Road Safety Country Overview November 2012

Germany





Germany has a strong and

influential

automotive industry.

Structure and Culture

Basic data

Table 1: Basic data of Germany in relation to the European average. (Sources: [1] OECD/ITF, 2011; [2] Eurostat; [3] DG-TREN, 2005; [4] CIA)

Basic data of Germany	European average	
 Population: 81.8 million inhabitants (2010) 	17.1 million (2010 ¹) [1,2]	
 Area: 357 000 km² (2010) 	156 225 km ² (2010) [1,3]	
(2.3% water) (2010)	3% water (2010) [4]	
 Climate and weather conditions (capital city; 1992): 	(2010)	
Average winter temperature (Nov. to April): 6°C	6°C	
Average summer temperature (May to Oct.): 15°C	16°C	
Annual precipitation level: 603 mm	747 mm	
 Exposure: 704.8 billion vehicle km (2010) 	168 billion vehicle km	
(85% passenger cars, 12% trucks, 2% motorcycles, 1%	(2010") [1]	
mopeds)		
 0.6 motorised vehicles per person (2010) 	0.7(2010 ^{^{I, III}) [1,2]}	

• Country characteristics

Table 2: Characteristics of Germany in comparison to the European average. (Sources: [1] OECD/ITF, 2011; [2] Eurostat; [3] national sources)

Characteristics of Germany	European average
 Population density: 229 inhabitants/km² (2010) 	110 inhabitants km ² (2010 [']) [1,2,3]
 Population composition (2010): 13% children (0-14 years), 66% adults (15-64 years), 21% elderly (65 years and over) Gross Domestic Product (GDP) per capita: €30 600 (2010) 	16% children, 67% adults, 17% elderly (2009 ⁱⁱⁱ) [1,2] €26 100 (2010) [1,2]
 51% of population lives inside urban area (2010) 	42% (2010 ^{iv}) [1,2]
 Special characteristics: Germany has the fourth largest technological industry of the world, which includes the automotive industry. 	

Based on 30 European countries; data of HU = 2009.

- ⁱⁱ Based on 15 European countries (excl. BG, CY, EE, EL, ES, HU, IT, LT, LU, LV, MT, PL, PT, RO, SK); data of
- CZ, IE, SE, NO (2009); data of AT, BE, DK (2008); Data of UK (2006); data of NL (2003).
 - Based on 27 European countries (excl. LT, NO, PL); data of BE, UK (2008).
 - ^{iv} Based on 29 European countries (excl. IS).

DaCoTA

Structure of road safety management

 Road safety policy making is decentralised centralized in Germany. The national government is the key actor for setting the national framework and national policy, guidelines and laws; the federal states (Bundesländer) are the key actors for road safety management.

The following key-actors are responsible for road safety (RS) management:

Table 3: Key actors per function in Germany. (Sources: DG-TREN, 2010; national experts)

Key functions	Key actors
 Formulation of national RS strategy Setting targets Development of the RS programme 	 The Federal Ministry for Transport, Building and Housing (BMVBS): responsible for road safety at a national level. German Road Safety Council (DVR): lead agency dealing with road safety. It consists of representatives of BMVBS, other transport related ministries of the 'Bundesländer' and other road safety organisations.
2. Monitoring of the RS development in the country	BMVBS, supported by BASt
3. Improvements in road infrastructure	 BMVBS: responsible for developing a Federal Transport Infrastructure Plan. The Federal Road Administration and the local authorities (Länder): responsible for implementation and financing of the measures to improve road safety on the federal and non- federal road network respectively.
4. Vehicle improvement	The Federal Motor Transport Authority (KBA): responsible for approving vehicles types and parts, vehicle test centers, penalty points-system and central registration of traffic offenders.
5. Improvement in road user education	 DVR; Transport Ministries of the 'Bundesländer'; "Verkehrswachten": local road safety associations; Automobile clubs.
6. Publicity campaigns	 – DVR – Transport Ministries of the 'Bundesländer' – "Verkehrswachten": local road safety associations – Automobile and bicycle clubs
7. Enforcement of road traffic laws	 Police Federal Ministry of Justice: legislation on road traffic BMVBS: setting of fines
8. Other relevant actors	 Members of the DVR include: Road Safety Clubs, the Work Accident Insurance Associations, automobile clubs, the insurance sector, vehicle manufacturers, churches, the industrial sector, the employer associations and trade unions; Research institutes: BASt (the Federal Highway Research Institute), Road and Transportation Research Association, the German Institute for Standardisation (DIN), the German Institute for Construction Technology, universities.

