



In-Depth Road Fatalities Study Motorcycles January 2015 – August 2024

Executive Summary and Recommendations

March 2025

INTRODUCTION

In the last decade there has been an overall downward trend in the number of people killed in road traffic collisions on Scotland's roads. Despite some increases in 2016, 2019 and 2022, overall, there have been positive changes towards a reduction in fatal casualties. Unfortunately, 2024 saw a notable rise in fatalities and it is imperative that Police Scotland and partners work together to address this and reverse this trend.

Scotland's Road Safety Framework 2030 (RSF2030)¹ has a vision to have the best road safety performance in the world by 2030 and a compelling long-term goal for road safety where there are no deaths or serious injuries on Scotland's roads by 2050. These outcomes align with the five pillars of the Safe System: Safe Road Use; Safe Vehicles; Safe Speeds; Safe Roads and Roadsides; Post-crash Response.

All road users are exposed to a variety of risks. The alignment of one or more risks can result in a collision. It is important, therefore, to understand the nature of collision causation, as it may be any combination of factors that result in a collision and any combination of factors that result in a fatality. A positive change in road users' behaviour can reduce the severity of the collision or prevent it from happening entirely.

Working in partnership to achieve the RSF2030 vision, Police Scotland and Transport Scotland instigated road fatality research and in-depth analysis of all factors relating to road traffic fatalities on Scotland's road network. The findings of the 'In-depth road traffic fatalities report for the years 2015-2020' were published on 25th October 2023².

Recommendation 73 within the report states that:

"Further in-depth analysis should be undertaken on the currently available data set to identify trends and subsequent recommendations for pedestrians, motorcyclists, pedal cyclists and child fatalities."

The number of motorcycle fatalities in 2024 indicates an increasing trend. In order to help address this, analysis has been conducted to:

- Identify fatal collisions involving motorcycle riders and passengers
- Identify the contributory factors that led to the fatal outcome of the collisions
- Identify the countermeasures that could have prevented the fatal collisions or reduced the severity of injury
- Explore road users in relation to specific contributory factors and countermeasures
- Make recommendations to assist in addressing identified themes and issues.

This report will focus on fatal collisions involving at least one motorcycle³ fatality during the reporting period 1st January 2015 to 31st August 2024.

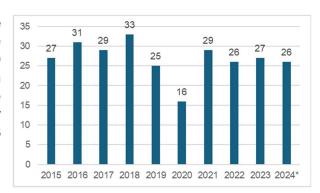
¹ Transport Scotland - Road Safety Framework to 2030

² In-Depth Road Traffic Fatalities Report for the Years 2015-2020

³ Please note, one electric motorcycle has been included within the analysis.

EXECUTIVE SUMMARY

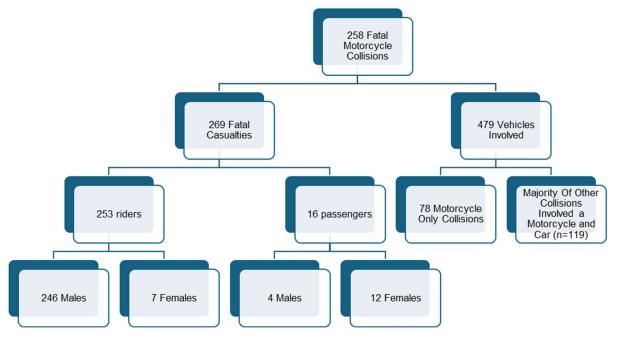
Between 1st January 2015 and 31st August 2024, there were 1,424 fatal collisions recorded on Scotland's roads, 258 of these involved at least one motorcycle fatality⁴. This resulted in 269 motorcycle fatalities (253 riders and 16 passengers). Between 2015 and 2023⁵, on average, there were 26 fatal motorcycle collisions per calendar year. Although fatalities have been fairly consistent in recent years, the number is likely to rise above 26 by the end of the 2024 calendar year.



Overview 1: Motorcycle fatal casualties by calendar year (1st January 2015 – 31st August 2024*)

Fatalities were most commonly male, aged between 46-55, closely followed by the 26-35 and 56-65 age groups. Of the 208 motorcycle riders deemed to be 'at fault'⁶, the largest proportion were in the 26-35 age group (n=49).

18% of all fatalities were a motorcycle rider or passenger, despite motorcycles only being estimated to account for less than 1% of traffic in Scotland (based on 2023 figures).⁷ This highlights the disproportionate representation and the vulnerability of motorcycles on the roads.



