



SAFE SAVARI

NEWSLETTER ON ROAD SAFETY

KSCSTE-NATIONAL TRANSPORTATION PLANNING AND RESEARCH CENTRE



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के एस सी एस टी इ - राष्ट्रीय परिवहन योजना एवं अनुसंधान केंद्र
കെ എസ് സി എസ് ടി ഇ - ദേശീയ ഗതാഗത ആസൂത്രണ ഗവേഷണ കേന്ദ്രം

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Editorial

One glance at the newspaper in the morning is enough to fill on the instances of gruesome road crashes. Road crash is the most unwanted thing to happen to a road user, though they happen quite often. The most unfortunate thing is that we don't learn from our mistakes on road. Most of the road users are quite well aware of the general rules and safety

measures while using roads but it is only the laxity on part of road users, which cause accidents and crashes. Major cause of road crashes are due to human errors. Most of the fatal crashes occur due to over speeding. It is a natural psyche of humans to excel. Increase in speed multiplies the risk of crash and severity of injury. It is to be remembered that "Being late is better than never".

The most common, permanently occurring causes of road crashes include failure to comply with the rules of the road traffic, low driving skills combined with a poor assessment of the situation on the road, lack of adequate road infrastructure as well as poor technical condition(s) of vehicles. It is necessary to continue multidirectional actions to improve safety on the roads, resulting in a systematic increase in the level of road traffic security.

This issue of Safe Savari addresses an in-depth study of a road crash to identify the contributory factors. Road crash investigation helps road agencies to detect the gravity or extent of road infrastructure deficiencies that influence a crash occurrence and to guide them in the implementation of appropriate improvement measures.

Analysis of Road Crash Causative Factors

Bus vs Bus Crash Near Ayur, Kollam

Main Central Road (SH-1) witnessed a road crash near Ayur, Kollam on 3rd March 2017 resulting in the loss of four human lives. More than 25 people sustained injuries. The crash occurred when a KSRTC Superfast bus travelling from Thiruvananthapuram to Angamaly, collided head-on with a private bus which was going from Ayur to Attingal.

Officials from NATPAC visited the crash spot on 6th March 2017. It was observed as a 'hit on side' type of collision where the private bus lost control and got rammed into the right side body panel of the super-fast which was moving through its dedicated lane.

As per the Police FIR, rash and negligent driving on the part of drivers of both KSRTC and Private bus was the reason for this fatal crash. The spot analysis revealed that there was drizzle during the time of crash and the sky was cloudy. The time of crash was reported as 6.45pm which infer that the visibility parameter was less (below 30lux without headlights). The absence of adequate street lighting and lack of proper road markings etc. contributed to reduced vision.

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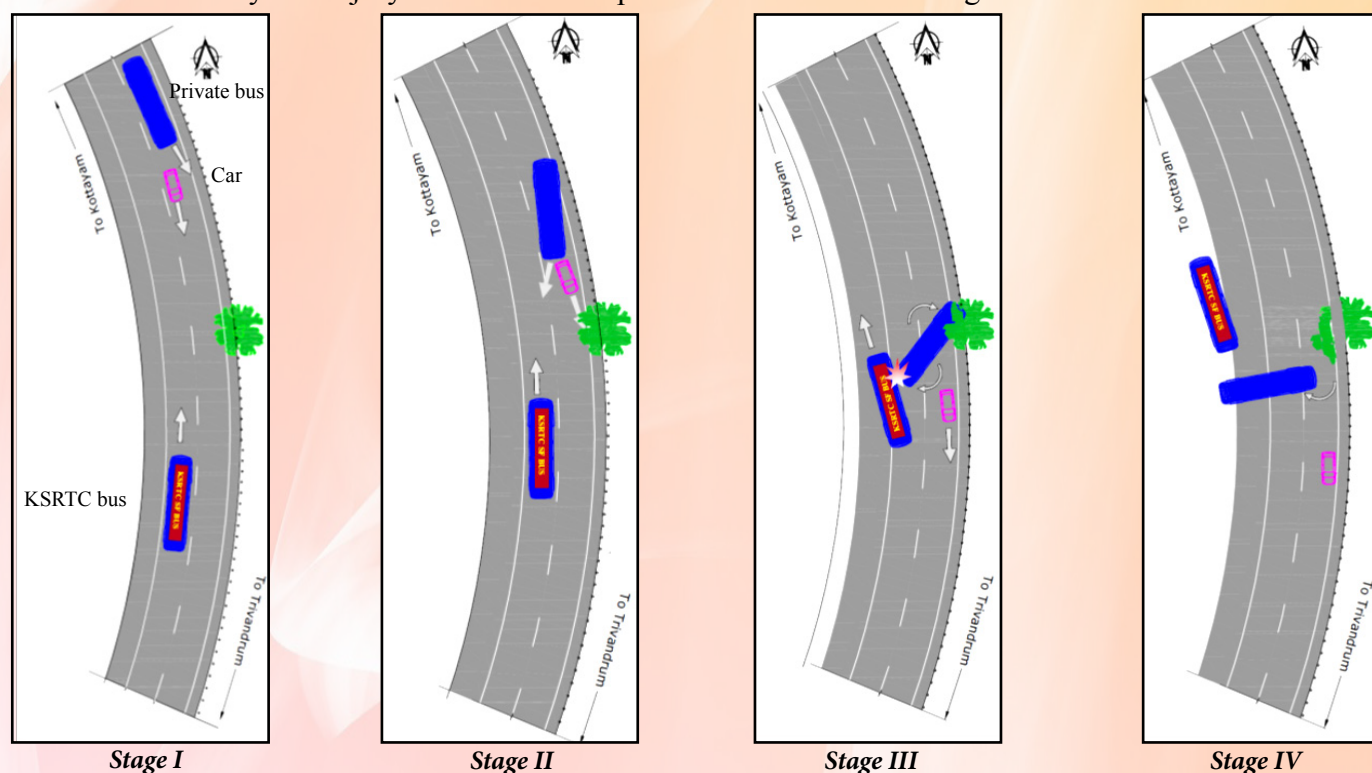
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At the crash scene, a lightly visible mark of sudden steering shift of a heavy vehicle's front axle was visible. From the pattern of the impression of front axle on the pavement, it was ascertained that the marking is not because of sudden braking but because of sudden steer attempt that resulted in skidding of the rear axle of vehicle due to centrifugal action on curve. It was also observed that the rear pillar corner piece of the private bus got stuck in the branch of a tree located near the shoulder.