The Federal Ministry of Transport, Building and Housing is the key actor for national policy making; the federal states are in charge of road safety management in Germany.



Attitudes towards risk taking

- German drivers generally report to drive somewhat less hazardous as drivers in other countries.
- In Germany, drivers are less in favour of stricter legislation than drivers in other countries, especially for speeding offences.
- The probability of being checked is perceived as somewhat higher in Germany than in other countries.

Table 4: Road safety attitudes and behaviour of drivers (Source: SARTRE, 2004)

	Germany	SARTRE average	
Self-reported driving behaviour	% of drivers that show		
	behaviour often or more		
Too close following	6% 9%		
Inappropriate overtaking	4%	5%	
Exceeding speed limit on motorways	20%	25%	
Exceeding speed limit on main inter-urban roads	15%	18%	
Exceeding speed limit on country roads	17%	13%	
Exceeding speed limit in built-up areas	7% 8%		
Support of stricter legislation	% of drivers that support		
	stricter legislation		
Higher penalties for speeding offences	45%	60%	
Higher penalties for drink-driving offences	86%	88%	
Lower BAC limits	4%	8%	
Perceived probability of being checked for	% of drivers who assume they		
	are checked often		
	000/	4.00/	
Speeding	20%	18%	

Legend

(comparison of country attitude in relation to average attitude of other SARTRE countries):





German drivers are more in favour of stricter legislation than drivers in other countries.



The German RS plan aims for a reduction of 40% fatalities in 2020.

Road safety

obligatory in Germany; road safety audits are obligatory for federal projects.



Programs and measures

National strategic plans and targets

- Germany's latest federal road safety action plan was launched in 2011.
- Targets (referred to 2010):

Table 5: Road safety targets for Germany

YearFatalities2020-40%

- Priority topics:
 - Enhancement of sustained road safety;
 - Enabling an ecological and sustainable mobility;
 - Enhancement of an unobstructed and safe mobility of people with a limited scope of traveling;
 - Cultivation of an accountable and respectful behaviour of all road users;
 - Attending the efforts of the German Automobile Industry (development of technical innovations and setting frameworks for a utile competitive environment).

(Source: national sources)

Road infrastructure

Table 6: Description of the road categories and their characteristics in Germany (Source: TiS.PT, 2003).

Road type	Speed limit (km/h)
Urban roads	50
Rural roads	100
Motorways	No limits (130 recommended)

Special rules for:

- Light motorcycles (A1; until 18 years): 80 km/h
- o Trucks: 60 km/h on rural roads, 80 km/h on motorways
- Busses and cars with trailers: mostly 80 km/h
- Guidelines and strategic plans for infrastructure are available in Germany.

Table 7: Obligatory parts of infrastructure management in Germany and other European countries. (Sources: DG-TREN, 2010; national sources)

Obligatory parts in Germany:	European countries with obligation
Safety impact assessment: no	-
Road safety audits: yes (federal	50%
projects; otherwise recommended)	
Road safety inspections: yes	60%
Black spot treatment: yes	47% ^v

- Recent infrastructural actions have been addressing:
 - o building new highways and improved standards,
 - o focus on improvement of safety of rural roads (2 lane roads),
 - o consider safety in planning,
 - o more use of 30 km/h zone.

^v Based on data of 18 countries (excl. AT, BE, CH, CZ, FI, FR, HU, IE, MT, NO, RO, SE).



