

58 Helicopter pilot suits for offshore application: a survey of thermal comfort and ergonomic design

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The objective of this study was to determine the existing problems associated with helicopter pilot survival suits currently in use. A survey of helicopter pilots from both Canadian commercial and military disciplines was conducted. Pilots commented on eight different types of survival suits. Reduced thermal comfort as well as lack of ventilation were the two most common criticisms of the pilot suits. The "greenhouse" effect, common to helicopter cockpits, results in hot working ambients both in summer and winter. The air cooling mechanisms employed in summer may cause a "chilling" effect following an on-ground stand-by where cockpit temperatures may reach **4BC**. Thermal stress may also be induced with high cockpit temperatures caused by the sun's radiation in winter and summer. Suit design was another area considered. 72% and 86% of military and commercial pilots respectively felt their freedom of movement was hindered by their survival suits. Certain designs were considered more hazardous than others with regards to clips and hooks catching switches on the control panel. Difficulty in donning suits appeared to be a universal problem irrespective of type of suit used. Lack of comfort and movement in addition to thermal stress may lead to reduced time to fatigue and, thus, occurrence of errors and accidents. The results of this survey reflect the inadequacies of the helicopter pilot survival suits presently in use. It is suggested that evaluation of these suits be made on the basis of their ventilation capabilities, ergonomic design and thermal properties in a variety of ambient environments.