





FRANCE



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France recorded 2 541 road fatalities in 2020, a decrease of 21.7% from 2019. This figure is historically low and is largely explained by the travel restrictions imposed during the Covid-19 pandemic. The French Government imposed two confinement periods as well as travel restrictions between counties and national or local curfews. Working from home was often the norm. During these periods of limitation, business and tourist travel significantly reduced. Mortality fell in 2020, particularly among road users aged 75 and over. Pedestrian mortality went down, but the decrease was below the average. Bikers' mortality fell in line with the average, while cyclist mortality remained close to previous years.

Road safety management and strategy

The number of road fatalities peaked in 1972 at about 18 000. France had a fatality rate of 35 deaths per 100 000 inhabitants. Since then, fatalities have followed a downward trend, with fluctuations from year to year. Between 1990 and 2020, the number of road fatalities decreased by 72%.

Between 1990 and 2000, the following important road safety measures were introduced:

- In 1989, the publication of the white paper on road safety paved the way for road safety policies on improving and enhancing enforcement that would come into effect ten years later.
- The maximum speed limit in built-up areas was set at 50 km/h in 1990, and the maximum allowable BAC was lowered to 0.5 g/l.
- The demerit point system was introduced in 1992.
- Most motorway network construction was completed during this period.

France: Quick facts

Population: 65.1 million GDP per capita: USD 39 970 Road network: 1 096 463 km

- urban roads:15%
- rural roads: 84%
- motorways: 1%

Registered motor vehicles: 47.8 million

- cars: 78%
- goods vehicles: 13%
- motorcycles: 6%

Volume of traffic: -1.8% (2000-20) Speed limits:

- urban roads: 50 km/h
- rural roads: 80 km/h on rural single carriageways (90 km/h when two lanes dedicated to the same direction)
- motorways: 130 km/h

Limits on Blood Alcohol Content:

- general drivers: 0.5 g/l
- professional drivers: 0.2 g/l
- novice drivers: 0.2 g/l

Road fatalities: 2 541

- pedestrians: 15%
- cyclists: 7%
- car occupants: 49%
- motorcyclists: 23%
- other: 6%

Road fatalities per 100 000 population: 3.9 Road fatalities per 10 000 vehicles: 0.5 Cost of road crashes: between 1.6% of GDP (Quinet's method) and 2.2% of GDP (VALOR project)

All data 2020 unless otherwise stated.

- Most vehicles were equipped with airbags.
- The educational continuum was implemented.

Despite these measures, fatalities only decreased by 20% during the decade, as traffic increased by 20%. In 2000, there were 15 people killed per billion vehicle kilometres driven and 14 per 100 000 inhabitants. In July 2002, French President Jacques Chirac declared road safety one of his four main priorities. Between 2000 and 2010, important advances in road safety included:

- The first permanent automated speed cameras were introduced in 2003.
- A national council on road safety was established for public and private stakeholders to meet and present action proposals to the government.
- Probationary licences were introduced in 2004.
- A driver caught exceeding the maximum BAC level would lose six demerit points out of 12 (or six out of six for drivers during probation).

These changes made it possible to go below the symbolic level of 5 000 fatalities per year in 2006, with deaths falling 51% from 2000 to 2010. Experts attribute 75% of the improvement to a reduction in average speed and 11% to improved vehicle safety. At the same time, traffic was up 7%.

The French government has been introducing new measures continually since 2006. Examples include developing pedestrian zones or areas with low speed limits in 2008 and introducing the first traffic light cameras in 2009.

Responsibility for the organisation of road safety in France lies with the Road Safety Directorate, which has reported to the Minister of the Interior since 2012. The Minister of the Interior chairs the Inter-ministerial Road Safety Committee, an assembly of representatives of various ministries, where decisions are taken. The French Road Safety Observatory (ONISR) assists the Road Safety Directorate. It is responsible for managing the road traffic accident database, analysing road safety performance and organising research to prepare new measures and evaluate them. The National Road Safety Council (CNSR) is in charge of presenting road safety action proposals to the government. Its primary role is to provide guidance to the government, make recommendations and identify objectives to reduce road crashes. It is assisted by an expert committee that provides appropriate technological and scientific input.

