



RSA

# Fatal Collisions 2008-2012

## Motorcyclists

3 October 2016

Údarás Um Shábháilteacht Ar Bhóithre  
Road Safety Authority

## Table of Contents

Executive Summary		4
Section 1	Introduction	15
Section 1.1	Background to Report	15
Section 1.2	Number of Fatal Collisions and People Killed Under Review	17
Section 1.3	Person Deemed Culpable for the Collision	19
Section 2	Collision Type, When, Where and Conditions	21
Section 2.1	Type of Collision	21
Section 2.2	Day, Time and Month of Collision	22
Section 2.3	County of Collision	26
Section 2.4	Type of Road and Speed Limit	27
Section 2.5	Weather and Light Conditions	30
Section 2.6	Road Factors	32
Section 3	Profile of Motorcyclist Deemed Culpable	33
Section 3.1	Gender and Age of Motorcyclist Deemed Culpable	33
Section 4	Pre-Crash Behaviour of Motorcyclist Deemed Culpable	36
Section 4.1	Purpose of Trip	36
Section 4.2	Record of Insurance	36
Section 4.3	Licence Status	37
Section 4.4	Age and Condition of Vehicle	38
Section 4.5	Alcohol Consumption	40
Section 4.6	Speed as a Factor	44
Section 4.7	Helmet and High Visibility Wearing	44
Section 4.8	Main Manoeuvre and Action Taken by Motorcyclist Deemed Culpable	45

Section 4.9	Main Manoeuvre and Action by Driver of Motor Vehicle Deemed Culpable	47
Section 5	Number of People Killed and Injured	49
Appendix		51

## **Executive Summary**

### **Background to Report**

Over the time period 2008 to 2012, 983 fatal collisions occurred on Irish roads claiming the lives of 1,077 people. This report examines 867 of the fatal collisions which occurred during this time period specifically focusing on the profile of collisions involving a motorcyclist.

The road collision database in Ireland is created using a form called a C(T)68 forwarded to the Road Safety Authority (RSA) from An Garda Síochána. The information provided in this form is based on preliminary information collected at the scene of a collision and does not constitute the findings of the final investigation. The RSA issues reports regularly using the data contained in this database as the best available representation of fatal and injury collisions.

However, this study is based on an analysis of the completed Garda investigation file where the full circumstances of the collisions are available. Access was granted by An Garda Síochána to the completed Investigation File produced for each collision. The file contains two main reports:

1. An Garda Síochána Investigation Report
2. Forensic Collision Investigation Report (FCI)

The RSA collected the data in the Garda National Traffic Bureau. This report provides an analysis of the data by collision, by vehicle and by

contributory factor. Therefore, the figures and totals will change depending on the category.

### **Type of Collision**

Of the 867 fatal collisions analysed 93 (11%) involved a motorcyclist. A third of these 93 collisions (34%) involved just the motorcyclist and no other vehicle (Table 1). Three of the 93 collisions involved two motorcyclists.

**Table 1. Type of Collision Involving a Motorcyclist**

	<b>N</b>	<b>%</b>
<b>Two Vehicle</b>	59	63.4
<b>Single Vehicle</b>	32	34.4
<b>Cyclist</b>	1	1.1
<b>Pedestrian</b>	1	1.1
<b>TOTAL</b>	<b>93</b>	<b>100.0</b>

Of the 59 collisions involving a second vehicle, the majority were private cars (70%).

## **When and Where**

- Over half (56%) of the fatal collisions involving a motorcyclist occurred on a Saturday or Sunday, with Sunday alone accounting for a third (33%).
- Over half (56%) of the fatal collisions involving a motorcyclist occurred between 12pm and 7pm. Most collisions on a Saturday (57%) occurred between 12pm and 7 pm. Similarly, 58% of collisions on a Sunday occurred between 12 pm and 7 pm.
- The two months when the most fatal collisions involving a motorcyclist occurred were April (16%) and July (15%). Apart from the peak in April, over a third (35%) occurred over the summer months May, June and July which may indicate a seasonal aspect to motorcyclist collisions.
- Of the 32 fatal single vehicle motorcyclist collisions, 38% occurred in May and July combined.
- April saw the greatest number of fatal collisions between a motorcyclist and another vehicle, accounting for 11 (19%) of the 59 two vehicle collisions.
- The county with the highest number of fatal collisions involving a motorcyclist was Cork (12%), followed by Dublin (9%) and Galway (8%).
- Six counties, Cork, Dublin, Galway, Kerry, Limerick and Tipperary accounted for 44 (47%) of all fatal collisions involving a motorcyclist.

- Sixty percent of the fatal collisions involving a motorcyclist occurred on a regional road and a quarter (26%) on a national road.
- Over half (54%) of the fatal collisions involving a motorcyclist occurred in an 80 km/h speed zone. A fifth (20%) occurred in a 50km/h zone.
- Overall, 21 (23%) of the fatal collisions involving a motorcyclist occurred in an urban setting and 72 (77%) in a rural location (regional and national roads).
- The majority (59%) of fatal collisions involving just the motorcyclist (single vehicle) occurred on an 80km stretch of road and a quarter (25%) in an urban setting.
- Only 16% of the fatal single vehicle collisions occurred on a 100 km stretch of road in contrast to 29% of those collisions involving a motorcyclist and another vehicle.

### **Weather and Light Conditions**

- The weather was dry at the time of 95% of all fatal collisions involving a motorcyclist, however, the road surface was recorded as being wet at 12 of these 88 collision sites, indicating a recent rainfall or surface water.
- It was bright at the time of three quarters (75%) of the fatal collisions involving a motorcyclist, which reflects the time of day and/or the summer months.

### **Profile of Culpable Motorcyclist**

- Of the 93 fatal collisions involving a motorcycle, the motorcyclist was deemed culpable or part culpable for 80 (86%) of the collisions (72 fully culpable, 8 part culpable). The main collision types involving the culpable motorcyclist include, 32 single vehicle, 47 two vehicle collisions and 1 cyclist collision.
- For the remaining 13 collisions for which the motorcyclist was deemed not culpable, 11 private car drivers and a pedestrian were deemed culpable for the collision. In one case culpability was not determined.
- Seventy eight (98%) of the motorcyclists who were deemed culpable for the collision were male and 2% were female.
- Half of the motorcyclists deemed culpable for the collision were aged between 25 and 34 years old.

### **Pre-Crash Behaviour Culpable Motorcyclist**

- The majority (86%) of the motorcyclists deemed culpable were on a social trip.
- Almost a third (30%) of the motorcyclists deemed culpable had no record of insurance at the time of the collision.
- Almost one in 7 (15%) of the motorcyclists deemed culpable did not hold a current motorcycle licence at the time of the collision.

- Of the 51 motorcyclists deemed culpable with a record of a licence, four (8%) of these were on a Learner Permit and 3 (6%) were disqualified at the time of the collision.
- All four of the motorcyclists deemed culpable who were on a Learner Permit were on their first permit.
- Of the 80 motorcycles driven by the motorcyclist deemed culpable, 11 (14%) had a vehicle factor (mechanical issue) cited as contributory to the collision. Of these, three involved defective brakes and/or brake pads, four were issues with worn and defective tyres and four had other defects such as issues with the throttle, bike stand or leaking fluid.

### **Alcohol Consumption**

- Of the 96 motorcyclists involved in a fatal collision, almost a third (29%, n=28) had a record of consuming alcohol, of which 20 (71%) were known to have been over the prevailing legal limit<sup>1</sup> at the time of the collision.
- The blood alcohol level (BAC) in motorcyclists with a confirmed presence of alcohol ranged from 29mgs to 317 mgs of alcohol per 100mls of blood with an average of 183mgs.

