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Flight Manual
REIMS/CESSNA F150L

Edition No. 1
September 1970
Revision No. 4
August 1973

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GENERAL

NOTIFICATION

This manual contains the instructions for use, and the list of Servicing and periodic inspections, as well as the performance data of the Model F150L "Standard", "Ecole" and "Liaison".

DOCUMENTS AVAILABLE

The following is a check list of the data, information and licenses that are part of the aircraft file and required by Regulations. They should be made available at all times to relevant Authority.

(1) Airworthiness Certificate.

(2) Registration Certificate.

(3) Radio Installation License (if radio installed).

(4) Log Books

(5) Flight Manual.

PRINCIPAL DIMENSIONS

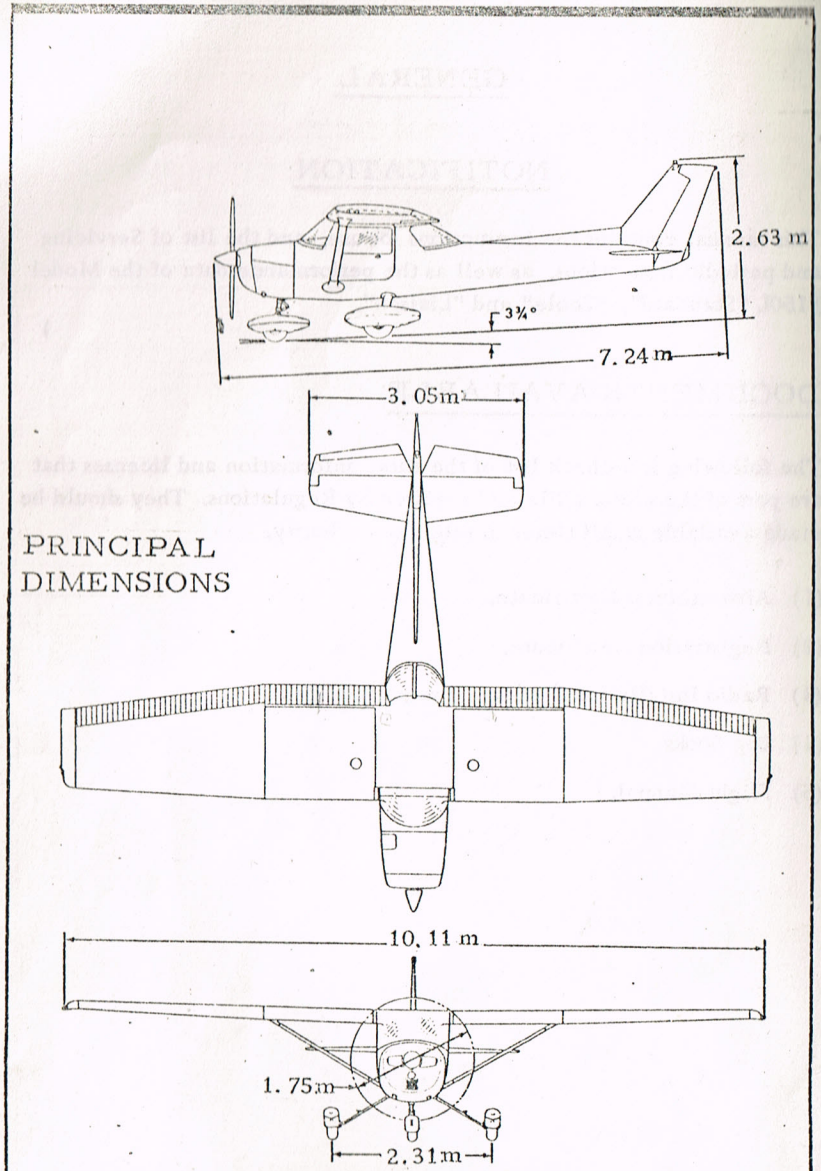

Figure 1

DESCRIPTION AND CHARACTERISTIC DIMENSIONS

Over-All Dimensions

Wing Span		10.11 m
Maximum Length		7.24 m
Maximum Height		2.63 m With Flashing Beacon and Nose Strut Depressed

Wing

Airfoil Type		NACA2412
Wing Area		14.8 m2
Dihedral Angle		+ 1° (at 25 % chord)
Angle of Incidence,	Wing Root	+ 1°
	Wing Tip	0°

Ailerons *

Area		1.66 m2
Control Travel,	Up	20° + 2° - 0°
	Down	14° + 2° - 0°

Wing Flaps

Method of Actuation	Electric/Cable
Area	1.72 m2
Control Travel	0° to 40° ± 2°

Horizontal Stabilizer and Elevator *

Stabilizer Area		1.58 m2
Angle of Incidence		- 3°
Elevator Area		1.06 m2
Control Travel,	Up	25° ± 1°
	Down	15° ± 1°

*Cable control systems

Elevator Trim Tab

Area		0.14 m2
Control Travel,	Up	10° ± 1°
	Down	20° ± 1°

Vertical Fin and Rudder*

Fin Area		0.87 m2
Rudder Area		0.55 m2
Control Travel, (perpendicular to hinge line)	Left	23° + 0° - 2°
	Right	23° + 0° - 2°

Landing Gear

Type		Fixed, Tricycle	
Shock Absorber,	Nose Gear	Air - Oil	
	Main Gear	Tubular Spring	
Tread		2.31 m	
Nose Wheel Tire and Pressure	5.00 x 5	2.10 bars	30 psi
Main Wheel Tire and Pressure	6.00 x 6	1.45 bars	21 psi
Nose Gear Shock Strut Pressure		1.40 bars	20 psi

Power Plant

Engine: Continental Rolls Royce O-200A 100 HP (74.6 kW)

Fuel: Aviation fuel, 80/87 Octane, Minimum Grade, or 100L :

- For engines of new Continental standard 213840 and on - Rolls Royce 24R003, 24R012, 24R024 and on.
- For engines changed to new standard per Rolls Royce Service Bulletin T.229, dated 27.11.72.

*Cable control systems

Aviation fuel, 80/87 Octane, Minimum Grade :
- For engines not corresponding to new Standard.

Oil: SAE 10W30 or SAE 20 below 5°C (40°F)
SAE 40 above 5°C (40°F)

Carburetor Heater: Manually Operated

Propeller

Number	McCauley 1A101/GCM6948 or 1A101/HCM6948 or 1A101/PCM
Type	Fixed Pitch
Diameter	1.752 m

Cabin

Seating	2 (plus optional child seat)
Doors	2
Baggage compartment	

INSTRUMENT PANEL

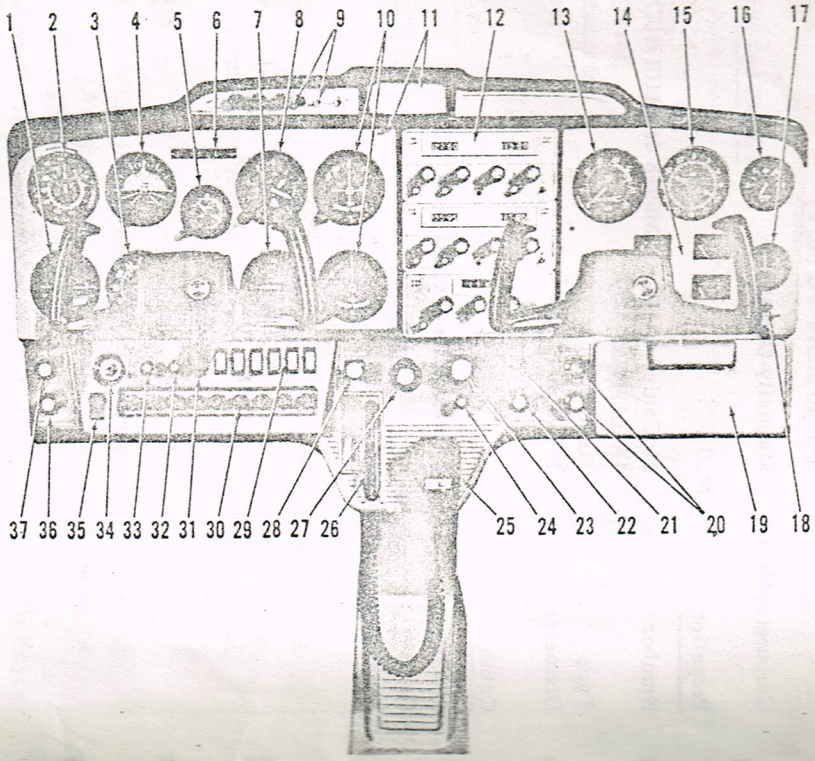

Figure 2

DESCRIPTION

1. Turn and Bank Indicator
2. Airspeed Indicator
3. Directional Gyro (Opt.)
4. Gyro Horizon (Opt.)
5. Clock (Opt.)
6. Aircraft Registration Number
7. Vertical Speed Indicator (Opt.)
8. Altimeter
9. Marker Beacon Indicator Lights and Switches/Radio Transmitter Selector Switch (Opt.)
10. Omni Course Indicator (Opt.)
11. Rear View Mirror and Control
12. Radios (Opt.)
13. Tachometer
14. Fuel and Oil Gages
15. ADF Bearing Indicator (Opt.)
16. Suction Gage (Opt.)
17. Ammeter
18. Over-Voltage Warning Light
19. Map Compartment
20. Cabin Air/Heat Control Knobs
21. Wing Flap Switch
22. Cigar Lighter (Opt.)
23. Mixture Control Knob
24. Wing Leveler Control Knob (Opt.)
25. Microphone (Opt.)
26. Elevator Trim Control Knob
27. Throttle
28. Carburetor Heat Control Knob
29. Electrical Switches
30. Fuses
31. Alternator Circuit Breaker
32. Radio Dial Light Rheostat
33. Panel Lights Rheostat
34. Ignition/Starter Switch
35. Master Switch
36. Primer
37. Parking Brake Knob

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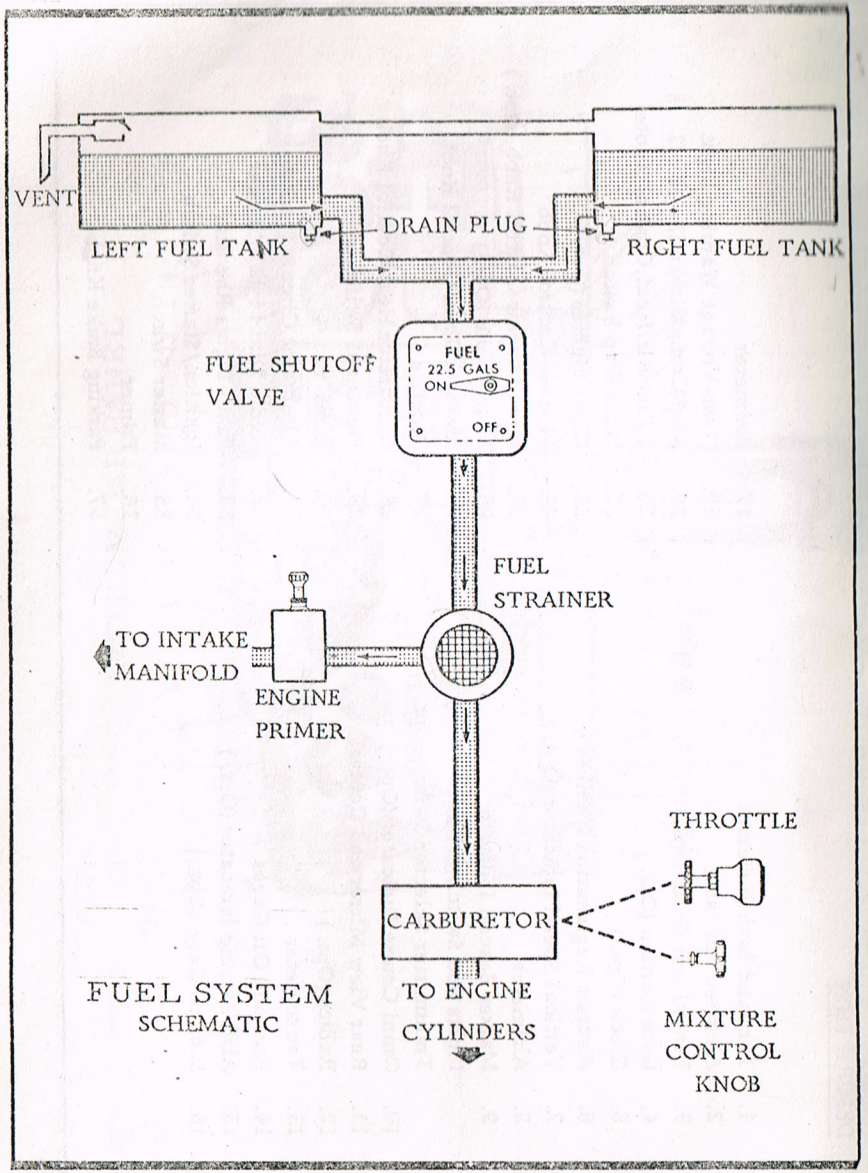


Figure 3

FUEL SYSTEM

Fuel is supplied to the engine from two tanks, one in each wing. From these tanks, fuel flows by gravity through a fuel shutoff valve and fuel strainer to the carburetor.

