

Acoustic survey equipment					
Equipment	Model	Deployment	Company	Sound Pressure Level re 1 μPA in water @ 1m from source	
Multibeam Echo sounder	EM2040 (200,300 & 400kHz)	Retractable hull mount	Kongsberg Maritime	210	
Sub-bottom Profiler	Knudsen 3250 CHIRP (3.5-12kHz)	Vessel mount	Knudsen	223	
Acoustic Doppler Current Profiler	Pinnacle (45Khz)	Retractable hull mount	RDI Teledyne	211	
Benthic sampling equipment					
Shipek Grab Sampler	N/A	Overboard	N/A	N/A	
Reineck box corer	N/A	Overboard	N/A	N/A	
Vibrocorer	Geo Resources 3000	Overboard	N/A	187.4	
Benthic monitoring equipment					
Unisense MiniChamber Lander System	N/A	Overboard	N/A	N/A	

Survey Vessel

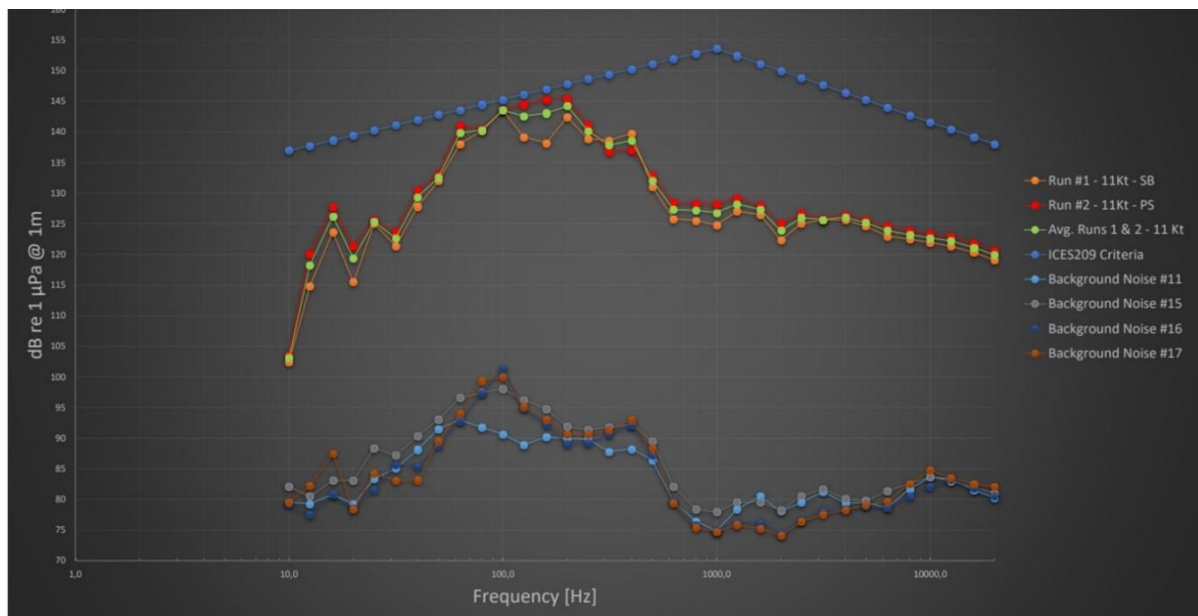
The Irish multi-purpose marine research vessel, the *RV Tom Crean*, will be used for the proposed surveys (figure 2). The RV Tom Crean was commissioned in 2022 and was designed as a silent research vessel to meet the stringent criteria of the ICES 209 noise standard for fisheries research. The vessel specifications are given in Table 2 and the noise profile at a range of speeds given in Figures 3 to 5.



Fig. 2. R.V. Tom Crean

Table 2. RV Tom Crean: Vessel specifications

Vessel size	
Vessel length	52.8m
Beam	14m
Draught	5.2m (maximum)
Tonnage (GRT)	1935 Tonnes
Main diesel generators	
Make	Mitsubishi
Type	S16R-(Z3)MPTAW
Number and power	2 x ~1437kW
Speed	1500 rpm
Mounting	Double resilient
Exhaust silencers	SCR system with 45dB(A) attenuation
Auxiliary diesel generators	
Make	Scania
Type	DI 13-91 M
Power	426 kWm
Speed	1500 rpm
Mounting	Resilient
Exhaust silencers	At least 25 dB(A)
Propulsion motor	
Make	Indar
Type	Squirrel cage – Induction motor IMU-710-X/8
Power	2000 kW at 179rpm
Rated frequency	12.6 Hz

**Fig. 3.** (Run ID no. 1 and 2). Main verification at 11Kt distance corrected and averaged.

Distance correction is based on derived correction factors from the transmission loss function.