---

<sup>1</sup> *In October 2011 the drink drive limit was reduced from 80mgs to 50mgs per 100mls of blood for all drivers and from 80mgs to 20mgs per 100mls of blood for learner, newly qualified drivers and professional drivers. This change in limits has been incorporated into this analysis.*

- Almost half (45%) of the motorcyclists with a presence of alcohol had a concentration greater than 201mgs per 100mls of blood. By way of reference this equates to four times or more above the current legal limit of 50mg of alcohol per 100mls of blood for regular drivers.
- Of the motorcyclists with a confirmed BAC, 25-34 year olds appear most often.
- Fifty seven percent of the 28 motorcyclists who had consumed alcohol and were subsequently involved in a fatal collision, crashed on a Sunday. More motorcyclists with a presence of alcohol were in a fatal collision between 5 and 6 pm on a Sunday than any other time during the week.
- Four of the five collisions that occurred on a Saturday involving a motorcyclist who had consumed alcohol, occurred between 2 and 4 am.
- July and May were the months when most motorcyclists who had consumed alcohol were involved in a fatal collision.
- Seventeen (53%) of the 32 single vehicle collisions involved alcohol.
- Four pillion passengers were killed while travelling on a motorcycle where the motorcyclist had consumed alcohol.

### **Speed as a Factor**

- Almost half (49%) of the 93 collisions involving a motorcyclist had excessive speed recorded as a contributory factor.
- Of the 46 collisions where speed was a factor, 17 involved a single vehicle, and 28 involved two or more vehicles.

### **Helmet Wearing and High Visibility**

- Where information was available on whether or not a helmet was worn at the time of the fatal collision, the files indicated that 82% of motorcyclists involved in fatal collisions were wearing a helmet, and 18% were not.
- Only 4 motorcyclists were recorded as wearing a high visibility garment.

### **How Collision Occurred**

- Over two thirds (68%) of the motorcyclists deemed culpable for the collision were driving forward at the time of the collision. A further 18% were attempting to overtake.
- Over half (54%) of the motorcyclists deemed culpable for the collision were recorded as having lost control prior to the fatal collision. The other main actions recorded were a failure to observe (14%) and improper overtaking (13%).

- In cases where there was dual culpability by the driver of the second vehicle and motorcyclist (n=8), these collisions were considered to have involved inappropriate exiting from a road or entrance by a motor vehicle combined with the inability of the motorcyclist to take avoidance action due to excessive speed and/or lack of observation.
- Of the 11 private car drivers who were deemed culpable for the collision involving the motorcyclist, the main manoeuvre cited was exiting or entering a side road (7), turning right (3) and loss of control (1).
- The main actions taken by the culpable driver were considered to be a failure to observe (9), a failure to stop or yield (1) and crossing to wrong side of road (1).

### **Number of People Killed and Injured**

Ninety six motorcyclists were involved in 93 fatal collisions from 2008 to 2012. Eighty four of the motorcyclists were killed, two sustained serious injuries, seven sustained minor injuries and three were not injured.

As a result of a collision involving a motorcyclist who was deemed culpable, 82 people were killed (73 motorcyclists, 2 drivers, 6 pillion passengers and 1 cyclist) and 6 sustained serious injuries (Table 2). This includes single vehicle collisions.

**Table 2. No of People Killed and Injured by Culpable Motorcyclist (including single vehicle).**

	<b>Fatal</b>	<b>Serious</b>	<b>Minor</b>
<b>Motorcyclist</b>	73	2	5
<b>Drivers</b>	2	0	1
<b>Passenger</b>	6*	4*	1
<b>Pedestrian</b>	0	0	0
<b>Cyclist</b>	1	0	0
<b>TOTAL</b>	<b>82</b>	<b>6</b>	<b>7</b>

\*pillion passengers

In total there were 93 fatal collisions involving at least one motorcyclist. There were 13 collisions where the motorcyclist was not deemed culpable. As a result of all 93 collisions involving a motorcyclist, 96 people were killed (84 motorcyclists, 4 drivers, 6 pillion passengers, 1 pedestrian and 1 cyclist) and 7 were seriously injured in the collisions.

**Table 3. Total No of People Killed and Injured All Collisions Involving Motorcyclist**

	<b>Fatal</b>	<b>Serious</b>	<b>Minor</b>
<b>Motorcyclist</b>	84	2	7
<b>Driver</b>	4	0	1
<b>Passenger</b>	6*	5*	1
<b>Pedestrian</b>	1	0	0
<b>Cyclist</b>	1	0	0
<b>TOTAL</b>	<b>96</b>	<b>7</b>	<b>9</b>

\*pillion passengers

## **Section 1.**

### **Introduction**

#### **Section 1.1 Background to Report**

Over the time period 2008 to 2012, 983 fatal collisions occurred on Irish roads claiming the lives of 1,077 people. The current report is an examination of the circumstances and factors contributing to these collisions. By better understanding how and why these collisions have occurred, the RSA can focus their interventions on the main contributing factors to fatal collisions in Ireland and reduce the number of people being killed on the roads.

A remit of the RSA is to report on road collisions occurring on Irish roads; as part of this work data is collated and analysed using the road collision database. This database is created using a form called a C (T) 68 forwarded to the RSA from An Garda Síochána. The information provided in this form is based on preliminary information collected at the scene of a collision and thus does not constitute the findings of the final investigation. The RSA issues reports regularly using the data contained in this database as the best available representation of fatal and injury collisions.

This report is based on an analysis of the completed investigation file where the full circumstances of the collisions are available. Access was granted by An Garda Síochána to the completed Investigation File produced for each collision. The file contains two main reports:

1. An Garda Síochána Investigation Report
2. Forensic Collision Investigation Report (FCI)

The RSA collected data in the Garda National Traffic Bureau. Of the 983 fatal collisions which occurred in the time period under investigation, approximately 12% (116) were unavailable for analysis for reasons which included a continuing or ongoing investigation or the file held by An Garda Síochána Ombudsman Commission (GSOC). The final number of collisions analysed was 867.

#### **An Garda Síochána Investigation Report:**

This report is completed by the main investigating officer who attended the collision and provides a detailed breakdown of the collision scene, vehicles involved, details of each driver, passengers, testing for alcohol, the number and type of casualty and all relevant circumstances to the collision. Included in this report are all witness statements provided to An Garda Síochána around the factors observed prior to and post collision by those involved in the collision and those who may have witnessed the collision. Autopsy reports, results of alcohol tests, the Forensic Collision Investigation Report and the decision by the Coroner are also included. This file allows the investigating officer to determine the circumstances prior to the collision, the party whose actions were primarily responsible for causing the collision and the direction or request to the Director of Public Prosecutions for a prosecution of those involved.

### **Forensic Collision Investigation Report (FCI):**

All fatal collisions are investigated by the regional Forensic Collision Investigation unit of An Garda Síochána. As part of this investigation a complete service check is performed on all vehicles involved to determine what or if any specific vehicle factors were present (e.g. faulty tyres, brakes, lights) which may have contributed either in full or part to the crash (PSV report). The PSV report is completed by Public Service Vehicle Inspector (a member of An Garda Síochána). This information is used in conjunction with a detailed forensic examination of the scene taking into account weather, lighting and road conditions or layout and the assessment of speed where possible. The result is an FCI Report containing information on each of the vehicles involved and a detailed description of how the crash occurred. This enables the decision to be made as to whether a specific party or vehicle is either culpable or part culpable for the collision.

