

# Australia Develops Better Ceramic Body Armor

By NIGEL PITTAWAY

**MELBOURNE, Australia** — Australian scientists have developed a lightweight, armor-grade ceramic strike face that can be shaped to provide troops with greater ballistic protection and maneuverability.

Lighter than ones in common use today, the strike faces were designed for use in body armor, but applications for helicopters and vehicles are also under development.

They have been developed through a partnership of Australian Defence Apparel (ADA), the Victorian Centre for Advanced Materials and Manufacturing (VCAMM), the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Defence Materials Technology Centre (DMTC).

DMTC is a not-for-profit company established by the Australian government's Defence Future Capability Technology Centre program and funded by the Victoria state government, industry and research bodies. The joint venture brings together research organizations, universities and the defense industry to develop new materials and manufacturing technologies.

The Australian-designed strike faces will improve protection, can be shaped to the contours of the upper body, and can be adapted and acquired more quickly.

DMTC said this new technology will enable Australia-based design, prototyping, testing and building of new designs to the Australian Defence Forces' exact specifications in half the time of strike faces purchased from U.S. supplies.

The armor is created using a new and cost-effective manufacturing technique initially developed by ADA and CSIRO under Project Land 149, a Defence-funded Capability and Technology Demonstrator project.

This technique was further developed into a commercially viable product through a DMTC-led pilot plant set up at CSIRO's facility in Melbourne. That facility is now intended to be scaled up. ADA officials want to set it up in Bendigo in Victoria.

DMTC says full-rate production will begin alongside anticipated growth in Australia and abroad in military, police and paramilitary markets.

ADA engineering manager Ian Crouch said the pilot facility was the culmination of seven years'

effort, and the Bendigo factory will be unique in the Southern Hemisphere and perhaps the world.

DMTC Chief Executive Officer Mark Hodge said U.S. research has estimated up to 80 percent of casualties may have been avoided if curved shoulder and extremity protection were more widely available. A lighter body armor system offers increased mobility while offering protection at least as good, he said.

"The innovation represented at [this] facility provides Australia with the capability to shape, mold and manufacture lightweight advanced ceramic armor strike faces, with our new manufacturing process," said Nigel Stone, the research team leader for CSIRO's process and engineering service.

At the unveiling, Warren Snowden, the minister for defense science and personnel, said the Australian government intended to support this kind of partnership with industry.

"We have something here that other countries envy," he said. "This advanced ceramic strike face is an indication of the seriousness of our intent to protect our service men and women." □

Email: npittaway@defensenews.com.