

Safety – Over Simplification

– Part 2

Last week we (somewhat) stirred a hornet's nest by saying that airbags should not be made mandatory in Indian cars. We feel there are more important matters to be resolved in the area of automotive safety and loading airbags on otherwise unsafe cars, rolling on roads resembling powder kegs, is like putting lipstick on a gun-shot wound.

It does nothing and may actually end in gangrene.

In this second and concluding part of our analysis, we look at the other aspects of safety and round it off with our recommendations (free!) to the government just in case the bureaucrats are really serious about reducing traffic related deaths in the country.

Airbags in cars – the Present Situation

But first let's take a look at how each manufacturer is treating safety. We will use the same language that the media and automotive experts have been using, i.e. count the number of airbags in each variant of car. We would also be limiting this mini-study to volume cars (Mini, Micro, Compact and Super Compact segments) only, as the segments above are mostly well equipped with safety features.

Brand	Model	NUMBER OF AIRBAGS							
		Variant 1=Base	Variant 2	Variant 3	Variant 4	Variant 5	Variant 6	Variant 7	Variant 8=Top
Tata	Nano	0	0	0	0	0			
	Indica	0	0						
	Indica Vista	0	0	0					
	Zest	0	0	2					
GM	Spark	0	0	0					
	Beat	0	0	0	2				
	Sail	0	0	1	2				
Maruti	Alto 800	0	0	0	Optional				
	Alto K10	0	0	0	1				
	WagonR	0	0	Optional					
	Celerio	0	0	2					
	Ritz	0	0	2					
	Swift	0	0	0	2				
	Dzire	0	0	2					
Ford	Fiigo	0	0	1	2				
Honda	Brio	0	0	0	0	2	2		
	Amaze	0	0	0	0	2	2	2	
Hyundai	Eon	0	0	0	0	1	0	0	
	Santra Xing	0	0	0					
	i10	0	0	0					
	Grand i10	0	0	0	2				
	Xcent	0	0	2					
Toyota	Liva	2	2	2	2				
	Etiios	2	2	2	2				
Renault	Pulse	1	1	2					
Nissan	Micra	1	1	1	1	1	2	2	3
Datsun	GO	0	0	0					
Mahindra	Verito	0	0	1					
	Verito Vibe	0	0	1					
Volkswagen	Polo	2	2	2	2				

Only Toyota and Volkswagen now offer cars with airbags across the range. Since this is a recent occurrence, we cannot draw statistics and comment whether this has made an impact on their sales – it hasn't. However, it does give the two companies bragging rights that their cars are safe even though the Polo was one of the random cars, picked up by Global NCAP, to score a duck.

The two companies in question also realize that safety doesn't have much appeal in India – their recent communication hasn't exactly been strong on stressing on the inflatable-balloons-and-explosive devices packed in their cars.

Propagating Safety to People who don't want it

So in a country devoid of any emotional connect to safety, how do we propagate such safety devices? Should it be done through legislation, i.e. make them mandatory like we did with seat belts or are there any other way around?

Many years back, the fitment of seat belts became a mandatory requirement. In one stroke, cars started to come fitted with seat belts. Surprisingly, wearing seat belts is still voluntary in most parts of the country outside the big metros. Most Indians don't wear them.

At this point, we would also like to digress and point out that an airbag inflating when the occupant is not wearing a seat belt may have unintentional disastrous consequences. So actually we are even more primitive than the government assumes us to be.

Should Government Intervene and Disrupt the Space-Time Continuum?

Coming back to the main topic, it is no doubt an attractive proposition for the government to make airbags mandatory in one sweeping executive order. This would also be true to the government and bureaucratic way of decision-making – knee-jerk and with minimal usage of brains.

However, such a decision may have a strong impact on car sales. A few calls to service centers of various OEMs indicated that for most Compact segment cars (Swift / i20), the cost of replacing the two frontal airbags along with the supplementary systems is about INR 55000. The same goes into the six-figure zone as we go into the Mid-Size and Executive segments. Calculating backwards for a small car like the Alto800, the airbag kit for a twin frontal airbag system should cost INR 40000.

Even at the OEM end (replacement parts carry a fat profit margin), this is still an INR 25000-30000 worth of kit. Also, for the basic variants and low-end cars, it is unlikely that manufacturers would throw in exotic stuff like seat occupant sensors (so that airbags don't deploy when the passenger seat is unoccupied).

This is likely to send insurance companies into massive convulsions – after all it is they who fork out the money for airbag replacement once you have wrapped your car around a tree.

Even without the insurance hike, the absolute hike on car prices at the lower end (Alto800 / Eon / Nano) is estimated at about 10%-12% of the current prices. This literally means a similar adjustment in prices.

Holy shit!

