



***Road Safety Authority
Fog Light Misuse Survey***

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Prepared for: Road Safety Authority
By: Amárach Research
MMcL/MC/SR/

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1.0 Introduction

In December 2017 Amárach Research were once again commissioned by the Road Safety Authority (RSA) to carry out research investigating the misuse of fog lights on Irish roads having completed it in 2013, 2014, 2015 and 2016. The fieldwork dates were the 15th of January to the 29th of January. The issue of fog light misuse continues to be an area of particular concern as studies have shown that they can dazzle and distract other drivers, temporarily hindering the sight of oncoming drivers, and ultimately endangering lives.

This research report identifies the level of fog light misuse on Irish roads across varying weather conditions and road types and compares them directly to 2016 findings. Of particular concern to the RSA are instances where fog light misuse is causing an increased hazardous risk to drivers on specific categories of roads in both rural and urban regions.

There was a small number of observations which took place during foggy or snowy weather conditions and these incidences were excluded from the survey as any fog lights turned on were being correctly used by drivers. There was a greater incidence of clear and bright weather conditions recorded.

In a study published by the RSA, it was discovered that over 1 in 8 (13%) drivers were using their fog lights improperly when weather conditions did not permit. Following this in 2012 the RSA introduced a safety initiative titled “light up” in an attempt to address the issues of defective, broken, missing or inappropriate use of lights such as the use of fog lights in non-foggy conditions. In addition the RSA published a report on the correct use of lights on cars to educate drivers about the dangers of the misuse of fog lights and the importance of using dipped headlights or daytime running lights (DRL’s).

Amárach Research, working as a research partner with the RSA, is committed to providing the most accurate data possible. In accordance with ISO 9001 quality assurance standards and ISO 20252 Market, Opinion and Social Research quality procedures, Amárach has ensured that data reported within will help ensure increased safety on Irish roads.

2.0 Methodology

2.1 Observation of Fog Light Misuse

In line with previous waves a total of 96 sites were surveyed combining urban (36 sites) and rural roads (60 sites) throughout Ireland (see appendix 1). This year we also looked at an extra sampling point, the Gort to Tuam motorway. These pre-determined site locations were provided by the RSA and each point was allocated to interviewers with specific instructions regarding shift times and dates for data to be recorded. These points have not changed since Amárach carried out this project in 2013.

As with previous years interviewers inspected each survey point prior to data collection to ensure that there was an area where vehicles were unlikely to be under sustained braking at any time i.e. not approaching traffic lights, roundabouts, site entrances, speed ramps, schools etc. This was to ensure that brake lights were not mistaken as rear fog lights.

Interviewers were provided with briefing packs that included the following items:

- Picture cards identifying different vehicle types.
- Pictures identifying the location of fog lights on different vehicle types.
- High visibility vests.
- Bespoke dashboard for data collection.
- Mock completed dashboard
- Clip Board and protective cover against harsh weather.
- Map of their site location.
- Interview Instructions.
- Risk assessment sheets.

As is now standard practice, interviewers have been provided with a site risk assessment form (see appendix 3) to be filled out and returned to the Amárach offices.

By providing the supplementary briefing documents we were able to ensure that fog lights were correctly identified on all vehicle types.

The following tables outline the road classifications and number of sites allocated to each. It is worth noting that all the urban national survey points were located outside of Dublin. Also worth noting is that some motorway locations were located within the Dublin city limits but these are reported under rural as all motorway points were identified as rural roads by the RSA.

Urban Roads

Road Class	Number of Sites
Urban National	10
Urban Arterial – 60km/h	8
Urban Arterial – 50km/h	7
Urban Residential – 50km/h	11
Total	36

Rural Roads

Road Class	Number of Sites
Motorways	11
Dual Carriageways	10
National Primary Roads (2-lane)	10
National Secondary Roads (2-lane)	10
Regional Roads	9
Country Roads ¹	10
Total	60

Interviewers collected data manually to avoid any technical issues that could arise from using electronic handheld devices (particularly under adverse weather conditions). As there have been no issues with the dashboard used in the previous studies, no amendments were made to it for the 2017/2018 study.

On rural and urban national roads, multiple vehicle categories were recorded and classified as either Rigid Goods Vehicles (RGV's), Semi-Articulated Goods Vehicles (SAGV's) and Buses.

¹ Local roads- all other urban and rural roads not included in the breakdown. A small number of regional roads in countryside locations were also included.

On both urban arterial and urban residential roads only cars were recorded as there is a low volume of other vehicle categories on these roads.

Vehicle categories not included in the survey were motorcycles and commercial vehicles (vans) that could not be identified under any of the above vehicle categories.