The French government set a target in 2010 of reducing the number of road fatalities to below 2 000 by 2020, which was in line with the European Commission's goal of halving the number of deaths by 2020. To achieve this objective, critical priorities identified by the government were: reducing fatalities among young people, novice drivers and riders of motorised two-wheelers, tackling the main crash-contributing factors of speed and impaired driving due to alcohol and drugs. Priorities are regularly re-formulated according to road safety outcomes. Progress towards the 2020 target was measured using national

indicators and published in ONISR's annual report. Like in most European countries, progress stopped in 2014. A new momentum was found in France by reducing the speed limit outside built-up areas, which allowed a 20% reduction between 2010 and 2019 (the low number of fatalities in 2020 was due to pandemic travel restrictions).

The Interministerial Road Safety Committee (CISR) met on 9 January 2018. An 18-point action plan was announced, and legislation for the measures is currently being rolled out (see the Measures). Objectives include engaging all citizens in road safety, protecting all road users and anticipating new technologies that can be used to enhance road safety.

In 2017, France adopted the Valletta Declaration, with a Vision Zero by 2050. It set a target of halving the number of fatalities and serious injuries in the EU by 2030. France chose 2019 as a baseline, as 2020 was atypical.

Latest road safety measures

After a successful experiment in the region of Normandy, the French government extended the outsourcing of the driving of radar cars in May 2020 to the regions of Bretagne, Pays de la Loire and Centre-Val de Loire.

For several years, traffic violations detected by radar have been sent to the offender's country of residence, which has been reciprocal between countries. Sweden and the Republic of Ireland have implemented this reciprocity since 24 June 2019. Today, 19 EU countries have partnered with France four years after transforming the European directive into the August 2015 Energy Transition and Green Growth law. They are: Germany, Austria, Belgium, Spain, Estonia, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, the Czech Republic, the United Kingdom, Romania, Slovakia. France has also signed a bilateral agreement with Switzerland.

In September 2020, the government introduced a reform to lower the cost of a driving licence and help people better choose a driving school.

To combat uninsured driving by making it easier for law enforcement officers to carry out checks, a central file of insured vehicles became operational in October 2019. All the data are made available to law and order enforcement.

With the aim of better protecting and empowering users of motorised two-wheelers, in January 2018, the CISR decided to modernise the content of training courses for motorised two-wheelers. Since March 2019, the AM licence for mopeds of less than 50 cc and light quadricycles (14+), the training provided by driving schools has been extended from seven to eight hours and is spread over at least two days. The objective is to reduce mental load and fatigue to assimilate knowledge and practices better.

The CISR started promoting in January 2018 the use of the alcohol interlock device (EAD) to fight against driving under the influence of alcohol and the recurrence of this offence.

After successful experimentation in seven counties, drivers over the BAC limit can avoid having their licences suspended by agreeing to drive a vehicle equipped with an EAD.

Other measures were implemented in 2020:

- Driver's licence suspension for drivers holding a phone in hand and committing at the same time another infraction of the road rules.
- Simplification of the access to the supervised driving. In case of failure of the practical test of the licence, only the insurer's agreement is necessary to resume supervised driving.
- Possibility of immobilising and impounding vehicles of drivers who committed an offence for seven days, with the authorisation of the prefect. Offences include: BAC level higher than 0.8 g/l, use of narcotics, lack of driver's licence and refusal to submit to an alcohol or narcotics control.
- Prohibition of parking less than five meters from pedestrian crossings. Road managers must complete the compliance work by the end of 2026.

Costs of road crashes

Road traffic crashes represent a high cost for France, estimated in 2020 at EUR 37.9 billion (1.6% of GDP). According to the VALOR¹ project, this cost could be estimated at EUR 77.8 billion in 2019. The first estimate considers the loss of productivity, the human cost for the relatives, medical expenses and the loss of quality of life. This calculation takes into account estimates of non-reported crashes. Gustave Eiffel University estimates that the number of injured people could be four times greater than the registered number.

Safety performance indicators

Speed

Inappropriate or excessive speed is the leading cause of fatal crashes. In 2020, according to police reports, speed was one of the causes of 29% of fatal crashes and the primary reason for 19% of fatal crashes.

In July 2018, the speed limit was reduced from 90 to 80 km/h on single carriageway rural roads. A final evaluation was published in July 2020 and concluded that it saved 331 lives in the first 18 months of its implementation.

