

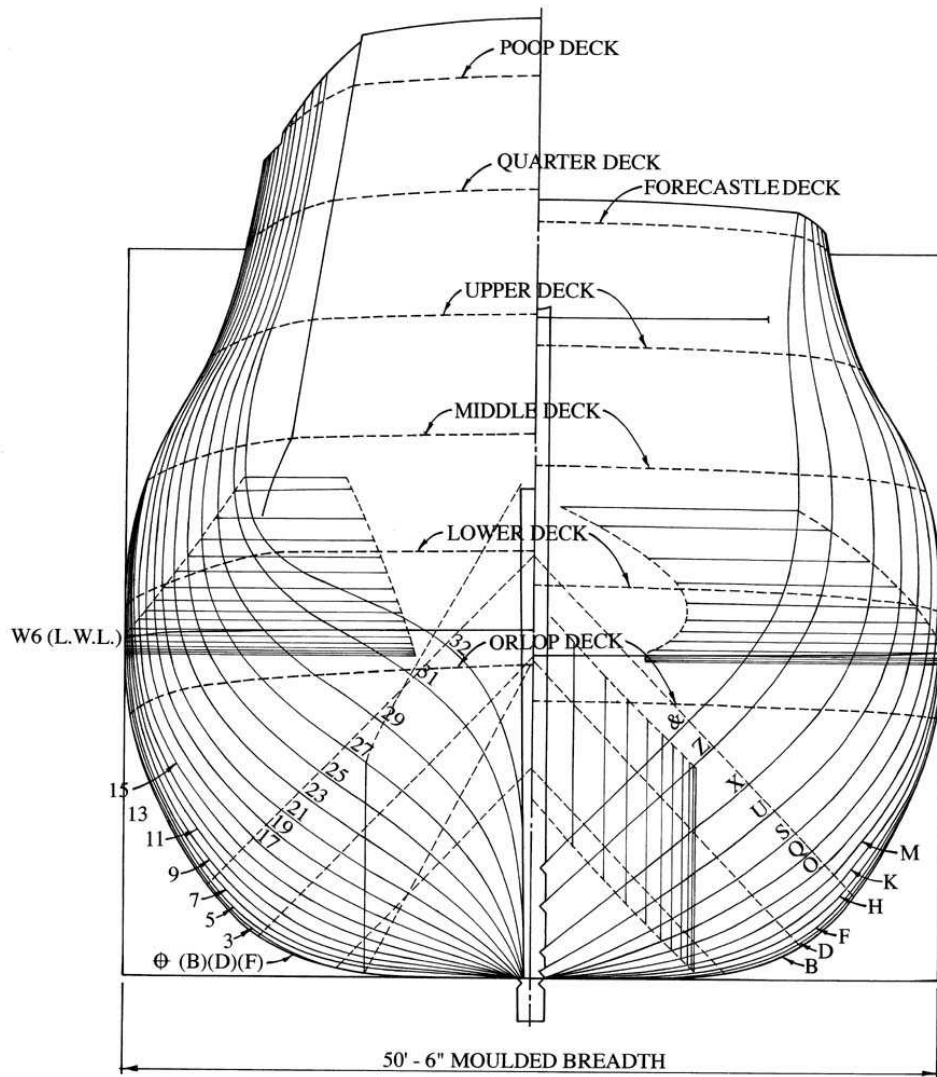


Figure 1 *HMS Victory* Body Plan [3]