Observations were conducted between 6.30am-9.30am, 12.30pm-3.30pm and 5pm-8pm Monday–Friday in accordance with guidelines agreed with the RSA.

2.2 Health and Safety

In line with health and safety protocol we produced a site risk assessment form to be completed by each interviewer. The risk assessment form was produced by Amárach and approved by the RSA. Completed forms were reviewed by Amárach and stored in a secure location in the Amárach offices. Each interviewer was provided with a separate site risk assessment form for each site to be completed and sent back to the Amárach offices.

2.3 Pilot Survey

The initial 5 site locations were undertaken as a pilot by interviewers who had carried out the project previously. The project manager reviewed those sites and had a de-brief with the interviewer. The field manager was confident that no issues had arisen and full fieldwork could commence as normal. These pilot sites were included in the final data as no changes were made.

As Amárach Research carried out this survey in 2013/ 2014/ 2015/ 2016 certain decisions had already been made based on the pilot (e.g. due to traffic volumes, only record cars going in one direction with the exception of rural roads). No new insights were garnered for this pilot, although it did refresh the memories of the executive team and the experience was utilised during the observer briefings.

3.0 Results and Analysis

The analysis section is comprised of four sections in accordance with requirements outlined by the RSA in the tender documents. Comparisons are made to the 2016 results throughout.

As highlighted in the introduction there were a small number of incidences of foggy conditions recorded which have been excluded from the sample. There was also an increase in clear/ bright weather conditions during observations. Therefore there is an overall increase in sample size for clear/ bright weather conditions. There was also incidences of snow which did not occur in the last study.

i) Incidence of fog lights being used in non-foggy conditions

Incidence of Fog Lights Being Used in Non Foggy Conditions – Overview amárach research

Total	Total N=40,094 (39,672)	Cars N=32,873 (32,651)	Rigid Goods Vehicles N=3,402 (3,465)	Semi- Articulated Vehicles N=2,858 (2,586)	Buses N=961 (970)
No fog lights on	85% (89%)	86% (90%)	87% (89%)	76% (84%)	80% (85%)
Front only	11% (7%)	11% (7%)	9% (6%)	18% (10%)	13% (9%)
Rear only	1% (1%)	1% (1%)	*%(1%)	1% (1%)	*%(2%)
Both front & rear	3% (2%)	2% (2%)	3% (6%)	6% (5%)	7% (3%)
Total fog light misuse	15% (11%)	14% (10%)	13% (11%)	24% (16%)	20% (15%)

* Less than 1%
Due to rounding totals may not add to 100%

() Denotes 2016 findings

This first section of analysis provides a top-line review of the results from the survey. There was an overall increase in the occurrence of incorrect fog light usage, with Semi-articulated goods vehicles accounting for the highest levels of fog light misuse with 24%, an increase of 8% on the 2016 survey, jumping back to the 2015 figure. As we have seen previously car drivers remain one of the least likely to use their fog lights incorrectly, however overall, improper use has risen by 4% this year. RGV's are on par with cars in terms of correct usage, but have also risen 2% on the 2016 figures.

Overall, this year there is an increase in the incorrect use of fog lights from one in ten (11%) to just over one in seven (15%), similar to what we recorded in 2015.

ii) Incidence of fog lights being used in non-foggy conditions by road type

Incidence of Fog Lights Being Used in Non Foggy Conditions by Road Type - Total						amárach research
Total N=40,094 (39,672)	No Fog Lights on	Front Only	Rear Only	Both Front and Rear	Total Fog Light Misuse	
Dual Carriageway – N=6,079 (5,459)	86% (89%)	12% (8%)	1% (2%)	1% (1%)	14% (11%)	
Motorway – N=5,371 (3,116)	89% (93%)	9% (4%)	0 (*)	1% (2%)	11% (7%)	
Country Road – N=2,652 (3,616)	85% (91%)	11% (7%)	1% (*)	4% (1%)	15% (9%)	
Regional Road – N=2,648 (3,302)	85% (88%)	11% (6%)	1% (1%)	3% (5%)	15% (12%)	
National Primary Road – N=4,909 (5,100)	81% (90%)	16% (8%)	0%(1%)	3% (1%)	19% (10%)	
National Secondary Road – N=3,782 (4,955)	83% (83%)	13% (12%)	1% (1%)	4% (4%)	17% (17%)	
Urban National – N=5,104 (5,045)	79% (85%)	12% (11%)	0% (1%)	9% (3%)	21% (15%)	
Urban Arterial – N=6,000 (5,999)	90% (93%)	9% (5%)	1% (1%)	1% (1%)	10% (7%)	
Urban Residential – N=3,549 (3,080)	89% (96%)	8% (3%)	2% (*)	1% (*)	11% (4%)	

*Less than 1%
Due to rounding totals may not add to 100%

() Denotes 2016 findings

The above chart provides a breakdown of the total number of vehicles recorded against the various road types where the survey was carried out. Motorways and Urban Residential/ Arterial roads displayed the lowest levels of fog light misuse, but each of these road types had higher levels of fog light mis-use than the 2016 survey findings. Urban residential roads saw the biggest jump (11% vs. 4%). We saw an increase in incorrect light usage on National Primary roads and Urban National, with the two highest levels on these roads.