¹ VALOR: Monetary valuation of the prevention of road fatalities and serious road injuries, VIAS Institute, Gustave Eiffel University, BASt, Netherlands Institute for Transport Policy Analysis.

On roads limited to 80 km/h since mid-2018, the average speed decreased by 3 km/h 12 months after implementing the new speed limit.

Drink-driving

Driving under the influence of alcohol is another major cause of road crashes in France. In 2020, it was estimated that 804 people were killed in an alcohol-related crash. The share of alcohol-related fatalities has remained stable at around 30% since 2000.

Drink driving concerns all age groups, particularly 18-24 and 25-34 years old.

The maximum authorised BAC is 0.5 g/l for all drivers (including cyclists). For bus and coach drivers, the maximum authorised BAC is 0.2 g/l. Since 2009, all buses that carry children have alcohol interlocks installed. Since 1 July 2015, the maximum authorised BAC is 0.2 g/l for novice drivers during their probation period. A crash is defined as alcohol related when any active participant has a BAC above the legal limit.

Gustave Eiffel University's ACTUSAM research showed that the risk of being responsible for a fatal crash is multiplied by an average of 18 for drivers under the influence of alcohol. This factor varies increasingly with BAC.

The use of alcohol interlocks for drink driving offenders started as a possibility for magistrates to use as a penalty. In some cases, it could be advised by medical committees for people with a problem with alcohol. Since September 2019, a local decision can allow drink driving offenders to resume driving on the condition that they install an alcohol interlock device in their vehicle.

Drugs and driving

Driving under the influence of drugs is of continuing concern. In 2020, it was estimated that 534 persons (21% of all road deaths) were killed in a crash with a driver under the influence of illegal drugs.

INSERM-CESIR (the National Institute of Health and Medical Research's studies on health and road safety) research among drivers estimated that 3% of crashes could be attributed to the consumption of prescription drugs. Benzodiazepines (anxiolytics or hypnotics) and antidepressants, widely used in France, are associated with a significant increase in the risk of causing a road crash.

In 2020, among drivers implicated in a road crash tested with a BAC above the legal limit of 0.5 g/l, 31% also tested positive in a drug test. Among drivers involved in a fatal crash who tested positive for a drug test, half were also found to have a BAC above the legal limit of 0.5 g/l.

Since 2003, driving under the influence of substances or plants classified as narcotics constitutes an offence. Testing is approved for the following categories: cannabinoids, amphetamines, cocaine and opiates. The police have been carrying out more random drug tests using a saliva-testing kit, which is less expensive than a blood test. After a trial period from December 2015 to June 2016 in 11 departments, saliva-only testing was generalised in 2017. Between 2019 and 2020, the number of drug tests increased by 4% despite the pandemic.

In 2020, among drivers implicated in a fatal crash while under the influence of a drug (whether alcohol or narcotics), half were exclusively under the influence of alcohol, a quarter under the influence of drugs and a quarter both.

Use of mobile phones while driving

An increasing problem for traffic safety in France is distraction, which includes using mobile phones while driving or crossing a street. In 2020, distracted attention contributed to 13% of fatal crashes.

It is forbidden to drive while using a hand-held mobile phone, but hands-free mobile phones are tolerated. While phoning when driving is a growing concern, smartphones' expanding number of features is even more significant. Drivers have been prohibited since 1 July 2015 from using any device attached to the ear while driving, whether used for phone calls or for listening to music or the radio (e.g. headphones or headsets).

Observations during the daytime in 2020 showed that at any given time, 2.5% of passenger car drivers, 6% of light-duty vehicle drivers and 4.5% of heavy vehicle drivers used a handheld or ear-mounted phone. The use of a phone while driving increases in cities, especially for cyclists (6.4%) and light-duty vehicles drivers (14.7%).

The share of sleepiness and fatigue as a causal factor in crashes is especially challenging to detect. According to police records, sickness and sleepiness are the main contributing factors in 3% of fatal crashes. Fatigue or drowsiness is more prevalent on motorways operated under a concession, where it was identified in 23% of fatal road crashes during the period 2015-20. A total of 36% of fatal road crashes where drowsiness is a contributing factor occurs between 4-8 a.m. and 16% from 2-5 p.m.

Seat belt and helmet use

Seat belt wearing has been compulsory for drivers and in front seats in rural areas since 1973, in urban areas and at night since 1975, and at all times since 1979. They have been compulsory in rear seats since 1991. Children under 10 must be seated in a rear seat and be adequately restrained, considering their weight and height.

