Speeds Observatory : results for the year 2012

WARNING : some of the results published in this note have been revised in relation to the values published prior in the 2012 annual report.

Inappropriate speed is a factor of specific risks because of its recurring presence at collision time as a factor of occurrence or seriousness. Indeed, independently of accident genesis, drivers margin of reaction to avoid the shock is determined by their speeds. Moreover, the accident seriousness (degree of physical infringement) depends closely of the impact energy, so of speeds at stake before and at the impact time.

This is the reason of the importance to follow the development of practised speeds, in relation to the development of the accidents number and their consequences.

Some measures of practised speeds have been realized by French Road Safety Observatory (ONISR) since 2000, in accordance with a very precise operating protocol using speed radars identical to police forces ones. These measures represent almost 200 000 data a year.

Their analysis gives new information about the average speeds practised by different categories of users and theirs developments, in and outside built-up areas on the different french road networks, at daytime and at night, and about the overtaking of maximal speed limit.

Average speed at daytime has increased in 2012 for all the categories of vehicles (light vehicles, motorcycles, heavy goods vehicles). Concerning light vehicles, this increase is of 0,4 km/h.

However, all the categories present globally a plateau since 2008-2009, and a decrease since 2000 of the order of 10 km/h range for light vehicles and motorcycles and of 6 km/h for heavy goods vehicles.

Now, highest speed excesses are a tiny fraction of speed excesses. Speed excesses of more than 30 km/h have been reduced from 4,6% to 0,36% since 2001. Excesses of more than 40 km/h have been reduced from 1,6% to 0,1% and excesses of more than 50 km/h have been reduced from 0,6 to 0,02%.

Between 2002 and 2012, exceeding rate of maximal authorized speeds has been divided into two. It still remains an exceeding rate of 29%.

Analysed data

Indicators studied by the ONISR are about various series of observations. Data presented in this chapter are the ones who seem to be the more relevant. First, average practised speeds who synthesize the global development of behaviour concerning maximal authorized speeds ; after, excessive speeds through two indicators : more than 10 km/h exceeding and high exceeding of more than 30 km/h which of very high speeds (more than 50 km/h). The next paragraphs are dedicated to the comportments analysis concerning drivers at daytime and at night, and to an analysis of offences rates development according to maximal authorized

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French Road Safety Observatory (ONISR) ; e-mail :Onisr-dscr@interieur.gouv.fr
website : https://www.onisr.securite-routiere.interieur.gouv.fr

speeds levels, the analysis of heavy goods vehicles drivers (4 axles and more) behaviours when driving at daytime and of motorcyclists driving at daytime.

SPEEDS OBSERVATORY ANALYSIS OF 2012 RESULTS

Average speed at daytime all networks taken together

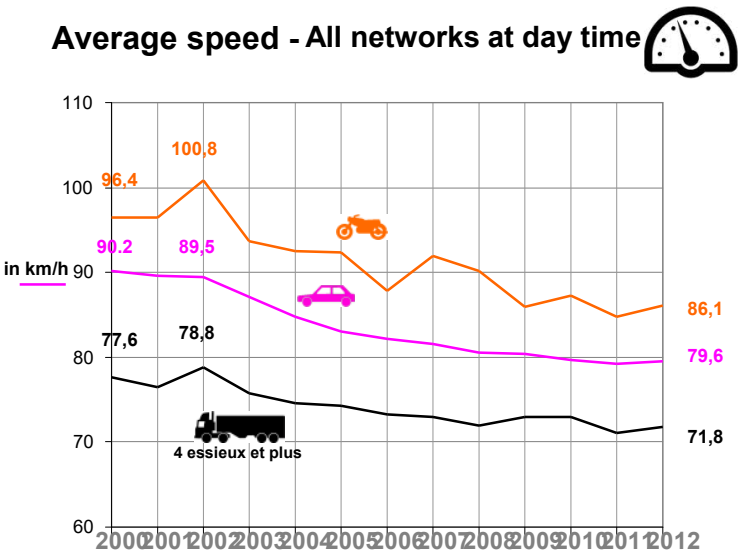
Average speed is calculated for vehicles driving at daytime on the whole of the metropolitan network. Practised average speed at night has been dismissed from this global indicator because the ONISR does not have access to night measures for two types of networks : national roads with 2 X 2 lanes and departemental roads (for reasons related to investigators safety). However, it has subsequently been the subject of a specific analysis for light vehicles category.

Light vehicles knows a slight upturn of practised average speeds compared to 2011 (+0,4 km/h). After a decrease of speeds of the order of 10 km/h between 2000 and 2008, these ones are stabilizing since this date around 80 km/h.

