



Underwater bubble walls help keep sea life safe

By 2Lt Rob Bungay

The Navy has taken an innovative approach to reduce the environmental damage of underwater explosive training.

The "bubble system" as it is called, is designed to reduce underwater shock waves that harm marine animals.

The project is being carried out with the help of the Defence Research and Development Canada (DRDC) scientist Gerry Rude, and in consultation with the Department of Fisheries and Oceans. "A 25-foot diameter, stainless-steel ring

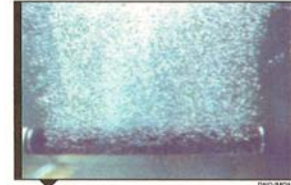
with 330 air diffusers attached is placed on the sea floor," said Lieutenant(N) Troy Beechinor, an underwater engineer with the Fleet Diving Unit (FDU) Atlantic. "Air is pumped into the ring through negatively buoyant hoses from a high-pressure air compressor on the surface. This air, as it escapes through the 300 plus diffusers, creates the bubble curtain."

In the past, FDU Pacific divers deployed a similar apparatus in Whirl Bay. The bubble screen had a long hose anchored to the bottom, with several holes along its length. "The use of the diffusers

promotes the generation of many more smaller bubbles, which are more effective at damping the damaging higher frequency components of the blast-wave," said Mr. Rude.

The bubble wall reduces sound and shock waves by changing the density of the waves as they pass through the bubble curtain. A series of trial underwater explosions were set up to measure changes outside of the bubble wall.

Underwater explosive ranges are only open a few times a year to test the skills of potential FDU diver hopefuls.



The Bubble curtain at work. Here, you can see the "bubble system" as it appears underwater.

Fonctionnement de l'écran de bulles. Voici le « système de bulles » tel qu'on peut le voir sous l'eau.