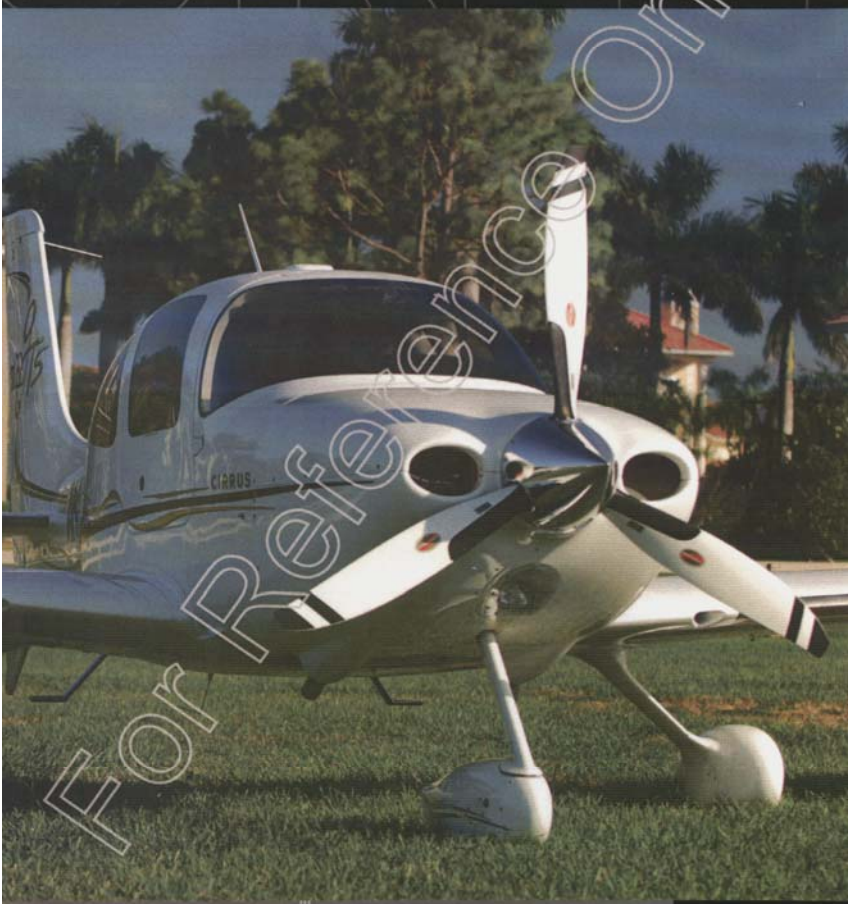
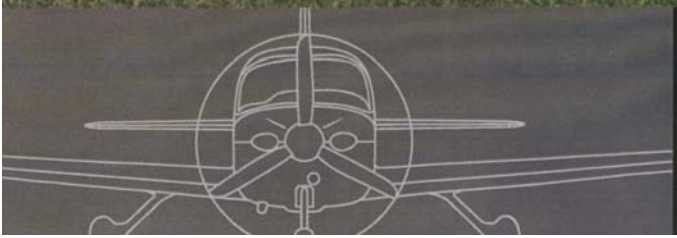
PILOT'S CHECKLIST

CIRRUS SR22





CIRRUS

#13728-001

NOTES

Contents

Normal CheckLists

Airspeeds for Normal Operation

Takeoff Rotation:

Vr (Normal)	Normal Rotation (Flaps 50%)	70
Vr (Obstacle)	Obstacle Rotation (Flaps 50%)	78

Enroute Climb, Flaps Up:

	Normal Climb	110-120
Vy (SL)	Best Rate Climb (SL)	101
Vy (10K)	Best Rate Climb (10,000 Ft)	95
Vx (SL)	Best Angle Climb (SL)	78
Vx (10K)	Best Angle Climb (10,000 Ft)	82

Landing Approach:

	Normal Approach (Flaps Up)	90-95
	Normal Approach (Flaps 50%)	85-90
	Normal Approach (Flaps 100%)	80-85
Vref	Short Field (Flaps 100%)	77

Go-Around Flaps:

	Go Around (Flaps 50%)	80

Maximum Turbulent Air Penetration:

	Penetration (3400 Lb)	133
	Penetration (2900 Lb)	123

Maximum Demonstrated Crosswind:

	Max Crosswind	20

Miscellaneous:

Vso	Stall (Full Flaps)	59
Vs	Stall Clean	70
Vo (3400)	Operating Maneuvering	133
Vfe (50%)	Maximum Flap (50%)	119
Vfe (100%)	Maximum Flap (100%)	104
Vno	Max Structural Cruising	178

Vne	Never Exceed	201
Vpd	Parachute Deployment	133
	Best Glide (3400 Lb)	88
	Best Glide (2900 Lb)	87

Preflight Inspection

Preflight External Accessories

1. Chocks.....Remove
2. Pitot Tube Cover.....Remove
3. Engine Inlet Covers.....Remove
4. Right Wing Tie-Down.....Disconnect
5. Tail Tie-Down.....Disconnect
6. Left Wing Tie-Down.....Disconnect

Preflight Fuel and Oil

1. Right Wing Fuel Quantity.....Check
2. Right Wing Fuel Cap.....Secure
3. Left Wing Fuel Quantity.....Check
4. Left Wing Fuel Cap.....Secure
5. Left Wing Fuel Drains.....Sample
6. Right Wing Fuel Drains.....Sample
7. Engine Fuel Drain (Gascolator).....Sample
8. Engine Oil Level.....6-8 Qts
9. Engine Oil Cap.....Secure

Preflight Cabin

1. POH / Documents..... Available
2. Weight and Balance ..... Check
3. Hobbs Time ..... Record
4. Avionics Power Switch ..... Off
5. Bat 2 Master Switch .....On
6. PFD.....On
7. Avionics Cooling Fan.....Audible
8. Voltmeter..... 23-25 V
9. Flap Position Light .....Out
10. Bat 1 Master Switch .....On
11. Nav, Land, Strobe Lights and Pitot Heat .....On
12. Nav, Land, Strobe Lights and Pitot Heat ..... Verify
13. Stall Warning.....Test
14. Nav, Land, Strobe Lights and Pitot Heat ..... Off
15. Fuel Quantity..... Check
16. Fuel Selector.....Fullest Tank
17. Flaps 100%,
18. Oil Annunciator.....On
19. Bat 1 and Bat 2 Master Switches ..... Off
20. Alternate Static Source..... Normal
21. Circuit Breakers..... In
22. Fire Extinguisher .....Charged
23. Emergency Egress Hammer ..... Available
24. Caps Handle ..... Pin Out

