TAKE-OFF DISTANCE

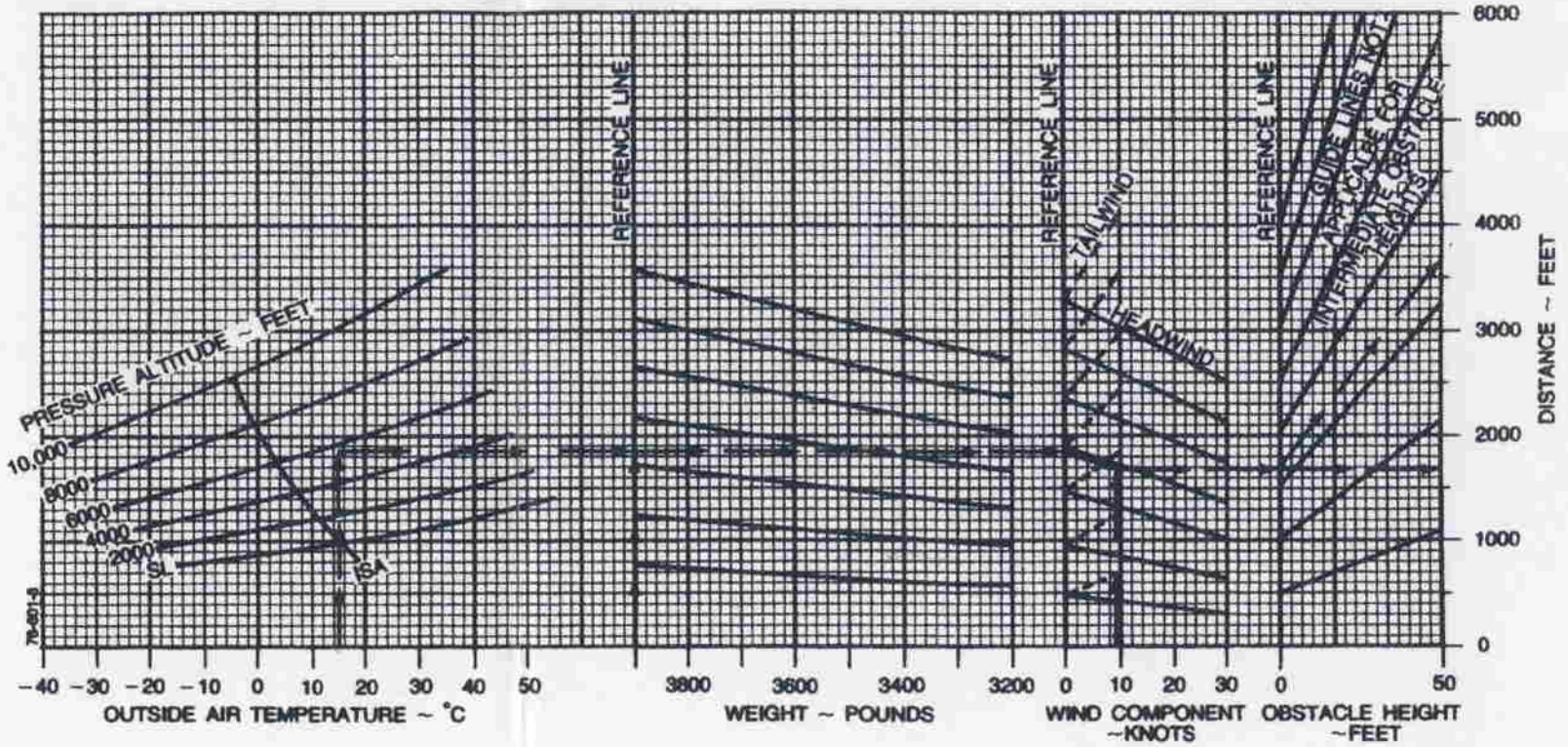
ASSOCIATED CONDITIONS:

POWER	TAKE-OFF POWER AT 2700 RPM SET BEFORE BRAKE RELEASE
MIXTURE	FULL RICH (ABOVE 5000 FT LEAN TO 75°-100°F ON RICH SIDE OF PEAK EGT)
FLAPS	UP
LANDING GEAR	RETRACT AFTER POSITIVE CLIMB ESTABLISHED
RUNWAY	PAVED, LEVEL, DRY SURFACE
COWL FLAPS	OPEN

TAKE-OFF SPEEDS (ALL WEIGHTS)	
LIFT-OFF	71 KNOTS
50 FEET	80 KNOTS

EXAMPLE:

OAT	15°C
PRESSURE ALTITUDE	5650 FT
TAKE-OFF WEIGHT	3900 LBS
HEADWIND COMPONENT	9.5 KTS
GROUND ROLL	1680 FT
TOTAL DISTANCE OVER 50-FT OBSTACLE	3670 FT



ACCELERATE - STOP DISTANCE

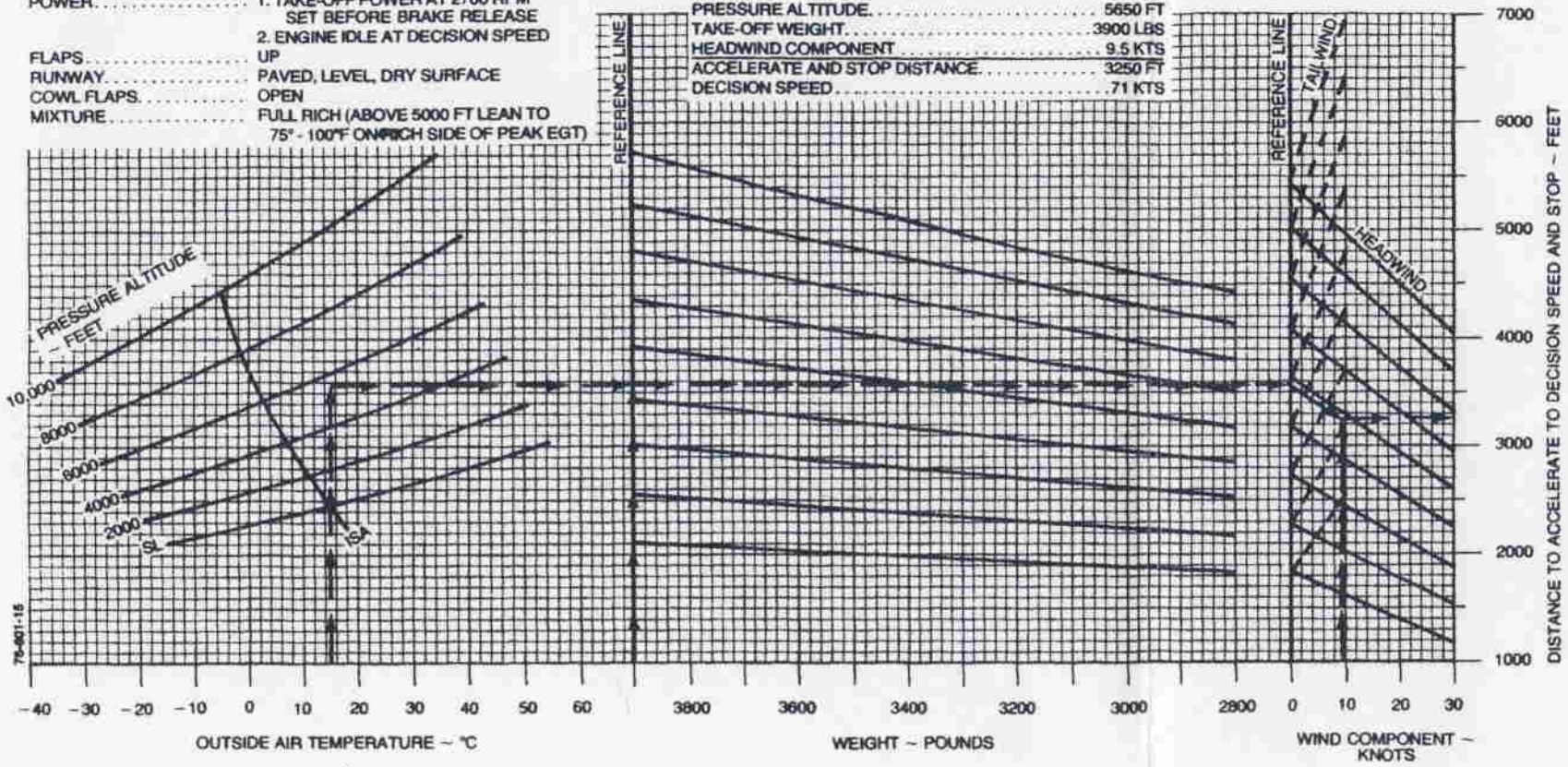
DECISION SPEED 71 KNOTS (ALL WEIGHTS)

ASSOCIATED CONDITIONS:

POWER	1. TAKE-OFF POWER AT 2700 RPM SET BEFORE BRAKE RELEASE 2. ENGINE IDLE AT DECISION SPEED
FLAPS	UP
RUNWAY	PAVED, LEVEL, DRY SURFACE
COWL FLAPS	OPEN
MIXTURE	FULL RICH (ABOVE 5000 FT LEAN TO 75° - 100°F ON RICH SIDE OF PEAK EGT)

EXAMPLE:

OAT	15°C
PRESSURE ALTITUDE	5650 FT
TAKE-OFF WEIGHT	3900 LBS
HEADWIND COMPONENT	9.5 KTS
ACCELERATE AND STOP DISTANCE	3250 FT
DECISION SPEED	71 KTS



ACCELERATE-GO DISTANCE

ASSOCIATED CONDITIONS:

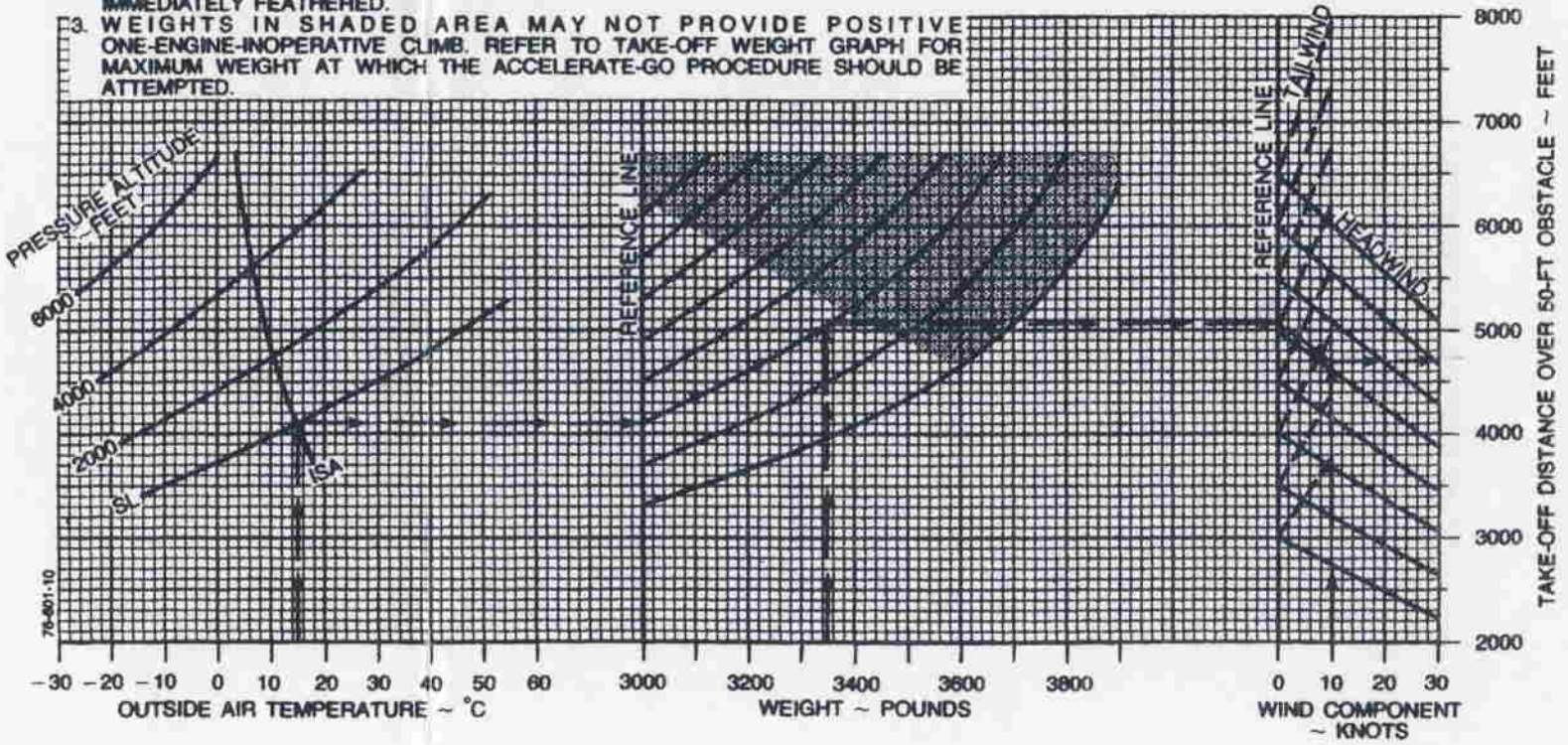
POWER	TAKE-OFF POWER AT 2700 RPM. SET BEFORE BRAKE RELEASE.
FLAPS	UP
LANDING GEAR	RETRACT AFTER LIFT-OFF.
RUNWAY	PAVED, LEVEL, DRY SURFACE.
COWL FLAPS	OPEN
MIXTURE	FULL RICH (ABOVE 5000 FT, SET TO 75-100°F ON RICH SIDE OF PEAK EGT)