Traffic laws and regulations

Table 8: Description of the regulations in Germany in relation to the most common regulations in other European countries. (Sources: [1] DG-TREN, 2005; [2] national sources; [3] DG-TREN, 2010; [4] DG-TREN, 2008)

Regulations in Germany	Most common in Europe (% of countries)	
Allowed BAC level: 0.5%;	0.5‰ (60%)	
 Novice drivers: 0.0‰; 	0.5‰ and 0.2‰ (both 30%)	
 Professional drivers in passenger 	0.5‰ (30%) [1,2]	
transport: 0.0‰. [1]		
Phoning:		
 Hand held: not allowed 	Not allowed (97%) [2,3]	
 Hands free: allowed [3] 	-	
Use of restraint systems:		
 Driver: obligatory 	Obligatory (all countries)	
 Front passenger: obligatory 	Obligatory (all countries)	
 Rear passenger: obligatory 	Obligatory (all countries)	
 Children: obligatory 	Obligatory on all seats (73%) [2,3]	
Helmet wearing:		
 Motor riders: obligatory 	Obligatory (all countries)	
 Moped riders: obligatory 	Obligatory (all countries)	
 Cyclists: recommended 	Recommended (25% ^{vi}) [2,3]	
 DRL is recommended [4]; 		
 a demerit point system is in place [3] 		

• Enforcement

Table 9: Effectiveness of enforcement effort in Germany according to an international respondent consensus (scale = 0-10) (Source: DG-TREN, 2010)

Issue	Score for Germany	Most common in Europe (% of countries)
Speed legislation enforcement	Not available	7 (35%)
Seat-belt law enforcement	Not available	7 (43%) ^{vii}
Child restraint law enforcement	Not available	6 (27% ^{viii})
Helmet legislation enforcement	Not available	9 (39% ^{ix})



Germany has a zero tolerance for drink-driving of novice drivers and professional drivers in passenger transport; this is lower than most limits in Europe.



^{vi} Based on data of 24 countries (excl. CH, CY, HU, LU, NO, PT). ^{vii} Based on data of 23 countries (excl. DE, DK, IE, IS, LU, NL and UK).

viii Based on data of 22 countries (excl. DE, DK, IE, IS, LU, NL, RO and UK).



Table 10: Performance of enforcement effort in Germany according to an international respondent consensus (scale = is good, is improving, needs to do more) (Source: DG-TREN, 2010)

Issue	Score for Germany	Most common in Europe (% of countries)
Speeding	is improving	is improving (50%)
Drink driving	is improving	is improving (79%) ^{ix}
Seat belt use	is good	is improving (52% ^x)

Road user education and training

Table 11: Road user education and training in Germany, compared to the situation in other European countries. (Sources: [1] ROSE25, 2005; [2] ETSC, 2011; [3] national sources)

Education and training in Germany	Most common in Europe (% of countries)
General education programmes:	
 Primary school: Compulsory 	Compulsory (65% ^{xi})
 Secondary school: Compulsory 	Compulsory (50% ^{XII}) [1,2]
 Other groups: none 	-
Driving licences thresholds:	
 Passenger car: 18 (accompanied: 17) 	18 years (79%)
 Motorised two wheeler: 18 	18 years (low categories) and higher ages for
	faster vehicles (66%)
 Busses and coaches: 21 	21 years (76%) ^{xiii}
 Lorries and trucks: 21 	21 years (79% ^{xiv}) [2,3]

Public campaigns

Table 12: Public campaigns in Germany, compared to the situation in other European countries. (Sources: SUPREME, 2007; national sources)

Campaigns in Germany	Most common issues in Europe (% of countries)
Organisation:	
– DVR;	
 Transport Ministries of the 'Bundesländer'; 	
 "Verkehrswachten": local road safety 	
associations;	
 Automobile clubs. 	
Main themes:	
 Drink-driving, 	Drink-driving (83%)
– Seat-belt,	Seat-belt (73%)
– Speeding,	Speeding (53%)
 Public awareness campaigns for e.g. 	-
motorcyclists,	
 Information for the elderly, 	-
 Information on cycling for children, 	-
 Best car driver, 	-
 Road safety for employees. 	-



^{ix} Based on data of 24 countries (excl. BG, CH, IS, NO, PL and RO).

^x Based on data of 25 countries (excl. BG, CH, IS, NO and RO).

^{xi} Based on data of 26 countries (excl. BG, CH, NO and RO).

- xii Based on data of 24 countries (excl. BG, CH, MT, NO, RO and SK).
- xiii Based on data of 29 countries (excl. NO).
- xiv Based on data of 28 countries (excl. IE and NO).

Road user education and campaigns and driving license thresholds are similar to the European average.