The seat belt wearing rate is among the highest in OECD countries; however, there is still room for improvement, especially for rear seats. In 2020, 24% of car occupants killed and 38% of utilitarian vehicle occupants killed were not wearing a seat belt or the seat belt was not appropriately buckled when the crash occurred.

For powered two-wheelers, helmet wearing is the most effective passive safety tool. In France, wearing a helmet was made compulsory in 1973 for motorcyclists with engines over 125 cc and for moped riders and motorcyclists with engines of 50 cc to 125 cc in rural areas. This obligation was extended to urban areas in 1975. The helmet-wearing rate for motorised two-wheelers (challenging to discriminate between mopeds and motorcycles during observations) is almost 100% on weekdays and weekends. In 2020, 12 moped and 12 motorcycle riders were killed while not wearing helmets.

It has been illegal since March 2017 to allow children under 12 to ride a pedal cycle without a helmet. Failure to do so results in a fine for the parents. While not compulsory, the helmet wearing rate for adult pedal cyclists increased from 21% in 2016 to 31% in 2020.

Road safety data for France at a glance

							2020 % change over			r
	1990	2000	2010	2018	2019	2020	2019	2010	2000	1990
Reported safety data										
Fatalities	11 215	8 079	3 992	3 248	3 244	2 541	-21.7	-36.3	-68.5	-77.3
Injury crashes	162 573	121 223	67 288	55 766	56 016	45 121	-19.4	-32.9	-62.8	-72.2
Injured persons hospitalised			30 393							
Deaths per 100 000 population	19.8	13.7	6.4	5.0	5.0	3.9	-22.0	-38.7	-71.6	-80.3
Deaths per 10 000 registered vehicles	3.6	2.3	0.9	0.7	0.7	0.5	-20.9	-44.0	-76.4	-85.4
Deaths per billion vehicle kilometres	26.7	15.6	7.0	5.2	5.3	5.0	-5.7	-28.5	-68.1	-81.4
Fatalities by road user										
Pedestrians	1 534	838	485	471	483	391	-19.0	-19.4	-53.3	-74.5
Cyclists	437	270	147	175	187	178	-4.8	21.1	-34.1	-59.3
Moped riders	716	456	248	133	134	100	-25.4	-59.7	-78.1	-86.0
Motorcyclists	1 031	937	704	627	615	479	-22.1	-32.0	-48.9	-53.5
Passenger car occupants	6 862	5 291	2 117	1 637	1 622	1 243	-23.4	-41.3	-76.5	-81.9
Other road users	635	288	291	205	203	150	-26.1	-48.5	-47.9	-76.4
Fatalities by age group										
0-14 years	546	363	130	86	66	74	12.1	-43.1	-79.6	-86.4
15-17 years	472	350	161	106	87	77	-11.5	-52.2	-78.0	-83.7
18-20 years	1 153	857	370	230	243	219	-9.9	-40.8	-74.4	-81.0
21-24 years	1 594	869	461	273	306	230	-24.8	-50.1	-73.5	-85.6
25-64 years	5 784	4 157	2 105	1 711	1 693	1 298	-23.3	-38.3	-68.8	-77.6
65-74 years	756	624	264	332	317	291	-8.2	10.2	-53.4	-61.5
≥ 75 years	882	718	499	510	532	352	-33.8	-29.5	-51.0	-60.1
Fatalities by road type										
Urban roads	3 940	2 250	1 133	963	1 037	843	-18.7	-25.6	-62.5	-78.6
Rural roads	6 542	5 250	2 603	2 016	1 944	1 497	-23.0	-42.5	-71.5	-77.1
Motorw ays	732	578	256	269	263	201	-23.6	-21.5	-65.2	-72.5
Traffic data										
Vehicle kilometres (millions)	419 772	518 248	573 928	620 159	615 373	511 172	-16.9	-10.9	-1.4	21.8
Registered vehicles (thousands)	30 869	35 874	42 083	48 152	48 299	47 817	-1.0	13.6	33.3	54.9
Registered vehicles per 1 000 population	545.6	609.5	670.5	743.9	745.2	734.3	-1.5	9.5	20.5	34.6

Table 1. Long-term road safety trends for France





Index 2000 = 100

Figure 2. Road fatalities per 100 000 inhabitants in France in comparison with IRTAD countries, 2020





Figure 3. Road fatalities per 10 000 vehicles in France in comparison with IRTAD countries, 2020

Note: in Belgium, Denmark, Germany and Hungary registered vehicles do not include mopeds.