TAKE-OFF SPEEDS (ALL WEIGHTS)	
LIFT-OFF	71 KNOTS
50 FT	80 KNOTS

EXAMPLE:

OAT	15°C
PRESSURE ALTITUDE	SL
TAKE-OFF WEIGHT	3350 LBS
HEADWIND COMPONENT	10 KTS
TOTAL DISTANCE OVER 50-FT OBSTACLE	4700 FT
GROUND ROLL	940 FT

NOTE:
1. GROUND ROLL DISTANCE IS 20% OF TAKE-OFF DISTANCE OVER 50-FT OBSTACLE.
2. DISTANCES ASSUME AN ENGINE FAILURE AT LIFT-OFF AND PROPELLER IMMEDIATELY FEATHERED.
3. WEIGHTS IN SHADED AREA MAY NOT PROVIDE POSITIVE ONE-ENGINE-INOPERATIVE CLIMB. REFER TO TAKE-OFF WEIGHT GRAPH FOR MAXIMUM WEIGHT AT WHICH THE ACCELERATE-GO PROCEDURE SHOULD BE ATTEMPTED.



CLIMB - TWO ENGINE

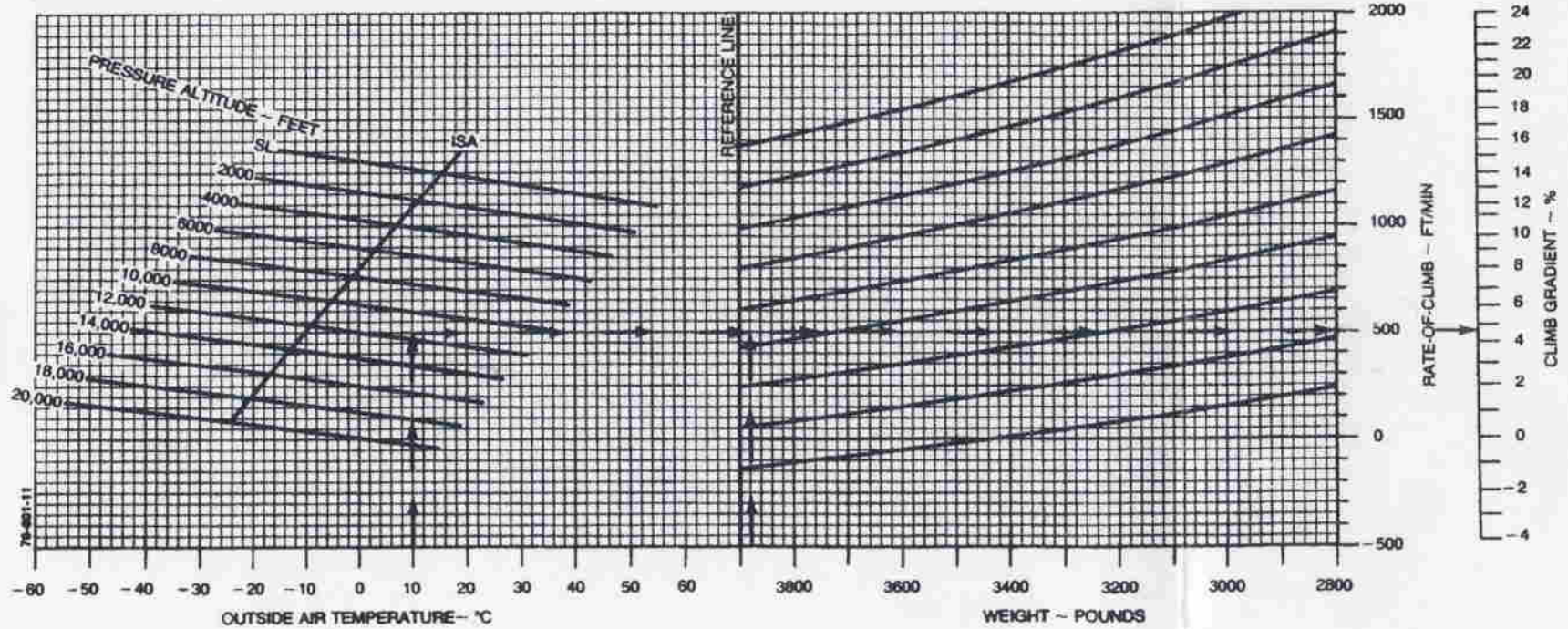
CLIMB SPEED 85 KNOTS (ALL WEIGHTS)