Motorcycles too show a new increase of average speeds compared to 2011. However, for this category, developments are more irregular because of, in particular, the more reduced number of measured vehicles. The important reduction of speeds between 2002 and 2003 (-7 km/h) has been followed by a reduction of the order of 8 km/h between 2003 and 2009. Since this year, motorcycles speeds are relatively stabilized around 86 km/h, so -10 km/h compared to 2000. This average speed is still 6 km/h above motorists one.

Concerning **heavy goods vehicles** (4 axles and more), the slight new increase observed in 2012 globally comes within a plateau around 72 km/h since 2008, that is to say a gain of the order of 6 km/h compared to 2000.

AVERAGE SPEED DEVELOPMENT (SYNTHETIC INDICATOR ALL NETWORKS TAKEN TOGETHER)



DAYTIME

Source : ONISR – Speeds Observatory

Exceeding authorized speed limits

The proportion of authorized speed limits' (VMA) exceeding has known a very strong reduction between 2002 and 2004 ; after, it has gone on decreasing in a more moderate way, with plateaux last years. In 2012, around 9 % of the vehicles exceeded of more than 10 km/h authorized speed limits. Exceeding rates of more than 30 and 40 km/h are respectively of 0,4 % and 0,1 %.

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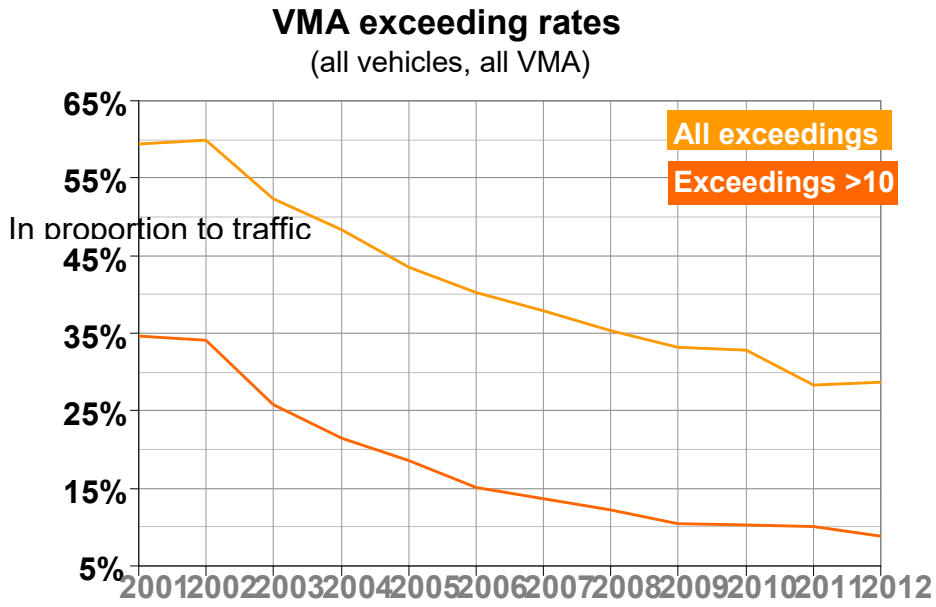
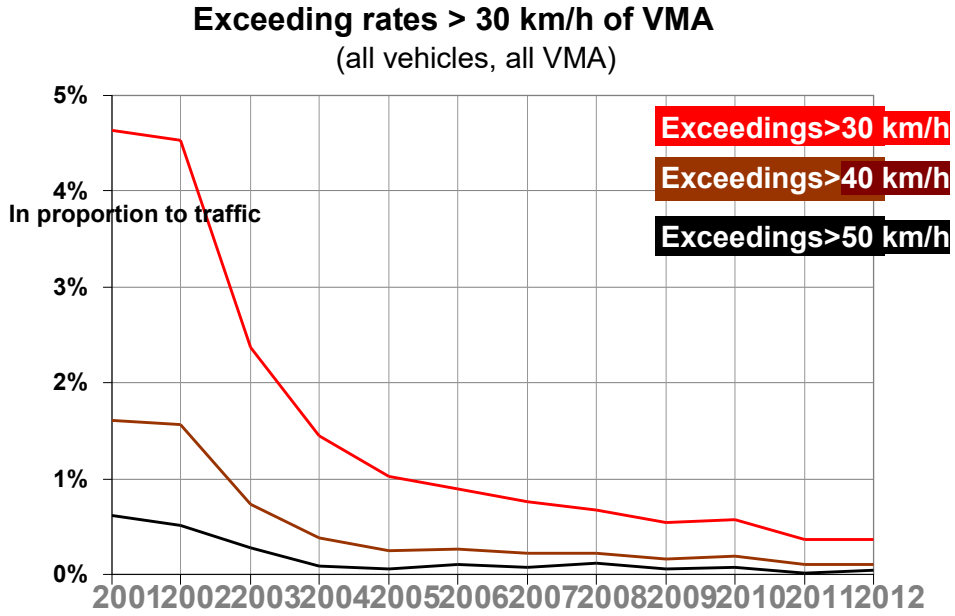
EXCEEDING RATE OF MORE THAN 10 KM/H, 30 KM/H, 40 KM/H AND 50 KM/H OF AUTHORIZED SPEED LIMITS (VMA)