Incidence of Fog Lights Being Used in Non Foggy Conditions by Road Type – Cars

Cars 32,873 (N=32,651)	No Fog Lights on	Font Only	Rear Only	Both Front and Rear	Total Fog Light Misuse
Dual Carriageway – N=4,000 (4,000)	88% (90%)	11% (8%)	0 (2%)	1% (1%)	12% (10%)
Motorway – N=4,040 (2,416)	89% (94%)	9% (5%)	* (**)	1 % (1%)	11% (6%)
Country Road –N=2,444 (3,207)	85% (91%)	11% (7%)	1% (*)	3% (1%)	15% (9%)
Regional Road – N= 2,248 (2,592)	84% (88%)	12% (6%)	1% (1%)	3% (5%)	16% (12%)
National Primary Road –N= 3,573 (3,707)	83% (90%)	14% (8%)	1%(*)	2% (1%)	17% (10%)
National Secondary Road N=3,020–(3,932)	83% (83%)	13% (13%)	1% (1%)	3% (3%)	17% (17%)
Urban National – N= 3,999 (3,718)	79% (85%)	12% (11%)	0% (2%)	8% (3%)	21% (15%)
Urban Arterial – N= 6,000 (5,999)	90% (93%)	9% (5%)	1% (1%)	1% (1%)	10% (7%)
Urban Residential– N=3,549 (3,080)	89% (96%)	8% (3%)	2% (*)	1% (*)	11% (4%)

*Less than 1%
Due to rounding totals may not add to 100%

() Denotes 2016 findings

The highest incidence of fog light misuse for car drivers was recorded on Urban national roads at 21%, a 6% increase on the 2016 survey findings. The highest increase was found on National Primary roads at 7%. National secondary roads also remain a potential danger zone as incorrect fog light mis-use was observed at 17%. Fog light misuse among car drivers is lowest on urban arterial roads (10%), urban residential (11%) and motorways (11%).

Incidence of Fog Lights Being Used in Non Foggy Conditions by Road Type – RGV's

Rigid Good Vehicles (RGVs) N= 3402 (3,465)	No Fog Lights on	Front Only	Rear Only	Both Front and Rear	Total Fog Light Misuse
Dual Carriageway – N=908 (606)	87% (90%)	12% (7%)	1% (2%)	0% (1%)	13% (10%)
Motorway – N=601 (324)	92% (89%)	6% (3%)	0% (2%)	2% (6%)	8% (11%)
Country Road – N105= (227)	78% (89%)	14% (7%)	1% (2%)	7% (2%)	22% (11%)
Regional Road – N=227 (344)	88% (88%)	5% (5%)	0 (0)	7% (7%)	12% (12%)
National Primary Road – N=554 (712)	86% (92%)	11% (5%)	*% (1%)	3% (2%)	14% (8%)
National Secondary Road – N=518 (584)	89% (84%)	7% (8%)	1% (*)	3% (7%)	11% (16%)
Urban National – N=489 (668)	79% (88%)	11% (7%)	0% (1%)	9% (4%)	21% (12%)

*Less than 1%
Due to rounding totals may not add to 100%

() Denotes 2016 findings

The highest level of compliance with safe use of fog lights for RGV's occurred on motorways, with mis-use lowering from 11% to 8% after we had seen a rise in mis-use in 2016. Country roads reported the highest number of vehicles using fog lights incorrectly at 22%, double that of the 2016 findings. Mis-use on urban national roads has also almost doubled on 2016 (12% vs. 21%).

