

Traffic Safety Basic Facts 2010

Car Occupants

Introduction

This fact sheet explores the characteristics of car occupant fatalities. Cars comprise a considerable share of the vehicle fleet in the EU. Therefore, better understanding the characteristics specific to this user group provides an opportunity to address a large proportion of fatalities.

Cars refer to both private vehicles as well as vehicles used for commercial purposes (like taxis). Car Occupant in this context refers to both the driver and any passengers.

How Big is the Problem?

In 2008, 17.037 car occupants were killed in road traffic accidents in the EU-19. This represents 48% of all road traffic fatalities in the EU-19 in 2008. Of these 17.037 killed car occupants, 11.434 were drivers and 5.597 were passengers (and 6 unknown). Table 1 presents the absolute number of car occupant fatalities between 1999 and 2008 by country for which the data are available from CARE. There were 7,9% fewer car occupant fatalities in the EU-19 countries in 2008 than in 2007, and a reduction of 39% between 1999 and 2008. There is a large difference in number of fatalities between countries, and also over the years. For example, the highest numbers of fatalities in 2008 occurred in Germany (2.368), France (2.205), Italy (2.116) and Poland (2.540) while the lowest number occurred in Luxembourg (20). These numbers naturally are related to exposure, e.g. the national volumes of traffic.

In 2008, 17.037 car occupants were killed in road traffic accidents in the EU-19.

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Table 1: Car occupant fatalities by country, 1999-2008 ¹

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BE	851	922	899	779	688	623	624	589	550	479
CZ	775	784	715	759	798	779	679	567	661	573
DK	271	235	242	246	236	186	169	138	168	196
DE	-	4.396	4.023	4.005	3.774	3.238	2.833	2.683	2.625	2.368
EE	-	-	-	-	-	-	88	106	122	69
IE	236	262	231	202	174	205	222	226	171	160
EL	886	922	803	793	761	775	816	722	771	708
ES	3.193	3.288	3.144	3.104	3.211	2.691	2.389	2.096	1.824	1.495
FR	5.455	5.290	5.283	4.864	3.689	3.369	3.065	2.627	2.466	2.205
IT	3.796	3.850	3.847	3.653	3.377	3.032	2.830	2.781	2.320	2.116
LV	-	-	-	-	-	-	-	182	203	167
LU	49	54	51	52	33	27	38	23	27	20
HU	-	-	-	-	640	606	620	630	555	448
NL	540	513	477	479	483	398	337	323	299	299
AT	615	549	570	524	524	480	432	384	378	367
PL	-	-	2.438	2.548	2.541	2.459	2.526	2.392	2.582	2.540
PT	821	732	636	710	630	537	495	375	417	358
RO	914	903	933	874	856	1.012	1.069	992	1.096	1.323
SI	-	126	107	124	102	124	107	96	126	82
SK	-	-	-	-	-	-	294	282	293	292
FI	251	224	262	267	217	221	231	203	241	202
SE	372	393	373	379	349	288	273	261	279	234
UK	1.763	1.770	1.816	1.832	1.841	1.757	1.744	1.687	1.489	1.312
EU-19	27.748	27.651	26.850	26.194	24.284	22.201	20.879	19.165	18.490	17.037
Yearly ¹ Change		-0,3%	-2,9%	-2,4%	-7,3%	-8,6%	-6,0%	-8,2%	-3,5%	-7,9%

Source: CARE Database / EC
Date of query: February 2011

The highest numbers of car occupant fatalities in 2008 occurred in Germany (2.368), France (2.205), Italy (2.116) and Poland (2.540).

Figure 1: Car driver and passenger fatalities as a proportion of all road accident fatalities, EU-19¹, 1999-2008



Source: CARE Database / EC
Date of query: February 2011

¹ The country abbreviations are shown on Page 17. EU-19 refers to the 23 countries in Table 1 less EE, LV, HU and SK. For EU-19 and Yearly change calculations, the next available data is used for DE (1999), for PL (1999 and 2000) and for SI (1999).

Figure 1 presents the car driver and passenger fatalities as a proportion of all other road traffic fatalities for EU-19 for the period 1999-2008. The proportion of car occupant fatalities has decreased over the ten year period by 6%.

Table 2 shows the change in car driver, car passenger and car occupant fatalities between 1999 and 2008 in the EU-19. The greatest reductions over the 10 years occurred in France (60%), Luxembourg (59%) and Portugal (56%), while there was little change in Poland and a 45% increase in car occupant fatalities in Romania.

