ISRP 2002 abstract

Presenter/author	Title	Abstract
Gray, B. Roberts, W. **Scanlan**, S. *Defence Science Technology Organisation (DSTO), Melbourne, Australia*	**Measurement of Operational Fit Factors for Soldiers Wearing the S10 Respirator**	Investigations in the industrial setting have established that mask Fit Factors (FF) achieved in the workplace often bear little resemblance to those achieved in a laboratory. Consequently, the potential impact of operational activities on the protection afforded by the S10 respirator was investigated. Twenty-four Australian soldiers (23 male, 1 female; 17 non-smokers, 7 smokers) participated in a study to determine mask fit under a range of operational conditions. The study consisted of the following segments, Initial Mask FF (6 minutes), Operational FF (30 minutes) and Final Mask FF (6 minutes). The total length of time subjects wore the S10 respirator was 3 hours. Mask FF for non-smokers remained unchanged across the trial, indicating that wearing a respirator for 3 hours and completing moderate exercise (30 mins) had no adverse affect. Operational activities such as Jogging, Taking Cover, Stair Climb, Run & Dodge, Lift & Carry, and Walk & Command recorded significantly greater mask FF than the minimum target of 2000. Exercises requiring speech were found to have significantly lower mask FF. Overall, the Australian in-service respirator (S10) provided excellent levels of protection in an operational environment.