Overview 2: Overview of motorcycle casualties and vehicles involved

⁴ Please note, one of the 258 collisions included an electric motorcycle.

⁵ Please note, the calendar year 2024 has not been included in the average calculation as data is only available between 1st January 2024 – 31st August 2024.

⁶ Rider 'at fault' indicates that the behaviour / actions of the rider are likely to have contributed to the occurrence of the collision. It should be noted that more than one road user can be found 'at fault' in any given collision.

⁷ <u>Transport Scotland - Scottish Transport Statistics 2023</u>

There were 479 vehicles involved in the fatal motorcycle collisions. 78 collisions involved a motorcycle only; 180 collisions involved a motorcycle and at least one other vehicle. The majority of the other vehicles involved were cars; and 9 collisions related to two motorcycles colliding with each other.

The highest number of fatal collisions occurred within the west of Scotland when considering Police Scotland Command Areas; however, when broken down to local authority areas, the highest were recorded within Highland Local Authority (n=28), followed by Argyll & Bute (n=25) and Scottish Borders (n=22).

Fatal motorcycle collisions occurred most commonly on 'A' Class roads, particularly within the Highland local authority followed by Argyll & Bute and Scottish Borders. The picturesque and challenging layout of the roads within these local authorities are popular amongst motorcyclists and attract tourists particularly during the summer months. This is reflected further in the seasonal trend for motorcycle collisions with higher numbers in summer months, particularly August, and reduced numbers of collisions during the winter months.

Collisions most commonly occurred in rural environments, whereby the collision types 'cornering – left hand bend' were recorded the most, followed by 'overtaking and lane change'⁸.

There was a high degree of commonality in the contributory factors attributed to all vehicles involved in motorcycle collisions, with the most commonly recorded being:

- 'Failed to look properly'
- 'Careless, reckless or in a hurry'
- 'Poor turn or manoeuvre'
- 'Loss of control'
- 'Failed to judge others path/speed'.

However, analysis identified some differences between those assigned to motorcycles when compared to other vehicles.

Some contributory factors were also more prevalent among certain groups of riders, such as those relating to excessive speed featuring prominently among male riders aged 26–35.

Where the contributory factor 'impaired by alcohol' was attributed to a collision, this related to eleven motorcycle riders deemed to be 'at fault'. All of the riders were male with ages ranging between 23–57, with the 26-35 age group being the most represented.

Overwhelmingly, people-related contributory factors were identified as pertinent to the collision accounting for more than 90% of all those recorded compared to much smaller numbers relating to roads and vehicles.

In terms of prevention and severity reduction, the collisions were assessed, and countermeasures were identified. Analysis of 'people' countermeasures show that while 'training to improve hazard perception skills' and 'awareness training of Vulnerable Road Users' were the most frequently assigned countermeasure for collision avoidance in relation to motorcycles and other vehicles, the confidence level was generally low for both groups.

'Anti-lock braking system' is most frequently recorded in relation to 'vehicle' countermeasures for collision avoidance. Whereas countermeasures in relation to speed ('add speed camera at locus' and 'reduce speed limit') were the most commonly recorded 'road countermeasures' for collision avoidance and severity reduction.

The vast majority of motorcycle riders and passengers were wearing appropriate safety equipment, as such, countermeasures relating to protective equipment did not feature highly – this is illustrated by 4% of the riders

⁸ Please note, the 'collision type' may not relate specifically to the motorcycle, but other vehicles involved in the collision.

and passengers found not to be wearing a helmet. On two occasions, a helmet has not been fastened properly – one relating to a rider, the other a passenger.

Recommendations have been developed based on the in-depth analysis of the 258 fatal collisions, with a focus on reducing motorcycle fatalities. Clusters have been identified where collisions have occurred within close proximity and it is recommended site visits are undertaken to establish suitable measures to reduce collisions. Analysis highlighted:

- A 45 mile stretch on the A836 on the north coast where people were often 'careless, reckless or in a hurry'
- 'High risk' bends on the A708 and A85
- The main roads of concern relating to foreign riders, with an area near to the A85 between Taynuilt and Inverlochy identified as problematic
- 'Failure to look properly or to judge others path/speed' were most common on the A82 but a pattern has been identified along the north east coast where this appears to be a common issue
- Drivers making 'poor turns or manoeuvres' were commonly recorded on the A82, with a cluster north of Luss, and on the A92 and A96 between Aberdeen, Dundee and Elgin
- Locations which would benefit from introduction of PRIME markings included a 10 mile stretch of the A7 north of Galashiels and a 13 mile stretch of the A708 between Moffat and Selkirk
- Priority locations for consideration of speed reduction or the addition of barriers, traffic lights, or speed cameras have been provided.

