

Breathing device allows divers to plunge to new depths

By Richard Vieira

The motto of Fleet Diving Unit (Pacific) may be “Strength in Depth”, but a new breathing apparatus developed by Experimental Diving Unit will allow FDUs on both coasts to dive even deeper.

The new CUMA V2, the Canadian Underwater Minecountermeasures Apparatus – Version Two, enables divers to plunge to depths as far as 81 metres. The CUMA V2 is a vast improvement upon its predecessor, CUMA, which prevented divers from descending deeper than 46 metres.

"CUMA is already the system of choice for a number of navies," says Lieutenant-Commander Robert Gwalchmai, officer commanding, Fleet Diving Unit, adding the original device is considered one of the best mine counter measures breathing apparatuses in the world. "But once they see this new version, we expect they will upgrade to it."

The CUMA V2 lets divers go deeper because its air supply consists of a blend of oxygen and helium, whereas the first version of the apparatus uses an oxygen and nitrogen mixture. Nitrogen becomes a narcotic after a certain period of exposure, rendering a diver intoxicated and unable to think clearly or perform competently, thereby limiting the time and depth a diver can endure. Helium exposure, however, has no such disabling effects. As a result, divers can stay underwater longer and deeper to concentrate on the task at hand—the neutralization of ordnance.

"(The helium blend) keeps you totally calm and collected," says LCdr Gwalchmai. "And when you're doing mine counter measures work, you have to be totally focussed."

The CUMA V2, which has been under development for the last four years, also gives mine counter divers more freedom and control to manoeuvre. The system is worn like a vest, with its controls located within the "golden triangle" of the upper body, the prime area of the chest underneath the chin and between the arms that is easily accessible by both hands. The original CUMA consists of a piece of headgear whose controls all extend from behind the head, making it difficult to reach.

"With life support equipment like this, it's critical to keep your hands as free as possible," says LCdr Gwalchmai.

Extensive testing of the device has just completed and full production has already begun.

Current CUMA units will be converted to CUMA V2 by adding components to its existing structure, effectively replacing the original version within the Canadian Navy. The revamped units will be given to both FDUs this summer.

Because the updated system is similar to the original, LCdr Gwalchmai says it should take only a week of training for an individual diver to make a comfortable transition.

The device should be fully integrated into FDU exercises and operations by November of this year.