Preflight Empennage

1. COM 1 Antenna (top) ..... Check
2. Left Wing/Fuselage Fairing ..... Check
3. COM 2 Antenna (Underside) ..... Check
4. Baggage Door ..... Secure
5. Left Side Static Button ..... Clear
6. Parachute Cover ..... Check
7. Horiz / Vert Stabilizers ..... Check
8. Elevator and Tab ..... Check
9. Rudder ..... Check
10. Rudder Trim Tab ..... Check
11. Attachment Hardware ..... Secure
12. Right Side Static Button ..... Clear
13. Right Wing/Fuselage Fairing ..... Check

Preflight Right Wing

1. Flap and Rub Strip ..... Check
2. Aileron and Tab ..... Check
3. Aileron Gap Seal ..... Check
4. Attach & Activation Hardware ..... Secure
5. Tip ..... Check
6. Strobe, Nav Light and Lens ..... Check
7. Fuel Vent (underside) ..... Clear
8. Leading Edge and Stall Strips ..... Check
9. Wheel Fairings ..... Check
10. Tire ..... Check
11. Wheel and Brakes ..... Check
12. Cabin Air Vent ..... Clear

Preflight Nose

1. Right Vortex Generator ..... Check
2. Cowling ..... Check
3. Right Exhaust Pipe ..... Check
4. Transponder Antenna (Underside) ..... Check
5. Tow Bar ..... Removed
6. Strut ..... Check
7. Wheel Fairing ..... Check
8. Wheel and Tire ..... Check
9. Propeller ..... Check
10. Spinner ..... Check
11. Air Inlets ..... Check
12. Alternator ..... Check
13. Landing Light ..... Check
14. Cowling ..... Check
15. External Power Door ..... Closed
16. Left Vortex Generator ..... Check
17. Left Exhaust Pipe ..... Check

Preflight Left Wing

1. Wheel Fairings ..... Check
2. Tire ..... Check
3. Wheel and Brakes ..... Check
4. Cabin Air Vent ..... Clear
5. Leading Edge and Stall Strips ..... Check
6. Fuel Vent (underside) ..... Clear
7. Pitot Mast ..... Check
8. Strobe, Nav Light and Lens ..... Check
9. Tip ..... Check
10. Flap and Rub Strip ..... Check
11. Aileron ..... Check
12. Aileron Gap Seal ..... Check
13. Attach & Activation Hardware ..... Secure

Before Starting Engine

1. Preflight ..... Complete
2. Emergency Equipment ..... On Board
3. Passengers ..... Briefed
4. Seats/Belts ..... Adjusted/Locked

Starting Engine

1. External Power (If Applicable) ..... Connect
2. Brakes ..... Hold
3. Bat Master Switches ..... Both On
4. Volts ..... Check
5. Strobe Lights ..... On
6. Mixture ..... Full Rich
7. Power Lever ..... Full Forward
8. Fuel Pump ..... Prime
9. Fiuel Pump ..... Boost
10. Propeller Area ..... Clear
11. Power Lever ..... Open 1/4 Inch
12. Ignition Switch ..... Start
13. Power Lever ..... Retard to 1000 RPM
14. Oil Pressure ..... Check
15. Alt Master Switches ..... On
16. Avionics Power Switch ..... On
17. Engine Parameters ..... Monitor
18. External Power (If Applicable) ..... Disconnect
19. Amp Meter/Indication ..... Check

Before Taxiing

1. Flaps ..... Up (0%)
2. Cabin Heat/Defrost ..... As Required
3. Fuel Selector ..... Switch Tank
4. Radios ..... Set

Waukesha (KUES)	Tower	123.7
	Ground	121.6
	ATIS	118.875
	Unicom	122.95
Watertown (KRYV)	CTAF	122.80
	AWOS	119.975

Taxiing

1. Brakes ..... Check
2. HSI Orientation ..... Check
3. Attitude Gyro ..... Check
4. Turn Coordinator ..... Check

Before Takeoff

1. Doors ..... Latched
2. CAPS Handle ..... Pin Out
3. Seat Belts and Harnesses ..... Secure
4. Fuel Quantity ..... Confirm
5. Fuel Selector ..... Fullest Tank
6. Fuel Pump ..... On (Boost)
7. Mixture ..... As Required
8. Flaps ..... 50% and Check
9. Transponder ..... Set
10. Autopilot ..... Check
11. Navigation Radios / GPS ..... Set
12. Cabin Heat / Defrost ..... As Required
13. Brakes ..... Hold
14. Power Lever ..... 1700 RPM
15. Alternator ..... Check
    - Pitot Heat ..... On
    - Nav Lights ..... On
    - Landing Light ..... On
    - Annunciator Lights ..... Check
    - Alt Caution Lights ..... Out
    - Each Alternator ..... Positive Amps
16. Voltage ..... Check
17. Pitot Heat ..... As Required
18. Navigation Lights ..... As Required
19. Landing Light ..... As Required
20. Magnetos / RPM Drop ..... Check
21. Engine Params ..... Check
22. Power Lever ..... 1000 RPM
23. Flight Instruments (HSI, & Altimeter) ..... Check and Set
24. Flight Controls ..... Free and Correct
25. Trim ..... Set TakeOff
26. Autopilot ..... Disconnect

Normal Takeoff

1. Brakes ..... Release
2. Power Lever ..... Full Forward
3. Engine Parameters ..... Check
4. Elevator Control ..... Rotate at 70-73 KIAS
5. At 80 KIAS ..... Flaps Up

Short Field Takeoff

1. Flaps 50%
2. Brakes ..... Hold
3. Power Lever ..... Full Forward
4. Mixture ..... Set
5. Engine Parameters ..... Check
6. Brakes ..... Release
7. Elevator Control ..... Rotate at 70 KIAS
8. Airspeed at obstacle ..... 78 KIAS
9. At 80 KIAS ..... Flaps Up

Climb

1. Climb Power ..... Set
2. Flaps ..... Verify Up
3. Mixture ..... Lean as Required
4. Engine Parameters ..... Check
5. Fuel Pump ..... Off

Cruise

1. Fuel Pump ..... Off
2. Cruise Power ..... Set
3. Mixture ..... Lean as Required
4. Engine Parameters ..... Monitor
5. Fuel Flow and Balance ..... Monitor

Cruise Leaning

- Best Power ..... 75 Degrees Rich of Peak EGT
- Best Economy ..... 50 Degrees Lean of Peak EGT

Descent

1. Altimeter ..... Set
2. Cabin Heat / Defrost ..... As Required
3. Landing Light ..... On
4. Fuel System ..... Check
5. Mixture ..... As Required
6. Brake Pressure ..... Check

Before Landing

1. Seat Belts and Harnesses ..... Secure
2. Fuel Pump ..... Boost
3. Mixture ..... As Required
4. Flaps ..... As Required
5. Autopilot ..... As Required