ASSOCIATED CONDITIONS:

POWER	MAXIMUM CONTINUOUS AT 2700 RPM
FLAPS	UP
LANDING GEAR	UP
COWL FLAPS	OPEN
MIXTURE	FULL RICH (ABOVE 5000 FT LEAN TO 75° - 100°F ON RICH SIDE OF PEAK EGT)

EXAMPLE:

OAT	10°C
PRESSURE ALTITUDE	11,500 FT
WEIGHT	3880 LBS
RATE OF CLIMB	500 FT/MIN
CLIMB GRADIENT	4.6%



CLIMB - ONE ENGINE INOPERATIVE

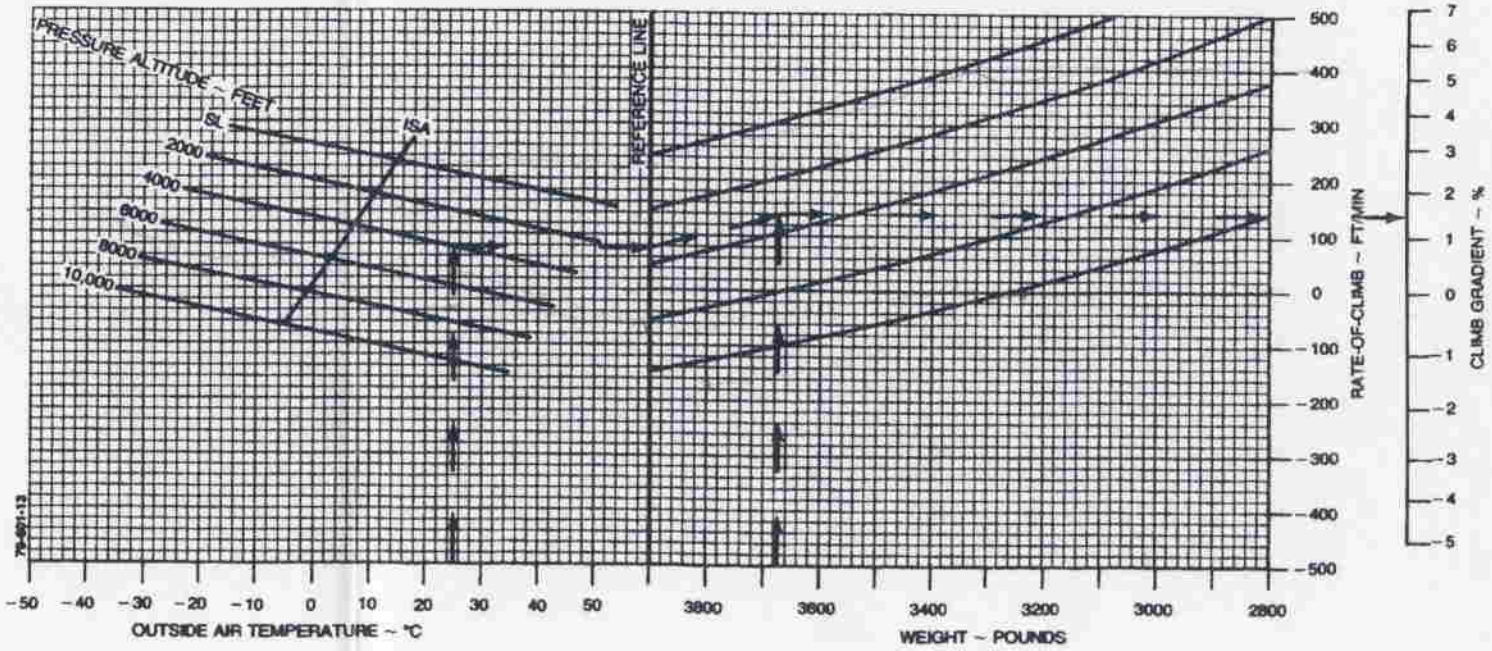
CLIMB SPEED 85 KNOTS (ALL WEIGHTS)

ASSOCIATED CONDITIONS:

POWER	TAKE-OFF AT 2700 RPM
LANDING GEAR	UP
FLAPS	UP
INOPERATIVE PROPELLER	FEATHERED
COWL FLAPS	OPEN
MIXTURE	FULL RICH (ABOVE 5000 FT LEAN TO 75° - 100°F ON RICH SIDE OF PEAK EGT)

EXAMPLE:

OAT	25°C
PRESSURE ALTITUDE	3965 FT
WEIGHT	3677 LBS
RATE OF CLIMB	140 FT/MIN
CLIMB GRADIENT	1.5%
CLIMB SPEED	85 KTS



TAKE-OFF CLIMB GRADIENT – ONE ENGINE INOPERATIVE

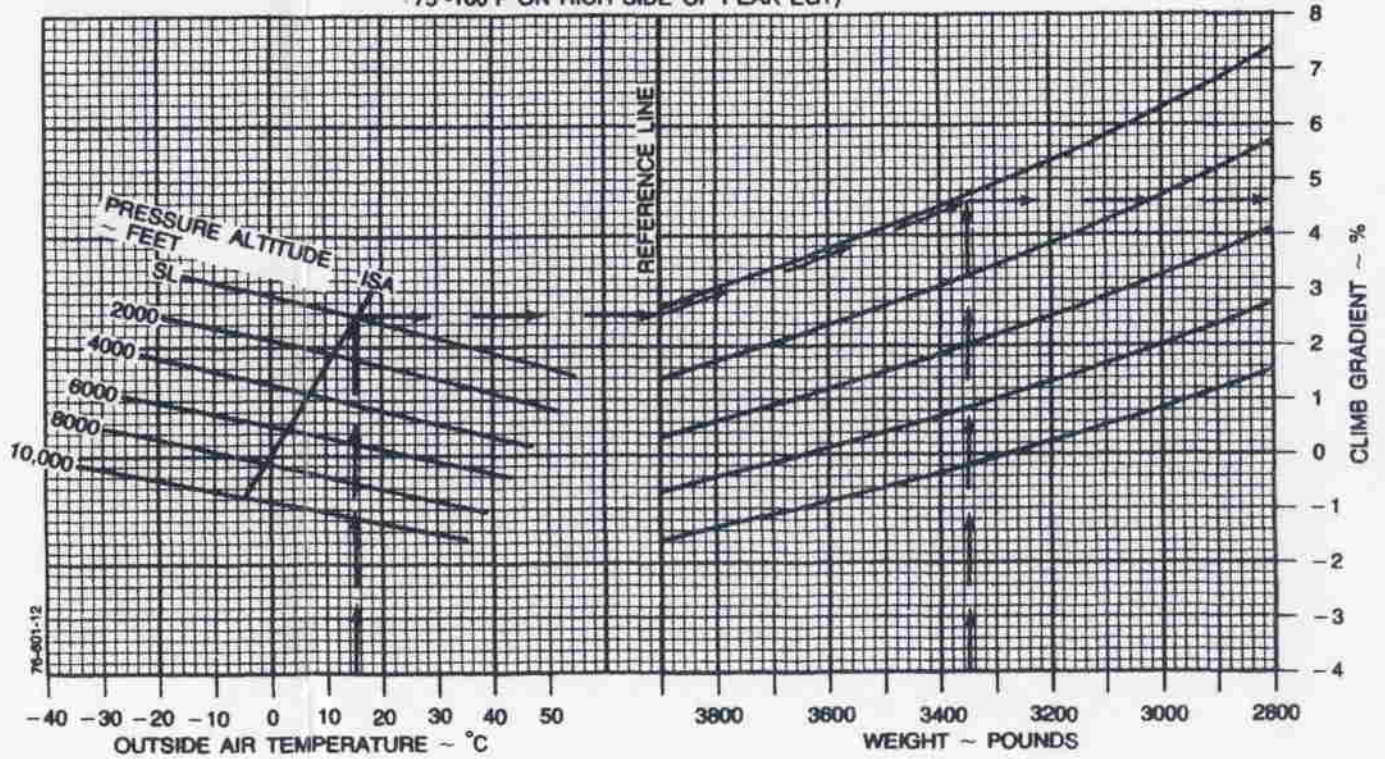
CLIMB SPEED 80 KNOTS (ALL WEIGHTS)

ASSOCIATED CONDITIONS:

POWER	TAKE-OFF AT 2700 RPM
LANDING GEAR	UP
FLAPS	UP
INOPERATIVE PROPELLER	FEATHERED
COWL FLAPS	OPEN
MIXTURE	FULL RICH (ABOVE 5000 FT LEAN TO 75°-100°F ON RICH SIDE OF PEAK EGT)

