

ISRP 2002 abstract

Presenter/author	Title	Abstract
<p>Rowbotham, Alex</p> <p><i>Defence Science and Technology Laboratory, Portin Down, Salisbury, Wilts., UK</i></p>	<p>Designing the Next Generation Military Respirator</p>	<p>A program is described which produced prototypes of two novel military respirator designs in order to examine what improvement in protection levels was possible. For each of the respirators' sub systems several concepts were developed and tested to identify those offering the greatest protection increase. Trials were conducted with military forces using respirator space models to identify the design with best equipment compatibility and field of vision. Concept schematics and specifications were identified to facilitate the design and development process of the test-worthy prototype respirators. The favoured sub-systems were integrated within the most equipment-compatible face piece, taking care to produce a holistic system with minimum trade off. The two variants of respirators were prototyped to a high degree of accuracy in order to achieve gas tight units. Protection against a particulate challenge was assessed for the prototypes when fitted to volunteers within a salt vapour environment. Testing proved that when a good fit was achieved the prototype respirator designs provided protection that was significantly greater than that offered by existing military respirators.</p>