Normal Landing

1. Entry Power ..... 15" MP
2. Entry Speed ..... 120 KIAS
3. Abeam Power ..... 11" MP
4. Abeam Flaps 50%
5. Abeam Speed ..... 100 KIAS
6. Base Speed ..... 90 KIAS
7. Aproach Flaps 100%
8. Approach Speed ..... 80 KIAS

Short Field Landing

1. Entry Power ..... 15" MP
2. Entry Speed ..... 120 KIAS
3. Abeam Power ..... 11" MP
4. Abeam Flaps 50%
5. Abeam Speed ..... 100 KIAS
6. Base Speed ..... 90 KIAS
7. Aproach Flaps 100%
8. Approach Speed ..... 77 KIAS
9. Flaps ..... Up (0%)
10. Yoke ..... Back
11. Brakes ..... Maximum (No Skid)

Balked Landing

1. Autopilot ..... Disengage
2. Power Lever ..... Full Forward
3. Flaps 50%
4. Airspeed ..... 75-80 KIAS
5. Flaps ..... Up (0%)

Landing

1. Power Lever ..... 1000 RPM
2. Fuel Pump ..... Off
3. Flaps ..... Up
4. Transponder ..... Stby
5. Lights ..... As Required
6. Pitot Heat ..... Off

Securing Airplane

1. Avionics Switch ..... Off
2. Fuel Pump (If Used) ..... Off
3. Throttle ..... Idle
4. Ignition Switch ..... Cycle
5. Mixture ..... Cutoff
6. All Switches ..... Off
7. Magnetos ..... Off
8. ELT ..... Transmit Light Out
9. Chocks, Tie Downs, Pitot Cover ..... As Required

Performance Data

TAKEOFF DISTANCE

Maximum Weight 2900 Pounds

WEIGHT = 2900 LB
Speed at Liftoff = 70 KIAS
Speed over 50 Ft Obstacle = 74 KIAS
Flaps - 50% · Takeoff Pwr · Dry Paved

Headwind: Subtract 10% for each 12 knots headwind.
Tailwind: Add 10% for each 2 knots tailwind up to 10 knots.
Runway Slope: Ref. Factors.
Dry Grass: Add 15% to Ground Roll

PRESS ALT FT	DISTANCE FT	TEMPERATURE ~ °C					
		0	10	20	30	40	ISA
SL	Grnd Roll	605	654	704	757	811	679
	50 ft	958	1029	1103	1180	1259	1066
1000	Grnd Roll	668	721	777	835	895	738
	50 ft	1053	1131	1212	1297	1383	1155
2000	Grnd Roll	737	796	857	921	989	802
	50 ft	1158	1244	1334	1426	1522	1253
3000	Grnd Roll	815	880	948	1018	1092	873
	50 ft	1275	1370	1469	1570	1676	1361
4000	Grnd Roll	901	973	1048	1126	1207	952
	50 ft	1403	1510	1619	1731	1847	1479
5000	Grnd Roll	998	1078	1161	1248	1337	1088
	50 ft	1552	1667	1787	1911	2039	1610
6000	Grnd Roll	1107	1195	1287	1383	1483	1134
	50 ft	1714	1842	1974	2111	2253	1753
7000	Grnd Roll	1229	1327	1429	1535	1646	1239
	50 ft	1896	2037	2184	2335	2492	1912
8000	Grnd Roll	1366	1475	1588	1706	1829	1356
	50 ft	2100	2257	2419	2587	2760	2087
9000	Grnd Roll	1520	1641	1767	1899	2035	1486
	50 ft	2329	2503	2682	2868	3061	2281
10000	Grnd Roll	1683	1828	1969	2115	2267	1630
	50 ft	2586	2779	2978	3185	3399	2495

TAKEOFF DISTANCE

Maximum Weight 3400 Pounds

/EIGHT = 3400 LB
Speed at Liftoff = 73 KIAS
Speed over 50 Ft. Obstacle = 78 KIAS
Flaps - 50% · Takeoff Pwr · Dry Paved

Headwind: Subtract 10% for each 12 knots headwind.
Tailwind: Add 10% for each 2 knots tailwind up to 10 knots.
Runway Slope: Ref. Factors.
Dry Grass: Add 15% to Ground Roll.

PRESS ALT FT	DISTANCE FT	TEMPERATURE ~ °C 0	10	20	30	40	ISA
SL	Grnd Roll	910	982	1058	1137	1219	1020
	50 ft	1414	1520	1629	1742	1860	1574
1000	Grnd Roll	1003	1084	1167	1254	1344	1108
	50 ft	1554	1670	1790	1915	2044	1706
2000	Grnd Roll	1108	1196	1289	1385	1484	1206
	50 ft	1710	1837	1970	2107	2248	1851
3000	Grnd Roll	1224	1322	1424	1530	1640	1312
	50 ft	1883	2024	2169	2320	2476	2010
4000	Grnd Roll	1354	1463	1575	1693	1814	1430
	50 ft	2076	2231	2392	2558	2730	2185
5000	Grnd Roll	1500	1620	1746	1875	2009	1560
	50 ft	2291	2462	2640	2823	3013	2377
6000	Grnd Roll	1663	1796	1935	2078	2228	1704
	50 ft	2532	2721	2917	3120	3330	2590
7000	Grnd Roll	1846	1994	2147	2307	2473	1862
	50 ft	2801	3010	3227	3452	3684	2824
8000	Grnd Roll	2052	2216	2387	2564	2748	2038
	50 ft	3103	3335	3575	2823	4080	3083
9000	Grnd Roll	2284	2466	2656	2853	3058	2233
	50 ft	3442	3698	3965	4240	4526	3370
10000	Grnd Roll	2544	2748	2959	3179	3407	2449
	50 ft	3822	4107	4403	4709	5026	3687

CRUISE PERFORMANCE

Conditions:

- Mixture ..... Best Power
- Cruise Weight .....2900 LB
- Winds .....Zero

Note:
Subtract 10 KTS if nose wheel fairings removed.

Cruise Pwr above 85% not recommended.

