

2pt85 prop speed.xls			HP-lo	2.85 PSRU Prop Speed												4/2/2006	
E-shaft RPM	/2.85 =	Prop RPM	pwr RX8	80"tip spd	Mach,sl	78"tip spd	Mach,sl	76"tip spd	Mach,sl	74"tipspd	Mach,sl	72"tip spd	Mach,sl	70"tip spd	Mach,sl	68"tip spd	Mach,sl
1000	2.85	350.9		122.5		119.4		116.4		113.3		110.2		107.2		104.1	
1400	2.85	491.2		171.5		167.2		162.9		158.6		154.3		150.0		145.8	
1800	2.85	631.6		220.5		215.0		209.4		203.9		198.4		192.9		187.4	
2200	2.85	771.9		269.5		262.7		256.0		249.2		242.5		235.8		229.0	
2400	2.85	842.1		294.0		286.6		279.3		271.9		264.6		257.2		249.9	
2600	2.85	912.3		318.4		310.5		302.5		294.6		286.6		278.6		270.7	
3000	2.85	1052.6		367.4		358.3		349.1		339.9		330.7		321.5		312.3	
3400	2.85	1193.0		416.4		406.0		395.6		385.2		374.8		364.4		354.0	
3800	2.85	1333.3		465.4		453.8		442.2		430.5		418.9		407.2		395.6	
4200	2.85	1473.7		514.4		501.6		488.7		475.8		463.0		450.1		437.3	
4600	2.85	1614.0		563.4		549.3		535.2		521.1		507.1		493.0		478.9	
4800	2.85	1684.2	144=75 %of192	587.9		573.2		558.5		543.8		529.1		514.4		499.7	
5000	2.85	1754.4		612.4		597.1		581.8		566.5		551.2		535.8		520.5	
5400	2.85	1894.7		661.4		644.9		628.3		611.8		595.2		578.7		562.2	
5800	2.85	2035.1		710.4		692.6		674.9		657.1		639.3		621.6		603.8	
6200	2.85	2175.4		759.4		740.4		721.4		702.4		683.4		664.4		645.5	
6500	2.85	2280.7	190.0	796.1		776.2		756.3		736.4		716.5		696.6		676.7	
6600	2.85	2315.8		808.4	0.720	788.2		767.9		747.7		727.5		707.3		687.1	
7000	2.85	2456.1	192.0	857.4	0.770	835.9		814.5		793.1		771.6		750.2		728.8	
7200	2.85	2526.3		881.9	0.789	859.8	0.769	837.8	0.749	815.7	0.730	793.7	0.71	771.6	0.69	749.6	0.671
7400	2.85	2596.5		906.3	0.810	883.7	0.791	861.0	0.770	838.4	0.751	815.7	0.73	793.1	0.71	770.4	0.689
7500	2.85	2631.6	limit - low pwr	918.6	0.822	895.6	0.802	872.7	0.781	849.7	0.760	826.7	0.739	803.8	0.719	780.8	0.698
7750	2.85	2719.3		949.2	0.849	925.5	0.828	901.8	0.807	878.0	0.786	854.3	0.764	830.6	0.743	806.8	0.722
8000	2.85	2807.0		979.8	0.877	955.3	0.854	930.8	0.833	906.3	0.811	881.9	0.789	857.4	0.768	832.9	0.745
8200	2.85	2877.2	231.0	1004.3	0.904	979.2	0.882	954.1	0.858	929.0	0.836	903.9	0.814	878.8	0.791	853.7	0.769
8500	2.85	2982.5		1041.1	0.932	1015.0	0.908	989.0	0.885	963.0	0.862	937.0	0.839	910.9	0.815	884.9	0.791
8750	2.85	3070.2		1071.7	0.959	1044.9	0.935	1018.1	0.911	991.3	0.887	964.5	0.864	937.7	0.839	910.9	0.815
9000	2.85	3157.9	limit - hi pwr	1102.3	0.987	1074.8	0.962	1047.2	0.937	1019.6	0.912	992.1	0.887	964.5	0.864	937.0	0.839
Mach number calculator at http://www.grc.nasa.gov/WWW/K-12/airplane/mach.html																	
I plan on 80" prop for my RV-6. If I can get 7500 e-shaft rpm on takeoff, tip mach is .822, OK. Low pwr eng limit is 7500																	
Max hp on low pwr RX-8 is 192 (factory's revised downward hp rating) at 7000rpm																	
75% of 192hp = 144 hp (144/160 = 90% of a 160 hp engine), at about 4800 rpm																	
Could "high cruise" 5500rpm, abt 160hp (83% of 192) which should give cruise speed of 201mph like at "full throttle" with 160hp engine																	