For fuel system service information, refer to Lubrication and Servicing Procedures in Section 6.

FUEL STRAINER DRAIN KNOB

Refer to fuel strainer servicing procedure, Section 6.

FUEL QUANTITY DATA			
TANKS	USABLE FUEL ALL FLIGHT CONDITIONS	UNUSABLE FUEL	TOTAL FUEL VOLUME
TWO, STANDARD WING 49 litres each	85 litres 22.4 USG	13 litres	98 litres 25.8
TWO, LONG RANGE WING 72 litres each	132.5 litres 35.1 USG	11.5 litres	144 litres

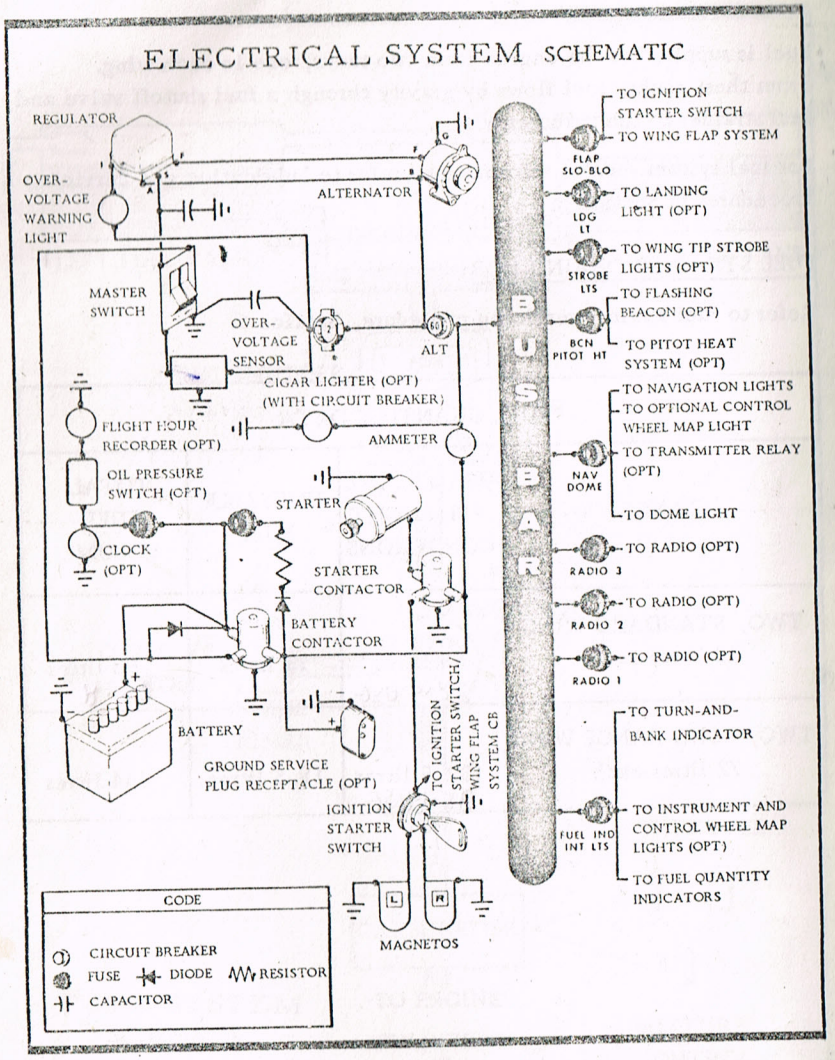


Figure 4

ELECTRICAL SYSTEM

Electrical energy is supplied by a 14-volt, direct-current system powered by an engine-driven alternator. A 12-volt battery is located on the left, forward side of the firewall adjacent to the engine access door. A master switch controls power to all circuits, except the engine ignition system, optional clock and optional flight hour recorder (operative only when the engine is operating).

MASTER SWITCH

The master switch is a split-rocker type switch labeled "MASTER", and is "ON" in the up position and "OFF" in the down position. The right half of the switch, labeled "BAT", controls all electrical power to the airplane. The left half, labeled "ALT", controls the alternator.

Normally, both sides of the master switch should be used simultaneously, however, the "BAT" side of the switch could be turned "ON" separately to check equipment while on the ground. The "ALT" side of the switch, when placed in the "OFF" position, removes the alternator from the electrical system. With this switch in the "OFF" position, the entire electrical load is placed on the battery. Continued operation with the alternator switch "OFF" will reduce battery power low enough to open the battery contactor, remove power from the alternator field, and prevent alternator restart.

AMMETER

The ammeter indicates the flow of current, in amperes, from the alternator to the battery or from the battery to the aircraft electrical system. When the engine is operating and the master switch is "ON", the ammeter indicates the charging rate applied to the battery.

OVER-VOLTAGE SENSOR AND WARNING LIGHT

The aircraft is equipped with an automatic over-voltage protection system consisting of an over-voltage sensor behind the instrument panel and a red warning light, labeled "HIGH VOLTAGE", near the ammeter.

In the event an over-voltage condition occurs, the over-voltage sensor automatically removes alternator field current and shuts down the alternator. The red warning light will then turn on, indicating to the pilot that the aircraft is supplying all electrical power.

The over-voltage sensor may be reset by turning the master switch off and back on again. If the light does illuminate again, a malfunction has occurred, and the flight should be terminated as soon as practical.

The over-voltage warning light may be tested by momentarily turning off the "ALT" portion of the master switch and leaving the "BAT" portion turned on.

FUSES AND CIRCUIT BREAKERS

Fuses on the left lower portion of the instrument panel protect the majority of electrical circuits in the airplane. Labeling below each fuse retainer indicates the circuits protected by the fuses. Fuses are removed by pressing the fuse retainers inward and rotating them counterclockwise until they disengage. Spare fuses are held in a clip inside of the map compartment.

NOTE

A special "SLO-BLO" fuse protects the wing flaps circuit. If this fuse is replaced, care should be taken to assure that the replacement fuse is of the proper type and capacity. A "SLO-BLO" fuse is identified by an integrally mounted spring encircling the fuse element.

Two additional fuses are provided : one fuse is located adjacent to the battery and protects the optional clock and optional flight hour recorder circuits, the other fuse is located in the center electrical harness behind the instrument panel and protects the alternator circuit.

A circuit breaker is located on the instrument panel and protects the alternator circuit. The cigar lighter has a manually reset type circuit breaker mounted directly on the back of the lighter behind the instrument panel.

When more than one radio is installed, the radio transmitter relay is protected by the "NAV-DOME" fuse. It is important to remember that any malfunction in other systems protected by this fuse (navigation lights, dome light, or optional control wheel map light) which causes the fuse to open will de-activate these systems and the transmitter relay. In this

event, the switches for these lighting systems should be turned off to isolate the circuits ; then replace the "NAV-DOME" fuse to re-activate the transmitter relay and permit its usage. Do not turn on any of the lights protected by the fuse until the malfunction has been corrected.

LANDING LIGHT (OPT)

Optional lighting includes a single landing light in the cowl nose cap, controlled by a two-position switch.

FLASHING BEACON AND HIGH INTENSITY STROBE LIGHTS (OPT)

The flashing beacon should not be used when flying through clouds or overcast ; the flashing light reflected from water droplets or particles in the atmosphere, particularly at night, can produce vertigo and loss of orientation.

The two high intensity strobe lights will enhance anti-collision protection. However, the lights should be turned off when taxiing in the vicinity of other aircraft, or during flight through clouds, fog or haze.

WING FLAP SYSTEM

The wing flaps are electrically operated by a flap motor located in the right wing. Flap position is controlled by a switch, labeled "WING FLAPS", on the lower center of the instrument panel. Flap position is mechanically indicated by a pointer housed in the left front doorpost.

To extend the wing flaps, the wing flap switch must be depressed and held in the "DOWN" position until the desired degree of extension is reached by pilot reference to the flap position indicator. After the desired flap extension is obtained, releasing the switch allows it to return to the center off position. When flap retraction is necessary, place the switch in the "UP" position. The switch will remain in the "UP" position without manual assistance due to an over center design within the switch. With the flaps extended in flight, placing the flap switch in the "UP" position will retract the flaps in approximately 6 seconds. Gradual flap retraction can be accomplished by intermittent operation of the flap switch to the "UP" position. Normal full flap extension in flight will require approximately 9 seconds.

After the flaps reach maximum extension or retraction, limit switches will automatically shut off the flap motor. However, when the flaps have reached the fully retracted position, the wing flap switch should be manually returned to the center off position.

CABIN HEATING AND VENTILATING SYSTEM

The temperature and volume of airflow into the cabin can be regulated to any degree desired by manipulation of the push-pull "CABIN HT" and "CABIN AIR" knobs. Heated fresh air and outside air are blended in a cabin manifold ; this air is then vented into the cabin from outlets in the cabin manifold near the pilot's and passenger's feet. A separate adjustable ventilator near each upper corner of the windshield supplies additional outside air to the pilot and passenger.

PARKING BRAKE SYSTEM

To set parking brake, pull out on the parking brake knob, apply and release toe pressure to the pedals, and then release the parking brake knob. To release the parking brake, apply and release toe pressure on the pedals while checking to see that the parking brake knob is full in.

STALL WARNING HORN

The stall warning horn produces a steady signal 8 to 16 km/h - 4 to 8.5 kts - 5 to 10 MPH before actual stall is reached and remains on up to the stall.

LIMITATIONS

CERTIFICATION BASIS

The REIMS/CESSNA F150L is certified in the Utility Category under AIR 2052 regulations, with amendments dated 5 November 1965, with the limits indicated in this section.

AIRSPEED LIMITATIONS

	km/h	kts	mph
Vne (Never Exceed Speed)	261	141	162
Vno (Maximum Structural Cruising Speed)	193	104	120
Vp (Maneuvering Speed)	175	95	109
Vfe (Maximum Speed, Flaps Extended)	161	87	100

AIRSPEED INDICATOR MARKINGS

Red Line	261	141	162
Yellow Arc (Caution Range)	193-261	104-141	120-162
Green Arc (Normal Operating Range)	90-193	49-104	56-120
White Arc (Flap Operating Range)	79-161	43-87	49-100

FLIGHT MANEUVERING LOAD FACTORS AT GROSS WEIGHT (726 KG)

Flaps Up	+ 4.4	- 1.76
Flaps Down	+ 3.5	

MAXIMUM GROSS WEIGHT FOR TAKE-OFF AND LANDING

Take-off : 726 kg

Landing : 726 kg

CENTER OF GRAVITY LOCATION

Leveling Means : Screws on outer left side aft of cabin.

Center of Gravity Reference : Forward face of firewall.

Center of Gravity Range Limits at 726 kg Gross Weight :

Forward Limit : + 0.835 m Aft Limit : + 0.952 m

LOADING LIMITS

Number of Occupants : Front Seats : 2

Minimum Crew : 1

Maximum Baggage in Baggage Compartment : 120 lbs (54 kg)

Occupied Optional Child's Seat Approved if Fitted With a Safety Belt

AUTHORIZED OPERATIONS

If equipped with good condition instruments described in the approved appendix of this manual, this aircraft is certified for day, night, VFR and IFR flight operations.

FLIGHT IN ICING CONDITIONS

Flight in icing conditions is strictly prohibited.

MANEUVERS - UTILITY CATEGORY

This airplane is not designed for aerobatic maneuvers. However, certain maneuvers that are required in the acquisition of various certificates may be performed provided the limitations in the following table are not exceeded.

No aerobatic maneuvers are approved except those listed below :

MANEUVER	RECOMMENDED ENTRY SPEED
Chandelles	175 km/h - 95 kts - 109 MPH
Lazy Eights	175 km/h - 95 kts - 109 MPH
Steep Turns	175 km/h - 95 kts - 109 MPH
Spins	Use Slow Deceleration
Stalls (Except Whip Stalls)	Use Slow Deceleration

During prolonged spins the engine may stop ; however, spin recovery is not adversely affected by engine stoppage.

Intentional spins with flaps extended are not approved. Inverted flight maneuvers are not recommended.

The important thing to bear in mind in flight maneuvers is that the airplane is clean in aerodynamic design and will build up speed quickly with the nose down. Proper speed control is an essential requirement for execution of any maneuver, and care should be exercised to avoid excessive speed which in turn can impose excessive loads. In the execution of all maneuvers, avoid abrupt use of controls.