Table 2: Change in car occupant fatalities between 1999 and 2008, EU-19

	Car Driver	Car passenger	Car occupants
BE	-43%	-45%	-44%
CZ	-18%	-38%	-26%
DK	-24%	-36%	-28%
DE	-44%	-51%	-46%
IE	-31%	-35%	-32%
EL	-12%	-32%	-20%
ES	-50%	-58%	-53%
FR	-58%	-63%	-60%
IT	-42%	-49%	-44%
LU	-53%	-82%	-59%
NL	-42%	-50%	-45%
AT	-34%	-55%	-40%
PL	9%	-2%	0%
PT	-55%	-59%	-56%
RO	37%	52%	45%
SI	-33%	-60%	-35%
FI	-20%	-19%	-20%
SE	-35%	-45%	-38%
UK	-21%	-34%	-26%
EU-19 ¹	-37%	-41%	-39%

Source: CARE Database / EC
Date of query: February 2011

From 1999 to 2008, there was a reduction of 39% in car occupant fatalities for the EU-19 countries.

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Because these fatality numbers are related to exposure, absolute numbers do not provide a good basis for cross country comparisons. Table 3 compares fatality rates across the EU-23 countries (2008), based on relative populations. The Netherlands recorded the lowest fatality rate per population when considering only drivers (13) but also had one of the lowest rates for all occupants (18) along with the UK (21).

Greece had the highest rate of fatalities when considering only drivers (42) and Latvia had the highest fatality rate when considering all occupants (74). The rates for all occupants are consistently higher in all countries than the rates for drivers only, as expected.

Table 3: Car occupant fatality rate per million population, EU-23, 2008

	Car Driver	Car passenger	Car occupant
BE	34	11	45
CZ	36	19	55
DK	26	10	36
DE	21	8	29
EE	31	21	51
IE	25	12	36
EL	42	21	63
ES	22	11	33
FR	25	10	34
IT	25	10	35
LV	41	33	74
LU	37	4	41
HU	27	17	45
NL	13	5	18
AT	34	11	44
PL	38	28	67
PT	21	13	34
RO	31	31	61
SI	39	2	41
SK	34	20	54
FI	27	11	38
SE	18	7	25
UK	15	7	21
EU-23	25	12	37

Source: CARE Database / EC
 Date of query: February 2011
 Source of population data: Eurostat
 Date of query: November 2010

While an important basis for comparison, fatality rates per population do not always provide the best measure of safety. The vehicle kilometres travelled indicate the risk to which a road user is exposed while on the road and so can better indicate relative levels of safety. However, these data are currently not available for sufficient countries to enable this analysis.

The Netherlands had the lowest car occupant fatality rate per million population (18) for in 2008

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Who is involved?

Table 4 indicates that the majority of driver fatalities were male across the EU countries in 2008. The proportion of driver fatalities who were female was highest in Ireland and Luxembourg (31% and 28%, respectively), and lowest in Slovakia and Romania (both 8%). When considering the age groups selected for the analysis, the largest percentage of driver fatalities were aged 25-49 bracket (36% male and 8% female, average of EU-23). These findings are likely to be influenced by the distribution of drivers by gender and age group, and the distance travelled.

Table 4: Distribution of car driver fatalities by age and gender, EU-23, 2008

	<18		18-24		25-49		50-64		65+		all ages		un-known
	F	M	F	M	F	M	F	M	F	M	F	M	
BE	0%	0%	2%	20%	9%	38%	3%	10%	3%	13%	18%	82%	0%
CZ	0%	0%	4%	19%	7%	44%	3%	14%	1%	9%	15%	85%	0%
DK	0%	1%	4%	18%	14%	26%	4%	12%	4%	18%	25%	75%	0%
DE	0%	1%	5%	22%	10%	28%	4%	13%	4%	14%	23%	77%	0%
EE	2%	0%	5%	22%	7%	41%	2%	10%	0%	10%	17%	83%	0%
IE	0%	5%	9%	27%	12%	24%	4%	3%	6%	11%	31%	69%	0%
EL	0%	0%	2%	17%	5%	44%	1%	14%	1%	13%	9%	89%	1%
ES	0%	0%	3%	17%	7%	42%	2%	14%	1%	13%	14%	85%	1%
FR	0%	1%	5%	20%	8%	30%	4%	12%	5%	15%	22%	78%	0%
IT	0%	0%	2%	14%	8%	35%	3%	13%	2%	20%	15%	83%	2%
LV	2%	1%	3%	13%	5%	48%	3%	16%	2%	5%	16%	84%	0%
LU	0%	0%	17%	28%	11%	28%	0%	11%	0%	6%	28%	72%	0%
HU	0%	1%	1%	14%	9%	44%	3%	19%	0%	9%	13%	86%	0%
NL	0%	1%	3%	23%	9%	35%	4%	12%	3%	11%	18%	82%	0%
AT	0%	2%	5%	23%	8%	27%	3%	12%	3%	16%	20%	80%	0%
PL	0%	0%	4%	22%	8%	43%	2%	16%	0%	6%	13%	87%	0%
PT	0%	0%	3%	12%	7%	41%	4%	19%	1%	13%	14%	86%	0%
RO	0%	0%	2%	20%	5%	51%	1%	17%	0%	4%	8%	92%	0%
SI	0%	0%	5%	17%	8%	44%	3%	14%	0%	10%	15%	85%	0%
SK	0%	1%	2%	22%	4%	40%	2%	10%	0%	3%	8%	75%	17%
FI	0%	1%	5%	16%	9%	25%	5%	10%	3%	26%	22%	78%	0%
SE	0%	1%	3%	18%	10%	21%	4%	14%	8%	21%	25%	75%	0%
UK	1%	3%	5%	22%	9%	29%	3%	9%	6%	12%	25%	75%	0%
EU-23	0%	1%	4%	19%	8%	36%	3%	13%	2%	12%	18%	81%	1%