Example:

Outside Air Temp.....29° C
RPM .....2700 RPM
Cruise Press Alt..... 8000 FT

% Power (24.0 MAP) 75%
True Airspeed .....178 Knots
Fuel Flow.....17.7 GPH

2000 Feet Pressure Altitude

		ISA - 30° C (-19° C)			ISA (11° C)			ISA + 30° C (41° C)		
RPM	MAP	PWR	KTAS	GPH	PWR	KTAS	GPH	PWR	KTAS	GPH
2700	27.4	103%	186	24.6	98%	186	23.3	93%	181	22.0
2600	27.4	99%	183	23.5	94%	183	22.2	89%	178	21.5
2500	27.4	93%	179	22.1	88%	179	20.9	84%	174	20.8
2500	26.4	89%	176	21.1	84%	176	19.9	80%	171	20.2
2500	25.4	84%	173	20.0	80%	173	19.0	76%	168	19.5
2500	24.4	80%	170	19.0	76%	170	18.0	72%	165	18.8
2500	23.4	76%	167	18.0	72%	167	17.0	68%	162	18.1

4000 Feet Pressure Altitude

		ISA - 30° C (-23° C)			ISA (7° C)			ISA + 30° C (37° C)		
RPM	MAP	PWR	KTAS	GPH	PWR	KTAS	GPH	PWR	KTAS	GPH
2700	25.4	96%	185	22.9	91%	185	21.6	87%	180	20.8
2600	25.4	92%	182	21.9	87%	182	20.7	83%	177	20.6
2500	25.4	87%	178	20.6	82%	178	19.5	78%	173	19.9
2500	24.4	82%	175	19.5	78%	175	18.5	74%	170	19.2
2500	23.4	78%	172	18.5	74%	172	17.5	70%	167	18.5
2500	22.4	73%	169	17.4	69%	169	16.5	66%	163	17.7
2500	21.4	69%	165	16.4	65%	165	15.5	62%	159	16.9

6000 Feet Pressure Altitude

		ISA - 30° C (-27° C)			ISA (3° C)			ISA + 30° C (33° C)		
RPM	MAP	PWR	KTAS	GPH	PWR	KTAS	GPH	PWR	KTAS	GPH
2700	23.5	89%	184	21.2	85%	184	20.1	81%	179	19.6
2600	23.5	85%	181	20.3	81%	181	19.2	77%	176	19.1
2500	23.5	80%	177	19.1	76%	177	18.1	72%	172	18.3
2500	22.5	76%	174	18.1	72%	174	17.1	68%	169	17.6
2500	21.5	72%	170	17.0	68%	170	16.1	64%	165	16.9
2500	20.5	67%	166	15.9	64%	166	15.1	60%	161	16.1
2500	19.5	63%	162	14.9	59%	162	14.1	56%	157	15.3

CRUISE PERFORMANCE (Continued)

8000 Feet Pressure Altitude										
		ISA - 30° C (-31° C)			ISA (-1° C)			ISA + 30° C (29° C)		
RPM	MAP	PWR	KTAS	GPH	PWR	KTAS	GPH	PWR	KTAS	GPH
2700	21.7	83%	183	19.7	78%	183	18.6	75%	178	17.7
2600	21.7	79%	180	18.8	75%	180	17.8	71%	175	17.0
2500	21.7	75%	176	17.7	71%	176	16.8	67%	171	16.0
2500	20.7	70%	172	16.7	66%	172	15.8	63%	167	15.0
2500	19.7	66%	168	15.6	62%	168	14.8	59%	163	14.0
2500	18.7	61%	163	14.5	58%	163	13.8	55%	158	13.1
2500	17.7	57%	159	13.5	54%	159	12.8	51%	153	12.1

10,000 Feet Pressure Altitude										
		ISA - 30° C (-35° C)			ISA (-5° C)			ISA + 30° C (25° C)		
RPM	MAP	PWR	KTAS	GPH	PWR	KTAS	GPH	PWR	KTAS	GPH
2700	20.0	77%	182	18.2	73%	182	17.3	69%	176	16.4
2600	20.0	71%	177	17.0	68%	177	16.1	64%	172	15.3
2500	20.0	67%	173	16.0	64%	173	15.1	61%	167	14.4
2500	19.0	63%	168	14.9	59%	168	14.1	56%	163	13.4
2500	18.0	58%	163	13.8	55%	163	13.1	52%	158	12.5
2500	17.0	54%	158	12.8	51%	158	12.1	48%	153	11.5

12,000 Feet Pressure Altitude										
		ISA - 30° C (-39° C)			ISA (-9° C)			ISA + 30° C (21° C)		
RPM	MAP	PWR	KTAS	GPH	PWR	KTAS	GPH	PWR	KTAS	GPH
2700	18.5	71%	180	16.9	67%	180	16.0	64%	175	15.2
2600	18.5	68%	177	16.2	64%	177	15.3	61%	172	14.5
2500	18.5	64%	173	15.2	60%	173	14.4	58%	167	13.7
2500	17.5	59%	168	14.1	56%	168	13.4	53%	162	12.7
2500	16.5	55%	162	13.0	52%	162	12.3	49%	157	11.7
2500	15.5	50%	156	12.0	48%	156	11.3	45%	151	10.8

14,000 Feet Pressure Altitude										
		ISA - 30° C (-43° C)			ISA (-13° C)			ISA + 30° C (17° C)		
RPM	MAP	PWR	KTAS	GPH	PWR	KTAS	GPH	PWR	KTAS	GPH
2700	17.1	66%	178	15.6	62%	178	14.8	59%	173	14.1
2600	17.1	63%	175	14.9	60%	175	14.1	57%	170	13.5
2500	17.1	59%	171	14.1	56%	171	13.3	53%	165	12.7
2500	16.1	55%	165	13.0	52%	165	12.3	49%	159	11.7
2500	15.1	50%	159	11.9	47%	159	11.2	45%	153	10.7

CRUISE PERFORMANCE (Continued)

16,000 Feet Pressure Altitude										
		ISA - 30° C (-47° C)			ISA (-17° C)			ISA + 30° C (13° C)		
RPM	MAP	PWR	KTAS	GPH	PWR	KTAS	GPH	PWR	KTAS	GPH
2700	15.8	61%	176	14.5	58%	176	13.0	55%	171	13.0
2600	15.8	58%	173	13.8	55%	173	12.5	52%	167	12.5
2500	15.8	55%	168	13.0	52%	168	11.7	49%	163	11.7
2500	14.8	50%	162	11.9	47%	162	10.7	45%	156	10.7

17,000 Feet Pressure Altitude										
		ISA - 30° C (-49° C)			ISA (-19° C)			ISA + 30° C (9° C)		
RPM	MAP	PWR	KTAS	GPH	PWR	KTAS	GPH	PWR	KTAS	GPH
2700	15.2	59%	175	13.9	55%	175	13.2	53%	169	12.5
2600	15.2	56%	171	13.3	53%	171	12.6	50%	166	12.0
2500	15.2	53%	167	12.5	50%	167	11.9	47%	162	11.3
2500	14.2	48%	160	11.4	45%	160	10.8	43%	155	10.3

LANDING DISTANCE

WEIGHT = 3400 LB
Speed over 50 Ft Obstacle = 77 KIAS
Flaps - 100% · Idle · Dry, Level Paved Surface

Headwind: Subtract 10% per each 13 knots headwind.
Tailwind: Add 10% for each 2 knots tailwind up to 10 knots.
Runway Slope: Ref. Factors
Dry Grass: Add 40% to Ground Roll

