

Design and Development of Flood Rescue Vehicle



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Abstract:
In India, there are few vehicles available for rescue operation in case of fire accidents or road accidents. But, in flood accidents, there are no proper rescue teams as well as no equipped vehicles to carry out flood rescue. The vehicles currently used are huge boats which cannot be used in small water bodies. This has proved to be a huge set back when water rescue needs to be carried out at a large scale. Lots of victims are succumbed to the injuries without getting proper medical attention after the flood accidents. So a flood rescue vehicle with minimum medical facilities and maximum capacity of rescuing victims is on a high demand. This project is aimed at developing shallow water flood rescue vehicle with medical facilities.

Literature studies and GEMBA studies were carried out on the existing flood rescue vehicles and also to understand the requirements needed for flood rescue. Information regarding rescue operations were obtained by consulting the rescue teams. The Quality Function Deployment (QFD) and Product Design Specifications (PDS) were developed on the basis of the user study. The QFD and PDS helped in arriving at different concepts. The final concept selection was done using weighted ranking method. 3D modelling of the particular concept was done using alias. The digital rendering was done using Keyshot. A 1:14 scaled mock-up model was made using jungle wood and the sun board for the validation of the design.

The new design was made in accordance to the feedbacks from the user. Thus it would fill the void which exists as a hindrance to fast and safe rescue in the time of flood accidents.



Digital modeling



Digital rendering



Mock-up model of flood rescue vehicle