



The safety of e-scooters

PACTS briefing following the Queen's speech

May 2022



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Making Roads Safer

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Introduction

Spurred on by the COVID-19 pandemic the UK Government decided, in July 2020, to permit electric scooter (e-scooter) trial rental schemes in England. These regulated schemes now involve 23,000 e-scooters in 31 areas. Meanwhile, the ownership of private e-scooters has mushroomed with over one million imported since 2019.¹

Private e-scooters are currently defined as motor vehicles and, as they do not meet necessary performance criteria, are effectively illegal to use on public roads. However, they are legal to sell, with minimal requirements made of retailers. Private e-scooters are evidently being used extensively and the police do not have sufficient resources to effectively enforce the law. The unsafe nature of some private e-scooters, and irresponsible use by some riders, are leading to serious injuries and there are concerns for riders and other road users. Pedestrians, particularly those who are more vulnerable (older, visually impaired, with young children etc), are at risk from e-scooters ridden on pavements or from obstruction caused by carelessly parked rental e-scooters.²

It is now clear that the Government intend to legalise e-scooters as part of a new Transport Bill which is likely to be published in Autumn 2022. This will create a new category of vehicle (Powered Personal Transporter) with detailed regulations for e-scooters. Ministers have stated that these will prioritise safety.³ [PACTS has made such evidence-based recommendations to regulate the construction and use of private e-scooters](#) (see Recommendations below).

“Safety is at the heart of our plans to create a regulatory framework for smaller, lighter, zero-emission vehicles, sometimes known as e-scooters. Their popularity is clear, and new rules are needed to improve safety and crackdown on illegal use while unlocking innovation and growth in this emerging multi-billion-pound industry.”

Baroness Vere, Parliamentary Under-Secretary of State, Department for Transport
speaking in the [House of Lords Debate on Queen's Speech](#) on 11th May 2022.

e-scooter casualties

Since 2019, 18 people have died using e-scooters. All, but one, were riding private e-scooters. While the Government regulated e-scooter rental schemes are being evaluated to gather data on usage and safety, there has been little assessment of the impact of extensive private e-scooter use on UK roads. PACTS carried out an independent study, funded by The Road Safety Trust, to gather up-to-date casualty data for the UK.

Records collected by PACTS from the police, media and insurance firms document over 900 casualties in collisions involving an e-scooter in 2021.^{4, 5} Nearly 40% were seriously injured and twelve people were killed. Around 70% of the e-scooters involved in these collisions were private e-scooters while 15% were rentals and 15% were not recorded. Nearly a quarter of all the riders were hurt in single-vehicle collisions, i.e., they were not in a collision with another road user or moving vehicle. Head injuries were common (over 40% of those who suffered serious injury had a head injury) and 25% suffered fractures.⁶ There is evidence that e-scooters are less stable than pedal cycles, especially when accelerating, decelerating and navigating bumps.⁷ The upright position of the rider tends to make face and head injury more likely.

¹ As advised by the Bicycle Association and obtained from HMRC import figures for 2019, 2020 and 2021

² “should privately-owned e-scooters be legalised, the Government should ensure that the law clearly prohibits the pavement use of e-scooters” - Transport Select Committee, [E-scooters: pavement nuisance or transport innovation?](#), HC 255, 29th September 2020, p4.

³ Secretary of State Grant Shapps, Transport Select Committee (Q237), [Oral evidence: Work of the Secretary of State for Transport](#), 27 April 2022.

⁴ [E-scooter casualty data for the UK \(2021\) v13.xlsx \(pacts.org.uk\)](#)

⁵ The DfT have published provisional data for the year 2021 recording 1,350 casualties involving e-scooters ([Reported road casualties Great Britain: e-Scooter factsheet 2021 \(provisional\) - GOV.UK \(www.gov.uk\)](#))

⁶ [The safety of private e-scooters in the UK](#), PACTS, March 2022, pp37-50.

⁷ [The safety of private e-scooters in the UK](#), PACTS, March 2022, pp54-65.