### **Section 1.2 Number of Fatal Collisions and People Killed Under Review**

This report will examine 867 of the fatal collisions which occurred from 2008 to 2012 (Table 1.1). These include:

**Table 1.1 No of Collision Files Examined**

	<b>N</b>
<b>Single Vehicle</b>	333
<b>Two Vehicle</b>	319
<b>Cyclist</b>	37
<b>Pedestrian</b>	178
<b>Total</b>	<b>867</b>

858 of the 867 collisions involved at least one driver. Of the other nine, seven involved a cyclist and no other vehicle, while two involved a 'pony and trap' and no other vehicle. Details of 1,177 drivers (1,081 four wheeled motor vehicles and 96 motorcyclists) were available for analysis.

The number of people killed or injured for which details were available for analysis are as follows in Table 1.2:

**Table 1.2 Killed and Injured in Collisions Analysed**

	<b>Fatal</b>	<b>Serious Injury</b>	<b>Minor Injury</b>
<b>Driver Motor Vehicle</b>	450	69	154
<b>Driver Motorcycle</b>	84	2	6
<b>Passenger</b>	196	94	143
<b>Pedestrian</b>	180	-	-
<b>Cyclist</b>	37	-	-
<b>TOTAL</b>	<b>947</b>	<b>165</b>	<b>303</b>

### **Section 1.3 Person Deemed Culpable for the Collision**

For each collision where possible or appropriate, the Investigation Report produced by An Garda Síochána identifies the party whose actions most likely caused the collision. This results from a detailed analysis of all factors such as witness statements on the behaviours and actions of the driver, pedestrian or cyclist, and alcohol toxicology results. It also includes conclusions drawn from the FCI report on precisely how the collision occurred and which vehicle was being driven by the person deemed to be responsible or part responsible for causing the collision. In some instances no responsibility by the driver, cyclist or pedestrian is determined due to the specific circumstances of the collision. This may be the case in hit and run collisions or those with unforeseen circumstances, such as an animal or unexpected

object on the road. However, for the most part one party is deemed by their actions to have caused the fatal collision.

It is important that the details of those parties whose actions or behaviour caused the collision are highlighted as these are the behaviours that will need to be addressed through road safety interventions to modify such behaviour and be the focus of Garda enforcement efforts. Throughout the report there will be a section detailing the profile and actions of those who were deemed to be responsible or part responsible for the collision. For the remainder of the report they will be referred to as the culpable party. Of the 1,177 drivers of motorised vehicles where details are available, 705 were deemed to be culpable or part culpable for the collision. Three drivers were deemed not culpable due to unforeseen circumstances such as the presence of unexpected animals or objects on the road. A further three collisions were hit and run so no culpability could be determined.

Important note:

Where culpability is cited this is not judicial culpability. This report is focused on the pre-crash behaviour of the parties involved in the collision and not the result of a prosecution.

## Section 2.

### Collision Type, When, Where and Conditions

#### Section 2.1 Type of Collision

Of the 867 fatal collisions analysed 93(11%) involved at least one motorcyclist. A third of the 93 collisions (34%) involved just the motorcyclist and no other vehicle (Table 1). Three collisions involved two motorcyclists (Table 2).

**Table 1. Type of Collision Involving a Motorcyclist**

	<b>N</b>	<b>%</b>
<b>Two Vehicle</b>	59	63.4
<b>Single Vehicle</b>	32	34.4
<b>Cyclist</b>	1	1.1
<b>Pedestrian</b>	1	1.1
<b>TOTAL</b>	<b>93</b>	<b>100.0</b>

Of the 59 collisions where a second vehicle was involved, the majority involved a private car (70%). Of the 10% classified as 'other', these included for example, a tractor, van, jeep or pick-up truck towing a trailer (Table 2).

**Table 2. Type of Vehicle Involved in Collision with Motorcyclist**

	<b>N</b>	<b>%</b>
<b>Private Car</b>	42	71.2
<b>Other</b>	6	10.2
<b>Motorcycle</b>	3*	5.1
<b>HGV</b>	3	5.1
<b>Van</b>	2	3.4
<b>PSV</b>	3	5.1
<b>TOTAL</b>	<b>59</b>	<b>100.0</b>

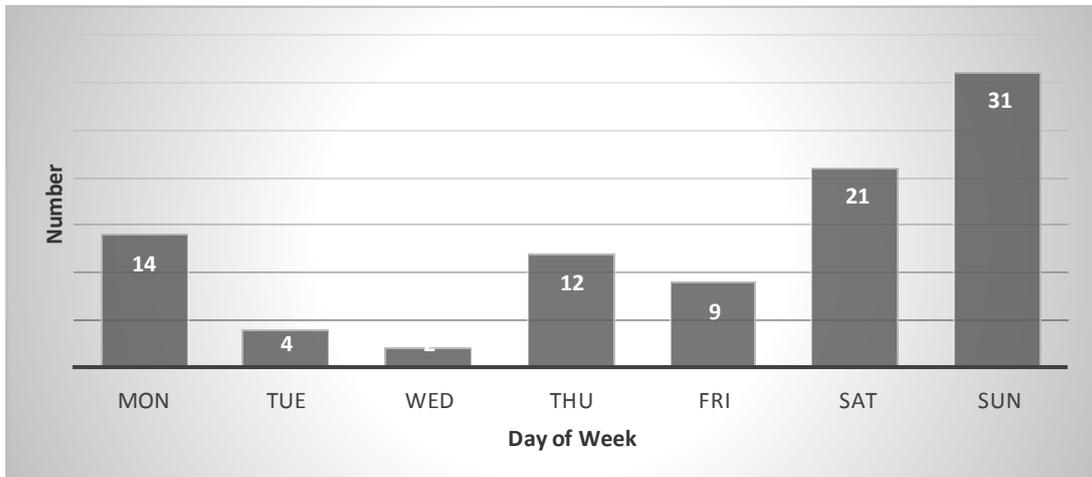
\*3 collisions involved two motorcyclists

## **Section 2.2. Day, Time and Month of Collision**

Day of Week:

Of the 93 fatal collisions involving a motorcyclist, over half (56%) occurred on a Saturday or Sunday, with Sunday alone accounting for one third (33%), see Figure 1.

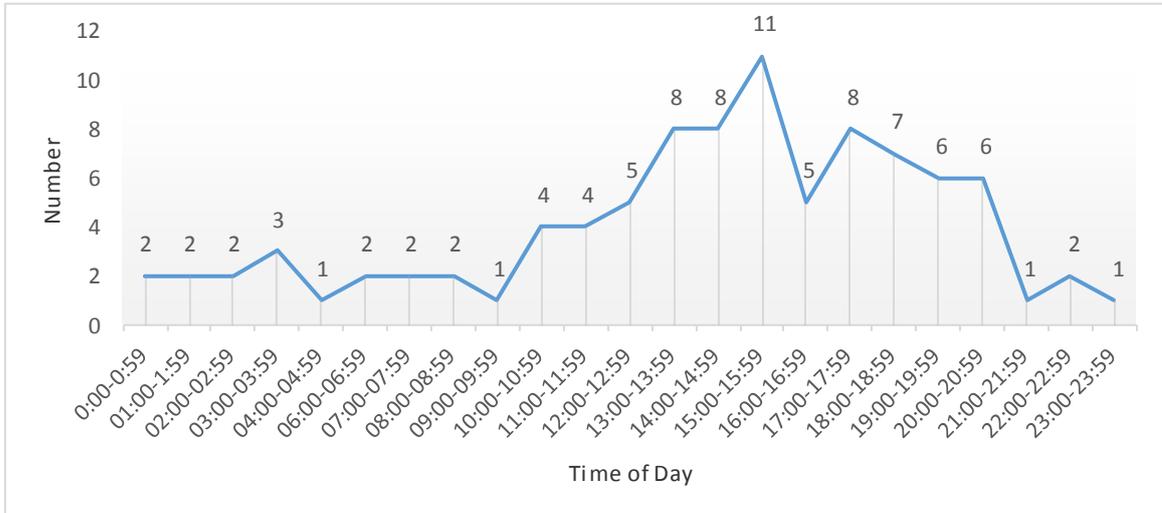
**Figure 1. Day of Week Motorcyclist Collision**



**Time of Day:**

Over half (56%) of the fatal collisions involving a motorcyclist occurred between 12pm and 7pm (Figure 2). Most collisions on a Saturday (57%) occurred between 12pm and 7 pm. Similarly, 58% of collisions on a Sunday occurred between 12 pm and 7 pm. Table 1 in Appendix 1 sets out the day of week by time of day.

