

TAS True Airspeed is the airspeed of an airplane relative to undisturbed air which is the CAS corrected for altitude, temperature, and compressibility.

V_A Maneuvering Speed is the maximum speed at which application of full available aerodynamic control will not overstress the airplane.
128K

V_{FE} Maximum Flap Extended Speed is the highest speed permissible with wing flaps in a prescribed extended position.
104K

V_{LE} Maximum Landing Gear Extended Speed is the maximum speed at which an airplane can be safely flown with the landing gear extended.
143K

V_{LO} Maximum Landing Gear Operating Speed is the maximum speed at which the landing gear can be safely extended or retracted.
143K

V_{NE} Never Exceed Speed is the speed limit that may not be exceeded at any time.
195K

V_{NO} Maximum Structural Cruising Speed is the speed that should not be exceeded except in smooth air and then only with caution.
or V_C
161K

V_S Stalling Speed or the minimum steady flight speed at which the airplane is controllable.

V_{SO} Stalling Speed or the minimum steady flight speed at which the airplane is controllable in the landing configuration.

BEECHCRAFT
Debonair A33 and B33

Section I
General

V_x

75K

Best Angle-of-Climb Speed is the airspeed which delivers the greatest gain of altitude in the shortest possible horizontal distance.

V_y

90K

Best Rate-of-Climb Speed is the airspeed which delivers the greatest gain in altitude in the shortest possible time.

The following limitations must be observed in the operation of this airplane.

AIRSPEED LIMITATIONS

SPEED	CAS		IAS		REMARKS
	KNOTS	MPH	KNOTS	MPH	
Never Exceed V_{NE}	195	225	197	227	Do not exceed this speed in any operation.
Maximum Structural Cruising V_{NO} or V_C	161	185	162	186	Do not exceed this speed except in smooth air and then only with caution
Maneuvering V_A	128	147	129	148	Do not make full or abrupt control movements above this speed
Maximum Flap Extension/ Extended V_{FE}	104	120	106	122	Do not extend flaps or operate with flaps extended above this speed
Maximum Landing Gear Operating/ Extended V_{LO} and V_{LE}	A33 122	140	122	140	Do not extend, retract or operate with landing gear extended above this speed except in emergency
	B33 143	165	144	166	

STALL SPEEDS - POWER IDLE

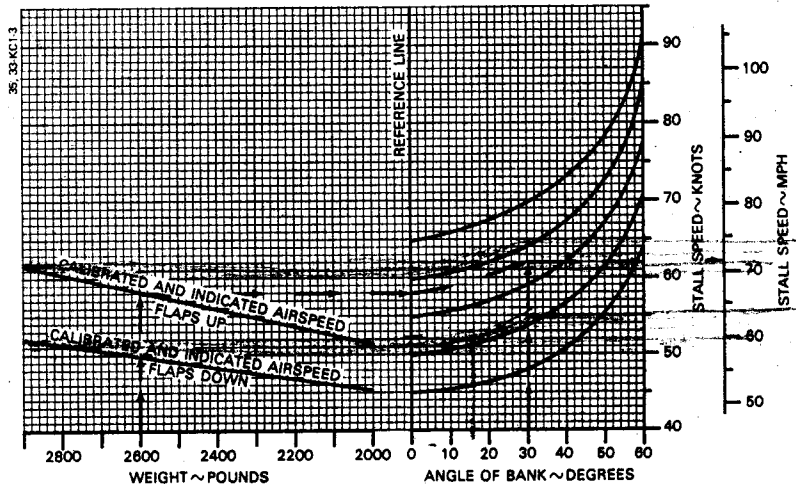
NOTES: 1. THE MAXIMUM ALTITUDE LOSS EXPERIENCED WHILE CONDUCTING STALLS IN ACCORDANCE WITH CAM 3.120 WAS 200 FT.

