CRF MkII Formulae													
4/4/17													
	R1 = Base Rating			**R1= 0.06 * (L * S) / (.75*DSPS/64)^.33 + 0.3L + 0.20S + 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*PG*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 ratio				Base Disp/Length = 350 - 2.9 * L							
	Sail Area/Disp Factor				SaDF = ((S^2/(disp/64))^.67)/(Base SA/Disp Ratio))^.02								
		Base SA/Disp ratio				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	Feathering or folding propeller
	2 blade solid prop in aperture		3	0.98	Solid propeller
	3 blade solid prop in aperture		4	0.96	Solid propeller
	Exposed offcenter shaft, or in aperture		5	0.99	Feathering or folding propeller
	Exposed shaft, 2 blade solid prop		6	0.97	Solid propeller
	Exposed shaft, 3 blade solid prop		7	0.95	Solid propeller
		Twin Screw	8	0.90	Solid propeller
		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	Single rudder only
		Trim Tab	2	1.100	Single rudder plus trim tab on keel trailing edge