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Reality Expansion Pack for X-Plane

Beechcraft Bonanza F33A

Checklists & References

BEFORE STARTING

1. Seats ..... POSITION AND LOCK
2. Seat Backs ..... UPRIGHT
3. Parking Brake ..... SET
4. All Avionics ..... OFF
5. Circuit Breakers ..... IN
6. Landing Gear Handle ..... DOWN
7. Cowl Flaps ..... OPEN
8. Light Switches ..... OFF
9. Electric Elevator Trim Switch ..... OFF
10. Fuel Selector Valve ..... FULLEST TANK
11. Battery Switch ..... ON
12. Fuel Quantity Indicators ..... CHECK QUANTITY
13. Beacon Light ..... ON

WARNING

Do not take off if gages indicate in yellow arc or with less than 13 gallons in each tank.

STARTING

CAUTION

Vernier-type engine controls should not be rotated clockwise after being advanced to the full forward position.

1. Mixture ..... FULL RICH
2. Propeller ..... HIGH RPM
3. Throttle ..... FULL OPEN

NOTE

If the engine is hot, and the ambient temperature is 90º F (32º C) or above, place mixture control in IDLE CUT-OFF, switch aux fuel pump to ON for 30 to 60 seconds, then OFF. Return mixture control to FULL RICH.

4. Aux Fuel Pump ..... ON until fuel flow peaks then OFF
5. Throttle ..... OPEN 1/4 inch APPROXIMATELY
6. Magneto/Start Switch ..... START

CAUTION

Do not engage starter for more than 30-seconds in any 4-minute time period.

NOTE

In case of overprime, engange the starter with MIXTURE CUT-OFF and FULL-THROTTLE. As the engine starts reduce throttle to IDLE and advance the mixture control to FULL RICH

AFTER STARTING

1. Throttle ..... 1000 to 1200 RPM
2. Oil Pressure ..... CHECK
3. External Power (if used) ..... DISCONNECT
4. Alternator Switch ..... ON; CHARGING
5. All Engine Indicators ..... CHECK
6. Starter Energized Light ..... CHECK OFF

CAUTION

If starter energized light is inoperative, the ammeter indication should be less than 25% of full charge at 1000 to 1200 RPM within two minutes. If not, turn off the battery and alternator switches and do not take off.

7. Avionics Equipments ..... ON, AS REQUIRED
8. Flaps ..... UP

TAXI

1. Brakes ..... RELEASE AND CHECK
2. Lights ..... AS REQUIRED

CAUTION

Do not operate engine above 1200 RPM until oil temperature reaches 75º F (24º C).

BEFORE TAKEOFF

1. Seats Belts and Shoulder Harnesses ..... CHECK
2. Parking Brake ..... SET
3. Radios ..... CHECK
4. Engine Instruments ..... CHECK
5. Flight Instruments ..... CHECK AND SET
6. Throttle ..... 1700 RPM
7. Propeller ..... EXERCISE to obtain 300/400 RPM drop
8. Propeller ..... HIGH RPM
9. Magnetos ..... CHECK (50/125RPM drop)
10. Mixture ..... CHECK
11. Throttle ..... 1000-1200 RPM
12. Trim ..... SET

a. Aileron - NEUTRAL

b. Elevator - 0º (3º nose up if only front seats are occupied)

13. Flaps ..... UP
14. Doors and Windows ..... SECURE
15. Flight Controls ..... CHECK
16. Mixture ..... FULL RICH (or as required)
17. Brakes ..... RELEASED
18. Instruments ..... CHECK

TAKEOFF

1. Transponder ..... ALT
2. Power ..... SET TAKE-OF POWER
3. B| RELEASE, THEN ACCELERATE to recommended speed
4. Landing Gear ..... RETRACT with positive climb
5. Airspeed ..... ESTABLISH DESIRED CLIMB SPEED

CLIMB

Maximum Continuous Power: Full Throttle at 2700 RPM

Cruise Climb Power: 25 in. Hg at 2500 RPM

1. Engine Temperatures ..... MONITOR
2. Power ..... SET
3. Mixture ..... SET FUEL FLOW

CRUISE

See Cruise Charts in REFERENCES Section

1. Cowl Flaps ..... CLOSED
2. Power ..... SET
3. Mixture ..... SET FUEL FLOW
4. Fuel Selector Valve ..... SWITCH every 20 minutes

DESCENT

1. Altimeter ..... SET
2. Cowl Flaps ..... CLOSED
3. Power ..... AS REQUIRED

Avoid prolonged idle settings and low cylinder head temperatures.