2. A NORMAL STALL RECOVERY TECHNIQUE MAY BE USED

EXAMPLE:

WEIGHT 2800 LBS
FLAPS UP
ANGLE OF BANK 30°

STALL SPEED 62 KNOTS
71 MPH



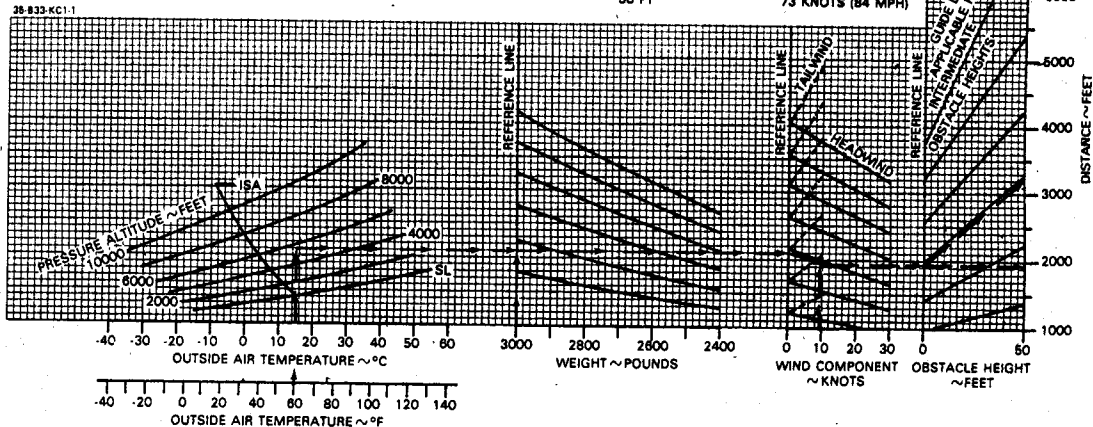
Performance

Debonair A33 and B33

POWER	FULL THROTTLE
	2800 RPM
MIXTURE	LEAN TO APPROPRIATE
	FUEL FLOW
FLAPS	UP
LANDING GEAR	RETRACT AFTER POSITIVE
	CLIMB ESTABLISHED

WEIGHT ~ POUNDS	TAKE-OFF SPEED			
	LIFT-OFF		50 FT	
	KNOTS	MPH	KNOTS	MPH
3000	67	77	73	84
2800	66	76	71	82
2600	64	74	70	81
2400	63	73	68	78

OAT	15°C (59°F)
PRESSURE ALTITUDE	5650 FT
TAKE-OFF WEIGHT	3000 LBS
HEAD WIND COMP.	9.5 KNOTS
<hr/>	
GROUND ROLL	1950 FT
TOTAL DISTANCE OVER A 50 FT OBSTACLE	3200 FT
TAKE-OFF SPEED AT LIFT-OFF 50 FT	87 KNOTS (77 MPH) 73 KNOTS (84 MPH)



July 1977

5-17

ASSOCIATED CONDITIONS:

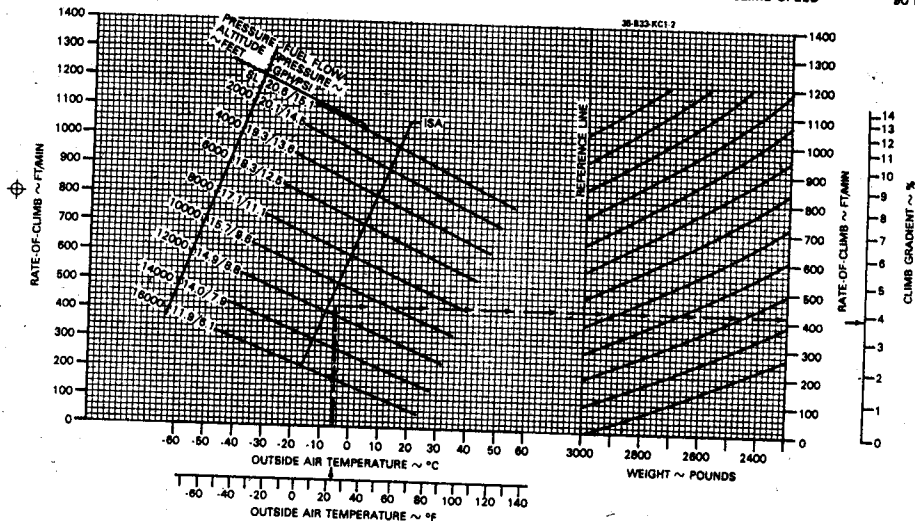
POWER FULL THROTTLE
MIXTURE AT 2800 RPM
FLAPS LEAN TO APPROPRIATE
LANDING GEAR FUEL FLOW/PRESSURE
UP
UP