Source : ONISR – Speeds Observatory



Source : ONISR – Speeds Observatory

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SPEEDS PRACTISED BY SOME CATEGORIES OF USERS AND BY TYPE OF ROAD

Speeds practised at daytime (9h30 am – 4h30 pm) by light vehicles

The values of average speed found during the year 2012 are globally close enough of those found last year.

Average practised speeds at daytime by light vehicles users have strongly decreased since 2000. Out of built up areas, these reductions vary from -9 km/h to -13 km/h according to the type of network. In built up areas, they are of -11 km/h on national roads crossed by small urban areas and of -7 km/h on the other categories of axis.

Since 2008, only the motorways have known significant reductions of average practised speeds at daytime by light vehicles. On inter cities motorways, the reduction is of -4 km/h and on bypass motorways, they are of -7 km/h.

Percentages of exceeding authorized speeds, in particular the ones of more than 10 km/h, in sharp decline since 2011 on « speed » networks (motorways and national roads with 2 x 2 lanes), are almost stable in 2012 compared to 2011. Let us point out, moreover, that as equal average speeds, if we notice a reduction of the percentage of exceeding speeds limits, it means that we are witnessing at a values contraction around the average, so to a lesser dissipation of speeds.

In 2012, like in 2011, we state that average speed is still slightly above legal speed on urban network, except in mid-sized cities town centers main roads.

Speeds practised at daytime by light vehicles	2000	2008	2009	2010	2011	2012
Inter city motorways (130 km/h)						
Average speed (km/h)	127	118	118	114	113	114
% of exceeding speed limit (1)	52	32	29	23	12	15
% of exceeding speed limit +10km/h (1)	32	11	11	7	4	5
Bypass motorways (110 km/h)						
Average speed (km/h)	110	108	107	104	101	101
% of exceeding speed limit	54	46	41	40	23	23
% of exceeding speed limit +10km/h	33	21	19	18	9	8
National roads with 2x2 ways and separate ways (110 km/h)						
Average speed (km/h)	112	98	99	101	101	101
% of exceeding speed limit	56	20	23	29	21	21
% of exceeding speed limit +10km/h	35	5	6	10	5	6
National roads and departemental roads with important traffic (90 km/h)						
Average speed (km/h)	93	82	82	81	81	81
% of exceeding speed limit	59	28	27	27	25	24
% of exceeding speed limit +10km/h	36	10	8	8	10	7
Crossings of urban areas (-5 000 inhabitants) by national roads (50 km/h)						
Average speed (km/h)	62	52	52	51	51	51
% of exceeding speed limit	82	49	52	50	50	48
% of exceeding speed limit +10km/h	53	18	18	17	15	15
Main roads in built up areas of 20 000 to 100 000 inhabitants (50 km/h)						
Average speed (km/h)	52	46	46	45	45	45
% of exceeding speed limit	54	29	28	28	25	26
% of exceeding speed limit +10km/h	25	5	5	5	4	5
Way to entrance to urban area from 20 000 to 100 000 inhabitants (50 km/h)						
Average speed (km/h)	59	52	51	52	53	52
% of exceeding speed limit	80	54	51	51	57	55
% of exceeding speed limit +10km/h	43	19	14	14	22	19