4. Mixture ..... ENRICH AS REQUIRED

BEFORE LANDING

1. Seat Belts and Shoulder Harnesses ..... FASTENED
2. Fuel Selector Valve ..... FULLEST TANK
3. Cowl Flaps ..... AS REQUIRED
4. Mixture ..... FULL RICH
5. Landing Gear ..... DOWN AND CHECK
6. Flaps ..... FULL DOWN
7. Airspeed ..... ESTABLISHED
8. Propeller ..... HIGH RPM

BALKED LANDING

1. Power ..... FULL THROTTLE
2. Airspeed ..... 70 Kts until clear of obstacles, then Vy
3. Flaps ..... UP
4. Landing Gear ..... UP
5. Cowl Flaps ..... OPEN

AFTER LANDING

1. Landing and Taxi Lights ..... AS REQUIRED
2. Flaps ..... UP
3. Trim Tab ..... Set to 0º
4. Cowl Flaps ..... OPEN
5. Transponder ..... Standby

SHUTDOWN

1. Brakes ..... SET
2. Electrical and Radio Equipment ..... OFF
3. Throttle ..... CLOSE
4. Mixture ..... IDLE CUT-OFF
5. Magneto/Start Switch ..... OFF after engine stops
6. Lights ..... OFF
7. Battery and Alternator ..... OFF
8. Wheel INSTALL IF REQUIRED (then parking brake release)

EMERGENCY AIRSPEEDS (3400 LBS)

Emergency Descent	154KTS
Maximum Glide Range	105KTS
Emeregncy Landing Approach	83KTS

The following information is presented to enable the pilot to form, in advance, a definite plan of action for coping with the most probable emergency situations which could occur in the operation of the airplane. Where practicable, the emergencies requiring immediate corrective action are trated in checklist form for easy reference and familiarization. Other situatios, in which more time is usually permitted to decide on and execute a plan of action, are discussed at some length.

ENGINE FAILURE DURING TAKE-OFF ROLL

1. Throttle ..... CLOSED
2. Braking ..... MAXIMUM
3. Fuel Selector Valve ..... OFF
4. Battery and Alternator Switches ..... OFF

ENGINE FAILURE IN FLIGHT

Landing straing ahead is usually advisable. If sufficient altitude is available for maneuvring, accomplish the following:

1. Fuel Selector Valve ..... SELECT OTHER TANK
2. Auxiliary Fuel Pump ..... ON
3. Mixture ..... FULL RICH, then LEAN AS REQUIRED
4. Magnetos ..... CHECK LEFT RIGHT, then BOTH ON

NOTE

The most probable cause of engine failure would be loss of fuel flow or improper functioning of the ignition system.

If no restart:

1. Landing site ..... SELECT MOST FAVOURITE
2. Landing Gear ..... AS REQUIRED

The use of landing gear is dependent on the terrain where the landing must be made.

ENGINE DISCREPANCY CHECKS

1. Mixture ..... FULL RICH, then LEAN AS REQUIRED
2. Magneto/Starter Switch ..... BOTH position (check to verify)

LOSS OF ENGINE POWER

1. Fuel Flow Gage ..... CHECK

If fuel flow is abnormally low:

a. Mixture - FULL RICH

b. Auxiliary Fuel Pump - ON

(then OFF if performance does not improve in a few moments)

2. Fuel Quantity Indicator ..... CHECK tank in use

If fuel tank in use is empty:

Fuel Tank Selector Valve - SELECT OTHER FUEL TANK

AIR START PROCEDURE

1. Fuel Selector Valve ..... FULLEST TANK
2. Throttle ..... RETARD
3. Mixture Control ..... FULL RICH
4. Auxiliary Fuel Pump ..... ON until power is regained, then OFF

(Leave on if engine driven fuel pump is inoperative)