F=female M=male

Source: CARE Database / EC
Date of query: February 2011

Across the EU countries the majority of driver fatalities were male, and relatively many were aged 25-49 for both genders.

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Table 5: Distribution of car passenger fatalities by age and gender, EU-23, 2008

	<18		18-24		25-49		50-64		65+		all ages		un-known
	F	M	F	M	F	M	F	M	F	M	F	M	
BE	15%	6%	10%	17%	12%	21%	6%	0%	12%	1%	55%	45%	0%
CZ	4%	5%	12%	17%	13%	19%	7%	10%	11%	1%	47%	53%	1%
DK	11%	11%	6%	22%	6%	15%	0%	4%	20%	6%	43%	57%	0%
DE	9%	9%	8%	20%	9%	12%	7%	5%	17%	4%	50%	50%	0%
EE	7%	7%	4%	32%	4%	25%	11%	4%	4%	4%	29%	71%	0%
IE	15%	19%	8%	19%	6%	13%	0%	2%	13%	2%	42%	54%	4%
EL	5%	5%	6%	12%	14%	21%	9%	6%	15%	5%	50%	50%	0%
ES	7%	7%	6%	17%	12%	18%	9%	4%	15%	4%	50%	49%	1%
FR	7%	8%	9%	25%	7%	16%	6%	5%	15%	4%	43%	57%	0%
IT	7%	6%	9%	14%	10%	18%	6%	3%	13%	6%	45%	48%	7%
LV	5%	3%	7%	26%	8%	31%	5%	7%	4%	4%	30%	70%	0%
LU	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	0%
HU	5%	9%	8%	9%	17%	24%	8%	11%	6%	2%	44%	55%	1%
NL	4%	7%	7%	16%	7%	20%	1%	6%	25%	6%	44%	56%	0%
AT	8%	8%	9%	17%	5%	24%	8%	3%	15%	3%	44%	56%	0%
PL	8%	8%	8%	20%	10%	20%	8%	7%	7%	3%	41%	59%	0%
PT	8%	8%	8%	11%	16%	9%	12%	6%	14%	8%	58%	42%	0%
RO	5%	6%	10%	17%	16%	25%	6%	7%	4%	4%	42%	58%	0%
SI	0%	0%	0%	25%	0%	25%	0%	25%	25%	0%	25%	75%	0%
SK	5%	5%	8%	16%	6%	25%	7%	8%	6%	2%	30%	57%	13%
FI	9%	19%	3%	16%	7%	22%	2%	9%	7%	7%	28%	72%	0%
SE	7%	10%	7%	15%	15%	21%	5%	3%	16%	2%	49%	51%	0%
UK	8%	15%	11%	20%	7%	14%	6%	3%	12%	4%	44%	56%	0%
EU-23	7%	8%	7%	17%	9%	23%	6%	6%	12%	4%	40%	58%	1%

F=female M=male

Source: CARE Database / EC
Date of query: February 2011

The smallest proportion of car passenger fatalities who were female was in Slovenia (25%).

Of car passenger fatalities, the highest proportion of females occurred in Belgium (55%) and Portugal (58%). Apart from Luxembourg, that had very low fatality numbers, the smallest proportion of was in Slovenia (25%). As with driver proportions, passenger fatalities were highest in the 25-49 age group.

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When are these Car Occupants killed?

Overall there is no clear trend to the distribution of fatalities across the months of the year. July, August, October and December record marginally more fatalities (9% compared to 8% of all fatalities) (Table 6).

