LOAD DATA SHEET - PAGE 1 OF 3 - AEROPLANE WEIGHT

Aeroplane Type:..... DIAMOND DA 42 NG

Registration Marking:..... **VH-YKU** Serial No: 42.N190

ISSUE:.... ONE	DATE:..... 2.Dec.15	EXPIRY:..... INDEFINITE

AEROPLANE WEIGHT AND CENTRE OF GRAVITY DATA:

ITEM	WEIGHT (Kg)	ARM (mm aft of datum)	MOMENT (Kg.mm)	CABIN CONFIGURATION
EMPTY	**1418.0**	**2421.5**	**3433630**	FOUR SEATS TOTAL
STANDARD CABIN CONFIGURATION AUSTRO ENGINES & MT PROPELLERS				
THE FOLLOWING IMPERIAL UNITS ARE FOR USE WITH THE PILOTS HANDBOOK SECTION SIX				
	(lb)	(in)	(in.lb)	
EMPTY	**3126.2**	**95.33**	**298026**	FOUR SEATS TOTAL

NOTE: The above empty weights include:-

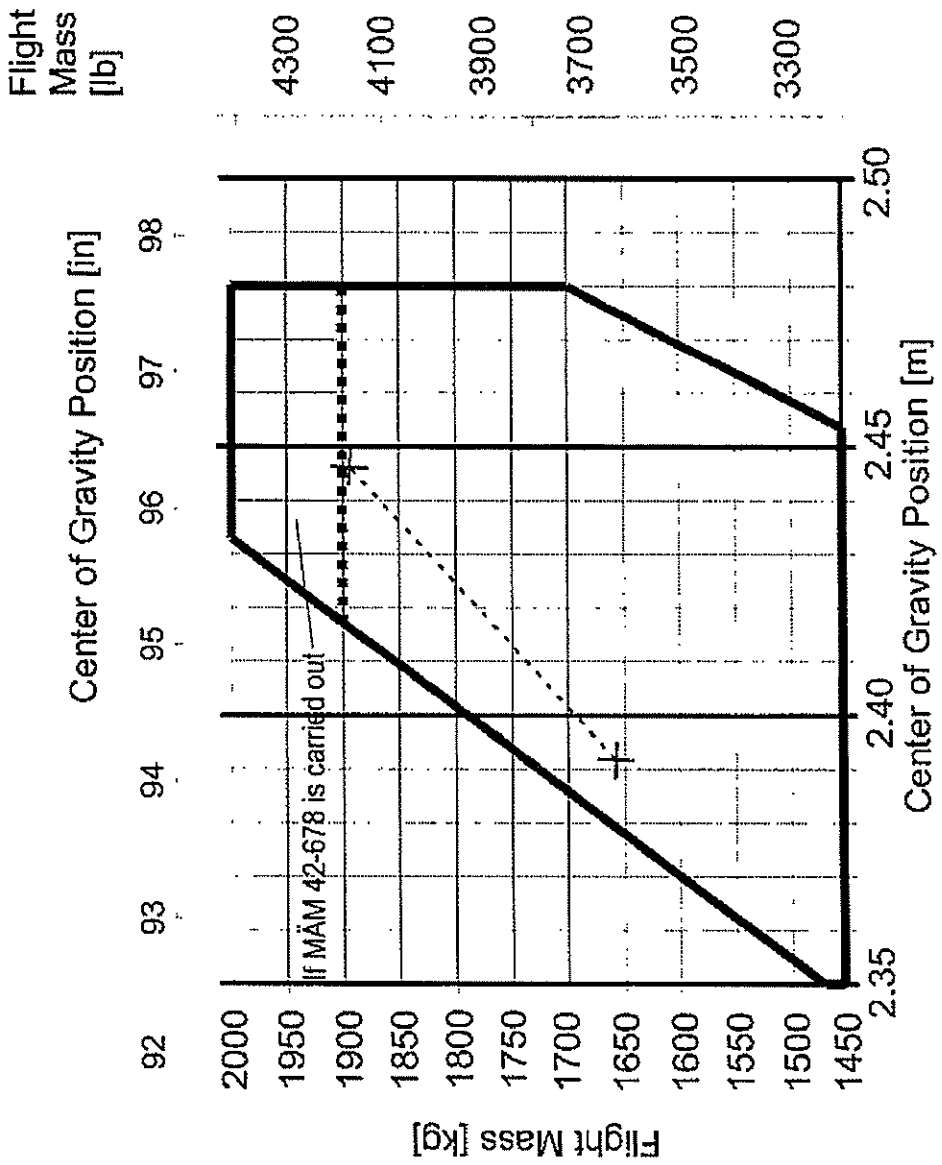
EMPTY - unusable fuel and full oil

AeroWeigh Pty. Ltd.
BRUCE GEISSOLD
AUTHORITY NUMBER AN-9
MOBILE: 0412 58 5551

CALCULATION OF LOADING CONDITION	DA 42 NG (Example)		Your DA 42 NG	
	Mass [kg] [lb]	Moment [kgm] [in.lb]	Mass [kg] [lb]	Moment [kgm] [in.lb]
1. Empty mass (from Mass and Balance Report)	1450 *3197*	3488.0 *302,747*		
2. Front seats Lever arm: 2.30 m *(90.6 in)*	160 *353*	368.0 *31,982*		
3. Rear seats Lever arm: 3.25 m *(128.0 in)*	0 *0*	0.0 *0*		
4. Nose baggage compt. Lever arm: 0.60 m *(23.6 in)*	0 *0*	0 *0*		
5. Cabin baggage compt. Lever arm: 3.89 m *(153.1 in)*	10 *22*	38.9 *3,368*		
6. Baggage extension Lever arm: 4.54 m *(178.7 in)*	8 *18*	36.3 *2,217*		
7. Standard baggage compartment Lever arm: 3.65 m *(143.7 in)*	0 *0*	0.0 *0,0*		
8. Short baggage extension (if OÄM 42-207 is carried out) Lever arm: 3.97 m *(156.3 in)*	0 *0*	0 *0*		
9. De-Icing fluid (if only OÄM 42-160 is installed; see NOTE on previous page) (1.1 kg/liter) *(9.2 lb/US gal)* Lever arm: 1.00 m *(39.4 in)*	27.5 *61*	27.5 *2,403*		

CALCULATION OF LOADING CONDITION	DA 42 NG (Example)		Your DA 42 NG	
	Mass [kg] [lb]	Moment [kgm] [in.lb]	Mass [kg] [lb]	Moment [kgm] [in.lb]