CLIMB

CLIMB SPEED 90 KNOTS IAS (ALL WEIGHTS)
104 MPH IAS

EXAMPLE:

OAT	-5°C (23°F)
PRESSURE ALTITUDE	11500 FT
WEIGHT	3000 LBS
RATE-OF-CLIMB	420 FT/MIN
CLIMB GRADIENT	3.9%
CLIMB SPEED	90 KNOTS (104 MPH)



BEECHCRAFT
Debonair A33 and B33

Section V
Performance

TIME, FUEL AND DISTANCE TO CLIMB

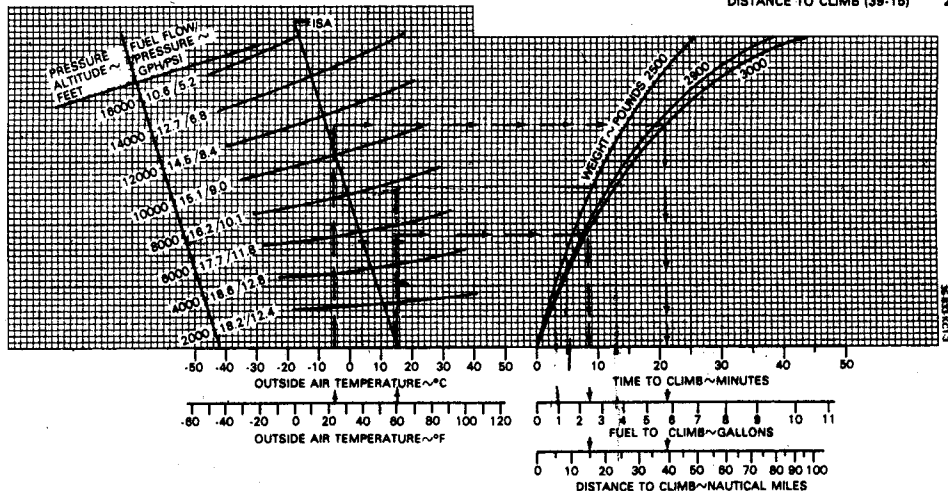
ASSOCIATED CONDITIONS:

POWER 25 IN. HG. OR FULL THROTTLE
 2500 RPM
 FUEL DENSITY 6.0 LB/GAL
 MIXTURE LEAN TO APPROPRIATE
 FUEL FLOW/PRESSURE

CLIMB SPEED - 104 KNOTS
 120 MPH

EXAMPLE:

OAT AT TAKE-OFF	15°C (59°F)
OAT AT CRUISE	-6°C (23°F)
AIRPORT PRESSURE ALTITUDE	5850 FT
CRUISE PRESSURE ALTITUDE	11500 FT
INITIAL CLIMB WEIGHT	3000 LBS
TIME TO CLIMB (21-8.5)	12.5 MIN
FUEL TO CLIMB (5.8-2.4)	3.4 GALS
DISTANCE TO CLIMB (39-15)	24 NM



May 1976

CRUISE POWER SETTINGS

75% MAXIMUM CONTINUOUS POWER (OR FULL THROTTLE)
@ AVERAGE CRUISE WEIGHT = 2900 LBS.

PRESS ALT.	ISA -36°F (-20°C)								STANDARD DAY (ISA)								ISA +36°F (+20°C)							
	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW		TAS		OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW		TAS		OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW		TAS	
	FEET	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS
SL	27	-3	2450	23.7	8.6	14.2	149	171	83	17	2450	24.2	8.6	14.2	152	175	99	37	2450	25.0	8.6	14.2	155	178
2000	20	-7	2450	23.3	8.6	14.2	152	175	56	13	2450	23.8	8.6	14.2	155	178	92	33	2450	24.5	8.6	14.2	158	182
4000	13	-11	2450	22.9	8.6	14.2	154	177	49	9	2450	23.4	8.6	14.2	158	182	85	29	2450	24.1	8.6	14.2	161	185
6000	6	-15	2450	22.4	8.6	14.2	157	181	42	5	2450	23.0	8.6	14.2	160	184	78	26	2450	23.6	8.6	14.2	163	188
8000	-1	-19	2450	22.0	8.6	14.2	159	183	35	0	2450	22.6	8.6	14.2	161	186	71	23	2450	23.2	8.6	14.2	165	191
10000	-8	-23	2450	21.4	8.6	14.2	161	185	28	-2	2450	22.0	8.6	14.2	163	188	64	19	2450	22.8	8.6	14.2	167	194
12000	-16	-27	2450	20.8	8.6	14.2	163	187	21	-7	2450	21.6	8.6	14.2	165	190	57	15	2450	22.4	8.6	14.2	169	197
14000	-23	-31	2450	20.2	8.6	14.2	165	189	14	-11	2450	21.0	8.6	14.2	167	192	50	11	2450	22.0	8.6	14.2	171	200
16000	-30	-33	2450	19.6	8.6	14.2	167	191	7	-18	2450	20.4	8.6	14.2	169	194	43	8	2450	21.6	8.6	14.2	173	202