Incidence of Fog Lights Being Used in Non Foggy Conditions by Road Type – SAGV's

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Semi-Articulated Vehicles (SAGVs) N=2,858 (2,586)	No Fog Lights on	Front Only	Rear Only	Both Front and Rear	Total Fog Light Misuse
Dual Carriageway – N=879 (671)	78% (87%)	18% (9%)	1% (1%)	3% (3%)	22% (13%)
Motorway –N=573 (273)	85% (90%)	12% (1%)	0% (1%)	3% (8%)	15% (10%)
Country Road – N=55 (114)	71% (92%)	14% (7%)	0 (0)	14% (*)	29% (8%)
Regional Road –N=112 (261)	86% (86%)	8% (7%)	0% (2%)	6% (5%)	14% (14%)
National Primary Road – N=628 (509)	67% (85%)	26% (8%)	1% (1%)	6% (6%)	33% (15%)
National Secondary Road – N=181 (271)	69% (73%)	20% (14%)	2% (1%)	9% (13%)	31% (27%)
Urban National – N=430 (487)	74% (79%)	14% (17%)	* (0)	12% (5%)	26% (21%)

*Less than 1%
Due to rounding totals may not add to 100%

() Denotes 2016 findings

As identified in the earlier chart overview, and in line with previous waves, SAGV's were recorded as the most likely vehicle category to misuse their fog lights. The biggest increase in fog light mis-use occurred on country roads (29% vs 8%) (Caution small sample size) followed by national primary roads (33% vs. 15%). No roads indicated an improvement but regional roads stayed static.

Incidence of Fog Lights Being Used in Non Foggy Conditions by Road Type – Buses

Buses N=961 (970)	No Fog Lights on	Front Only	Rear Only	Both Front and Rear	Total Fog Light Misuse
Dual Carriageway – N= 292 (182)	79% (81%)	17% (13%)	0% (4%)	3% (2%)	21% (19%)
Motorway – N=157 (103)	87% (98%)	12% (0)	0 (0)	1% (2%)	13% (2%)
Country Road – N= 48 (68)	75% (90%)	6% (9%)	6% (1%)	13% (0)	25% (10%)
Regional Road – N= 61 (105)	80% (87%)	10% (5%)	0% (2%)	10% (7%)	20% (13%)
National Primary Road – N= 154 (172)	83% (85%)	13% (8%)	0% (4%)	4% (2%)	17% (15%)
National Secondary Road – N= 63 (168)	70% (77%)	19% (17%)	0% (0)	11% (6%)	30% (23%)
Urban National – N= 186 (172)	75% (87%)	9% (9%)	1 (0)	16% (3%)	25% (13%)

* Less than 1%

** Caution small base size

Due to rounding totals may not add to 100%

() Denotes 2016 findings

Similar to SAGV's there was an increase in the number of buses on country roads recorded as using fog lights incorrectly, again the small sample size here must be highlighted. As with the 2016 survey, buses recorded on Motorways showed the least amount of fog light misuse, however after remaining at 2% the previous two surveys, has risen to 13% this year. Similar to 2016, the highest level of fog light mis-use occurred on National Primary roads, again the sample size here must be highlighted.

iii) Incidence of fog lights being used in non-foggy conditions in built-up areas and on rural roads

The methodology section detailed the exact distribution of survey point locations nationally. These locations are divided between both urban and rural roads. The following chart details the total breakdown of vehicles for both urban and rural locations.


Incidence of Fog Lights Being Used in Non Foggy Conditions in Built up Areas and on Rural Roads						amárach research
Urban	Total N=14,653 (14,124)	Cars N=13,548 (12,797)	Rigid Goods Vehicles N=489 (668)	Semi-Articulated Vehicles N=430 (487)	Buses N=186 (172)	
No fog lights on	86% (91%)	87% (91%)	79% (88%)	74% (79%)	75% (87%)	
Front only	10% (7%)	10% (6%)	11% (7%)	14% (17%)	9% (9%)	
Rear only	1% (1%)	1% (1%)	0% (1%)	* (*)	1% (0)	
Both front & rear	4% (2%)	3% (1%)	9% (4%)	12% (5%)	16% (3%)	
Total Fog Light Misuse	14% (9%)	13% (9%)	21% (12%)	26% (21%)	25% (13%)	
Rural	Total N=25,441 (25,548)	Cars N=19,325 (19,854)	Rigid Goods Vehicles N=2,913 (2,797)	Semi Articulated Vehicles N=2,428 (2,099)	Buses N=775 (798)	
No fog lights on	85% (89%)	86% (89%)	88% (89%)	76% (85%)	81% (85%)	
Front only	12% (8%)	12% (8%)	9% (6%)	19% (8%)	14% (10%)	
Rear only	1% (1%)	1% (1%)	*% (1%)	1% (1%)	0% (2%)	
Both front & rear	2% (2%)	2% (2%)	2% (4%)	4% (6%)	5% (3%)	
Total Fog Light Misuse	15% (11%)	14% (11%)	12% (11%)	24% (15%)	19% (15%)	

(*) Denotes 2016 findings

On an overall level, similar to the 2016 findings, the incorrect use of fog lights appears to be slightly more prevalent in rural areas than urban areas (15% vs. 14%), however, there has been a dis-improvement across both, more so for urban areas.

iv) Weather conditions where the misuse of fog lights is more prevalent

An important focus of this research was to understand the varying effects of different weather conditions on fog light misuse. The chart below details the various weather categories experienced by interviewers on a top line level across all vehicles observed. As previously mentioned, although there was an increase in clear and bright weather, there was also more heavy rain, mist and drizzle. Observations with snow or foggy weather were excluded as fog lights may be used correctly in these conditions.