5. Throttle ..... ADVANCE to desired power
6. Mixture ..... LEAN as required

ENGINE FIRE IN FLIGHT

1. Firewall Air Control ..... PULL TO CLOSE
2. Mixture ..... IDLE CUT-OFF
3. Fuel Selector Valve ..... CLOSE
4. Battery, Alternator and Mags ..... OFF
5. Engine Restart ..... DO NOT ATTEMPT

ENGINE FIRE ON THE GROUND

1. Fuel Selector Valve ..... CLOSE
2. Mixture ..... IDLE CUT-OFF
3. Battery, Alternator and Mags ..... OFF
4. Fire Extinguisher ..... USE TO EXTINGUISH FIRE

EMERGENCY DESCENT

1. Power ..... IDLE
2. Propeller ..... HIGH RPM
3. Landing Gear ..... DOWN
4. Airspeed ..... ESTABLISH 154 KTS

MAXIMUM GLIDE CONFIGURATION

1. Landing Gear ..... UP
2. Flaps ..... UP
3. Cowl Flaps ..... CLOSED
4. Propeller ..... PULL to LOW RPM
5. Airspeed ..... 105 KTS

Glide distance is approximately 1.7 nautical miles (2 statute miles) per 1000 feet of altitude above terrain.

LANDING WITHOUT POWER

1. Airspeed ..... ESTABLISH 78 TO 83 KTS
2. Fuel Selector Valve ..... OFF
3. Mixture ..... IDLE CUT-OFF
4. Magneto/Start Switch ..... OFF
5. Flaps ..... AS REQUIRED
6. Landing Gear ..... DOWN or UP (depending on terrain)
7. Battery and Alternator Switches ..... OFF

LANDING WITH LANDING GEAR RETRACTED

If possible, choose firm sod or foamed runway. Make a normal approach, using flaps if necessary. When sure of reaching the selected landing spot:

1. Throttle ..... CLOSED
2. Mixture ..... IDLE CUT-OFF
3. Battery, Alternator and Mags ..... OFF
4. Wings ..... LEVEL DURING TOUCH DOWN
5. Leave Airplane ..... AS SOON AS POSSIBLE

EMERGENCY SPEED REDUCTION

In an emergency, the landing gear may be used to create additional drag. Should disorientation occur under instrument conditions, the lowring of the landing gear will reduce the tendency for excessive speed buildup. This procedure would also be appropriate for a non-instrument rated pilot who unavoidably encounters instrument conditions or in other emergencies such as severe turbolence.

Should the landing gear be used at speed higher that the maximum extension speed, a special inspection of the gear doors in accordance with the maintenance manual procedures is required, with repair as necessary.

REFERENCE SPEEDS

Vne - Never Exceed Speed	196 KIAS
Vno - Max Structural Cruising Speed	167 KIAS
Va - Maneuvering Speed	134 KIAS
Vfe - Maximum Flap Extended Speed (Approach)	154 KIAS
Vfe - Maximum Flap Extended Speed (Full Down)	123 KIAS
Maximum Landing Gear Extension Speed	154 KIAS
Maximum Landing Gear Retraction Speed	154 KIAS
Vle - Maximum Landing Gear Extended Speed	154 KIAS
Vx - Best Angle-of-Climb Speed	77 KIAS
Vy - Best Rate-of-Climb Speed	96 KIAS
Maximum Glide	105 KIAS
Cruise Climb	107 KIAS
Landing Approach	70 KIAS
Maximum Demonstrated Crosswind Component	17KTS

TAKE-OFF DISTANCE

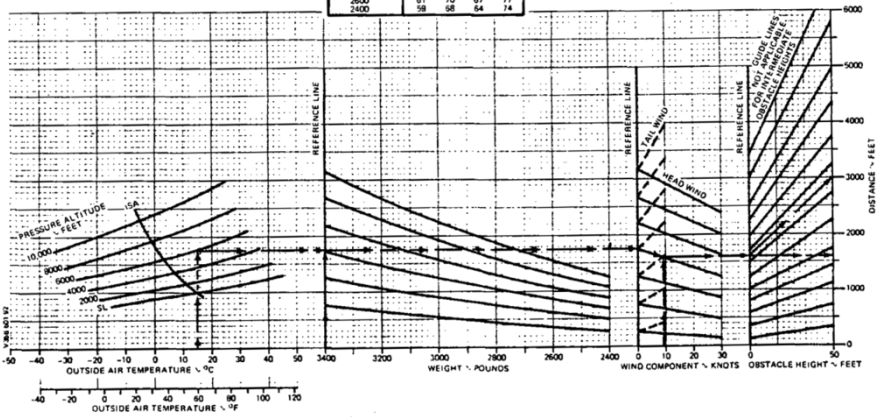
ASSOCIATED CONDITIONS:

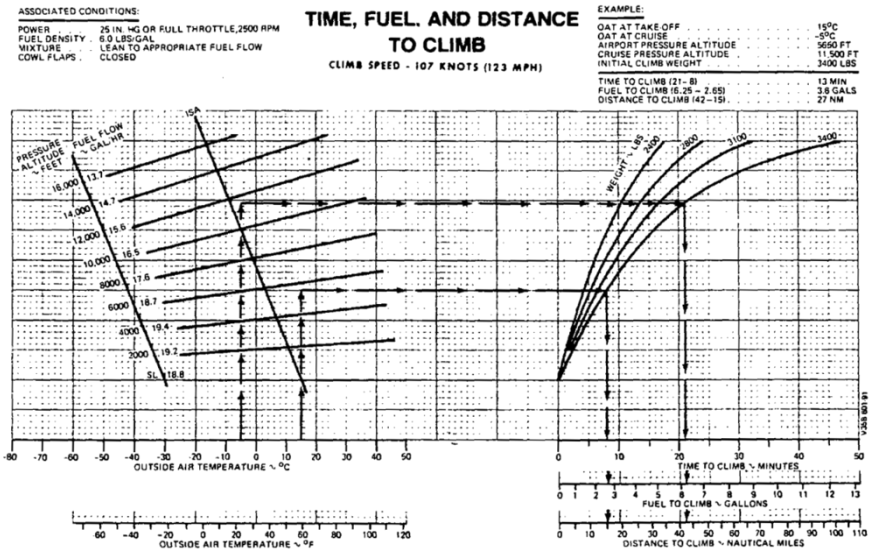
POWER	FULL THROTTLE AT 2700 RPM
MIXTURE	LEAN TO APPROPRIATE FUEL FLOW
FLAPS	UP
LANDING GEAR	RETRACT AFTER POSITIVE CLIMB ESTABLISHED
COWL FLAPS	OPEN

WEIGHT - LBS	TAKE OFF SPEED			
	LIFT OFF		50 FT	
	KTS	MPH	KTS	MPH
3400	71	82	77	89
3200	69	79	75	86
3000	66	76	73	84
2800	64	74	70	81
2600	61	70	67	77
2400	58	68	64	74

EXAMPLE.

OAT	15°C (59°F)
PRESSURE ALTITUDE	5650 FT
TAKE OFF WEIGHT	3400 LBS
HEAD WIND COMPONENT	9.5 KTS
GROUND ROLL	1600 FT
TOTAL DISTANCE OVER A 50 FT OBSTACLE	3000 FT
TAKE-OFF SPEED AT LIFT OFF	71 KTS (82 MPH)
AT 50 FT	77 KTS (89 MPH)




ASSOCIATED CONDITIONS:
POWER 25 IN. HG OR FULL THROTTLE, 2500 RPM
FUEL DENSITY 6.0 LBS/GAL
MIXTURE LEAN TO APPROPRIATE FUEL FLOW
COWL FLAPS CLOSED
TIME, FUEL, AND DISTANCE TO CLIMB
CLIMB SPEED - 107 KNOTS (123 MPH)
EXAMPLE:
OAT AT TAKE OFF 15°C
OAT AT CRUISE -5°C
AIRPORT PRESSURE ALTITUDE 5650 FT
CRUISE PRESSURE ALTITUDE 11,500 FT
INITIAL CLIMB WEIGHT 3400 LBS
TIME TO CLIMB (21 - 8) 13 MIN
FUEL TO CLIMB (6.25 - 2.65) 3.6 GALS
DISTANCE TO CLIMB (42 - 15) 27 NM
PRESSURE ALTITUDE - FEET
FUEL FLOW - GAL/HR
WEIGHT - LBS
OUTSIDE AIR TEMPERATURE - °C
OUTSIDE AIR TEMPERATURE - °F
TIME TO CLIMB - MINUTES
FUEL TO CLIMB - GALLONS
DISTANCE TO CLIMB - NAUTICAL MILES