- NOTES: 1. Full throttle manifold pressure settings are approximate.
2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

65% MAXIMUM CONTINUOUS POWER (OR FULL THROTTLE)
 @ AVERAGE CRUISE WEIGHT = 2900 LBS. -

PRESS ALT.	ISA -36°F (-20°C)								STANDARD DAY (ISA)								ISA +36°F (+20°C)							
	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW			TAS	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW			TAS	OAT	ENGINE SPEED	MAN. PRESS	FUEL FLOW	TAS			
	FEET	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS
SL	26	-3	2450	21.6	7.2	12.1	141	162	82	17	2450	22.0	7.2	12.1	144	166	99	37	2450	22.5	7.2	12.1	147	169
2000	19	-7	2450	21.1	7.2	12.1	143	165	55	13	2450	21.5	7.2	12.1	147	169	92	33	2450	22.1	7.2	12.1	149	171
4000	12	-11	2450	20.7	7.2	12.1	146	168	48	9	2450	21.1	7.2	12.1	149	171	85	29	2450	21.7	7.2	12.1	152	175
6000	5	-15	2450	20.2	7.2	12.1	148	170	41	5	2450	20.7	7.2	12.1	152	175	78	25	2450	21.2	7.2	12.1	154	177
8000	-2	-19	2450	19.8	7.2	12.1	151	174	34	1	2450	20.2	7.2	12.1	154	177	71	21	2450	20.8	7.2	12.1	157	181
10000	-9	-23	2450	19.3	7.2	12.1	154	177	27	-3	2450	19.8	7.2	12.1	157	181								

NOTES: 1. Full throttle manifold

- NOTES: 1. Full throttle manifold pressure settings are approximate.
 2. Shaded area represents operation with full throttle.

CRUISE POWER SETTINGS

55% MAXIMUM CONTINUOUS POWER (OR FULL THROTTLE)
 @ AVERAGE CRUISE WEIGHT = 2900 LBS.

PRESS ALT.	ISA -36°F (-20°C)								STANDARD DAY (ISA)								ISA +36°F (+20°C)							
	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW			TAS	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW			TAS	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW			TAS
	FEET	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS
SL	28	-3	2300	20.7	5.9	10.1	131	151	62	17	2300	21.2	5.9	10.1	134	154	98	37	2300	21.7	5.9	10.1	137	158
2000	19	-7	2300	20.2	5.9	10.1	134	154	55	13	2300	20.8	5.9	10.1	137	158	91	33	2300	21.3	5.9	10.1	139	160
4000	12	-11	2300	19.8	5.9	10.1	136	157	48	9	2300	20.3	5.9	10.1	139	160	84	29	2300	20.9	5.9	10.1	141	162
6000	5	-15	2300	19.4	5.9	10.1	138	159	41	5	2300	19.9	5.9	10.1	141	162	77	25	2300	20.4	5.9	10.1	143	165
8000	-2	-19	2300	18.9	5.9	10.1	140	161	34	1	2300	19.4	5.9	10.1	143	165	70	21	2300	20.0	5.9	10.1	145	167
10000	-9	-23	2300	18.5	5.9	10.1	142	163	27	-3	2300	19.0	5.9	10.1	145	167	63	17	2300	19.6	5.9	10.1	147	169
12000	-16	-27	2300	18.1	5.9	10.1	144	166	20	-7	2300	18.6	5.9	10.1	147	169								

- NOTES: 1. Full throttle manifold pressure settings are approximate.
2. Shaded area represents operation with full throttle. 1

CRUISE POWER SETTINGS

45% MAXIMUM CONTINUOUS POWER (OR FULL THROTTLE)
@ AVERAGE CRUISE WEIGHT = 2900 LBS.

