Right).....	AN-O-6	25
14. Brake Pedals.....	AN-O-6	25
15. Rudder Cable Pulleys.....	AN-O-6	100
16. Elevator Push-Pull Tube.....	AN-O-6	25
17. Brake Cable Pulleys (6).....	AN-O-6	100

	Lubricant	Hrs.
18. Landing Gear Hinge Pin, (1 Left, 1 Right).....	AN-G-3	25
19. Door Hinges, (2 Left, 2 Right).....	AN-O-6	25
20. Elevator Cable Pulleys.....	AN-O-6	100
21. Door Catch, (1 Left, 1 Right).....	AN-O-6	25
22. Rudder Hinge Bearings.....	AN-O-6	25
23. Trim Tab Hinge.....	AN-O-6	25
24. Elevator Hinge Bearings, (2 Left, 2 Right).....	AN-O-6	25
25. Tail Wheel Swivel.....	AN-O-6	25
26. Tail Wheel Bearing.....	AN-G-3	25
27. Elevator Cable Pulleys.....	AN-G-5	100
28. Rudder Cable Pulleys.....	AN-O-6	100
29. Cable Clevis Pins.....	AN-O-6	100
30. Aileron Hinge Bearings.....	AN-O-6	25
31. Aileron Cable Pulleys.....	AN-O-6	25
32. Tab Pulley and Mechanism.....	AN-O-6	100
33. Elevator Bell Crank.....	AN-O-6	100
34. Lower Aileron Cable Pulleys (1 Left, 1 Right).....	AN-O-6	25
35. Brake Actuating Arms (1 Left, 1 Right).....	AN-O-6	100
36. Landing Gear Wheel Bearings, (Remove, Clean, Repack).....	AN-G-5	100

ENGINE OIL CHART

Outside Air Temperature	Above 100 F.	100 to 70 F.	70 to 32 F.	Below 32 F.
Grade of Oil.....	S.A.E. 50	S.A.E. 40	S.A.E. 30	S.A.E. 20

OLEO CYLINDER — To fill, remove plug in top of cylinder. With all wheels on ground fill unit to level marked on gauge with "90" or equivalent.

STARTER, GENERATOR, MAGNETOS — These have oil sealed bearings and are factory serviced.

FIXTURES, LINKAGE, "Etc." — Should be kept clean and oiled moderately with AN-O-6.

2. Access to the oil filler cap is provided by opening right side of the engine cowl.
3. Capacity 4.5 qts. Minimum operating level 2.5 quts.
4. Use SAE 40-50 for summer operation; SAE 20-30 for winter operation.

OPERATING RECOMMENDATIONS

TACHOMETER:

1. Maximum RPM — 2575 (Radial red line on instrument).
2. Cruising RPM — 2350.
3. Idle RPM — 550.

OIL PRESSURE:

1. Maximum Oil Pressure — 48 lbs. per sq. inch.
2. Normal Operating Pressure — 38 to 40 lbs. per sq. inch.
3. Minimum Operating Pressure — 25 lbs. per sq. inch.

OIL TEMPERATURE:

1. Maximum Oil Temperature — 220° F.
2. Normal Operating Temperature — 120° F. to 200° F.
3. Caution Operating Temperature — 40° F. to 120° F.

AIR SPEED:

1. Never exceed speed — 145 mph (T.I.A.S.) (red line).
2. Normal Operating Speeds — 48 to 112 mph (T.I.A.S.).
3. Stalling Speed — 48 mph (T.I.A.S.).

PERFORMANCE INFORMATION:

NOTE: True Indicated Airspeeds — Gross weight — sea level conditions are given.

1. Stalling Speed — 48 mph.
2. Take-Off Distance — 575 feet on a hard turf surface.
3. Landing Ground Roll — 450 feet hard turf surface.
4. Rate of Climb — 800 feet per minute at 72 miles per hour.
5. Due to reduced air density at higher altitudes wing lift and engine power are reduced with resulting performance reduction. Take-off and landing distances are increased and rate of climb reduced. For each 1,000 feet of increased altitude above sea level add 3% of Take-Off and Landing run.

Examples:

1. At 10,000 feet altitude add 3 x 10 or 30% to the sea level performance. Take-Off run, $30\% \times 575 = 172.5$, 575 plus 172.5 = 747.5. Landing distance, $30\% \times 450 = 135$, 450 plus 135 = 585 feet.
2. At 5,000 feet altitude add 15% to the sea level performance. Take-

Off
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The above

ENGINE C

By a simple
the engine for
the cowl a
screw driver.