Table 6: Car occupant fatalities per month, EU-23, 2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
BE	37	48	48	39	44	38	40	38	28	43	45	31
CZ	35	40	39	40	42	48	61	51	47	56	71	43
DK	16	24	20	11	9	13	19	8	16	23	22	15
DE	198	168	215	201	186	211	231	195	175	221	158	209
EE	5	4	4	2	4	12	10	5	10	7	4	2
IE	13	24	13	9	10	16	11	15	11	14	12	12
EL	61	56	60	60	38	51	64	97	54	60	50	57
ES	124	119	124	88	130	127	138	152	109	131	115	138
FR	167	154	219	159	202	146	188	192	158	233	179	208
IT	198	165	197	176	181	178	187	177	150	141	169	197
LV	15	10	7	13	13	13	19	21	14	11	17	14
LU			2	1	2	2	3	2	3	2		3
HU	30	24	23	22	35	39	51	52	55	43	39	35
NL	23	18	29	19	34	27	22	16	18	22	39	32
AT	32	25	38	25	25	34	25	28	29	36	34	36
PL	181	165	199	199	199	207	276	250	206	253	211	194
PT	25	25	31	33	22	23	29	41	24	24	42	40
RO	77	97	99	102	89	122	119	137	123	116	108	134
SI	9	9	8	13	4	5	6	10	2	5	5	6
SK	19	17	20	16	25	22	21	32	38	26	29	27
FI	16	16	15	18	18	18	12	10	17	30	14	18
SE	23	19	23	15	16	23	26	26	16	16	19	12
UK	122	99	96	105	104	79	140	94	107	116	125	125
EU-23	1.426	1.326	1.529	1.366	1.432	1.454	1.697	1.649	1.410	1.629	1.507	1.588
% EU-23	8%	7%	8%	8%	8%	8%	9%	9%	8%	9%	8%	9%

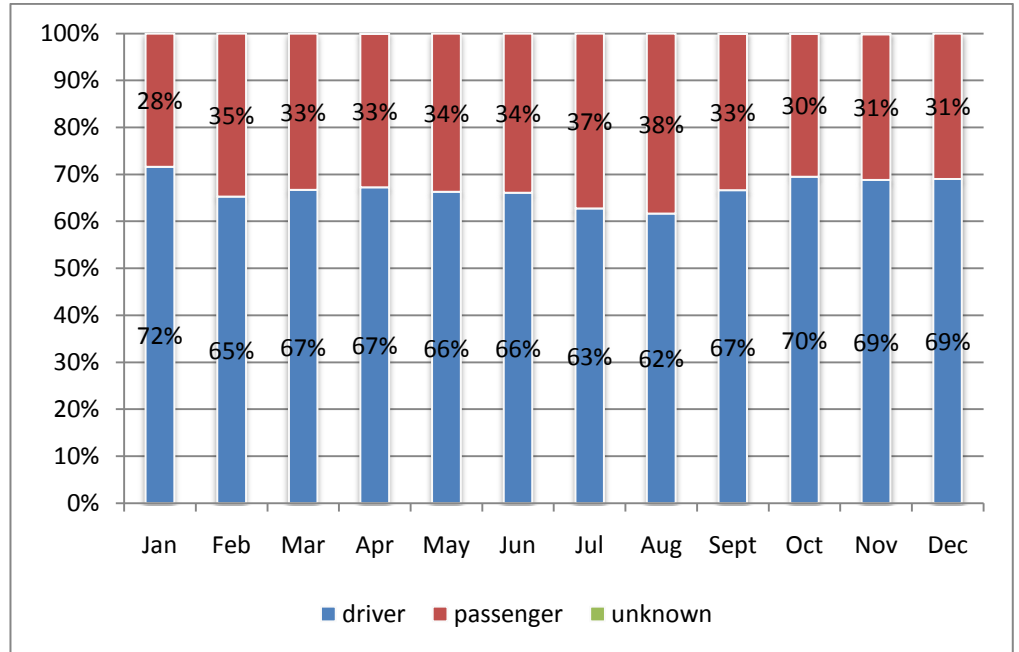
Source: CARE Database / EC
Date of query: February 2011

Figure 2 presents the proportions of car occupant fatalities who were drivers and passengers for the EU-23 by month in 2008. In general, the distribution is relatively equal over the year. In January however, the proportion of car driver fatalities is relatively high (72%). In July and August the proportion of passenger fatalities is relatively high (37% and 38%)

Overall there is no clear trend to the distribution of fatalities across the months of the year.

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Figure 2: Proportion of car driver and occupant fatalities per month for the EU-23, 2008



