



Diving and Hyperbaric Test Centre (DHTC)

The Diving and Hyperbaric Test Centre (DHTC) at Haslar operates a unique collection of specialist facilities and capabilities for the research, testing and evaluation of diving, submarine escape and other hyperbaric systems.

QinetiQ operates the centre in support of the Ministry of Defence and commercial organisations, providing assurance that diving equipment is safe and effective in use. These facilities are also used to support the development and testing of submarine escape and rescue systems, life support systems and decompression procedures. Originally established in Alverstoke, these facilities now reside in QinetiQ Haslar. The DHTC includes some of the UK's leading hyperbaric testing chambers and tanks. QinetiQ staff working in the Centre use the facilities to help avoid human casualties, protecting people in extreme environments and testing leading edge diving equipment for military and commercial use. The DHTC is set up for rapid forensic investigations of diving and life support equipment following serious incident.



DHTC key facilities include:

Life Support Systems Laboratory (LSSL) with 1000 m depth capability, breathing simulator and respiratory gas monitoring

Experimental Diving Tank (EDT) with acoustic measurement capability

The Hydrostatic and Extreme Temperature Tank (HETT) with temperature control for both fresh and salt water

Hyperbaric Trials Unit (HTU) with 1500 m depth capability and a control system for replicating pressurised escape profiles

High Flow Rig (HFR) 310 bar air storage facility, capable of flowing compressed air through units under test to atmosphere measuring flow characteristics

Life Support Systems Laboratory is a single compartment hyperbaric chamber with 1000 m depth capability, optional water fill, temperature control, 600 m rated breathing simulators, and respiratory gas monitoring:

- Wet or dry pressure chamber; rated to 100 bar (1000 m)
- Fresh water temperature between 2° and 40 °C
- Breathing simulator; gas humidification and heating to 32 °C (± 4 °C) DHTC key facilities include:
- Breathing performance and endurance evaluation to 60 bar (600 m)
- Full range of system and apparatus monitoring
- Carbon dioxide absorbent endurance and performance
- Simulated metabolic oxygen consumption (image on front page)

Experimental Diving Tank (EDT) is an open water tank that allows for temperature control and can be fitted with anechoic panels to allow acoustic measurements:

- Open top tank 3 m x 3 m x 3 m
- Fresh or salt water filled
- Temperature controlled in fresh water 2° to 40°C
- 2 m x 2 m x 2 m underwater anechoic chamber
- Diving helmet noise evaluation
- Thermal insulation of wetsuits, drysuits and immersion suits can be evaluated using the NEMO thermal manikin system

Environmental Cabinet with access port for instrumentation and services:

- Extreme temperature range between -40° and 180° C
- Relative humidity between 10% and 98%
- Associated breathing simulator; gas humidification and heating to 32 °C (± 4 °C)
- Functional performance following apparatus storage at extreme temperatures

Hydrostatic and Extreme Temperature Tank (HETT) is an open top water tank with extreme temperature control that can be fitted with rotating mannequin and breathing simulator:

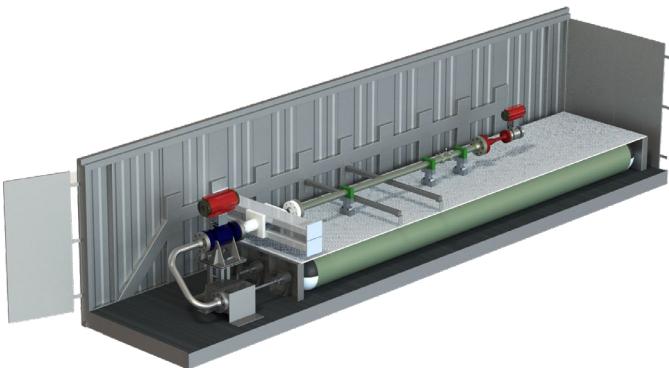
- Open tank of salt or fresh water at atmospheric pressure
- Salt water temperature range between -2° C and ambient
- Dedicated breathing simulator; gas humidification and heating to 32 °C (± 4 °C)
- Full range of system and apparatus monitoring
- Hydrostatic load in full range of diver orientations

Hyperbaric Trials Unit (HTU) is a versatile two compartment hyperbaric chamber that can be used for testing and evaluation of undersea and hyperbaric systems. The HTU configuration specifically enables the assessment of submarine escape systems and components and supports the development of submarine escape standards:

- 3 m diameter and 2 m diameter spherical compartments
- Rated pressure to 150 bar (1500 m)
- Main access and interlock doors 0.75 m diameter

The High Flow Rig (HFR) comprises of 3 x 1609 litre cylinders creating a large HP Air reservoir, interconnecting pipework and control valve allows a High Flow of compressed air to be delivered to components under test. Air is expelled into 60' of silencer ISO containers.

- 3 x 1609 litre cylinders (559mm dia x 8910mm lg)
- 310 bar Max Working Pressure (MWP)
- Mass Flow Measurement
- 2" Nominal Bore max outlet



High Flow Rig (HFR)



NEMO in the Experimental Diving Tank (EDT)



Hyperbaric Trials Unit (HTU)



High Flow Rig (HFR)

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