To remove
the propeller
the back part
the cowl only

BATTERY:

The 12-volt
of the baggage
removable part
battery may be
two retainer nuts
lifting off the
nuts and safety
Check water

INSPECTION

Inspection of
action of a met
loosen the two
the line of the s
be slid off. To

WINDSHIELD

Use good quality
areas. Patented
solvent action on

SEAT CUSHION

Spots or stains
— before they h
There are two
1. Volatile ch
chloride or
(*methyl methacrylate.

Off run — $15\% \times 575 = 86.2$, 575 plus 86.2 = 661.2. Landing distance — $15\% \times 450 = 67.5$, 450 plus 67.5 = 517.5.

The above figures are arbitrary for normal conditions.

SERVICE HINTS

ENGINE COWL:

By a simple arrangement of cowl fasteners, access may be easily made to the engine for routine servicing. To open the cowl, turn each fastener on the cowl a quarter turn counter-clockwise with a coin, key, knife, or screw driver.

To remove the cowl assembly for engine overhaul it is necessary to remove the propeller bolts, lift the propeller off, and then remove the screws around the back part of the cowl at the firewall bulkhead. To completely remove the cowl only about 20 minutes are required.

BATTERY:

The 12-volt battery is mounted in a metal box on a platform just back of the baggage compartment on the right side. For access to the battery, a removable partition is supplied at the back of the baggage compartment. The battery may be removed for servicing by cutting the safety wire from the two retainer nuts on the battery box cover, removing the wire and nuts, and lifting off the cover. When replacing battery box cover be sure to replace nuts and safety them in place.

Check water level of battery every two weeks.

INSPECTION COVERS:

Inspection covers on wings and fuselage are held in place by the clamping action of a metal strip and two screws. To remove an inspection cover first loosen the two screws and then slide the cover in either direction parallel to the line of the screws. The opposite end will drop free and the cover can then be slid off. To replace the cover reverse the procedure.

WINDSHIELD AND WINDOWS:

Use good quality soap, clean water, and clean soft cloths to clean these areas. Patented cleaners should be used cautiously, because of their possible solvent action on the plastic material* used in the construction of these parts.

SEAT CUSHIONS:

Spots or stains on the upholstery should be removed as soon as convenient — before they have a chance to soak in and dry.

There are two basic types of cleaners generally available:

1. Volatile cleaners — colorless liquids generally having carbon tetrachloride or naphtha as a base.

(*methyl methacrylate. Also known by the trade names of Plexiglas and Lucite)

In most cases volatile cleaners are recommended, especially if the upholstery is a flat fabric such as broadcloth or Bedford Cord. In using volatile cleaners, here are a few special directions that are well worth following:

1. Don't use too much fluid.
2. Carefully brush off all loose particles of dirt.
3. Wet a small, clean cloth with the cleaning solution, wring out thoroughly.
4. Tap the spot lightly with the cloth, but don't rub it. This will pick up particles which are too embedded to be removed by brushing. Repeat several times, using a clean part of the cloth each time.
5. Moisten another piece of clean cloth with cleaner and allow to evaporate until barely damp. Now rub the spot lightly, working from the outside in toward the center. (This, as you probably know, keeps the spot from spreading and is less likely to leave a ring.) If necessary, repeat several times.
6. Brush again to remove any further particles which may have become loosened.

CARE OF ALUMINUM

The manufacturers of modern metal airplanes use a high tensile strength, aluminum alloy.

These alloys are protected from corrosion by a coating of pure aluminum. They are known as "Alclad" and "Pureclad".

It is important to remember that the polishes are non-corrosive, non-toxic and non-flammable.

It is important to remember that the polishes and waxes used should be non-corrosive, non-toxic, and only mildly abrasive. "Klad Polish", manufactured by the R. M. Co., has been especially formulated for this purpose.

It is recommended that a coating of "Klad Wax" be applied to the polished finish and to help retard further oxidation. The operations may be reduced by periodic reapplication of the wax.

It is recommended that a coating of "Klad Wax" be applied, to preserve the polished finish and to help retard further oxidation. Frequent polishing operations may be reduced by periodic applications of "Klad Wax".

[illegible]

This manual is a direct copy of the original.
We assume no responsibility for its contents.