ENGINE OPERATION LIMITATIONS

Power and Speed	74.6 KW (100 HP) at 2750 RPM

ENGINE INSTRUMENT MARKINGS

OIL TEMPERATURE GAGE

Normal Operating Range	Green Arc
Maximum Allowable	240°F (116°C) red line

OIL PRESSURE GAGE

Minimum Idling	10 psi (0.69 bar) (red line)
Normal Operating	30-60 psi (2.07-4.13 bars) (green arc)
Maximum	100 psi (6.89 bars) (red line)

FUEL QUANTITY INDICATORS

Empty ..... E (red line)
(6.5 litres unusable each tank)

TACHOMETER

Normal Operating Range

At sea level	2000-2550 RPM (inner green arc)
At 5000 feet	2000-2650 RPM (middle green arc)
At 10,000 feet	2000-2750 RPM (outer green arc)
Maximum Allowable	2750 RPM (red line)

PLACARDS

The following information is displayed in the form of individual placards.

(1) In full view of the pilot :

This airplane is approved in the utility category and must be operated in compliance with the operating limitations as stated in the form of placards, markings, and manuals

MAXIMUMS

MANEUVERING SPEED	109 MPH - 95 kts - 176 km/h
GROSS WEIGHT	1600 lbs - 726 kg
FLIGHT LOAD FACTOR Flaps Up	+4.4 - 1.76
Flaps Down	+3.5
DEMONSTRATED CROSSWIND	20 kts - 37 km/h

NO AEROBATIC MANEUVERS APPROVED
EXCEPT THOSE LISTED BELOW

Maneuver	Max. Entry Speed
Chandelles	109 MPH - 95 kts
Lazy Eights	109 MPH - 95 kts
Steep Turns	109 MPH - 95 kts
Spins	Slow Deceleration
Stalls (except Whip Stalls)	Slow Deceleration

Spin Recovery : opposite rudder - forward elevator.
Intentional spins with flaps extended are prohibited. Known icing conditions to be avoided. This airplane is certified, depending on the equipment items installed, for the following flight operations as of date of original airworthiness certificate :

DAY - NIGHT - VFR - IFR

(2) In the baggage compartment :

120 lbs - 54 kg maximum baggage and/or auxiliary seat passenger. For additional loading instructions see Weight and Balance Data.

(3) Near fuel shut-off valve :

Fuel 22.5 gals - 85 litres ON-OFF.

(4) On the instrument panel near overvoltage light :

HIGH VOLTAGE

EMERGENCY PROCEDURES

SGAC APPROVED

ENGINE FAILURE

DURING TAKE-OFF

(a) Throttle - Idle.
(b) Apply brakes.
(c) Flaps - Retract.
(d) Mixture - Idle cut-off.
(e) Ignition Switch - "OFF".
(f) Master Switch - "OFF".

AFTER TAKE-OFF

(a) Glide Speed - 113 km/h - 61 kts - 70 MPH.
(b) Mixture - Idle cut-off.
(c) Fuel Shutoff Valve - "OFF".
(d) Ignition Switch - "OFF".
(e) Master switch is to be left "ON" so that wing flaps may be extended.

CAUTION

Perform the landing straight ahead, making only small changes in heading to avoid obstructions. Never attempt to turn back to the landing strip.

DURING FLIGHT

(a) Glide Speed - 113 km/h - 61 kts - 70 MPH (optimum glide angle with propeller windmilling).
(b) Fuel - Verify that fuel shutoff valve handle is "ON".
(c) Mixture - Rich.
(d) Throttle - Craked one inch (2.5 cm).
(e) Ignition Switch - "BOTH".

If the propeller is allowed to stop windmilling, the engine will have to be turned with the starter. If the engine will not start, select an unobstructed area to land in and secure the engine as follows :

(a) Mixture - Idle cut-off.
(b) Throttle - Closed.
(c) Ignition Switch - "OFF".
(d) Fuel Shutoff Valve Handle - "OFF".
(e) Leave master switch "ON" so that wing flaps can be extended and to keep use of the radio.

NOTE

Full flaps are recommended for emergency landings on unpaved surfaces.

FIRES

ENGINE FIRE ON GROUND

In case of fire in the intake duct during ground operations, proceed as follows :

(a) Starter - Crank.
(b) Mixture - Idle cut-off.
(c) Throttle - Full open.
(d) Fuel Shutoff Valve Handle - "OFF".

NOTE

If fire occurs in intake duct during engine run-up, keep engine running for about 15 to 30 seconds. If fire persists, perform above steps (b), (c) and (d).

ENGINE FIRE IN FLIGHT

(a) Cabin Heat Control - "CLOSED".
(b) Mixture - Idle cut-off.
(c) Fuel Shutoff Valve Handle - "OFF".
(d) Ignition Switch - "OFF".
(e) Master Switch - "OFF".

NOTE

Do not attempt to restart the engine. Execute a forced landing.

CABIN FIRE

(a) Master Switch - "OFF".
(b) Cabin Heating and Ventilation Controls - Closed.

NOTE

Use a portable extinguisher if available.

WING FIRE

(a) Master Switch - "OFF".
(b) Ventilating Controls - Closed.

NOTE

Perform a sideslip on the side opposite to the wing in fire in an attempt to extinguish the flames. Land the aircraft as soon as possible with flaps retracted.

ELECTRICAL FIRE

(a) Master Switch - "OFF".
(b) All other switches - "OFF".
(c) Master Switch - "ON".

NOTE

Select switches "ON" successively, permitting a short time delay to elapse after each switch is turned on until the short circuit is localized.

LANDING

LANDING WITH ONE FLAT TIRE

Lower the flaps normally and land the airplane with nose up and wing tilted to hold the flat tire off the ground as long as possible. At touchdown, use rudder and the brake on the good wheel to maintain directional control, and shut down the engine.

LANDING WITHOUT PITCH CONTROL

Trim for horizontal flight (with an airspeed of approximately 97 km/h - 52 kts - 60 MPH and flaps lowered to 20°) by using throttle and

elevator trim controls. Control the glide angle by adjusting power exclusively.

At flareout, the nose-down moment resulting from power reduction is an adverse factor and the aircraft may hit on the nose wheel.

Consequently, at flareout, the control should be set at the full nose-up position and the power adjusted so that the aircraft will rotate to the horizontal attitude for touchdown. Close the throttle at touchdown.

FORCED LANDINGS

PRECAUTIONARY LANDING WITH ENGINE POWER

(1) Drag over selected field with flaps 20° and 113 km/h - 61 kts - 70 MPH airspeed.
(2) Seat belts - Adjust and lock.
(3) Turn off all switches except the ignition and master switches.
(4) Approach with flaps 40° at 104 km/h - 57 kts - 65 MPH.
(5) Unlatch cabin doors.
(6) Turn fuel shutoff valve to "OFF".
(7) Land in a slightly tail-low attitude.

EMERGENCY LANDING WITHOUT ENGINE POWER

(1) Pull mixture control to idle cut-off position.
(2) Turn fuel shutoff valve to "OFF".
(3) Turn all switches "OFF" except master switch.
(4) Approach at 113 km/h - 61 kts - 70 MPH.
(5) Extend wing flaps.
(6) Turn master switch "OFF".
(7) Unlatch cabin doors.
(8) Land in a slightly tail-low attitude.
(9) Apply heavy braking.

DITCHING

(1) Prepare for ditching by securing or jettisoning heavy objects.
(2) Transmit Mayday message on 121.5 MHz.
(3) Plan approach into wind if winds are high and seas are heavy. With heavy swells and light wind, land parallel to swells.
(4) Approach with flaps 40° and sufficient power for a 300 ft./min. rate of descent at 104 km/h - 57 kts - 65 MPH.
(5) Unlatch the cabin doors.
(6) Maintain a continuous descent until touchdown in level attitude.
(7) Place folded coat or cushion in front of face at time of touchdown.
(8) Evacuate airplane through cabin doors. If necessary, open window to flood cabin compartment for equalizing pressure so that door can be opened.
(9) Inflate life vests and raft (if available) after evacuation of cabin. The aircraft can not be depended on for floatation for more than a few minutes.

FLIGHT IN ICING CONDITIONS

Although flying in known icing conditions is prohibited, an unexpected icing encounter should be handled as follows :

(1) Turn pitot heat switch "ON".
(2) Change altitude to obtain an outside air temperature that is less conducive to icing.
(3) Pull cabin heat control full out for maximum defroster heat and air flow.
(4) Open the throttle to increase engine speed to minimize ice buildup.
(5) Apply carburetor heat.
(6) Plan a landing at the nearest airport.
(7) With an important ice accumulation, be prepared for significantly higher stall speed.
(8) Leave wing flaps retracted since wing flap extension could result in a loss of elevator effectiveness.

(9) Open left window and, if practical, scrape ice from a portion of the windshield for visibility in the landing approach.
(10) Perform a landing approach using a forward slip, if necessary, for improved visibility.
(11) Approach at 113 to 129 km/h - 61 to 69 kts - 70 to 80 MPH, depending upon the amount of ice accumulation.
(12) Avoid sharp bank in the landing approach.
(13) Perform a landing in level attitude.

RECOVERY FROM A SPIRAL DIVE

If a spiral is encountered, proceed as follows :

(1) Close the throttle.
(2) Stop the turn by using coordinated aileron and rudder control to align the symbolic airplane in the turn coordinator with the horizon reference line.
(3) Cautiously apply elevator back pressure to slowly reduce the indicated airspeed to 129 km/h - 69 kts - 80 MPH.
(4) Adjust the elevator trim control to maintain a 129 km/h - 69 kt - 80 MPH glide.
(5) Keep hands off the control wheel, using rudder control to hold a straight heading.
(6) Apply carburetor heat.
(7) Upon breaking out of clouds, apply normal cruising power and resume flight.

ELECTRICAL SYSTEM FAILURES

COMPLETE ELECTRICAL FAILURE

A complete electrical failure causes the loss of the turn coordinator, the fuel quantity indicators and the wing flaps.

Turn the master switch to "OFF" and land as soon as possible.

ALTERNATOR OR VOLTAGE REGULATOR FAILURE

The battery keeps supplying the aircraft electrical system.
Turn to "OFF" all equipment that is not essential for flight.
If applicable, wait 2 to 3 minutes and reset the alternator circuit-breaker.
In case it pops out again, do not insist and land as soon as possible.

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

Malfunctions in the electrical power supply system can be detected by periodic monitoring of the ammeter and over-voltage warning light.
If the ammeter indicates a continuous discharge rate in flight, turn the alternator switch to "OFF" and land as soon as possible.
If the charging rate were to remain above the normal value, the over-voltage sensor will automatically shut down the alternator and the over-voltage warning light will illuminate. Turn the master switch off and then on again. If the light comes on again, the flight should be terminated as soon as practical.
If the emergency occurs at night, turn the alternator switch back on for use of the landing light and flaps.

ROUGH ENGINE OPERATION OR LOSS OF POWER

CARBURETOR ICING

A gradual loss of RPM and eventual engine roughness may result from the formation of carburetor ice. To clear the ice, apply full throttle

and pull the carburetor heat knob full out until the engine runs smoothly; then remove carburetor heat and readjust the throttle.

If conditions require the continued use of carburetor heat in cruise flight, use the minimum amount of heat necessary to prevent ice from forming and lean the mixture slightly for smoothest engine operation.

SPARK PLUG FOULING

A slight engine roughness in flight may be caused by one or more spark plugs becoming fouled by carbon or lead deposits. This may be verified by turning the ignition switch momentarily from "BOTH" to either "L" or "R" position. An obvious power loss in single ignition operation is evidence of spark plug or magneto trouble. Assuming that spark plugs are the more likely cause, lean the mixture to the normal lean setting for cruising flight. If the problem does not clear up in several minutes, determine if a richer mixture setting will produce smoother operation. If not, proceed to the nearest airport for repairs using the "BOTH" position of the ignition switch unless extreme roughness dictates the use of a single ignition position.

MAGNETO MALFUNCTION

A sudden engine roughness or misfiring is usually evidence of magneto problems. Switching from "BOTH" to either "L" or "R" ignition switch position will identify which magneto is malfunctioning. Select different power settings and enrichen the mixture to determine if continued operation on "BOTH" magnetos is practicable. If not, switch to the good magneto and proceed to the nearest airport for repairs.

LOW OIL PRESSURE

If low oil pressure is accompanied by normal oil temperature, there is a possibility the oil pressure gage or relief valve is malfunctioning. A leak in the line to the gage is not necessarily cause for an immediate precautionary landing because an orifice in this line will prevent a sudden loss of oil from the engine sump. However, a landing at the nearest airport would be advisable to inspect the source of trouble.