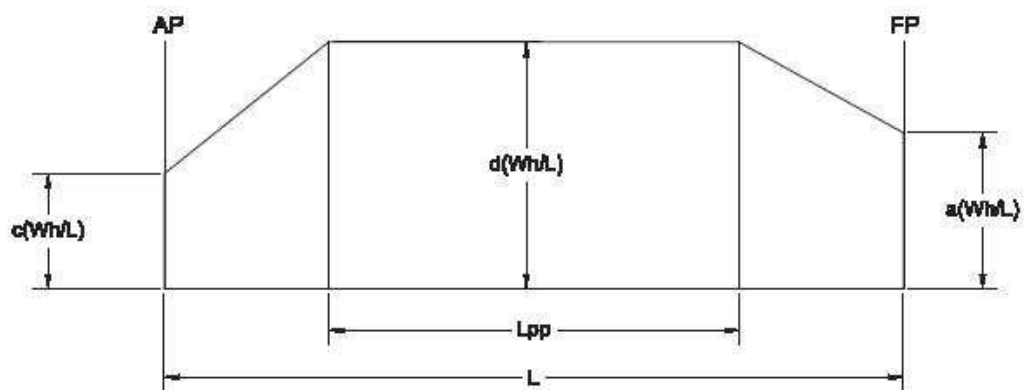


Figure 2 Coffin diagram for estimating longitudinal weight distribution

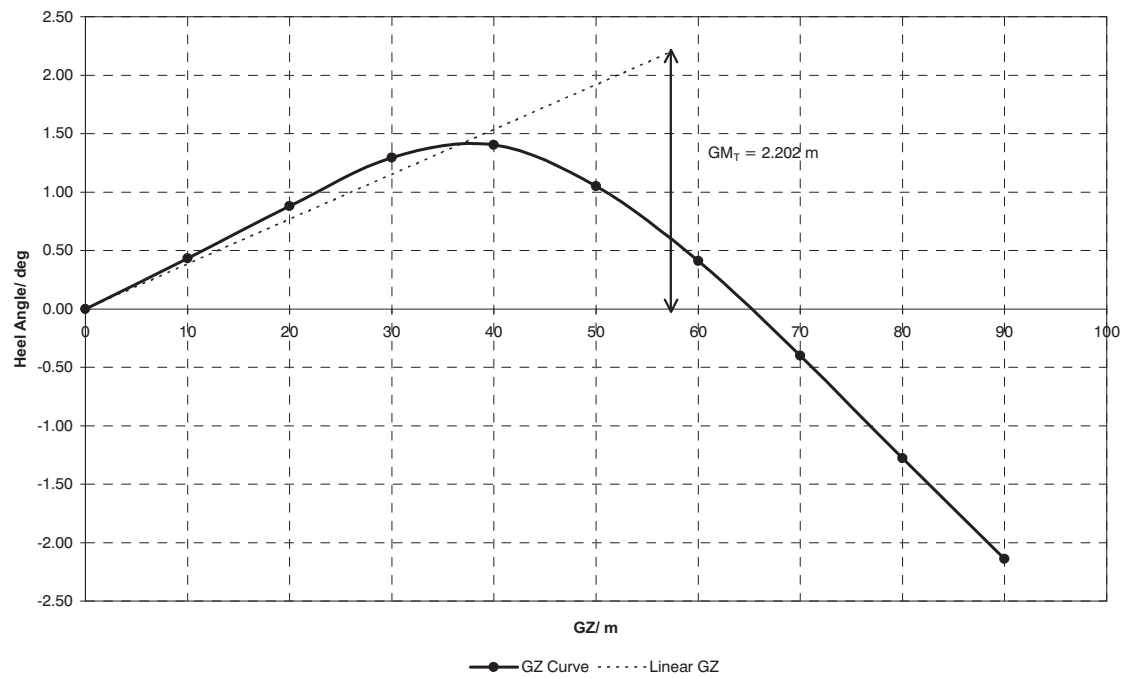


Figure 3 Estimated *GZ* curve for fully laden *HMS Victory*



Figure 4 CNC machining of *Victory* model

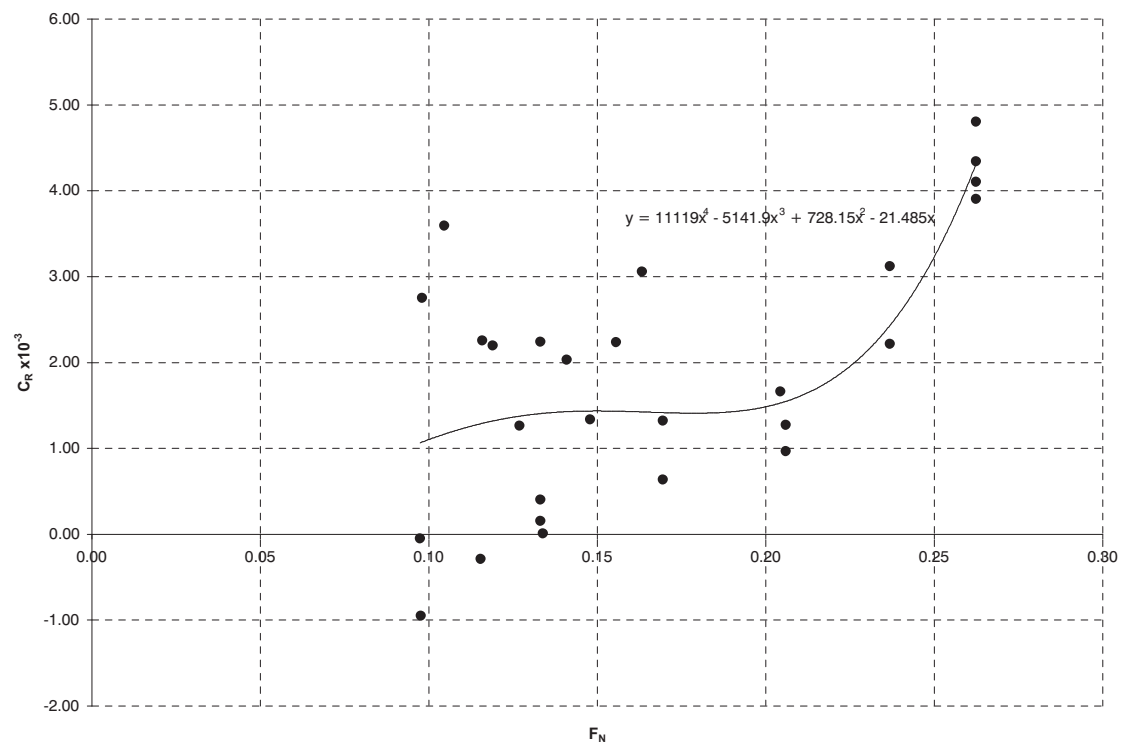


Figure 5, 6 Upright fully loaded residuary resistance curve

