

Insert values in green
calculations assume true airspeed

Min Sink spd	42 mph
Stall Spd	33 mph
Min Sink Rate	186 ft/min
wingspan	51 Feet

0.868976 mph conversion to knots
1.46667 mph conversion to f/s
0.682 f/s conversion to mph
1 ft conversion
51.0 wingspan ft

Bank angle	G load	Stall speed increase	Vs	V min sink mph	sink rate factor	Min Sink Rate ft/min	% sink rate increase	ROT °/sec	time to turn 360°: sec	altitude loss 360°	altitude loss 180°	turn radius ft	Turn Diameter ft	circle circumference	effective wing length	outer circumference	inner circumference	wingtip circumference Δ	Outer Tip Speed ft/s	Inner Tip Speed ft/s	speed Δ f/s	Speed delta mph	Speed Delta %
0	1.00	0.00%	33.0	42.0	0.00	186	0%	0.0															
5	1.004	0.19%	33.1	42.1	1.01	187	1%	2.6	138	430	215	1355	2709	8512	51	8671	8352	3.7%	62.9	60.6	2.3	1.6	3.8%
10	1.02	0.77%	33.3	42.3	1.02	190	2%	5.2	69	218	109	680	1360	4272	50	4430	4114	7.1%	64.4	59.8	4.6	3.1	7.7%
15	1.04	1.75%	33.6	42.7	1.05	196	5%	7.9	46	149	75	456	912	2866	49	3021	2712	10.2%	66.1	59.3	6.8	4.6	11.4%
20	1.06	3.16%	34.0	43.3	1.10	204	10%	10.5	34	116	58	345	690	2169	48	2320	2018	13.0%	68.0	59.1	8.8	6.0	14.9%
25	1.10	5.04%	34.7	44.1	1.16	216	16%	13.3	27	97	49	279	559	1755	46	1901	1610	15.3%	70.1	59.4	10.7	7.3	18.0%
30	1.15	7.46%	35.5	45.7	1.24	231	24%	16.1	22	86	43	236	472	1484	44	1622	1345	17.1%	72.4	60.0	12.4	8.4	20.6%
35	1.22	10.49%	36.5	46.4	1.35	251	35%	18.9	19	79	40	206	412	1293	42	1425	1162	18.4%	75.0	61.2	13.8	9.4	22.6%
40	1.31	14.25%	37.7	48.0	1.49	277	49%	22.0	16	76	38	184	367	1154	39	1277	1031	19.2%	77.9	62.9	15.0	10.2	23.8%
45	1.41	18.92%	39.2	49.9	1.68	313	68%	25.1	14	75	37	167	334	1049	36	1162	936	19.5%	81.2	65.3	15.8	10.8	24.2%
50	1.56	24.73%	41.2	52.4	1.94	361	94%	28.6	13	76	38	154	308	968	33	1071	865	19.2%	85.0	68.7	16.3	11.1	23.8%
55	1.74	32.04%	43.6	55.5	2.30	428	130%	32.3	11	79	40	144	288	906	29	998	814	18.4%	89.6	73.1	16.5	11.3	22.6%
60	2.00	41.42%	46.7	59.4	2.83	526	183%	36.6	10	86	43	136	273	857	26	937	777	17.1%	95.3	79.0	16.3	11.1	20.6%
65	2.37	53.82%	50.8	64.6	3.64	677	264%	41.7	9	97	49	130	261	819	22	886	751	15.3%	102.6	86.9	15.7	10.7	18.0%
70	2.92	70.99%	56.4	71.8	5.00	930	400%	48.0	7	116	58	126	251	789	17	844	735	13.0%	112.6	98.0	14.6	10.0	14.9%

cosine bank angle sqrt gload increase