Source: CARE Database / EC
Date of query: February 2011

Table 7: Proportion of car occupant fatalities per day of the week, EU-23, 2008

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
BE	14%	10%	10%	11%	16%	19%	20%
CZ	14%	12%	13%	14%	13%	17%	17%
DK	16%	14%	10%	14%	14%	13%	19%
DE	14%	13%	12%	12%	17%	16%	15%
EE	9%	10%	9%	12%	22%	28%	12%
IE	18%	14%	10%	11%	12%	17%	19%
EL	14%	12%	11%	12%	15%	16%	20%
ES	13%	11%	11%	11%	15%	17%	21%
FR	11%	12%	12%	13%	15%	19%	19%
IT	12%	12%	12%	12%	14%	18%	19%
LV	11%	13%	10%	13%	17%	17%	20%
LU	20%	15%	10%	5%	10%	25%	15%
HU	14%	14%	12%	13%	15%	18%	15%
NL	12%	9%	13%	12%	22%	18%	13%
AT	12%	12%	9%	13%	15%	24%	15%
PL	14%	10%	12%	10%	15%	18%	20%
PT	14%	14%	9%	10%	11%	17%	26%
RO	11%	10%	9%	11%	16%	20%	24%
SI	20%	7%	6%	17%	21%	15%	15%
SK	17%	12%	12%	10%	17%	18%	13%
FI	9%	14%	12%	16%	22%	16%	10%
SE	14%	10%	14%	15%	18%	16%	14%
UK	12%	11%	12%	13%	14%	20%	18%
EU-23	13%	12%	11%	12%	16%	18%	19%

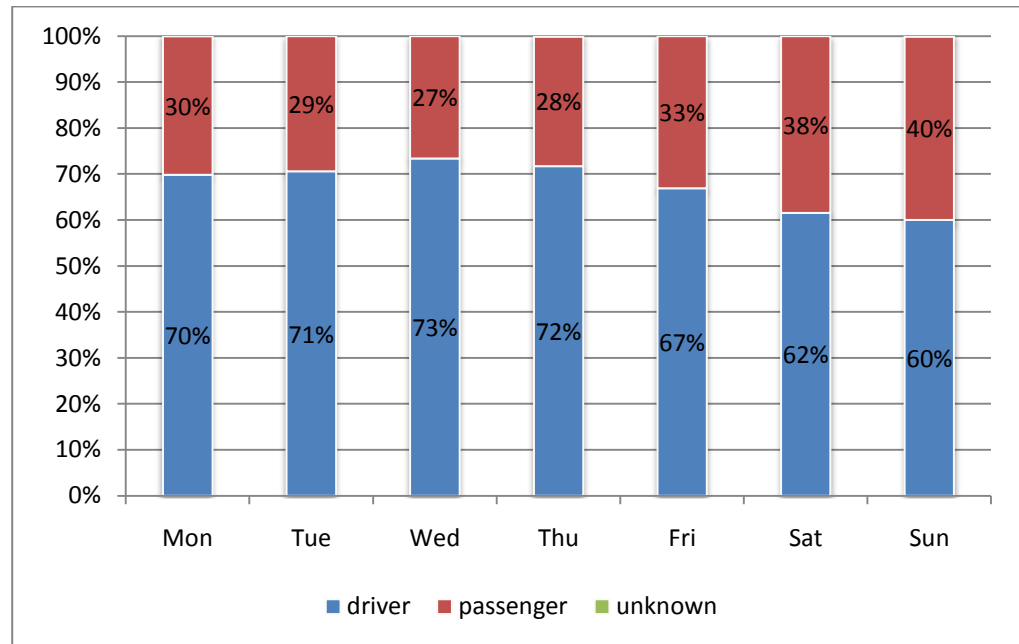
Source: CARE Database / EC
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Table 7 presents the percentages of car occupant fatalities across the days of the week in 2008. These indicate that for the EU-23, nearly 40% of car occupant fatalities occur either on a Saturday or a Sunday, while Wednesday recorded in general, the lowest percentage of fatalities (11%). Individual countries also conformed to this trend in general, with the exceptions such as the Netherlands, Slovenia and Finland where the largest percentage occurred on a Friday.

Figure 3 presents the proportions of car occupant fatalities who were drivers and passengers for the EU-23 by day of the week in 2008. The proportion of fatalities who were passengers is higher at the weekend than on weekdays.

Figure 3: Proportion of car driver and occupant fatalities per day of the week, EU-23, 2008



Source: CARE Database / EC
Date of query: February 2011

Nearly 40% of car occupant fatalities on Saturdays and Sundays were passengers, while the percentage was lowest on Wednesdays.

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Table 8 presents the percentage of car occupant fatalities over a 24 hour period. There is a notable difference for the EU-23 between the smallest percentage (from midnight to 4am, 12%) and the largest percentage (1600-2000, 18%). With the exception of Belgium, Luxembourg, Hungary and Sweden, in most countries the largest percentage of fatalities occurred between 16:00 and 20:00 hours, suggesting that the afternoon peak hour traffic contributes significantly to the fatality numbers.

