

CESSNA 172

HANDLING NOTES CHECKLISTS

MINOVATION Pty Ltd
1A Eagle Drive
Jandakot Airport
WA 6164

MINOVATION Pty Ltd

CESSNA 172 HANDLING NOTES**SPECIFICATIONS****1. Power Plant**

Type: Lycoming

MVD, WFU 0-360**CFG** IO-360

Rated Horsepower 180 @ 2700

The engine is four cylinder, direct drive, horizontally opposed and air cooled.

The oil system is a wet sump, pressure feed system

2. Propeller

All metal, two bladed, 76 inch fixed pitch propeller which rotates clockwise as viewed from the cockpit.

4. Weight Specifications Maximum all up weight 1156.0 kg**5. Tyre Pressures and Sizes** Nose: 34 psi; 5.00 x 5 - 6 ply,
Mains: 28 psi; 6.00 x 6 - 4 ply**6. Fuel**
MVD Capacity 204 litres, 189 usable.
CFG Capacity 213 litres, 200 useable
WFU Capacity 257 litres, 235 useableConsumption for flight planning: 36 litres per hour
Octane rating 100/130**7. Oil**
Capacity 8 US quarts
Minimum 6 US quarts
Grade Aeroshell W100 or equivalent**8. Airspeeds (knots)**
Best Angle of Climb 60
Best Rate of climb 76
Normal 80
Glide 65
Approach 70
Final 65
Flapless approach 70

TAS for flight planning 115

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CESSNA 172 HANDLING NOTES**OPERATING LIMITATIONS**

1. Maximum all-up weight	1156 kg
2. Airspeed limitations (knots)	Vne 158
	Vno 127
	Manoeuvring 99 (MTOW)
	Vfe 10° flap 110
	Vfe Full flap 85
	Window open 158
	Max crosswind 15 (Demonstrated)

3. Manoeuvres permitted

Normal Category: Manoeuvres permitted are stalls, lazy eights, chandelles and turns up to 60° angle of bank. Spins are not approved in the normal category.

Utility Category: The baggage area and rear seat must not be occupied. Refer to the Pilot's Operating Handbook for permitted manoeuvres and recommended entry speeds.

Load factor limits: Flaps up: +3.8g, -1.52g
Flaps down: +3.0g

Ground Manoeuvring

Moving the aeroplane by hand is most easily accomplished using the towbar. If a tow bar is not available, or pushing is required, use the wing struts as push points.

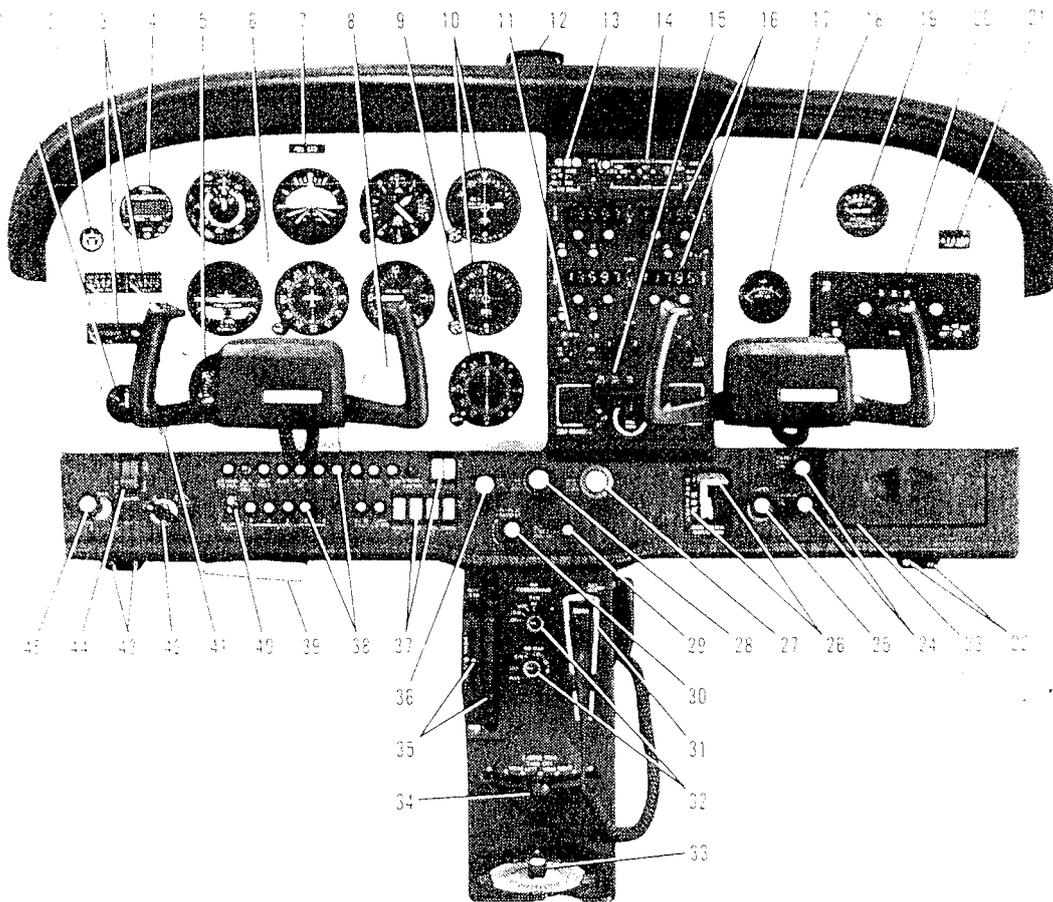
N.B. Do not use the vertical or horizontal surfaces to move the aeroplane.

4. Smoking

Smoking is not permitted in Company aircraft. (Ref. Company Operations Manual)

5. Power plant limitations

Oil Temperatures:	Normal 75° - 245 ° F; 24° - 118° C
Oil Pressures	Normal 25 - 115 psi Minimum in flight 60 psi Caution 25 - 60 psi
Gyro suction	4.5-5.4 inches of mercury



MVD, WFU

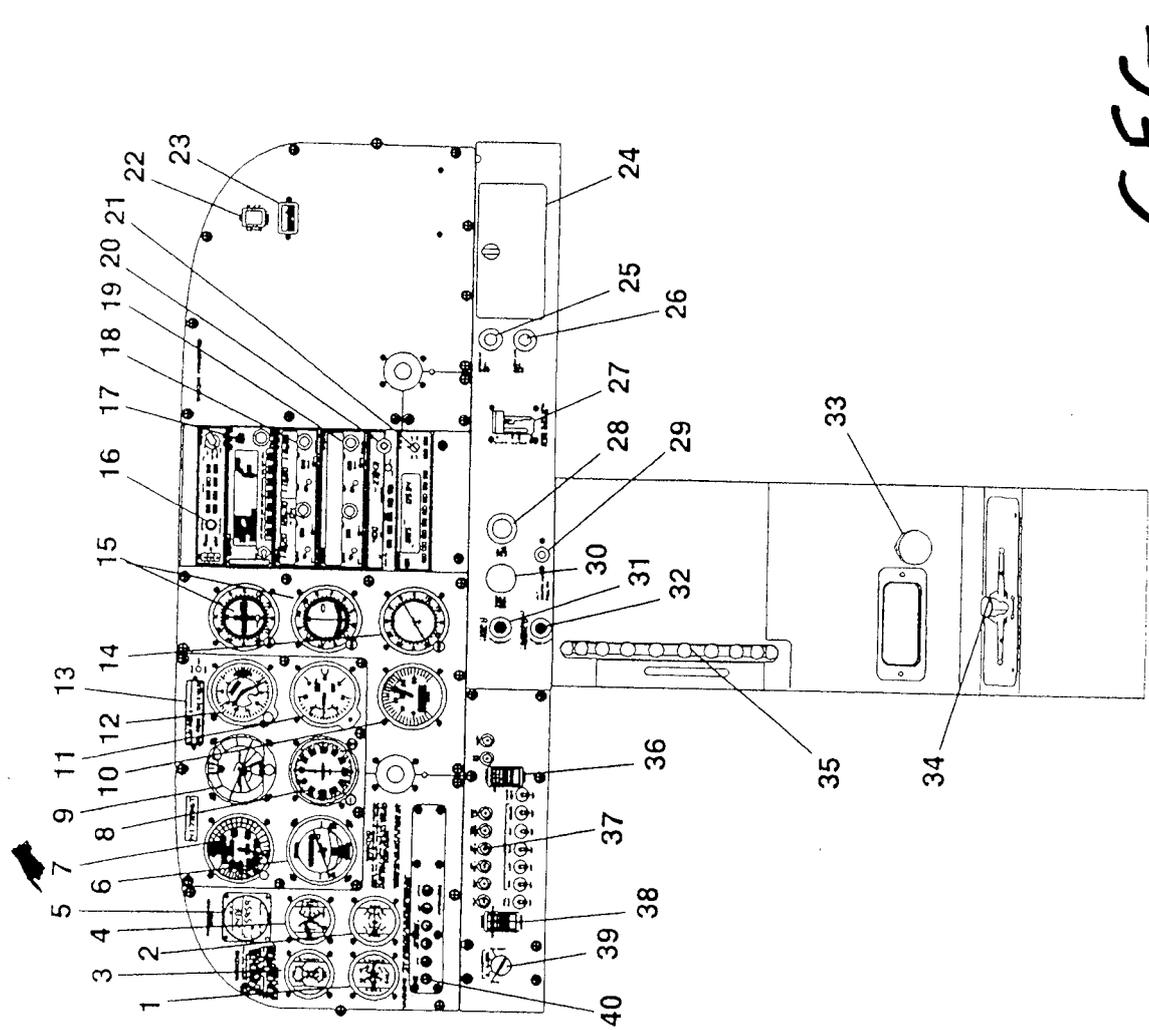
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|--|--|
| 1. Ammeter | 24. Cabin Heat and Air Control Knobs |
| 2. Suction Gauge | 25. Cigar Lighter |
| 3. Oil Temperature, Oil Pressure, and Fuel Quantity Indicators | 26. Wing Flap Switch and Position Indicator |
| 4. Digital Clock | 27. Mixture Control |
| 5. Tacnometer | 28. Throttle (With Friction Lock) |
| 6. Flight Instrument Group | 29. Static Pressure Alternate Source Valve |
| 7. Airplane Registration Number | 30. Instrument and Radio Light Dimming Rheostats |
| 8. Additional Instrument Space | 31. Hand-Held Microphone |
| 9. ADF Bearing Indicator | 32. Air Conditioning Controls |
| 10. Course Deviation Indicators | 33. Fuel Selector Valve Handle |
| 11. Transponder | 34. Rudder Trim Control Lever |
| 12. Magnetic Compass | 35. Elevator Trim Control Wheel and Position Indicator |
| 13. Marker Beacon Indicator Lights and Switches | 36. Carburetor Heat Control |
| 14. Avionics Control Panel | 37. Electrical Switches |
| 15. Autopilot Control Unit | 38. Circuit Breakers |
| 16. Nav. Com Radios | 39. Parking Brake Handle |
| 17. Economy Mixture Indicator (EGT) | 40. Avionics Power Switch |
| 18. Additional Instrument Space | 41. Low-Voltage Warning Light |
| 19. Carburetor Air Temperature Gage | 42. Ignition Switch |
| 20. ADF Radio | 43. Auxiliary Phone and Mike Jacks (Pilot) |
| 21. Flight Hour Recorder | 44. Master Switch |
| 22. Auxiliary Phone and Mike Jacks (Front Passenger) | 45. Primer |
| 23. Map Compartment | |

