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Title: Emergency Buoyancy Testing: Study 1 – Determination of Underwater Buoyancy
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At one time, offshore personnel were required to have available to them both an immersion suit used for helicopter transport to and from the platform and a marine abandonment suit used for emergency evacuation from the platform. In both cases, the purpose of the suit was to reduce the life threatening effects of sudden immersion in cold water. As a result of the merger of the standards for immersion suits and marine abandonment suits (CGSB-65-17-99 and CGSB-65.16-2005), respectively, the maximum escape buoyancy allotted increased to 175 N. However, the new buoyancy levels in the single standard have anecdotally been identified as potentially being too buoyant, one of the major concerns was the possible negative effect on emergency egress from a ditched helicopter. Neither past nor current suit standard(s) included testing or measures relating buoyancy to emergency egress. The anecdotal reports first appeared following the crash of a military (CH149) helicopter off the coast of Nova Scotia in 2006 and again during the ongoing investigation following the crash of the Cougar helicopter off of Newfoundland in 2009. This study was a part of a larger study developed to examine the complex issue of buoyancy and underwater egress from a helicopter. The specific purposes of this study were to directly measure the buoyancy of a typical sample of offshore workers under varying conditions of immersion suit wear and to develop a prediction equation to predict the human-suit buoyancy based on anthropometric measures.