LANDING DISTANCE

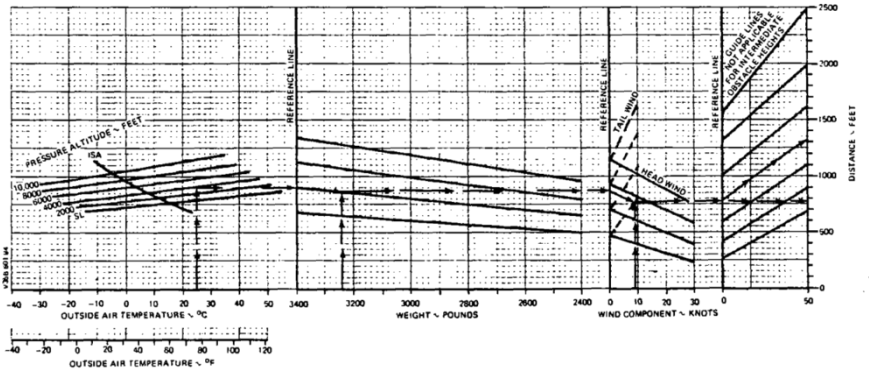
ASSOCIATED CONDITIONS

POWER	RETARDED TO MAINTAIN 900 FT/MIN ON FINAL APPROACH
FLAPS	DOWN
LANDING GEAR	DOWN
RUNWAY	PAVED, LEVEL, DRY SURFACE
APPROACH SPEED	IAS AS TABULATED
BRAKING	MAXIMUM

WEIGHT - LBS	SPEED AT 50 FT	
	KTS	MPH
3400	70	81
3200	68	79
3000	66	76
2800	63	73
2600	61	71
2400	59	68

EXAMPLE:

OAT	25°C (77°F)
PRESSURE ALTITUDE	3965 FT
WEIGHT	3242 LBS
HEADWIND COMPONENT	9 KTS
GROUND ROLL	763 FT
TOTAL OVER 50 FT OBSTACLE	1324 FT
APPROACH SPEED	69 KTS (80 MPH)



CRUISE POWER SETTINGS

75% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2500 RPM - 3200 POUNDS

	ISA -36º F (-20º C)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	27	-3	2500	23.9	91.4	15.2	159	165
1000	24	-5	2500	23.6	91.4	15.2	161	164
2000	20	-7	2500	23.4	91.4	15.2	162	163
3000	17	-8	2500	23.1	91.4	15.2	164	163
4000	13	-10	2500	22.8	91.4	15.2	165	162
5000	10	-12	2500	22.5	91.4	15.2	167	161
6000	6	-14	2500	22.2	91.4	15.2	168	160
7000	3	-16	2500	22.0	91.4	15.2	169	159
8000	-1	-18	2500	21.7	89.4	14.9	169	156
9000	-4	-20	2500	20.6	86.5	14.4	168	153
10000	-8	-22	2500	20.0	83.7	14.0	167	150
11000	-12	-24	2500	19.2	80.8	13.8	166	148
12000	-15	-26	2500	18.3	78.2	13.0	165	143
13000	-19	-28	2500	17.6	76.4	12.6	163	139
14000	-23	-30	2500	16.5	72.9	12.2	162	136
15000	-28	-32	2500	16.1	70.4	11.7	160	133
16000	-30	-34	2500	15.4	68.1	11.4	159	129

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

75% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2500 RPM - 3200 POUNDS

	STANDARD DAY (ISA)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	63	17	2500	24.6	91.4	15.2	163	163
1000	60	16	2500	24.3	91.4	15.2	164	162
2000	55	14	2500	24.1	91.4	15.2	166	161
3000	53	12	2500	23.8	91.4	15.2	167	160
4000	49	10	2500	23.5	91.4	15.2	169	159
5000	45	8	2500	23.2	91.4	15.2	170	158
6000	43	6	2500	23.0	91.4	15.2	172	157
7000	39	4	2500	22.6	89.7	15.0	172	155
8000	35	2	2500	21.7	86.5	14.4	170	151
9000	32	0	2500	20.6	83.7	14.0	169	148
10000	28	-2	2500	20.0	81.0	13.5	168	145
11000	24	-4	2500	19.2	78.3	13.1	167	142
12000	21	-6	2500	18.3	75.7	12.6	165	138
13000	17	-8	2500	17.6	73.0	12.2	164	135
14000	13	-10	2500	16.5	70.6	11.8	162	131
15000	10	-12	2500	16.1	68.2	11.4	160	127
16000	8	-14	2500	15.4	65.9	11.0	158	124