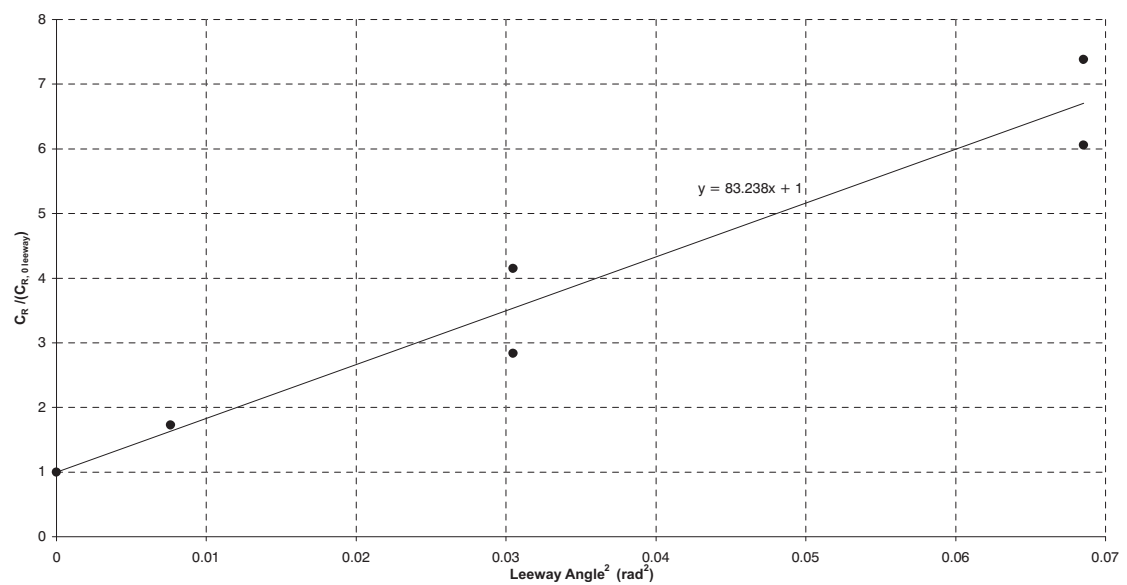


Figure 6,7 Influence of leeway angle squared on increase of residuary resistance

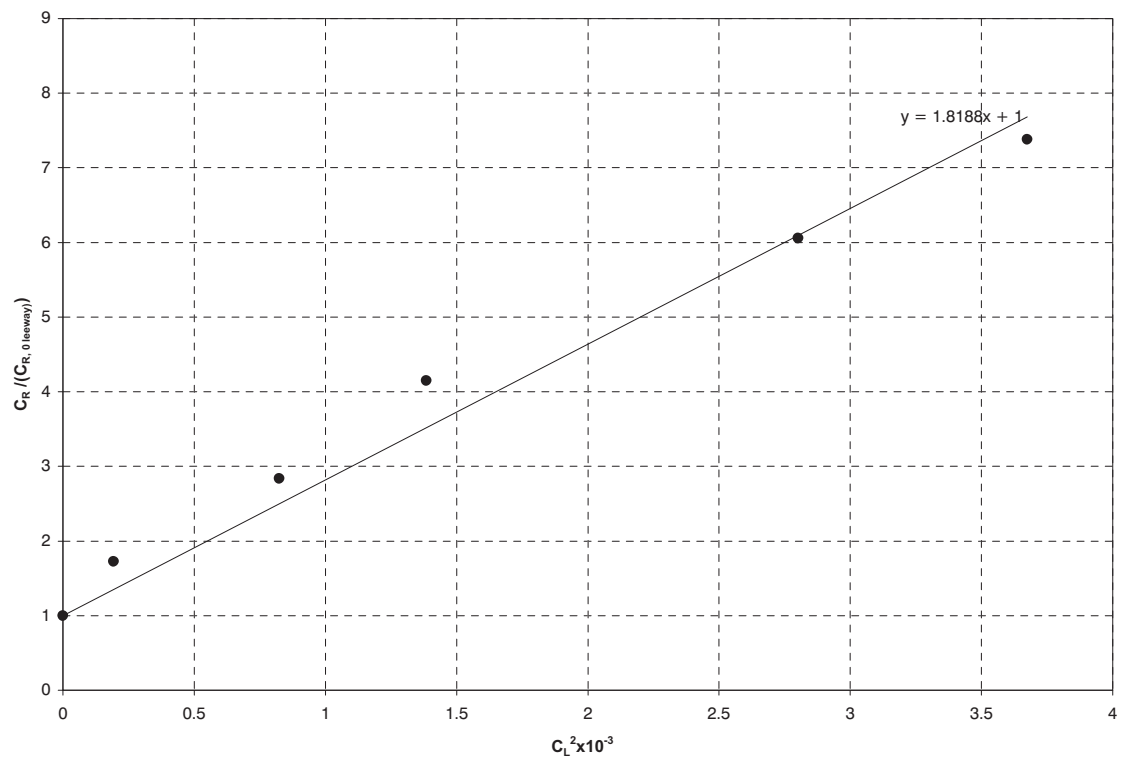


Figure 7,8 Variation in C_R/C_{R0} with square of C_L at $F_N = 0.17$

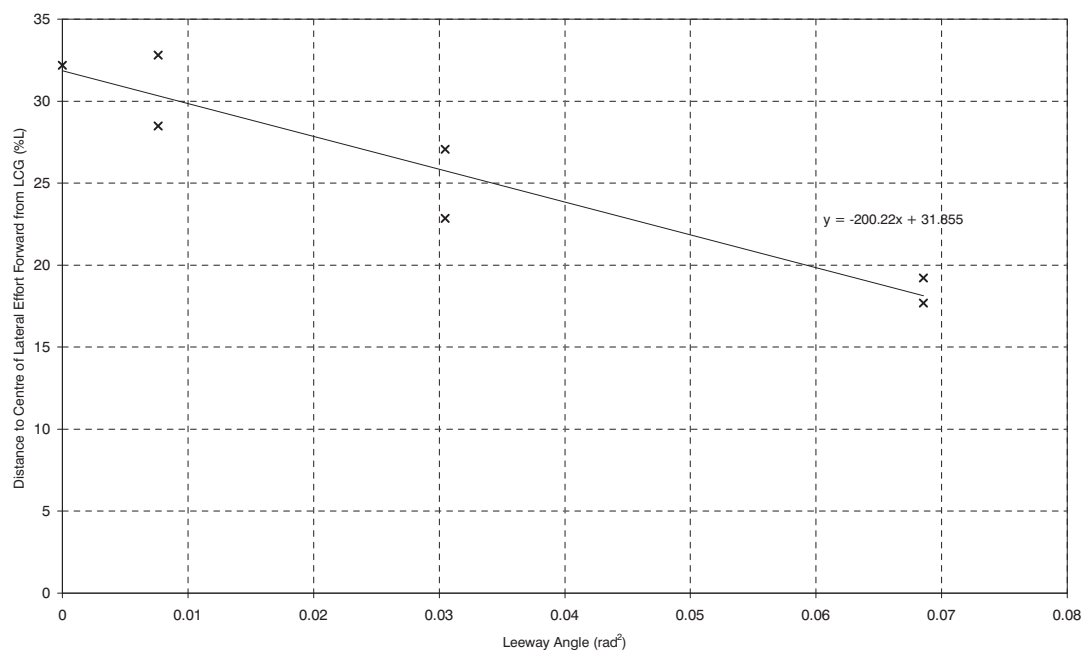


Figure 8, 9 Position of Centre of Lateral Resistance Compared to Leeway Angle Squared