EXAMPLE:

OAT	15°C
PRESSURE ALTITUDE	SL
WEIGHT	3350 LBS
GRADIENT OF CLIMB	4.6%



MODEL *DUCHESS 76* DATE _____

SERIAL NO. _____ REG. NO. _____

ITEM	WEIGHT	MOM/[redacted]
1. BASIC EMPTY CONDITION	2737	304,091
2. FRONT SEAT OCCUPANTS		
3. 3rd & 4th SEAT OCCUPANTS OR BENCH SEAT OCCUPANTS		
4.		
5. AFT BAGGAGE		
6. **SUB TOTAL** ZERO FUEL CONDITION (3500 LBS MAX.)		
7. FUEL LOADING (gal.)		
8. **SUB TOTAL** RAMP CONDITION		
9. *LESS FUEL FOR START, TAXI, AND TAKEOFF		
10. **SUB TOTAL** TAKE-OFF CONDITION		
11. LESS FUEL TO DESTINATION		
12. **LANDING CONDITION**		

mom/100
3,040.91 BEW

*Fuel for start, taxi, and takeoff is normally 16 lbs at an average mom/100 of 19.

OCCUPANTS

WEIGHT	FRONT SEATS			3RD AND 4TH SEATS	
	*FWD POS.		*AFT POS.	STD. BENCH	OPTIONAL
	††ARM **104	†ARM **105	ARM **112	ARM **142	ARM **144
	MOMENT/100				
120	125	126	134	170	173
130	135	137	146	185	187
140	146	147	157	199	202
150	156	158	168	213	216
160	166	168	179	227	230
170	177	179	190	241	245
180	187	189	202	256	259
190	198	200	213	270	274
200	208	210	224	284	288
210	218	220	235	298	302
220	229	231	246	312	317
230	239	241	256	327	331
240	250	252	269	341	346
250	260	262	280	355	360

† Effective ME-1 thru ME-20
†† Effective ME-21 and after
* Reclining seat with back in full-up position
** Values computed from a C.G. criterion based on a 170 pound male. Differences in physical characteristics can cause variation in center of gravity location.

BEECHCRAFT Duchess 76 — USEFUL LOAD WEIGHTS AND MOMENTS — Section VI Wt & Bal/Equip List

BAGGAGE
ARM 167

WEIGHT	MOMENT 100
10	17
20	33
30	50
40	67
50	84
60	100
70	117
80	134
90	150
100	167
110	184
120	200
130	217
140	234
150	251
160	267
170	284
180	301
190	317
200	334