PHOTOGRAPH BY THE AIRCRAFT PHOTOGRAPHY SECTION, U.S. AIR FORCE

AIRCRAFT PHOTOGRAPHY SECTION, U.S. AIR FORCE

PHOTOGRAPH BY THE AIRCRAFT PHOTOGRAPHY SECTION, U.S. AIR FORCE

1. Oil Temperature and Oil Pressure Indicator
2. Vacuum and Ammeter Indicator
3. Fuel Quantity Indicator
4. EGT/Fuel Flow Indicator
5. Digital Clock / O.A.T. Indicator
6. Turn Coordinator
7. Airspeed Indicator
8. Directional Gyro
9. Attitude Indicator
10. Tachometer
11. Vertical Speed Indicator
12. Altimeter
13. Annunciator Panel
14. ADF Bearing Indicator
15. Course Deviation and Glide Slope Indicators
16. Audio Control Panel
17. GPS Receiver
18. Nav/Com Radio #1
19. Nav/Com Radio #2
20. ADF Receiver
21. Transponder
22. ELT Remote Test Button
23. Hour Meter
24. Glove Box
25. Cabin Heat Control
26. Cabin Air Control
27. Flap Switch and Position Indicator
28. Mixture Control
29. Alternate Static Air Control
30. Throttle Control
31. Radio and Panel Dimming Control
32. Glareshield and Pedestal Dimming Control
33. Fuel Shutoff Valve Control
34. Fuel Selector
35. Elevator Trim Control and Position Indicator
36. Avionics Master Switch
37. Circuit Breakers and Switch/Breakers
38. Master Switch
39. Ignition Switch
40. Avionics Circuit Breaker Panel



CFG

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Figure 7-2. Instrument Panel (Sheet 1 of 2)

Figure 7-2. Instrument Panel (Sheet 2 of 2)

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CESSNA 172 HANDLING NOTES**AIRCRAFT SYSTEMS****Fuel System****MVD AND WFU**

Fuel is supplied by gravity to the engine from two vented tanks fitted adjacent to the wing roots. From these tanks, fuel flows by gravity to the carburettor via a fuel shut-off valve and fuel strainer. From the carburettor, mixed fuel and air flows to the cylinders through intake manifold tubes. The manual primer draws its fuel from the fuel strainer and injects it into the cylinder intake ports. **It is essential that the primer is locked prior to flight.** Venting is accomplished by an interconnecting line from the right tank to the left tank, where the vent line protrudes from the bottom surface of the left wing near the wing strut attachment point.

The fuel tap has four positions, LEFT, RIGHT, BOTH and OFF. The fuel grade to use in this aircraft is Avgas 100/130.

The up-draught, float type fixed jet carburettor is fitted with an accelerator pump to prevent a "lean cut" if the throttle is opened rapidly. Therefore the throttle should not be "pumped" unless the engine is cranking, otherwise an excess of fuel from the accelerator pump can cause a risk of engine fire. The carburettor is also equipped with a idle cut-off mechanism and manual mixture control.

CFG

The fuel system consists of two vented integral fuel tanks, a three position selector valve with LEFT, RIGHT and BOTH positions, a fuel shutoff valve, auxiliary fuel pump, fuel strainer, engine driven fuel pump, fuel/air control unit, fuel distribution valve and fuel injection nozzles. Fuel flows by gravity from the wing tanks through the selector valve and on to the reservoir tank. From there the fuel flows through the auxiliary fuel pump,, past the fuel shutoff valve, through the fuel strainer to the engine driven fuel pump.

From the engine driven fuel pump the fuel is delivered to the fuel/air control unit where it is metered and directed to a fuel distribution valve (manifold) which distributes it to each cylinder. Fuel flow into each cylinder is continuous and flow rate is determined by the amount of air passing through the fuel/air control unit.

CFG has a total of thirteen fuel drain valves, five under each wing and three under the engine cowling.

Fuel measurement before flight is achieved by reading directly from the fuel gauges, as there is no dipstick for this aircraft.

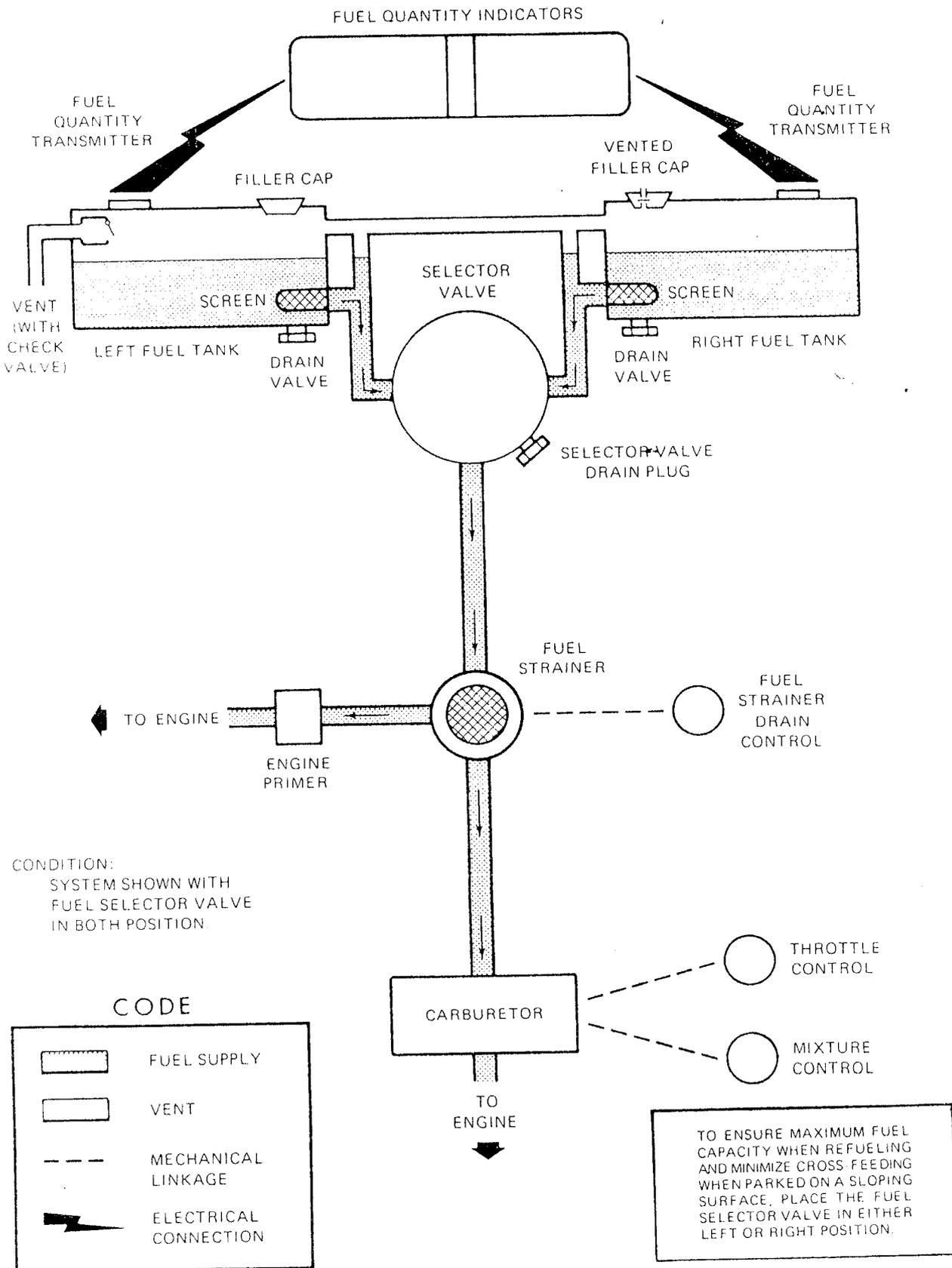
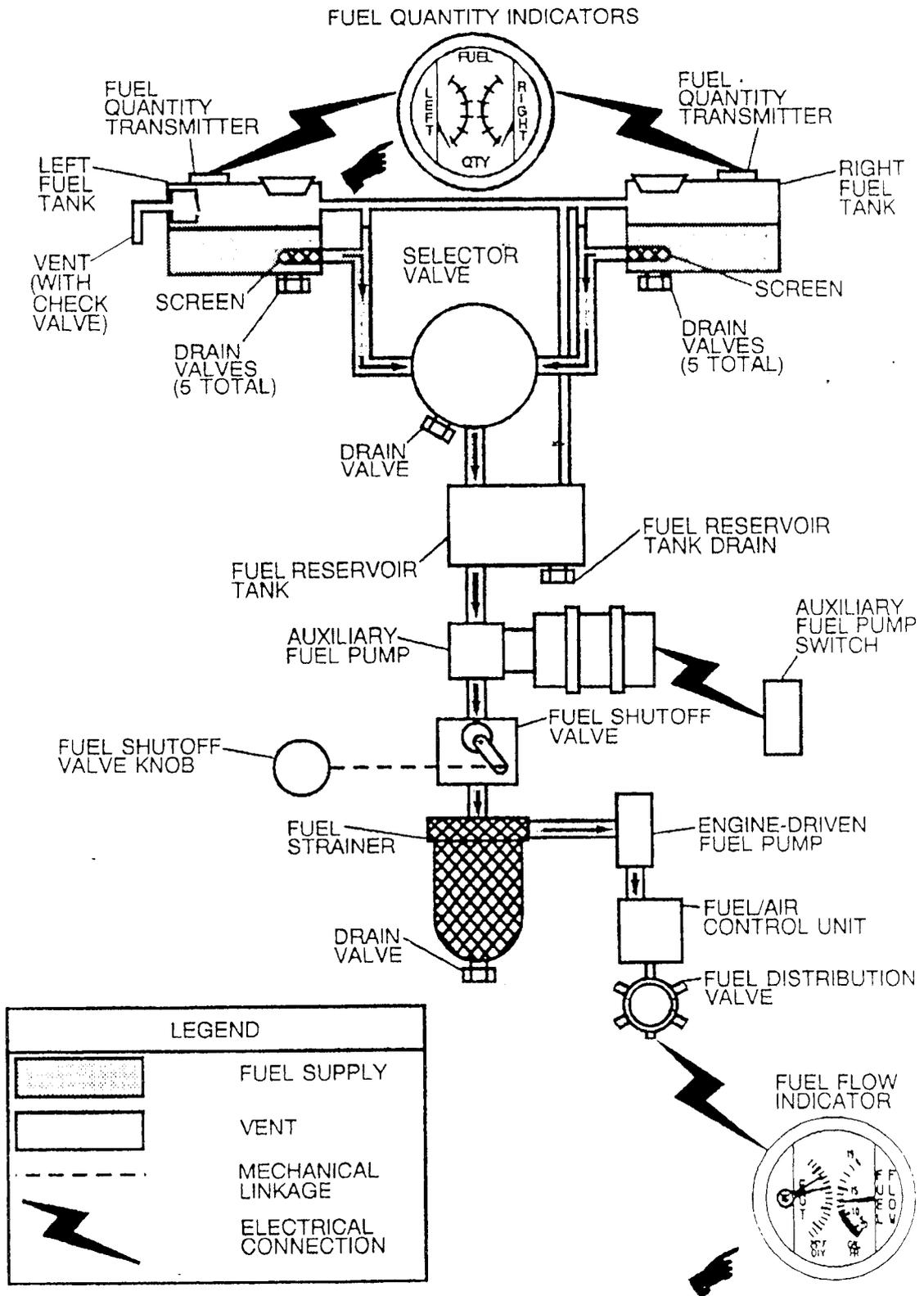


Figure 7-6. Fuel System (Standard and Long Range)

CFG



0585C1013

Figure 7-6. Fuel System Schematic

CESSNA 172 HANDLING NOTES**Undercarriage**

The Cessna 172 has a fixed tricycle undercarriage. The main undercarriage legs are made of spring steel to absorb the loads on landing.