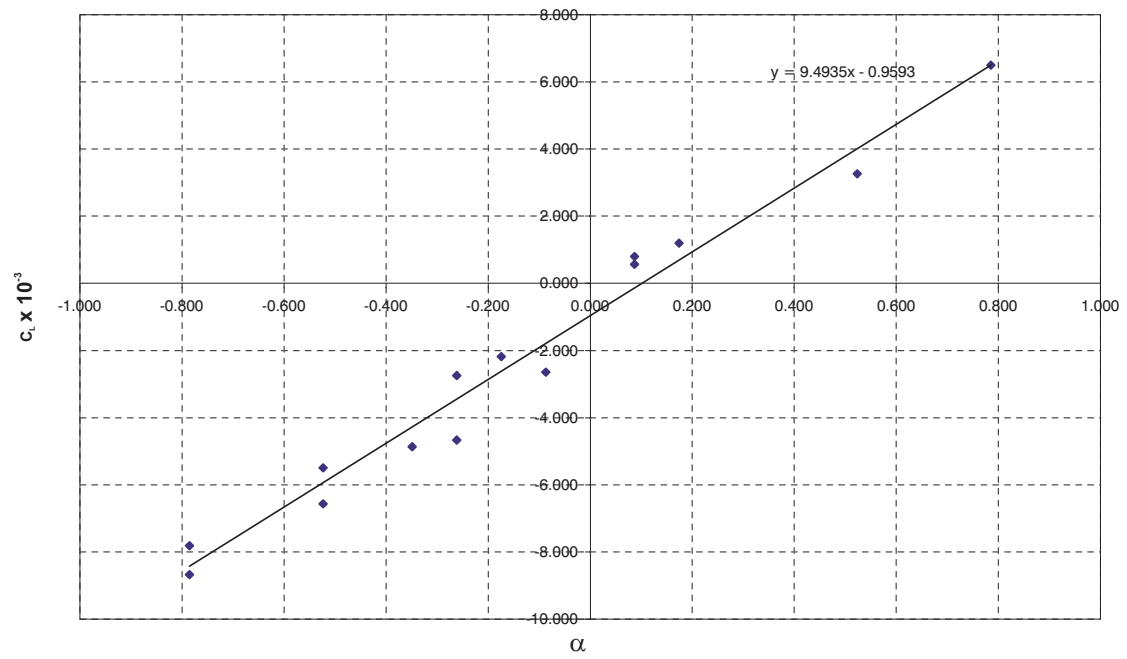


Figure 9, 12 Influence of rudder angle on sideforce

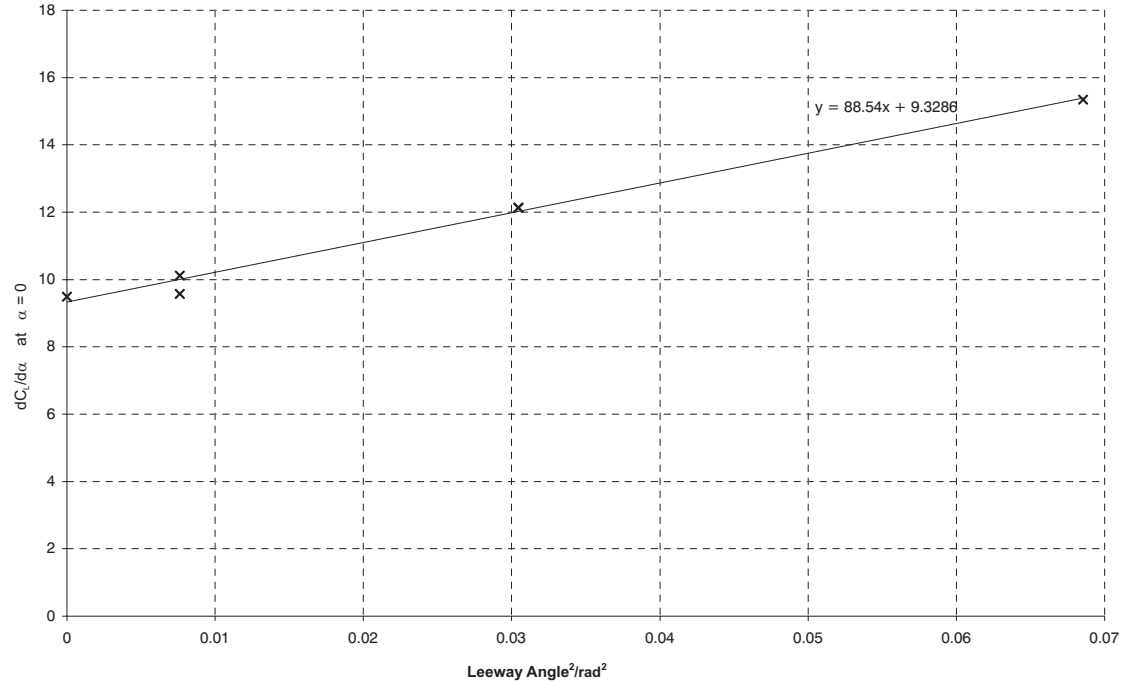
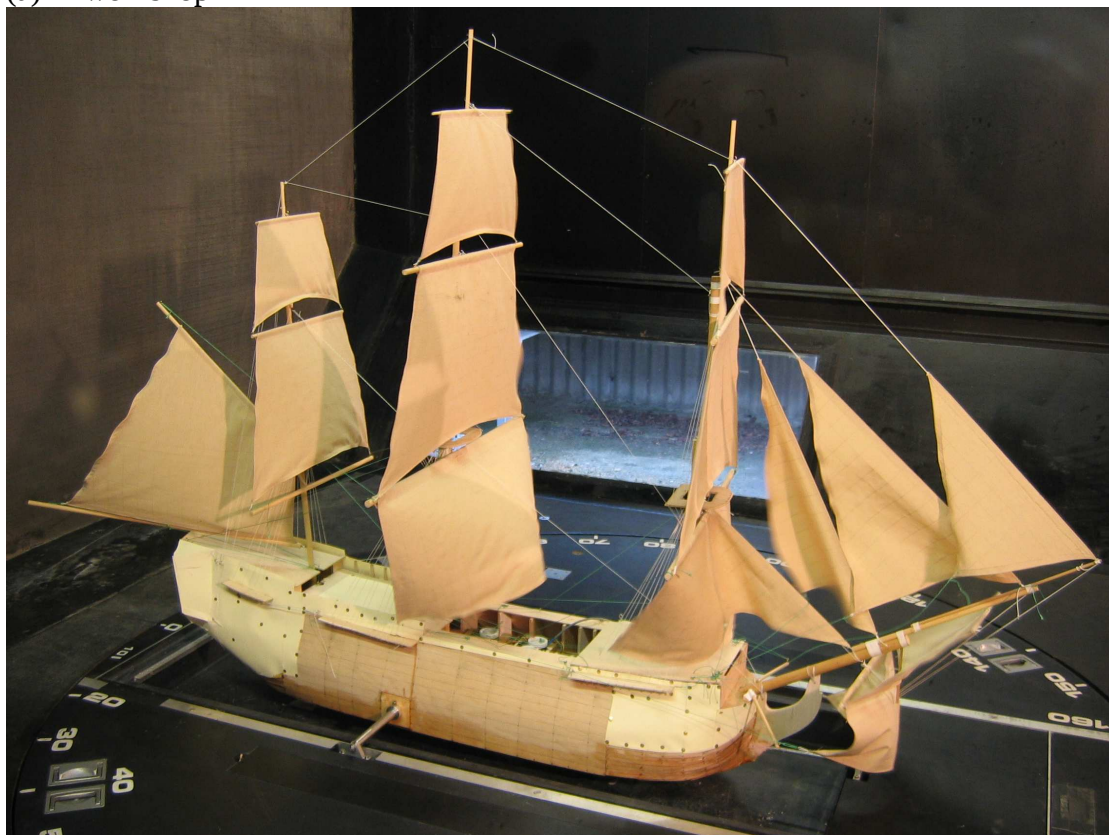