PRESS ALT FT	DISTANCE FT	TEMPERATURE ~ °C 0	10	20	30	40	ISA
SL	Grnd Roll	1082	1121	1161	1200	1240	1141
	50 ft	2244	2298	2352	2408	2464	2325
1000	Grnd Roll	1122	1163	1204	1245	1286	1175
	50 ft	2298	2355	2412	2470	2529	2372
2000	Grnd Roll	1163	1206	1248	1291	1334	1210
	50 ft	2356	2415	2476	2537	2598	2422
3000	Grnd Roll	1207	1251	1295	1339	1384	1247
	50 ft	2417	2479	2543	2607	2672	2473
4000	Grnd Roll	1252	1298	1344	1390	1436	1285
	50 ft	2481	2547	2614	2681	2749	2528
5000	Grnd Roll	1300	1348	1395	1443	1490	1324
	50 ft	2550	2619	2689	2759	2831	2585
6000	Grnd Roll	1350	1399	1449	1498	1547	1365
	50 ft	2622	2694	2768	2842	2917	2644
7000	Grnd Roll	1402	1453	1504	1556	1607	1408
	50 ft	2698	2775	2852	2930	3008	2707
8000	Grnd Roll	1456	1509	1563	1616	1669	1452
	50 ft	2779	2860	2941	3022	3105	2773
9000	Grnd Roll	1513	1569	1624	1679	1735	1497
	50 ft	2865	2949	3035	3121	3207	2841
10000	Grnd Roll	1573	1630	1688	1746	1803	1545
	50 ft	2956	3045	3134	3225	3316	2914

WEIGHT AND BALANCE

Loading Calculations

For Moment/1000, refer to Loading Data table on following page.

Description	Weight	Moment/1000
1. Empty Weight *Includes unusable fuel and full oil*		
2. Front Seats Occupants *Pilot and Passenger*		
3. Rear Seats Occupants		
4. Baggage *130 lb maximum*		
5. Zero Fuel Condition *Subtotal items 1 thru 4*		
6. Fuel Load *81 Gallon @6.0 lb/gal. maximum*		
7. Ramp Weight *Subtotal items 5 and 6*		
8. Fuel for start, taxi, and runup *Normally 9 lb at avg. mmnt of 1394*	-	-
9. Takeoff Weight *Subtract Item 8 from item 7*		

Calculation Instructions

1. Enter the current basic empty weight and moment from the aircraft's Weight and Balance Record.
2. Enter the total weight and moment/1000 for the front seat occupants from the adjacent Loading Data Table.
3. Enter the total weight and moment/1000 for the rear seat occupants from the adjacent Loading Data Table.
4. Enter the total weight and moment/1000 for the baggage from the adjacent Loading Data Table.
5. If desired, subtotal the weight and moment/1000 entries from steps 1 - 4.
6. Enter the weight and moment/1000 of usable fuel loaded on the airplane.
7. Subtotal the weight and moment/1000.
8. Enter values for typical start, taxi, and run-up operations of 9 pounds at an average moment\1000 of 1.39.
9. Subtract step 8 weight and moment/1000 from the Ramp Weight to determine t Takeoff Weight and moment/1000.
   a. Verify Takeoff Weight does not exceed the 3400 pounds.
   b. Verify Moment/1000 does falls between the interpolated minimum and maximum values listed on the adjacent Moment Limits Table.

Loading Data

To complete Loading Calculations, use this table to determine the Moment/1000.

Weight LB	Fwd Pass FS 143.5	Aft Pass FS 180.0	Baggage FS 208.0	Fuel FS 154.9	Weight LB	Fwd Pass FS 143.5	Aft Pass FS 180.0	Fuel FS 154.9
20	2.87	3.60	4.16	3.10	260	37.31	46.80	40.27
40	5.74	7.20	8.32	6.20	280	40.18	50.40	43.37
60	8.61	10.80	12.48	9.29	300	43.05	54.00	46.47
80	11.48	14.40	16.64	12.39	320	45.92	57.60	49.57
100	14.35	18.00	20.80	15.49	340	48.79	61.20	52.67
120	17.22	21.60	24.96	18.59	360	51.66	64.80	55.76
140	20.09	25.20	(27.04)*	21.69	380	54.53	68.40	58.86
160	22.96	28.80		24.78	400	57.40	72.00	61.96
180	25.83	32.40		27.88	420	60.27	75.60	65.06
200	28.70	36.00		30.98	440	63.14	79.20	68.16
220	31.57	39.60		34.08	460			71.25
240	34.44	43.20		37.18	486**			75.28

* 130 lb Maximum
** 81 Gallon Usable

Moment Limits

Use this table to determine if Loading Calculations are within limits.

Weight LB	MInimum Moment /1000	Maximum Moment/1000	Weight LB	MInimum Moment /1000	Maximum Moment/1000
2200	304	326	2850	398	422
2250	311	333	2900	406	430
2300	318	341	2950	414	437
2350	326	348	3000	421	444
2400	333	355	3050	429	452
2450	340	363	3100	437	459
2500	347	370	3150	444	467
2550	354	378	3200	452	474
2600	362	385	3250	461	481
2650	369	392	3300	471	489
2700	375	400	3350	480	496
2750	383	407	3400	489	504
2800	390	415			

WIND COMPONENTS

Conditions:

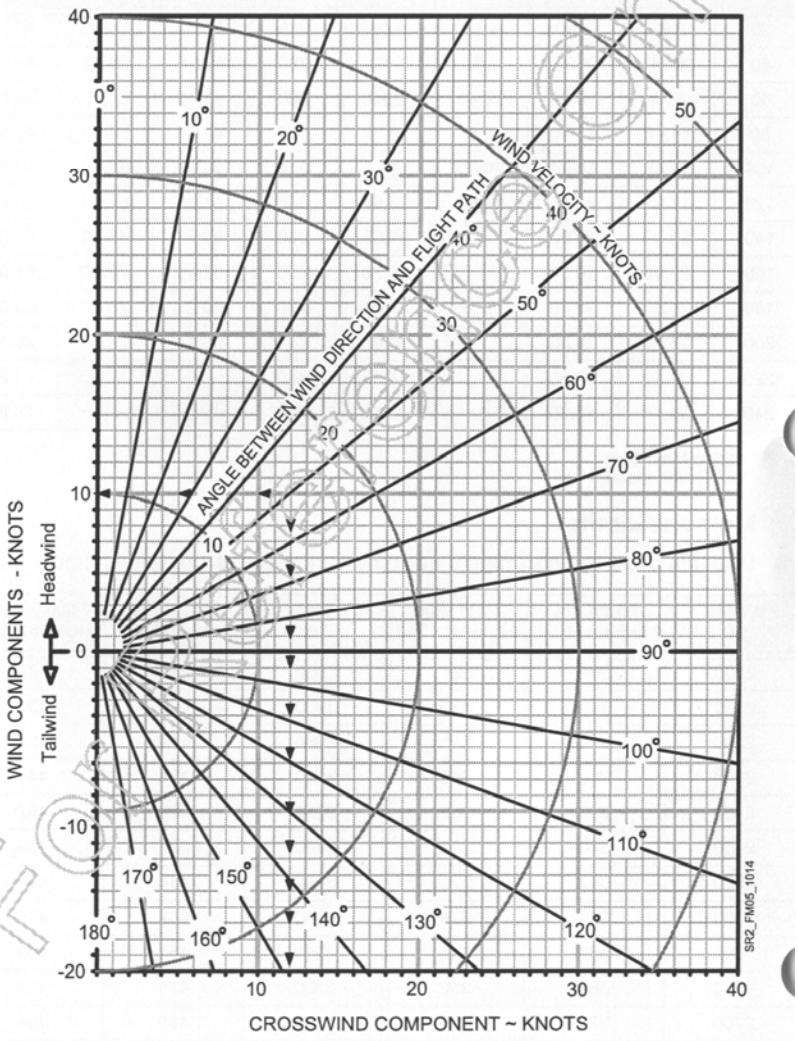
- Runway Heading.....10°
- Wind Direction.....60°
- Wind Velocity.....15 Knots