If a total loss of oil pressure is accompanied by a rise in oil temperature, there is good reason to suspect an engine failure is imminent. Reduce engine power immediately and select a suitable forced landing field. Leave the engine running at low power during the approach, using only the minimum power required to reach the desired touchdown spot.

AIRCRAFT REGISTRATION

G-BBKE

SUPPLEMENT NO

AIRWORTHINESS NOTICE No 88

A steady/flashing warning light is fitted which will illuminate if the generator/alternator fails and the battery supplies power to the bus bar

Before engine start

Check low volts warning - ON

After engine start

Check low volts warning - OFF

If warning illuminates during flight -

Reduce electrical load -

Battery duration approx 40 mins

Land as soon as possible.

NOTE: Warning may illuminate with low engine rpm. Check it goes out when rpm increased.

R.C. BOYALL
LAE 11813
A.C. & X.

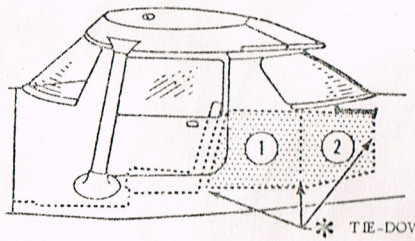
Boyall
26 Aug 04

LOADING GRAPH AND CENTER OF GRAVITY MOMENT ENVELOPE

SAMPLE LOADING PROBLEM	SAMPLE AIRPLANE		YOUR AIRPLANE	
	Weight kg	Moment m.kg	Weight kg	Moment m.kg
1. Licensed Empty Weight (Sample Airplane)	485	402		424
2. Oil ✻	5	1.5	5	1.5
3. Pilot and Passenger	154	153		
4. Fuel (Standard)	61	65		
5. Baggage - Area 1 (child's seat)	21	34		
6. Baggage - Area 2	0			
7. TOTAL WEIGHT AND MOMENT	726	652.5		
8. Locate this point (726 and 652.5) on the center of gravity moment envelope, and since this point falls within the envelope, the loading is acceptable.				

✻ Full oil may be assumed for all flights.

BAGGAGE LOADING AND TIE-DOWN



BAGGAGE AREA
MAXIMUM ALLOWABLE LOADS

AREA (1) = 54 KG
AREA (2) = 18 KG
AREAS (1) + (2) = 54 KG

✻ TIE-DOWN NET ATTACH POINTS

✻ A cargo tie-down net is provided to secure baggage in the baggage area. The net attaches to six tie-down rings. Two rings are located on the floor just aft of the seat backs and one ring is located two inches above the floor on each cabin wall at the aft end of area (1). Two additional rings are located at the top, aft end of area (2). At least four rings should be used to restrain the maximum baggage load of 54 kg. If the airplane is equipped with an optional utility shelf, it should be removed prior to loading and tying down large baggage items. After baggage is loaded and secured, either stow the shelf or, if space permits, install it for storing small articles.

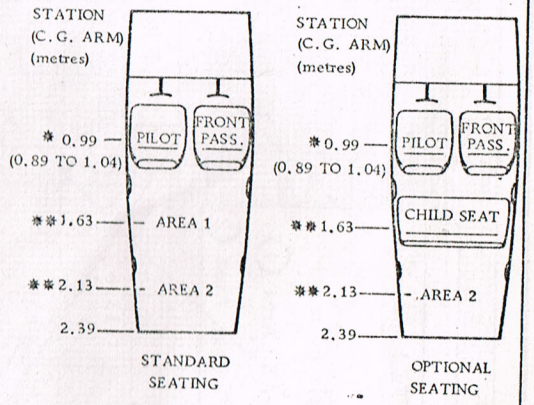
Figure 5

LOADING ARRANGEMENTS

✻ Pilot or passenger center of gravity on adjustable seats positioned for average occupant. Numbers in parentheses indicate forward and aft limits of occupant center of gravity range.

✻✻ Arms measured to the center of the areas shown.

NOTE
The aft baggage wall (approximate station 94) can be used as a convenient interior reference point for determining the location of baggage area fuselage stations.



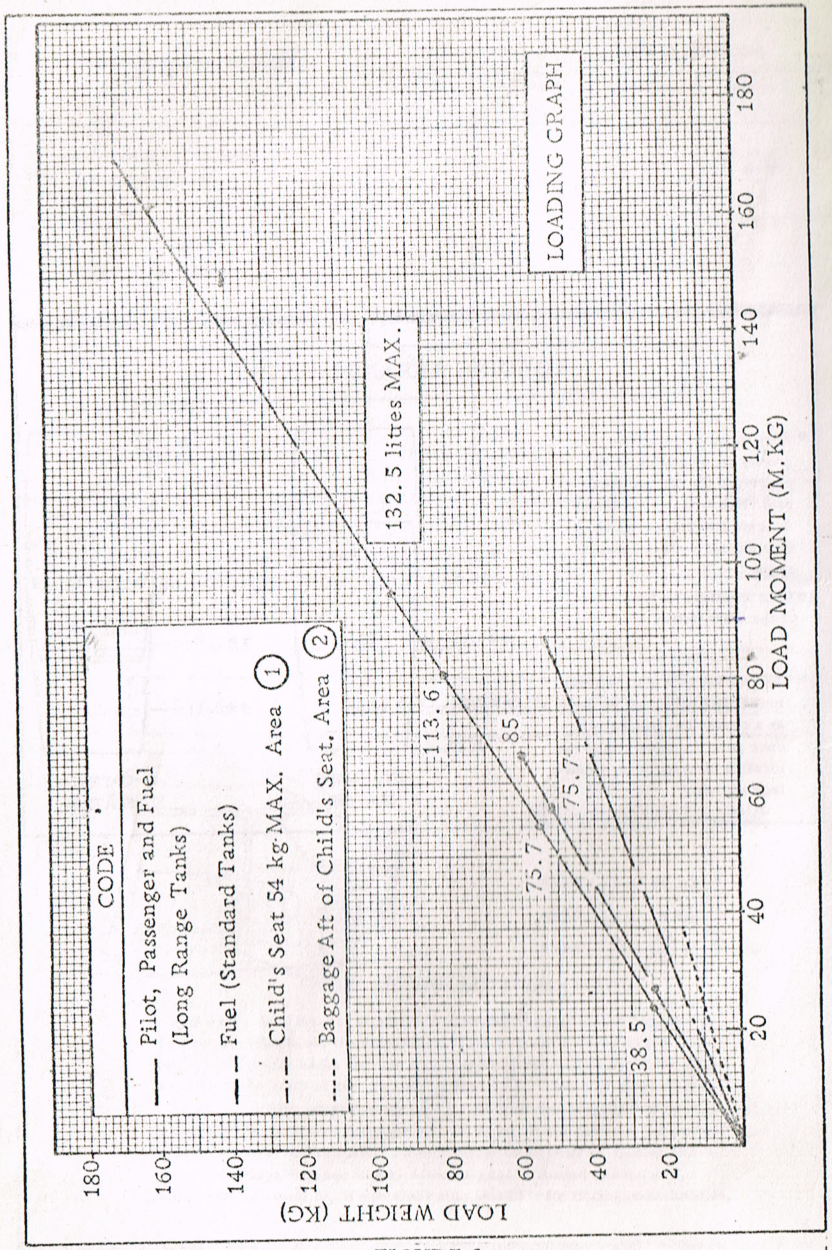


FIGURE 6

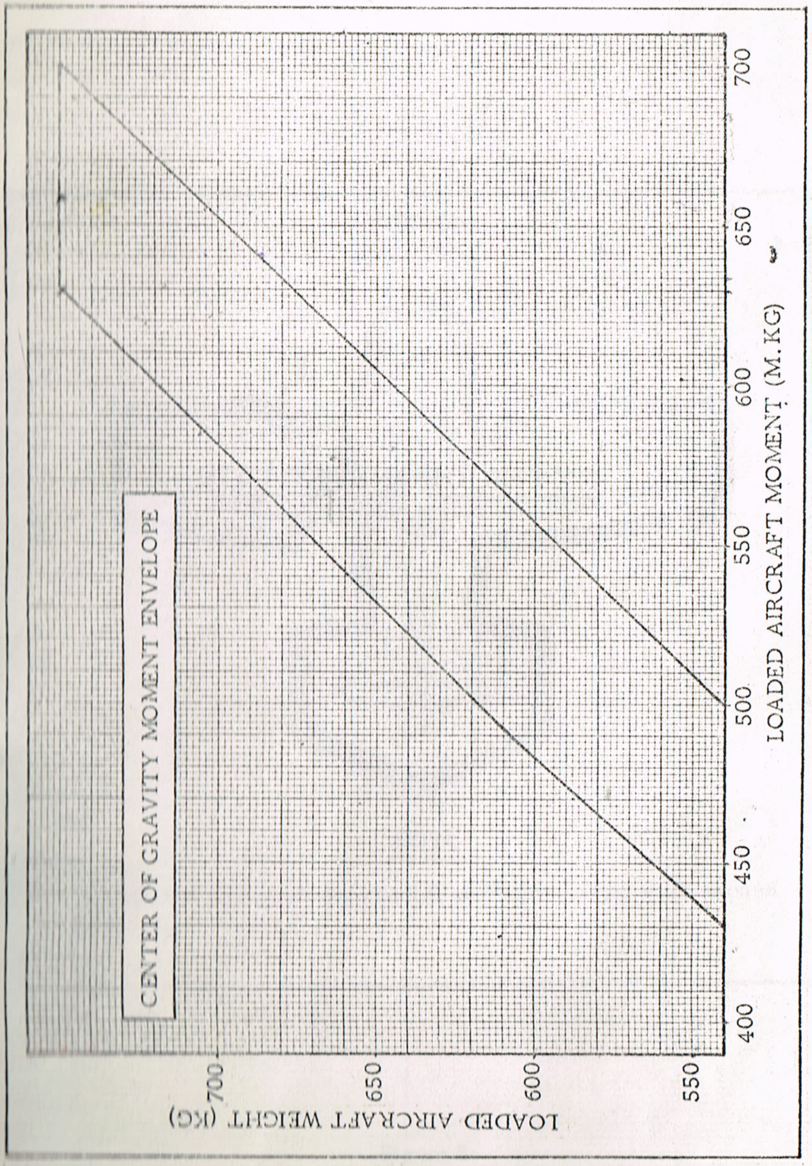
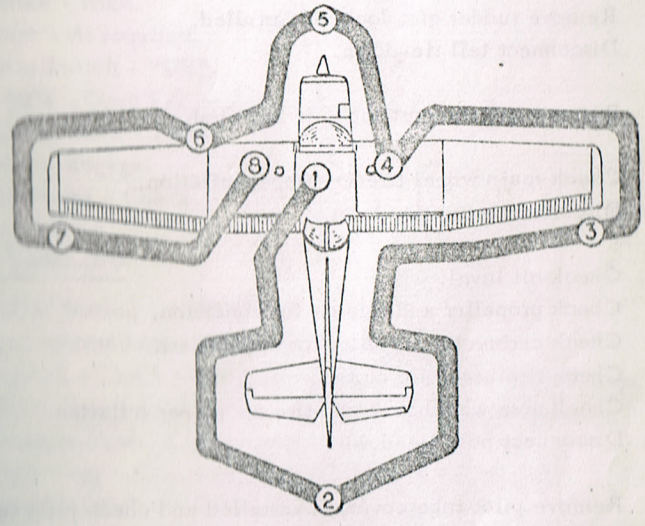


Figure 7

EXTERIOR INSPECTION

SGAC APPROVED

EXTERIOR
INSPECTION



NOTE

Visually check aircraft for general condition during walk-around inspection.

Figure 8

(1) a. Turn on master switch and check fuel quantity indicators, then turn master switch "OFF".
b. Check ignition switch "OFF".
c. Check fuel valve handle "ON".
d. Remove control wheel lock.
e. Before first flight of day, remove the wing tank drain plugs to clear the fuel system of possible water and sediment and pull out the fuel strainer drain knob (use the sampler cup in the map compartment).

(2) a. Remove rudder gust lock, if installed.
b. Disconnect tail tie-down.

(3) a. Remove aileron gust lock, if installed.

(4) a. Check main wheel tire for proper inflation.
b. Disconnect wing tie-down.

(5) a. Check oil level.
b. Check propeller and spinner for condition.
c. Check carburetor air filter for cleanliness.
d. Check strainer drain closed.
e. Check nose wheel strut and tire for proper inflation.
f. Disconnect nose tie-down.

(6) a. Remove pitot tube cover, if installed and check pitot tube opening for stoppage.
b. Check fuel tank vent opening for stoppage.
c. Check stall warning vent opening for stoppage.