Natural Progression of Technology...and Prices

Airbags are interesting devices. They pop up at a time when your head is traveling at a massive speed towards the steering wheel or the dashboard. They cushion you and save your skull from cracking, but the impact anyways makes you dazed enough that you fail to read the brand name on the airbag. So no idea if the balloon that saved you came from Takata or Autoliv or any of their brethren.

You actually don't get an idea about the brand till someone issues a [recall](#).

Also there are no luxury airbags, no felt lined airbags and no airbags with faux fur. In short, airbags are a commodity and universally do the same job irrespective if they are fitted on a Suzuki Swift or a Bentley Flying Spur.

Like all commodities, their prices should fall rapidly once the numbers increase. Better, there should be a potential (if not already) Chinese supplier willing to make a few million airbags a month to bring the prices down to a dime.

Just for fun.

So how low can airbag prices potentially fall?

Autoliv has the answer.

In the days when the Tata Nano was a hot commodity, there was a ~~rumour~~ media report that Autoliv was developing an Airbag costing \$10 for Tata's small hatchback. It was reported [here](#). We reckon that for Autoliv to have achieved the price point, many times the number of Nanos currently being sold needed to be shifted out of showrooms, as was the original plan.

We also don't know if Autoliv and Tata were serious about the whole thing or if it was just the work of an over-enthusiastic PR machinery. The bottomline is that the inexpensive airbag solution was never mentioned again.

However, that does not mean that such a price point cannot be achieved. Remember flat-panel TVs? Android smartphones? Or a few hundred other items that did start out expensive but are now dirt-cheap because they have become commodities. The only reason why an iPhone continues to be over-priced (compared to Android devices) is that Apple has invested in developing the brand and there is a huge ~~number of zombies~~ fan following, which prevents it from becoming a commodity.

There is no scope for an airbag manufacturer to do that considering that the end user cannot check the brand name in normal working conditions.

Typically the prices of any commodity fall after a few years of it being in the market. As volumes increase, prices crash, and the same should be the case in the Indian market.

Natural progression – The Best Bet

Considering that two manufacturers with small volumes have

already put airbags on their cars across the range and everyone else is offering airbags on their top variants, we are not very far off from the price decrease scenario. A natural progression in technology and the commodity version of Moore's law should ensure that airbag system prices should fall to 30% of present costs.

However, that would need the big manufacturers – Maruti-Suzuki, Hyundai, Tata, Mahindra – to take the leap of faith and convert their entire fleets in to airbag toting automobiles. The sooner some of them take this leap of faith, the faster the fall in prices would happen. Theoretically, with light vehicle volumes approaching three million units, there is sufficient space for two airbag manufacturers to slug it out and drive down prices, provided they manufacture the systems in India.

However, that still does not rule out the questions that we have raised till now:

- 1. Does strapping airbags to cars with 15-year old platforms make them any safer?*
- 2. Does offering airbags in cars in a nation where drivers and occupants have a natural aversion to wearing seat belts, a wise idea?*

Realising that we have hit a dead-end here, we digress and take a look at the new technologies that may actually help in improving road safety in India.

Lane Departure Warning Systems – Why They Get our Mojo

In recent times, no technology has stoked us more than Lane

Departure Warning Systems. These are systems that warn the driver if the vehicle unintentionally starts moving out of its designated lane. The latest generations of these systems are rather accurate as is demonstrated by the Hyundai Genesis in the viral [YouTube](#) video.

With a few modifications and calibrations, the system can be adapted for use on buses, commercial vehicles and any fleet operated vehicles. Think of it, what if we had state transport buses equipped with the system programmed to loudly chime and announce inside the bus – when the driver moves out of the designated lane – “The driver is deviating from his designated lane; kindly shoot his picture and post it on Facebook.”

Efficient, we say.

Smart Licenses, Smarter Policing

One of the critical areas of stress in the recently notified New Motor Vehicles Act is the huge increase in fines for any traffic violations. In most cases, fines have gone up by 5-10 times. This should automatically curb driving offences and limit traffic related deaths. Right?

Nopes.

In a society, where the police department is one of the most corrupt government organisations, the new rules are only likely to result in an astronomical increase in the amount of bribe one has to pay to wiggle out of ‘situations’. The winner is the police and no one else.

We believe that a better way is to completely remove human intervention from traffic policing. Let’s start with cameras replacing cops, so all over-speeding violations, signal violations would be recorded by cameras and fines issued directly to car owners.

However, this requires the details of car ownership to be made

available online in a centralized database. This is also technology intensive but we can get around that by implementing it in phases.

As an extension, offenders would need to pay the fine online. Most traffic violators prefer to bribe policemen than pay fines is because the fine needs to be deposited at the local court, a process, which would easily take 2-3 hours on a busy day. Making the fine payment online will make paying it easier and convenient and likely convince more offenders to pay fines than bribe the cops.