Weather Conditions Where Misuse of Fog Lights is More Prevalent – Total 

Total N=40,094 (39,672)	No Fog Lights on	Front Only	Rear Only	Both Front and Rear	Total Fog Light Misuse
Clear / Bright – N=13,714 (11,913)	88% (92%)	10% (5%)	1% (*)	2% (2%)	12% (8%)
Dark– N=14,266 (13,930)	83% (88%)	13% (9%)	1% (1%)	3% (2%)	17% (12%)
Overcast – N= 3771 (1,603)	88% (91%)	10% (8%)	0 (*)	2% (1%)	12% (9%)
Mist or Drizzle – N=2374 (566)	83% (89%)	12% (8%)	* (*)	4%(2%)	17% (11%)
Rain/Heavy Rain– N=5,969 (2,205)	85% (85%)	10% (12%)	*% (2%)	4% (2%)	15% (15%)

* Less than 1%

**Caution small base size

Due to rounding not all totals will add to 100%

() Denotes 2016 findings

Both dark or misty conditions were most likely to result in the improper use of fog lights by drivers.

Weather Conditions Where Misuse of Fog Lights is More Prevalent – Cars

Cars N=32,873 (32,651)	No Fog Lights on	Front Only	Rear Only	Both Front and Rear	Total Fog Light Misuse
Clear / Bright – N= 11,154 (9,305)	89% (93%)	9% (5%)	1 (*)	2% (1%)	11% (7%)
Dark – N=12,197 (11,876)	84% (89%)	13% (8%)	1% (1%)	3%(2%)	16% (11%)
Overcast – N=3010 (1,529)	89% (91%)	9% (7%)	* (*)	3%(1%)	11% (9%)
Mist or Drizzle – N=1,720 (483)	86% (89%)	10% (8%)	* (*)	3% (3%)	16% (11%)
Rain/Heavy Rain– N= 4,792 (1,739)	86% (85%)	11% (11%)	1% (2%)	3% (5%)	16% (15%)

*Less than 1%

**Caution small base size

Due to rounding not all totals will add to 100%

() Denotes 2016 findings

The chart shows a breakdown of fog light misuse in different weather conditions for car drivers specifically. Car drivers are most likely to misuse their fog lights while it is dark, raining or misty (16%). Heavy rain conditions caused almost the same level of mis-use as the 2016 findings showed however, mis-use in dark and misty weather has risen by 4%.

Weather Conditions Where Misuse of Fog Lights is More Prevalent – RGV's

Rigid Good Vehicles N=3,402 (3,465)	No Fog Lights on	Front Only	Rear Only	Both Front and Rear	Total Fog Light Misuse
Clear / Bright – N=1,200 (1,297)	89% (92%)	8% (4%)	1% (1%)	2% (4%)	11% (8%)
Dark – N=888 (1,072)	85% (88%)	12% (8%)	0% (1%)	3% (3%)	15% (12%)
Overcast – N=425 (20)	89% (85%)	9% (10%)	0% (5%)	2% (0)	11% (15%)
Mist or Drizzle – N=314 (60)	85% (96%)	12% (4%)	0 (0)	2% (0)	15% (4%)
Rain/Heavy Rain – N= 575 (206)	84% (85%)	7% (11%)	1% (1%)	9% (2%)	16% (15%)

*Less than 1%

**Caution small base size

Due to rounding not all totals will add to 100%

() Denotes 2016 findings

As with car drivers, incorrect use of fog lights has increased in misty conditions for RGV's (15% vs. 4%). The highest level of mis-use is in rainy conditions, on par with the 2016 findings, with only a 1% change. This is closely followed by dark or misty conditions at 15%. There has been an improvement in overcast conditions of 4%.