(7) - Same as 3.

(8) - Same as 4 and inspect flight instrument static source opening on left side of fuselage for stoppage.

BEFORE ENTERING THE AIRPLANE

(1) Make an exterior inspection in accordance with figure 8.

BEFORE STARTING THE ENGINE

(1) Seats, Seat Belts - Adjust and lock.
(2) Brakes - Test and set.
(3) Fuel Shutoff Valve Handle - "ON".
(4) Radios and Electrical Equipment - "OFF".

STARTING THE ENGINE

(1) Carburetor Heat - Cold.
(2) Mixture - Rich.
(3) Primer - As required.
(4) Master Switch - "ON".
(5) Throttle - Open 1/2 inch (1 cm).
(6) Propeller Area - Clear.
(7) Starter - Engage.
(8) Oil Pressure - Check.

BEFORE TAKE-OFF

(1) Throttle Setting - 1700 RPM.
(2) Engine Instruments - Within green arc.
(3) Magnetos - Check (RPM drop should not exceed 150 RPM on either magneto or 75 RPM differential between magnetos).
(4) Carburetor Heat - Check operation.
(5) Suction Gage - Check (4.6 to 5.4 inches of mercury).
(6) Flight Controls - Check for free movement.
(7) Trim Tab - "TAKE-OFF" setting.
(8) Cabin Doors - Latched.
(9) Flight Instruments and Radios - Set.

TAKE-OFF

NORMAL TAKE-OFF

(1) Wing Flaps - Up.
(2) Carburetor Heat - Cold.

(3) Throttle - Full "OPEN".
(4) Elevator Control - Lift nose wheel at 88 km/h - 48 kts - 55 MPH.
(5) Climb Speed - 113 to 129 km/h - 61 to 69 kts - 70 to 80 MPH until all obstacles are cleared, then set up climb speed as shown in "NORMAL CLIMB" check list.

MAXIMUM PERFORMANCE TAKE-OFF

(1) Wing Flaps - Up.
(2) Carburetor Heat - Cold.
(3) Brakes - Hold.
(4) Throttle - Full "OPEN".
(5) Brakes - Release.
(6) Elevator Control - Slightly tail low.
(7) Climb Speed - 113 km/h - 61 kts - 70 MPH.

CLIMB

NORMAL CLIMB

(1) Airspeed - 121 to 137 km/h - 65 to 74 kts - 75 to 85 MPH.
(2) Throttle - Full "OPEN".
(3) Mixture - Rich.

MAXIMUM PERFORMANCE CLIMB

(1) Airspeed - 122 km/h - 66 kts - 76 MPH.
(2) Throttle - Full "OPEN".
(3) Mixture - Rich.

CRUISING

(1) Power - 2000 to 2750 RPM.
(2) Elevator Trim - Adjust.
(3) Mixture - Lean to maximum RPM.

BEFORE LANDING

(1) Mixture - Rich.
(2) Carburetor Heat - Apply full heat before closing throttle.
(3) Airspeed - 113 to 129 km/h - 61 to 69 kts - 70 to 80 MPH.
(4) Wing Flaps - As desired below 161 km/h - 87 kts - 100 MPH.
(5) Airspeed - 97 to 113 km/h - 52 to 61 kts - 60 to 70 MPH (flaps down).

NORMAL LANDING

(1) Touchdown - Main wheels first.
(2) Landing Roll - Lower nose wheel gently.
(3) Braking - Minimum required.

AFTER LANDING

(1) Wing Flaps - Up.
(2) Carburetor Heat - Cold.

SECURING THE AIRCRAFT

(1) Parking Brake - Set.
(2) Radios and Electrical Equipment - "OFF".
(3) Mixture - Idle cut-off.
(4) All switches - "OFF".
(5) Control lock - Installed.

OPERATING DETAILS

STARTING ENGINE

Ordinarily the engine starts easily with one or two strokes of primer in warm temperatures to six strokes in cold weather, with the throttle open approximately 1/2 inch (1 cm). In extremely cold temperatures,

it may be necessary to continue priming while cranking. Weak intermittent firing followed by puffs of black smoke from the exhaust stack indicate overpriming or flooding. Excess fuel can be cleared from the combustion chambers by the following procedure : Set the mixture control in full lean position, throttle full open, and crank the engine through several revolutions with the starter. Repeat the starting procedure without any additional priming.

If the engine is underprimed it will not fire at all, and additional priming will be necessary.

After starting, if the oil gage does not begin to show pressure within 30 seconds in the summertime and about twice that long in very cold weather, stop engine and investigate. Lack of oil pressure can cause serious engine damage. After starting, avoid the use of carburetor heat unless icing conditions prevail.

NOTE

When starting is performed using an external power source, turn the master switch "ON" only after the ground service plug has been disconnected.

Flight Manual
REIMS/CESSNA F150L
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Revision No. 4
August 1973

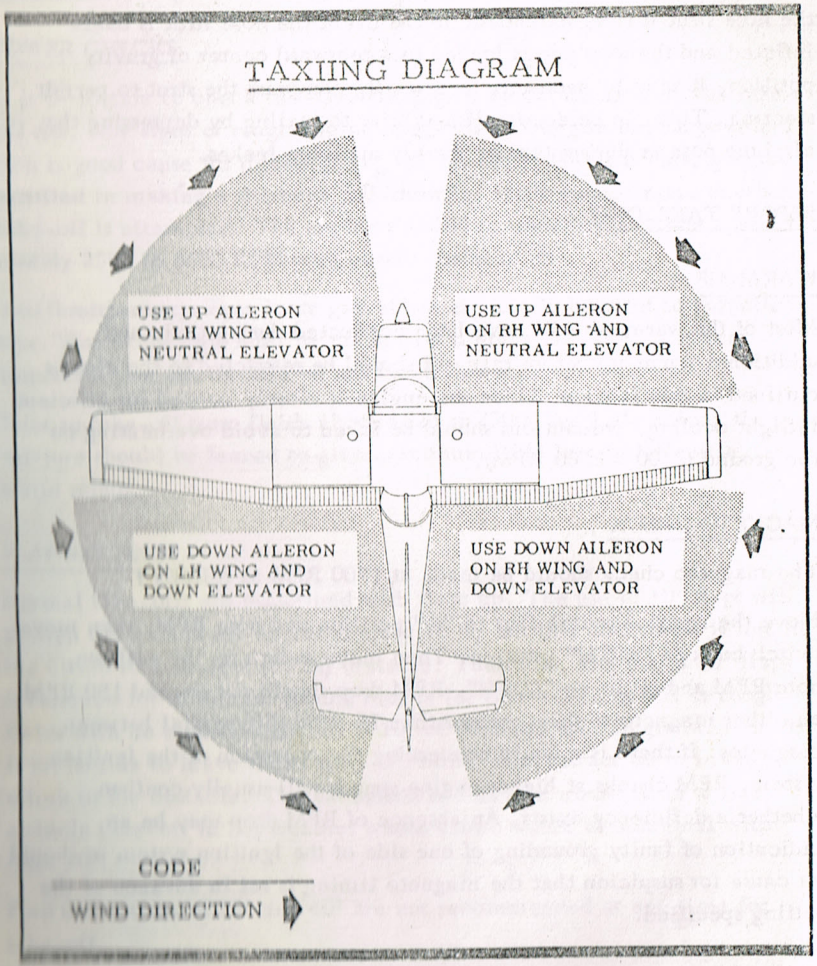

Figure 9

TAXIING

When taxiing, it is important that speed and use of brakes be held to a minimum and that all controls be utilized (see taxiing diagram, figure 9) to maintain directional control and balance. Taxiing over loose gravel or cinders should be done at low engine speed.

The nose wheel is designed to automatically center straight ahead when the nose strut is fully extended. In the event the nose strut is over-inflated and the airplane is loaded to a rearward center of gravity position, it may be necessary to partially compress the strut to permit steering. This can be accomplished prior to taxiing by depressing the airplane nose or during taxi by sharply applying brakes.

BEFORE TAKE-OFF

WARM-UP

Most of the warm-up will have been conducted during taxi, and additional warm-up before take-off should be restricted to the checks outlined in this Section. Since the engine is closely cowled for efficient inflight cooling, precautions should be taken to avoid overheating on the ground (2400 - 2500 RPM).

MAGNETO CHECK

The magneto check should be made at 1700 RPM as follows :

Move the ignition switch first to "R" position and note RPM, then move switch back to "BOTH" position. Then move switch to "L" position, note RPM and return to "BOTH". RPM drop should not exceed 150 RPM on either magneto or show greater than 75 RPM differential between magnetos. If there is a doubt concerning the operation of the ignition system, RPM checks at higher engine speeds will usually confirm whether a deficiency exists. An absence of RPM drop may be an indication of faulty grounding of one side of the ignition system or should be cause for suspicion that the magneto timing is set in advance of the setting specified.

ALTERNATOR CHECK

Prior to flights where verification of proper alternator and voltage regulator operation is essential (such as night or instrument flights), a positive verification can be made by loading the electrical system momentarily (3 to 5 seconds) with the optional landing light, (if so equipped), or by operating the wing flaps during the engine runup.

The ammeter will remain at zero if the alternator and voltage regulator are operating properly.

TAKE-OFF

POWER CHECKS

It is important to check full-throttle engine operation early in the take-off run. Any signs of rough engine operation or sluggish engine acceleration is good cause for discontinuing the take-off. If this occurs, you are justified in making a thorough full-throttle, static runup before another take-off is attempted. The engine should run smoothly and turn approximately 2500 to 2600 RPM with carburetor heat off.

Full throttle runups over loose gravel are especially harmful to propeller tips. When take-offs must be made over a gravel surface, it is very important that the throttle be advanced slowly.

Prior to take-off from fields above 1524 m (5000 feet) elevation, the mixture should be leaned to give maximum RPM in a full-throttle, static runup.

FLAP SETTINGS

Normal take-offs are performed with flaps up. The use of 10° flaps will shorten the ground run approximately 10 %, but this advantage is lost in the climb to a 50-foot (15 m) obstacle. Therefore, the use of 10° flaps is reserved for minimum ground runs or for take-off from soft or rough fields with no obstacles ahead. If 10° of flaps are used in ground runs, it is preferable to leave them extended rather than retract them in the climb to the obstacle. The exception to this rule would be in a high altitude take-off in hot weather where climb would be marginal with flaps 10°.

Flap deflections of 30° and 40° are not recommended at any time for take-off.

CROSSWIND TAKE-OFFS

Take-offs into strong crosswinds normally are performed with the minimum flap setting necessary for the field length. The airplane is accelerated to a speed slightly higher than normal, then pulled off abruptly to prevent possible settling back to the runway while drifting. When clear of the ground, make a coordinated turn into the wind to correct for drift.

CLIMB

For detailed data, see Maximum Rate-Of-Climb Data chart.

CLIMB SPEEDS

Normal climbs are conducted at 121 to 137 km/h - 65 to 74 kts - 75 to 85 MPH with flaps up and full throttle, for best engine cooling. The mixture should be full rich unless the engine is rough due to too rich a mixture. The best rate-of-climb speeds range from 122 km/h - 66 kts - 76 MPH at sea level to 113 km/h - 61 kts - 70 MPH at 3048 m - 10,000 ft. If an obstruction dictates the use of a steep climb angle, climb at an obstacle clearance speed of 113 km/h - 61 kts - 70 MPH with flaps retracted.
Steep climbs at low speeds should be of short duration to allow improved engine cooling.

BALKED LANDING (GO-AROUND)

In a balked landing (go-around) climb, the wing flap setting should be reduced to 20° immediately after full power is applied. Upon reaching a safe airspeed, the flaps should be slowly retracted to the full up position. In critical situations, the 20° flap setting can be approximated by holding the flap switch for approximately two seconds. This technique will allow the pilot to obtain the 20° setting without having to divert his attention to the flap position indicator.

CRUISE

Normal cruising is done between 65 % and 75 % power. The power settings required to obtain these powers at various altitudes and outside air temperatures can be determined by using your Cessna Power Computer or the PERFORMANCE DATA, Section 5.

The higher the cruise altitude, the higher the true airspeed for the same power.

This is illustrated in the following figure which shows performance at 75 % power at various altitudes.

MAXIMUM CRUISE SPEED PERFORMANCE

75 % POWER

ALTITUDE	RPM	TRUE AIRSPEED		
		km/h	kts	MPH
Sea Level	2525	177	95	110
1525 m - 5000 ft	2650	185	100	115
2133 m - 7000 ft	Full throttle	188	102	117

The use of full carburetor heat is recommended during flight in heavy rain to avoid the possibility of engine stoppage due to excessive water ingestion or to carburetor icing. The mixture setting should be readjusted for smoothest operation.

