

## Program for bare hull PMM tests in deep water

### US Navy Combatant 5415

PMM tests shall be conducted in deep water (i.e.  $h/T > 10$ ) with a bare hull model i.e. only equipped with bilge keels. Model size should be  $L_{pp} = 4.0$  m, i.e. a scale of **1:35.48**. The model should be free in heave and pitch, and fixed in roll (3 DOF). Test speeds should be **Fn 0.138** (10.0 kn), **Fn 0.280** (20.3 kn), and **Fn 0.410** (29.8 kn). The scope of the tests should cover the parameters given in Table 1 in the stated combinations.

Table 1: Scope of bare hull PMM tests in deep water, 5415

	Fn	Drift Angle $\beta$ (deg)	Sway Vel. $v'$ (non-dim)	Yaw Vel. $r'$ (non-dim)
<b>STATIC TESTS</b>				
static drift	0.138	-20, -16, -12, -11, -10, -9, -6, -2, 0, 20, 16, 12, 11, 10*, 9, 6, 2	-	-
	0.280	-20, -16, -12, -11, -10, -9, -6, -2, 0, 20, 16, 12, 11, 10*, 9, 6, 2	-	-
	0.410	-12, -11, -10, -9, -6, -2, 0, 12, 11, 10*, 9, 6, 2	-	-
<b>DYNAMIC TESTS</b>				
pure sway	0.280	0	0.03, 0.07, 0.17*	0
pure yaw	0.138	0	0	0.05, 0.15, 0.30*, 0.45, 0.60, 0.75
	0.280	0	0	0.05, 0.15, 0.30*, 0.45, 0.60, 0.75
	0.410	0	0	0.05, 0.15, 0.30*, 0.45
yaw & drift	0.280	9, 10*, 11	0	0.30

“\*” Indicates the conditions which have been repeated (12 times) for determination of precision limits in the uncertainty assessment (FORCE, 2004).