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Replacement of Halon with 3M™ Novec™ 1230 in a Crew Compartment Protection System

Objective

To evaluate the effectiveness of Novec™ 1230 as a “drop-in” replacement for halon in an existing crew compartment fire protection system.

Background

The Canadian Department of National Defence is seeking a more environmentally safe replacement for halon to use with its crew compartment fire protection systems in armoured vehicles. The most cost-effective solution would use an agent that could be dropped into an existing system. Novec™ 1230 has been considered as such a replacement, but because its boiling point is much higher than that of other halocarbons, conventional nozzles did not fully vaporize it, reducing its effectiveness. Further work is therefore needed to choose or develop a new nozzle for delivering Novec™ 1230 and to test the effectiveness of this solution in a crew compartment fire.

Statement of Work

- Obtain commercially available nozzles for Novec™ 1230, or develop a prototype nozzle if these are not available
- Conduct experiments that simulate an explosion in a Coyote light armoured vehicle crew compartment caused by fuel spray, in order to evaluate the effectiveness of the nozzles using Novec™ 1230.

Expected Outcomes

A report summarizing these experimental results.

Partners

Department of National Defence, Canada

Start/Expected Completion Dates

This project began in March 2005, and will be completed in March 2006.

Project Manager

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For more information, see http://irc.nrc-cnrc.gc.ca/fr/pfdss/crew_e.html

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