

# ISRP 1999 abstract

Presenter/author	Title	Abstract
<b>Nelson, T. J.</b> <b>Wheeler, T. J.</b> <b>Mustard, T. S.</b>  <i>NIHS Inc.</i> <i>2401 East Mall</i> <i>Ardentown, DE</i> <i>19180</i> <i>USA</i>	<b>Workplace Performance of a Supplied Air Hood During Aircraft Priming</b>	<p>Supplied air hoods and helmets have various assigned protection factors (APFs). NIOSH assigns a value of 25, ANSI Z88.2 assigns 1000. OSHA assigns values from &gt;10 to 1000 depending on the substance.</p> <p>In February 1994, Air Force Occupational Safety and Health (AFOSH) Standard 48-137, Respiratory Protection Program, lowered the assigned protection factor for supplied air respirators equipped with a hood/helmet from 1000 to 25, to adhere to the more restrictive value assigned by NIOSH. As a result, personnel involved in aircraft painting and sanding operations at Tinker AFB were required to stop wearing the air-supplied loose-fitting hoods and start wearing full-face supplied air respirators operated in the pressure demand mode. This change caused an increase in production time. Employee complaints related to a limited field of vision, decreased communication capability, and heat stress, fatigue, and ergonomic issues also increased. Additional costs have been incurred for the purchase of the new respirators and for respirator fit tests.</p> <p>To determine the actual performance of a supplied air hood during aircraft priming operations, samples were collected inside and outside the hood while it was being worn. The samples were analyzed for strontium, as a surrogate for strontium chromate contained in the primer.</p> <p>No detectable concentrations of strontium were found inside the hoods during these operations. Therefore, a direct calculation of respirator performance cannot be made. A Monte Carlo analysis was designed to estimate the level of respiratory protection that would produce the results found. This analysis estimates the mean workplace protection factor to be greater than 10,000, with a 5th percentile value of at least 1600. These values are consistent with the ANSI APF of 1000.</p>