Figure 5. Evolution of road fatalities in France by user category, age group and road type, 2010-20





Figure 6. Road fatalities in France by user category, 2020







■ Pedestrians ■ Cyclists ■ Moped riders ■ Motorcyclists ■ Car occupants ■ Other road users 0 0 0 0-14 15-17 18-20 21-24 25-64 65-74 ≥ 75

Rate per 100 000 population in the same age group

Table 2. Cost of road crashes in France, 2020

	Unit Cost Quinet (EUR)	Unit Cost VALOR (EUR)	Total Quinet (EUR)	Total VALOR (EUR)
Fatalities	3.33 million	5.35 million	8.5 billion	13.6 billion
Seriously injured MAIS3+	416 338	830 000	5.8 billion	11.6 billion
Non-seriously hospitalised	416 338	416 338	11.5 billion	11.5 billion
Slight injuries	15 654	26 750	3.0 billion	4.9 billion
Property damage costs of injury crashes	5 107	5 107	0.9 billion	0.9 billion
Property damage costs of non-injury crashes			8.2 billion	8.2 billion
Total			37.9 billion	50.7 billion
Total as % of GDP			1.6	2.2

	2000	2010	2020
Front seats			
General (driver and passenger)			
Driver		98	99
Passenger		98	98
Urban roads (driver)	78	96	98
Rural roads (driver)	94	99	99
Motorways (driver)	96	99	99
Rear seats			
General		85	
Children (use of child restraint)			
Helmet			
Motorcyclists			99
Pedal cyclists			31

Table 3. Seat belt and helmet wearing rates

Percentages

Research and resources

Publications

To meet road safety challenges and to obtain a better understanding of road crashes, the French Road Safety Directorate (DSR) identified seven research priorities for the period 2018 to 2022:

- vulnerable road users
- young and older road users
- reducing the number of serious injuries
- behavioural factors (i.e. speed, alcohol, drugs)
- ensuring regulatory compliance and safe traffic
- automated vehicles
- evaluation of road safety policies.

As part of this strategy, since 2017, each year, the DSR has launched a call for research projects to support work to update or increase knowledge on road safety key stakes. More information is available at <u>https://www.onisr.securite-routiere.interieur.gouv.fr/en/road-safety-policy/call-forresearch-projects</u>.

Reduction of speed limits

Cerema (Centre for Studies and Expertise on Risks, the Environment, Mobility and Urban Planning) carried out the final assessment of the impact of reducing speed limitation from 90 to 80 km/h on two-way roads outside urban areas, introduced on 1 July 2018. The study covered the 18 months after the measure was introduced, detailing that 331 lives were saved on the network. The results also showed a reduction of average speeds for light vehicles of 3.5 km/h and a decrease of 1.8 km/h for HGVs, which were already subject to an 80 km/h speed limit. The time lost due to the measure is, on average, one second per kilometre.

The Vehicle Occupant Infrastructure Road User Safety Studies (*Véhicule occupant infrastructure études de la sécurité des usagers de la route* [VOIESUR]) led to the launch of several in-depth analyses from police reports registered in the VOIESUR database. These gathered all fatality crash reports and one out of 20 injury crash reports in France for 2011. Concerning driving speeds in road crashes, 30% of drivers involved in fatal traffic crashes occurring on rural single carriageways with two lanes exceeded the speed limit.

Work-related road risks

The CISR recommended in 2018 that the government publish an annual report on road risks related to work. These risks are the leading cause of death in the workplace, with 356 workers killed in 2020. Of the 2 541 road fatalities, 35% involved somebody (driver or pedestrian) commuting or driving for work. Based on the Rhône register and the BAAC database, Gustave Eiffel University estimated that in 2018, 41 000 workers were injured on their commute to work and 15 000 on a professional journey. This led to 4.1 million days compensated.

Gustave Eiffel University conducted a study on professional phone use while driving. The results show that 90% of the workers used phones for conversations and 81% for other tasks, such as writing messages or handling the phone. Only 7% of respondents thought phone use should not be restricted while driving. Also, two out of three declared they never had road safety training in their company.