Weather Conditions Where Misuse of Fog Light is More Prevalent – SAGV's

Semi-Articulated Vehicles (SAGVs) N=2,858 (2,586)	No Fog Lights on	Front Only	Rear Only	Both Front and Rear	Total Fog Light Misuse
Clear / Bright – N=998 (1,010)	80% (86%)	16% (7%)	*% (1%)	4% (6%)	20% (14%)
Dark – N=911 (776)	72% (82%)	21% (11%)	1% (1%)	5% (6%)	18% (18%)
Overcast – N=240 (40**)	78% (80%)	18% (15%)	1% (5%)	3% (0)	22% (20%)
Mist or Drizzle – N=234 (23**)	69% (74%)	26% (26%)	1 (0)	4% (0)	31% (26%)
Rain/Heavy Rain – N=475 (161)	76% (78%)	12% (19%)	0% (2%)	12% (1%)	24% (22%)

() Denotes 2016 findings

* Less than 1%
 ** Caution small base size
 Due to rounding total may not add to 100%

Misty conditions saw the greatest levels of fog light mis-use in SAGV's with 3 in ten vehicles presenting with fog lights on in these conditions. The lowest levels were seen in dark conditions at 18%, unchanged from the 2016 findings. Clear and bright conditions saw one of the biggest increases in mis-use rising 6% to 20% from 14%.

Weather Conditions Where Misuse of Fog Light is More Prevalent – Buses

Buses N=961 (970)	No Fog Lights on	Front Only	Rear Only	Both Front and Rear	Total Fog Light Misuse
Clear / Bright – N=362 (301)	83% (88%)	13% (9%)	* % (1%)	3% (2%)	17% (12%)
Dark – N=270 (206)	79% (83%)	12% (9%)	1 (5%)	8% (7%)	21% (17%)
Overcast – N=96 (14**)	74% (79%)	15% (14%)	0 % (7%)	11% (0)	26% (21%)
Mist or Drizzle – N=106	67%	24%	0%	9%	33%
Rain/ Heavy Rain – N=127 (99)	85% (80%)	5% (14%)	0 (0)	10% (6%)	15% (20%)

() Denotes 2016 findings

* Less than 1%
 ** Caution small base size
 Due to rounding totals may not add to 100%

The highest level of fog light mis-use occurred in misty weather conditions, with one third of buses having fog lights on incorrectly. All other weather conditions recorded saw an increase of at least 4% on the 2016 findings.

v) Time-related behavioural patterns for fog light misuse

Incidence of Fog Lights Being Used in Non Foggy Conditions – Overview

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	Total	Cars	Rigid Goods Vehicles	Semi-Articulated Vehicles	Buses
Morning (6.30-9.30 am)	N=15,276 (13,327)	N=12,537 (10,522)	N= 1,239 (1,294)	N=1,125 1,108)	N=375 (403)
Any fog lights on	15% (12%)	14% (11%)	13% (12%)	25% (16%)	22% (16%)
Afternoon (12.30-3.3 pm)	Total N=10,890 (13,549)	Cars N=8,652 (10,951)	Rigid Goods Vehicles N=1,096 (1,335)	Semi-Articulated Vehicles N=874 (932)	Buses N=268 (331)
Any fog lights on	11% (7%)	10% (6%)	10% (8%)	22% (13%)	15% (10%)
Evening (6.30-9.30 pm)	Total N=13,928 (12,796)	Cars N=11,684 (11,178)	Rigid Goods Vehicles N=1067 (836)	Semi-Articulated Vehicles N=879 (546)	Buses N=318 (236)
Any fog lights on	17% (13%)	16% (12%)	17% (17%)	25% (22%)	25% (19%)

() Denotes 2016 findings

Observations of fog light misuse were conducted over a relatively even spread throughout the day, with slightly more cars observed in the morning and evening time. The chart above indicates that fog light misuse is most prevalent in the evening and morning. Level of mis-use has increased relatively evenly across the three periods. In the evening, when the misuse of fog lights is most prevalent, as we saw in the 2016 survey, SAGV's are most likely to have their fog lights on. This year buses are as likely as SAGV's to have fog lights on when they are not needed.

4.0 Conclusion

In the 2016 survey findings we saw an improvement in the mis-use of fog lights, however, this year, we have seen an increase in the incorrect use of fog lights.

Just over one in seven (15%) vehicles recorded used their fog lights incorrectly, a return to the 2015 figure of 14%. In 2016 the figure was approximately one in ten.

The lowest levels of fog light misuse were recorded amongst RGV's drivers (13%) followed by cars (14%), similar to trends we saw in the 2016 survey findings. SAGV's displayed the highest levels of fog light misuse (24%), increasing by 8%, the largest increase across vehicle type. Rates of improper use have increased across all vehicle types.

The improper use of fog lights is most common on Urban National roads (21%) an increase of 6% on the 2016 survey. This behaviour is least common on Urban Arterial roads (10%). There were no improvements on any road type, however, National Secondary roads stayed static at 17%.