Example: (See Chart ▶ ▶ ▶)

Wind/Flight Path Angle..... 50°
Crosswind Component.....12 Knots
Headwind Component.....10 Knots

• Note •

- The maximum demonstrated crosswind is 20 knots. Value not considered limiting.



Abnormal Checklists

Ground Procedures

Brake Failure During Taxi

1. Engine Power ..... As Required
2. Directional Control ..... With Rudder
3. Brake Pedal(s) ..... Pump

If Directional Control can not be maintained

4. Mixture ..... Cutoff

Aborted Takeoff

1. Power Lever ..... Idle
2. Brakes ..... As Required

In-Flight Procedures

Inadvertent Icing Encounter

1. Pitot Heat.....On
2. Icing Conditions.....Exit
3. Cabin Heat.....Maximum
4. Windshield Defrost.....Full Open
5. Alternate Induction Air.....On

Inadvertent IMC Encounter

1. Airplane Control.....Straight and Level
2. Autopilot.....Engage (Heading and Altitude)
3. Heading.....Reset for 180 Degree Turn

Door Open in Flight

1. Airspeed.....Reduce to 80-90 KIAS
2. Land.....ASAP

Landing Procedures

Landing with Failed Brakes

One Brake Inoperative

1. Land on side of runway corresponding to the inoperative brake
2. Maintain directional control using rudder and working brake

Both Brakes Inoperative

1. Divert to the longest, widest runway with the most direct headwind
2. Land on downwind side of the runway
3. Use rudder for obstacle avoidance
4. Perform Emergency Shutdown on Ground Checklist

Landing with Flat Tire

Main Gear

1. Land on the side of the runway corresponding to the good tire
2. Maintain directional control with brakes and rudder
3. Do not taxi. Stop the airplane and perform a normal engine shutdown.

Nose Gear

1. Land in the center of the runway
2. Hold the nosewheel off the ground as long as possible
3. Do not taxi. Stop the airplane and perform a normal engine shutdown.

System Malfunctions

Alternator Failure

ALT 1 Light Steady

1. ALT 1 Master Switch..... Off
2. Alternator 1 Circuit Breaker.....Check and Reset
3. ALT 1 Master Switch.....On

If Alternator Does Not Reset

4. Switch of unnecessary equipment on Main Bus 1, Main Bus 2, and the non-essential Buses to reduce loads. Monitor voltage
5. ALT 1 Master Switch..... Off
6. Land.....ASAP

ALT 1 Light Flashing

1. Ammeter Switch.....Batt
2. If Charging rate is greater than 30 amps, reduce load on Main Bus1, Main Bus 2, and Non-Essential Buses.
3. Monitor Ammeter until battery charge is less than 15 Amps
4. When battery charge rate is within limits, add loads as necessary for flight conditions

ALT 2 Light Steady

1. ALT 2 Master Switch..... Off
2. Alternator 2 Circuit Breaker.....Check and Reset
3. ALT 2 Master Switch.....On

If Alternator Does Not Reset

4. Switch of unnecessary equipment on Main Bus 1, Main Bus 2, and the non-essential Buses to reduce loads.
5. ALT 2 Master Switch..... Off
6. Land.....ASAP

Engine Indicating System Failure

1. ANNUN / ENGINE INST Circuit Breaker..... Cycle
2. Land.....ASAP

Low Volts Warning Light

1. Land .....ASAP

Communications Failure

1. Switches, Controls .....Check
2. Frequency.....Change
3. Circuit Breakers .....Check
4. Headset.....Change
5. Hand Held Microphone.....Connect

Pitot Static Malfunction

Static Source Blocked

1. Pitot Heat.....On
2. Alternate Static Source..... Open

Pitot Tube Blocked

1. Pitot Heat.....On

Electric Trim / Autopilot Failure

1. Airplane Control ..... Maintain Manually
2. Autopilot (if engaged).....Disengage

If problem is not corrected

3. Circuit Breakers .....Pull as required
   - Pitch Trim
   - Roll Trim
   - Autopilot
4. Power Lever .....As Required
5. Control Yoke.....Manually Hold Pressure
6. Land .....ASAP

Emergency Checklists

Airspeeds for Emergency Operation

Maneuvering Speed

3400 Lb ..... 133 KIAS

Best Glide

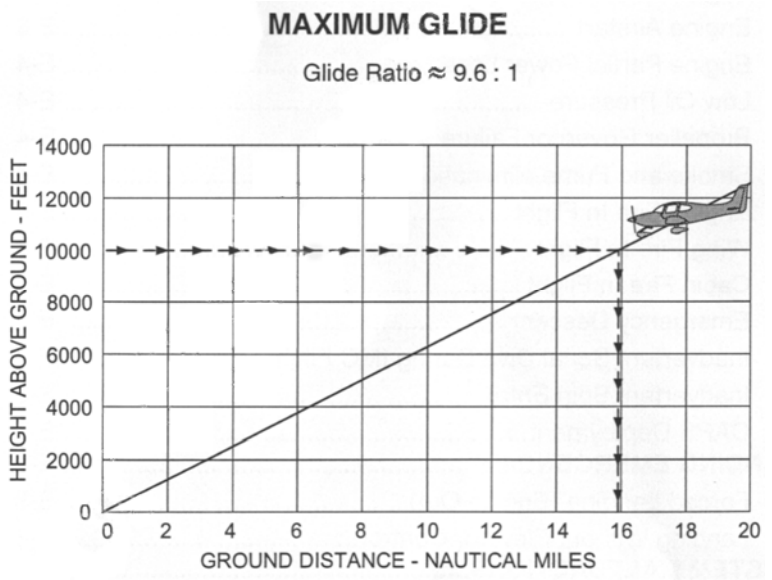
3400 Lb ..... 88 KIAS
2900 Lb ..... 87 KIAS