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

75% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2500 RPM - 3200 POUNDS

	ISA + 36º F (+20º C)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	100	38	2500	25.1	91.4	15.2	166	161
1000	96	36	2500	24.8	91.4	15.2	168	160
2000	93	34	2500	24.6	91.4	15.2	169	159
3000	89	32	2500	24.3	91.4	15.2	171	158
4000	86	30	2500	24.0	91.4	15.2	172	157
5000	82	28	2500	23.7	91.4	15.2	173	156
6000	79	26	2500	23.5	89.7	15.0	174	153
7000	75	24	2500	22.6	86.7	14.5	172	150
8000	71	22	2500	21.7	83.6	13.9	171	147
9000	66	20	2500	20.6	81.0	13.6	170	143
10000	64	18	2500	20.0	78.3	13.1	168	140
11000	60	16	2500	19.2	75.7	12.6	167	137
12000	57	14	2500	18.3	73.1	12.2	165	133
13000	53	12	2500	17.6	70.6	11.8	163	129
14000	49	10	2500	16.5	68.3	11.4	162	126
15000	45	8	2500	16.1	66.0	11.0	159	122
16000	42	6	2500	15.4	63.7	10.5	156	116

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

65% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2300 RPM - 3200 POUNDS

	ISA -36º F (-20º C)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	27	-3	2300	23.3	80.0	13.3	150	156
1000	24	-5	2300	23.1	80.0	13.3	152	155
2000	20	-7	2300	22.8	80.0	13.3	153	154
3000	17	-8	2300	22.5	80.0	13.3	154	153
4000	13	-10	2300	22.3	80.0	13.3	155	152
5000	10	-12	2300	22.0	80.0	13.3	157	151
6000	6	-14	2300	21.8	80.0	13.3	158	150
7000	3	-16	2300	21.5	80.0	13.3	159	149
8000	-1	-18	2300	21.3	80.0	13.3	160	148
9000	-4	-20	2300	20.9	79.1	13.0	160	145
10000	-8	-22	2300	20.0	78.8	12.7	159	143
11000	-12	-24	2300	19.2	73.8	12.2	158	138
12000	-15	-26	2300	18.4	71.3	11.8	157	136
13000	-19	-28	2300	17.8	68.8	11.6	155	132
14000	-23	-30	2300	16.9	66.4	11.1	153	129
15000	-28	-32	2300	16.1	64.0	10.7	151	125
16000	-30	-34	2300	15.6	61.9	10.3	148	121

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

65% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2300 RPM - 3200 POUNDS

	STANDARD DAY (ISA)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	63	17	2300	23.9	80.0	13.3	154	153
1000	60	16	2300	23.6	80.0	13.3	155	153
2000	55	14	2300	23.4	80.0	13.3	156	152
3000	53	12	2300	23.1	80.0	13.3	157	151
4000	49	10	2300	22.9	80.0	13.3	159	150
5000	45	8	2300	22.6	80.0	13.3	160	146
6000	43	6	2300	22.4	80.0	13.3	161	147
7000	39	4	2300	22.1	80.0	13.3	162	146
8000	35	2	2300	21.7	80.0	13.3	163	144
9000	32	0	2300	20.9	76.4	12.7	161	141
10000	28	-2	2300	20.0	73.6	12.3	160	136
11000	24	-4	2300	19.2	71.4	11.9	158	134
12000	21	-6	2300	18.4	69.0	11.5	157	131
13000	17	-8	2300	17.6	66.6	11.1	156	127
14000	13	-10	2300	16.8	64.4	10.7	152	123
15000	10	-12	2300	16.1	62.1	10.4	150	119
16000	8	-14	2300	15.4	60.0	10.0	147	115