The nose gear attaches to the engine mount and also has an air-oil oleo strut to damp and absorb operating loads. About 10 cm of the piston should be exposed. On the rear of the leg is a torque link, which maintains the correct alignment of the nose wheel in flight. The nose gear is steerable through direct linkage with the rudder pedals to 8.5° each side of centre. By applying differential braking, the degree of turn may be increased to 30° either side of centre..

Brake system

The brake system consists of single disc brake assemblies fitted to each main wheel which are operated hydraulically.

Each toe brake has a separate brake cylinder allow differential braking for tighter turns on the ground. Excessive use of differential braking can cause tyre damage. The park brake should be used whenever the aircraft is stationary with the engine running.

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CESSNA 172 HANDLING NOTES**Flight controls**

Dual flight controls are fitted as standard to the Cessna 172.

The AILERONS are of the differential and frise type. There are three mass balance weights attached to the aileron to prevent “flutter”.

The RUDDER is operated through the rudder pedals.

The ELEVATOR has a conventional trim tab fitted to the trailing edge.

The FLAPS are of the slotted and fowler type. They are operated by an electric motor and push rods, and are operated by a lever in the cockpit. The flap position is indicated next to the flap operating lever.

Electrical system

The Cessna 172 has a 28 volt DC electrical system. The 60 amp alternator is mounted to the front lower right of the engine and is engine driven from a belt drive from a pulley behind the starter ring. The alternator produces AC. The output is controlled by a voltage regulator, and has an over voltage relay to protect the system from damage.

The 24 volt battery is used to start the engine, provide enough voltage for excitation of the alternator field and provide backup power in the event of an alternator failure. The battery is located on the left hand forward portion of the firewall.

The ammeter indicates the flow of current from the alternator to the battery. In the unlikely event of an alternator failure the ammeter will show the rate of discharge from the battery as this is supplying the required power to the bus bar.

In the event of alternator failure during flight, indicated by a discharge on the ammeter:

- reduce the electrical load
- check the field circuit breaker and output circuit breaker
- if either of these has tripped, wait 2 seconds then reset
- turn off the ALT half of the master switch for 3 seconds to reset the over-voltage regulator, and then switch on again.

If the ammeter still does not indicate an output, reduce the electrical load to a minimum and terminate the flight as soon as practicable.

The battery will provide sufficient power to run the radios for approximately 20 minutes.

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CESSNA 172 HANDLING NOTES

Vacuum system

An engine driven vacuum pump is mounted to the engine. The pump is fitted with a plastic shear drive to prevent damage to the engine if the pump should seize. Suction is used to drive the Attitude Indicator and Directional Gyro. The suction gauge is mounted on the instrument panel.

Loading

The aircraft must be loaded so that the take-off weight is below the certified maximum. Operating the aircraft over weight will adversely affect the performance of the aircraft. Operating when loaded outside the centre of gravity limitations will reduce effectiveness of the control surfaces.

Each aircraft has its own weight schedule which is found in the flight manual for that particular aircraft, and are reproduced in these notes.

MANDATORY INSTRUMENTS AND INDICATORS.

The aircraft shall not be operated unless, in addition to the equipment required by CAO 20.18, the following are also installed:

- Trim position indicators
- Fuel quantity gauges
- Fuel pressure gauge
- Oil pressure gauge
- Oil temperature gauge
- Tachometer
- Stall warner

6.2 - AEROPLANE WEIGHT

Aeroplane Type: Cessna 172N

Registration Marking: VH-MVD

Aircraft S/N: 172 73660

Issue	Date	Date of Expiry
2	13/07/94	Indefinite

Aeroplane Weight and Centre of Gravity Data:

Empty/Basic/Operating Weight (kg) (See Note Below)	Arm (mm aft of datum) *	Index Moment $\frac{+000}{(kg\ mm)}$	Cabin Configuration
699	974	680 518	4 Seats

NOTE: The above weight(s) include UNUSABLE FUEL (8.2 kg) and FULL OIL (5.1 kg).

* DATUM:

F.S. 0.0 is the lower front face of the firewall.

Prep.: JK	Chkd: 								
<table border="1"> <tr> <td colspan="2">AERONAUTICAL ENGINEERS AUSTRALIA</td> </tr> <tr> <td>APPROVED</td> <td></td> </tr> <tr> <td>WEIGHT CONTROL AUTHORITY No.</td> <td>.....</td> </tr> <tr> <td>DATE</td> <td>13/07/94</td> </tr> </table>		AERONAUTICAL ENGINEERS AUSTRALIA		APPROVED		WEIGHT CONTROL AUTHORITY No.	DATE	13/07/94
AERONAUTICAL ENGINEERS AUSTRALIA									
APPROVED									
WEIGHT CONTROL AUTHORITY No.								
DATE	13/07/94								

6.2 - AEROPLANE WEIGHT

Aeroplane Type: Cessna 172P

Registration Marking: VH-WFU Aircraft S/N 17274613

Issue	Date	Date of Expiry
2	24/4/91	indefinite

Aeroplane Weight and Centre of Gravity Data:

Empty/Basic/Operating Weight (kg) (See Note Below)	* Arm (mm aft of datum)	Index Moment $\frac{+000}{(kg\ mm)}$	Cabin Configuration
711	986	701 105	4 seats

NOTE: The above weight(s) include UNUSABLE FUEL (8 kg)

FULL OIL (6.8 kg).

DATUM* FS 0.0 front face lower firewall

AERONAUTICAL ENGINEERS AUSTRALIA	
APPROVED	
WEIGHT CONTROL AUTHORITY No.
DATE	24/4/91

WFU, MVD.

CIVIL AVIATION AUTHORITY
APPROVED SUPPLEMENT
April 1991

CESSNA 172P
180HP INSTALLATION
GROSS WEIGHT INCREASE

SECTION 2: LIMITATIONS

- A. The following placard must be displayed in full view of the pilot:

THIS AIRCRAFT HAS BEEN MODIFIED BY THE
INSTALLATION OF A 180 HP ENGINE PER STC
SA-703-GL. IT MUST BE OPERATED IN
COMPLIANCE WITH THE OPERATING
LIMITATIONS AS STATED IN THE FORM OF
PLACARDS, MARKINGS AND MANUALS.

- B. The following limits apply to the normal category only:

Maximum Gross Weight - 1156 kg

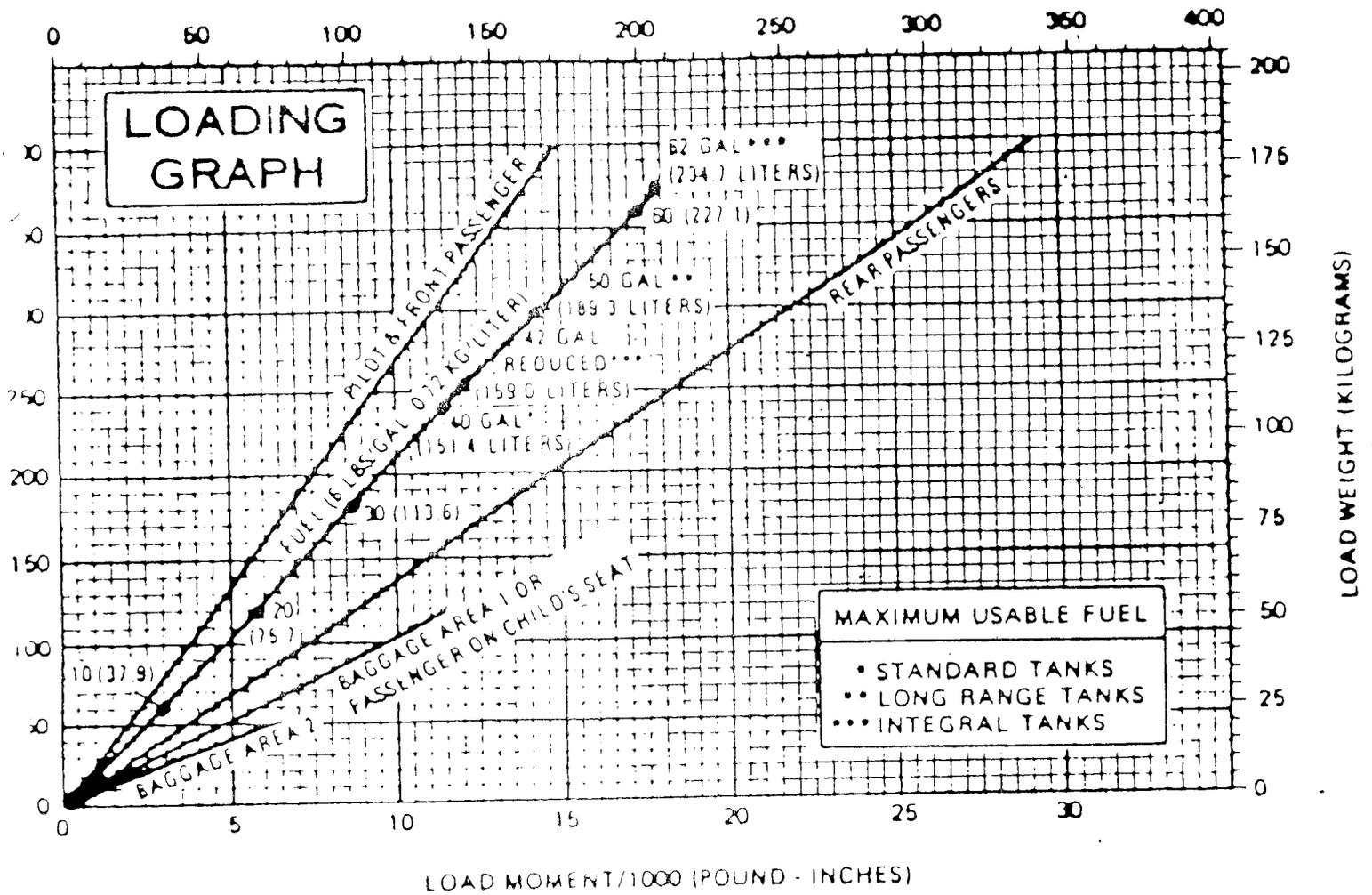
C.G. Range - 1041mm to 1201mm @ 1156kg

- 889mm to 1201mm @ 884kg or less

- Straight line variation between
points given.