Emergency Landing (Engine Out)

Flaps Up ..... 90 KIAS
Flaps 50% ..... 85 KIAS
Flaps 100% ..... 80 KIAS

Maximum Glide

10,000 AGL ..... 16 Nautical Miles
1.6 NM ..... Per 1000 Ft AGL



Ground Emergencies

Engine Fire During Start

1. **Mixture**.....**Cutoff**
2. **Fuel Pump**.....**Off**
3. **Fuel Selector**.....**Off**
4. **Power Lever**.....**Forward**
5. **Starter**.....**Crank**

If Flames Persist

6. Emergency Engine Shutdown.....Perform
7. Emergency Ground Egress.....Perform

Emergency Engine Shutdown on Ground

1. **Power Lever**.....**Idle**
2. **Fuel Pump (If Used)**.....**Off**
3. **Mixture**.....**Cutoff**
4. **Fuel Selector**.....**Off**
5. **Ignition Switch**.....**Off**
6. Bat-Alt Master Switches.....Off

Emergency Ground Egress

1. **Engine**.....**Shutdown**
2. **Seat Belts**.....**Release**
3. Airplane.....Exit

In-Flight Emergencies

Engine Failure on Takeoff

1. **Best Glide or Landing Speed** ..... **Establish**
2. **Mixture** ..... **Cutoff**
3. **Fuel Selector** ..... **Off**
4. **Ignition Switch** ..... **Off**
5. **Flaps** ..... **As Required**

If time permits

6. Power Lever ..... Idle
7. Fuel Pump ..... Off
8. Bat-Alt Master Switches ..... Off
9. Seat Belts ..... Secured

Engine Failure in Flight

1. **Best Glide Speed** ..... **Establish**
2. **Mixture** ..... **As Required**
3. **Fuel Selector** ..... **Switch Tank**
4. **Fuel Pump** ..... **Boost**
5. **Alternate Induction Air** ..... **On**
6. Ignition Switch ..... Check, BOTH

If no Start

7. Engine Airstart Checklist ..... Perform

Engine Airstart

1. **Bat Master Switches**.....**On**
2. **Power Lever**..... **1/2 " Open**
3. **Mixture**..... **Rich, As Reqd**
4. **Fuel Selector** ..... **Switch Tank**
5. **Ignition Switch**.....**Both**
6. Fuel Pump .....Boost
7. Alternate Induction Air .....On
8. Alt Master Switches ..... Off
9. Starter (Prop not Windmilling) .....Engage
10. Power Lever .....Increase
11. Alt Master Switches .....On

If no start

12. Forced Landing Checklist .....Perform

Engine Partial Power Loss

1. Fuel Pump .....Boost
2. Fuel Selector .....Switch Tanks
3. Mixture..... Check Appropriate
4. Power Lever ..... Sweep
5. Alternate Induction Air .....On
6. Ignition Switch.....BOTH, L, then R
7. Land .....ASAP

Low Oil Pressure

1. Power Lever ..... Minimum Reqd
2. Land .....ASAP

Propeller Governor Failure

Prop RPM will not increase

1. Oil Pressure ..... Check
2. Land.....ASAP

Prop overspeed or no decrease

1. Power Lever .....Adjust (for RPM Limits)
2. Airspeed ..... Reduce to 90 KIAS
3. Land.....ASAP

Smoke and Fume Elimination

1. Heater ..... Off
2. Air Vents .....Open, Full Cold
3. Land.....ASAP

If airflow insufficient to clear

4. Cabin Doors..... Unlatch

Engine Fire in Flight

1. **Mixture**.....**Cutoff**
2. **Fuel Pump** .....**Off**
3. **Power Lever** ..... **Idle**
4. **Fuel Selector**.....**Off**
5. **Ignition Switch**.....**Off**
6. Forced Landing Checklist .....Perform

Wing Fire in Flight

1. **Pitot Heat Switch**.....**Off**
2. **Navigation Light Switch** .....**Off**
3. **Strobe Light Switch**.....**Off**
4. **If Possible, side slip to keep flames away from fuel tank and cabin**
5. Land.....ASAP

Cabin Fire in Flight

1. **Alt 1, Alt 2, Bat 1** ..... **Off**
2. **In VMC: Bat 2** ..... **Off**
3. **Heater** ..... **Off**
4. **Air Vents** ..... **Closed**
5. **Fire Extinguisher** ..... **Activate**
6. **Fire Extinguished: Air Vents** ..... **Open, Full Cold**
7. Avionics Power Switch ..... Off
8. All Other Switches ..... Off
9. Land ..... ASAP

If setting master switches off eliminated source of fire or fumes and airplane is in night, weather, or IFR conditions:

10. Bat-Alt Master Switches ..... On
11. Avionics Power Switch ..... On
12. Activate required systems one at a time. Pause several seconds between activating each system to isolate malfunctioning system. Activate only the minimum amount of equipment necessary to complete a safe landing.

Emergency Descent

1. **Power Lever** ..... **Idle**
2. **Mixture** ..... **As Required**
3. Airspeed ..... Vne (201 KIAS)

Inadvertent Spiral Dive During IMC Flight

1. **Power Lever** ..... **Idle**
2. **Stop the spiral dive by using coordinated aileron and rudder control while referring to the attitude indicator and turn coordinator to level the wings**
3. **Cautiously apply elevator back pressure to bring airplane to level flight attitude**
4. Trim ..... Level Flight
5. Power Lever ..... As Required
6. Use autopilot if functional otherwise keep hands off control yoke, use rudder to hold constant heading
7. IMC ..... Exit

Inadvertent Spin Entry

1. CAPS ..... Activate

CAPS Deployment

1. **Airspeed** ..... **Minimum Possible (<= 133 KIAS)**
2. **Mixture (Permitting)** ..... **Cutoff**
3. **Activation Cover** ..... **Remove**
4. **Activation Handle** ..... **Pull (Both Hands)**

After deployment

5. Mixture ..... Check, Cutoff
6. Fuel Selector ..... Off
7. Bat-Alt Master Switches ..... Off
8. Ignition Switch ..... Off
9. Fuel Pump ..... Off
10. ELT ..... On
11. Seat Belts and Harnesses ..... Tighten
12. Loose Items ..... Secure
13. Emergency Landing Position ..... Assume