Lorries or trucks: Every 12 months

The mandatory inspection period for passenger cars and motorcycles is longer in Germany than the most common period in Europe.

Vehicles and technology (national developments)

Table 13: Developments of vehicles and technology in Germany, compared to the
situation in other European countries. (Sources: TiS.PT, 2003; national sources)Technical inspections mandatory for:Most common in Europe (% of countries)Passenger cars: Every 24 monthsEvery 12 months (41%)Motorcycles: Every 24 monthsEvery 12 months (35%)Busses or coaches: Every 12 monthsEvery 12 months (41%)

Every 12 months (41%)^{xv}



^{xv} Based on data of 17 countries (excl.BG, CH, CY, CZ, EE, HU,LT, MT, NO, RO, SI, SK).



Project co-financed by the European Commission, Directorate-General for Mobility and Transport 7/16



There is no information available about driving speed in Germany.



Road Safety Performance Indicators

Speed

Table 14: Number of speed checks in Germany versus the European average (Source: ETSC, 2010)

Measure	2006	2008	Average annual change	European average (2008)
Number of tests/1000 population	Not available	Not available	Not available	90.8 ^{xvi}

Table 15: Percentage of speed offenders per road type in Germany compared to the European average (Source: ETSC, 2010)

Road type	2001	2010	Average annual change	European average
Motorways	Not available	Not available	Not available	Not available
Rural roads	Not available	Not available	Not available	Not available
Urban roads	Not available	Not available	Not available	Not available

Table 16: Mean speed per road type in Germany compared to the European average (Source: ETSC, 2010)

Road type	2001	2010	Average annual change	European average
Motorways	Not available	Not available	Not available	Not available
Rural roads	Not available	Not available	Not available	Not available
Urban roads	Not available	Not available	Not available	Not available

Alcohol

Table 17: Road side surveys for drink-driving* in Germany compared to the European average (Source: ETSC, 2010)

Measure	2006	2008	Average annual change	European average (2008)
Number of tests/1000 population	Not available	Not available	Not available	145.8 ^{xvii}
% tested over the limit	Not available	Not available	Not available	Not available

* Road side surveys for drink-driving are not allowed in Germany.

DaCoTA

^{xvi} Based on data of 21 countries (excl. BE, CH, DE, EE, IE, IS, MT, PT and UK).
 ^{xvii} Based on data of 17 countries (excl. BE, BG, CH, CZ, DE, IS, LU, LV, MT, NL, RO, SK and UK.).

The German car fleet is newer and with a higher occupant protection score than the European average.

Seat-belt wearing rates are quite high in Germany, as is helmet wearing by motor riders.

• Vehicles

Table 18: State of the vehicle fleet in Germany compared to the European average (Source: ETSC, 2009)

Vehicle fleet in Germany	European average
Cars per age group (2009):	Passenger cars (2009) ^{xviii}
– 15% ≤ 2 years,	12% ≤ 2 years,
- 21% 2 to 5 years,	19% 2 to 5 years,
- 30 % 6 to 10 years,	27 % 6 to 10 years,
- 34% > 10 year.	42% >10 years
EuroNCAP occupant protection score of cars (new cars	
sold in 2008):	
– 5 stars: 55%	49%
- 4 stars: 30%	35%
- 3 stars: 4%	6%
- 2 stars: 0%	1%^^^

• Protective systems

Table 19: Protective system use in Germany versus the average in Europe (Source: Vis & Eksler, 2008, national sources)

Use of protective systems in Germany	European average
Daytime seat belt wearing in cars and vans (2011):	(2007)
– 98% front,	85% front ^{xx} ,
– 98% driver	Not available
 98% front passenger 	Not available
– 96% rear,	60% rear ^{**!} ,
 92% (rural) and 88% (urban) child restraint systems 	Not available
Helmet use (2007):	
– 95% motor rides,	Not available
 83% moped riders, 	Not available
– 11% cyclists (2011)	Not available



xviii Based on data of 22 countries (excl. BG, DK, EL, FR, IS, MT, PT and SK).

xix Based on data of 27 countries (excl. CY, IS and MT).