10. De-Icing fluid (if OÄM 42-160 AND OÄM 42-203 are installed; see NOTE on previous page) (1.1 kg/liter) *(9.2 lb/US gal)* Lever arm: 4.52 m *(178.0 in)*	0 *0*	0 *0*		
11. Total mass & total moment with empty fuel tanks (Total of 1.through 10.)	1655.5 *3651*	3958.7 *343,717*		
12. Usable fuel, main tanks (0.84 kg/liter) *(7.01 lb/US gal)* Lever arm: 2.63 m *(103.5 in)*	159 *351*	418.2 *36,329*		
13. Usable fuel, auxiliary tanks (if installed) (0.84 kg/liter) *(7.01 lb/US gal)* Lever arm: 3.20 m *(126.0 in)*	84 *185*	268.8 *23,310*		
14. Total mass & total moment with fuel & de-icing fluid (Total of 11. through 13.)	1898.5 *4187*	4645.7 *403,356*		

6.4.4 PERMISSIBLE CENTER OF GRAVITY RANGE



Take-Off Distance - Normal Procedure - 1900 kg / 4189 lb

Weight: 1900 kg / 4189 lb
Flaps: UP
v_R: 80 KIAS
Power: MAX
v_{50}: 85 KIAS
Runway: dry, paved, level

Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	ISA
SL	Ground Roll	420	450	480	510	570	660	458
	15 m / 50 ft	670	710	760	830	940	1110	734
1000 305	Ground Roll	450	480	510	550	620	720	483
	15 m / 50 ft	720	770	820	900	1030	1220	778
2000 610	Ground Roll	480	510	540	590	670	780	510
	15 m / 50 ft	770	820	890	970	1130	1350	826
3000 914	Ground Roll	510	550	580	630	740	850	539
	15 m / 50 ft	830	890	960	1060	1250	1500	877
4000 1219	Ground Roll	550	590	630	690	800	930	571
	15 m / 50 ft	890	960	1040	1170	1390	1680	935
5000 1524	Ground Roll	590	630	680	760	880		606
	15 m / 50 ft	960	1040	1130	1300	1550		999
6000 1829	Ground Roll	630	680	730	840	970		645
	15 m / 50 ft	1050	1140	1240	1460	1760		1072
7000 2134	Ground Roll	680	740	800	920	1070		685
	15 m / 50 ft	1150	1250	1380	1650	2000		1152
8000 2438	Ground Roll	740	810	880	1020	1180		732
	15 m / 50 ft	1260	1390	1540	1870	2220		1245
9000 2743	Ground Roll	810	880	970	1130	1300		787
	15 m / 50 ft	1400	1550	1750	2120	2360		1351
10000 3048	Ground Roll	890	960	1070	1250			847
	15 m / 50 ft	1570	1760	2010	2260			1477

For the distance in [ft] divide by 0.3048 or multiply by 3.28.