WFU, MVD

LOAD MOMENT/1000 (KILOGRAM-MILLIMETERS)



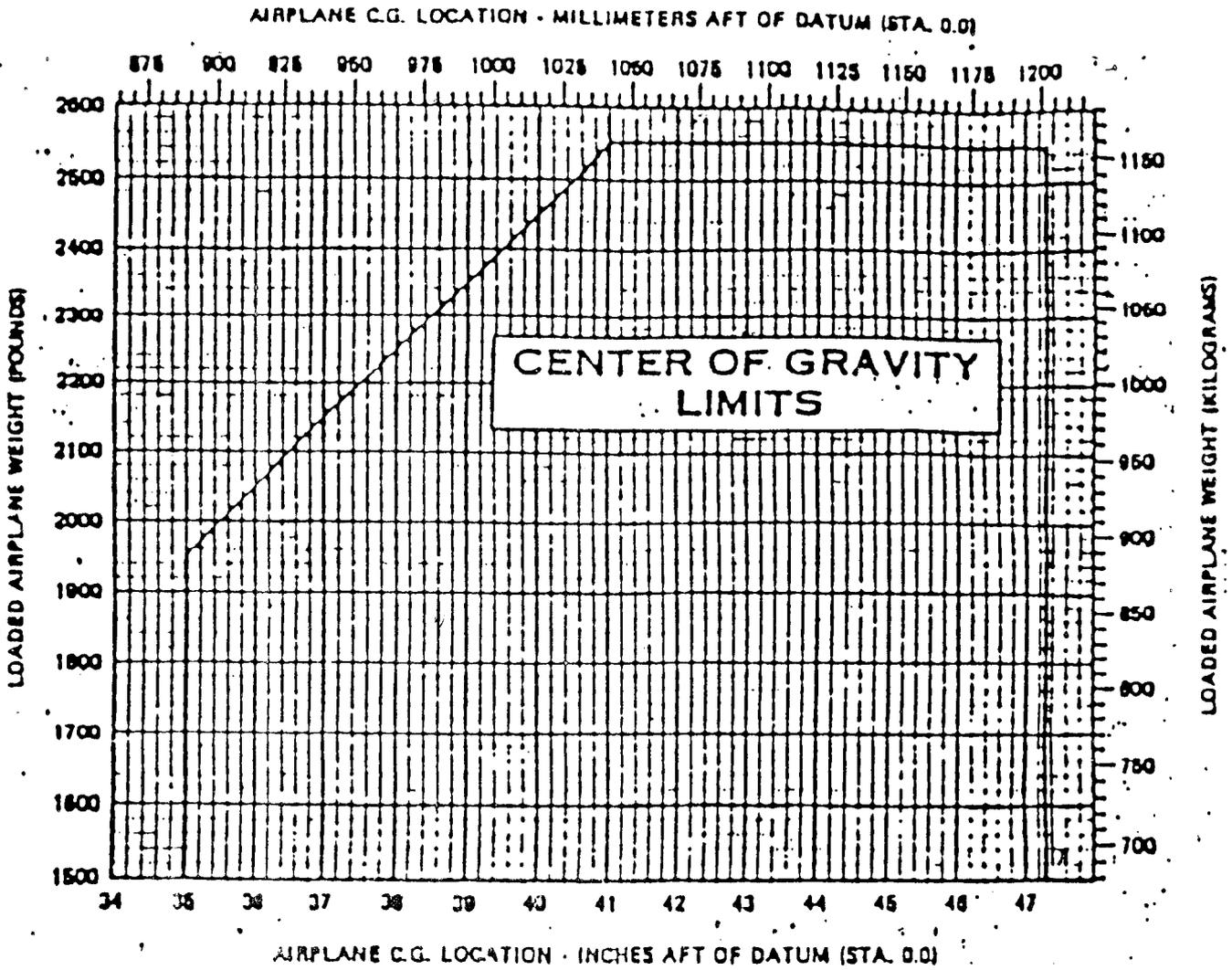
NOTE Line representing adjustable seats shows the pilot or passenger center of gravity on adjustable seats positioned for an average occupant. Refer to the Loading Arrangements diagram for forward and aft limits of occupant C.G. range

W.F.U., M.V.D.

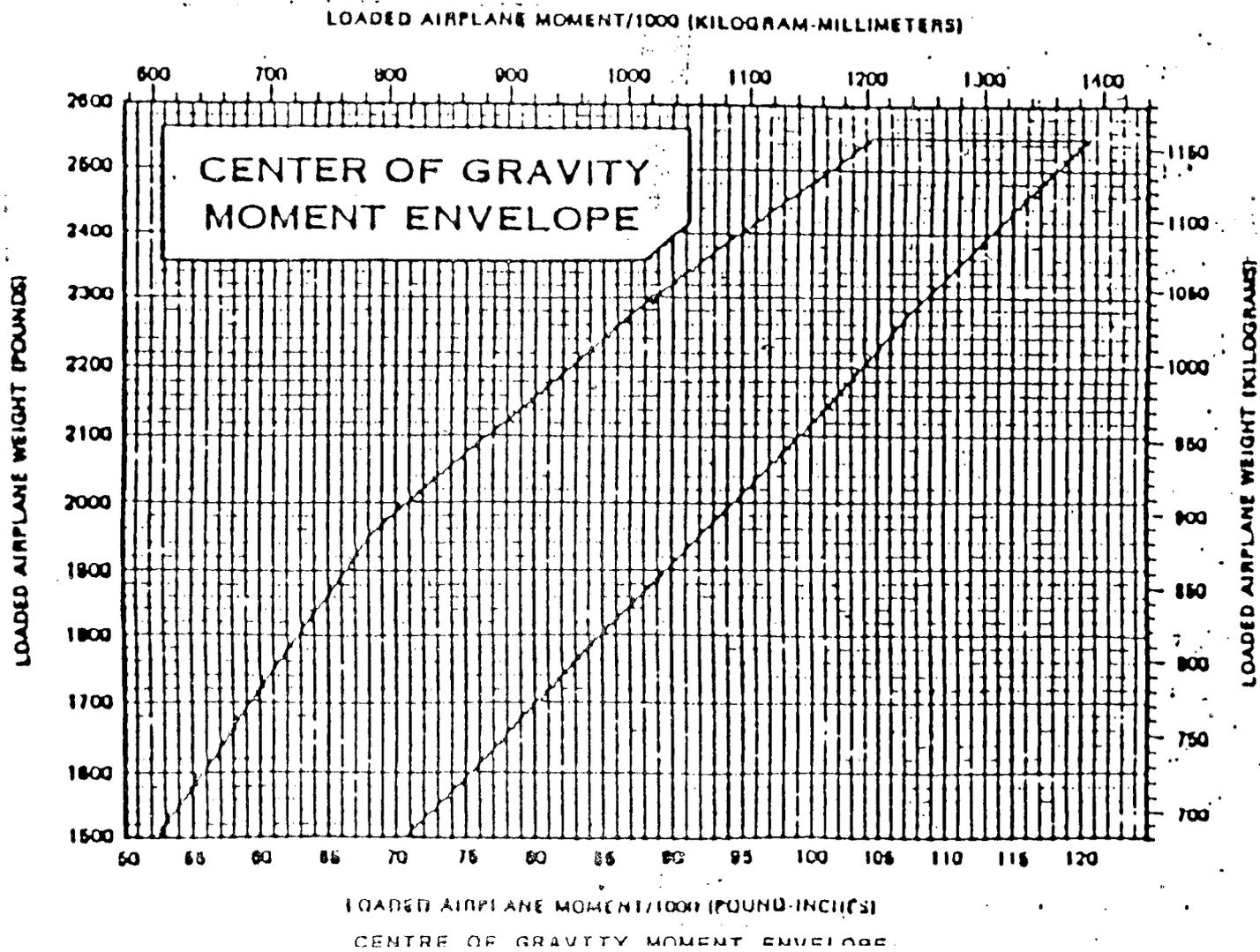
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GROSS WEIGHT INCREASE