^{xx} Based on data of 25 countries (excl. AT, EL, IS, LT and RO); data of SK (2008); data of BE, CH, DK, IE, MT, NL (2006); data of HU, IT, NO, PT (2005); data of LU (2003)

^{xxi} Based on data of 22 countries (excl. CY, EL, ES, IS, IT, LT, RO and SK); data of BE, CH, DK, IE, MT, NL (2006); data of HU, NO, PT (2005); data of LU (2003).





Road Safety Outcomes

General positioning









Germany has a lower than average annual amount of fatalities per million population and also the rate of decrease is larger.



Transport

Car occupants and motorcycles have the highest share in Germany, and also higher than the European average; pedestrians have a lower share than average.

In Germany, fatalities among females and older men have a higher share than average in Europe.

Transport mode

Table 20: Reported fatalities by mode of road transport in Germany compared to the European average of the last year available (Source: CARE, national sources).

Transport mode	2001	2010	Average annual change	% in 2010	European average (2009 ^{xxii})
Pedestrians	900	476	-7%	13%	18%
Car occupants	4023	1840	-8%	50%	47%
Motorcyclists	964	635	-4%	17%	13%
Mopeds	138	74	-6%	2%	2%
Cyclists	635	381	-5%	10%	5%
Bus/coach occupants	11	32	31%	1%	<1%
Lorries or truck occupants*	228	160*	-4%	4%	4%

*2009

Age, gender and nationality

Table 21: Reported fatalities by age, gender and nationality in Germany versus the European average of the last year available (Source: CARE, national sources).

Age and gender	2001	2010	Average annual change	% in 2010	European average (2009 ^{VIII})
Females	1.923	997	-5%	27%	24%
0-14 years	98	48	-6%	1%	1%
15 – 17 years	79	33	-6%	1%	1%
18 – 24 years	352	187	-5%	5%	4%
25 – 49 years	565	245	-6%	7%	7%
50 – 64 years	271	156	-5%	4%	3%
65+ years	558	328	-5%	9%	7%
Males	5.052	2.651	-5%	73%	75%
0-14 years	133	56	-6%	2%	2%
15 – 17 years	207	68	-7%	2%	2%
18 – 24 years	1.254	503	-7%	14%	13%
25 – 49 years	2.026	973	-6%	27%	31%
50 – 64 years	708	468	-4%	13%	12%
65+ years	724	582	-2%	16%	12%
Nationality of driver or	rider killed	k			
National	6824	4304*	-4%	96%	Not available
Non-national	153	173*	1%	5%	Not available



^{xxii} Based on data of 28 countries (excl. NO, LT); data of FR, IE, MT, SE (2008).

In Germany a higher share of fatal crashes happen at junctions and on rural roads and motorways than on average in Europe.



A higher share of fatal crashes happen in Germany during daylight than on average in Europe; single vehicle crashes have a lower share than average.

Location

Table 22: Reported fatalities by location in Germany compared to the European average of the last year available (Source: CARE, national sources). Motorways and junctions are part of built-up and rural areas.

Location	2001	2010	Average annual change	% in 2010	European average (2009 ^{VIII})
Built-up areas	1726	1011	-5%	28%	33%
Rural areas	5251	2637	-6%	72%	49%
Motorways	770	430	-5%	12%	5%
Junctions	1643	1073*	-5%	29%	12%

*2008

Lighting and weather conditions

Table 23: Reported fatalities by lighting and weather conditions in Germany compared to the European average of the last year available (Source: CARE, national sources).

Conditions	2001	2010	Average annual change	% in 2010	European average (2009 ^{xxiii})
Lightning conditions					
During daylight	4045	2368	-5%	65%	55%
During nighttime	2538	1116	-6%	31%	39%
Weather condition					
While raining (*2008)	248	146*	-6%	4%	10%

Single vehicle crashes

Table 24: Reported fatalities by type in Germany compared to the European average of the last year available (Source: CARE, national sources).

Crash type	2001	2010	Average annual change	% in 2010	European average (2009 ^{xxiv})
Single vehicle crash	2273	1119	-6%	31%	40%

Under-reporting of casualties

- Fatalities: nearly 100% (2009). This amount is suspected since research on the actual reporting rate is missing.
- Hospitalised: no information on the percentage reported seriously injured.

