

CRF MkII Formulae			
4/25/2017			
R1 = Base Rating		R1= 0.06 * (L * S) / (.75*DSPS/64)^.33 + 0.3*L + 0.20*S + DC + LBRC	
Rated Length		L = 1.02*(LOA + 4* LWL)/5	
Rated SA^0.5		S = ((RSAup + RSAdn) / 2) ^0.5 * Rig Factor	
	RSAup; Rated SA, Upwind	RSAup = Jib + Main + Mizzen + Foresail RSAup=RSAF + RSAM + RSAY + RSAG	
	Rated Foretriangel Area, if LP% >1	If J*LP%> J: RSAF=0.55*IG*J*((1+1.5*(LP%*J)-J)/(LP%*J))	
	Rated Foretriangel Area, if LP% <=1	If J*LP%<= J: RSAF=0.55*IG*J	
	Rated Main\sail Area, for Jib Headed Main	If P> 0: RSAM=.45*P*E	
	Rated Mainsail Area for Gaff Headed Main	If PG> 0: RSAM=0.60*P*E	
	Rated Mizzen Area	If PY> 0: RSAY=0.5*PY*EY	
	Rated Foresail Area, Schooner's	If B1> 0: RSAG=0.4*(P1+P3)/2*B1	
	RSAdn; Rated SA, downwind	RSAdn = Spin + Main + Mizzen + Foresail RSAdn=SPIN + RSAM + RSAY + RSAG If S-SPIN > A-SPIN: SPIN=S-SPIN If S-SPIN <= A-SPIN: SPIN=A-SPIN S-SPIN=0.95*(ISP^2+J^2)^0.5*1.8*SPL*0.8*1.0 A-SPIN=0.95*(ISP^2+TSPJ^2)^0.5*1.75*TSP*0.75*0.95	
Displacement		DSPS	Boat weight as raced, without crew, in pounds
Draft Correction			If RD>BD: DC=0.2*L*((RD/BD)^1.35-1) If RD<=BD: DC=0.2*L*((RD/BD)^2.5-1) Base Draft: BD=0.15*L+1.6
	Centerboarders		Rated Draft: If DMcb > 0: RD=DM+0.7*(DMcb-DM)
	Fixed keels		If DMcb=0: RD=DM
Length/Beam Correction		LBRC = 0.3 * L * ((L / Bmax) / (Base LBRC))^0.3 - 1.0 Base LBRC: 0.037*L+1.66	
R6 = Rating		R6 = R1 * Prop * DLF * SaDF * Keel * Spar*MAF	
Prop Factor		Prop = assigned prop factor	
Disp/Length Factor		DLF = (Base DLR/((DSPS/2240)/0.01*L)^3)^0.03 Base Disp/Length = 350 - 2.9 * L	
Sail Area/Disp Factor		SaDF = ((S^2/(disp/64)^.67)/(Base SA/Disp Ratio))^0.02 Base SA/Disp = .25 * L + 17	
Keel Factor		Keel =Assigned Keel Factor	
Spar Factor		Spar=Assigned Spar Factor	
Trim Tab		MAF = Moveable Appendage Factor	

Rig Factor			
Jib Headed:	Sloop =	1	1.00
	Yawl=	2	0.91
	Ketch=	3	0.90
Square Head:	Sloop =	4	1.20
Schooner:	Staysail=	5	0.90
Gaff Fore, Marconi Main=		6	0.80
Gaff Headed:	Sloop =	7	0.92
	Yawl=	8	0.83
	Ketch=	9	0.82
Schooner (Gaff Fore & Main)=		10	0.70
Prop Factor		Propeller Type	
	None	1	1.05
	Exposed shaft or strut drive	2	1.00
	2 blade solid prop in aperture	3	0.98
	3 blade solid prop in aperture	4	0.96
Exposed offcenter shaft, or in aperture		5	0.99
Exposed shaft, 2 blade solid prop		6	0.97
Exposed shaft, 3 blade solid prop		7	0.95
	Twin Screw	8	0.90
Keel Factor		Keel Type Guidelines	
Short chd fin w/Bulb & Spade Rudder	1	1.03	Chord length @ 1/2 draft <10% LWL
Fin w/Bulb & Spade Rudder	2	1.00	Chord length @ 1/2 draft = 10-20% LWL
Fin w/o Bulb, w/Spade Rudder	3	0.99	Chord length @ 1/2 draft = 20-30% LWL
Fin w/Skeg Rudder	4	0.98	Chord length @ 1/2 draft = 30-40% LWL
Racing 'Full Keel' w/Attached Rudder	6	0.96	Chord length @ 1/2 draft = 50-65% LWL (e.g. Cutaway Universal & International Rule keels)
Cruising 'Full Keel' w/Attached Rudder		0.94	Chord length @ 1/2 draft > 65% LWL (e.g. Full length classic and vintage cruising keels)
Spar Factor			
	Carbon	1	1.000
	Aluminum	2	0.990
	Wood, Sloop	3	0.930
	Wood, Split Rigs	4	0.915
			Yawls, ketches & schooners
Moveable Appendage Factor			
		1	1.000
		2	1.100
			Single rudder only
			Single rudder plus trim tab on keel trailing edge