CENTRE OF GRAVITY LIMITS

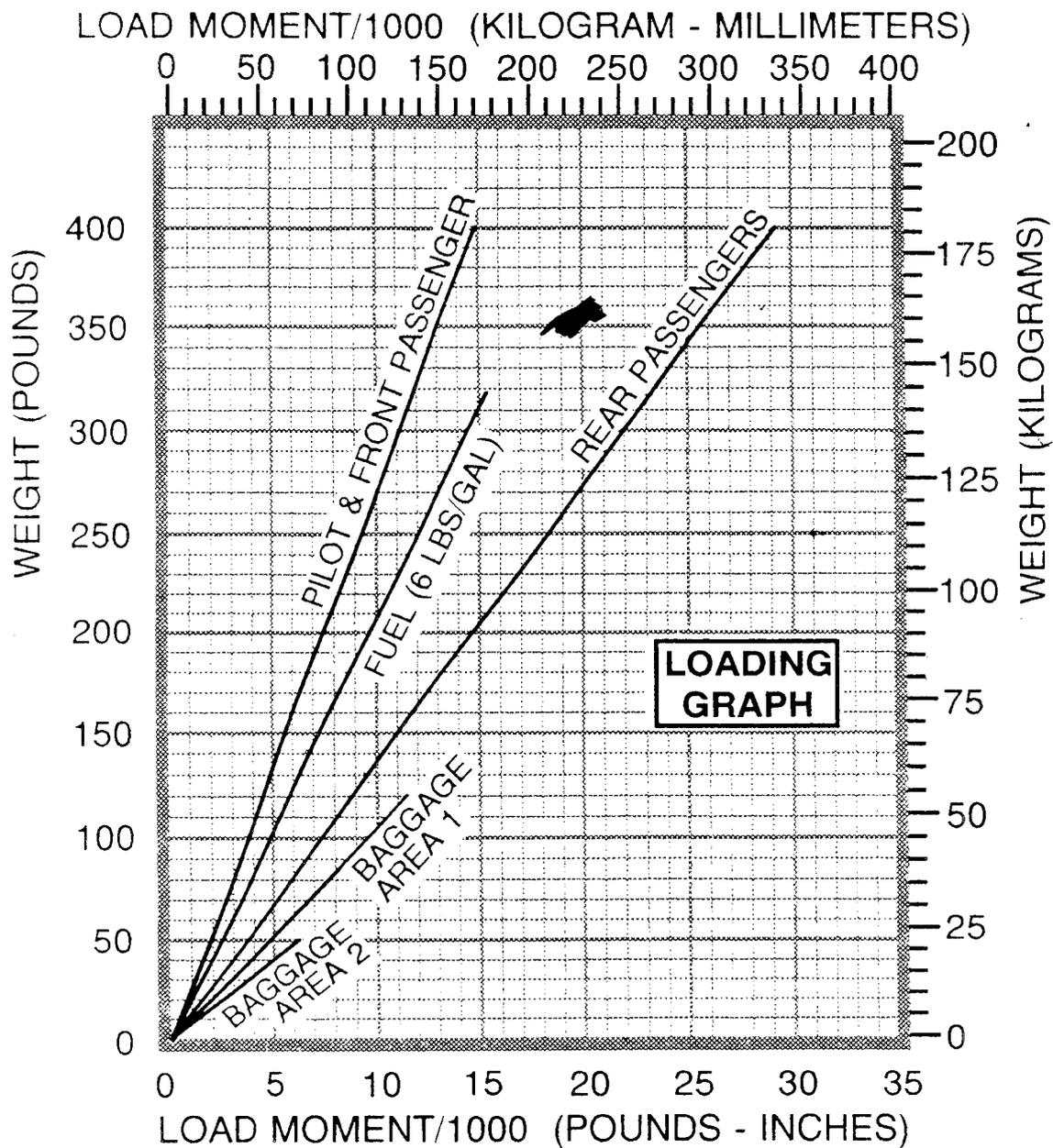


WFU, MVD



VH-CFG

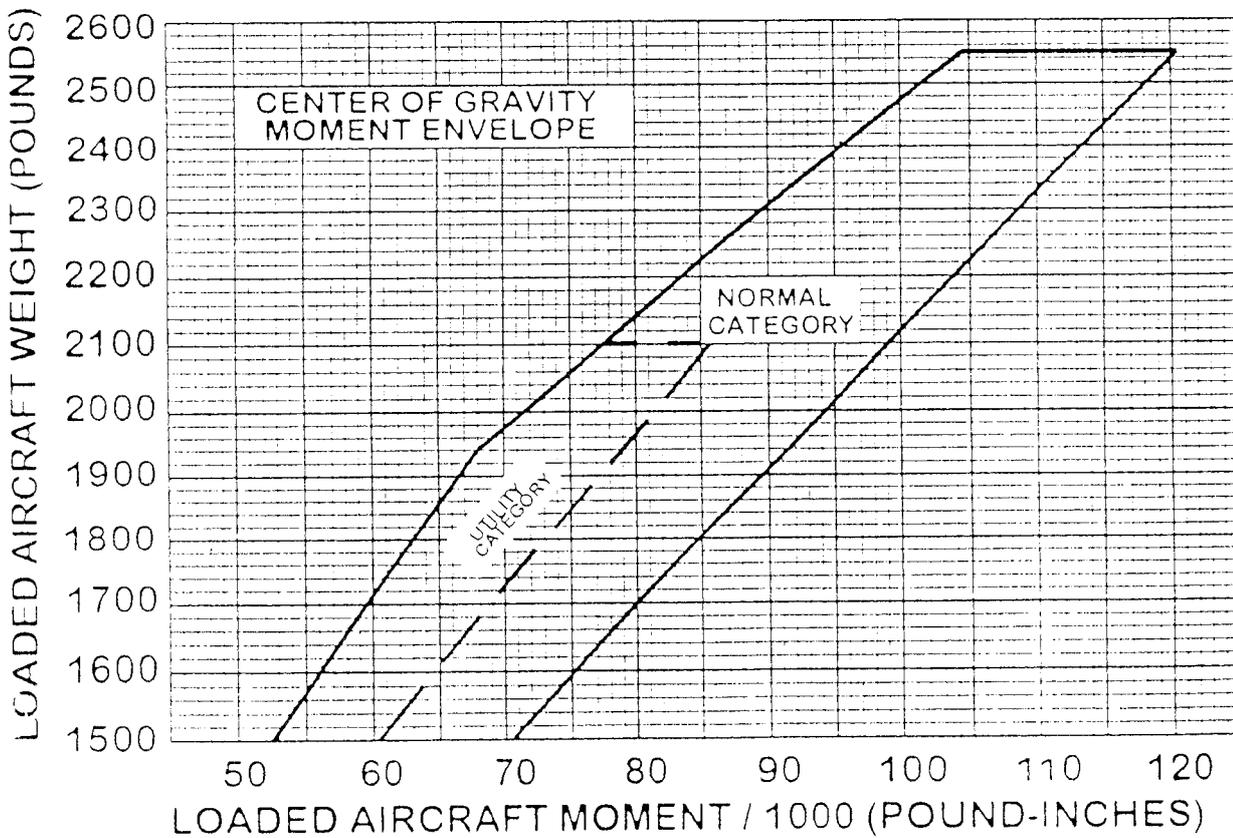
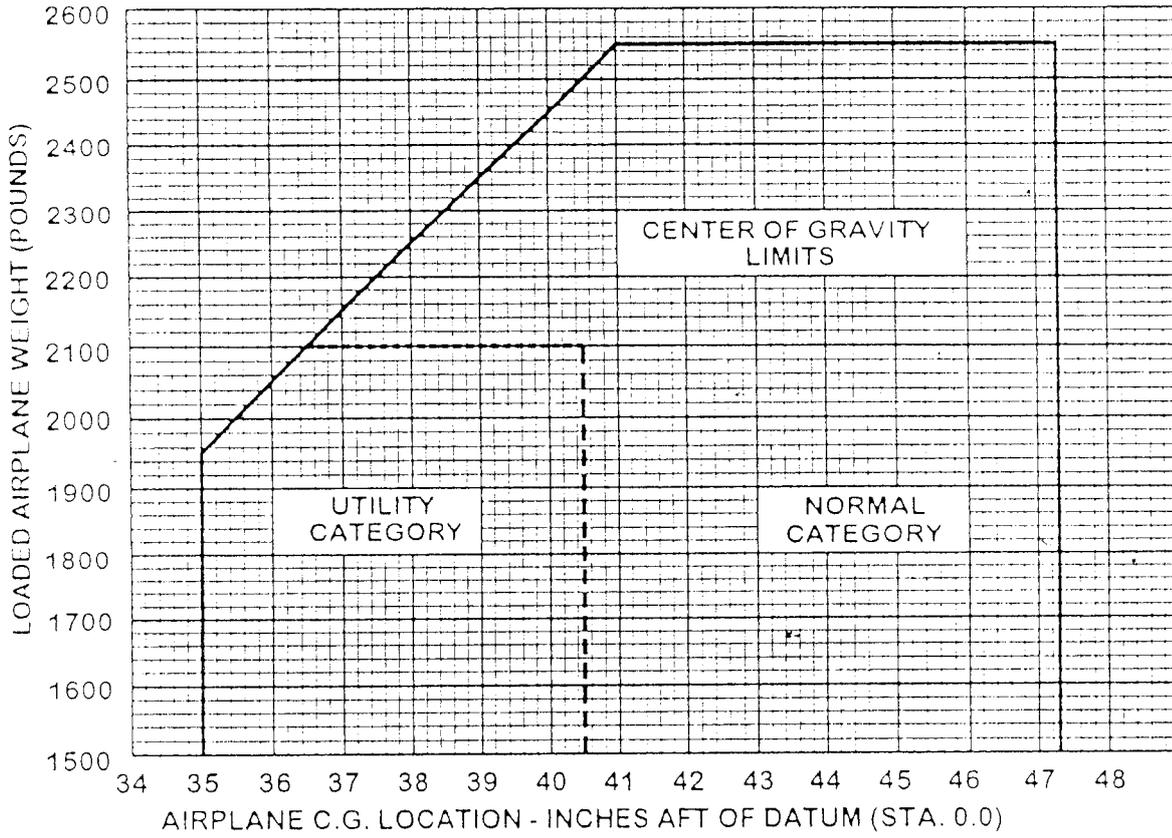
ITEM	WT (KG)	ARM	MOMENT
BEW	758	997	755-9
Pilot + R1 Pax	142	Extracted from Graph Fig 6-6	135
Rear Pax	135		252
Baggage	6	---	20
Fuel (97L)	70	---	85
TOW	1111		1256
MTOW	1111.3		1324



NOTE: LINE REPRESENTING ADJUSTABLE SEATS SHOWS THE PILOT OR PASSENGER CENTER OF GRAVITY ON ADJUSTABLE SEATS POSITIONED FOR AN AVERAGE OCCUPANT. REFER TO THE LOADING ARRANGEMENTS DIAGRAM FOR FORWARD AND AFT LIMITS OF OCCUPANT C.G. RANGE.

0585C1006

Figure 6-6. Loading Graph



SHORT FIELD TAKEOFF DISTANCE AT 2550 POUNDS

Conditions:

Flaps 10°
Full Throttle Prior to Brake Release
Paved level, dry runway
Zero Wind
Lift Off: 51 KIAS
Speed at left off: 56 KIAS

Press Alt In Feet	0°C		10°C		20°C		30°C		40°C	
	Grd Roll Ft	Total Ft to Clear 50 Ft Obst								
S.L.	860	1465	925	1575	995	1690	1070	1810	1150	1945
1000	940	1600	1010	1720	1090	1850	1170	1990	1260	2135
2000	1025	1755	1110	1890	1195	2035	1285	2190	1380	2355
3000	1125	1925	1215	2080	1310	2240	1410	2420	1515	2605
4000	1235	2120	1335	2295	1440	2480	1550	2685	1660	2880
5000	1355	2345	1465	2545	1585	2755	1705	2975	1825	3205
6000	1495	2605	1615	2830	1745	3075	1875	3320	2010	3585
7000	1645	2910	1785	3170	1920	3440	2065	3730	2215	4045
8000	1820	3265	1970	3575	2120	3880	2280	4225	2450	4615

Notes:

1. Short field technique as specified in Section 4
2. Prior to takeoff from fields above 3000 ft. elevation, the mixture should be leaned to give maximum RPM in a full throttle, static runup.
3. Decrease distances 10% for each 9 knots headwind. For operation with tail winds up to 10 knots, increase distances by 10% for each 2 knots.
4. For operation on dry, grass runway, increase distances by 15% of the ground roll figure.

