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Implementing Water Bed On The Driver'sSeat

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ABSTRACT

There are various products in the market that keeps driver comfortable for a short period of time, products like: - 1. Neck Rest, 2. Hand Rest, 3. Back Rest. But this product does not give driver a comfortable drive. So, we are applying concept of water bed on the seat to increase the driver's comfort while traveling for long distance/journey. As our product reduces the body pains faced by the drivers. Our main aim is to increase the comfort of the driver.

So, we had trying something new in these field to give better comfort. Our productcan give comfort to full body not just particularly one part of body. Our product is more efficient than the seats used in cars now-a-days in terms of comfort and cost.

Keywords: ***Water bed seat, Car seat***

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I. INTRODUCTION

The manufactures try to increases the comfort to all the passengers in the vehicle but still the material used now-a-days does not give proper comfort to drivers. As generally manufacturers use materials like leather, nylon, polyester, etc. but this all material does not give much comfort. So, to increase the comfort level of the drivers the concept of water bed is been implemented on the drivers' seat.

A waterbed, water mattress, or flotation mattress is a bed or mattress filled with water. Waterbeds intended for medical therapies appear in various reports through the 19th century. Waterbeds primarily consist of two types, hard-sided beds and soft-sided beds. A hard-sided waterbed consists of a water-containing mattress inside a rectangular frame of wood resting on a plywood deck that sits on a platform.

A soft-sided waterbed consists of a water-containing mattress inside of a rectangular frame of study foam, zippered inside a fabric casing, which sits on a platform. It lookslike a conventional bed and is designed to fit existing bedroom furniture. The platformusually looks like a conventional foundation or box spring, and sits atop a reinforced metal frame [1].

II. Methodology

Firstly, we need to take the normal car seat for implementing the water bed on the seat. Then a PVC water bed layer is to be taken. We need to apply the water bed layer on the seat properly so that all the parts of the seats are covered. All parts of the seats should be covered properly for getting proper comfort level. Proper fitting of the layer of the water bed should be done for avoiding any kind of lack of efficiency. Then calculations should be done on the water bed seats for measuring the pressures and temperature of the seat. Observation should be done and according to that all calculations should be done.

Fig. 1: - Car Seat

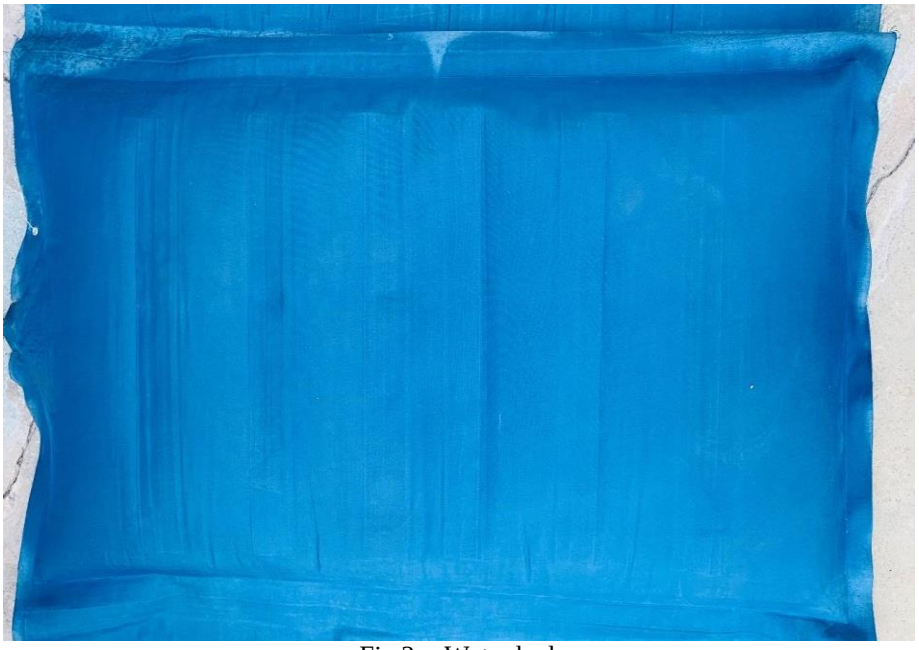

Fig.2: - Water bed

Fig.3: - Car seat with water bed placed on it

Fig.4: - Car seat with leather cover placed on it

III. WEIGHT COMPARISON

We have done the weight readings by just viewing the weight of the car seat we bought and the weight of the water bed by inflating it with the water inside it and thenwe just added the total weight of the seat and water bed. Max. Weight water bed can sustain is 90 K.GWeight of seat is 15 K.G. The weight of the water bed with water inside is 35 K.G.Total weight of the seat with the water bed is 50 K.G.