Take-Off Distance - Short Field Procedure - 1900 kg / 4189 lb								
Weight: 1900 kg / 4189 lb						Flaps: APP		
v_R: 76 KIAS						Power: MAX		
v_{50}: 82 KIAS						Runway: dry, paved, level		
Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						ISA
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	
SL	Ground Roll	410	430	460	500	560	650	445
	15 m / 50 ft	600	640	680	740	820	960	657
1000 305	Ground Roll	430	470	500	540	610	710	469
	15 m / 50 ft	640	680	730	790	900	1040	693
2000 610	Ground Roll	470	500	530	580	660	770	498
	15 m / 50 ft	680	730	780	840	970	1140	731
3000 914	Ground Roll	500	530	570	630	730	840	527
	15 m / 50 ft	730	780	840	910	1060	1250	775
4000 1219	Ground Roll	540	570	620	680	790	930	557
	15 m / 50 ft	780	840	900	1000	1170	1370	818
5000 1524	Ground Roll	580	620	670	750	870		595
	15 m / 50 ft	840	910	970	1100	1280		870
6000 1829	Ground Roll	620	670	730	830	970		634
	15 m / 50 ft	910	980	1060	1210	1410		924
7000 2134	Ground Roll	670	730	790	920	1080		676
	15 m / 50 ft	980	1060	1150	1340	1570		985
8000 2438	Ground Roll	740	800	880	1020	1190		724
	15 m / 50 ft	1070	1160	1260	1490	1740		1055
9000 2743	Ground Roll	810	880	970	1130	1320		780
	15 m / 50 ft	1170	1270	1400	1650	1940		1133
10000 3048	Ground Roll	890	960	1080	1270			843
	15 m / 50 ft	1280	1400	1570	1860			1221
For the distance in [ft] divide by 0.3048 or multiply by 3.28.								

5.3.7 CLIMB PERFORMANCE (ALL ENGINES OPERATING)

Conditions:

- Power lever ..... both 92%
- Flaps ..... UP or APP
- Landing gear ..... retracted
- Airspeed ..... v_Y

The climb performance tables show the rate of climb. The gradient of climb can be calculated using the following formula:

$$Gradient\,[\%] = \frac{ROC\,[fpm]}{TAS\,[KTAS]} \cdot 0.98$$

NOTE

Rate of climb at MTOM (1900 kg / 4189 lb) with a power setting of 100% at MSL and ISA conditions:

- 1186 ft/min (6.0 m/s) with flaps UP
- 1160 ft/min (5.9 m/s) with flaps APP

NOTE

If MÄM 42-678 is installed, the rate of climb at MTOM (1999 kg / 4407 lb) with a power setting of 100% at MSL and ISA conditions:

- 1100 ft/min (5.6 m/s) with flaps UP
- 1073 ft/min (5.4 m/s) with flaps APP

All Engines Operating Climb - Flaps UP

Flaps: UP
v_Y: 92 KIAS (above 1900 kg / 4189 lb) Power: 92%
v_Y: 90 KIAS (up to 1900 kg / 4189 lb) Gear: retracted

Weight [kg] / [lb]	Press. Alt. [ft]	Press. Alt. [m]	Rate of Climb - [ft/min]								
			Outside Air Temperature - [°C] / [°F]								
			-20 -4	-10 14	0 32	10 50	20 68	30 86	40 104	50 122	ISA
1999 / 4407	SL		1030	1010	1000	980	970	950	900	810	982
	2000	610	1000	990	970	950	940	920	840	760	956
	4000	1219	970	950	940	920	900	870	780	690	929
	6000	1829	940	920	900	880	860	800	720		901
	8000	2438	900	880	860	840	820	740	660		868
	10000	3048	860	840	820	790	750	660			832
	12000	3658	800	770	740	710	630	520			772
	14000	4267	740	700	660	600	510	380			716
	16000	4877	620	580	540	460	370				614
	18000	5486	510	470	420	320	220				512
1900 / 4189	SL		1110	1090	1080	1070	1050	1030	980	890	1065
	2000	610	1080	1070	1050	1040	1020	1000	920	830	1039
	4000	1219	1050	1040	1020	1000	980	940	860	760	1010
	6000	1829	1020	1000	980	960	950	880	800		981
	8000	2438	980	960	950	920	900	820	730		952
	10000	3048	950	920	900	880	830	740			915
	12000	3658	890	850	820	790	710	590			854
	14000	4267	820	780	740	680	590	450			796
	16000	4877	700	660	620	530	440				695
	18000	5486	580	550	500	390	290				590