Table 8: Proportions of car occupant fatalities during the day for EU-23, 2008

	0:00-3:59	4:00-7:59	8:00-11:59	12:00-15:59	16:00-19:59	20:00-23:59	unknown
BE	20%	17%	14%	16%	16%	17%	0%
CZ	11%	16%	15%	20%	21%	15%	1%
DK	11%	16%	14%	20%	21%	17%	0%
DE	0%	0%	0%	0%	0%	0%	100%
EE	16%	6%	13%	17%	25%	22%	1%
IE	19%	8%	18%	15%	19%	22%	0%
EL	17%	16%	15%	15%	26%	10%	0%
ES	10%	15%	15%	20%	22%	17%	0%
FR	11%	17%	15%	18%	23%	15%	0%
IT	16%	14%	15%	19%	19%	15%	1%
LV	13%	10%	19%	20%	22%	14%	2%
LU	20%	30%	0%	15%	20%	15%	0%
HU	14%	19%	19%	17%	17%	15%	0%
NL	12%	14%	13%	17%	22%	22%	0%
AT	14%	18%	18%	15%	20%	15%	0%
PL	11%	16%	16%	20%	20%	18%	0%
PT	16%	15%	15%	18%	21%	16%	0%
RO	16%	15%	14%	15%	22%	19%	0%
SI	7%	12%	13%	13%	34%	20%	0%
SK	13%	15%	16%	22%	23%	10%	2%
FI	14%	9%	21%	19%	22%	15%	0%
SE	13%	12%	15%	27%	21%	12%	0%
UK	17%	12%	11%	18%	19%	22%	0%
EU-23	12%	13%	13%	16%	18%	14%	13%

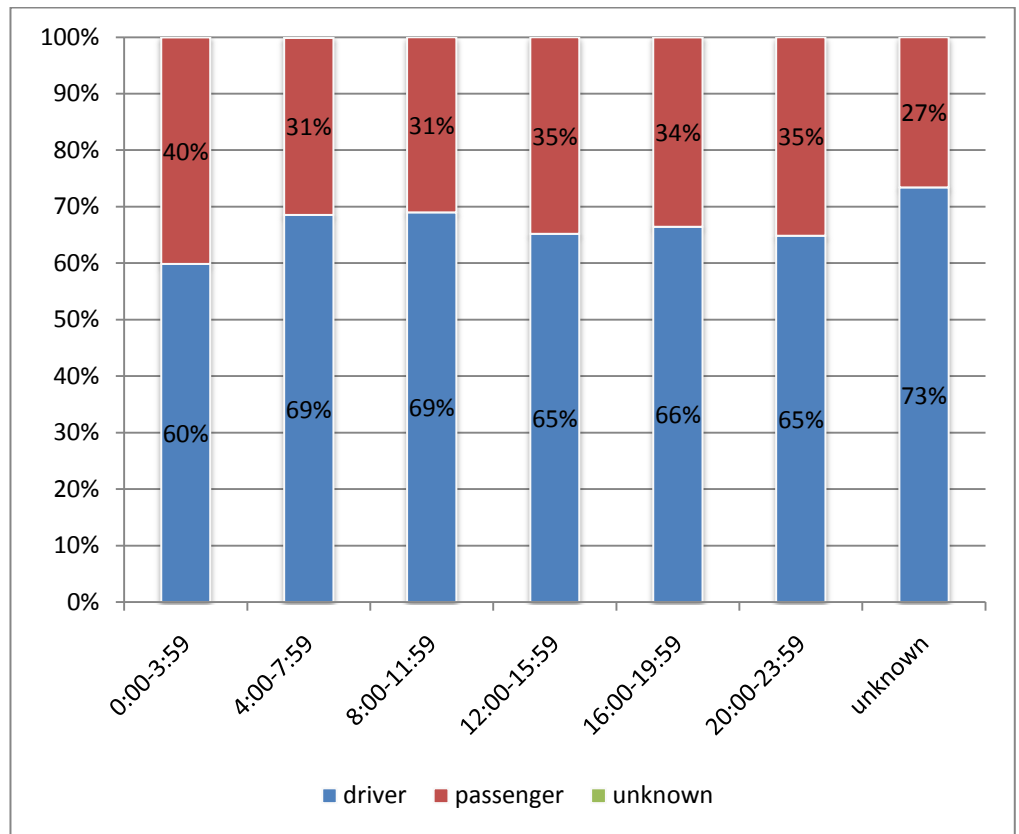
Source: CARE Database / EC
Date of query: February 2011

Figure 4 presents the proportions of car occupant fatalities in the EU-23 who were drivers and passengers by time of day for the year 2008. The proportion of car passenger fatalities (in the EU-23) is highest (40%) between midnight and 04:00 (am), but there is little variation during the rest of the day.

Relatively many car occupants are killed between 4pm and 8pm, and the afternoon peak hour traffic is likely to contribute significantly.

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Figure 4: Proportion of car driver and occupant fatalities by time of the day for the EU-23, 2008



Source: CARE Database / EC
Date of query: February 2011

The proportion of car passenger fatalities is highest (40%) between midnight and 4 am

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Where Do these Fatalities Occur?