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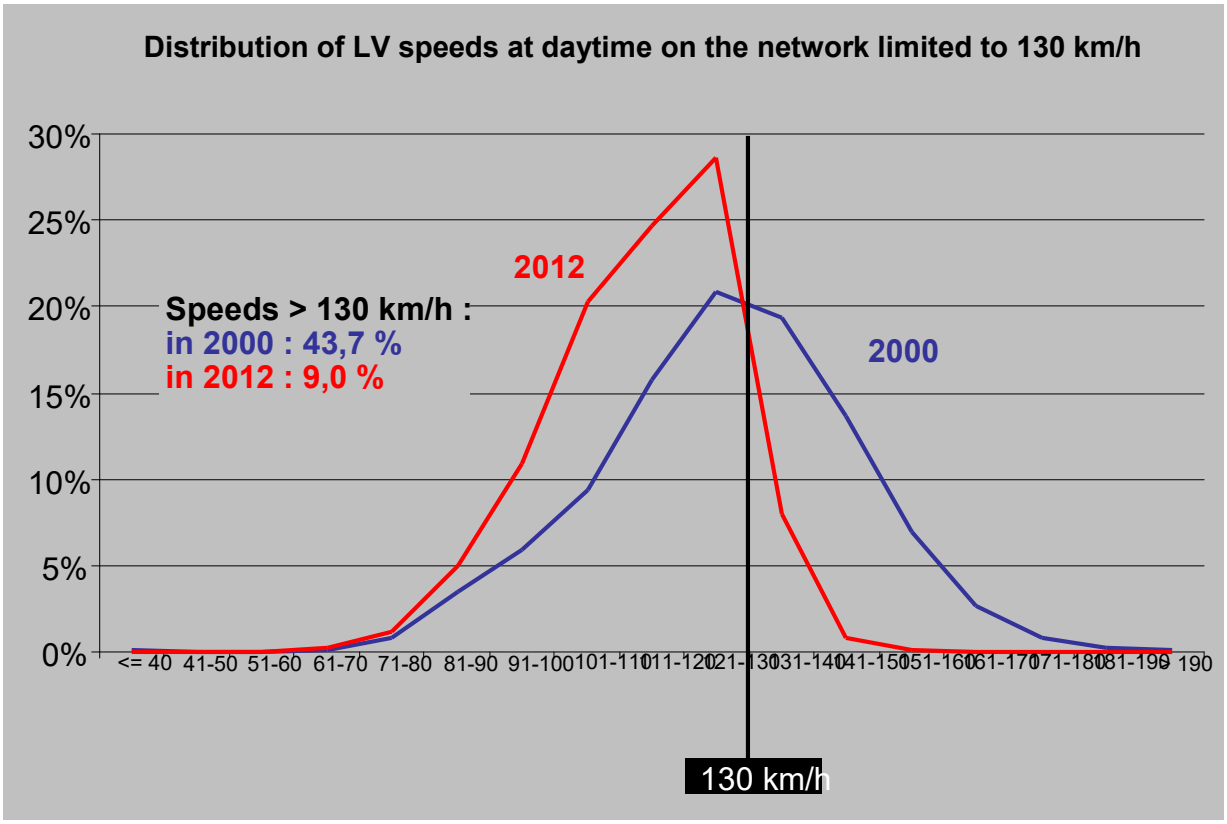
Speeds practised at daytime by light vehicles	2000	2008	2009	2010	2011	2012
All						
Average speed (km/h)	90	81	80	80	79	79
% of exceeding speed limit	61	34	32	32	28	28
% of exceeding speed limit +10km/h	36	12	10	10	10	9

Source : ONISR – Speeds Observatory - 130 027 observations in 2012

(1) Rates for exceeding the speed limit and the speed limit + 10 km/h take into account the lowering of authorized maximal speed in the case of precipitations (art. R 413-2 of the Code de la route). For example, concerning bypass motorways, the rate for exceeding speed limit is calculated from the number of vehicles exceeding 130 km/h in the absence of precipitations, and from the number of vehicles exceeding 110 km/h in the presence of precipitations.

Insecurity on road network is not only connected to average speeds but on the dispersal of the speed too, namely speeds differences between users.

The following graphs show this dispersal and compare, by categories of axis, the light vehicles distribution of speeds at daytime in 2000 and 2012. We can observe that the reduction of average speeds has been accompanied by a significant reduction of the width of the distribution. In other words, practised speeds aim to a greater homogeneity.