All Engines Operating Climb - Flaps UP

Flaps: UP
v_Y: 92 KIAS (above 1900 kg / 4189 lb)
v_Y: 90 KIAS (up to 1900 kg / 4189 lb)

Power: 92%
Gear: retracted

Weight [kg] / [lb]	Press. Alt. [ft]	Press. Alt. [m]	Rate of Climb - [ft/min]								
			Outside Air Temperature - [°C] / [°F]								ISA
			-20 -4	-10 14	0 32	10 50	20 68	30 86	40 104	50 122	
1700 / 3748	SL		1280	1270	1260	1240	1230	1210	1150	1040	1241
	2000	610	1260	1250	1230	1210	1190	1170	1080	980	1213
	4000	1219	1230	1210	1190	1170	1160	1110	1020	910	1183
	6000	1829	1190	1170	1150	1140	1120	1050	940		1153
	8000	2438	1160	1130	1120	1090	1070	970	870		1121
	10000	3048	1110	1090	1070	1040	990	890			1082
	12000	3658	1050	1020	980	940	860	730			1016
	14000	4267	980	940	890	820	720	570			954
	16000	4877	850	810	760	660	560				843
	18000	5486	720	680	630	500	400				728

For the rate of climb in [m/s] divide by 196.8 or multiply by 0.00508.

5.3.11 LANDING DISTANCES

Conditions:

- Power lever ..... both IDLE
- Flaps ..... LDG, APP or UP
- Runway ..... dry, paved, level
- Approach speed ..... v_{REF}

The following factors are to be applied to the computed landing distance for the noted condition:

- Headwind:	Decrease by 10% for each 14 kt (7.2 m/s) headwind.
- Tailwind:	Increase by 10% for each 3 kt (1.5 m/s) tailwind.
- Paved runway, wet:	Increase by 15%.
- Grass runway, dry, 5 cm (2 in) long:	Increase the ground roll by 10%.
- Grass runway, dry, 5 cm (2 in) to 10 cm (3.9 in) long:	Increase the ground roll by 15%.
- Grass runway, dry, longer than 10 cm (3.9 in):	Increase the ground roll at least by 25%.
- Grass runway, wet or soft runway:	Increase the ground roll by 10%.
- Downhill slope:	Increase the ground roll by 9% for each 1% (1 m per 100 m or 1 ft per 100 ft) of slope.

WARNING

For a safe landing the available runway length must be at least equal to the landing distance over a 50 ft (15 m) obstacle.

WARNING

Poor maintenance condition of the airplane, deviation from the given procedures, uneven runway, as well as unfavorable external factors (rain, unfavorable wind conditions, including cross-wind) will increase the landing distance.

CAUTION

The factors in the above corrections are typical values. On wet ground or wet soft grass covered runways the landing distance may become significantly longer than stated above. In any case the pilot must allow for the condition of the runway to ensure a safe landing.

The above corrections for runway slope should be used with caution since published runway slope data is usually the net slope from one end of the runway to the other. Runways may have positions at their length at greater or lesser slopes than published slope, lengthening (or shortening) the landing roll estimated with these tables.

NOTE

The effect of 50% of the headwind component and 150% of the tailwind component is already incorporated in the head- and tailwind factors.

Landing Distance - Flaps LDG - 1900 kg / 4189 lb

Weight: 1900 kg / 4189 lb
Flaps: LDG
V_{REF}: 84 KIAS
Power: IDLE
Runway: dry, paved, level

Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	ISA
SL	Ground Roll	350	370	380	390	420	480	369
	15 m / 50 ft	600	610	630	650	700	780	618
1000 305	Ground Roll	370	380	390	410	450	500	381
	15 m / 50 ft	610	630	650	670	730	820	634
2000 610	Ground Roll	380	390	410	420	470	530	390
	15 m / 50 ft	630	650	670	690	770	860	650
3000 914	Ground Roll	390	410	420	440	500	550	402
	15 m / 50 ft	650	670	690	720	810	900	667
4000 1219	Ground Roll	410	420	440	460	520	580	415
	15 m / 50 ft	670	690	710	760	850	950	684
5000 1524	Ground Roll	420	440	450	490	550		426
	15 m / 50 ft	700	720	740	800	890		702
6000 1829	Ground Roll	440	450	470	520	580		439
	15 m / 50 ft	720	740	760	840	940		720
7000 2134	Ground Roll	460	480	490	550	620		456
	15 m / 50 ft	750	770	800	890	990		749
8000 2438	Ground Roll	490	510	530	600	670		484
	15 m / 50 ft	790	820	850	960	1070		786
9000 2743	Ground Roll	530	550	580	660	730		519
	15 m / 50 ft	840	870	920	1030	1150		831
10000 3048	Ground Roll	570	590	640	720			561
	15 m / 50 ft	900	930	1000	1120			882

For the distance in [ft] divide by 0.3048 or multiply by 3.28.

Landing Distance - Flaps LDG - 1700 kg / 3748 lb

Weight: 1700 kg / 3748 lb | **Flaps:** LDG

v_{REF}: 84 KIAS | **Power:** IDLE

Runway: dry, paved, level

Press. Alt. [ft] / [m]	Distance [m]	Outside Air Temperature - [°C] / [°F]						
		0 / 32	10 / 50	20 / 68	30 / 86	40 / 104	50 / 122	ISA
SL	Ground Roll	320	330	340	360	380	430	335
	15 m / 50 ft	550	570	590	600	650	730	575
1000 305	Ground Roll	330	350	360	370	400	460	345
	15 m / 50 ft	570	590	600	620	680	760	589
2000 610	Ground Roll	350	360	370	380	430	480	356
	15 m / 50 ft	590	610	620	640	710	800	603
3000 914	Ground Roll	360	370	380	400	450	500	364
	15 m / 50 ft	610	630	640	670	750	840	619
4000 1219	Ground Roll	370	380	400	420	470	530	376
	15 m / 50 ft	630	640	660	700	790	880	635
5000 1524	Ground Roll	380	400	410	440	500		388
	15 m / 50 ft	640	670	680	740	830		651
6000 1829	Ground Roll	400	410	430	470	530		397
	15 m / 50 ft	670	690	710	770	870		668
7000 2134	Ground Roll	420	430	450	500	560		416
	15 m / 50 ft	690	720	740	820	920		691
8000 2438	Ground Roll	450	460	480	550	610		441
	15 m / 50 ft	730	760	790	890	990		729
9000 2743	Ground Roll	490	500	530	600	680		477
	15 m / 50 ft	780	810	860	960	1070		773
10000 3048	Ground Roll	530	550	600	670			521
	15 m / 50 ft	840	870	930	1050			826

For the distance in [ft] divide by 0.3048 or multiply by 3.28.

5.3.12 GO-AROUND CLIMB PERFORMANCE

Conditions:

- Power lever ..... both MAX
- Flaps ..... LDG
- Landing gear ..... extended
- Airspeed:
  Up to 1900 kg (4189 lb) ..... v_{REF} = 84 KIAS
  Above 1900 kg (4189 lb) ..... v_{REF} = 86 KIAS

The climb performance charts show the rate of climb. The gradient and angle of climb can be calculated using the following formula:

$$Gradient\ [\%] = \frac{ROC\ [fpm]}{TAS\ [KTAS]} \cdot 0.98$$

NOTE

The angles of climb at MSL and ISA condition are:

3.8° for Maximum Take-Off Mass (1900 kg / 4189 lb)

4.3° for Maximum Landing Mass (1805 kg / 3979 lb)

If MÄM 42-678 is carried out:

3.1° for Maximum Take-Off Mass (1999 kg / 4407 lb)

Go-Around Climb Performance

Flaps: LDG — **Power: MAX**

v_{REF}: **86 KIAS above 1900 kg (4189 lb)**
84 KIAS up to 1900 kg (4189 lb) — **Gear: extended**