In the next stage, all Driving Licenses should be converted into smart chip cards. These chips should communicate with the engine immobilizer ensuring that the engine fails to start in the absence of a valid driving license. The chips would end up carrying the entire history of the driver including his past traffic violations.

From a technology perspective, this is not very difficult or costly to implement.

Road Safety and Corporate Social Responsibility – Linking the Obvious

If you met the nicest people in a Honda then you meet the most annoying, rash and outright dangerous drivers in a ~~Tata Indica~~ ~~Tata Indigo~~ ~~Toyota Innova~~ ~~Maruti Suzuki DZire~~ ~~Tour~~ Mahindra Bolero. Cars used as taxicabs are often driven dangerously and while we don't have any statistics to support us, we do get the sense that a large share of road accidents would be involving taxicabs.

Let's digress a bit and look at the recently introduced law on Corporate Social Responsibility (CSR). The law makes India the only country in the world, which has legislated CSR. As per

the law, all companies, including MNCs, with a minimum net worth of INR 5.0 billion, revenues of INR 10 billion and a net profit of at least INR 50 million need to spend at least 2% of their profit on CSR activities.

That's a lot of money, which can be put to good use. How about making automotive companies use their CSR funds to work for road safety. A part of the law could ensure that companies selling cars to the taxi market take responsibility of training a certain number of cab drivers every year.

That would make a significant impact on road safety.

Where Should Government be Focusing its Resources on – Our Recommendations

Like all ~~pressure groups~~ think tanks, we cannot go to sleep without providing our ~~two-cents~~ seven-point suggestion list for the government.

1. Make people sweat for a Driving License. The typical cost of getting a Driving License in the UK is roughly 10% of the price of a regular car. It is a long, tough and painful test and passing it in one go gives you some sort of bragging rights.
2. Make better roads. A normal road contract should not stop at just paving the road, but should also include constructing the pavements, overbridges and marking the lanes and other signage along the stretch. Make it mandatory and implement it strictly.
3. Move to the international standard of signage and ban hoardings, political posters and anything that obstructs the signage.
4. Make DUI, a nonbailable offense even when the driver has not exactly crashed his car.

5. While cameras and smart governance can strictly implement rules on the present generation, we need to stem the rot at the base. Road safety should be taught in schools as a subject. It can be a part of a larger curriculum titled 'Living in a civil society' where some of the other sections could cover areas like urination in public, spitting, and littering.
6. Make road safety a mandatory part of the CSR activities of all companies who stand to benefit from vehicles on the road, as discussed earlier in the analysis.
7. Convert all Driving Licenses into smart chip cards and have the chips communicate with engine mobilisers, as discussed earlier in the analysis.

Driving license and Gun Licenses – Contrasts and Parallels

We checked with a random senior police officer on the state of road safety in India and he blamed our driving license system, or the sheer lack of it, for the problems. Surprisingly – for a police officer – he made sense with his logic. He highlighted the contrasts between our Driving License system and the Indian Gun License system and drew parallels with the US Gun License system and the Driving License systems in developed countries.

According to him, the greater the difficulty in getting any license, the lesser the deaths at the end of the rainbow. Indians get Driving Licenses easily and it is ditto for Americans and Gun Licenses. The end results are equally horrific. He further pointed out that the archaic, yet very effective, Gun License laws in India; make it frustratingly complex for anyone to legally hold a firearm in the country. For getting a Gun License in India, you need a truckload of documents including the tax returns from the three previous years and a character certificate from two 'respectable' members of the society. The last clause has been deliberately added to maintain an area of greyness in the whole process and

keep the doors open for corruption.

Any which way, it is a reality that against the millions of Driving Licenses doled out in India every year, only a few hundred Gun Licenses are issued. As a result, very few Indians die due to legally acquired guns.

Talking about Indian Driving License processes, or the lack of any, it is easier to get a Driving License than getting a Marriage Certificate or a Birth Certificate issued. The Indian Driving test is very basic and is cleared by most all respondents in the first attempt. The Indian government in their infinite wisdom also believes that the skills for riding a motorcycle and those for driving a car are the same and clubs both licenses.

To add to this, in most states, a Driving License can be procured without having to move your butt out of your living room by paying a small bribe in the form of convenience fee. A large, immeasurable chunk of the population uses this mean as otherwise procuring a Driving License means writing off the better part of a normal working day.

Add to that, Driving Licenses are not yet 'smart' and not connected to a central database. The address on the license is not verified and the DL is not recognized as a proof of residence document for all practical purposes. Licenses are easy to forge and most criminals are caught with multiple counterfeit licenses.

[x](#)