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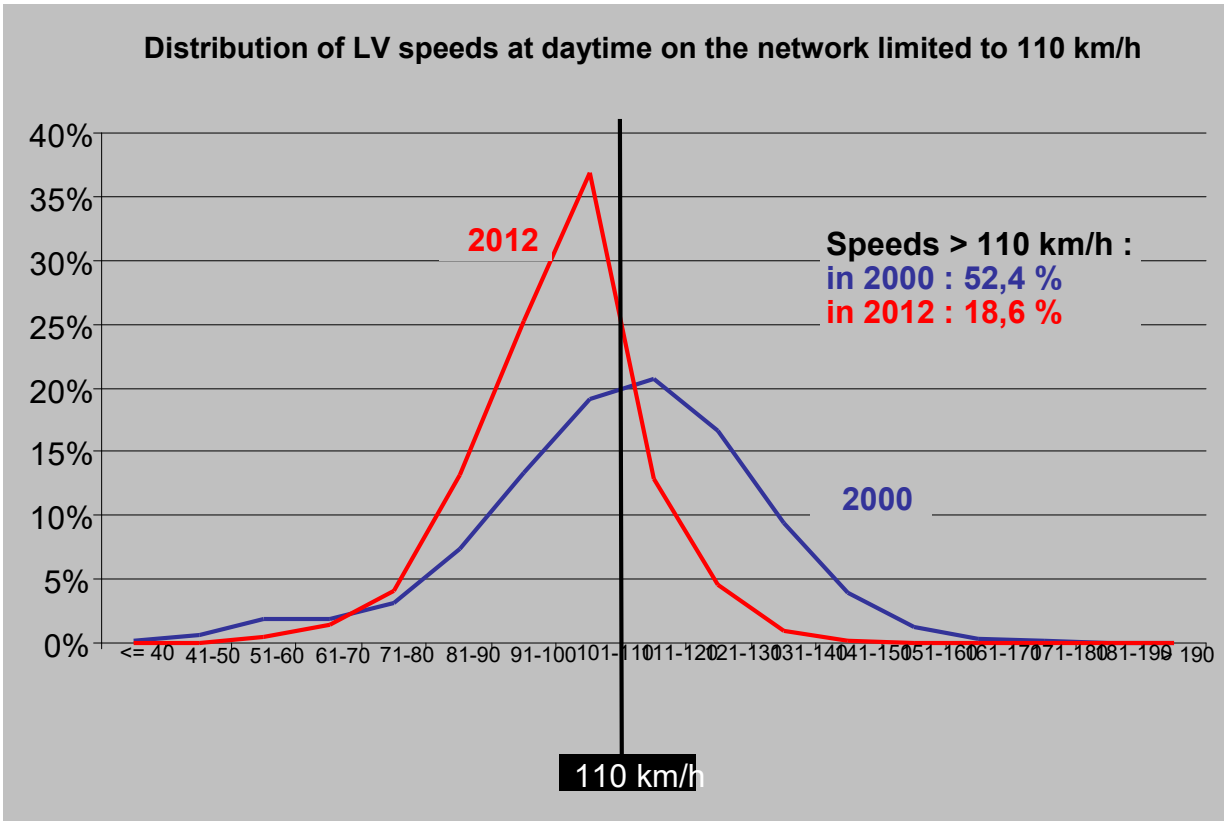