CRUISE FUEL CONSUMPTION

Conditions:
2550 Pounds
Recommended Lean Mixture

Press. Alt Feet	RPM	20°C Below Standard Temp.		Standard Temperature		20° C Above Standard Temp.	
		% BHP	GPH	% BHP	GPH	% BHP	GPH
2000	2550	----	----	76	10.2	72	9.6
	2500	77	10.3	72	9.6	68	9.1
	2400	69	9.2	64	8.7	61	8.3
	2300	61	8.3	58	7.9	55	7.6
	2200	55	7.5	52	7.2	49	6.9
	2100	49	6.8	46	6.6	43	6.3
4000	2600	----	----	76	10.2	72	9.6
	2500	73	9.7	68	9.2	65	8.7
	2400	65	8.8	62	8.3	58	8.0
	2300	58	8.0	55	7.6	52	7.3
	2200	52	7.3	49	6.9	47	6.6
	2100	46	6.6	44	6.3	41	6.1
6000	2650	----	----	76	10.1	72	9.6
	2600	77	10.3	72	9.6	68	9.1
	2500	69	9.3	65	8.8	62	8.4
	2400	62	8.4	59	8.0	56	7.6
	2300	56	7.7	53	7.3	50	7.0
	2200	50	7.0	47	6.7	44	6.4
8000	2700	----	----	76	10.1	71	9.5
	2600	73	9.8	69	9.2	65	8.7
	2500	66	8.8	62	8.4	59	8.0
	2400	59	8.1	56	7.7	53	7.3
	2300	53	7.4	50	7.0	47	6.7
	2200	47	6.7	45	6.4	42	6.1
10,000	2700	77	10.2	72	9.6	68	9.1
	2600	69	9.3	65	8.8	62	8.4
	2500	63	8.5	59	8.1	56	7.7
	2400	57	7.8	53	7.4	50	7.0
	2300	51	7.1	48	6.8	45	6.5
	2200	47	6.7	45	6.4	42	6.1
12,000	2700	69	9.3	65	8.8	62	8.4
	2600	66	8.9	62	8.4	59	8.0
	2500	60	8.2	56	7.7	53	7.4
	2400	54	7.5	51	7.1	48	6.7
	2300	48	6.8	45	6.5	42	6.2

Short Field Landing Distance At 2550 Pounds

Conditions:

Flaps 30°
Power Off
Maximum Braking
Paved Level, dry runway
Zero Wind
Speed at 50 Ft: 61KIAS

Press Alt In Feet	0°C		10°C		20°C		30°C		40°C	
	Grd Roll Ft	Total Ft to Clear 50 Ft Obst								
S.L.	545	1290	565	1320	585	1350	605	1380	625	1415
1000	565	1320	585	1350	605	1385	625	1420	650	1450
2000	585	1355	610	1385	630	1420	650	1455	670	1490
3000	610	1385	630	1425	655	1460	675	1495	695	1530
4000	630	1425	655	1460	675	1495	700	1535	725	1570
5000	655	1460	680	1500	705	1535	725	1575	750	1615
6000	680	1500	705	1540	730	1580	755	1620	780	1660
7000	705	1545	730	1585	760	1625	785	1665	810	1705
8000	735	1585	760	1630	790	1670	815	1715	840	1755

Notes:

1. Short field technique as specified in Section 4
2. Decrease distances 10% for each 9 knots headwind. For operation with tail winds up to 10 knots, increase distances by 10% for each 2 knots.
3. For operation on dry, grass runway, increase distances by 45% of the "ground roll" figure.
4. If landing with flaps up, increase the approach speed by p KIAS and allow for 35% longer distances.

TAKEOFF DISTANCE MAXIMUM WEIGHT 2300 LBS

SHORT FIELD

WFU, MVD

CONDITIONS:
Flaps 10°
Full Throttle Prior to Brake Release
Paved, Level, Dry Runway
Zero Wind

NOTES:

1. Short field technique as specified in Section 4.
2. Prior to takeoff from fields above 3000 feet elevation, the mixture should be leaned to give maximum RPM in a full throttle, static runup.
3. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
4. For operation on a dry, grass runway, increase distances by 15% of the "ground roll" figure.

WEIGHT LBS	TAKEOFF SPEED KIAS		PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
	LIFT OFF	AT 50 FT		GRND ROLL	TOTAL TO CLEAR 50 FT OBS								
			1000	760	1370	820	1475	880	1585	950	1705	1020	1830
			2000	835	1510	900	1625	970	1750	1045	1885	1120	2030
			3000	920	1670	990	1800	1070	1940	1150	2095	1235	2260
			4000	1010	1850	1090	2000	1180	2165	1270	2340	1365	2535
			5000	1115	2060	1205	2235	1300	2425	1405	2635	1510	2860
			6000	1235	2310	1335	2515	1440	2740	1555	2985	1675	3265
			7000	1370	2610	1480	2850	1600	3125	1730	3430	1865	3775
			8000	1520	2975	1645	3270	1780	3610	1925	4000	2080	4465

Figure 5-4. Takeoff Distance (Sheet 1 of 2)

1 July 1979

TAKEOFF DISTANCE 2100 LBS AND 1900 LBS

SHORT FIELD

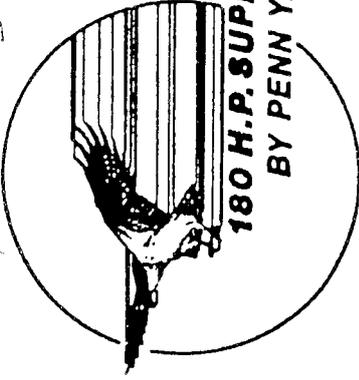
REFER TO SHEET 1 FOR APPROPRIATE CONDITIONS AND NOTES.

WEIGHT LBS	TAKEOFF SPEED KIAS		PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
	LIFT OFF	AT 50 FT		GRND ROLL	TOTAL TO CLEAR 50 FT OBS								
			1000	615	1115	665	1195	715	1285	765	1375	820	1470
			2000	675	1225	725	1315	785	1410	840	1515	905	1625
			3000	740	1345	800	1445	860	1555	925	1670	995	1795
			4000	815	1485	880	1600	950	1720	1020	1855	1095	1995
			5000	900	1645	970	1775	1045	1915	1125	2065	1210	2225
			6000	990	1825	1070	1975	1155	2135	1245	2310	1340	2505
			7000	1095	2040	1185	2210	1280	2400	1380	2605	1485	2835
			8000	1215	2295	1315	2495	1420	2720	1530	2965	1650	3245
1900	43	48	S.L.	450	820	480	880	520	940	555	1000	595	1070
			1000	490	895	525	960	565	1025	610	1095	655	1170
			2000	535	980	580	1050	620	1120	665	1200	715	1280
			3000	590	1070	635	1150	680	1230	735	1315	785	1410
			4000	645	1175	695	1260	750	1355	805	1450	865	1555
			5000	710	1295	765	1390	825	1495	890	1605	955	1725
			6000	785	1430	845	1540	910	1655	980	1785	1055	1920
			7000	865	1585	935	1710	1005	1845	1085	1990	1165	2145
			8000	955	1765	1030	1905	1115	2060	1200	2230	1290	2410

Figure 5-4. Takeoff Distance (Sheet 2 of 2)

1 July 1979

NFA, MVD



180 H.P. SUPER-HAWK
BY PENN YAN AERO

Power Chart

Press. Alt.	Std. Alt. Temp. °F	108 HP 60% Power RPM	117 HP 65% Power RPM	126 HP 70% Power RPM	135 HP 75% Power RPM	Press. Alt.
SL	59	2290	2370	2440	2500	SL
1,000	55	2310	2390	2460	2520	1,000
2,000	52	2330	2410	2480	2540	2,000
3,000	48	2350	2430	2500	2560	3,000
4,000	45	2370	2450	2520	2580	4,000
5,000	41	2390	2470	2540	2600	5,000
6,000	38	2410	2490	2560	2620	6,000
7,000	34	2430	2510	2580	2640	7,000
8,000	31	2450	2530	2600	—	8,000
9,000	27	2470	2550	2620	—	9,000
10,000	23	2490	2570	—	—	10,000
11,000	19	2510	2590	—	—	11,000
12,000	16	2530	—	—	—	12,000

LANDING DISTANCE

SHORT FIELD **WFU, MVD**

CONDITIONS:

- Flaps 40°
- Power Off
- Maximum Braking
- Paved, Level, Dry Runway
- Zero Wind

NOTES:

1. Short field technique as specified in Section 4.
2. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots
3. For operation on a dry, grass runway, increase distances by 45% of the "ground roll" figure.

WEIGHT LBS	SPEED AT 50 FT KIAS	PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
			GRND ROLL	TOTAL TO CLEAR 50 FT OBS								
2300	59	S.L.	495	1205	510	1235	530	1265	545	1295	565	1330
		1000	510	1235	530	1265	550	1300	565	1330	585	1365
		2000	530	1265	550	1300	570	1335	590	1370	610	1405
		3000	550	1300	570	1335	590	1370	610	1405	630	1440
		4000	570	1335	590	1370	615	1410	635	1445	655	1480
		5000	590	1370	615	1415	635	1450	655	1485	680	1525
		6000	615	1415	640	1455	660	1490	685	1535	705	1570
		7000	640	1455	660	1495	685	1535	710	1575	730	1615
8000	665	1500	690	1540	710	1580	735	1620	760	1665		

Figure 5-10. Landing Distance

FLIGHT MANUAL SUPPLEMENT

OPERATION WITH DOOR REMOVED

This Supplement shall apply when the aeroplane is operated with the main cabin door removed. Only that information which differs from the basic Flight Manual is contained herein.

LIMITATIONS

1. Maximum speed - door removed : 125 kts. I. A. S.
2. Operations are limited to V. F. R. only and shall be confined to normal flying manoeuvres. Turns in which the angle of bank exceeds 30 degrees, stalls, side-slips, and acrobatic manoeuvres shall not be performed.
3. Smoking is not permitted.
4. When determining the gross weight for take-off as limited by local conditions, the distance applied to the take-off weight chart shall be the actual distance available reduced by 5 percent. When a climb weight limitation is included on the take-off and/or landing weight charts, then the gross weights determined in accordance with this limitation shall be reduced by 5 percent.
5. No baggage or other loose articles may be carried unless adequately restrained or stowed.
6. The following placard shall be displayed on the instrument panel in full view of the pilot during actual operation with the door removed -

"OPERATION WITH DOOR REMOVED

- (i) Operations are limited to normal flying manoeuvres. Turns exceeding 30° bank, stalls, side-slips and acrobatic manoeuvres are not permitted.
 - (ii) Speeds not in excess of 125 kts. I. A. S.
 - (iii) No smoking is permitted.
 - (iv) No loose articles permitted.
 - (v) For additional requirements see Approved Flight Manual Supplement".
7. For requirements relating to the carriage and restraint of persons and the dropping of articles, refer to the relevant sections of Air Navigation Orders Parts 20 and 29.

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CESSNA 172 HANDLING NOTES**Pre-flight Inspection**

When approaching the aircraft, check that it is in a suitable position for starting and that it can be taxied out safely.

Documents	Flight manual, maintenance release, pilot's licence and medical
Control column	Remove control lock from control column
Ignition	Off
Mixture	Lean
Master	On
Fuel gauges	Check contents
Beacon	Check
Flaps	Lowered
Master	Off

Chocks and Ropes	Removed
Control Surfaces	Full and free movement, no damage, rudder lock removed
Windows	Clean
Engine	No oil leaks, obstructions or damage to engine mounts
Oil	6.0 – 8.0 Quarts
Cowlings	Secure
Propeller	No nicks or cracks
Fuel	Sufficient and free of contamination, tank vents clear
Air inlets	Unobstructed
Undercarriage	Free of hydraulic leaks, condition of tyres and brakes
Pitot tube	Cover removed, no obstructions
Antennas	Undamaged
Hinges and linkages	Secure

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CESSNA 172 HANDLING NOTES**PRE-START CHECKS**

THESE CHECKS ARE TO BE CARRIED OUT WITH REFERENCE TO THE WRITTEN CHECKLIST.

