Interior Design of Heavy Transport Vehicle for Indian Scenario

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Keywords: Truck Driver, Heavy Trucks, Interior Design, Ergonomics

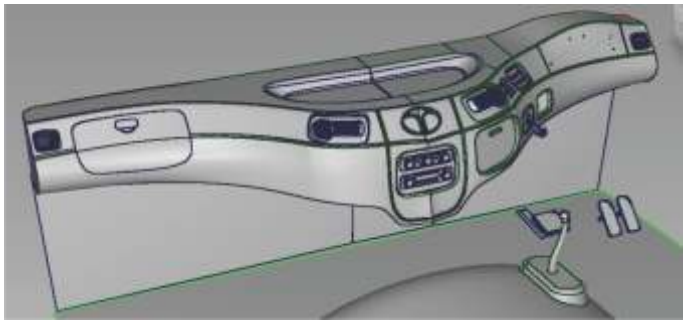
Abstract:

In India commercial transportation accounts nearly 65% when compared to the other means of transportation. The project was to design of a truck cabin for improved ergonomics and comfort for driver in Indian driving condition. Truck drivers usually spend most of his time travelling for either short or long trips by staying away from home. In this context the study was focused on ergonomics of the driver within the truck cabin. Considering various user needs of the truck interior have been conceptually designed to suite the Indian customers.

To design the interior of heavy transport vehicle for Indian scenario, literature reviews were carried out based on the data available through various journals, books and also market survey. Customer surveys were done through relevant questionnaires. Considering the needs of user group, Quality Function Deployment and Product Design Specification were drawn. Design was focused mainly on the comfort, ergonomics and packaging of the truck cabin. Various concept sketches were developed and one concept was finalized by using Pugh matrix method. The finalized concept was modelled in Alias design tool. To get the realistic look to the product, model was rendered by using Keyshot tool. To validate the model ergonomic analysis was carried out for the design and reachability of driver found to be within the reach. To validate the concept 1:10 scaled mock-up model was built.

The developed concept of the truck interior has good aesthetic features like projected dash board, ergonomic interiors with easy reach, easy ingress and egress, nap berths, enough glove box space and with all the safety feature. All these features are validated in terms of ergonomics using Indian anthropometric standard dimensions. Finally the design was analysed by reachability analysis method using "Human Activity Analysis" module of CATIA V5 software done to confirm the positions and dimensions of all the features in the truck cabin.

Final concept interior



Alias modelling of final concept

Rendered model of final concept