After airplane comes to a complete stop

14. Evacuate ..... Quickly
15. Move ..... Upwind

Landing Emergencies

Forced Landing (Engine Out)

1. **Best Glide Speed** ..... **Establish**
2. **Radio** ..... **121.5 Mhz (MAYDAY)**
3. **Transponder** **7700**
4. **If off Airport: ELT** ..... **Activate**
5. **Power Lever** ..... **Idle**
6. **Mixture** ..... **Cutoff**
7. **Fuel Selector** ..... **Off**
8. **Ignition Switch** ..... **Off**
9. **Fuel Pump** ..... **Off**
10. Flaps (When Landing Assured) 100%
11. Master Switches ..... Off
12. Seat Belt(s) ..... Secured

Landing Without Elevator Control

1. Flaps 50%
2. Trim ..... 80 KIAS
3. Power ..... As Required for Glide Angle

System Malfunctions

PFD - Loss of Air Data

1. **Land** ..... **ASAP**
2. **Standby Instruments (Altitude, Airspeed)** ..... **Monitor**
3. If in IMC ..... Exit IMC

PFD - Loss of Attitude Data

1. Standby Instruments (attitude, heading) ..... Monitor

If failure ocurs while flying in IMC

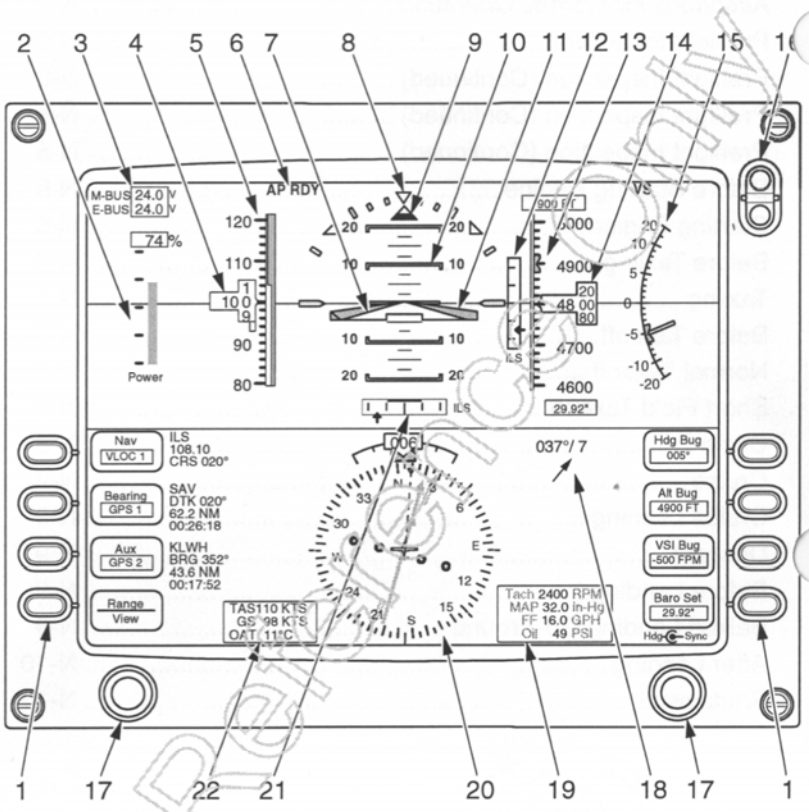
2. **Autopilot GPSS Mode** ..... **Activate**
3. **Autopilot Altitude Hold** ..... **Activate**
4. IMC ..... Exit

Power Lever Linkage Failure

1. Power Lever Movement ..... Verify
2. Power ..... Set if Able
3. Flaps ..... Set if Needed
4. Mixture ..... As Required
5. Land ..... ASAP

Other References

PFD Reference



LEGEND

1. Navigation & Avionics Configuration Button s
2. Percent Power
3. Bus Voltages
4. Airspeed Window
5. Airspeed Tape
6. Autopilot Annunciations
7. Aircraft Reference Symbol
8. Bank Angle Indicator
9. Skid/Slip Indicator
10. Pitch Ladder
11. Flight Director Steering Command Bars
12. Vertical Deviation Indicator (VDI)
13. Altitude Tape
14. Altitude Window
15. Vertical Speed Indicator (VSI)
16. Brightness Control (BRT/DIM)
17. Mode and Display Selection
18. Wind Vector
19. Engine Information Data Block
20. Horizontal Situation Indicator (HSI)
21. Horizontal Deviation Indicator (HDI)
22. Air Data Block

ANNUNCIATOR PANEL/OPTIONAL MFD EMAX MESSAGES

Engine Speed > 2710 RPM for 5s:
Check RPM ACK

Oil Temperature ≥ 240°F:
Check Oil Temp ACK

Oil Pressure < 10 psi OR > 99 psi:
Check Oil Press ACK

Cylinder Head Temperature > 460°F:
Check CHT ACK

Main Bus Volts < 24.5v OR > 32.0v:
Check Main Bus ACK

Essential Bus Volts < 24.5v OR > 32.0v:
Check Essential Bus ACK

Fuel Flow > 30.0 gallons per hour:
Check Fuel Flow ACK

Fuel Remaining < 9.9 gallons:
Check Fuel Remaining ACK

Oil Temperature ≥ 235°F:
Monitor Oil Temp ACK

Oil Pressure < 30 psi OR > 75 psi:
Check Oil Press ACK

Cylinder Head Temperature > 420°F:
Check CHT ACK

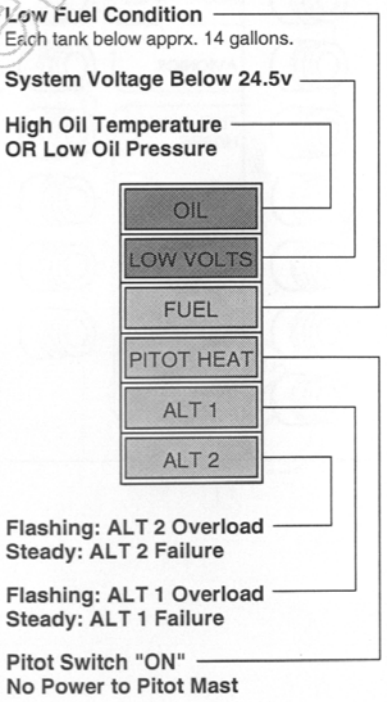
Alternator 1 < 2 A for 20 s or more:
Check Alt 1 ACK

Alternator 2 < 2 A for 20 s or more:
Check Alt 2 ACK

Battery 1 < -4 A for 30 s or more:
Check Batt 1 ACK

Fuel Flow > 26.7 gallons per hour:
Check Fuel Flow ACK

Fuel Remaining < 28.0 gallons:
Check Fuel Remaing ACK



CIRCUIT BREAKER PANEL