Drivers on rural roads recorded a higher incidence of incorrect use of fog lights at 15% compared to 14% on urban roads, however this difference is only 1%. Urban roads saw the biggest increase compared to the 2016 survey. Buses on urban roads saw the biggest increase from 13% to 25%, with the highest levels of mis-use by SAGV's at 26%.

Different weather conditions were recorded to have an impact on the levels of fog light misuse amongst drivers. Drivers are most likely to use their fog lights in dark or misty conditions (17%), followed closely by rain (15%). The biggest increase in the incorrect use of fog lights was in dark conditions rising from 12% to 17%.

The likelihood of drivers using their front fog lights 'only' (11%) is higher than rear fog light usage (1%), in line with previous studies. 3% of all vehicles observed were found to have both front and rear headlights on.

It is not known exactly why drivers use their fog lights for conditions other than their intended use, i.e. for driving in fog or falling snow. This year we saw an increase in misty, overcast

weather and in heavy rain, these conditions could lead to greater mis-use of fog lights as visibility could be reduced. Anecdotally, with weather conditions becoming increasingly severe and varied, even in typically calmer months, proper care and vigilance is as important as ever on the roads. As this year's results show, the incorrect usage of fog lights is still an issue on Irish roads, education on and awareness of the proper use of fog lights continues to be an important element of driver safety on Irish roads.

Appendix

Appendix 1 Survey Point Locations

Area	County	Route	Road type
Cratloe	Clare	N18	Dual C(R)
Black Bull	Meath	N3	Dual C(R)
Black Bull	Meath	N3	Dual C(R)
Mulhuddart	Dublin	N3	Dual C(R)
Newtownmountkennedy	Wicklow	N11	Dual C(R)
Cratloe	Clare	N18	Dual C(R)
Cratloe	Clare	N18	Dual C(R)
Newtownmountkennedy	Wicklow	N11	Dual C(R)
Arklow	Wicklow	N11 Arklow bypass	Dual C(R)
Little Island	Cork	N25	Dual C(R)
Maynooth	Kildare	M4	M-Way(R)
Newbridge	Kildare	M7	M-Way(R)
Dunleer	Louth	M1	M-Way(R)
Maynooth	Kildare	M4	M-Way(R)
Naas	Kildare	M7	M-Way(R)
Shankhill	Dublin	M11	M-Way(R)
Portlaoise	Laois	M7 Portlaoise bypass	M-Way(R)
Portlaoise	Laois	M7 Portlaoise bypass	M-Way(R)
Balbriggan	Dublin	M1 Balbriggan bypass	M-Way(R)
Balbriggan	Dublin	M1 Balbriggan bypass	M-Way(R)
Gprt- Tuam	Galway	M17/M18	M-Way(R)
Mountbellew	Galway	LP3210	Country Road(R)
Timahoe	Kildare	LP111	Country Road(R)
Naas	Kildare	LP333	Country Road(R)
Djouce Woods	Wicklow	LP999	Country Road(R)
	Cork		Country Road(R)
	Cork		Country Road(R)
Lattin	Tipperary	R515	Country Road(R)
Passage West	Cork	R610	Country Road(R)
	Cork	L35	Country Road(R)
	wexford	L7	Country Road(R)
Powers Cross	Galway	R352	Regional Rd (R)
Carrickmacross	Monaghan	R178	Regional Rd (R)
Abbeyleix	Laois	R430	Regional Rd (R)
	Tipperary	R499	Regional Rd (R)
	Cork	R630	Regional Rd (R)