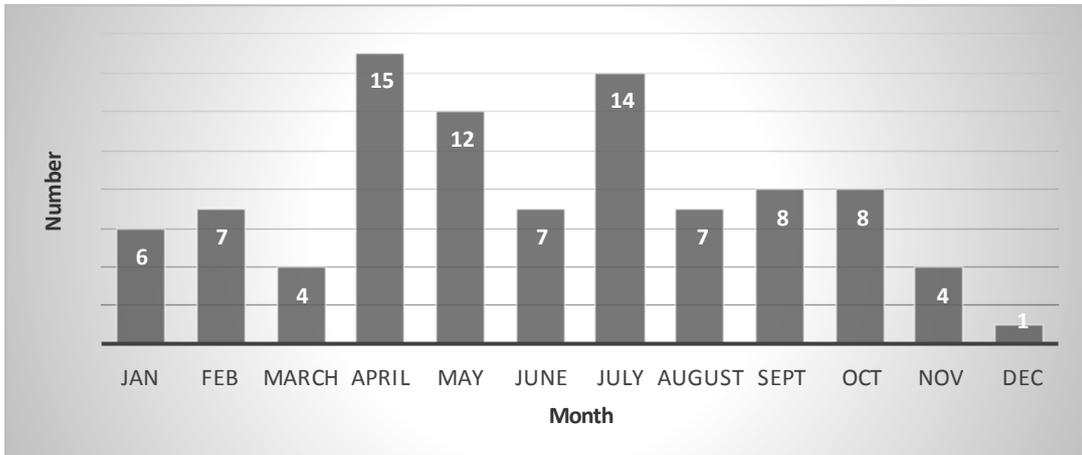
**Figure 2. Time of Day Motorcyclist Collision**



**Month:**

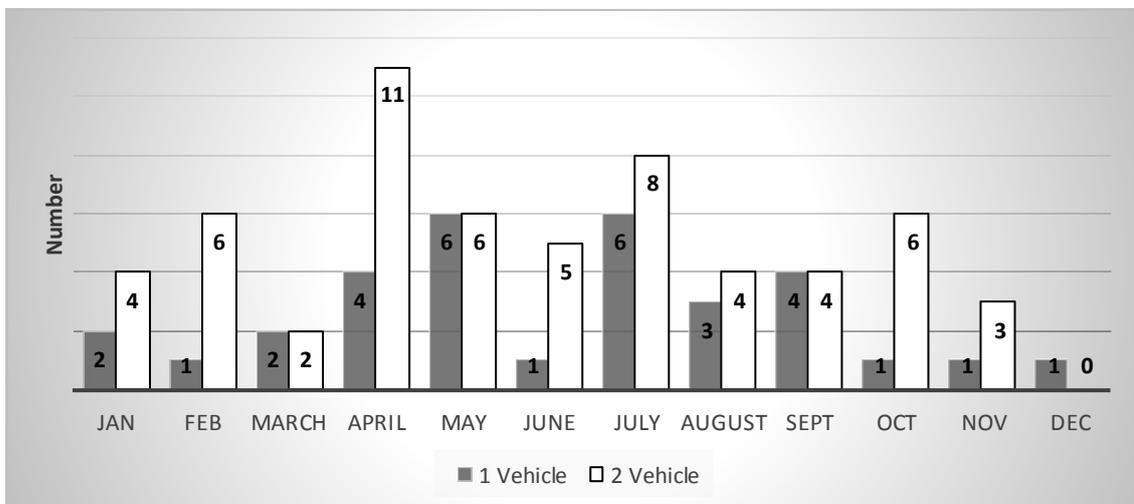
The two months when most collisions involving a motorcyclist occurred were April (16%) and July (15%). Apart from the peak in April, over a third (35%) of the collisions involving a motorcyclist occurred over the summer months May, June and July indicating a seasonal aspect to motorcyclist collisions (Figure 3). This is most likely due to the weather and social behaviour across the summer months.

**Figure 3. Month of Motorcyclist Collision**



Of the 32 fatal single vehicle motorcyclist collisions, 38% occurred in May and July combined. April saw the greatest number of collisions between a motorcyclist and another vehicle, accounting for 11(19%) of the 59 two vehicle collisions (Figure 4).

**Figure 4. Month of Collision Involving Motorcyclist**



### Section 2.3 County of Collision

The county with the highest number of collisions involving a motorcyclist was Cork (12%), followed by Dublin (9%) and Galway (8%). Six counties, Cork, Dublin, Galway, Kerry, Limerick and Tipperary accounted for 44 (47%) of all collisions involving a motorcyclist (Figure 5). It should be noted that many motorcyclists drive long distances, particularly at weekends, therefore, the county of collision needs to be interpreted with some caution.

Figure 5. County of All Motorcyclist Collisions

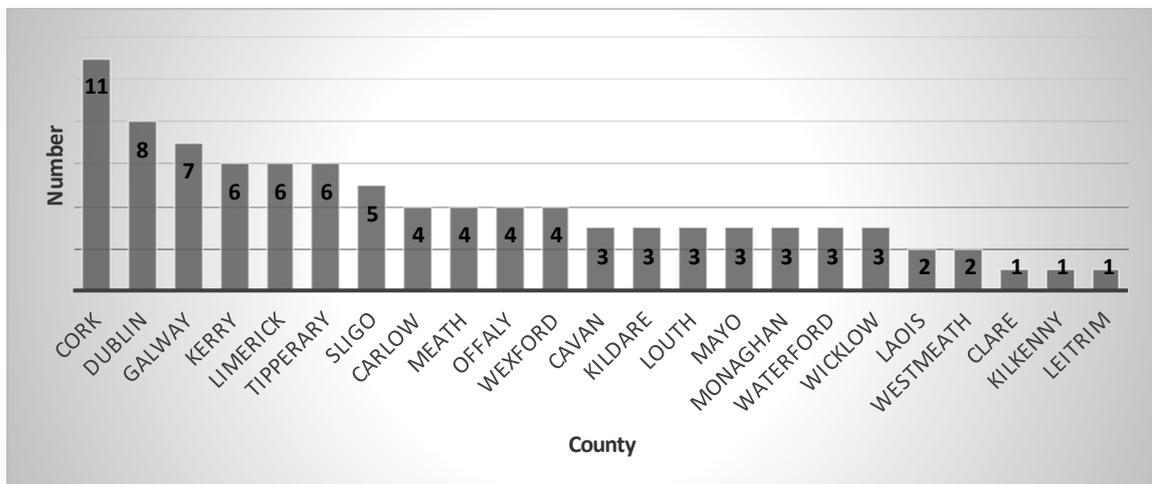
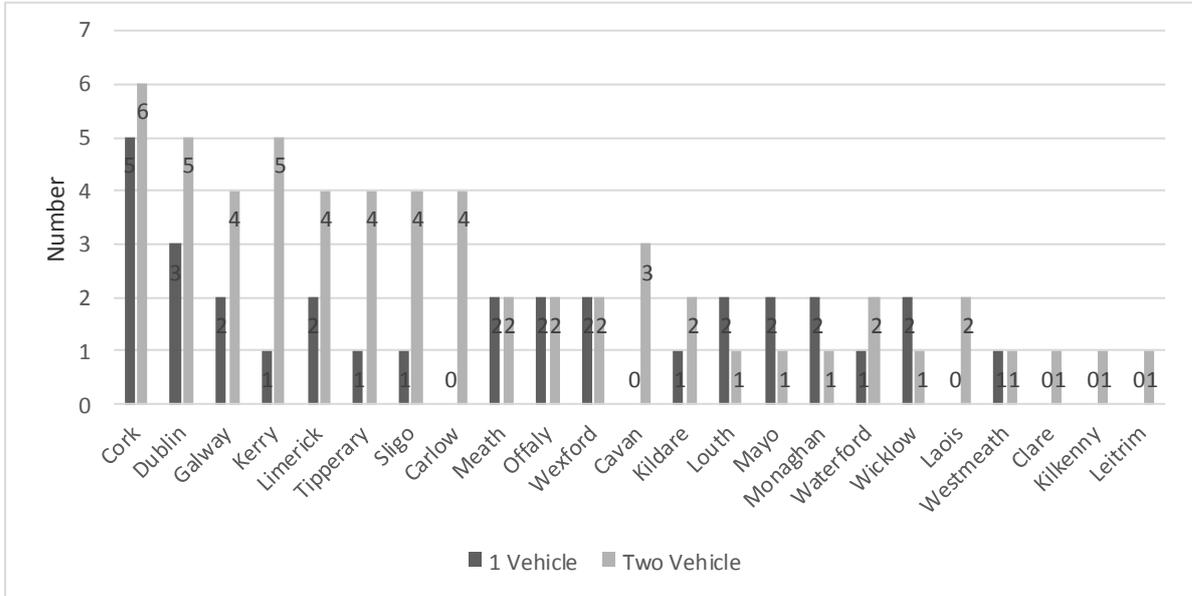