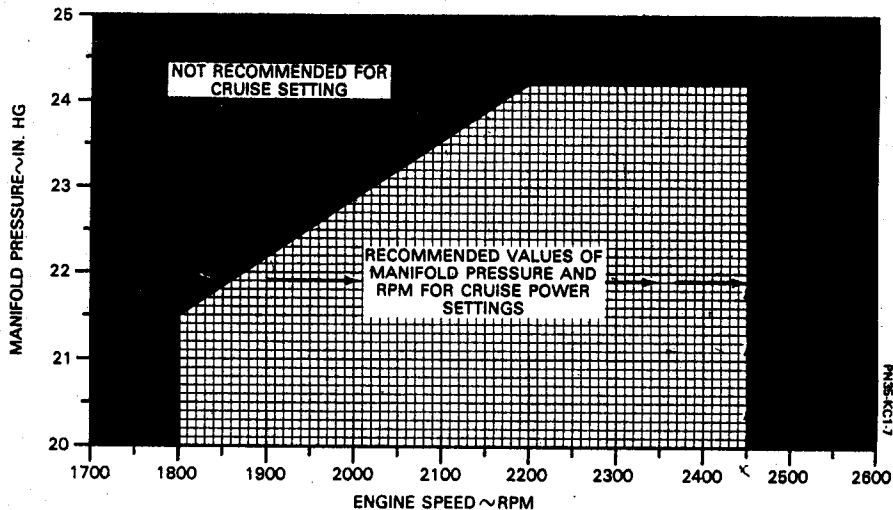
PRESS ALT.	ISA -36°F (-20°C)								STANDARD DAY (ISA)								ISA +36°F (+20°C)							
	OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW		TAS		OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW		TAS		OAT		ENGINE SPEED	MAN. PRESS	FUEL FLOW		TAS	
	FEET	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS	MPH	°F	°C	RPM	IN HG	PSI	GPH	KTS
SL	25	-4	2100	20.2	4.9	8.4	120	138	61	16	2100	20.7	4.9	8.4	122	140	98	36	2100	21.1	4.9	8.4	124	143
2000	18	-8	2100	19.7	4.9	8.4	122	140	54	12	2100	20.2	4.9	8.4	124	143	91	33	2100	20.6	4.9	8.4	126	145
4000	11	-12	2100	19.2	4.9	8.4	124	143	47	9	2100	19.8	4.9	8.4	126	145	83	29	2100	20.2	4.9	8.4	128	147
6000	4	-15	2100	18.8	4.9	8.4	125	144	40	5	2100	19.3	4.9	8.4	127	146	76	25	2100	19.7	4.9	8.4	129	148
8000	-3	-19	2100	18.4	4.9	8.4	127	146	33	1	2100	18.9	4.9	8.4	129	148	69	21	2100	19.3	4.9	8.4	130	150
10000	-10	-23	2100	17.9	4.9	8.4	129	148	26	-3	2100	18.4	4.9	8.4	130	150	62	17	2100	18.8	4.9	8.4	131	151
12000	-17	-27	2100	17.5	4.9	8.4	130	150	19	-7	2100	17.9	4.9	8.4	131	151	55	13	2100	18.3	4.9	8.4	131	151
14000	-24	-31	2100	17.0	4.9	8.4	131	151	12	-11	2100	17.5	4.9	8.4	131	151	48	8	2100	17.7	4.9	8.4	131	151
16000	-31	-35	2100	16.5	4.9	8.4	132	151	5	-15	2100	16.9	4.9	8.4	132	151	40	5	2100	16.9	4.9	8.4	131	151

- NOTES: 1. Full throttle manifold pressure settings are approximate.
2. Shaded area represents operation with full throttle.