Figure 10 Variation in $\partial C_L / \partial \alpha$ Over a Range of Leeway Angles



(a) In workshop



(b) Downwind in wind tunnel

Figure 11,14 Photographs of model of HMS Victory

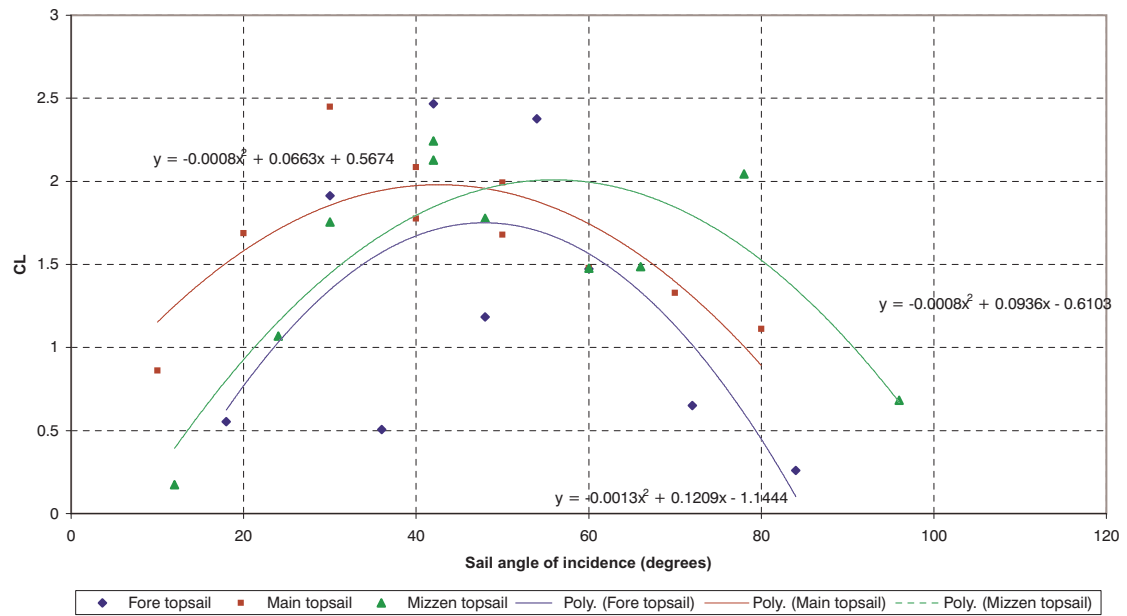


Figure 12, 15 Top sail C_L vs α