STALLS

The stall characteristics are conventional for the flaps up and flaps down condition. Slight buffeting may occur just before the stall with flaps down.

Stall speeds are shown in Section 5 for forward c.g., full gross weight conditions. They are presented as calibrated airspeeds because indicated airspeeds are unreliable near the stall.

With aircraft weights lower than the full gross weight, stall speeds are reduced. The stall warning horn produces a steady signal 8 to 16 km/h - 4 to 8.5 kts - 5 to 10 MPH before the actual stall is reached and remains on until the normal flight attitude is resumed.

In case of roll, use ailerons to return wings level, then neutralize aileron control.

LANDINGS

Normal landings are made with power-off and with flaps as required. Final approaches are performed at speeds of 113 to 129 km/h - 61 to 69 kts - 70 to 80 MPH with flaps up, and 97 to 113 km/h - 52 to 61 kts - 60 to 70 MPH with flaps down, depending on the air turbulence.

CROSSWIND LANDING

When landing in a strong crosswind, use the minimum flap setting required for the field length. Use a wing low, crab, or a combination method of drift correction and land in a nearly level attitude. Maintain directional control by using the nose wheel steering system and the brakes.

Excessive nose strut inflation can hinder nose wheel alignment with the airplane ground track. This can be counteracted by firmly lowering the nose wheel to the ground after initial contact. This action partially compresses the nose strut, permitting nose wheel swiveling and positive ground steering.

COLD WEATHER OPERATION

Prior to starting on cold mornings, it is advisable to pull the propeller through several times by hand. In extremely cold (- 18°C and lower) weather, the use of an external preheater is recommended.

Cold weather starting procedures are as follows :

With Preheat :

(1) Propeller Area - Clear.
(2) Master Switch - "ON".
(3) With ignition switch "OFF" and throttle closed, prime the engine four to ten strokes as the propeller is being turned over by hand.

NOTE

Use heavy strokes of primer for best atomization of fuel. After priming, check that the primer is in the locked position.

(4) Ignition Switch - "BOTH".
(5) Open the throttle 1/2 inch (1 cm) and engage the starter.

With outside air temperatures below freezing point, avoid using the carburetor heater. Partial carburetor heating may cause the air in the intake duct to reach critical icing temperatures.

Without Preheat :

(1) Prime the engine eight to ten strokes while the propeller is being turned by hand with throttle closed. Leave primer charged and ready for stroke.
(2) Propeller Area - Clear.
(3) Master Switch - "ON".
(4) Mixture - Full rich.
(5) Ignition Switch - "START".
(6) Pump throttle rapidly to full open twice. Return to 1/8 inch (1/2 cm) open position.
(7) Release ignition switch to "BOTH" when engine starts.
(8) Continue to prime engine until it is running smoothly, or alternately pump throttle rapidly over first 1/4 of total travel.
(9) Oil Pressure - Check.
(10) Pull carburetor heat knob full on after engine has started. Leave on until engine is running smoothly.
(11) Lock primer.

NOTE

If the engine does not start, it is probable that the spark plugs have been frosted over. Preheat must be used before another start is attempted.

IMPORTANT

Pumping the throttle may cause raw fuel to accumulate in the intake air duct, creating a fire hazard in the event of a backfire. If this occurs, maintain a cranking action to suck flames into the engine. An outside attendant with a fire extinguisher is advised for cold starts without preheat.

During cold weather operations, no indication will be apparent on the oil temperature gage. After a suitable warm-up period (2 to 5 minutes at 1000 RPM), accelerate the engine several times to higher engine RPM. If the engine accelerates smoothly and the oil pressure remains normal and steady, the airplane is ready for take-off. When operating in temperatures around - 20°C, avoid using carburetor heat, which would increase the temperature in the intake duct and restore critical icing conditions.

SPECIFIC OPERATION

SPIN

The spin is a prolonged stall that results in a rapid nose-down rotation, the airplane following a helical path. The rotation is the result of a sustained yaw that causes the slower moving wing to almost completely stall while the outer wing retains a portion of its lift. In essence, the rotation is a result of the relatively unstalled outer wing "chasing" the stalled inner wing.

Spins should be practiced at altitudes of 3000 feet (915 m) or more above the surface.

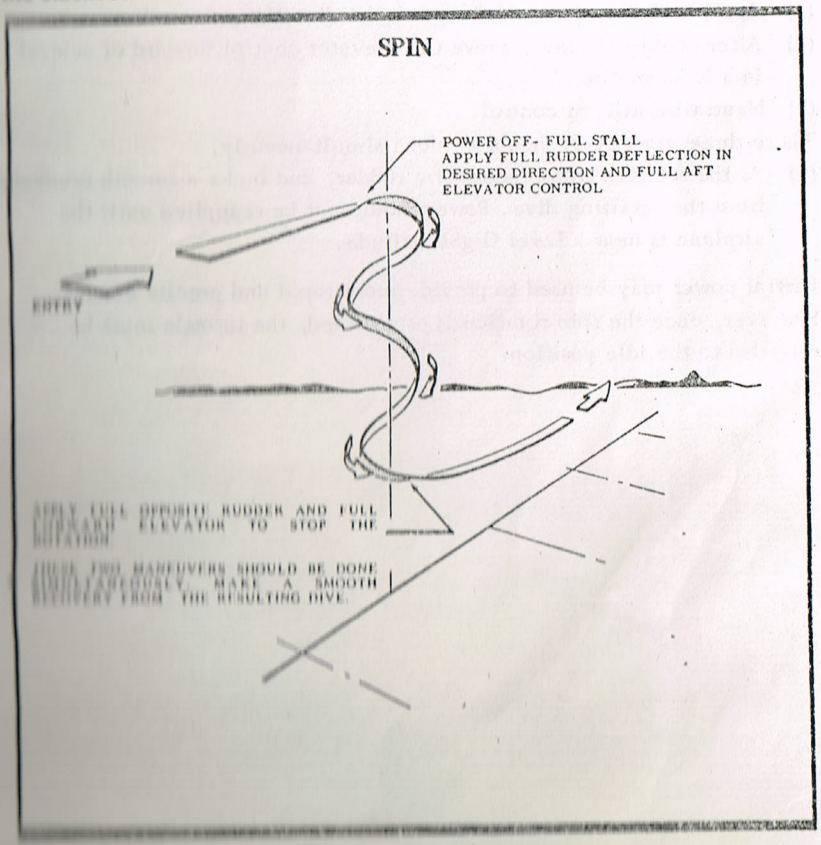

Figure 10

The normal entry is made from a power-off stall. As the stall is approached, the elevator control should be smoothly pulled to the full aft position. Just prior to reaching the stall "break", rudder control in the desired direction of the spin rotation should be applied so that full rudder deflection is reached almost simultaneously with reaching full aft elevator. Care should be taken to avoid using aileron control since its application can increase the rotation and cause erratic rotation.

Both elevator and rudder controls should be held full with the spin until the spin recovery is initiated. An inadvertent relaxation of either of these controls could result in the development of a nose-down spiral.

The normal spin recovery technique is as follows :

(1) Apply full opposite rudder against the direction of rotation.
(2) After one-fourth turn, move the elevator control forward of neutral in a brisk motion.
(3) Neutralize aileron control.

These three maneuvers should be done simultaneously.

(4) As the rotation stops, neutralize rudder, and make a smooth recovery from the resulting dive. Power should not be reapplied until the airplane is near a level flight attitude.

Partial power may be used to provide more rapid and precise entries. However, once the spin rotation is established, the throttle must be retarded to the idle position.

PERFORMANCE

NOTIFICATION

The tables appearing on the following pages result from actual tests with an airplane in good flying condition. They will be useful in flight planning ; nevertheless, it will be advisable to plan on an ample safety margin concerning the fuel reserve at arrival, since the data given does not take into account the effects of wind, navigational errors, pilot technique, run-up, climb, etc. All these factors should be considered when estimating the reserve required by regulations. Don't forget that maximum range increases by using a lower power setting. To solve these problems, consult the Cruise Performance table.

In the Table 2, range and endurance are given for lean mixture from 3500 feet to 12, 500 feet. All figures are based on zero wind, 85 and 132, 5 litres of fuel for cruise, 726 kg gross weight and standard atmospheric conditions.

Remember that the charts contained herein are based on standard day conditions.

PERFORMANCE

SPECIFICATIONS

GROSS WEIGHT	726 kg
SPEED :	
Top Speed at Sea Level	196 km/h - 106 kts - 122 MPH
Cruise, 75 % Power at 7000 ft	188 km/h - 102 kts - 117 MPH
RANGE :	
Cruise, 75 % Power at 7000 ft	765 km - 412 NM
22.5 US Gal. (85 l), No Reserve	4.1 hrs
	188 km/h - 102 kts - 117 MPH
Cruise, 75 % Power at 7000 ft	1166 km - 629 NM
"Long Range" Version, 35 US Gal. (132.5 l)	6.2 hrs
	188 km/h - 102 kts - 117 MPH
Optimum Range at 10,000 ft	910 km - 491 NM
22.5 US Gal. (85 l), No Reserve	6.1 hrs
	150 km/h - 81 kts - 93 MPH
Optimum Range at 10,000 ft	1416 km - 764 NM
"Long Range" Version, 35 US Gal. (132.5 l)	9.4 hrs
	150 km/h - 81 kts - 93 MPH
RATE OF CLIMB AT SEA LEVEL	3.4 m/s - 670 fpm
SERVICE CEILING	3855 m - 12,650 ft

TAKE-OFF :	
Ground Run	224 m
Total Distance Over 50-Ft Obstacle	422 m
LANDING :	
Ground Roll	136 m
Total Distance Over 50-Ft Obstacle	328 m
EMPTY WEIGHT (Approximate) :	
With "Standard" Tanks	484 kg
With "Long Range" Tanks	486 kg
BAGGAGE	54 kg
WING LOADING	49.8 kg/m2
POWER LOADING	9.73 kg/kW
TOTAL FUEL CAPACITY	
"Standard" Tanks	26 US Gal. - 98 litres
"Long Range" Tanks	38 US Gal. - 144 litres
OIL TANK CAPACITY	6 qts - 6 litres
PROPELLER : Fixed Pitch (Diameter)	1.752 m
ENGINE : Continental - ROLLS ROYCE engine 100 rated HP at 2750 RPM, 74.6 kW	Type O-200A

Table 1

CRUISE PERFORMANCE

ALTITUDE m	ALTITUDE ft	RPM	% BHP	TAS km/h	TAS kts	FUEL CONSUMPTION (PER HOUR) Litres	FUEL CONSUMPTION (PER HOUR) US Gal.	ENDURANCE HOURS Standard 85 l	ENDURANCE HOURS Long Range 132.5 l	RANGE km NM Standard 85 l		RANGE km NM Long Range 132.5 l	
762	2500	2750	92	195	105	26.5	7.0	3.2	5.0	628	339	974	526
		2700	87	192	103	25	6.6	3.4	5.3	660	356	1022	552
		2600	77	184	99	22	5.8	3.9	6.1	716	387	1110	600
		2500	68	174	94	19.3	5.1	4.4	6.9	764	413	1191	643
		2400	60	165	89	17.4	4.6	4.9	7.7	813	439	1271	686
		2300	53	154	83	15.5	4.1	5.5	8.6	861	465	1336	721
		2200	46	143	77	13.6	3.6	6.2	9.7	885	478	1384	747
		2100	40	128	69	12.1	3.2	7.0	10.9	893	482	1392	752
1524	5000	2750	85	195	105	24.2	6.4	3.5	5.5	684	369	1062	574
		2700	80	189	102	22.7	6.0	3.8	5.8	716	387	1110	600
		2600	71	182	98	20	5.3	4.2	6.6	764	413	1191	643
		2500	63	172	93	18.2	4.8	4.7	7.4	813	439	1271	686
		2400	56	163	88	16.3	4.3	5.3	8.2	853	461	1336	721
		2300	49	150	81	14.4	3.8	5.9	9.2	885	478	1384	747
		2200	43	135	73	12.9	3.4	6.6	10.3	901	487	1400	756
		2100	37	114	62	11.4	3.0	7.5	11.7	870	469	1344	726
[illegible]	[illegible]	2700	74	189	102	20.8	5.5	4.1	6.3	772	417	1199	647
		2600	66	178	96	18.5	4.9	4.6	7.1	813	439	1271	686
		2500	58	169	91	16.7	4.4	5.1	7.9	861	465	1336	721
		2400	52	158	85	15.1	4.0	5.7	8.8	893	482	1384	747
		2300	45	148	77	13.6	3.6	6.3	9.8	901	487	1408	760
		2200	40	124	67	12.1	3.2	7.1	11.1	885	478	1368	739
3048	10,000	2700	68	187	101	19.3	5.1	4.4	6.8	821	443	1271	686
		2600	61	176	95	17.4	4.6	4.9	7.6	861	465	1336	721
		2500	54	165	89	15.5	4.1	5.4	8.5	893	482	1392	752
		2400	48	150	81	14	3.7	6.1	9.4	909	491	1416	765
		2300	42	132	71	12.5	3.3	6.8	10.6	893	482	1384	747
3800	12,500	2650	60	178	96	17	4.5	5.0	7.8	885	478	1376	743
		2600	56	171	92	16.3	4.3	5.3	8.2	893	482	1392	752
		2500	50	156	84	14.7	3.9	5.8	9.1	909	491	1416	765
		2400	44	138	75	13.2	3.5	6.5	10.1	901	487	1400	756

NOTES :

1. Maximum cruise is normally limited to 75 % power.
2. In the above calculations of endurance in hours and range, no allowances were made for take-off or reserve.
3. These performance data are computed for an aircraft fitted with wheel fairings. Subtract 3.15 km/h - 1.7 kts from the highest cruise speeds and 1.6 km/h - 0.85 kt from the lowest cruise speeds for the "Standard" and "Ecole" aircraft versions.