UNIVAIR AIRCRAFT CORPORATION

Dear Friend:

You are now the owner of one of the best lightplanes made by American industry. Behind the plane you have is nearly 15 years of experience in the engineering and production of several thousand all-metal lightplanes. Luscombe pioneered the all-metal lightplane field and has been the leader ever since. We believe that the years of experience behind your *SILVAIRE* are responsible for its high degree of strength, economy, durability, performance and safety.

At this time we should like to make a few suggestions which we believe will enable you to obtain the greatest satisfaction from your new *SILVAIRE*.

First, fly safely. The *SILVAIRE* is well-built and can take it, but it is only as safe as the pilot who flies it.

Second, take care of your *SILVAIRE*. With just reasonable and ordinary care it will give you many years of satisfactory service and enjoyable pleasures, and its all-metal construction gives it a resale or trade-in value which will remain high.

Third, remember that our Service Department stands ready to answer your requests for information and furnish you advice on parts, construction, maintenance and operation. Also there is a widely spread network of Luscombe *SILVAIRE* distributors and dealers whose maintenance and overhaul facilities are for your convenience and use.

Fourth, we want you to know we will appreciate any comments you send us about the *SILVAIRE*. We are trying continually to improve our product, and many features of our planes are the result of suggestions made by customers.

In closing I would like to state that the goal of all our efforts is to build for our customers a safe plane with high performance, good workmanship, and pleasing appearance at a low price that the average person can afford.

I hope that the following information enclosed in this book will give you valuable hints on your *SILVAIRE* and if you are in the vicinity of our plant, please visit us and let us show you how *SILVAIRES* are being built.

Reprint of Owners Handbook by
Silvaire Aircraft
Fort Collins, Colorado

DELUXE SILVAIRE MODEL 8-E

Specifications and Performance

Engine Rating.....	85 horsepower @ 2575 rpm.
Gross Weight.....	1400 pounds
Empty Weight.....	850 pounds
Wing Span.....	35 feet
Wing Chord.....	50 inches
Overall Length.....	20 feet
Overall Height.....	6 feet 3 inches
Propeller Diameter.....	72 inches
Baggage Capacity.....	75 pounds
Power Loading.....	16.5 pounds per h.p.
Wing Loading.....	10 pounds per sq. ft.
Maximum Speed.....	125 mph.
Cruising Speed.....	112 mph.
Stalling Speed.....	48 mph (T.I.A.S.)
Take-off Run.....	575 feet (minimum)
Landing Roll.....	450 feet (minimum)
Rate of Climb.....	800 feet per min. (sea level)
Speed for Best Rate Climb.....	72 mph.
Cruising Range.....	650 miles
Service Ceiling.....	16,500 feet
Fuel Consumption-Cruising.....	5.5 gallons per hour
Fuel Capacity.....	30 gallons
Oil Capacity.....	4.5 quarts
Fuel Octane Rating.....	73 (minimum)
Tire Pressure.....	18 pounds

DESCRIPTION

The Deluxe *SILVAIRE* is a completely all-metal two-place high wing monoplane powered with a Continental C85 four-cylinder horizontally-opposed air-cooled 85 horsepower engine. The wings of the *SILVAIRE* are all-metal, with stressed skin, and a single strut. The engine is carburetor-equipped with dual ignition, self-starter, primer, and generator for 12-volt operation. A Sensenich 2 blade wooden fixed pitch propeller is supplied as standard equipment. The electrical system, with a 12-volt storage battery, is fully protected by thermal-type circuit-breakers and switches. The system supplies current for engine starting, radio operation, panel, position, and landing lights. The storage battery is located just aft of the baggage compartment on the right side of the fuselage.

Positive action mechanical brakes control each wheel separately. Brakes are operated by depressing either or both of the heel pedals beneath the rudder pedals. The parking brake control, operated by hand, is located under the left side of the instrument panel. The wide tread *SILVAIRE* landing gear is equipped with a hydraulic oleo and a coil steel spring provides for easy ground maneuvering. A steerable full-swivel tail wheel provides for ease while maneuvering on the ground. Dual stick-type controls are located on the right side of the fuselage and the control stick on the right side is removable for passenger.