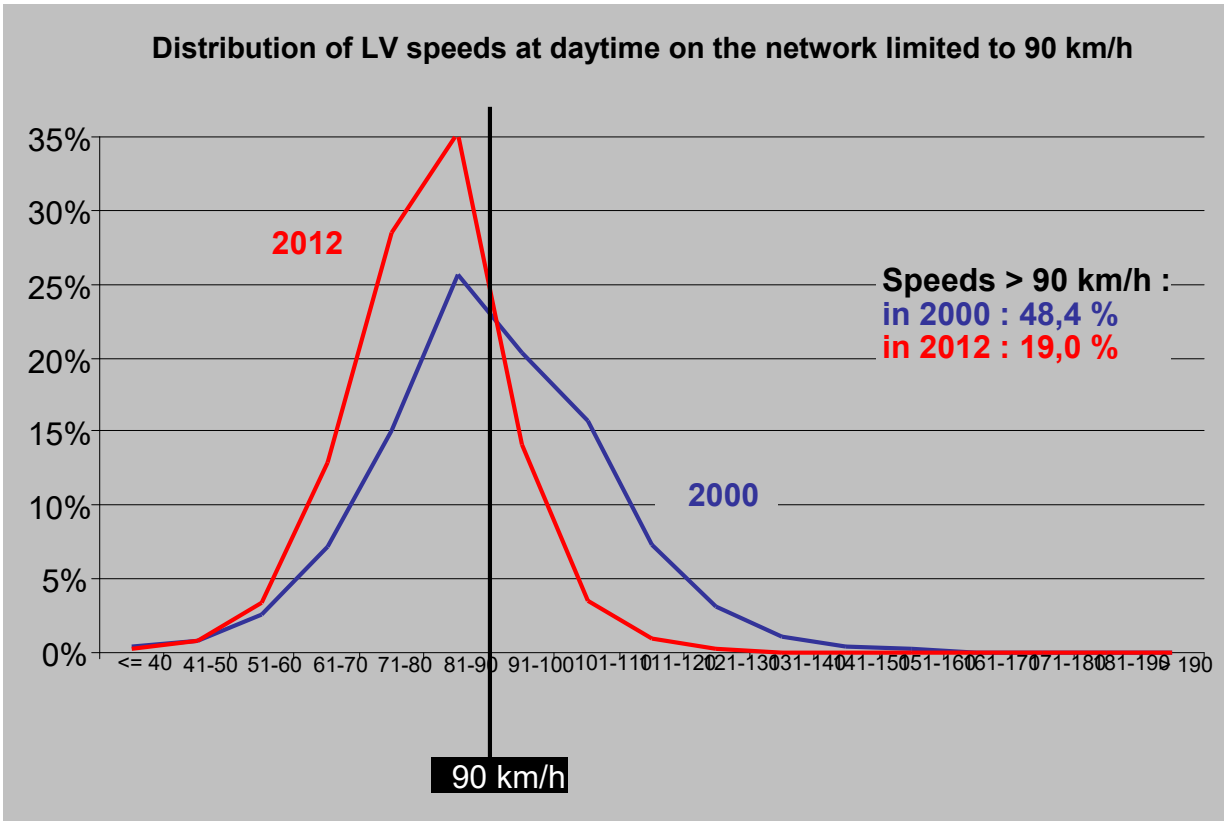

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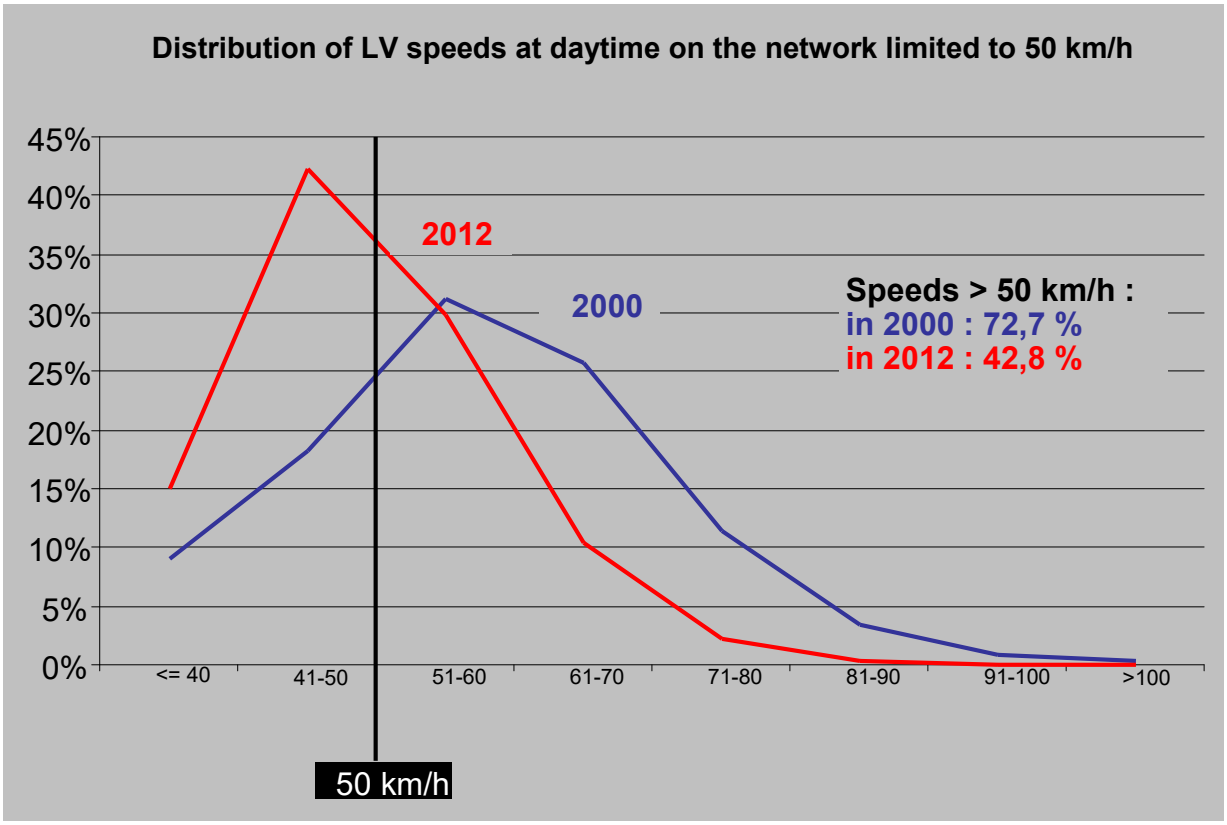

Practised speeds at night (10h00 pm – 3h00 am) by light vehicles

Like daytime speeds, speeds practised at night by light vehicles in 2012 are close to those found in 2011. The developments noticed between 2010 and 2011 are confirmed, which of the significant reduction of speeds at night on motorways.

Since 2000, the reduction of speeds at night is of the order of -10 to -12 km/h on the network out of built up areas. The variations between 2000 and 2012 are less homogeneous for axis in built up areas. They extend from -7 km/h on the ways of entrance in mid-sized cities to -15 km/h on town centers main roads of mid-sized cities. These tendencies are very similar to the ones of practised speeds by drivers at daytime, with the notable exception of main roads in built up areas where the reduction has been twice stronger at night (-15 km/h) than at daytime (-7 km/h).