Table 2

Flight Manual REIMS/CESSNA F150L Edition No. 1 September 1970

AIRSPEED CORRECTION TABLE

FLAPS UP										
IAS	KM/H	80	97	113	129	145	161	177	193	209	225
	MPH	50	60	70	80	90	100	110	120	130	140
CAS	KM/H	85	97	111	126	140	156	172	188	206	222
	MPH	53	60	69	78	87	97	107	117	128	138
FLAPS DOWN										
IAS	KM/H	64	80	97	113	129	145	161		
	MPH	40	50	60	70	80	90	100		
CAS	KM/H	64	80	98	116	134	151	169		
	MPH	40	50	61	72	83	94	105		

Table 3

POWER OFF — STALL SPEEDS — CAS km/h - MPH

MAXIMUM GROSS WEIGHT 726 kg CONDITIONS	ANGLE OF BANK 0°	20°	40°	60°
FLAPS UP	89 km/h 55 MPH	92 km/h 57 MPH	101 km/h 63 MPH	126 km/h 78 MPH
FLAPS 20°	79 km/h 49 MPH	82 km/h 51 MPH	90 km/h 56 MPH	113 km/h 70 MPH
FLAPS 40°	77 km/h 48 MPH	79 km/h 49 MPH	87 km/h 54 MPH	108 km/h 67 MPH

Table 4

TAKE-OFF DISTANCE — FLAPS RETRACTED — HARD SURFACE RUNWAY

GROSS WEIGHT	IAS 15 m	HEAD WIND.		AT SEA LEVEL AND + 15°C		AT 762 M - 2500 FT AND + 10°C		AT 1524 M - 5000 FT AND + 5°C		AT 2286 M - 7500 FT AND 0°C	
				Ground Run	Total to Clear 15 m Obs	Ground Run	Total to Clear 15 m Obs	Ground Run	Total to Clear 15 m Obs	Ground Run	Total to Clear 15 m Obs
		km/h	kts	m	m	m	m	m	m	m	m
726 kg	113 km/h	0	0	224	422	277	506	340	605	414	744
	61 kts	18.5	10	152	315	192	381	238	460	296	572
	70 MPH	37	20	93	222	120	271	154	332	195	419

NOTE : Increase the distance by 10 % for each 15°C increase in temperature above standard for the particular altitude.
For operation on a dry, grass runway, increase the above distances by 10 %.

Table 5

LANDING DISTANCE — FLAPS LOWERED — POWER OFF - ZERO WIND — HARD SURFACE RUNWAY

GROSS WEIGHT	APPROACH SPEED IAS	AT SEA LEVEL AND + 15°C		AT 762 M - 2500 FT AND + 10°C		AT 1524 M - 5000 FT AND + 5°C		AT 2286 M - 7500 FT AND 0°C	
		Ground Roll	Total to Clear 15 m Obs	Ground Roll	Total to Clear 15 m Obs	Ground Roll	Total to Clear 15 m Obs	Ground Roll	Total to Clear 15 m Obs
		m	m	m	m	m	m	m	m
726 kg	97 km/h 52 kts 60 MPH	136	328	143	346	151	364	158	383

NOTE : Decrease distances shown by 10 % for each 7.5 km/h - 4 kts - 6.4 MPH headwind.
Increase the distance by 10 % for each 15°C temperature increase above standard.
For operation on a dry, grass runway, increase the above distances by 20 %

Table 6

FLAPS RETRACTED FULL THROTTLE MAXIMUM RATE OF CLIMB DATA									
GROSS WEIGHT	AT SEA LEVEL AND + 15°C			AT 1524 M - 5000 FT AND + 5°C			AT 3048 M - 10,000 FT AND - 5°C		
	IAS	Rate of Climb	Fuel Used	IAS	Rate of Climb	Fuel Used	IAS	Rate of Climb	Fuel Used
726 kg	122 km/h 66 kts 76 MPH	3.4 m/s 670 ft/min.	2.30 litres	117 km/h 63 kts 73 MPH	2.2 m/s 440 ft/min.	6 litres	113 km/h 61 kts 70 MPH	1.12 m/s 220 ft/min.	11.4 litres

NOTE : Flaps retracted, full throttle, mixture leaned above 1524 m - 5000 feet.
Fuel used includes warm-up and take-off allowances.

Table 7

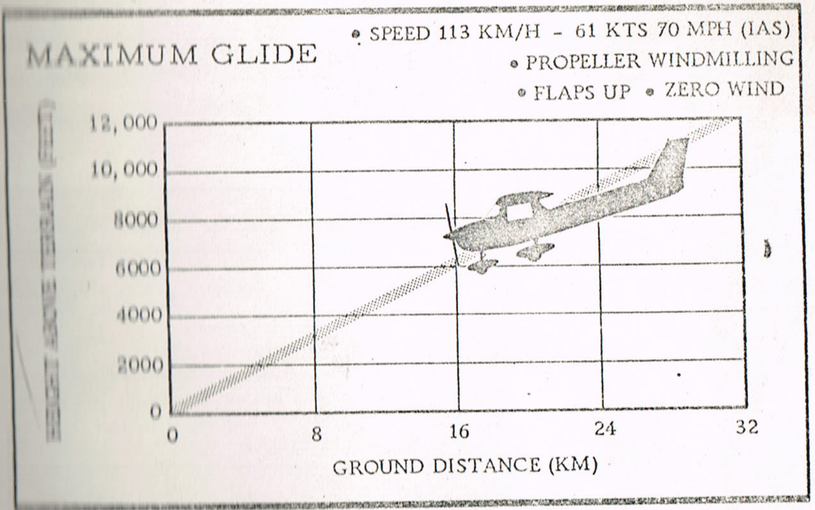

Figure 18

SHORT FIELD LANDINGS

Make a power-off approach at 97 km/h - 52 kts - 60 MPH with full flaps and land on the main wheels first. Immediately after touchdown, lower the nose wheel and apply heavy breaking.

CROSSWIND LIMITATIONS

Take-off direct crosswind limitation 37 km/h - 20 kts.
Landing direct crosswind limitation 28 km/h - 15 kts.

APPENDIX

LUBRICATION AND SERVICING PROCEDURES

DAILY

FUEL TANK FILLERS :

Service with 80/87 minimum grade or 100 L fuel in accordance with the requirements defined in pages 1-4 and 1-5. The capacity of each wing tank is 13 U.S. gallons (49 litres) for standard fuel tanks, 19 U.S. gallons (72 litres) for optional long range tanks.

FUEL STRAINER :

Before first flight of the day, drain the wing tanks and pull out the fuel strainer drain knob ; release it then check that strainer drain is closed. (The fuel sampler cup is housed in the map compartment).

OIL FILLER :

Check oil level before each flight and service, if necessary, with aviation grade engine oil ; SAE 10W50 or SAE 40 above 5°C (40°F) and SAE 10W30 or SAE 20 below 5°C (40°F).

Multi-viscosity oil is recommended for improved starting in cold weather.

Detergent or dispersant oil, conforming to Continental Specification MHS 24 are recommended.

NOTE

The aircraft was delivered from the factory with a corrosion preventive aircraft engine oil. If oil must be added during the first 25 hours, use only aviation grade straight mineral oil (non-detergent) conforming to Specification No. MIL-L-6082.

SERVICING INTERVALS CHECK LIST

FIRST 25 HOURS

ENGINE OIL SUMP AND OIL FILTER

After first 25 hours of operation, drain engine oil sump and clean both the oil suction strainer and oil pressure screen. If an optional oil filter is installed, change filter element at this time. Refill sump with straight mineral oil (non-detergent) and use until a total of 50 hours have accumulated, then change to detergent oil.

EACH 50 HOURS

BATTERY

Check and service. Check more often (at least every 30 days) if operating in hot weather. Electrolyte should be added only into a charged battery.

ENGINE OIL SUMP AND OIL FILTER (OPT)

If optional oil filter is not installed, change oil and clean the oil pressure screen.

If optional oil filter is installed, replace filter element only.

The above operations shall be performed even though less than 50 hours have accumulated within a six month period.

Reduce periods for prolonged operation in dusty areas, cold climates, or when short flights and long idle periods result in sludging conditions.

CARBURETOR AIR FILTER

Clean or replace. Under extremely dusty conditions, daily maintenance of the filter is recommended.

NOSE GEAR TORQUE LINKS

Lubricate. When operating under dusty conditions, more frequent lubrication is recommended.

EACH 100 HOURS

BRAKE MASTER CYLINDERS

Check and fill.

SHIMMY DAMPENER

Check and fill.

FUEL STRAINER

Disassemble and clean.

FUEL TANK SUMP DRAINS

Drain water and sediment.

FUEL LINE DRAIN PLUG

Drain water and sediment.

VACUUM SYSTEM OIL SEPARATOR (OPT)

Clean.

SUCTION RELIEF VALVE INLET FILTER (OPT)

Clean.

SPARK PLUGS

Clean, test and regap.

ENGINE OIL SUMP

If optional oil filter is installed, change oil.

Change the oil even though less than 100 hours have accumulated within a six month period.

Reduce periods for prolonged operation in dusty areas, cold climates, or when short flights and long idle periods result in sludging conditions.

EACH 500 HOURS

VACUUM SYSTEM AIR FILTER (OPT)

Replace filter element.
Replace sooner if suction gage reading drops to 4.6 in. Hg.

WHEEL BEARINGS

Lubricate.

AS REQUIRED

NOSE GEAR SHOCK STRUT

Keep filled with hydraulic fluid and inflated with air.

GYRO INSTRUMENT AIR FILTER

Replace at instrument overhaul.

CARE OF THE AIRPLANE

GROUND HANDLING

The airplane is most easily and safely maneuvered by hand with a tow-bar attached to the nose wheel.

When using the tow-bar, never exceed the turning angle of 30° either side of center, or damage to the gear will result.

MOORING YOUR AIRPLANE

Proper tie-down is the best precaution against damage to your parked airplane by gusty or strong winds. To tie down your airplane securely, proceed as follows :

(1) Set parking brake and install control wheel lock.
(2) Install a surface control lock between each aileron and flap.
(3) Tie sufficiently strong ropes to wing and tail tie-down fittings, and secure each rope to ramp tie-down.
(4) Install a surface control lock over the fin and rudder.
(5) Install a pitot tube cover.

WINDSHIELD - WINDOWS

The windshield and windows should be kept clean at all times. Wash them carefully with plenty of soap and water, using palm of hand. 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 ; the use of a chamois prevents such a dust attraction.

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

After removing dirt and grease, the surface may be waxed with a good grade of wax. 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.

PAINTED SURFACES

The painted exterior surfaces of the aircraft require an initial curing period which may be as long as 15 days. During this curing period, some precautions should be taken to avoid damaging the finish. The finish should be cleaned only by washing with clean water and mild soap, followed by a rinse water and drying with chamois. Do not use polish or wax, and avoid flying through rain, hail or sleet during this period. Once the finish has cured completely, wax or polish may be used, particularly on the leading edges, engine nose cap, and propeller spinner to reduce the abrasion encountered in these areas.

ALUMINUM SURFACES

The clad aluminum surfaces of the aircraft require only minimum care to keep them bright and clean. The airplane may be washed with clear water to remove dirt ; oil and grease may be removed with gasoline, naphtha, carbon tetrachloride or other non-alkaline solvents. Dulled aluminum surfaces may be cleaned effectively with an aircraft aluminum polish.

After cleaning, and periodically thereafter, waxing with a good wax will preserve the bright appearance and retard corrosion. Regular waxing is especially recommended for airplanes operated in salt water areas as a protection against corrosion.