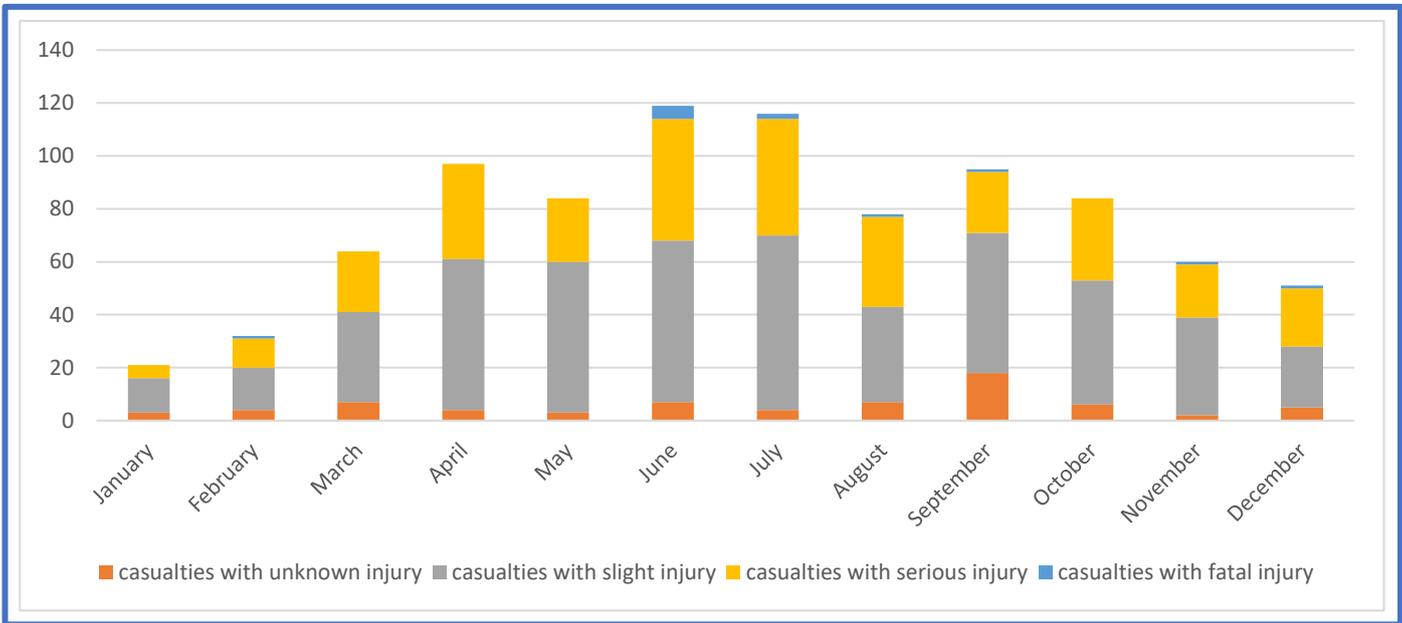


Figure 1: e-scooter casualties in GB in 2021 by severity of injury and month (Source: PACTS)