Average speed is generally higher from 3 to 6 km/h at night than at daytime, except on inter city motorways (-5 km/h) and on the town centers main roads (-1km/h).

Practised speeds at night by light vehicles	2000	2008	2009	2010	2011	2012
Inter city motorways (130 km/h)						
Average speed (km/h)	121	114	113	112	108	109
% of exceeding speed limit (1)	38	27	26	20	9	14
% of exceeding speed limit +10km/h (1)	25	14	13	7	3	4
By pass motorways (110 km/h)						
Average speed (km/h)	117	114	112	112	107	107
% of exceeding speed limit	61	62	59	56	36	38
% of exceeding speed limit +10km/h	41	32	34	31	17	17
National roads and departemental roads with important traffic (90 km/h)						
Average speed (km/h)	96	84	83	78	83	84
% of exceeding speed limit	65	30	28	20	28	29
% of exceeding speed limit +10km/h	37	14	12	8	13	11
Crossings of urban areas (-5 000 inhabitants) by national roads (50 km/h)						
Vitesse moyenne (km/h)	65	58	56	57	55	54
% of exceeding speed limit	84	73	65	67	60	58
% of exceeding speed limit +10km/h	59	39	32	36	25	21
Main roads in built up areas from 20 000 to 100 000 inhabitants (50 km/h)						
Average speed (km/h)	59	48	46	47	43	44
% of exceeding speed limit	80	44	33	32	18	25
% of exceeding speed limit +10km/h	39	18	9	10	4	6
Way to entrance to urban area from 20 000 to 100 000 inhabitants (50 km/h)						
Average speed (km/h)	65	57	58	58	59	58
% of exceeding speed limit	84	71	75	74	77	71
% of exceeding speed limit +10km/h	57	33	38	37	40	36

Source : ONISR – Speeds Observatory – 9 454 observations en 2012

(1) Rates for exceeding the speed limit and the speed limit + 10 km/h take into account the lowering of authorized maximal speed in the case of precipitations (art. R 413-2 of the Code de la route). For example, concerning bypass motorways, the rate for exceeding speed limit is calculated from the number of vehicles exceeding 130 km/h in the absence of precipitations, and from the number of vehicles exceeding 110 km/h in the presence of precipitations.

Practised speeds at daytime (9h30 am –4h30 pm) for heavy goods vehicles

Investigations specialized in heavy goods vehicles speeds statements does not make possible to have good indications about vehicles with a TGW > 3,5 tonnes at night.

Moreover, given the complexity of heavy goods vehicles speed limits tables, given that they depend on the road network categories, TGW's and heavy goods vehicles categories, techniques of visual recognition used for speed measures do not make possible to value correctly exceeding rates of speed limits for each heavy goods vehicles administrative category as specified in the table.

However, heavy goods vehicles can be classified according to an other distribution, the axles number, for which the identification is easier. In this paragraph, we will present results for heavy goods vehicles with four axles and more, which are a heavy majority on motorways network.

Concerning these heavy goods vehicles, no significant variation of average speed is noticed in 2012 in comparison with 2011, except a trend to an increase on National roads with 2 x 2 ways after the reduction who occurred last year.

Compared to 2000, speeds practised by heavy goods vehicles have clearly decreased on the national roads when crossing small urban areas (-10 km/h). Out of built up areas, the decrease observed varies from -1 to -7 km/h according to the considered category of axis.

Average practised speeds at daytime by heavy goods vehicles with 4 axles and more (km/h)	2000	2008	2009	2010	2011	2012
Intercity motorways	90	91	90	90	87	87
Bypass motorways	86	90	89	88	86	85
National roads with 2x2 lanes and separated ways	89	84	86	86	82	84
National roads and departemental roads with important traffic (90km/h)	84	77	79	79	76	77
Crossings of urban areas (-5 000 inhabitants) by national roads	60	51	51	48	49	50

Source : ONISR – Speeds Observatory – 8 788 observations in 2012

Practised speeds at daytime (9h30 am – 4h30 pm) by motorcyclists

Since 2000, practised average speeds record decreases higher than -10 km/h on the whole of the networks. On bypass motorways as on national roads with 2 x 2 lanes, average speeds decrease of about -16 km/h (comparison to the average speed observed between 2009 and 2012).

Since 2008, average speeds practised on motorways and on roads limited to 90 km/h have known a sharp decline (around -7 km/h). National roads with 2x2 lanes seem, for their part, to keep a relative stability, like national roads when crossing small built up areas.