Figure 6 sets out the county of collision by type of collision. The top two counties for all fatal collisions involving a motorcyclist are the same for a single or two vehicle collision.

**Figure 6. County of Collision by Single or Two Vehicle Collision**

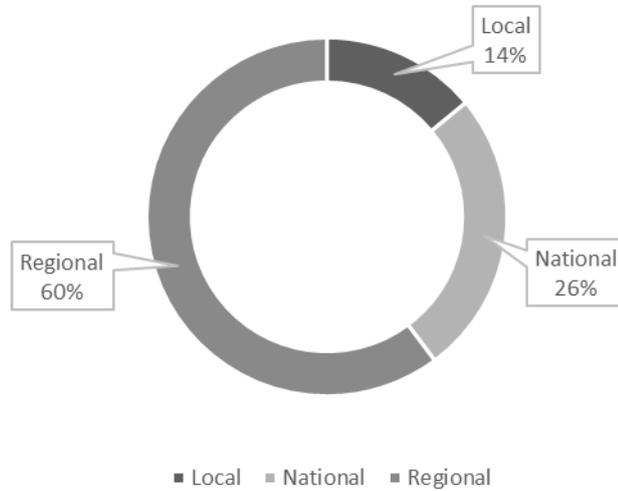


- Please note the pedestrian and cyclist collisions are not included here.

**Section 2.4 Type of Road and Speed Limit**

Sixty percent of the fatal collisions involving a motorcyclist occurred on a regional road and a quarter (26%) on a national road (Figure 7).

**Figure 7. Type of Road Collision Occurred**



Over half (54%) of the fatal collisions involving a motorcyclist occurred in an 80 km/h speed zone, while a fifth (20%) occurred in a 50km/h zone (Table 3).

**Table 3. Speed Limit**

<b>KM/H</b>	<b>N</b>	<b>%</b>
<b>100</b>	22	23.7
<b>80</b>	50	53.8
<b>60</b>	2	2.2
<b>50</b>	19	20.4
<b>TOTAL</b>	<b>93</b>	<b>100</b>

Table 4 sets out the speed limit by road type. Of the 13 fatal collisions involving a motorcyclist on a local road, almost two thirds occurred on a

50km/h zone indicating an urban environment. Overall, 21 (23%) occurred in an urban setting and 72 (77%) in a rural location (regional and national roads).

**Table 4. Speed Limit by Road Type.**

KM/H	Local		National		Regional	
	N	%	N	%	N	%
<b>100</b>	1	7.7	21	87.5	0	0.0
<b>80</b>	3	23.1	0	0.0	47	83.9
<b>60</b>	1	7.7	0	0.0	1	1.8
<b>50</b>	8	61.5	3	12.5	8	14.3
<b>TOTAL</b>	<b>13</b>	<b>100.0</b>	<b>24</b>	<b>100.0</b>	<b>56</b>	<b>100.0</b>

The majority (59%) of fatal collisions involving just the motorcyclist (single vehicle) occurred on an 80km/h stretch of road however, a quarter (25%) occurred in an urban setting (50-60 km/h zone). Only 16% of the fatal single vehicle collisions occurred on a 100 km/h stretch of road in contrast to 29% of those fatal collisions involving the motorcyclist and another vehicle (Table 5). The number of fatal single vehicle collisions occurring in an urban environment may indicate a loss of control due to inappropriate speed in these areas resulting in impact with a footpath, sudden braking or swerving to avoid an object or person. Section 4.8 contains more detail on main actions taken.

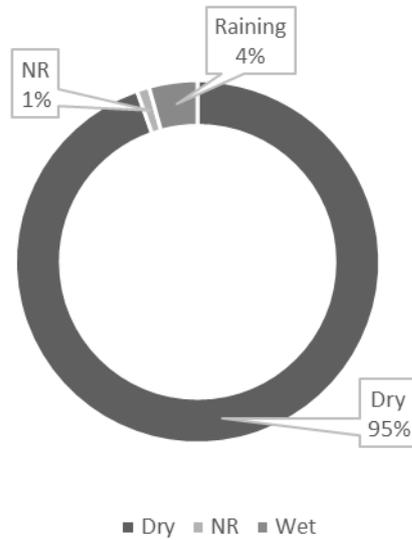
**Table 5. Speed Limit by Collision Type**

	Single Vehicle		Two Vehicle	
	N	%	N	%
<b>100</b>	5	15.6	17	28.8
<b>80</b>	19	59.4	30	50.8
<b>60</b>	1	3.1	1	1.7
<b>50</b>	7	21.9	11	18.6
<b>TOTAL</b>	<b>32</b>	<b>100.0</b>	<b>59</b>	<b>100.0</b>

### **Section 2.5 Weather and Light Conditions**

The weather was dry at the time of 95% of the fatal collisions involving a motorcyclist (Figure 8), however, the road surface was recorded as being wet at 12 of these 88 collision sites, indicating a recent rainfall or surface water.

**Figure 8. Weather at Time of Collision**



It was bright at the time of three quarters (75%) of the fatal collisions involving a motorcyclist, which reflects the time of day and/or the summer months (Table 6).

**Table 6. Light Conditions at Time of Collision**

	<b>N</b>	<b>%</b>
<b>Bright</b>	70	75.3
<b>Dark</b>	21	22.6
<b>Dusk</b>	1	1.1
<b>NR</b>	1	1.1
<b>TOTAL</b>	<b>93</b>	<b>100.0</b>

## **Section 2.6 Road Factors**

Only 3 of the fatal collisions involving a motorcyclist indicated the condition of the road as an additional factor which may have contributed to the collision. These included for example loose gravel, signage and road works.