Recommendations have been developed (aligned to the pillars of the Safe System) which aim to improve road safety and reduce motorcycle fatalities through:

- Education and awareness
- Legislation
- Practical actions.

Positive action from Police Scotland, Transport Scotland, partner agencies and all road users is required to reduce motorcycle fatalities on Scotlish roads.

RECOMMENDATIONS

The following recommendations have been identified through analysis and are presented for consideration:

SAFE ROAD USE		
Education and Awareness		
Category	Recommendation	Rec. Number
Motorcyclists - General	 Develop or continue to run campaigns on motorcycle safety Targeted campaigns should continue to be aware of seasonal differences for motorcyclist fatalities. Police Scotland's Motorcycle Safety Campaign in 2024 ran from April to September, the findings of this report support this time period for future similar campaigns. Consideration could be given to tailored winter campaigns, in relation to riding motorcycles in poorer winter conditions. Consider young male riders when developing any messaging and campaigns for motorcyclists Campaigns highlighting the importance of motorcycle helmet use could be developed and targeted at younger male riders. Engagement with schools, colleges, motorcycle events and motorcycle training 	Recommendation 1 Recommendation 2
	schools, reinforce the importance of helmets and appropriate safety clothing, targeting younger males specifically. Consider ways to reduce or manage speed for motorcyclists Improved training and education are required for motorcycle riders in addition to speed management measures, including speed limit reductions and the addition of Intelligent Speed Assistance systems, to address riding style and	Recommendation 3

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Motorcyclists - Foreign Drivers	 Develop foreign driver/riders materials and distribute at relevant locations Posters/display materials could be developed and displayed in various establishments on the A82, A85 and North Coast 500 route. Materials should reinforce the requirement to drive/rider on the left and provide an overview of common road layouts and driving practices including giving way when joining traffic and the direction of travel of other vehicles. 	Recommendation 4
	 Transport Scotland and other relevant partners could work in partnership with motorcycle rental companies to develop materials that can be disseminated to foreign drivers on obtaining a hire vehicle. Hire companies should also have such materials available on their websites for foreign drivers when booking online. Road Safety Scotland has a wealth of materials available in various languages that could be utilised (e.g. German, Dutch). 	Recommendation 5
	 Transport Scotland to work in partnership with major UK airports and ferry ports (e.g. Newcastle) to display materials aimed at foreign drivers. Materials should reinforce the requirement to drive on the left and provide an overview of common road layouts and driving practices, including giving way when joining traffic, and the direction of travel of other vehicles. Materials should also be available on ferries servicing many of Scotland's islands which are popular with tourists, including Caledonian MacBrayne and Northlink Ferries. 	Recommendation 6
	 Use technology to inform Road Safety Scotland has developed a video for foreign drivers prior to them travelling to the UK. The dissemination of this video should be supported by Transport Scotland and Police Scotland and further utilised where appropriate. 	Recommendation 7

Action		
Motorcyclists - General	 Community Engagement – Safety Initiatives Police Scotland should collaborate with motorcycle clubs and venues such as Knockhill Racing Circuit to develop roadshows and/or drop-in points where motorcycle helmets can be checked by a knowledgeable expert, ensuring they are correctly fitted and that riders are aware how to secure them correctly. Raise awareness of the importance of increasing visibility of both motorcycles and riders/passengers. Using headlights during the day can alert other drivers to their presence on the road. Additionally, motorcyclists wearing high visibility clothing at all times of the day or night will increase other drivers' awareness and improve safety. Continue to develop and deliver the 'Rider Refinement' programme across Scotland, which will enhance the motorcyclist's awareness of risks on the road and develop safer riding techniques. 	Recommendation 8
Meterovolisto Foreign Drivers	Road Safety Messaging – Foreign Drivers Liaison with ferry ports and airports to develop and display materials aimed at tourists travelling to Scotland with relevant road safety messaging.	Recommendation 9
Motorcyclists - Foreign Drivers	 Vehicle familiarisation inputs should be available for all foreign drivers obtaining hire motorcycles to ensure they are accustomed to all vehicle controls. These should be facilitated by motorcycle hire companies. 	Recommendation 10