Elders and road safety

Thanks to the volunteers of the GAZEL cohort (12 460 participants aged 62 to 76), INSERM conducted a study on the influence of certain diseases on the behaviour of older drivers. Parkinson's disease or cardiovascular accidents can cause road crashes. Still, they do not lead to greater risk: the drivers adapt their behaviour by avoiding complicated situations, limiting their travels or even stopping using their cars. However, disorders such as hearing impairment or articular pains lead to a higher risk.

The Gustave Eiffel University carried out a study ("COSERA: Senior Driving, responsibility and adaptation") using the VOIESUR database to determine liability in fatal crashes. The results show that middle-aged drivers (35-64 years old) are less likely to be victims of

human failure than other drivers. In addition, the study recommends the introduction of personal support for older drivers to help them self-assess their ability and knowledge.

Soft mobility

Gustave Eiffel University is currently working on the type of injuries e-scooterists bear, based on data provided by the hospitals (Rhône registry). Their initial results show a higher probability of head injuries than cyclists. In addition, they showed that users of electric scooters have, on average, more serious injuries than users of kick scooters.

Inserm is experimenting with artificial intelligence to build data from "emergency summaries" recorded in Bordeaux's main hospital (TARPON project). This also provides information on soft mobility injuries, which are under-reported in the usual injury database issued by the police forces.

These two studies also show that there are more injured e-scooter users than injured pedestrians in the care services of the Rhône department and the city of Lyon, but this is not the case in the town of Bordeaux. The development of the use of e-scooters is, therefore, quite variable depending on the city.

The University of Strasbourg conducts tests to evaluate the protection provided by cyclists' (and motorcyclists') helmets using a more demanding methodology than that used for certification. Their results show that not all helmets are equal and that price is not a guarantee of quality (<u>https://www.certimoov.com/</u>).

The University Gustave Eiffel conducted the VICTIMS study, which looks at improving motorists' cognitive awareness about cyclists. They showed that preventive films had a positive effect on cyclist detection by motorists and that the type of film (educational, emotional or neutral) had little impact on the film's effectiveness.

In France, since 2019, the "*savoir rouler à vélo*" ("know to ride a bike") programme aims to teach cycling to children aged ten to 11. The AMPERE study carried out by University Gustave Eiffel aimed to evaluate the first steps of this programme. The results show that the programme eliminates the overconfidence of children who already know how to ride a bike and improves the skills of others. However, the programme should be more continuous throughout the year for greater effectiveness.

Autonomous vehicles

The Gustave Eiffel University and the Rennes 2 University have conducted a study (Automa-Pied) on pedestrians crossing in front of an autonomous vehicle (AV) in a pedestrian crossing simulator. They found specific pedestrian movements that can help the AV determine the intention to cross the street or not. They recommend a homogenous look for AVs, making them distinguishable from other vehicles.

Another study (Surca, <u>https://surca.ifsttar.fr/le-projet-de-recherche/resume-du-projetsurca/</u>) focuses on the impact on accidents caused by the introduction of AVs in

traffic. The first results show that if all cars were AVs, the number of fatal crashes could be reduced by around 40%. Another aspect of the study is the impact of new postures in vehicles due to not needing to drive the car and the consequences of injuries if a crash happens.

Factors related to fatal accidents (Facteurs Liés aux Accidents Mortels [FLAM])

Cerema set up a database in 2017-18 that includes data and information on 85% of fatal crashes that occurred in 2015. With this database, it is now possible to determine the causes of crashes. They are divided into four factors: humans, vehicles, infrastructure and traffic. Human factors are involved in 92% of fatal crashes and are the sole cause of crashes in 49% of the cases. The main elements are excessive or inappropriate speed (38%), alcohol (31%), drug use (17%) and non-compliance with priority rules (16%). Further analysis is ongoing. The study shows that vehicle factors are involved in 20% of fatal crashes, those related to infrastructure in 26% and those related to traffic in 13%.

In 2020, Cerema published the study FLAM 2RM on powered two-wheelers. This shows that fatal crashes with powered two-wheelers have a greater diversity of factors and more vehicle and infrastructure factors.

Cerema also published the study FLAM pedestrian. Its findings show the most important causes of accidents involving pedestrians. The leading causes are alcohol (18%), noncompliance with priorities (16%), and voluntary risk-taking behaviour (15%). Among drivers of vehicles that struck the pedestrian, the leading causes are inattention (excluding smartphones) (28%), non-compliance with priorities (27%) and speed (17%).