### **Section 3.**

#### **Profile of Motorcyclist Deemed Culpable**

Of the 93 fatal collisions involving a motorcycle, the motorcyclist was deemed culpable or part culpable for 80 (86%) of the collisions (72 fully culpable, 8 part culpable). The main collision types involving the culpable motorcyclist include, 32 single vehicle, 47 two vehicle collisions and 1 cyclist collision. For the remaining 13 collisions for which the motorcyclist was deemed not culpable, 11 private car drivers and a pedestrian were all deemed culpable for the collision. Culpability was not determined in one case. For the remainder of this section all 80 motorcyclists deemed culpable will be discussed as it was their action which was considered to have contributed to the final outcome of the collision either in full or part.

#### **Section 3.1 Gender and Age of Motorcyclist Deemed Culpable**

Seventy eight (98%) of the motorcyclists who were deemed culpable for the collision were male and 2% were female.

Half of the motorcyclists deemed culpable for the collision were aged between 25 and 34 years old (Table 7). The average age was 32 years ranging from 16 to 78 years.

**Table 7. Age Profile of Motorcyclist Deemed Culpable**

	<b>N</b>	<b>%</b>
<b>16-24</b>	18	22.5
<b>25-34</b>	40	50.0
<b>35-49</b>	15	18.8
<b>50-64</b>	4	5.0
<b>65+</b>	2	2.5
<b>NR</b>	1	1.3
<b>TOTAL</b>	<b>80</b>	<b>100</b>

Looking at the age profile of the motorcyclist deemed culpable, 47% of single vehicle collisions and 51% of two (or more) vehicle collisions involved a motorcyclist aged 25-34 years old (Table 8).

**Table 8. Collision Type by Age of Motorcyclist Deemed Culpable**

	Single Vehicle		Two Vehicle		Cyclist
	N	%	N	%	N
<b>16-24</b>	8	25.0	10	21.3	0
<b>25-34</b>	15	46.9	24	51.1	1
<b>35-49</b>	8	25.0	7	14.9	0
<b>50-64</b>	1	3.1	3	6.4	0
<b>65+</b>	0	0.0	2	4.3	0
<b>NR</b>	0	0.0	1	2.1	0
<b>TOTAL</b>	<b>32</b>	<b>100.0</b>	<b>47</b>	<b>100.0</b>	<b>1</b>

## **Section 4.**

### **Pre-Crash Behaviour of Motorcyclist Deemed Culpable**

The following section will examine the circumstances surrounding the collision and report on specific pre-crash behaviours by the culpable motorcyclist.

#### **Section 4.1 Purpose of Trip**

The majority (86%) of the motorcyclists deemed culpable were on a social trip (Table 9).

**Table 9. Purpose of Trip Taken by Motorcyclist Deemed Culpable**

	<b>N</b>	<b>%</b>
<b>Social</b>	69	86.3
<b>Unknown</b>	9	11.3
<b>Commuting To/From Work</b>	2	2.5
<b>TOTAL</b>	<b>80</b>	<b>100.0</b>

#### **Section 4.2 Record of Insurance**

Almost a third (30%) of the motorcyclists deemed culpable had no record of having current insurance cover at the time of the collision (Table 10).

**Table 10. Insurance Held by Culpable Motorcyclist**

	<b>N</b>	<b>%</b>
<b>Yes</b>	38	47.5
<b>No</b>	24	30.0
<b>NR</b>	18	22.5
<b>TOTAL</b>	<b>80</b>	<b>100</b>

### **Section 4.3 Licence Status**

Almost two thirds (64%) of the motorcyclists deemed culpable had a current motorcycle licence at the time of the collision (Table 11). However, almost one in 7 (15%) did not hold a current motorcycle licence at the time of the collision.

**Table 11. Motorcycle Licence Held at time of Collision**

	<b>N</b>	<b>%</b>
<b>Yes</b>	51	63.8
<b>No</b>	12	15.0
<b>NR</b>	17	21.2
<b>TOTAL</b>	<b>80</b>	<b>100</b>

Of the 51 motorcyclists with a record of a motorcycle licence, four (8%) of the motorcyclists were on a Learner Permit and three (6%) were disqualified at the time of the collision (Table 12).

**Table 12. Status of Licence at Time of collision**

	<b>N</b>	<b>%</b>
<b>Full</b>	44	86.3
<b>Learner Permit</b>	4	7.8
<b>Disqualified</b>	3	5.9
<b>TOTAL</b>	<b>51</b>	<b>100.0</b>

All four who were on a Learner permit were on their first permit. One of the culpable motorcyclists who was disqualified had 3 separate endorsements for no insurance and drink driving.

#### **Section 4.4 Age and Condition of Vehicle**

Almost a quarter (24%) of the motorcycles involved in the fatal collision were aged between 5 and 9 years old and a further quarter (24%) were aged between 10 and 14 years at the time of the collision (Table 13).

**Table 13. Age of Motorcycle Involved**

	<b>N</b>	<b>%</b>
<b>&lt;1</b>	1	1.3
<b>1-4</b>	9	11.3
<b>5-9</b>	19	23.8
<b>10-14</b>	20	25.0
<b>15-19</b>	6	7.5
<b>20-24</b>	5	6.3
<b>NR</b>	20	25.0
<b>TOTAL</b>	<b>80</b>	<b>100.2</b>

Public Service Vehicle (PSV) reports were analysed to determine insofar as possible the pre-crash condition and roadworthiness of the vehicle at the time of the collision. Overall, despite the age of some vehicles, the majority of the motorcycles were in a good pre-crash condition. However, 2 (3%) were rated as dangerously defective, 4 (5%) as serviceable apart from the condition of tyres and a further 1 (1%) had an issue with brakes (Table 14).

**Table 14. Condition of Vehicle as per PSV Report.**

	<b>N</b>	<b>%</b>
<b>Serviceable/Roadworthy Condition</b>	64	80.0
<b>Mechanically Serviceable Apart From Tyres</b>	4	5.0
<b>Mechanically Serviceable*</b>	3	3.8
<b>Dangerously Defective</b>	2	2.5
<b>Mechanically Serviceable Apart From Brakes</b>	1	1.3
<b>Not Roadworthy</b>	1	1.3
<b>Too Damaged To Assess</b>	1	1.3
<b>NR</b>	4	5.0
<b>TOTAL</b>	<b>80</b>	<b>100.2</b>

\*no mechanical defects

#### Vehicle Factors as Contributory to Collision

Of the 80 motorcycles driven by the motorcyclist deemed culpable, 11 (14%) had a vehicle factor (mechanical issue) cited as contributory to the collision. Of these, 3 involved defective brakes and brake pads, 4 were issues with worn and defective tyres and 4 had other defects including issues with the throttle, brake stand and leaking fluid.

#### **Section 4.5 Alcohol Consumption**

Information on alcohol consumption was recorded for all of the 96 motorcyclists involved in the 93 fatal collisions.

Almost a third (29%, n = 28) of all 96 motorcyclists involved in the 93 fatal collisions had a record of having consumed alcohol either through a toxicology test or witness statements. Almost one quarter (n =23) had a confirmed presence of alcohol at the time of the collision. A confirmed presence of alcohol is indicated by a test result of  $\geq 20$ mg in blood or equivalent in breath or urine (27 milligrammes of alcohol per 100 millilitres of urine or 9 microgrammes of alcohol per 100 millilitres of breath).

All of the motorcyclists with a record of alcohol consumption prior to the collision were deemed culpable for the collision.

The blood alcohol level (BAC) ranged from 29mgs to 317 mgs of alcohol per 100mls of blood with an average of 183mg. Almost half (45%) of the motorcyclists with a confirmed presence of alcohol had a BAC greater than 201 mg. By way of reference this equates to four times or more above the current legal limit (Figure 9). One motorcyclist had 21-50mgs of alcohol in their urine sample. Table 2 in the appendix sets out the confirmed level of alcohol in blood or urine of the motorcyclist deemed culpable.