FLAPS CHECK UP

The flaps are moved through their range to visually check for full and free movement and then set in the fully up position

SEAT ADJUSTED

The pilot's seat is set to the correct position and is confirmed firmly locked into place

HARNESS SECURE

Lap and shoulder straps are adjusted to fit correctly and securely

BRAKE ON

The toe brakes are applied

MASTER ON

Both sides of the master switch are turned on

FUEL ON

The fuel selector is in the horizontal position

GAUGES READING CORRECTLY

Fuel gauges confirm the reading from the dipstick

RPM gauge reads zero

Oil pressure gauge reads zero

Suction gauge reads zero

Ammeter reads zero

Oil temperature gauge reads correctly

Vertical speed indicator reads zero

Airspeed indicator at lowest point

THROTTLE FREE, SET 1/2" OPEN

Check that the throttle moves freely through its range, then set to 1/2 inch open

MIXTURE FREE, SET RICH * **WFU AND MVD ONLY**

Check that the mixture moves freely through its range, and set to fully rich

MIXTURE FREE, SET TO IDLE CUT-OFF ***CFG ONLY**

Check that the mixture moves freely through its range and set to idle cut-off.

FRICITION FIRM

The throttle friction is set as required

CARB HEAT FREE, SET COLD * **Not applicable to CFG**

The carburettor heat control moves freely through its range and is set to cold

CIRCUIT**BREAKERS** ALL IN

Run hand along the circuit breaker panel to ensure that they are all in

HEATER OFF

The heater and demister are set to the off position

RADIOS OFF

The radios are all switched off

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CESSNA 172 HANDLING NOTES

TRIM FULL CORRECT MOVEMENT
SET FOR TAKE-OFF
Move the control wheel back, and visually check that the trim tab moves freely in the correct sense. Set trim to the take-off position.

MVD AND WFU
PRIMER AS REQUIRED
The engine is primed as required and the primer then locked

CFG
AUX. FUEL PUMP ON
The aux fuel pump is switched on until fuel flow starts to rise.
MIXTURE ADVANCE, THEN IDLE CUT-OFF
The mixture control is advanced as the fuel flow rises, and then returned to the idle cut-off position.

AUX FUEL PUMP OFF
The aux fuel pump is switched off.
WARM ENGINE OMIT THE ABOVE PRIMING PROCEDURE

BEACON ON
The beacon is switched on
MAGS ON BOTH
The magneto switch is turned to "both"

"CLEAR PROP"
The area around the propeller is checked to be clear and the words "Clear Prop" called by the pilot

STARTER ENGAGE
The starter is engaged

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CESSNA 172 HANDLING NOTES**AFTER START CHECKS**

THESE CHECKS ARE TO BE COMPLETED WITH REFERENCE TO THE WRITTEN CHECKLIST

BRAKES **HOLDING**

The aircraft is not moving forward

RPM **1000**

The engine RPM is set to 1000

OIL PRESSURE **GREEN ARC WITHIN 30 SECONDS**

Oil pressure is within the green arc within 30 seconds of engine start. If not, the engine is to be shut down immediately

AMMETER **READING CORRECTLY**

The ammeter shows a positive rate of charge

SUCTION **4.5 - 5.5" Hg**

The suction gauge registers 4.5 – 5.5 "Hg

MAGNETOS **CHECK**

Check left magneto, back to both, right magneto, back to both to ensure that magnetos are functioning correctly

RADIOS **ON AS REQUIRED**

Listen to ATIS if available then monitor the appropriate frequency; navigation aids turned on as required

TRANSPONDER **STANDBY**

The transponder is turned to the "standby" position

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CESSNA 172 HANDLING NOTESTAXYING CHECKS***THESE CHECKS ARE TO BE COMMITTED TO MEMORY*****BRAKES** CHECK

Power is applied to allow the aircraft to move forward, then the throttle is closed and the brakes applied to ensure smooth correct operation

STEERING CHECK

The nosewheel steering is functioning in the correct sense

INSTRUMENTS CHECK DG AND COMPASS,
ATTITUDE INDICATOR STEADY
TURN C-O AND BALL

Whilst turning during taxi ensure that the DG and compass show the correct direction of turn, the turn co-ordinator shows the correct direction of turn, the balance ball swings in the direction opposite to the turn, and the attitude indicator remains steady

POWER CHECKS***THESE CHECKS ARE TO BE CARRIED OUT WITH REFERENCE TO THE WRITTEN CHECKLIST*****FACE AIRCRAFT INTO WIND**

The aircraft is faced into wind, and the surface is not of a type likely to cause propeller damage

BRAKES ON

The park brake is set on, and the toe brakes also applied

ENGINE**INSTRUMENTS** WITHIN LIMITS

Oil temperature and pressure is in the green arc

CHECK ALL CLEAR BEHIND

Ensure that the area behind the aircraft is clear of people, aircraft, open hangars

RPM SET 1700

The RPM is set to 1700 RPM and the aircraft is not moving forward

CARB HEAT CHECK *Not applicable to CFG

Carburettor heat is applied, and a drop in RPM noted, carburettor heat re-set to "cold"

MAGNETOS CHECK DROP DOES NOT EXCEED
125 RPM OR DIFFERENCE OF 50 RPM

Check the left magneto, back to both, check right, back to both. RPM changes must be within the above limits.

If RPM drop is greater, carry out the procedure to clear plug fouling. If this is unsuccessful, return to the hangar

ENGINE GAUGES WITHIN LIMITS

Check that engine temperatures and pressures are in the green arc

IDLE NOT BELOW 600 RPM

Close the throttle and ensure the RPM at idle is no lower than 600

RPM SET 1000

The RPM is set to 1000

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CESSNA 172 HANDLING NOTES**PRE-TAKE OFF CHECKS**

THESE CHECKS ARE TO BE CONDUCTED WITH REFERENCE TO THE WRITTEN CHECKLIST

TRIM SET FOR TAKE OFF

Check that the trim is set to the "take-off" position

FRICTION FIRM

Check that the throttle friction is set as required

MIXTURE RICH

The mixture control is in the fully rich position

MAGNETOS ON BOTH

The magneto switch is set to "both"

CARB HEAT COLD *Not applicable to CFG

The carburettor heat is set to the "cold" position

FLAPS AS REQUIRED

The flaps are set as required for take-off

ENGINE GAUGES WITHIN LIMITS

The engine temperature and pressure gauges and the fuel pressure gauge are in the green arc

GYROS SET

The directional gyro is aligned to the compass, and the artificial horizon set to the reference line on the instrument *note this must be done on level ground

INSTRUMENTS SET

The correct QNH is set, and the altimeter reading airfield elevation

Navigation aids are set as appropriate

HATCHES SECURE

Doors and windows are secured

HARNESSES TIGHT

Seatbelts of all on board are checked secure

CONTROLS FULL AND FREE MOVEMENT

The flight controls are moved through their full range to ensure movement in the correct sense and that all control locks are removed

BEACON ON

The strobe is switched on, and the ammeter checked to be showing the load

TRANSPONDER ALT

The transponder is on the correct code, and turned to the "alt" position

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CESSNA 172 HANDLING NOTES**AFTER TAKE OFF CHECKS***THESE CHECKS ARE TO BE COMMITTED TO MEMORY*

TRACK ON RUNWAY CENTRELINE UNTIL ABOVE 500 FEET
AGL
ENGINE GUAGES TEMPERATURES AND PRESSURES IN THE GREEN ARC

EN-ROUTE CHECKS*THESE CHECK ARE TO BE COMMITTED TO MEMORY USING THE MNEMONIC
"FREDA" AND COMPLETED AT TEN MINUTE INTERVALS*

FUEL FUEL LOG UPDATED
MIXTURE LEANED AS APPROPRIATE

RADIO COM RADIO TUNED TO THE CORRECT FREQUENCY
ALL REQUIRED RADIO CALLS MADE
NAVIGATION AIDS TUNED, IDENTIFIED AND TESTED
TRANSPONDER CODE CORRECT

ENGINE TEMPERATURES AND PRESSURES IN THE GREEN
AMMETER SHOWING CHARGE
SUCTION 4.5 – 5.5 "Hg

DIRECTION COMPASS AND DIRECTIONAL GYRO ARE ALIGNED
CORRECT HEADING
LANDMARKS

ALTITUDE CORRECT QNH IS SET
CORRECT CRUISING LEVEL
MAINTAINING VFR

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CESSNA 172 HANDLING NOTES**PRE LANDING CHECKS**

THESE CHECKS ARE TO BE COMMITTED TO MEMORY USING THE MNEMONIC "BUMI/CHC"

BRAKES	OFF, HEELS ON THE FLOOR
U/CARRIAGE	DOWN AND LOCKED
MIXTURE	FULLY RICH
FUEL	SUFFICIENT FUEL FOR GO-AROUND
CARB HEAT	SET TO "HOT" *Not applicable to CFG
HATCHES	
HARNESSES	SECURE
CARB HEAT	SET TO COLD WHEN SATISFIED NO ICE IS PRESENT

AFTER LANDING CHECKS

THESE CHECKS ARE TO BE COMPLETED WITH REFERENCE TO THE WRITTEN CHECKLIST

POSITION	CLEAR OF LANDING STRIP
	Ensure that the aircraft is clear of the landing strip and not causing an obstruction to other aircraft
FLAPS	CHECK UP
	The flaps are fully retracted and visually checked
TRIM	SET TO TAKE-OFF
	The trim wheel is returned to the take off' position
TRANSPONDER	OFF
	The transponder is switched off.
RADIO	AS REQUIRED
	The appropriate radio call is made on the correct frequency

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CESSNA 172 HANDLING NOTES**SHUT DOWN CHECKS**

THESE CHECKS ARE TO BE CONDUCTED WITH REFERENCE TO THE WRITTEN CHECKLIST

- MAGS** CHECK
Check left, both, right, both to ensure that magnetos are earthing
- RADIOS** OFF
All radios are switched off
- MIXTURE** IDLE CUT-OFF
Mixture is moved to "Idle cut-off" position, and the RPM should rise slightly before the engine stops
- THROTTLE** CLOSED
After the engine has stopped, the throttle is closed
- MAGS** OFF
The magneto switch is turned off
- KEY** OUT
The key is removed from the ignition and placed in the folder
- SWITCHES** OFF
Confirm all radios, electric and light switches are "off"
- MASTER** OFF
The master switch is turned off.
- CONTROL LOCK** IN PLACE
The control lock is placed in the control column

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CESSNA 172 HANDLING NOTES**EMERGENCY PROCEDURES****Engine failure during take-off roll**

Maintain directional control. Close the throttle, apply braking, move the mixture to idle-cut off and turn ignition and master switch off.

Engine Failure after Take-off

Lower the nose to achieve the glide speed of 65 knots
Aim for a landing area within 30° of the flight path
If time permits, change fuel tanks and make a MAYDAY call.

Engine Failure at Altitude

Follow the normal forced landing procedure.