MANIFOLD PRESSURE vs RPM

EXAMPLE:

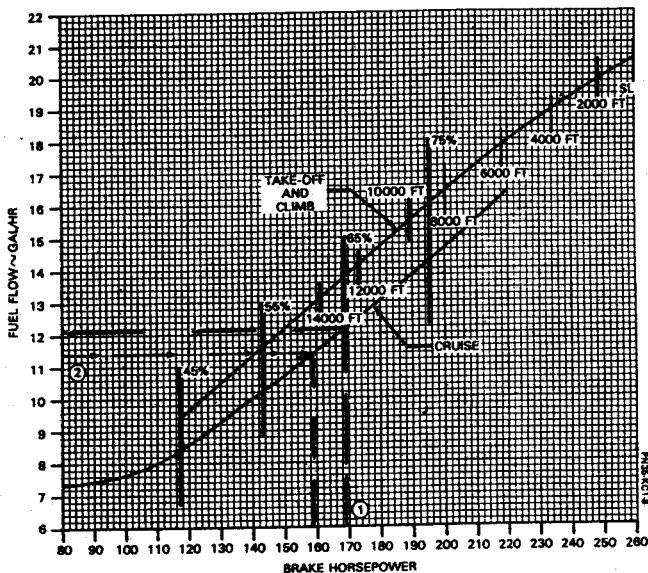
ENGINE SPEED	2450 RPM
MANIFOLD PRESSURE	21.9 IN. HG.
WITHIN RECOMMENDED LIMITS	



FUEL FLOW vs BRAKE HORSEPOWER

EXAMPLE:

① BRAKE HORSEPOWER	168.5
CONDITION	(65% MCP) LEVEL FLIGHT CRUISE LEAN
FUEL FLOW	12.1 GAL/HR
② FUEL FLOW	11.4 GAL/HR
CONDITION	LEVEL FLIGHT CRUISE LEAN
BRAKE HORSEPOWER	159



Section V
Performance

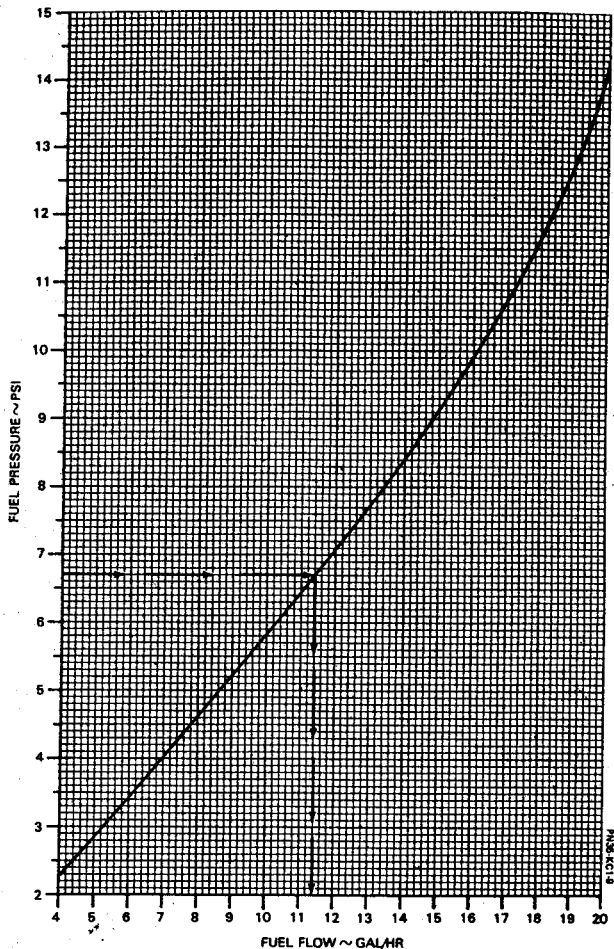
DEBONAIR- 6617. BEECHCRAFT
Bonanza N35 and P35

FUEL FLOW vs FUEL PRESSURE

EXAMPLE

FUEL PRESSURE
FUEL FLOW

6.7 PSI
11.4 GAL/HR
(GPH)



May 1976

RANGE PROFILE - 74 GALLONS

STANDARD DAY (ISA)

ASSOCIATED CONDITIONS:

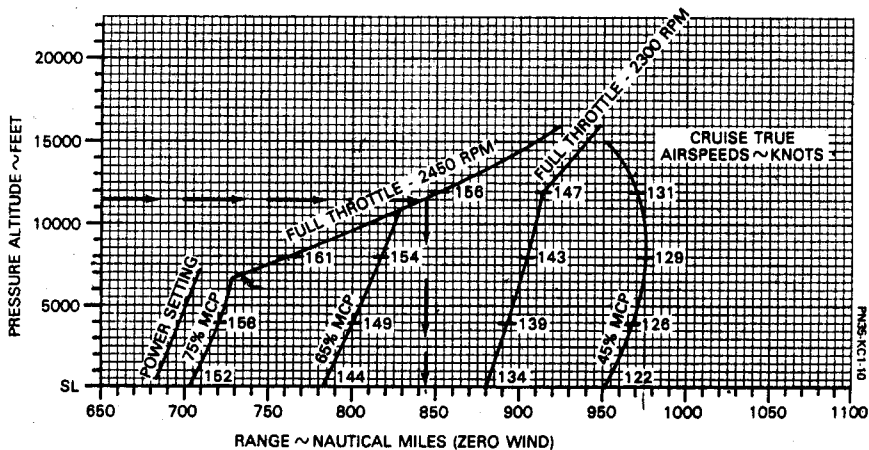
WEIGHT 3135 LBS BEFORE ENGINE START
 FUEL AVIATION GASOLINE
 FUEL DENSITY 6.0 LBS/GALLON
 INITIAL FUEL LOADING 74 GALLONS (444 LBS)

NOTE:

RANGE INCLUDES START, TAXI, AND CLIMB WITH
 45 MINUTES RESERVE FUEL AT 45% MCP

EXAMPLE:

PRESSURE ALTITUDE 11500 FT
 POWER SETTING FULL THROTTLE
 2450 RPM
 RANGE 844 NM



5-27

ENDURANCE PROFILE - 74 GALLONS

STANDARD DAY (ISA)

ASSOCIATED CONDITIONS:

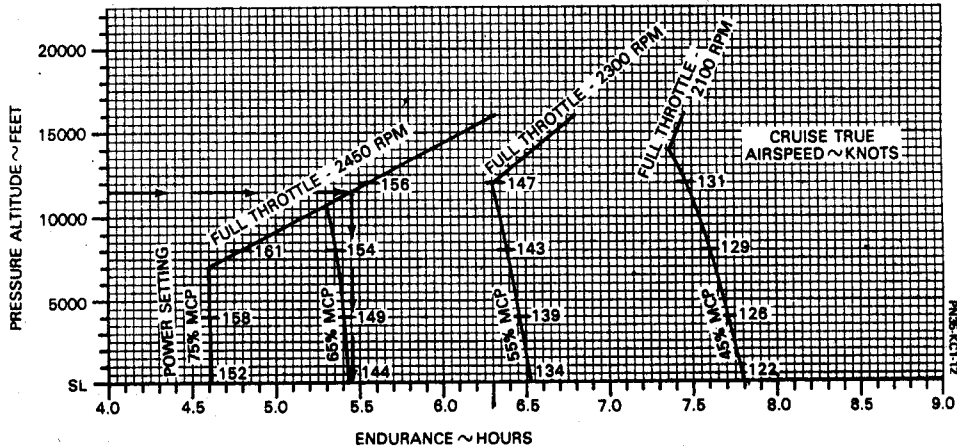
WEIGHT 3135 LBS BEFORE ENGINE START
FUEL AVIATION GASOLINE
FUEL DENSITY 6.0 LBS/GALLON
INITIAL FUEL LOADING 74 GALLONS (444 LBS)

NOTE:

ENDURANCE INCLUDES START, TAXI, AND CLIMB
WITH 45 MINUTES RESERVE FUEL AT 45% MCP

EXAMPLE:

PRESSURE ALTITUDE 11500 FT
POWER SETTING FULL THROTTLE
2450 RPM
ENDURANCE 5.45 HRS
5 HRS 27 MIN



ASSOCIATED CONDITIONS:

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

LANDING DISTANCE

WEIGHT ~ POUNDS	SPEED AT 50 FT	
	KNOTS	MPH
3000	69	79
2800	67	77
2600	65	75
2400	64	74
2300	63	73

EXAMPLE:

OAT 25°C (77°F) ✓
PRESSURE ALTITUDE 3985 FT
WEIGHT 2849 LBS ✓
WIND COMPONENT 9.0 KNOTS (HEADWIND)
GROUND ROLL 1150 FT ✓
TOTAL OVER 50 FT OBSTACLE 1775 FT ✓
APPROACH SPEED 87 KNOTS (77 MPH)