The collision had occurred at the dedicated lane of KSRTC Superfast bus where clear lane violation was evident from the part of the private bus driver. Possible chances of driver error from the part of KSRTC driver were thus ruled out. The tyres of KSRTC bus were retreaded ones with moderate to good surface grip. On inspecting the damages sustained to KSRTC bus, a high velocity impact is evident.

The private bus was negotiating a right hand curve and it was occupied with five persons only, including conductor and driver. The laden weight was very minimal. Drizzle can surely affect the pavement surface grip. As the tyres are retreaded ones, chances are high for skidding or drifting. In these adverse conditions, a sudden turn of steering can generate rotational outward momentum to the rear portion of the bus. Since the vehicle was negotiating a curve the effect of centrifugal force also remains even though minimal. The summation of these two forces can generate substantial outward momentum at the rear portion of the bus. In this case, the counter forces (laden weight and surface friction) available are not sufficient to resist the momentum generated towards outward. As a result the rear portion of the bus was thrown outward. While throwing outward, the rear upper corner of the private bus hit against the branched tree on the edge of the shoulder. The corner piece got pivoted which aggravated the severity of impact on the passing KSRTC bus. This has resulted in causing severe damage towards entire right side body of the KSRTC bus and resulting in increased fatality and injury. The tentative representation of collision is given below.



Tentative representation of collision

The speeding private bus had tailgated a car and tried to perform a forceful overtaking. The tailgating bus generated a sudden reaction on the car driver whose movement was totally unforeseen to the rash bus driver. Thereby the private bus driver on a reflex to avert a crash at the rear of the car have taken a sharp turn. The hitting of the rear portion of the private bus on the branch of the tree at the road edge resulted in increasing the severity of the impact. Thus is concluded that the reason for this crash is the rash and negligent driving behavior on the part of private bus driver.

A stage carriage driver should follow defensive driving techniques and should be well aware of the geometrical parameters, condition of vehicle and its laden weight, environmental conditions and its adverse effects on vehicle control etc.

On the basis of the study, the team has suggested certain remedial measures. Speed limit signs should be provided as per standards suggested in IRC 67-2012. Road side elements such as vegetation, protruding trees, concrete obstacles, advertisement boards etc, endangering life of road users and obstructing/distracting driver's view should be cleared or protected. Stretches where geometrical constraints exist have to be cautioned in advance. Open drains should be provided with cover slabs. All street lights should be made functional and advertisements on the poles should be removed. Reflective studs have to be fixed along the entire length in edge lines as well as median lines. Awareness programmes aimed at discouraging rash driving have to be carried out by the concerned agencies. Enforcements should be strengthened.