	wexford	R742	Regional Rd (R)
	Offaly	R438	Regional Rd (R)
	Kildare	R403	Regional Rd (R)
Bruff	Limerick	R516	Regional Rd (R)
Dungarvan	Waterford	N25	Nat Primary Rd (R)
Littleton	Tipperary	N8	Nat Primary Rd (R)
Close to Carrickmacross	Monaghan	N2	Nat Primary Rd (R)
Close to Virginia	Cavan	N3	Nat Primary Rd (R)
Drumsna	Leitrim	N4	Nat Primary Rd (R)
Crookstown	Cork	N22	Nat Primary Rd (R)
Ballinafad	Sligo	N4	Nat Primary Rd (R)
Longford Town	Longford	N5	Nat Primary Rd (R)
Swinford	Mayo	N5	Nat Primary Rd (R)
Horseleap	Offaly	N6	Nat Primary Rd (R)
Claremorris	Mayo	N60	Nat Secondary Rd (R)
Partry	Mayo	N84	Nat Secondary Rd (R)
Killeenaran	Galway	N67	Nat Secondary Rd (R)
Castlecomer	Kilkenny	N78	Nat Secondary Rd (R)
Kilmore	Mayo	N58	Nat Secondary Rd (R)
Dunfanaghy	Donegal	N56	Nat Secondary Rd (R)
Castlebar	Mayo	N60	Nat Secondary Rd (R)
Templemore	Tipperary, north	N62	Nat Secondary Rd (R)
Furnace Lough	Mayo	N59	Nat Secondary Rd (R)
Killarney	Kerry	N72	Nat Secondary Rd (R)
Curry	Sligo	N17	Urban National
Gort	Galway	N18	Urban National
Tivoli	Cork	N8	Urban National
Kells	Meath	N3	Urban National
Durrow	Laois	N8	Urban National
Athy	Kildare	N78	Urban National
Roscommon Town	Roscommon	N63	Urban National
Bandon	Cork	N71	Urban National
Tarbert	Limerick	N69	Urban National
Moylough	Galway	N63	Urban National
Boosterstown	Dublin	R118 Rock Road	Urban Arterial
Chapelizod	Dublin	R109 Chapelizod Road	Urban Arterial
Dollymount	Dublin	James Larkin Road	Urban Arterial
Goatstown	Dublin	Lower Kilmacud Road	Urban Arterial
Deans Grange	Dublin	Clonkeen Road	Urban Arterial
Kylemore Road	Dublin		Urban Arterial
Fox & Geese	Dublin	R110 Naas Road	Urban Arterial
Glasnevin	Dublin	N2 Finglas Road	Urban Arterial
Donnybrook	Dublin	N11 Stillorgan Road	Urban Arterial
Coolock	Dublin	R107 Malahide Road	Urban Arterial

Ballsbridge	Dublin	N11 Morehampton Road	Urban Arterial
Cabra	Dublin	N2 Cabra Road	Urban Arterial
Templeogue	Dublin	N81 Templeogue Road	Urban Arterial
Cabra	Dublin	N3 Navan Road	Urban Arterial
Rathfarnham	Dublin	R112 Dodder Park Road	Urban Arterial
Marino	Dublin	Brian Road	Urban Residential
Cabra	Dublin	Broombridge Road	Urban Residential
Santry	Dublin	Lorcan Avenue	Urban Residential
Phibsboro	Dublin	Annamoe Road	Urban Residential
Killester	Dublin	Brookwood Rise	Urban Residential
Glasnevin	Dublin	Glasilawn Road	Urban Residential
Marino	Dublin	Griffith Avenue	Urban Residential
Blanchardstown	Dublin	Delwood Road	Urban Residential
Sutton	Dublin	Offington Park	Urban Residential
Sutton	Dublin	Sutton Park	Urban Residential
Kilbarrick	Dublin	Abbey Park	Urban Residential

Appendix 3 Risk Assessment

Enumeration Location Risk Assessment Checklist

Note: this checklist is used in full by individual Enumerators for each location visited.

Location:

ENUMERATOR	<u>YES</u>	<u>NO</u>	<u>H/M/L</u>
Supervision			
Have you been assigned a Supervisor?			
Have you got your Supervisor's phone number in your phone?			
Are you carrying ID (Amarach ID badge, letter of authorisation etc)?			
Does your phone have a reasonable amount of battery charge? <i>(particularly if working alone)</i>			
Does some member of family/friends know where you are and when to expect you back <i>(particularly if working alone)</i> ?			
Do you know what the weather forecast is and are you prepared for it (suitable clothing, appropriate footwear etc)?			
Are you wearing high visibility clothing (relevant if working outdoors / at the roadside etc?)			

Set-up at location	<u>YES</u>	<u>NO</u>	<u>H/M/L</u>
Is your car parked safely and legally?			
Does your supervisor know of your location?			
Is your phone charged and have you contact numbers in case of Emergency?			
Is there a phone Signal? <i>(many locations will not have adequate phone signal and this should not normally be an issue but it is desirable to be aware if this is the case before the enumeration exercise begins)</i>			

Location Assessment

	<u>YES</u>	<u>NO</u>	<u>H/M/L</u>
Is there a suitable place to take up position for observation			
- Without interrupting the flow of traffic or the movement of pedestrians/other road users			
- Without putting yourself at risk from road activity			
- Is there shelter from adverse weather while conducting the exercise?			
Is there any aspect of the location that suggests it may not be appropriate to go ahead with the enumeration exercise at this time (e.g. road works or similar underway)?			

Conduct of the Exercise

	<u>YES</u>	<u>NO</u>	<u>H/M/L</u>
Have you completed, signed and dated this Risk Assessment?			
Name _____ Date _____			