BEECHCRAFT Duchess 76 — Sectic Wt & Bal/Equip

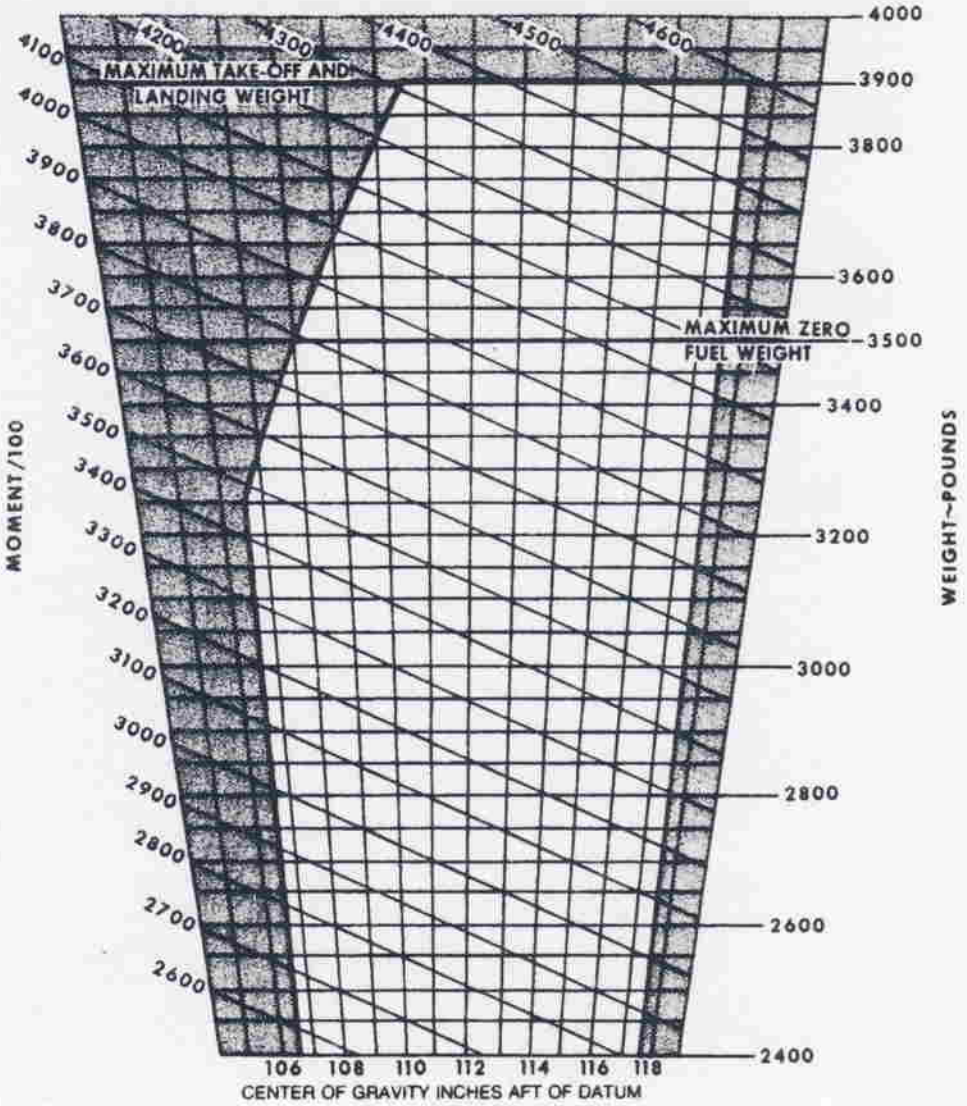
USEFUL LOAD WEIGHTS AND MOMENTS
USABLE FUEL
ARM 117.0

GALLONS	WEIGHT LBS	MOMENT 100
10	60	70
20	120	140
30	180	211
40	240	281
50	300	351
60	360	421
70	420	491
80	480	562
90	540	632
100	600	702

MOMENT LIMITS vs WEIGHT

WEIGHT POUNDS	MOMENT/100		WEIGHT POUNDS	MOMENT/100	
	FWD LIMIT	AFT LIMIT		FWD LIMIT	AFT LIMIT
2300	2452	2703	3125	3331	3672
2325	2479	2732	3150	3358	3701
2350	2505	2761	3175	3385	3731
2375	2532	2791	3200	3411	3760
2400	2558	2820			
2425	2585	2849	3225	3438	3789
2450	2612	2879	3250	3465	3819
2475	2638	2908	3275	3496	3848
2500	2665	2938	3300	3528	3878
2525	2692	2967	3325	3560	3907
2550	2718	2996	3350	3592	3936
2575	2745	3026	3375	3624	3966
2600	2772	3055	3400	3656	3995
2625	2798	3084	3425	3688	4024
2650	2825	3114	3450	3720	4054
2675	2852	3143	3475	3753	4083
2700	2878	3173	3500	3785	4113
2725	2905	3202	3525	3817	4142
2750	2932	3231	3550	3850	4171
2775	2958	3261	3575	3882	4201
2800	2985	3290	3600	3915	4230
2825	3012	3319	3625	3948	4259
2850	3038	3349	3650	3981	4289
2875	3065	3378	3675	4014	4318
2900	3091	3408	3700	4047	4348
2925	3118	3437	3725	4080	4377
2950	3145	3466	3750	4113	4406
2975	3171	3496	3775	4146	4436
3000	3198	3525	3800	4179	4465
3025	3225	3554	3825	4213	4494
3050	3251	3584	3850	4246	4524
3075	3278	3613	3875	4280	4553
3100	3305	3643	3900	4313	4583

MOMENT LIMITS VS WEIGHT



ENVELOPE BASED ON THE FOLLOWING WEIGHT AND CENTER OF GRAVITY LIMIT DATA (LANDING GEAR DOWN)

WEIGHT CONDITION	FWD C. G. LIMIT	AFT C. G. LIMIT
3900 POUNDS (MAX. TAKE-OFF/LANDING)	110.6	117.5
3250 POUNDS OR LESS	106.6	117.5

76-601-6

WIND COMPONENTS
Demonstrated Crosswind is 25 kts

EXAMPLE:

WIND SPEED	10 KNOTS
ANGLE BETWEEN WIND DIRECTION AND FLIGHT PATH	20°
HEADWIND COMPONENT	9.5 KNOTS
CROSSWIND COMPONENT	3.5 KNOTS