Motorcyclist – Reporting Application	 Pevelop application/reporting tool, where motorcycle riders can raise concerns and suggestions. For example, if riders observe hazards specific to motorcyclists as part of their journey (e.g. slippery tarmac), this could be logged; or suggestions for appropriate barriers to be installed at particularly difficult corners (where they believe riders could possibly leave carriageway) could also be logged. Dashcam footage could be uploaded as evidence, for the road to be reviewed and action taken by appropriate partner. 'Near misses' could also be logged on the application. 	Recommendation 11
Motorcyclists – Racetrack practice days	 Motorcycle Rider Practice Days In partnership with Scottish racetracks, allow riders to book time slots at the beginning of motorcycle season (spring/summer), to allow them a safe place to get comfortable with their motorbike again This could also be used as an opportunity to those riders who have purchased a new motorcycle (or more powerful motorcycle) to get comfortable with the vehicle. 	Recommendation 12
Motorcyclists – English Motorcycle Riders	Road Safety Messaging – English Motorcycle Riders Engage with English motorcycle groups/clubs – re-iterate the importance of looking properly whilst carrying out manoeuvres and making themselves as visible as possible when travelling on Scotland's road network.	Recommendation 13
Motorcyclists – Alcohol/Controlled Drugs	Vehicle Safety, Drink and Drug Testing Increased policing patrols by Police Scotland officers to undertake roadside stops, breath tests and drug wipes.	Recommendation 14

Legislation		
Motorcyclists - General	Road Safety education could be included in the Curriculum for Excellence to ensure that high quality road safety information is shared at the earliest stages, with a particular focus placed on the risk of vulnerable road users.	Recommendation 15
Motorcyclists - General	Rider Standards – Motorcyclists Working in conjunction with the Driver and Vehicle Standard Agency and DVLA, the potential impact of the introduction of a minimum period of learning and a requirement to demonstrate experience in different driving conditions via logbooks could be considered.	Recommendation 16
Motorcyclists - General	Purchasing Motorcycles Working in conjunction with motorcycle retailers, introduce a mandatory demonstration of the motorcycle as part of the purchase agreement. This will assist riders to be more familiar with the operation and safety features of the motorcycle	Recommendation 17
Motorcyclists – Younger Drivers	Restrictions – Young Drivers Due to the number of younger motorcycle rider fatalities, consideration should be given to a Graduated Driver Licensing system that could place restrictions on riding times, pillion passengers, specified routes/roads and engine size.	Recommendation 18

SAFE VEHI	CLES	
Education a	nd Awareness	
Motorcyclists – General	 Motorcycle Road Worthiness – Spring/Summer Police Scotland could consider a 'get ready for motorcycle season' campaign, encouraging motorcycle riders to ensure that their motorcycles are roadworthy and prepared for the season ahead. 	Recommendation 19

Action		
Motorcyclists – General	 Tyre Safety Increased roadside stops by Police Scotland Roads Policing officers to check tyre conditions of motorcycles to ensure safety and provide guidance where required. 	Recommendation 20
Legislation		
	 Older Motorcycles The Scottish Government should consider the development of a pilot scheme similar to the Mobility and Scrappage Fund with a road safety focus on removing older and potentially less-safe motorcycles from the roads. 	Recommendation 21
Motorcyclists – General	 Motorcycle Learner Riders Inclusion of tyre and motorcycle maintenance training as mandatory for learner drivers should be considered. An understanding of the importance of ensuring a motorcycle is roadworthy alongside practical training on practices such as checking and altering tyre pressure may have a positive impact. This could also form part of a theoretical and practical driving test. Consideration to be given to the number of times a motorcycle rider is permitted to sit (and pass) their compulsory basic training without going on to obtain a motorcycle licence. 	Recommendation 22

SAFE SPEI	SAFE SPEEDS		
Education a	and Awareness		
General	 Speeding and Dangerous Driving Campaign Campaigns highlighting the dangers of speeding and other risky driving behaviours should be targeted in areas frequented by motorcycle riders – both physically and virtually. This could include sporting events, social media, popular motorcycle club meeting points and racetracks. 	Recommendation 23	

	 Speeding – Offence Initiative Development of a National Speed Awareness Course and referral programme which motorcycle riders who have been caught speeding must attend. Consideration should be given as to whether this would be offered as an alternative to prosecution or as a mandatory additional requirement. 	Recommendation 24
Legislation		
	 Speeding – Penalties Consideration should be given to increasing the penalties for speeding offences (heavier fines and increased points) and increasing the period of time points remain on a driver's licence. 	Recommendation 25
General	 Speeding / Dangerous Driving – Penalties Consider increasing penalties or bans for repeat offenders of speeding/careless driving/dangerous driving, such as a graduated endorsement system with increased points for each offence. 	Recommendation 26