(Source: CARE; national sources)



^{xxiii} Based on 25 countries (excl. IE, IT, LT, NO, SI); data of AT, BE, DK, EE, FI, FR, MT, SE (2008). ^{xxiv} Based on 27 countries (excl. IE, LT, NO); data of AT, BE, DK, EE, FI, FR, MT, SE (2008).



Risk figures



Motorcycles, busses and youngsters have the highest risks in Germany.





Figure 4: Fatalities by number of inhabitants in Germany in 2010 (Sources: CARE, OECD/ITF, 2011).





Social Cost

- Total costs of road crashes (fatalities, injuries and property damage): 31 billion Euros
- Percentage of GDP: 1.25%

Table 25: Cost (in million Euro) per injury type in Germany versus the European average (Source: Bickel et al., 2006; national information).

Injury type	Value	European average ^{xxv}
Fatal	1.04	1.28
Hospitalised	0.11	0.18
Slightly injured	0.04	0.02

Estimated costs of serious injuries are somewhat lower and slight injuries somewhat higher in Germany than on average in Europe



xxv Based on data of 20 countries (excl. BG, DE, FI, FR, HU, IS, LT, NO, RO and SK).





Seat-belt wearing rates and seat-belt enforcement are very good in Germany, as is the vehicle fleet quality.

Synthesis

Safety position

Germany has a lower than average annual amount of fatalities per million population.

• Scope of problem

- Car occupants and motorcycles have the highest share in Germany, and also higher than the European average.
- In Germany, females and older men have a higher share than average in Europe.
- In Germany, a higher share of fatal crashes happen at junctions and on motorways and rural roads, but single vehicle crashes – which are common on rural roads – have a smaller share than average.
- Motorcycles and buses have the highest risks (amount of fatal crashes per share in the vehicle fleet) in Germany. Also youngsters have a high risk.

Recent progress

 The amount of annual fatalities per million inhabitants decreases faster in Germany than on average in Europe.

Remarkable road safety policy issues

- Road safety inspections are obligatory in Germany and road safety audits are obligatory for federal projects, recommended for other projects.
- Seat-belt enforcement is assessed as better than average in Germany, and seat-belt wearing rates are high.
- The German car fleet is newer and with a higher occupant protection score than the European average.





Literature

- Bickel, P. et al (2006) HEATCO deliverable 5. Proposal for harmonised guidelines. EUproject developing harmonised European approaches for transport costing and project assessment (HEATCO). Institut für Energiewissenschaft und Rationelle Energieanwendung, Stuttgart.
- CARE database
- CIA database
- DG-TREN (2005) Road safety country profiles (on website <u>http://ec.europa.eu/transport/road_safety/observatory/country_profiles_en.htm</u>)
- DG-TREN (2008) Day time running lights (on website http://ec.europa.eu/transport/road_safety/observatory/doc/drl_rules.pdf)
- DG-TREN (2010). Technical Assistance in support of the Preparation of the European Road Safety Action Program 2011-2020. Final Report. DG-TREN, Brussels
- ETSC (2009). Boost the market for safer cars across Europe. + Background tables PIN Flash no.13. ETSC, Brussels
- ETSC (2010). Tackling the three main killers on the road. A priority for the forthcoming EU Road Safety Action Program + Background tables. PIN Flash no.16. ETSC, Brussels
- ETSC (2011) <u>www.etsc.eu/faq.php</u> (FAQ on driving licensing has been removed now)
- Eurostat database
- National sources: via CARE national experts
- OECD/ITF (2011). IRTAD Road Safety 2010. Annual Report. OECD/ITF, Brussels
- ROSE25 (2005). Inventory and compiling of a European good practice guide on road safety education targeted at young people. Final report. KfV, Vienna
- SARTRE (2004). European drivers and road risk. SARTRE 3 results. INRETS, Arcueil Cedex.
- SUPREME (2007) Final Report Part F1. Thematic Report: Education and Campaigns. European Commission, Brussels.
- TiS.PT (2003). Study on Road Traffic Rules and Corresponding Enforcement Actions in the Member States of the European Union. European Commission Directorate-General Energy and Transport, Brussels.
- Vis, M.A. and Eksler, V. (Eds.) (2008) *Road Safety Performance Indicators: Updated Country Comparisons.* Deliverable D3.11a of the EU FP6 project SafetyNet.