During the year 2012, except for inter city motorways, speeds practised at daytime by motorcyclists are higher than the ones practised by motorists. So, the average speed of motorcyclists noticed on bypass motorways is higher of 4 km/h to light vehicles one's. This difference reaches 7 or 8 km/h on national roads with 2x2 lanes and on national and departemental roads with important traffic, and 5 km/h on national roads when crossing small built up areas.

On the same kind, in spite of notable progresses accomplished since 2000, motorcyclists' rates for exceeding speed limits are generally higher than motorists ones. Taking all networks together, the difference is of 9 points for exceeding maximal authorized speeds (30% for light vehicles at daytime on average from 10 km/h (9% for light vehicles at daytime on average from 2009 to 2012 versus 20% for motorcycles).

Practised speeds at daytime by motorcycles	2000	2008	2009	2010	2011	2012
Intercity motorway (130 km/h) Average speed (km/h) % of exceeding speed limit (1)	 132 60	 122 37	 119 26	 116 24	 112 9	 114 17
Bypass motorway (110 km/h) Average speed (km/h) % of exceeding speed limit	 118 63	 112 52	 110 43	 108 41	 106 32	 105 36
National roads with 2x2 lanes and separated ways (110 km/h) Average speed (km/h) % of exceeding speed limit	 121 65	 104 30	 106 35	 104 31	 105 28	 108 40
National and departemental roads with important traffic (90 km/h) Average speed (km/h) % of exceeding speed limit	 99 67	 96 59	 87 40	 91 52	 87 35	 89 50
Crossing of urban areas (-5 000 inhabitants) by national road (50 km/h) Average speed (km/h) %	69 94	56 59	60 72	59 71	57 66	56 58

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Practised speeds at daytime by motorcycles	2000	2008	2009	2010	2011	2012
All						
Average speed (km/h)	96	90	86	87	85	86
% of exceeding speed limit	69	47	45	43	29	39
% of exceeding speed limit +10km/h	50	27	24	22	16	20

Source : ONISR – Speeds observatory – 738 observations in 2012

(1) Rates for exceeding the speed limit and the speed limit + 10 km/h take into account the lowering of authorized maximal speed in the case of precipitations (art. R 413-2 of the Code de la route). For example, concerning bypass motorways, the rate for exceeding speed limit is calculated from the number of vehicles exceeding 130 km/h in the absence of precipitations, and from the number of vehicles exceeding 110 km/h in the presence of precipitations.

REGULATION ON SPEED LIMITS REMINDER

Vehicles of less than 3,5 tonnes (motorcycles, light vehicles and light goods vehicles) – art. R413-2, R413-3, R413-4, R413-5 et R413-7 of the Code de la Route

	Except bad weather	Rain	Visibility lower than 50 meters (fog)	Special measures	
				Use of tires with studs	Pupils drivers and novice drivers (license holders < 2 or 3 years)
Motorways	130 km/h	110 km/h	50 km/h	Maximal speed limited to 90 km/h	110 km/h
Roads with separated lanes	110 km/h	100 km/h	50 km/h	Idem autoroutes	100 km/h
Other roads outside built up areas	90 km/h	80 km/h	50 km/h		80 km/h
Built up areas	50 km/h[1]				50 km/h

[1] In some cases, this limit can be raised to 70km/h on the road sections where the access of the local residents and the crossing of the pedestrians are in limited number. It is raised to 80 km/h on the parisian beltway boulevard (70 km/h since January the 10th of 2014).

Heavy vehicles – art. R413-8, R413-8-1 et R413-9 of the Code de la Route

	Heavy goods vehicle		Transportation of dangerous goods with TGW or PTRA > 12 tonnes, Abnormal loads	Public transportation		
	Total weight : 12 tonnes and less	Total weight : More than 12 tonnes		9 seats and more and 12 tonnes and more	Public transportation > 9 seats[2]	
					10 tonnes maximum (common law)	More than 10 tonnes
Motorways	90 km/h	90 km/h	80 km/h	110 km/h	100 km/h	90 km/h (100 km/h for the vehicles equipped with an ABS system)
Priority roads	80 km/h (90 km/h on the roads with two lanes separed by a central reserve)	80 km/h	60 km/h (70 km/h when the vehicle is equipped with an ABS System)	80 km/h (100 km/h on the roads with two lanes separated by a central reserve)	90 km/h (100 km/h on the roads with two lanes separated by a central reserve)	90 km/h
Other roads out of built up areas	80 km/h	80 km/h (60 km/h for articulated vehicles or with trailer)	60 km/h	80 km/h	90 km/h (100 km/h on the roads with two lanes separated by a central reserve)	90 km/h
Built up areas	50km/h (except the parisian beltway : 80 km/h then 70 km/h since 1/10/2014)					

[2] Limitation to 70 km/h in case of transport of standing passengers.

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