The majority of car occupant fatalities occur away from a junction, with only around 14% the fatalities occurring at junctions in the EU-23 (Table 9). The greatest proportion of fatalities at junctions occurred in Estonia (32%), Italy (24%), Luxembourg (25%) and the UK (25%). No fatalities were recorded at junctions in Slovenia in 2008, and very low percentages were recorded in Greece, France, Latvia and Romania.

Table 9: Proportions of car occupant fatalities at junctions for EU-23, 2008

	Junction	No junction	Unknown
BE	13%	87%	0%
CZ	18%	81%	0%
DK	19%	81%	1%
DE	13%	44%	43%
EE	32%	67%	1%
IE	14%	0%	86%
EL	7%	93%	0%
ES	12%	88%	0%
FR	7%	93%	0%
IT	24%	76%	0%
LV	7%	90%	2%
LU	25%	75%	0%
HU	21%	79%	0%
NL	21%	79%	0%
AT	12%	61%	26%
PL	12%	88%	0%
PT	10%	86%	4%
RO	7%	93%	0%
SI	0%	80%	20%
SK	8%	91%	1%
FI	19%	81%	0%
SE	18%	0%	82%
UK	25%	75%	0%
EU-23	14%	78%	8%

The greatest proportion of fatalities at junctions occurred in Estonia (32%), Italy (24%), Luxembourg (25%) and the UK (25%).

Source: CARE Database / EC
Date of query: February 2011

The CARE data show whether fatalities occurred on motorways and, for non-motorway fatalities, whether on urban or rural roads. Table 10 shows the number of car occupant fatalities by road and area type. Most car occupant fatalities occurred outside urban areas on non-motorways.

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Table 10: Car occupant fatalities by road type and area type, EU-23, 2008

	Outside Urban area		Inside Urban area	Unknown
	Non motorway	Motorway		
BE	285	99	95	0
CZ	396	18	159	0
DK	147	23	26	0
DE	1.774	325	269	0
EE	57	0	12	0
IE	134	1	25	0
EL	426	65	217	0
ES	1.308	63	124	0
FR	1.755	143	307	0
IT	1.249	268	599	0
LV	128	0	36	0
LU	10	0	4	0
HU	311	27	110	0
NL	242	0	55	2
AT	263	56	48	0
PL	1.755	21	764	0
PT	192	55	112	0
RO	728	10	585	0
SI	52	8	22	0
SK	202	9	81	0
FI	156	6	40	0
SE	192	7	27	1
UK	875	105	332	0
EU-23	12.636	1.309	4.049	3

Most car occupant fatalities occurred outside urban areas on non-motorways.

Source: CARE Database / EC
Date of query: February 2011

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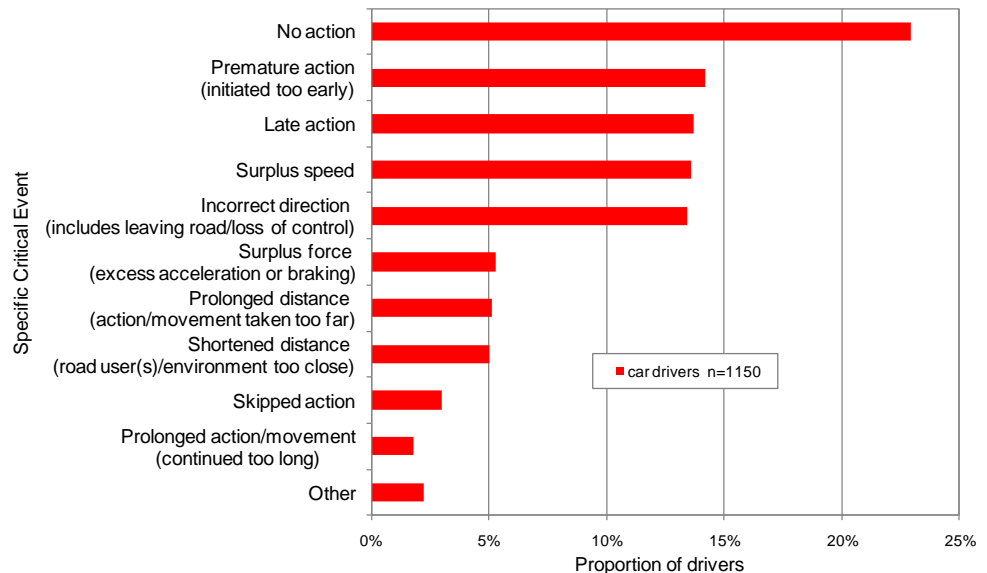
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Accident Causation

During the EC SafetyNet project, in-depth data were collected using a common methodology for samples of accidents that occurred in Germany, Italy, The Netherlands, Finland, Sweden and the UK^{2 3}. The SafetyNet Accident Causation Database was formed between 2005 and 2008, and contains details of 1.006 accidents covering all injury severities. A detailed process for recording causation (SafetyNet Accident Causation System – SNACS) attributes one specific critical event to each driver, rider or pedestrian. Links then form chains between the critical event and the causes that led to it. For example, the critical event of late action could be linked to the cause observation missed, which was a consequence of fatigue, itself a consequence of an extensive driving spell.