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

65% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2300 RPM - 3200 POUNDS

	ISA + 36º F (+20º C)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	100	38	2300	24.5	80.0	13.3	156	151
1000	96	36	2300	24.1	80.0	13.3	158	150
2000	93	34	2300	24.0	80.0	13.3	159	149
3000	89	32	2300	23.7	80.0	13.3	160	148
4000	86	30	2300	23.5	80.0	13.3	161	147
5000	82	28	2300	23.2	80.0	13.3	163	146
6000	79	26	2300	23.0	80.0	13.3	164	145
7000	75	24	2300	22.6	79.0	13.2	164	143
8000	71	22	2300	21.7	76.5	12.7	164	138
9000	66	20	2300	20.9	73.9	12.3	163	136
10000	64	18	2300	20.0	71.4	11.9	161	132
11000	60	16	2300	19.2	68.1	11.5	159	128
12000	57	14	2300	18.4	66.8	11.1	156	125
13000	53	12	2300	17.6	64.5	10.8	153	121
14000	49	10	2300	16.9	62.4	10.4	151	117
15000	45	8	2300	16.1	60.2	10.0	147	113
16000	-	-	-	-	-	-	-	-

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

55% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2100 RPM - 3200 POUNDS

	ISA -36º F (-20º C)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	27	-3	2100	23.0	68.8	11.5	140	145
1000	24	-5	2100	22.8	68.8	11.5	141	144
2000	20	-7	2100	22.5	68.8	11.5	142	143
3000	17	-8	2100	22.3	68.8	11.5	143	142
4000	13	-10	2100	22.1	68.8	11.5	144	141
5000	10	-12	2100	21.8	68.8	11.5	145	140
6000	6	-14	2100	21.5	68.8	11.5	146	139
7000	3	-16	2100	21.3	68.8	11.5	147	138
8000	-1	-18	2100	21.1	68.8	11.5	148	137
9000	-4	-20	2100	20.9	68.4	11.4	149	136
10000	-8	-22	2100	20.1	68.0	11.3	149	133
11000	-12	-24	2100	19.3	66.0	11.0	147	130
12000	-15	-26	2100	18.5	64.0	10.7	146	126
13000	-19	-28	2100	17.7	62.0	10.3	144	123
14000	-23	-30	2100	16.9	59.8	10.0	141	119
15000	-28	-32	2100	16.2	57.6	9.6	136	114
16000	-30	-34	2100	15.6	55.6	9.3	135	110

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

55% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2100 RPM - 3200 POUNDS

	STANDARD DAY (ISA)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	63	17	2100	23.6	68.8	11.5	143	143
1000	60	16	2100	23.3	68.8	11.5	144	142
2000	55	14	2100	23.1	68.8	11.5	145	141
3000	53	12	2100	22.9	68.8	11.5	146	140
4000	49	10	2100	22.6	68.8	11.5	147	138
5000	45	8	2100	22.4	68.8	11.5	148	137
6000	43	6	2100	22.1	68.8	11.5	148	136
7000	39	4	2100	21.9	68.8	11.5	149	135
8000	35	2	2100	21.6	68.8	11.5	150	133
9000	32	0	2100	21.0	67.3	11.2	149	131
10000	28	-2	2100	20.2	65.8	11.0	148	126
11000	24	-4	2100	19.3	64.0	10.7	147	124
12000	21	-6	2100	18.5	62.1	10.4	145	121
13000	17	-8	2100	17.7	60.2	10.0	142	117
14000	13	-10	2100	16.8	57.8	9.7	139	112
15000	-	-	-	-	-	-	-	-
16000	-	-	-	-	-	-	-	-

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

55% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2100 RPM - 3200 POUNDS

	ISA + 36º F (+20º C)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	100	38	2100	24.2	68.8	11.5	145	140
1000	96	36	2100	24.0	68.8	11.5	146	139
2000	93	34	2100	23.7	68.8	11.5	147	138
3000	89	32	2100	23.5	68.8	11.5	148	137
4000	86	30	2100	23.2	68.8	11.5	149	135
5000	82	28	2100	23.0	68.8	11.5	150	134
6000	79	26	2100	22.7	68.8	11.5	150	133
7000	75	24	2100	22.5	68.8	11.5	151	132
8000	71	22	2100	21.9	67.5	11.3	151	128
9000	66	20	2100	21.0	65.6	10.8	149	125
10000	64	18	2100	20.1	63.8	10.6	147	122
11000	60	16	2100	19.3	62.0	10.3	146	119
12000	57	14	2100	18.5	60.2	10.0	142	114
13000	53	12	2100	17.7	58.4	9.7	139	110
14000	-	-	-	-	-	-	-	-
15000	-	-	-	-	-	-	-	-
16000	-	-	-	-	-	-	-	-