Figure 9. Confirmed Level of Alcohol in Blood of Motorcyclist Deemed Culpable

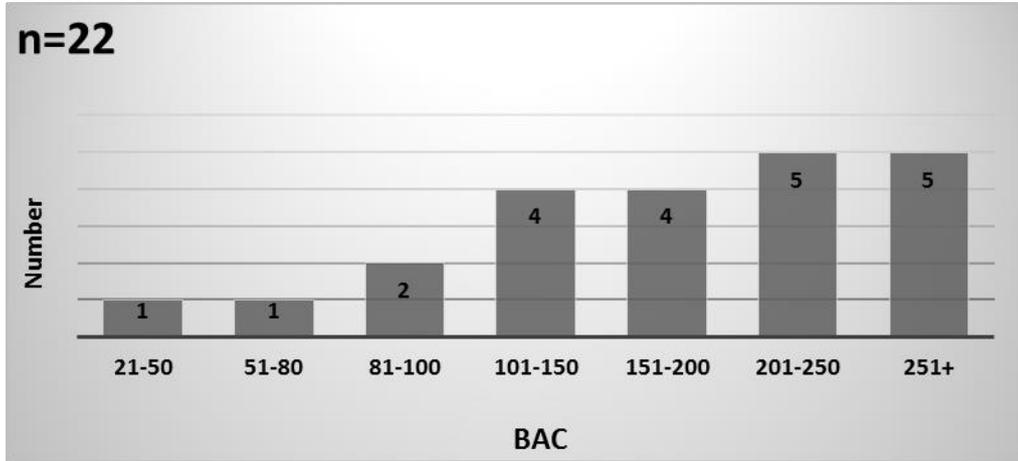
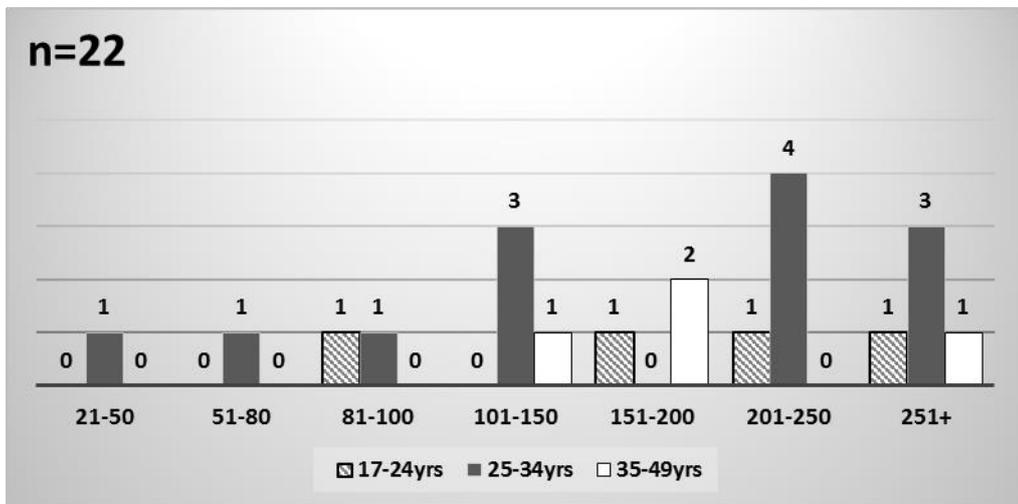


Figure 10 illustrates the motorcyclist age group by the BAC level. Of the motorcyclists with a recorded BAC, 25-34 year olds appear most often. Table 3 in the appendix sets out the motorcyclist BAC by age group.

Figure 10. Culpable Motorcyclist age group by the BAC level



### Legal Limit:

Over the time period of this study (2008 to 2012) there was a change in the legal limits of Blood, Urine and Breath alcohol for all classes of drivers in Ireland. This report takes into account these changes and refers to the legal limit for alcohol in a motorcyclists system in the remainder of this report as the 'prevailing legal limit'. See Appendix 1 for the change to limits.

Twenty (71%) of the 28 motorcyclists who had consumed alcohol were over the prevailing legal limit at the time of the collision.

Fifty seven percent of the 28 motorcyclists who had consumed alcohol and were subsequently involved in a fatal collision, crashed on a Sunday. More motorcyclists with a record of alcohol consumption were in a collision between 5 and 6 pm on a Sunday than any other time during the week. Four of the five collisions that occurred on a Saturday involving a motorcyclist who had consumed alcohol, occurred between 2 and 4 am. July and May were the months when most motorcyclists who had consumed alcohol were involved in a fatal collision.

Seventeen (53%) of the 32 single vehicle collisions involved alcohol. In eleven (19%) of the collisions involving two vehicles, the motorcyclist had consumed alcohol prior to the collision. Four pillion passengers were killed while travelling on a motorcycle where the motorcyclist had consumed alcohol.

#### **Section 4.6 Speed as a Factor**

Almost half (49%) of the 93 collisions involving a motorcyclist had excessive speed recorded as a contributory factor. Of the 46 collisions where speed was a factor, 17 involved a single vehicle, 28 two or more vehicles and 1 involved a cyclist.

#### **Section 4.7 Helmet and High Visibility Wearing**

Where information was available on whether or not a helmet was worn at the time of the fatal collision, the files indicated that 82% of motorcyclists involved in fatal collisions were wearing a helmet, and 18% were not.

Table 15 sets out the helmet use by the 80 culpable motorcyclists. In total, 10 (13%) were recorded as not wearing one at the time of the collision.

**Table 15. Helmet Use at Time of Collision**

	<b>N</b>	<b>%</b>
<b>Yes</b>	50	62.5
<b>No</b>	10	12.5
<b>NR</b>	20	25.0
<b>TOTAL</b>	<b>80</b>	<b>100.0</b>

Only four motorcyclists were wearing a high visibility garment at the time of the collision.

#### **Section 4.8 Main Manoeuvre and Action Taken by Motorcyclist Deemed Culpable**

Of the 80 motorcyclists considered culpable, over two thirds (68%) were recorded as moving forward at the time. A further 14 (18%) were recorded as 'Attempting to overtake', a further 10 (13%) were recorded as 'exiting' or 'entering' and the main type of manoeuvre was not recorded in two cases (Table 16).

**Table 16. Main Manoeuvre by Motorcyclist Deemed Culpable**

	<b>N</b>	<b>%</b>
<b>Travelling Forward</b>	54	67.5
<b>Attempting To Overtake</b>	14	17.5
<b>Exiting/Entering</b>	10	12.5
<b>NR</b>	2	2.5
<b>TOTAL</b>	<b>80</b>	<b>100</b>

Over half (54%) of the motorcyclists deemed culpable for the collision were recorded as having lost control prior to the fatal collision (Table 17). The other main actions considered were a 'failure to observe' (14%) and 'improper overtaking' (13%).

**Table 17. Main Manoeuvre by Culpable Motorcyclist**

	<b>N</b>	<b>%</b>
<b>Lost Control</b>	43	53.8
<b>Failed To Observe</b>	11	13.8
<b>Improper Overtaking</b>	10	12.5
<b>Taking Avoidance Action</b>	4	5.0
<b>Went To Wrong Side Of Road</b>	4	5.0
<b>Exceeded Safe Speed</b>	3	3.8
<b>Other</b>	3	3.8
<b>Failed To Stop Or Yield</b>	1	1.3
<b>NR</b>	1	1.3
<b>TOTAL</b>	<b>80</b>	<b>100.0</b>

**Loss of Control:**

Examples of the 43 fatal collisions where the motorcyclist was reported to have lost control of the vehicle include: loss of control on entering or exiting a bend (23), loss of control on regaining position after overtaking (6), hitting a footpath or speed ramp (4), experiencing a speed wobble (4), entering a grass verge (3), performing wheelies (2) and braking (1).

