

ISRP 2002 abstract

Presenter/author	Title	Abstract
<p>Richardson, Grant S.</p> <p><i>DSTL, Porton Down, Salisbury, Wilts., UK</i></p>	<p>A Dual-Seal Respirator Concept for Increased Respiratory Protection</p>	<p>There is a constant desire to improve the protection offered by military respirators against modern chemical and biological warfare agents. To achieve this, all sources of leakage are required to be addressed, with face seal leakage offering the most demanding challenge. This reflects the need to create an adequate face seal for a user population exhibiting diverse anthropometric characteristics. Economic restraints demand that this is achieved through employing a single seal design and in the minimum number of sizes. Having established that conventional means of overcoming face seal leakage through supplying an excess volume of air to the face piece is unsuited for widespread military use, an alternative means of generating a positive pressure gradient across the face seal is described. The proposed system benefits from de-coupling the air used to generate a positive pressure with the respirable airflow, so that the airflow requirement is reduced by orders of magnitude. Results are published for a dual-cavity prototype system together with suggestions for an alternative arrangement.</p>