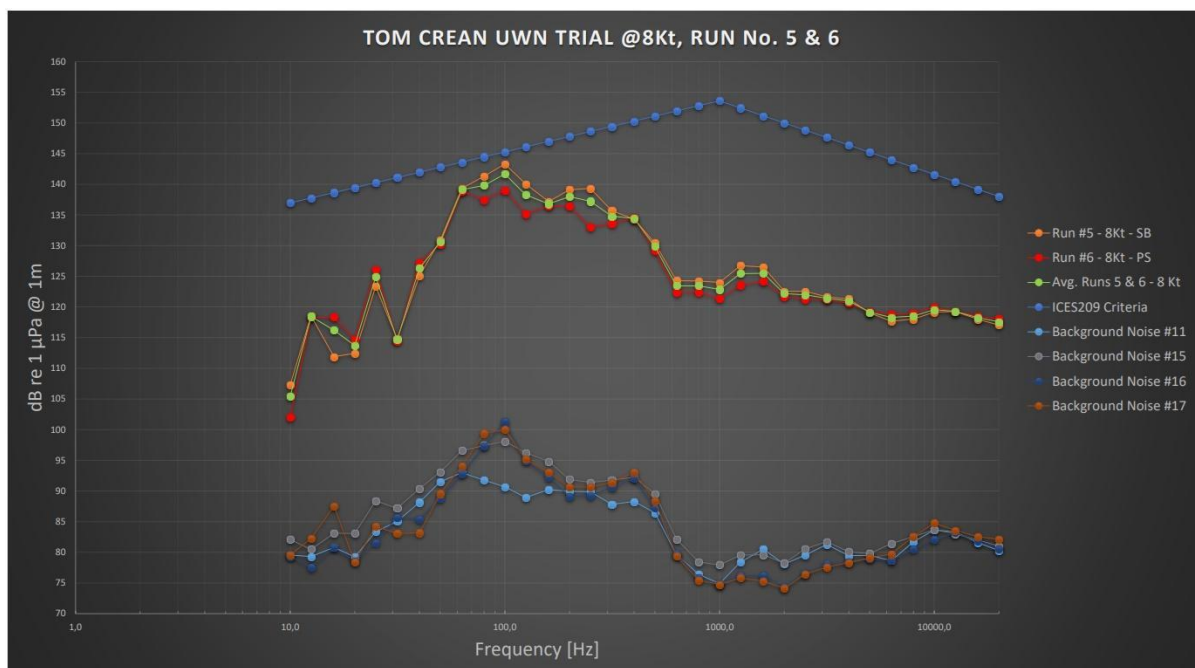


Fig. 4. Run Id no. 5 and 6 at 8Kt distance corrected and averaged.

Distance correction is based on derived correction factors from the transmission loss function.

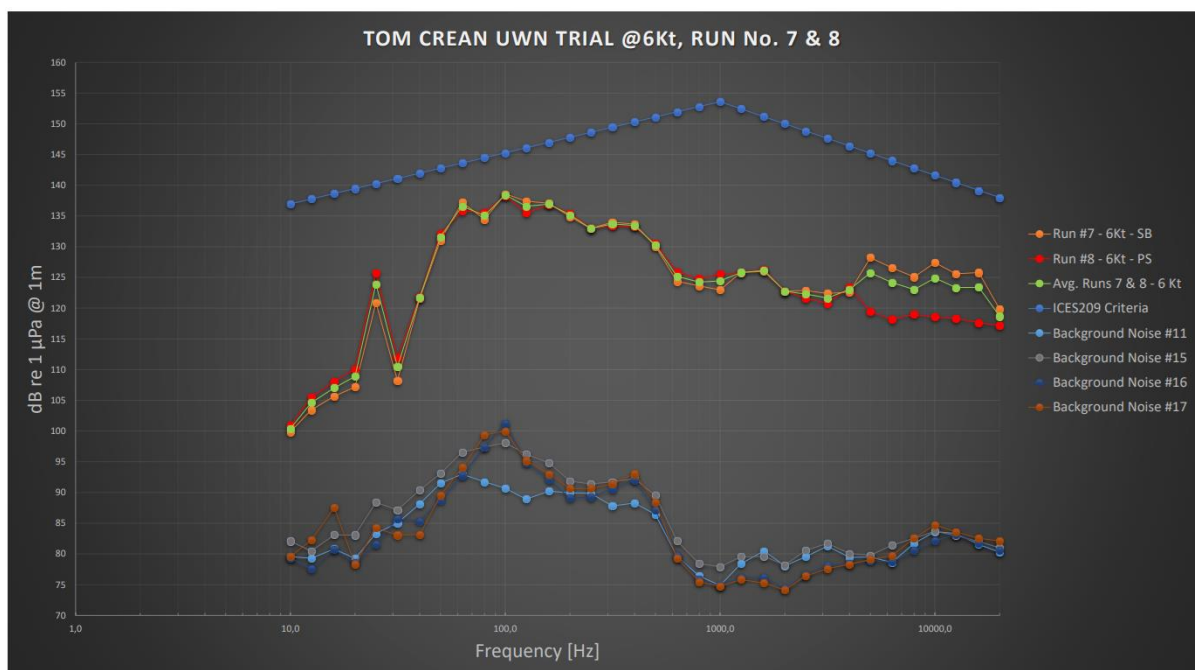


Fig. 5. Run Id No. 7 and 8 at 6Kt distance corrected and averaged.

Distance correction is based on derived correction factors from the transmission loss function.