**Failure to Observe:**

Examples of failing to observe mostly involve the failure to observe a vehicle indicating to turn right due to overtaking multiple vehicles or

coming around a corner at excessive speed. Other examples include the failure to observe a concealed entrance or stationary object.

#### Improper Overtaking:

Examples of this behaviour include overtaking multiple vehicles at a time and taking avoidance action when confronted by an oncoming vehicle. Some other examples of improper overtaking include: overtaking when there was insufficient room to make the manoeuvre safely (between two lines of traffic), overtaking on continuous white lines and overtaking on bends.

#### Dual Culpability:

In cases where there was dual culpability by the driver of the second vehicle and motorcyclist (n=8), these collisions were considered to involve inappropriate exiting from a road or entrance by a motor vehicle combined with the inability of the motorcyclist to take avoidance action due to excessive speed and lack of observation.

### **Section 4.9 Main Manoeuvre and Action by Driver of Motor Vehicle Deemed Culpable**

Of the 11 private car drivers who were deemed culpable for the collision involving a motorcyclist, the main manoeuvre recorded was

exiting or entering a side road (7), turning right (3) and loss of control (1).

The main actions taken by the culpable driver were considered to be a failure to observe (9), a failure to stop or yield (1) and crossing to wrong side of road (1).

## Section 5.

### Number of People Killed and Injured

Ninety six motorcyclists were involved in 93 fatal collisions from 2008 to 2012. Eighty four of the motorcyclists were killed, two sustained serious injury, seven sustained minor injury and three were not injured in the collision.

As a result of a collision involving a motorcyclist who was deemed culpable, 82 people were killed (73 motorcyclists, 2 drivers, 6 pillion passengers and 1 cyclist) and 6 sustained serious injuries (Table 18). This includes single vehicle collisions.

**Table 18. No of People Killed and Injured by Culpable Motorcyclist**

	<b>Fatal</b>	<b>Serious</b>	<b>Minor</b>
<b>Motorcyclist</b>	73	2	5
<b>Drivers</b>	2	0	1
<b>Passenger</b>	6*	4*	1
<b>Pedestrian</b>	0	0	0
<b>Cyclist</b>	1	0	0
<b>TOTAL</b>	<b>82</b>	<b>6</b>	<b>7</b>

\*pillion passengers

There were 13 collisions where the motorcyclist was not deemed culpable. As a result of all 93 collisions involving a motorcyclist, 96

people were killed (84 motorcyclists, 4 drivers, 6 pillion passengers, 1 pedestrian and 1 cyclist) and 7 were seriously injured (Table 19).

**Table 19. Number of People Killed and Injured in All Collisions Involving a Motorcyclist**

	<b>Fatal</b>	<b>Serious</b>	<b>Minor</b>
<b>Motorcyclist</b>	84	2	7
<b>Driver</b>	4	0	1
<b>Passenger</b>	6*	5*	1
<b>Pedestrian</b>	1	0	0
<b>Cyclist</b>	1	0	0
<b>TOTAL</b>	96	7	9

\*pillion passengers

## Appendix 1.

Table 1. Time of Day by Day of Week

	MON	TUE	WED	THU	FRI	SAT	SUN	Total
0:00-0:59	1	0	0	0	0	0	1	2
01:00-1:59	0	0	0	1	0	0	1	2
02:00-02:59	0	0	0	0	0	1	1	2
03:00-03:59	0	0	0	0	0	3	0	3
04:00-04:59	0	1	0	0	0	0	0	1
06:00-06:59	0	0	0	0	1	0	1	2
07:00-07:59	0	1	0	1	0	0	0	2
08:00-08:59	2	0	0	0	0	0	0	2
09:00-09:59	0	0	0	0	0	0	1	1
10:00-10:59	0	0	0	0	0	1	3	4
11:00-11:59	1	0	1	0	1	0	1	4
12:00-12:59	0	0	0	0	1	0	4	5
13:00-13:59	1	0	0	2	0	2	3	8
14:00-14:59	1	1	0	2	1	2	1	8
15:00-	1	0	0	0	2	4	4	11

<b>15:59</b>								
<b>16:00-16:59</b>	0	1	0	2	0	1	1	5
<b>17:00-17:59</b>	2	0	1	2	0	0	3	8
<b>18:00-18:59</b>	1	0	0	0	1	3	2	7
<b>19:00-19:59</b>	3	0	0	0	0	2	1	6
<b>20:00-20:59</b>	0	0	0	2	1	2	1	6
<b>21:00-21:59</b>	0	0	0	0	0	0	1	1
<b>22:00-22:59</b>	0	0	0	0	1	0	1	2
<b>23:00-23:59</b>	1	0	0	0	0	0	0	1
	<b>14</b>	<b>4</b>	<b>2</b>	<b>12</b>	<b>9</b>	<b>21</b>	<b>31</b>	<b>93</b>

#### Alcohol Legal Limits:

Section 4 of the Road Traffic Act 2010, reduced the drink driving alcohol limits for all drivers. It differentiates between experienced drivers and new drivers – those with learner permits or who hold a driving licence for 2 years or less, or have no valid licence/permit. Lower alcohol limits apply to new drivers than those that apply to experienced drivers. The lower alcohol limits applying to new drivers also apply to drivers of buses, lorries, trailers, work vehicles, taxis and other public service vehicle drivers. The new offences are as follows:

- 50 milligrammes of alcohol per 100 millilitres of blood for experienced drivers.
- 20 milligrammes of alcohol per 100 millilitres of blood for novice and professional driver.
- 67 milligrammes of alcohol per 100 millilitres of urine for experienced drivers.
- 27 milligrammes of alcohol per 100 millilitres of urine for novice and professional driver.
- 22 microgrammes of alcohol per 100 millilitres of breath for an experienced driver.
- 9 microgrammes of alcohol per 100 millilitres of breath for novice and professional driver.

**Table 2. Confirmed Level of Alcohol in Blood or Urine of Motorcyclist Deemed Culpable**

	<b>N</b>	<b>%</b>
<b>BLOOD</b>		
<b>21-50</b>	1	4.5
<b>51-80</b>	1	4.5
<b>81-100</b>	2	9.1
<b>101-150</b>	4	18.2
<b>151-200</b>	4	18.2
<b>201-250</b>	5	<b>22.7</b>
<b>251+</b>	5	<b>22.7</b>
<b>TOTAL</b>	<b>22</b>	<b>100.0</b>
<b>URINE</b>		
<b>21-50</b>	1	100.00

**Table 3. Age band of Motorcyclist Deemed Culpable by BAC level**

<b>MGS/100MLS</b>	<b>17-24YRS</b>		<b>25-34YRS</b>		<b>35-49YRS</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>21-50</b>	0	0.0	1	7.7	0	0.0
<b>51-80</b>	0	0.0	1	7.7	0	0.0
<b>81-100</b>	1	25.0	1	7.7	0	0.0
<b>101-150</b>	0	0.0	3	23.1	1	25.0
<b>151-200</b>	1	25.0	0	0.0	2	50.0
<b>201-250</b>	1	25.0	4	30.8	0	0.0
<b>251+</b>	1	25.0	3	23.1	1	25.0
<b>TOTAL</b>	<b>4</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>

# Working To Save Lives

## Údarás Um Shábháilteacht Ar Bhóithre Road Safety Authority

Páirc Ghnó Ghleann na Muaidhe, Cnoc an tSabhaircín, Bóthar Bhaile Átha Cliath, Béal an Átha, Co. Mhaigh Eo  
Moy Valley Business Park, Primrose Hill, Dublin Road, Ballina, Co. Mayo  
local: 1890 50 60 80 fax: (096) 25 252 email: [info@rsa.ie](mailto:info@rsa.ie) website: [www.rsa.ie](http://www.rsa.ie)

