Accident Data

Accident data study in support of development of Autonomous Emergency Braking (AEB) test procedures, 2010

Describes typically circumstances for pedestrian, read-end and head-on impacts based on British accident data. (STATS 19 (2008) and the in-depth On-the-Spot database (2000-2009))

Pedestrian Impacts:
The study reviewed 28,482 collisions with pedestrians from STATS19. It was found that the highest proportion of incidents were frontal collisions with passengers cars and taxis (81%). Within this field the following information was obtained regarding the vehicles speed:

16-48kmh = 92%,
64-80kmh = 5%
97-113mph = 3%

OTS randomly reviewed 175 cases matching that scenario chosen for the STATS19 review, and found the **mean vehicle speed = 44km/h**

Participants in study:

Loughborough University

Accident Data

Accident data study in support of development of Autonomous Emergency Braking (AEB) test procedures, 2010

Vehicle Impacts:
Review of 311,604 rear end collisions on passenger cars from STATS19 data, determines the most common collisions occur with an impact from the front of a Taxi or passenger car (38%)

Speed limit:	**Striking vehicle manoeuvre**	**Striking vehicle manoeuvre**
10-30mph = 54%,	Straight = 70 %	Straight = 70 %
40-50mph = 17%	Turning = 27 %	Turning = 27 %
60-70mph = 29%	Stopping/starting = 3%	Stopping/starting = 3%

Review of 4284 collisions on passenger cars from OTS data, determines the most common collisions is a rear impact with another vehicle (16%)

Struck vehicle Speed	**Striking vehicle Speed**	**Striking vehicle change in speed**
Mean = 7 km/h	**Mean = 48km/h**	Mean = 19km/h

Participants in study:

Loughborough University

Accident Data

GIDAS Analysis, 2016

Car Collisions in GIDAS (status 2016)		Accident Severity					
		KSI (Killed + Seriously Injured)		MAIS 1-2 (Slightly Injured)		Total	
Opponent	Constellation	n	%	n	%	n	%
Another Car	Front to rear	34	1,8%	3404	10,9%	3438	10,4%
	Other constellation	463	24,8%	12797	41,0%	13260	40,1%
Truck or Bus	Front to rear	25	1,3%	278	0,9%	303	0,9%
	Other constellation	99	5,3%	1218	3,9%	1317	4,0%
Pedestrians	Crossing	263	14,1%	1690	5,4%	1953	5,9%
	Other constellation	61	3,3%	680	2,2%	741	2,2%
Single Vehicle Accidents		382	20,5%	2911	9,3%	3293	9,9%
Other		538	28,8%	8261	26,4%	8799	26,6%
Total		1865	100%	31239	100%	33104	100%

Participants in study:

DESTATIS
Statistisches Bundesamt

GIDAS
GERMAN IN-DEPTH ACCIDENT STUDY
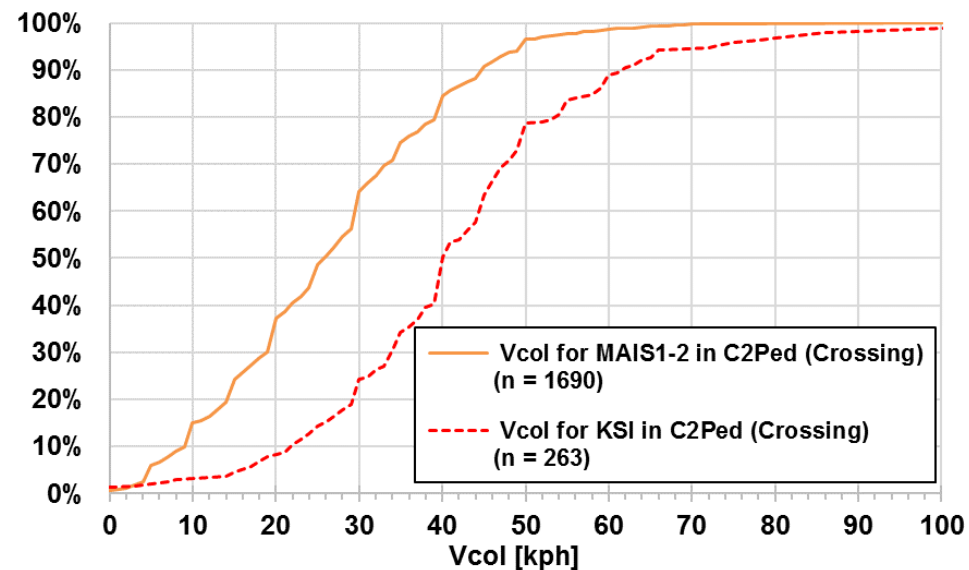
Accident Data