In the database, 82% (826) of the accidents involve a car. Of the car drivers, 65% are male and the mean age is 41 years old. Figure 5 gives the distribution of specific critical events for car drivers.

Figure 5: Distribution of specific critical events - car drivers



N=1150

Source: SafetyNet Accident Causation Database 2005 to 2008 / EC
Date of query: 2010

Specific critical events under the general category of ‘timing’, no action, premature action and late action, are recorded most often for car drivers. No action describes those drivers who have not reacted at all (or at least in an effective time frame) to avoid a collision, for example, to avoid an oncoming vehicle. A premature action is one undertaken before a signal has been given or the required conditions are established, for example entering a junction before it is clear of other traffic.

Following these ‘timing’ events’, surplus speed and incorrect direction are recorded in equal measure. Surplus speed describes speed that is too high for the conditions or manoeuvre being carried out, travelling above the speed limit and also if the driver is travelling at a

² SafetyNet D5.5, Glossary of Data Variables for Fatal and Accident Causation Databases
³ SafetyNet D5.8, In-Depth Accident Causation Database and Analysis Report

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speed unexpected by other road users. Incorrect direction refers to a manoeuvre being carried out in the wrong direction (for example, turning left instead of right) or leaving the road (not following the intended direction of the road). 'Loss of control' type accidents can fall into either critical event depending on the specific situation.

Table 11 gives the most frequent links between causes for car drivers in the dataset. For this group there are 1.303 such links in total.

Table 11: Ten most frequent links between causes – car drivers

Links between causes	Frequency
Faulty diagnosis - Information failure (driver/environment or driver/vehicle)	209
Observation missed - Distraction	86
Observation missed - Temporary obstruction to view	83
Observation missed - Faulty diagnosis	77
Faulty diagnosis - Communication failure	66
Inadequate plan - Insufficient knowledge	62
Observation missed - Permanent obstruction to view	60
Observation missed - Inadequate plan	52
Observation missed - Inattention	47
Inadequate plan - Under the influence of substances	45
Others	516
Total	1.303

Source: SafetyNet Accident Causation Database 2005 to 2008 / EC
Date of query: 2010

Table 11 gives both an indication of the most frequently recorded causes and the most frequently recorded links between them. Faulty diagnosis and observation missed are the two dominant causes for car drivers. Faulty diagnosis is an incorrect or incomplete understanding of road conditions or another road user's actions. It is linked to both information failure (for example, a driver thinking another vehicle was moving when it was in fact stopped and colliding with it) and communication failure (for example, pulling out in the continuing path of a driver who has indicated for a turn too early).

The causes leading to observation missed can be seen to fall into two groups, physical 'obstruction to view' type causes (for example, parked cars at a junction) and human factors (for example, not observing a red light due to distraction or inattention). Inadequate plan can also be seen to be frequently recorded and describes a lack of all the required details or that the driver's ideas do not correspond to reality. It is most often linked to insufficient knowledge (for example, not understanding a complex junction layout) but it is also linked with under the influence of substances (alcohol, drugs or medication).

16% of the links between causes are observed to be between 'faulty diagnosis' and 'information failure'.

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Disclaimer

The information in this document is provided as it is and no guarantee or warranty is given that the information is fit for any particular purpose. Therefore, the reader uses the information at their own risk and liability.

For more information

Further statistical information about fatalities is available from the CARE database at the Directorate General for Energy and Transport of the European Commission, 28 Rue de Mot, B -1040 Brussels.

Traffic Safety Basic Fact Sheets available from the European Commission concern:

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Country abbreviations used and definition of EU-level

EU-23		EU-23= EU-19+	
BE	Belgium	EE	Estonia
CZ	Czech Republic	LV	Latvia
DK	Denmark	HU	Hungary
DE	Germany	SK	Slovakia
IE	Ireland		
EL	Greece		
ES	Spain		
FR	France		
IT	Italy		
LU	Luxembourg		
NL	Netherlands		
AT	Austria		
PL	Poland		
PT	Portugal		
RO	Romania		
SI	Slovenia		
FI	Finland		
SE	Sweden		
UK	United Kingdom (GB+NI)		

Detailed data on traffic accidents are published annually by the European Commission in the Annual Statistical Report. This includes a glossary of definitions on all variables used.

More information on the DaCoTA Project, co-financed by the European Commission, Directorate-General for Mobility and Transport is available at the DaCoTA Website: <http://www.dacota-project.eu/index.html>.

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