4. Table 1 Seat Measurements

Seat Measurements			
	Without water bed seat	With water bed seat	Sitting in water bed seat
Upper Backside	75cm×50cm	75cm×70cm	75cm×68cm
Lower portion of the seat	50cm×50cm	70cm×38cm	67cm×40cm
Ground	32cm	35cm	34.5cm

IV. Temperature Comparison

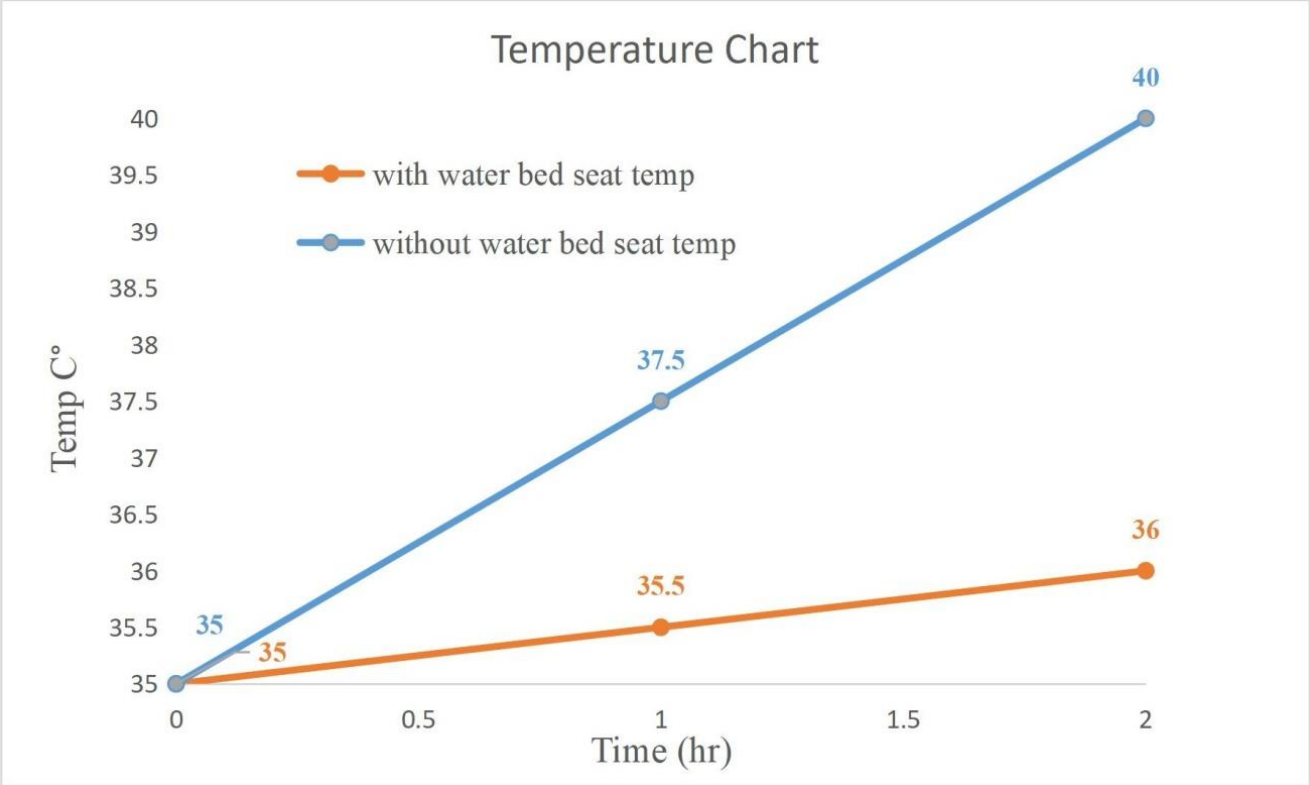

Fig. 5: - Different temperature of car seat

Figure 5 shows various temperature of car seat with and without water bed. As you can see there are various fluctuations in temperature at different time.

Without bed seat the temperature rises up to 37.5 ℃ in approximately one hour but when bed seat is inserted, the temperature falls to 35.5℃in one hour approximately.

Without bed seat the temperature rises up to 40 ℃ in approximately two hours but when bed seat is inserted, the temperature falls to 36℃in two hours approximately.

V. CONCLUSIONS

From the above experiment we concluded that the normal car seats used now-a-daysin all cars give comfort to the passengers but to a certain extent, so to improve the driving experience of the drivers as per comfort level we have implemented the layer of water bed sheet on the car seat. And by implementing the layer of water bed sheet on the car seat the comfort has improved and drivers can easily feel that level of comfort.

The car seat used in car are generally made of fabrics, leathers or semi-leathers and from all of these components leather seats give more comfort, and as leather is generally classified in seven different grades from grade one to seven, as grade one leather seats give the most comfort and grade seven gives the least, but this leather seat are way more expensive to purchase and install so to increase comfort without increasing the cost we have implemented the water bed.

And in its temperature difference is also a key value, in water bed the temperature is measured less as compared to normal car seats and the comfort level is also increased. The main disadvantage would be to the patients which are having breathing problems as they can face some difficulty. Water bed sheet gives much more comfort and is very useful for driving long distance. But still in this many other chances or modifications are possible as per need.

From the above experiment we also concluded different temperatures at the different time and the weight of the normal car seat and car seat with the water bed implemented on it. And the dimension of the seat also varies between the normal car seat and the water bed sheet implemented on it. But still the material used for the water bed sheet is nominal as we can still improve the material of the PVC used for the water bed.

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