AEBS HDV IWG

Accident Data in Germany
(GIDAS database)

AEBS-HDV-SP-02
January 25-27, 2021

Accident Situation Germany involving HGV (M2/M3, N2/N3)

In 2019, in 22'717 accidents w/ personal injuries an HGV was involved*.
This represents about 8% (22'717 / 300'143) of all accidents w/ personal injuries p.a.

In 2019, in 583 fatal accidents an HGV was involved*/.**
This represents about 20% (583 / 2'877) of all fatal accidents p.a.

In preselected scenarios an HGV is responsible p.a. for traffic victims*:
11% (322 / 3'046)*** of all fatalities, thereof:

- 11% (172 / 1'523) vehicle occupant fatalities (car, truck, bus) caused by HGV
- 10% (150 / 1'467) of VRU fatalities (motorcycle****, bicycle, pedestrian) involving HGV
  - 5% (31 / 605) of motorcycle fatalities; 15% (66 / 445) of bicycle fatalities; 13% (53 / 417) of pedestrian fatalities

HGV is responsible p.a. for accidents (all scenarios)**:**

- 7'453 HGV-vehicle accidents (all injuries) caused by HGV
- 870 HGV-motorcycle accidents (all injuries) involving HGV
- 1'900 HGV-bicycle accidents (all injuries) involving HGV
- 1'203 HGV-pedestrian accidents (all injuries) involving HGV

*German Federal Statistical Office (DESTATIS F8R7), 2019. DESTATIS special evaluation, 2019.
** German In-Depth Accident Study (GIDAS), 2005-2020. GIDAS data weighted and representative for Germany. Extrapolated to total Germany.
*** 3'046 total fatalities in 2019 Germany (1'523 vehicle occupant, 1'467 VRU, 56 others)
HGV = Heavy Goods Vehicle M2/3, N2/3. Motorcycles are L3e/L4e only. Bicycle include pedelecs.
**** Motorcycles are counted as VRUs in these accidents statistics (in some other studies they may appear as vehicles)

RAW accidents data

HGV vs Vehicle (caused by HGV)	Speed [km/h]	Accidents (n=7453, GIDAS*)	
Turning oncoming	Vego: 10-30	2%	
Crossing	Vego: 0-40	13%	
Run up moving M3, N2>8t, N3	Vego: 50-90 Vrel: 0-70	36%	89% > 7,5t
Run up moving N2<8t, M2			11% ≤ 7,5t
Run up standing	Vego: 50-90	18%	
Other		31%	

HGV vs Bicycle (HGV participation)	Ego speed [km/h]	Accidents (n=1900, GIDAS*)
Turning oncoming	0-10	1%
	20	2%
Turning behind	0-20	27%
Crossing	0-10	12%
	20-50	20%
Run up	0-10	2%
	20-50	10%
Other		26%

HGV vs Motorcycle (HGV participation)	Ego speed [km/h]	Accidents (n=870, GIDAS)
Turning oncoming	10-30	7%
Crossing	0-50	27%
Run up	0-90	11%
Oncoming	30-70	12%
Other		43%

HGV vs Pedestrian (HGV participation)	Ego speed [km/h]	Accidents (n=1203, GIDAS)
Turning oncoming	0-10	2%
	20-30	1%
Turning behind	0-30	7%
Crossing	0-10	18%
	20-50	54%
Backing up	0-10	16%
Other		2%

Analysis and Recommendation

Collision of HGVs vs…

vehicles		36%	7453	2683 run ups	**4025 accidents caused by HGVs**	**Step 1**
		18%	7453	1342 run ups		
				4025		
Motocycles		11%	870	96 run ups	**96**	
VRU	Bicycles	10%	1900	190 run ups	**1218 accidents involving HGVs**	**Step 2**
		20%	1900	380 crossing		
	Pedestrians	54%	1200	648 crossing		
				1218		

Comments: Available data only shows the potential for collision avoidance/mitigation of an AEBS.
There are cases where the collission may happen before AEBS can react
(e.g. a pedestrian/cyclist stepping/ridgin on the road directly in front of the vehicle)

Accident analysis in Germany supports the idea to prioritize vehicle-to-vehicle collisions vs VRUs.

Situation in Japan looks comparable (see CLEPA presentation.