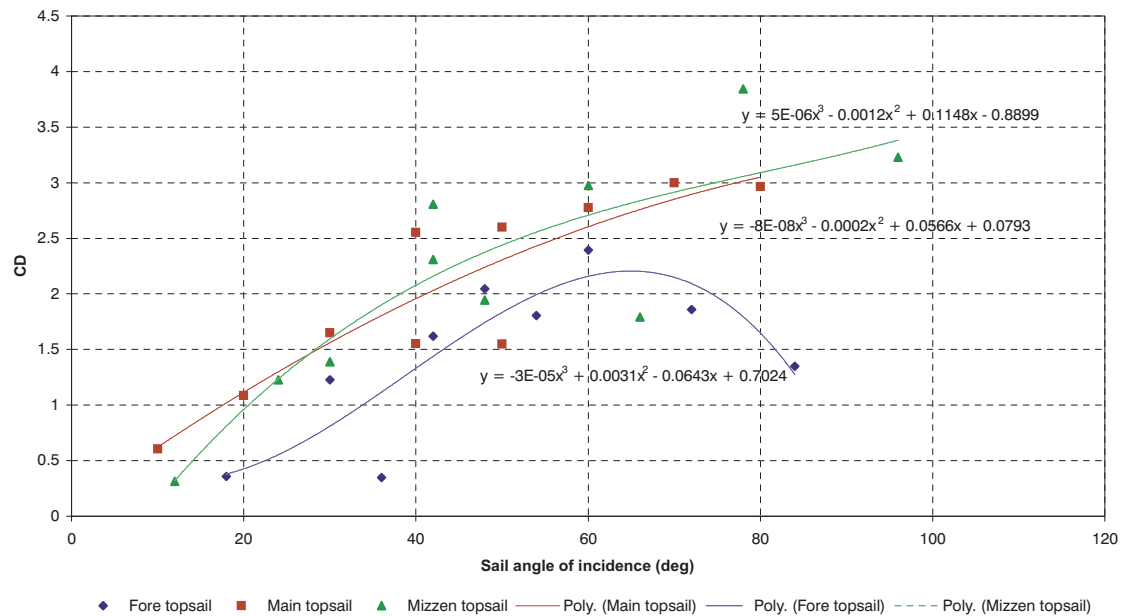


Figure 13, 16 Top sail C_D vs α

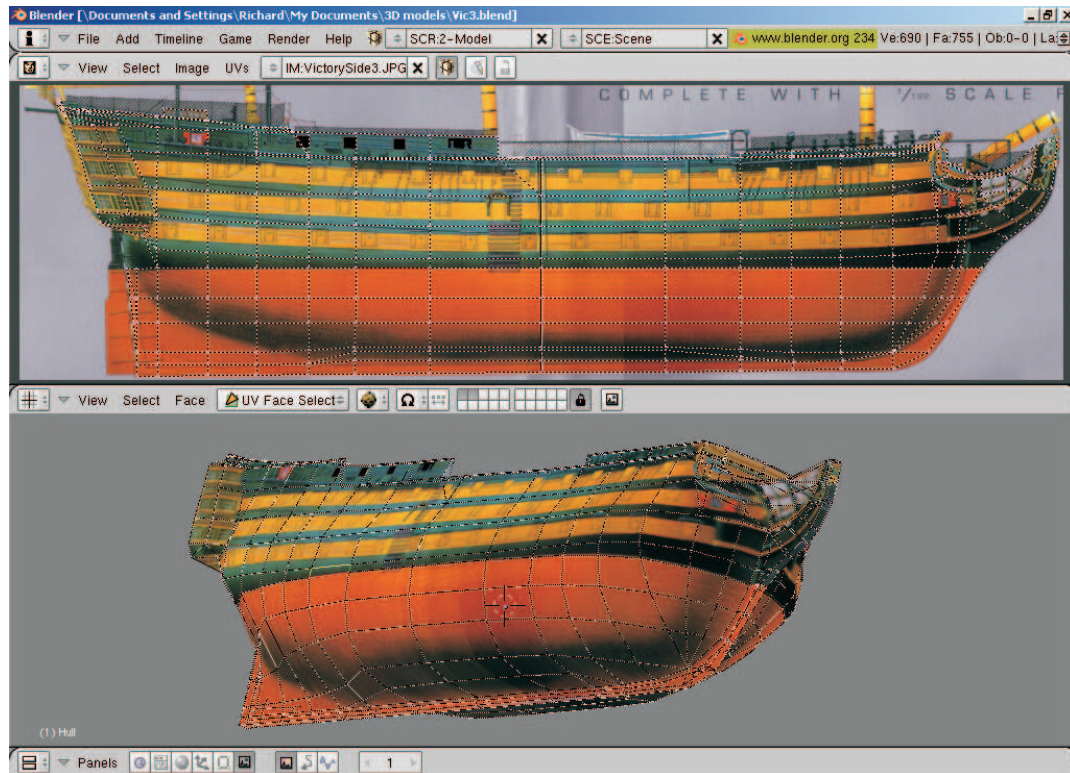


Figure 14, 17 Blender Texture Map of *HMS Victory*

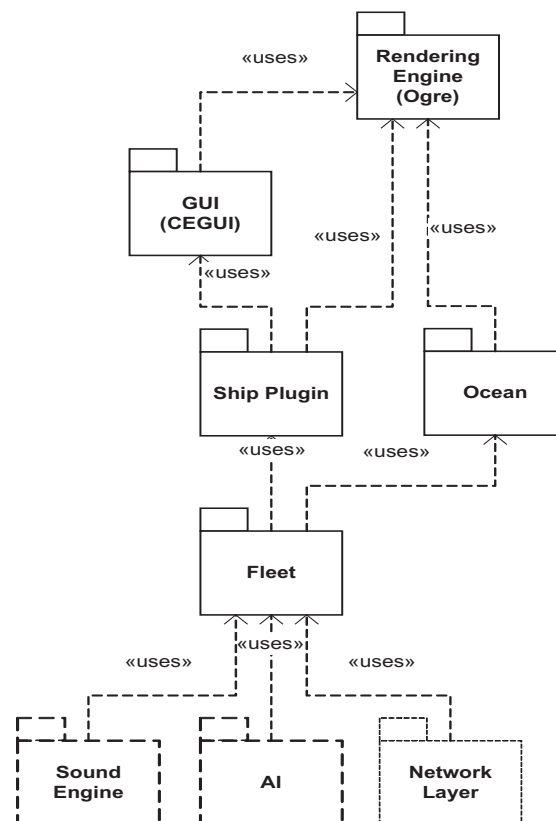


Figure 15 18 Overall software architecture