Weight [kg] / [lb]	Press. Alt. [ft]	Press. Alt. [m]	Rate of Climb - [ft/min]								
			Outside Air Temperature - [°C] / [°F]								
			-20 -4	-10 14	0 32	10 50	20 68	30 86	40 104	50 122	ISA
1999 / 4407	SL		515	495	480	460	445	400	345	270	454
	2000	610	480	460	445	420	395	350	290	215	419
	4000	1219	445	420	395	370	350	295	235	160	381
	6000	1829	395	370	345	320	300	240	175		341
	8000	2438	345	320	295	270	240	175	105		299
	10000	3048	295	265	235	195	155	80			253
1900 / 4189	SL		610	590	570	555	535	495	440	360	547
	2000	610	575	555	535	515	495	450	385	305	517
	4000	1219	540	515	495	470	445	395	325	245	479
	6000	1829	495	470	445	420	395	335	265		439
	8000	2438	445	420	395	365	340	270	200		397
	10000	3048	390	365	330	295	255	175			350
1700 / 3748	SL		755	735	715	695	680	635	570	480	690
	2000	610	715	695	680	660	635	585	510	420	659
	4000	1219	680	660	635	610	585	525	445	355	619
	6000	1829	635	610	585	555	530	460	380		577
	8000	2438	585	555	530	500	470	390	310		533
	10000	3048	525	495	465	425	375	290			483

For the rate of climb in [m/s] divide by 196.8 or multiply by 0.00508.

5.3.8 ONE ENGINE INOPERATIVE CLIMB PERFORMANCE

Conditions:

- Remaining engine ..... 92% load
- Dead engine ..... feathered and secured
- Flaps ..... UP
- Landing gear ..... retracted
- Airspeed ..... v_{YSE} = 85 KIAS
- Sideslip ..... half ball out

NOTE

With respect to handling and performance, the left-hand engine (pilots view) is considered the "critical" engine.

The climb performance tables show the rate of climb. The gradient of climb can be calculated using the following formula:

$$Gradient\,[\%] = \frac{ROC\,[fpm]}{TAS\,[KTAS]} \cdot 0.98$$

One Engine Inoperative Climb

Flaps: UP — **Power:** feathered / 92%

v_{YSE}: 85 KIAS — **Gear:** retracted

Weight [kg] / [lb]	Press. Alt. [ft]	Press. Alt. [m]	Rate of Climb - [ft/min]								
			Outside Air Temperature - [°C] / [°F]								
			-20 -4	-10 14	0 32	10 50	20 68	30 86	40 104	50 122	ISA
1999 / 4407	SL		180	165	155	145	130	120	100	70	140
	2000	610	155	145	130	120	105	90	65	35	120
	4000	1219	135	120	105	90	80	60	35	0	99
	6000	1829	110	90	75	60	45	25	0		74
	8000	2438	80	60	45	30	15	-10	-40		49
	10000	3048	45	30	15	-5	-25	-55			23
	12000	3658	5	-15	-35	-60	-85	-125			-14
	14000	4267	-35	-65	-90	-120	-150	-200			-53
	16000	4877	-105	-130	-155	-190	-225				-111
	18000	5486	-175	-195	-225	-270	-300				-169
1900 / 4189	SL		215	205	190	180	165	155	135	105	175
	2000	610	195	180	165	155	145	125	100	70	156
	4000	1219	170	155	140	130	115	95	65	30	134
	6000	1829	145	130	110	95	80	60	30		109
	8000	2438	115	95	80	65	50	20	-10		84
	10000	3048	80	65	45	30	10	-25			57
	12000	3658	40	20	-5	-25	-55	-100			19
	14000	4267	-5	-30	-60	-90	-120	-175			-21
	16000	4877	-75	-100	-125	-165	-200				-80
	18000	5486	-145	-170	-200	-245	-280				-140

One Engine Inoperative Climb

Flaps: UP — **Power:** feathered / 92%

V_{YSE}: 85 KIAS — **Gear:** retracted

Weight [kg] / [lb]	Press. Alt. [ft]	Press. Alt. [m]	Rate of Climb - [ft/min]								
			Outside Air Temperature - [°C] / [°F]								
			-20 -4	-10 14	0 32	10 50	20 68	30 86	40 104	50 122	ISA
1700 / 3748	SL		295	280	270	255	245	230	205	170	252
	2000	610	270	255	245	230	220	200	170	135	232
	4000	1219	245	230	220	205	190	165	135	95	210
	6000	1829	220	205	185	170	155	130	95		184
	8000	2438	190	170	155	140	120	90	55		158
	10000	3048	155	135	120	105	80	40			130
	12000	3658	115	90	65	40	10	-40			90
	14000	4267	65	40	10	-25	-60	-125			48
	16000	4877	-10	-35	-65	-105	-145				-16
	18000	5486	-85	-110	-140	-195	-235				-80

CAUTION: Dark grey shaded areas indicate a climb rate of less than 50 ft/min.
For the rate of climb in [m/s] divide by 196.8 or multiply by 0.00508.