Condition of KSRTC Superfast after crash



Crash spot and the tree to which the private bus collided



Condition of Private bus after crash

Road Safety Training for Various Road User Groups

1. Road Safety Education Programme for students as part of Summer School Camp at State Central Library, Thiruvananthapuram on 27th April 2017.
 - 400 students participated.
2. Training on Road Safety for NCC Cadets at St. Thomas College, Kozhencherry, Pathanamthitta on 28th April 2017.
3. Road Safety Education Programme for high school students in association with Institution of Engineers (India) at Vishweshwaraya Bhavan, Thiruvananthapuram on 2nd May 2017.
4. Road Safety Awareness Programme for driving test candidates at Vyapara Bhavan Hall, Ponkunnam on 7th May 2017.
5. Road Safety and First Aid Training Programme in association with WHO, INDUSEM, AIIMS & INDUSEM/EMA member medical colleges in India at Thrissur on 13th May 2017.

Training to Junior Sub Inspectors on 'Identification of Dangerous and Hazardous Goods and Dealing with Emergencies'

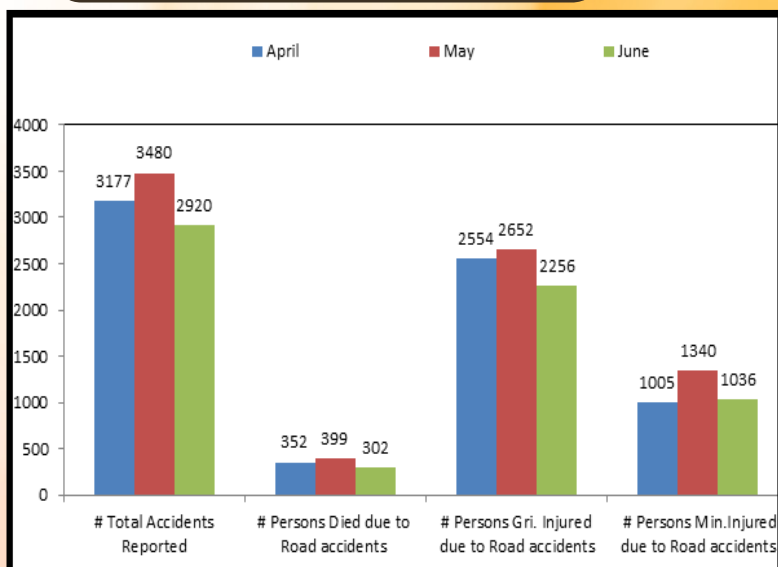
1. At Police Chief Office conference hall, on 4th April 2017 for 72 Police Officers in Thiruvananthapuram district.
2. At seminar hall, Ramavarmapuram on 22nd June 2017 for 123 Sub Inspectors and 35 Police Drivers in Thrissur district

Training Course for Drivers of Vehicles Carrying Dangerous and Hazardous Goods

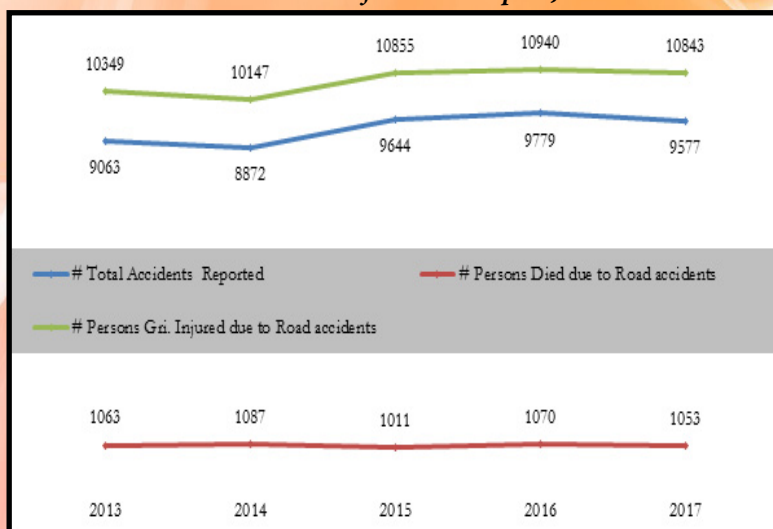
Five programmes were completed during this period.

Sl. No.	Venue	Date	Participants
1	K Karunakaran Transpark, Aakkulam	11 th April 2017	63
2		3-5 May 2017	25
3		3 rd May 2017	13
4		16 th May 2017	30
5		2 nd June 2017	12

Road Crashes Statistics in Kerala



Road crash details of Kerala in April-June 2017



Trend of road crash parameters in April-June of various years



ROAD SAFETY E-PORTAL


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Objectives
Leaving home to school
Walking to school
Crossing roads
Using vehicles
Back to home
General road safety tips
Summary

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