SAFE ROADS AND ROADSIDES			
Education a	nd Awareness		
Motorcyclists - Foreign Drivers	 Material – Distraction Materials/advertisements should be developed that remind tourists to avoid becoming distracted by scenery and Scottish wildlife. These could be situated within service stations on main routes utilised by tourists including the A82, A9 and the North Coast 500 route. Signage A review of the signage on the popular motorcycle routes for foreign riders should be undertaken to ensure it is sufficient. Regular usage should be made of matrix signs to display messages reminding riders to drive on the left. Consideration could be given to displaying this in different languages (e.g. German, Dutch). 	Recommendation 27	

Other Road Users	 Campaign / Material – Approaching and Moving Off From Junctions Materials/advertisements should be developed that reiterate the importance (to other road users) of looking properly and judging the speed of motorcycles when approaching and moving off from junctions. Signage A review of the signage on the popular motorcycle routes should be undertaken to raise awareness of motorcycles, in particular when approaching and moving off from junctions. 	Recommendation 28
	Campaign / Material – Fatigue	
Motorcyclists - Fatigue	 Appropriate road signs and campaign messages encouraging motorcycle riders to rest when feeling fatigued (particularly in rural areas) may assist in the reduction of fatalities. 	Recommendation 29
Action		
	Motorcycles leaving carriageway	
Motorcyclists - General	 Police Scotland liaise with partner agencies, sharing findings of this report where motorcycles involved in fatal collisions have left the carriageway. Partner agencies can access locations and ascertain if the installation of a barrier would be appropriate, or removal of object hit feasible (where appropriate). 	Recommendation 30
Motorcyclists - Prime Markings	PRIME Markings Police Scotland liaise with partner agencies, to assist in identifying locations on Scotland's Roads which could assist from the introduction of PRIMEs.	Recommendation 31
Partner Agencies	Partner Agency Site Visits Partner agencies to attend sites identified in this report where collisions have occurred within 75metres of each other and carry out assessment.	Recommendation 32
Partner Agencies	Consideration to be given to Early Intervention Programmes for those motorcycle riders with several previous convictions relating to road traffic offences.	Recommendation 33

FURTHER ANALYSIS		
Partner Agencies	 PRIME Markings Further exploration of those locations which currently have PRIME markings, with analysis conducted before and after the implementation of the markings. Identify roads similar to the A85 (those currently with PRIME markings) which would benefit from PRIME markings. 	Recommendation 34
	 COVID-19 Impact On Motorcycle Rider Behaviour Further exploration of the impact of Covid-19 on the impact of motorcycle rider behaviour, before and after lockdown and travel restrictions. 	Recommendation 35
Fatalities Report	 Urban/Rural Exploration Further exploration of the fatal collisions which occurred within urban and rural locations: analysis of the seasonal patterns and differences to be conducted; analysis of the contributory factors attributed to collisions occurring within urban locations compared to rural. 	Recommendation 36
	 Reduction of Speed Further analysis and research should be conducted on the stretches of road identified in this report for a potential reduction in the speed limit. 	Recommendation 37
Additional Analysis	 Prevention – Safety Cameras Further exploration of identified sites in this report for the potential addition of a speed camera should be undertaken to establish if they would reach the minimum site selection requirements as per the Scottish Safety Camera Programme Handbook. Any sites identified as potentially suitable by demonstrating a collision and speed history should be assessed and prioritised. Consideration will be required as to whether a fixed, mobile or average speed camera system would be most appropriate. 	Recommendation 38
	 Engineering – Barriers Further analysis and research should be undertaken on the stretches of road identified in this report for the addition of a barrier. Other alternatives should also be considered if barrier implementation is unsuitable. 	Recommendation 39
	 Addition of Traffic Lights Further analysis and research should be undertaken on the locations identified in this report for the addition of a traffic light. Other alternatives should also be considered if traffic light implementation is unsuitable. 	Recommendation 40

 A85 Problem Profile Further analysis of the A85 to be undertaken (problem profile), with an exploration of fatalities relating to all road users. 	Recommendation 41
 Serious and Slight Motorcycle Collisions Further analysis of serious and slight motorcycle collisions to be undertaken to gain a better understanding of all motorcycle collisions. 	Recommendation 42
 Crossroad Collision Analysis Further analysis and research should be undertaken on the location identified to prevent further collisions at the crossroad junction. 	Recommendation 43
 Remove Hazard Analysis Further analysis and research should be undertaken on the locations identified to identify if any measures can be put in place in relation to the hazards at the roadside. 	Recommendation 44