Finally, Cerema conducted the study FLAM pedal cycle, which shows that the leading causes of accidents involving cyclists and other road users are priority rules for cyclists (18%) and inattention for the other road user (18%). For accidents involving bikes without other vehicles, the leading causes are speed (40%), fainting (25%), and inattention (20%). Human factors are involved in 90% of fatal accidents and are the only cause of crashes in 40% of the cases.

Websites

ONISR: <u>https://www.onisr.securite-routiere.interieur.gouv.fr/en</u>.

Road Safety in France: 2020 Annual Report:

https://www.onisr.securite-routiere.gouv.fr/sites/default/files/2021-05/20210531 ONISR Final%20report 2020 EN.pdf.

Road safety directorate official website: <u>https://www.securite-routiere.gouv.fr</u>.

The National Council for Road Safety: <u>https://www.conseilnational-securiteroutiere.fr/</u>.

Gustave Eiffel University (ex-IFSTTAR) - The French Institute of Science and Technology for Transport, Development and Networks: <u>https://www.ifsttar.fr/en</u>, <u>https://www.revarrhone.org/</u>, <u>https://www.univ-gustave-eiffel.fr/en/</u>.

Cerema – The French Research Centre on Risks, Environment, Mobility and Planning: <u>https://www.cerema.fr/en</u>.

Health and Driving: <u>www.inserr.fr/sante-conduite</u>.

Road Safety Foundation: <u>https://fsr.ifsttar.fr</u>.

UTAC CERAM (Car, Motorcycle and Bicycle Technical Union): <u>https://www.utacceram.com/</u>.

European centre of studies on safety and risk analysis: <u>https://ceesar.fr/en</u>.

National Agency for Automated Offence Processing: <u>https://www.antai.gouv.fr/?lang=en</u>.

Definition, methodology, data collection

A road fatality is a person who dies within 30 days of a road crash. Before 2005, fatalities were accounted for when occurring within six days. A correction factor of 1.069 is applied for international comparisons for the years before 2005.

A seriously injured person is someone who is injured with at least one injury ranking three or more on the Maximum Abbreviated Injury Scale (MAIS3+), not including those who die within 30 days.

A slightly injured person is someone who is injured with no injury ranking three or more on the Maximum Abbreviated Injury Scale (MAIS1-2), not including those who die within 30 days.

Proven suicides and intentional murders are not registered as road traffic crashes. Pedestrian only accidents are not recorded as road traffic crashes, except for crashes involving pedestrians using non-motorised wheel devices, whether they injure themselves or crash into another pedestrian or a vehicle.

French official road safety information comes from the National Road Traffic Accident (RTA) database, which includes results for mainland France only unless it is specified that data from overseas territories are included.

The police record road traffic crashes leading to injury in their software programme according to a dedicated format, the Corporal Accident Analysis Bulletin (*Bulletin*

d'analyse d'accident corporel [BAAC]). These files are then gathered centrally through a web-based programme and constitute the national RTA database.

A new information system modernised the data collection process and the road traffic accident data analysis. The Injury Accident Analysis Bulletin (BAAC) format has been revised accordingly (date of implementation from February to July 2018, according to the police) to facilitate the work of the police, improve the coherence of statistics, and introduce information about new means of transport or accident factors.

The French Road Safety Observatory (ONISR) manages the data collection process, with assistance from technical teams from Cerema and the network of local observatories to check and complement the information as necessary.

Monitoring the quality of data is partially ensured by comparing it with the Rhone registry, i.e. information gathered from hospitals in the Rhone region on all road traffic crash victims who received medical care at a hospital. Information on the number of fatalities is considered highly accurate and used as a benchmark. Non-fatal crashes are known to under-report single vehicle crashes involving motorised two-wheelers, cyclists and e-scooterists. The number of injured people is estimated to be four times greater than what is recorded in the national database (BAAC).

There are some variations in how slight injury accidents are recorded across the country. The French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR) estimates that the number of injured people is significantly underestimated and could be four times greater than the registered number.

Based on the expertise developed by using both the Rhone registry and the BAAC, University Gustave Eiffel has been tasked with providing a national estimate for MAIS3+ victims to provide the relevant information requested by the European Commission.