Adequate ventilation has been arranged by providing cabin fresh air (see figure 1 for location of control), and left and right hand door windows may be opened. Cabin heat is also provided (see figure 1 for location of control). The throttle control, trim tab adjustment crank, fuel shut-off valve and electrical panel are centrally located so as to be easily accessible from either seat. The airplane is supplied with individual seat belts (each of which is approved for two persons), and a shock mounted instrument panel for engine and flight instruments. Engine and flight instruments include (see figure 1) oil pressure and temperature gauges, tachometer, ammeter, air speed indicator, altimeter, and compass.

OPERATING PROCEDURES

STARTING: (See figure 1 for location of controls)

1. Set fuel valve indicator to either RIGHT TANK or LEFT TANK.
2. CIRCUIT BREAKERS ON.
3. Close THROTTLE.
4. Set brakes.
5. Make certain that the Propeller is CLEAR of any person or obstruction.
6. Prime engine if it is cold. Two or three strokes of the PRIMER is usually sufficient.

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Fuel Capacity.....	30 gallons
Oil Capacity.....	4.5 quarts
Fuel Octane Rating.....	73 (minimum)
Tire Pressure.....	18 pounds

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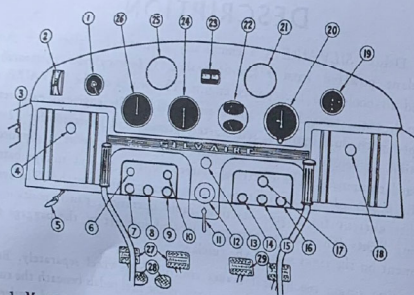
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1. Magneto Switch
2. Master Switch
3. Ash Tray
4. Glove Compartment
5. Parking Brake
6. Panel Light Control
7. Position Light Switch
8. Landing Light Switch
9. Carburetor Heat Control
10. Cigarette Lighter
11. Fuel Selector Control
12. Throttle
13. Primer
14. Starter
15. Cabin Heat Control
16. Fresh Air Control
17. Mixture Control
18. Glove Compartment
19. Ammeter
20. Altimeter
21. Space for additional instrument
22. Oil Temp. and Pressure Gauges
23. Compass
24. Tachometer
25. Space for additional instrument
26. Air Speed Indicator
27. Left Side Rudder Pedals
28. Left and Right Brake Pedals
29. Right Side Rudder Pedals

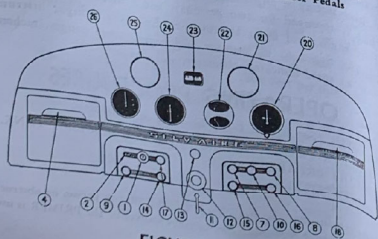


FIGURE 1

7. Mixture control FULL RICH.
8. Turn MASTER SWITCH ON.
9. Turn magneto switch to BOTH.
10. Pull STARTER control.

CARBURETOR AIR HEATER:

1. Heat is off when the knob is in, and on when knob is out (see figure 1).
2. Use carburetor heat full on during landing approach, during any closed throttle maneuvers, and when carburetor icing conditions exist. A slight drop in rpms and engine roughness generally denotes icing conditions.

FUEL SYSTEM:

1. The fuel selector valve must be on either RIGHT TANK or LEFT TANK during all flight. (see figure 1 for location of fuel valve).
2. Capacity of fuel tanks is marked on the selector valve placard and on the C.A.A. Operations Record form.
3. Direct reading fuel quantity gauges are located above the cabin doors.

MIXTURE CONTROL:

1. The carburetor mixture is full RICH when the knob is IN and full LEAN when the knob is OUT. (see figure 1 for location of mixture control).
2. Lean the mixture for better engine performance at altitudes of 5,000 feet or over. Otherwise leave in full RICH position.
3. Pull the knob back to the point where the engine and rpms smooth out.

CABIN HEAT:

1. Pull the knob out for HEAT ON; push in for HEAT OFF.

CABIN COOL AIR:

1. Pull the knob out for COOL AIR ON; push in for COOL AIR OFF.

- #### PANEL AND POSITION LIGHTS:
1. Circuit breakers must be ON. (Circuit breakers are located inside the right hand glove compartment).
 2. Pull POSITION LIGHTS knob out to turn both the position lights and panel lights ON.
 3. Turn the knob to the right to increase the brightness of the position lights. The adjustment of 3 above will not affect the brightness of the position lights. They are on bright as soon as the switch is pulled out.

OIL CHECK:

1. Oil level is checked by noting level on the bayonet gauge attached to the oil filler cap.