

Development of Quick First Response Fire Rescue Vehicle



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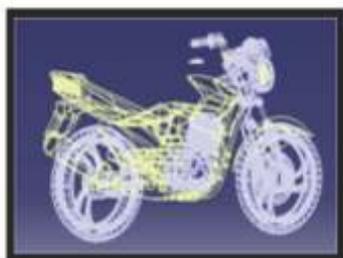
Keywords: Fire Vehicle, Quick Fire Rescue, Fire Apparatus, First Response

Abstract:

In today's world emergency vehicles have to respond to variety of dangerous situations. For an effective rescue the fire rescue vehicles should be well equipped with different facilities to meet varied requirements under different situations. The present day fire vehicles in India are limited for fire rescue only. As the number of vehicles increasing, the road accidents are increasing day by day. The traffic congestion makes it difficult for bigger fire engines to reach small lanes areas fast. Hence, there is a need for a fire service vehicle for quick response to reach the point in minimum time for the rising Indian traffic and a design based on two wheelers will be ideal for such situations. The project work is an attempt to reach these requirements.

Through design research, product survey was carried out to find the limitation and working scenarios of firefighting operations with existing vehicles. A user study was conducted and customer voice was converted to technical voice by which the Quality Function Deployment (QFD) and Product Design Specifications (PDS) were prepared. After analysing the fire fighter survey requirements, different concepts were generated as per the requirements. By considering the various equipments used to fight fire and response fast, the concepts have been developed.

Three concepts designs were finalized and a final concept was selected by the weighted ranking method. A detail design was made for the final selected concept in the digital modeling and rendered. The finalized concept was further validated by the user feedback for fire rescue vehicle with a mock-up model. A better fire rescue vehicle was thus designed.



Wire frame model



Model developed and completed bike model



Equipments in bike



Rendered model



Mock-up model