World Academy of Science, Engineering and Technology
International Journal of Aerospace and Mechanical Engineering
Vol:9, No:06, 2015

Feasibility of Deployable Encasing for a CVDR (Cockpit Voice and Data Recorder) in Commercial Aircraft

Authors : Vishnu Nair, Rohan Kapoor

Abstract : Recent commercial aircraft crashes demand a paradigm shift in how the CVDRs are located and recovered, particularly if the aircraft crashes in the sea. CVDR (Cockpit Voice and Data Recorder) is most vital component out of the entire wreckage that can be obtained in order to investigate the sequence of events leading to the crash. It has been a taxing and exorbitantly expensive process locating and retrieving the same in the massive water bodies as it was seen in the air crashes in the recent past, taking the unfortunate Malaysia airlines MH-370 crash into account. The study aims to provide an aid to the persisting problem by improving the buoyant as-well-as the aerodynamic properties of the proposed CVDR encasing. Alongside this the placement of the deployable CVDR on the surface of the aircraft and floatability in case of water submersion are key factors which are taken into consideration for a better resolution to the problem. All of which results into the Deployable-CVDR emerging to the surface of the water-body. Also the whole system is designed such that it can be seamlessly integrated with the current crop of commercial aircraft. The work is supported by carrying out a computational study with the help Ansys-Fluent combination.

Keywords : encasing, buoyancy, deployable CVDR, floatability, water submersion
Conference Title : ICMEAM 2015 : International Conference on Mechanical Engineering and Applied Mechanics
Conference Location : Toronto, Canada
Conference Dates : June 15-16, 2015