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RE : Car Design

Some of the key issues that our research has brought forward have simple solutions that could save considerable heart ache. The Automotive industry around the world look at each others product to much rather than the markets wants. The market wants aesthetic appeal, reliability, all mechanical for ease of maintenance and practicality, this is why the classic car market does so well. The marketing department of current manufacturers need to go to classic car shows and look hard at why people like the older pre 1970's plastic and electronic area cars so much.

1. **Alcohol Fuel**, is well known to be a safer fuel. There are considerable legislations on the automotive industry rather than the fuel suppliers. An engine is nothing more than a reshaped lump of steel the emissions problem should have always been the fuel suppliers problem. Alcohol is a less combustibile safer fuel which has been well proven in motor racing. Proven to the point of eliminating deaths by fire in racing accidents, yet we still use the highly combustibile fossil fuel to take our kids to school. In the advent of a fire alcohol is simply dousable by water, where as fossil fuel requires specific flame retardants. In the advent of a fuel spill, alcohol would just mix with the water without any catastrophe, but fossil fuel will kill everything in the water ways and is extremely difficult to clean, the added problem is that it leaves a slippery residue on the road surface which causes many accidents. Knowing that fossil fuels are destroying the atmosphere, alcohol fuel would seem a better choice for road safety. Alcohol fuel could be produced by the poorer nations leaving the oil companies to produce the lubricants as required for machinery.
4. **Better Quality Tyres**, tyres seem to puncture to easily. Some testing is done for off road tyres to be more durable and a lot of testing is done in rally motor sport. The technology does not seem to be filtering through to the domestic market. For this reason legislation needs to be put in place for tyres to be able to pass a specific puncture test. Eliminating accidents caused by punctures.
5. **Roll Cage**, it is no good developing crash tests for car manufacturers to design too. If a car is design for 120km/h what happens to the occupants at 200km/h or if a truck hits the car head on, what often happens is a catastrophe. It is OK to design the car to take a 120km/h crash test, but the cabin should take a 200km/h or 300km/h, this can be done by simply by adding a steel tubular roll cage in the cabin. This is well proven in the motor racing industry, as an elaborate design would not be required and the costs would not be any more than the foolish air bags. At high speeds some shock and trauma may be felt but no deaths or maiming will occur.
6. **Four Point Safety Harness**, inertia real safety belts and air bags are a waist of money and time, all that is required is a four point safety harness. If the persons

head is hitting the steering wheel then the safety belts are inadequate, putting in air bags is not fixing the inadequate design. Again well proven in more racing use is the better designed safety belt, in there case a five point safety harness is used to stop submarining as well, this may not be required in the domestic market. A four point safety harness will save lives.

7. **No Electronics**, when restoring an older car, as many enthusiasts do, the greatest problem faced can be the wiring system. The new cars have exacerbated this further by adding electronics. The primary rule is maintainability which equates to reliability which equates to safety. The electronics can not be serviced, you can take it in for a diagnosis which will tell you if there is anything wrong at that time. But you will not know if there is corrosion in the plugs, or if there are fraed wires about to short circuit, or if a resistor or electronic component will fail, all resulting in failure of the engine hopefully not at an inappropriate time causing an accident. All Engines should be mechanical so that it can be serviced by anyone. Mercedes Benz came forward and said three quarters of there QA problems stem from electronics. Electronics work on the race track but they only drive for a few laps, when the domestic market drives 100s of thousands of kilometres, this can create legal issues for the car manufacturers.
8. **Brake System**, the greatest problem with brakes is brake fluid boil and in an accident this is difficult to detect because it does not take long for the fluid to cool down. So all brake calliper designs should be similar designs to motor racing brake designs, some companies already do this. The brake fluid manufacturers need to supply the best quality brake fluid only. ABS is yet another complication making it difficult to maintain a car, used to stop brake lock up. Better driver training is a better option and constant four wheel drive systems (eg Subaru) makes a car more controllable.
9. **Tinted Windows**, by adding a film of tint to the glass on doors and rear it makes it considerably more difficult for an object to come through the glass window. This has been proven by thieves trying to brake into cars but found this to be impossible on tinted glass windows. What ever the material is in the tint that is being used, seems to add considerable strength to the glass. This would help in side impacts accidents or roll overs, stopping the body parts from leaving the cockpit due to the applied forces.

Automotive companies around the world are facing difficulties in sales targets because of simple mistakes. I hope these issues are taken seriously and acted upon. If anything further is required I am happy to help.

Regards

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