Fire

During Start - Continue cranking the starter, and if the engine starts run it at 1700RPM for a few minutes, then shutdown and inspect for damage.
IF the engine fails to start, put the throttle full open, mixture to idle cut-off and continue cranking. If the engine still will not start, turn off the master switch, ignition and fuel. Evacuate the aircraft and find a fire extinguisher.

During Flight - Check for source of fire

Engine: Fuel off, throttle closed, mixture idle cut-off, heater and defrost off, prepare for emergency landing.
Electrical: Master off, cabin heat and defrost off, vent open. Check circuit breakers, reduce electrical load to a minimum and land as soon as practicable.

Loss of oil pressure

If low oil pressure is accompanied by normal oil temperature there is the possibility of a malfunction in the oil pressure gauge. Land as soon as practicable and investigate. If oil temperature is rising rapidly reduce power immediately and conduct a forced landing.

High oil temperature

If flying at an airspeed below 65 knots, increase airspeed to at least 85 knots. If oil temperature does not reduce, land as soon as practicable and investigate the cause. Prepare for emergency landing.

CESSNA 172 HANDLING NOTES**EMERGENCY PROCEDURES****Alternator Failure**

If the ammeter is showing a rate of discharge from the battery, reduce electrical load as much as possible. Check alternator circuit breaker. Turn the ALT side of the Master switch off for three seconds, and then on again. Check the ammeter for a charge. If no charge is showing, turn the ALT side of the Master switch off, reduce electrical load and prepare for no-radio procedures.

Open Door in Flight

To close the door in flight, yaw the aircraft away from the open door side and close the door normally.

Rough Running Engine

Check carburettor heat, primer locked, change fuel tanks. If roughness continues, adjust the mixture for maximum smoothness and check magnetos. If the engine runs better on a single magneto, continue on that one with reduced power and mixture rich.

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CESSNA 172 HANDLING NOTES**EMERGENCY CHECKLISTS****ENGINE FAILURE***THESE CHECKS ARE TO BE COMITTED TO MEMORY***DURING TAKE-OFF WITH SUFFICIENT RUNWAY REMAINING TO STOP THE AIRCRAFT****THROTTLE** CLOSE

The throttle is fully retarded

MAINTAIN DIRECTIONAL CONTROL

Ensure that the aircraft is tracking straight

BRAKES APPLIED

The brakes are applied to enable rapid deceleration

MIXTURE IDLE CUT-OFF

Pull the mixture control out to the idle cut-off position.

MAGNETOS OFF

The magnetos are switched off

MASTER SWITCH OFF

The master switch is switched off.

AFTER TAKE OFF WITH NO RUNWAY REMAINING**AIRSPEED** TRIM FOR 60 KTS

The aircraft is put into the glide attitude and trimmed for 65 kts

DIRECTION SELECT

Turns should be limited to 30° either side of straight ahead.

Under no circumstances attempt to turn back to the runway below 1000 feet AGL

IF TIME PERMITS, CARRY OUT THE FOLLOWING**MIXTURE** IDLE CUT-OFF

The mixture is moved to the idle cut-off position

FUEL OFF

The fuel tap is moved to the vertical OFF position

MAGNETOS OFF

The magnetos are switched off

FLAPS AS REQUIRED

The wing flaps are set as required for landing

MASTER SWITCH OFF

The master switch is turned off.

MINOVATION Pty Ltd

CESSNA 172 HANDLING NOTES**ENGINE POWER LOSS IN FLIGHT****AIRSPPEED** 65 KTS

Trim the aircraft for the best glide speed of 65kts

LANDING AREA SELECT

Select the most suitable landing area and plan an approach to be late downwind at 1000 feet AGL

*THESE CHECKS ARE TO BE CONDUCTED FROM MEMORY, AND THE MNEMONIC FCMIT USED FOR THE "TROUBLE CHECKS" BELOW***FUEL** CHECK

The fuel is on and primer locked

CARB HEAT CHECK FOR ICE *Not applicable to CFG

The carburettor heat is moved to "HOT" and kept hot until any ice present has melted

MIXTURE RICH

The mixture is moved to "RICH" or set for smooth running

IGNITION CHECK

Magnetos are checked on left, right and both settings and the one with smoothest running selected

THROTTLE CHECK FOR RESPONSE

The throttle shall be moved through its range to attempt power recovery

IF POWER CANNOT BE RESTORED:**POWER OFF LANDING****MONITOR DESCENT****MAYDAY CALL**

Make a mayday call on the appropriate frequency, transponder to 7700 and switch ELT "on"

PASSENGER BRIEF

Remind passengers of location of emergency exits, to tighten seat belts and remove loose objects from their person

IGNITION OFF

The magnetos are switched to the "OFF" position

MASTER SWITCH OFF

The master switch is switched "OFF"

FUEL OFF

The fuel selector is moved to the "OFF" position

MIXTURE IDLE CUT-OFF

The mixture is moved to the Idle Cut-Off position

DOORS UNLATCH

The doors are unlatched to allow for rapid evacuation of the aircraft after landing.

MINOVATION Pty Ltd
CESSNA 172 HANDLING NOTES

CESSNA 172 COCKPIT CHECKLIST WFU, MVD

PRE-STARTING CHECKS

SEAT	ADJUSTED
HARNES	SECURE
FUEL	ON
MASTER	ON
FUSES	IN
CARB HEAT	COLD
THROTTLE	1/4" OPEN
MIXTURE	RICH
FLAPS	UP
INSTRUMENTS	READING CORRECTLY
RADIOS	OFF
TRIM	SET FOR TAKE-OFF
PRIMER	AS REQUIRED
BEACON	ON
"CLEAR PROP"	
MAGS	BOTH
STARTER	ENGAGE

AFTER START CHECKS

BRAKES	HOLDING
OIL	TEMPS AND PRESSURES
AMMETER	SHOWING CHARGE
SUCTION	4.6-5.4 INCHES
MAGS	CHECK
RADIOS	AS REQUIRED
TRANSPONDER	STANDBY

TAXYING CHECKS

BRAKES	CHECK
STEERING	CHECK
INSTRUMENTS	CHECK - COMPASS BALANCE BALL D.G.

POWER CHECKS

FACE AIRCRAFT INTO WIND

BRAKES	ON
INSTRUMENTS	WITHIN LIMITS
CHECK ALL CLEAR BEHIND	
THROTTLE	1700 RPM
CARB HEAT	CHECK
MAGS	CHECK - DROP SHOULD NOT EXCEED 125 RPM. OR 50 RPM DIFFERENCE.
INSTRUMENTS	WITHIN LIMITS
IDLE	NOT BELOW 600 RPM
THROTTLE	RESET 1000 RPM

PRE TAKE - OFF CHECKS

TRIM	SET FOR TAKE-OFF
FRICTION	FIRM
MAGS	BOTH
MIXTURE	RICH
CARB HEAT	COLD
FUEL	ON AND SUFFICIENT
PRIMER	LOCKED
FLAPS	AS REQUIRED
GUAGES	WITHIN LIMITS
INSTRUMENTS	SET
DOORS	LATCHED
HARNESSES	SECURE
CONTROLS	FULL. FREE. CORRECT
TRANSPONDER	ALT.

RUNWAY VACATED CHECKS

FLAPS	UP
CARB HEAT	COLD
TRIM	SET FOR T/O
TRANSPONDER	OFF
RADIO	CALLS AS REQ.

SHUT DOWN CHECKS

MAGS	CHECK
RADIOS	OFF
MIXTURE	IDLE-CUTOFF
MAGS	OFF. KEY OUT
THROTTLE	CLOSED
ELECTRICS	OFF
MASTER	OFF
CONTROLS	LOCKED

AIR SPEEDS

ROTATE	60
BEST ANGLE CLIMB	60
BEST RATE CLIMB	76
NORMAL CLIMB	80
APPROACH	70
FINAL APPROACH	65
FLAPLESS APPROACH	70
GLIDE	65

ATIS	120.9
GROUND	124.3
TOWER	118.1
CIRCUIT R/W	119.4
PERTH RAS	128.1

CESSNA 172 HANDLING NOTESCESSNA 172 COCKPIT CHECKLIST CFGPRE-STARTING CHECKS

SEAT	ADJUSTED
HARNES	SECURE
FUEL	ON
MASTER	ON
FUSES	IN
THROTTLE	1/4" OPEN
FLAPS	UP
INSTRUMENTS	READING CORRECTLY
AVIONICS	OFF
BEACON	ON
FUEL PUMP	ON
FUEL FLOW	RISING
MIXTURE	ADVANCE. THEN IDLE CUT-OFF
FUEL PUMP	OFF
"CLEAR PROP"	
MAGS	BOTH
STARTER	ENGAGE

AFTER START CHECKS

BRAKES	HOLDING
OIL	TEMPS AND PRESSURES
AMMETER	SHOWING CHARGE
SUCTION	4.6-5.4 INCHES
MAGS	CHECK
RADIOS	AS REQUIRED
TRANSPONDER	STANDBY

TAXI CHECKS

BRAKES	CHECK
STEERING	CHECK
INSTRUMENTS	CHECK - COMPASS
	- BALANCE BALL
	- ATT. INDICATOR
	- D. G.

POWER CHECKS

FACE AIRCRAFT INTO WIND	
BRAKES	ON
INSTRUMENTS	WITHIN LIMITS
CHECK ALL CLEAR BEHIND	
THROTTLE	1700 RPM
CARB HEAT	CHECK
MAGS	CHECK - DROP SHOULD NOT EXCEED 125 RPM. OR 50 RPM DIFFERENCE.
INSTRUMENTS	WITHIN LIMITS
IDLE	NOT BELOW 600 RPM
THROTTLE	RESET 1000 RPM

PRE TAKE - OFF CHECKS

TRIM	SET FOR TAKE-OFF
FRICTION	FIRM
MAGS	BOTH
MIXTURE	RICH
CARB HEAT	COLD
FUEL	ON AND SUFFICIENT
PRIMER	LOCKED
FLAPS	AS REQUIRED
GUAGES	WITHIN LIMITS
INSTRUMENTS	SET
DOORS	LATCHED
HARNESSES	SECURE
CONTROLS	FULL. FREE. CORRECT
TRANSPONDER	ALT.

RUNWAY VACATED CHECKS

FLAPS	UP
CARB HEAT	COLD
TRIM	SET FOR T/O
TRANPONDER	OFF
RADIO	CALLS AS REQ.

SHUT DOWN CHECKS

MAGS	CHECK
RADIOS	OFF
MIXTURE	IDLE-CUTOFF
MAGS	OFF. KEY OUT
THROTTLE	CLOSED
ELECTRICS	OFF
MASTER	OFF
CONTROLS	LOCKED

AIRSPEEDS

ROTATE	60
BEST ANGLE CLIMB	60
BEST RATE CLIMB	76
NORMAL CLIMB	80
APPROACH	70
FINAL APPROACH	65
FLAPLESS APPROACH	70
GLIDE	65

ATIS	120.9
GROUND	124.3
TOWER	118.1
CIRCUIT R/W	119.4
PERTH RAS	128.1