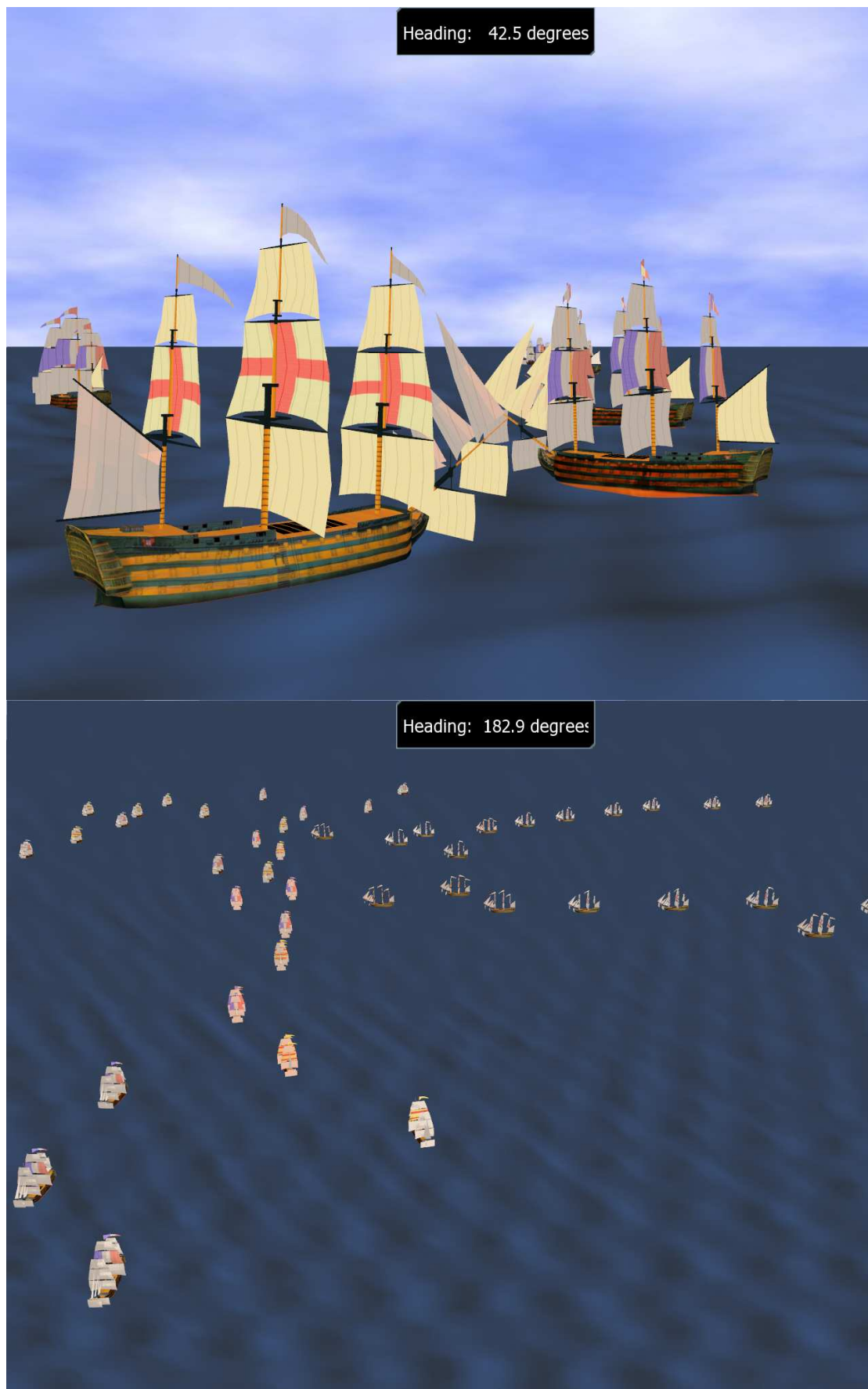


Figure 16 Views of Battle of Trafalgar

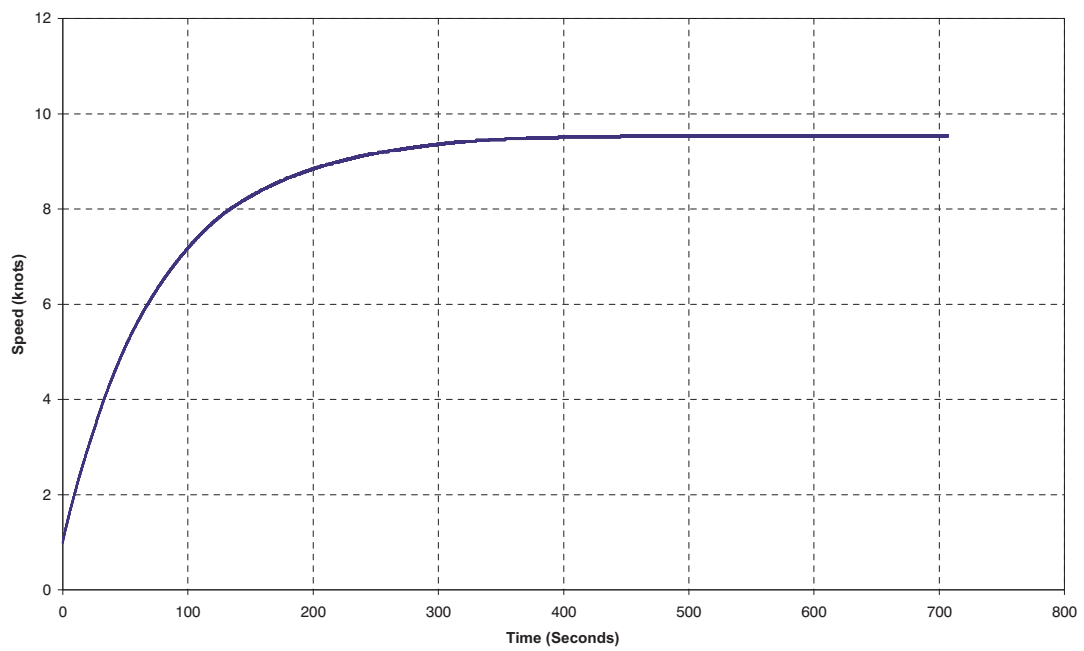


Figure 17 20 Time Trace of Forward Speed when Heading Downwind

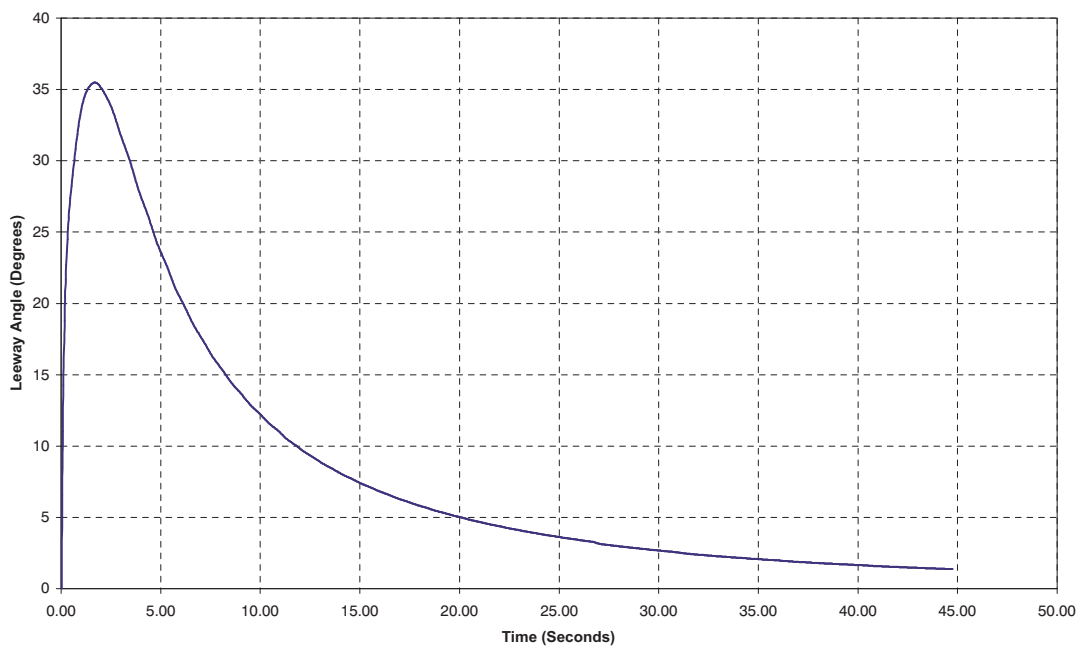
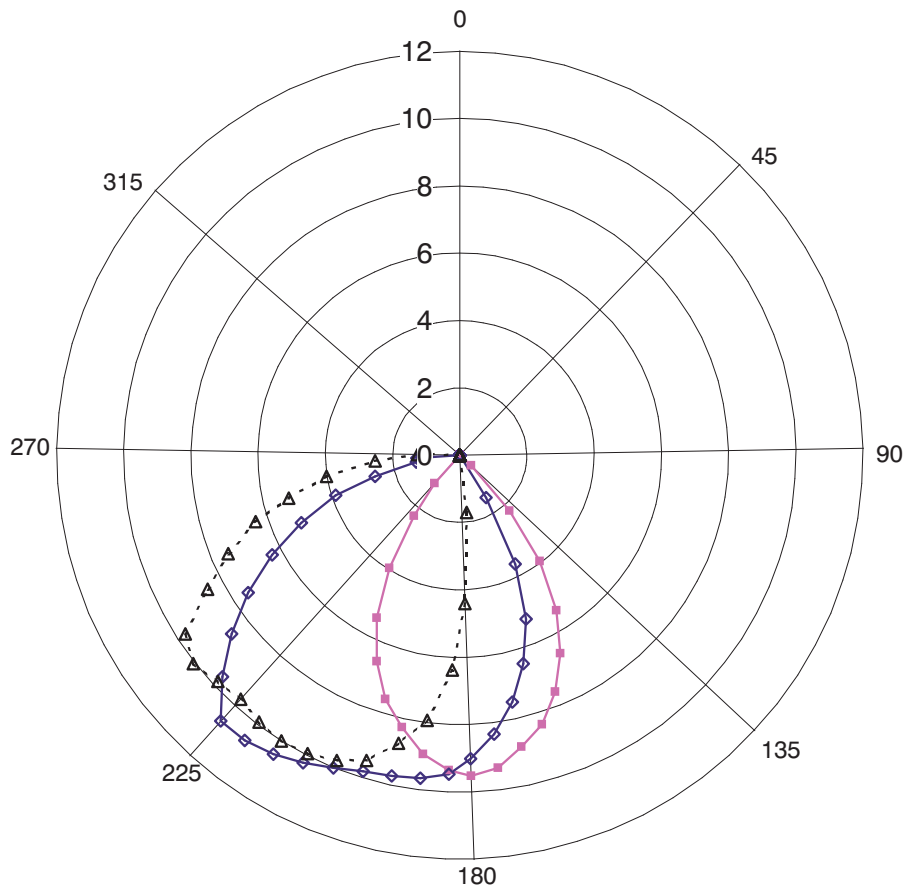


Figure 18 21 Time Trace of Leeway when Heading at 150° to the True Wind



—■— Sail Braced Square —◆— Sails Braced at 45 Degrees - - ▲ - - Sails Braced at 15 Degrees

Figure 19 22 Speed Polar Plot for *HMS Victory* with Yards Set at different angles