

CIRCLING PERFORMANCE

N49JD 1653[#]

ANGLE OF BANK	LOAD FACTOR	FACTOR FOR INCREASE OF STALL OR MIN. SINK SPEED	SINK RATE (FPM)	SPEED FOR MIN. SINK (KTS. - CAS)	TURN DIAMETER (FT)	TIME FOR 360° TURN (SECONDS)
0°	1	1	87	52.5	∞	∞
20	1.06	1.03	95	54	826	29
30	1.15	1.07	108	56	560	19
40	1.31	1.14	130	60	442	14
45	1.41	1.189	146	62	396	12
50	1.56	1.25	169	65	365	11
60	2.0	1.41	246	74	326	8
	①	②	⑤	②	③	④

① LOAD FACTOR = $\frac{1}{\cos(\text{BANK ANGLE})}$

② STALL SPEED INCREASE = $\frac{\sqrt{\text{LOAD FACTOR}}}{1}$ ↘ SAME
 MIN. SINK SPEED " = $\frac{1}{\sqrt{\cos(\text{ANGLE OF BANK})}}$

③ DIAMETER OF TURN (FT.) = $\frac{0.1331 V^2}{\tan(\text{ANGLE OF BANK})}$ where: V = MPH. TRUE

$VQ_{\text{STALL}} = \frac{V_{\text{STALL}}}{\cos(\text{ANGLE OF BANK})}$ where: V = MPH TRUE
 Q = ANGLE OF BANK

④ TIME TO COMPLETE 360° TURN = $2.142 \left(\frac{D}{V} \right)$ where: D = DIAMETER OF TURN (FT.)
 V = MPH TRUE

⑤ SINK RATE INCREASE = $\frac{1}{(\cos(\text{ANGLE OF BANK}))^{1.5}}$