PROPELLER CARE

Preflight inspection of propeller blades for nicks, and wiping them occasionally with an oily cloth to clean off grass and bug stains will assure long, trouble-free service. Small nicks on the blades, particularly

near the tips and on the leading edges, should be dressed out as soon as possible since these nicks produce stress concentrations, and if ignored, may result in cracks. Never use an alkaline cleaner on the blades ; remove grease and dirt with carbon tetrachloride.

INTERIOR CARE

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

Oily spots may be cleaned with household spot removers, used sparingly. Before using any solvent, 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.

The "royalite" trim, instrument panel and control knobs need only be wiped off 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 paragraphs on care of the windshield, must never be used since they soften and craze the plastic.

NOTE

All servicing procedures are described in detail in the Maintenance Guide available with the aircraft.

OPTIONAL EQUIPMENT LIST

DESCRIPTION	PAGE	APPROVAL
Winterization Kit	6-1.1	
Ground Service Plug Receptacle	6-2.1	
Radio Transmitter Selector Switch	6-3.1	
Boom Microphone	6-3.1	
True Airspeed Indicator	6-4.1	
Wing Leveler	6-5.1 and 6-5.2	
BADIN CROUZET RG10B Automatic Pilot + Directional Gyro Coupling + Omni Coupling	6-6.1 thru 6-6.3	

MINISTÈRE DES TRANSPORTS
P. Robert
Secrétariat Général à l'Aviation Civile

10 March 1972
p. o. J. ROBERT
SGAC Approval

OPTIONAL EQUIPMENT LIST

DESCRIPTION	PAGE	APPROVAL
+ Winterization Kit	6-1.1	
+ Ground Service Plug Receptacle	6-2.1	
+ Radio Transmitter Selector Switch	6-3.1	
+ Boom Microphone	6-3.1	
+ True Airspeed Indicator	6-4.1	
+ Wing Leveler	6-5.1 and 6-5.2	
+ BADIN CROUZET RG10B Automatic Pilot + Directional Gyro Coupling + Omni Coupling	6-6.1 thru 6-6.3	

10 March 1972
p. o. J. ROBERT
SGAC Approval

WINTERIZATION KIT

For continuous operation in temperatures consistently below 20°F (-7°C), the winterization kit should be installed to improve engine operation. The kit consists of :

- Two shields to partially cover the cowl nose cap openings.
- The addition of heat ducting from the right exhaust manifold for additional cabin heat.
- A carburetor airbox heat outlet cap.
- An insulation for the engine crankcase breather line.

NOTE

Once installed, the crankcase breather insulation is approved for permanent use in both cold and hot weather.

GROUND SERVICE PLUG RECEPTACLE.

A ground service plug receptacle may be installed to permit the use of an external power source for cold weather starting and during lengthy maintenance work on the electrical and electronic equipment.

Just before connecting an external power source, the master switch should be turned "ON".

This is especially important since it will enable the battery to absorb transient voltages which otherwise might damage the transistors in the electronic equipment.

The battery and external power circuits have been designed to completely eliminate the need to "jumper" across the battery contactor to close it for charging a completely "dead" battery. A special fused circuit in the external power system supplies the needed "jumper" across the contacts so that with a "dead" battery and an external power source applied, turning the master switch "ON" will close the battery contactor.

RADIO TRANSMITTER SELECTOR SWITCH

Operation of the radio equipment is normal as covered in the respective radio manuals. When the aircraft is equipped with more than one radio having transmitter capabilities, a transmitter selector switch is installed to switch the microphone to the radio unit the pilot desires to use for transmission. The switch is located in the upper left portion of the instrument panel and is labeled "TRANS, 1 and 2." Placing the switch in the upper position, labeled "1," switches the microphone to the upper transmitter; the lower position, labeled "2," switches the microphone to the lower transmitter.

BOOM MICROPHONE

A boom microphone may be mounted in the center of the cabin ceiling. Clips are provided just back of the upper edge of the windshield to stow the microphone when not in use.

The boom microphone allows radio communication without the necessity of releasing any controls to handle the normal hand microphone.

The microphone keying switch is a push button located on the left side of the pilot's control wheel.

TRUE AIRSPEED INDICATOR

A true airspeed indicator is available to replace the standard airspeed indicator in your airplane. The true airspeed indicator has a calibrated rotatable ring which works in conjunction with the airspeed indicator dial in a manner similar to the operation of a flight computer.

TO OBTAIN TRUE AIRSPEED, rotate ring until pressure altitude is aligned with outside air temperature in degrees Fahrenheit. Then read true airspeed on rotatable ring opposite airspeed needle.

NOTE

Pressure altitude should not be confused with indicated altitude. To obtain pressure altitude, set barometric scale on altimeter to "29.92" (1013 mb) and read pressure altitude on altimeter. Be sure to return altimeter barometric scale to original barometric setting after pressure altitude has been obtained.

WING LEVELER

1. GENERAL

A wing leveler may be installed to augment the lateral and directional stability of the airplane. The system uses the Turn Coordinator for roll and yaw sensing. Vacuum pressure, from the engine-driven vacuum pump, is routed from the Turn Coordinator to cylinder-piston servo units attached to the aileron and rudder control systems. As the airplane deviates from a wing level attitude or a given direction, vacuum pressure in the servo units is increased or relieved as needed to actuate the ailerons and rudder to oppose the deviations. The rudder action effectively corrects adverse yaw induced by the ailerons.

A separately mounted push-pull control knob, labeled "WING LVLR," is provided at the lower center of the instrument panel to turn the system on and off. A "ROLL TRIM" control knob on the Turn Coordinator is used for manual roll trim control to compensate for asymmetrical loading of fuel and passengers, and to optimize system performance in climb, cruise and let-down.

2. OPERATION LIMITATIONS

(1) The wing leveler system may be overpowered at any time without damage or wear. However, for extended periods of maneuvering it may be desirable to turn the system off.

(2) It is recommended that the system not be engaged during take-off and landing. Although the system can be easily overpowered, servo forces could significantly alter the manual "feel" of the aileron control, especially should a malfunction occur.

3. EMERGENCY PROCEDURES

If a malfunction should occur, the system is easily overpowered with pressure on the control wheel. The system should then be turned off. In the event of partial or complete vacuum failure, the wing leveler will automatically become inoperative. However, the Turn Coordinator used with the wing leveler system will not be affected by loss of vacuum since it is designed with a "back-up" system enabling it to operate from either vacuum or electrical power in the event of failure of one of these sources.

4. NORMAL PROCEDURES

TAKE-OFF

(1) "WING LVLR" Control Knob - Check in off position (full in).

CLIMB

(1) Adjust elevator trim for climb.
(2) "WING LVLR" Control Knob - Pull control knob "ON".
(3) "ROLL TRIM" Control Knob - Adjust for wings level attitude.

CRUISE

(1) Adjust power and elevator trim for level flight.
(2) "ROLL TRIM" Control Knob - Adjust as desired.

DESCENT

(1) Adjust power and elevator trim for desired speed and rate of descent.
(2) "ROLL TRIM" Control Knob - Adjust as desired.

LANDING

(1) Before landing, push "WING LVLR" control knob full in to the off position.

BADIN CROUZET RG10B AUTOMATIC PILOT + DIRECTIONAL GYRO COUPLING + OMNI COUPLING

1 BREAKDOWN OF CES. RA. 150. 770 OPTION

A. BADIN CROUZET RG10B Automatic Pilot

This automatic pilot is intended for stabilization or control of the aircraft in roll and yaw through the roll control system.

The major components are as follows :

- A flight controller.
- A roll/yaw sensor.
- An air distributor.
- Two aileron control air-driven actuators.
- A vacuum source.
- Mechanical parts.

B. Directional Gyro Coupling and Omni Coupling

The above automatic pilot may be supplemented with the following equipment :

- A vacuum-driven directional gyro.
- A "HDG-VOR" navigation coupler.

2 OPERATION LIMITATIONS

The automatic pilot must not be used for take-off and landing.

3 EMERGENCY PROCEDURES

Automatic Pilot Failure

- Take over manual control of the aircraft.
- Set autopilot "ON-OFF" switch to "OFF".
- Close "VIDE P. A." ("A. P. VACUUM") valve on the instrument panel.

Electrical Failure

- Any electrical failure will result in the failure of the automatic pilot and may be cause for residual forces to be overpowered.
- Apply the above procedure.

4 NORMAL PROCEDURES

Before Take-Off

- Set "TURN" and "TRIM" knobs to neutral.
- "STAB-HDG" selector switches - "STAB".
- Autopilot "ON-OFF" switch - "OFF".
- "VIDE P. A." ("A. P. VACUUM") valve - "OUVERT" ("OPEN").
- Suction gage - Check (4. 6 to 5. 4 inches of mercury).

Take-Off

- Autopilot "ON-OFF" switch - "OFF".

Automatic Pilot Engagement

- While holding the control wheel, set the following switches as follows :
  - "STAB-HDG" selector switch - "STAB".
  - Autopilot "ON-OFF" switch - "ON".
- Release the control wheel
  - Adjust "TRIM" knob for zero rate.
  - Maintain a steady climb angle with the manual flight controls without counteracting the transverse movements induced by the automatic pilot.
  - To make turns, rotate "TURN" knob to "L" or "R" according to the desired turn direction.

- Roll-out : Return "TURN" knob to neutral.
- "TRIM" knob must be readjusted from time to time to compensate for aerodynamic asymmetry.

NOTE

The automatic pilot is operative as soon as engaged ; however, maximum performance will be obtained only 30 minutes after its engagement.

Directional Gyro Coupling

- Select desired heading on the directional gyro compass card (aligned with magnetic compass heading).
- Set "HDG-VOR" selector switch to "HDG".
- Set "STAB-HDG" selector switch to "HDG" - The aircraft turns to the selected heading.
- "STAB-HDG" selector switch need not be set to "STAB" to change heading or to reset the directional gyro.

Omni Coupling Function

- Set the selected station frequency at the Omni control unit.
- Select desired heading on the directional gyro compass card and the Omni indicator.
- Set "HDG-VOR" selector switch to "VOR".
- Check "STAB-HDG" selector switch is set to "HDG".
- The selected heading is automatically maintained or corrected.

NOTE

If the aircraft is subjected to strong crosswind conditions, it is recommended to allow for a certain amount of drift upon heading selection on the directional gyro compass card, not altering the course selected on the Omni indicator.

ADDITIONAL INFORMATION FOR BRITISH CERTIFICATION

CAA Supplement 1 Issue 2 to the Reims/Cessna F150L 1974 Flight Manual.

CIVIL AVIATION AUTHORITY ae 7-2-80

Reims/Cessna F150L	Constructor's Serial No. 1026	Registration Marks G-BBKE.

The aeroplane is to be operated in accordance with the following information in addition to that contained in the Flight Manual and any relevant appendix, supplement or change sheet. The information in this supplement supersedes any similar information in the remainder of the Flight Manual.

LIMITATIONS

1. This type of aeroplane is eligible for certification in the Transport Category (Passenger).

   However, this particular aeroplane may be restricted to another Category and to some particular use. This will be stated in the Certificate of Airworthiness.

2. When the aeroplane is operated in the Transport Category (Passenger), the aeroplane is classified in Performance Group E.

3. Aerobatic manoeuvres are limited to those listed in the Flight Manual. When aerobatic manoeuvres are to be performed the limitations associated with the Utility Category in the Flight Manual shall be complied with.

4. The minimum crew is one pilot.

5. The total number of occupants shall not exceed two, nor exceed the number of seats approved for take-off and landing.

6. Smoking is prohibited during take-off and landing.

PERFORMANCE

1. The speed for compliance with the regulations governing flight over water is 100 mph TAS.

To be attached to the Reims/Cessna F150L 1974 Flight Manual.

CAA Supplement 1 Issue 2 — CAA Approved

CIVIL AVIATION AUTHORITY

ADDITIONAL INFORMATION FOR BRITISH CERTIFICATION

CAA Supplement 2 Issue 1 to the Reims/Cessna F150L 1974 Flight Manual.

CIVIL AVIATION AUTHORITY ae 8-5-81

Reims/Cessna F150L	Constructor's Serial No. 1026	Registration Marks G-BBKE

The aeroplane is to be operated in accordance with the following information in addition to that contained in the Flight Manual and any approved appendix, supplement or change sheet. The information supersedes any similar information in the manual.

PERFORMANCE

To allow for the performance recorded on this type of aeroplane during flight tests, the following adjustments must be made to the performance scheduled in the manual.

1. Increase the take-off distance by 3%.

2. Decrease the scheduled rate of climb by 30 ft/min.

To be inserted at the back of the manual and the CAA revision record sheet to be amended accordingly.

CAA Supplement 2 — CAA Approved