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

45% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2100 RPM - 3200 POUNDS

	ISA -36º F (-20º C)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	27	-3	2100	20.4	57.6	9.6	127	132
1000	24	-5	2100	20.1	57.6	9.6	128	131
2000	20	-7	2100	19.8	57.6	9.6	129	130
3000	17	-8	2100	19.4	57.6	9.6	130	129
4000	13	-10	2100	19.1	57.6	9.6	131	128
5000	10	-12	2100	18.8	57.6	9.6	132	127
6000	6	-14	2100	18.5	57.6	9.6	133	126
7000	3	-16	2100	18.2	57.6	9.6	134	125
8000	-1	-18	2100	17.9	57.6	9.6	134	124
9000	-4	-20	2100	17.6	57.6	9.6	135	123
10000	-8	-22	2100	17.3	57.6	9.6	136	122
11000	-12	-24	2100	17.0	57.6	9.6	136	120
12000	-15	-26	2100	16.7	57.6	9.6	137	119
13000	-19	-28	2100	16.4	57.6	9.6	137	117
14000	-23	-30	2100	16.0	57.6	9.6	138	116
15000	-28	-32	2100	15.7	57.6	9.6	138	114
16000	-30	-34	2100	15.4	55.6	9.3	135	110

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

45% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2100 RPM - 3200 POUNDS

	STANDARD DAY (ISA)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	63	17	2100	20.8	57.6	9.6	130	130
1000	60	16	2100	20.5	57.6	9.6	131	129
2000	55	14	2100	20.2	57.6	9.6	131	128
3000	53	12	2100	19.9	57.6	9.6	132	127
4000	49	10	2100	19.6	57.6	9.6	133	125
5000	45	8	2100	19.3	57.6	9.6	134	124
6000	43	6	2100	19.0	57.6	9.6	135	123
7000	39	4	2100	18.7	57.6	9.6	135	122
8000	35	2	2100	18.4	57.6	9.6	136	121
9000	32	0	2100	18.1	57.6	9.6	137	120
10000	28	-2	2100	17.8	57.6	9.6	137	118
11000	24	-4	2100	17.5	57.6	9.6	138	117
12000	21	-6	2100	17.1	57.6	9.6	138	115
13000	17	-8	2100	16.8	57.6	9.6	138	113
14000	13	-10	2100	16.5	56.6	9.6	136	110
15000	-	-	-	-	-	-	-	-
16000	-	-	-	-	-	-	-	-

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

45% MAX CONTINUOUS POWER (OR FULL THROTTLE)
2100 RPM - 3200 POUNDS

	ISA + 36º F (+20º C)							
PA	OAT		ENG SPD	MAP	FUEL FLOW		TAS	CAS
FEET	ºF	ºC	RPM	IN. HG	PPH	GPH	KTS	KTS
SL	100	38	2100	21.2	57.6	9.6	132	127
1000	96	36	2100	20.9	57.6	9.6	133	126
2000	93	34	2100	20.6	57.6	9.6	133	125
3000	89	32	2100	20.3	57.6	9.6	134	124
4000	86	30	2100	20.0	57.6	9.6	135	123
5000	82	28	2100	19.7	57.6	9.6	136	122
6000	79	26	2100	19.4	57.6	9.6	136	120
7000	75	24	2100	19.1	57.6	9.6	137	119
8000	71	22	2100	18.8	57.6	9.6	137	118
9000	66	20	2100	18.5	57.6	9.6	138	116
10000	64	18	2100	18.2	57.6	9.6	138	115
11000	60	16	2100	17.9	57.6	9.6	138	113
12000	57	14	2100	17.6	57.6	9.6	138	111
14000	-	-	-	-	-	-	-	-
14000	-	-	-	-	-	-	-	-
15000	-	-	-	-	-	-	-	-
16000	-	-	-	-	-	-	-	-

NOTES

1. Full throttle manifold pressure settings are approximate.

2. Shaded area represents operation with full throttle.