GIDAS Analysis, 2016
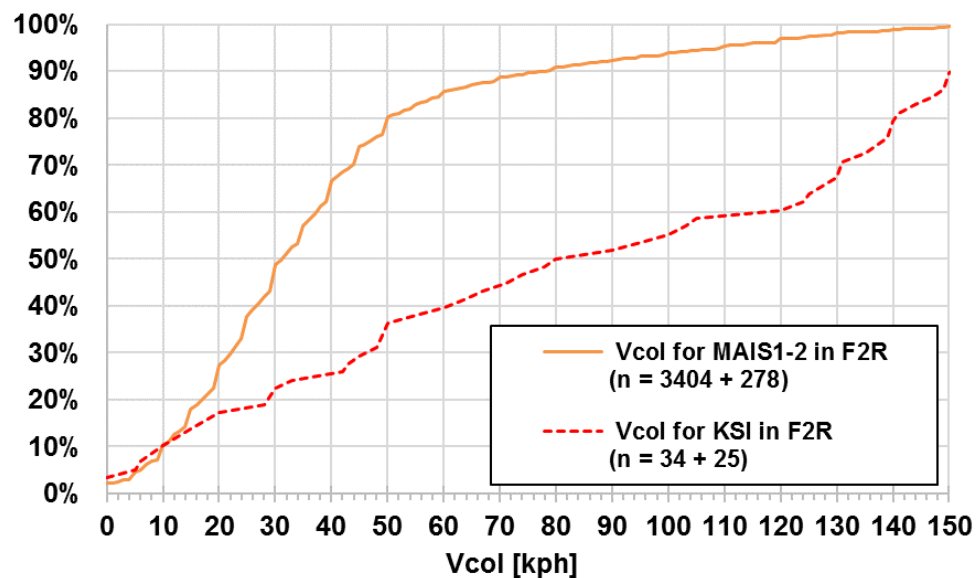
GIDAS: Cumulative Frequency of Collision Speeds in Car Front Collisions to the Rear of 2-Track Vehicles

GIDAS: Cumulative Frequency of Collision Speeds in Car Front Collisions with Crossing Pedestrians
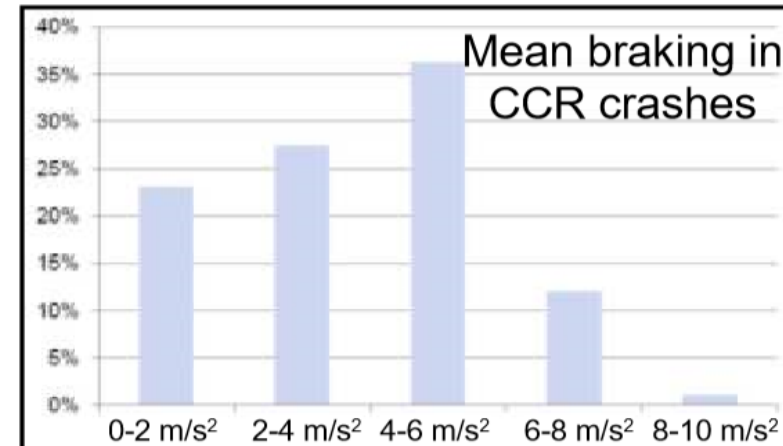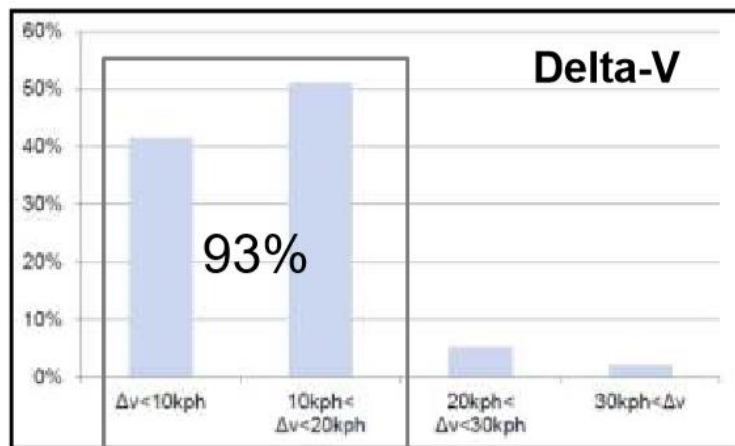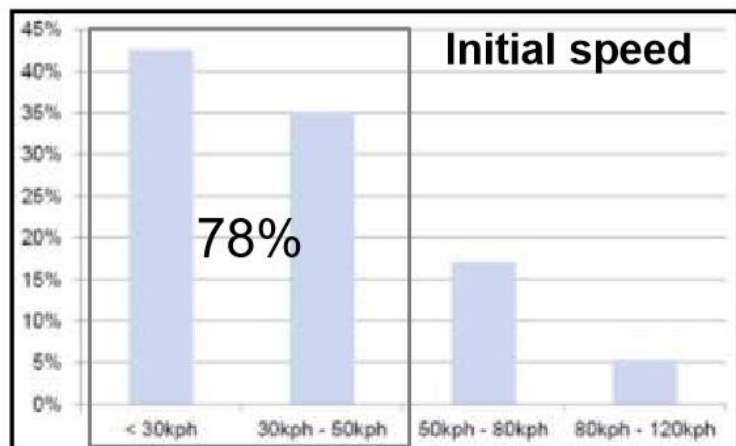
Participants in study:

Accident Data

AEB Test Scenario Selection

Event data recorder data collected by an insurer in Switzerland noted that 93% of accidents has a differential speed of less than 20km/h, and the initial speed prior to braking was below 50km/h for 78% of the cases.

86% of drivers braked before an accident and the majority of drivers did not brake hard enough.

Participants in study:

Accident Data

Summary

Based on the reviewed accident data the following assumptions can be made:

- The number of KSI is higher in vehicle to vehicle collisions than in vehicle to pedestrian collisions.

- The KSI/accident is higher in vehicle to pedestrian collisions than in vehicle to vehicle collisions.

- The vast majority of vehicle collisions with pedestrians occur below 50km/h.

- Over half of vehicle to vehicle collisions are below 50km/h.

- Majority of drivers brake before a collision, but do not brake hard enough.