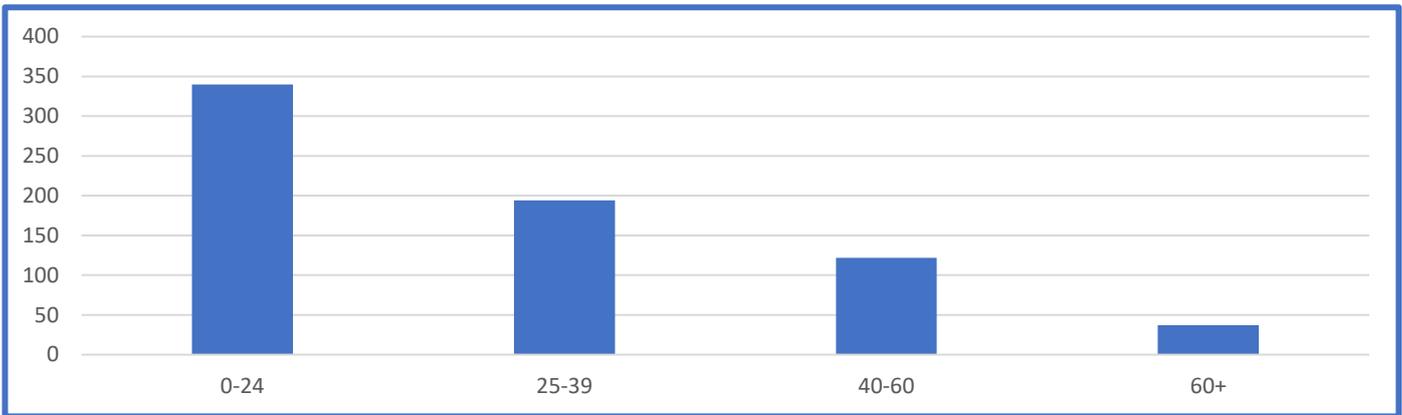


Figure 2: e-scooter casualties in GB in 2021 by age (Source: PACTS)

“From my experience, I don’t think e-scooters are suitable for 16-year-olds, so we don’t sell them to people under 18. This should be the same in the UK too.”

Kfir Ben-Shooshan, Founder and CEO of specialist e-scooter retailer INOKIM, [ZAG Daily](#), 3rd May 2022

“We need to legalise [e-scooters] properly and professionally. It would be great to see people have number plates and insurance. For anyone misbehaving, the police would be able to identify every scooter with a unique identifier that is easily visible.”

Adam Norris, founder of Pure Electric, [‘Number plates needed’ to put brakes on e-scooters The Sunday Times](#), 21 November 2021

“The Minister will recall that several Members of this House have previously raised safety concerns over their use and, although we can all see that e-scooters can play a valuable role in the future of short-distance travel, too many of them on the streets of the UK are unnecessarily dangerous in their current form. Safety should be paramount, as the Minister stated”

Baroness Blake of Leeds, speaking in the debate on Queen’s Speech, [Queen’s Speech - Hansard - UK Parliament](#), 10 May 2022

“[e-scooters] are less stable than cycles, you are going to expect to see more injuries but that means people need to wear helmets and the government need to indicate what they going to do about that... head injuries are a real risk and riders are more prone to those on e-scooters.”

Dan Norris, Mayor of West England Combined Authority, [speaking to BBC Radio 4](#), 29th April 2022

PACTS Recommendations

Now that the use of private e-scooters is to be legalised, appropriate regulations for construction and use are essential. It will not be as simple as duplicating the existing regulations for rental e-scooters. Although the DfT evaluation of the rental e-scooter trials may help to inform safety considerations for private e-scooters, the use and construction of the two types of e-scooter differ too greatly. For example, the systems for managing the safety and use for rental scooters, such as geofencing, “slow-go” areas and bans on riders who misuse them, will not be feasible for private ones.

Stakeholders from the industry, charities and the government agree that practical regulations are now required if private e-scooters are legalised for use on public roads. [PACTS has applied a collected body of evidence to make recommendations, based on safety principles, for regulations governing the construction and use of private e-scooters.](#)

If the UK Parliament decides to legalise the use of private e-scooters, PACTS recommend that it adopt regulations for their construction and use as set out below. We accept that slightly different regulations for construction, such as a heavier maximum unladen weight and a 350w motor, may be appropriate for rental scooters.

- Maximum possible speed of 12.5mph (20km/h)
- Maximum continuous rated motor power of 250 W
- Anti-tampering mechanisms should be included in the construction. Tampering should be prohibited by law
- Minimum front wheel size of 12 inches (30.5cm) and minimum rear wheel size of 10 inches (25.5cm)
- Two independently controlled brakes, one acting on the front wheel and one acting on the rear wheel
- Lighting to be mandatory at all times
- Maximum unladen weight of 20kg
- An audible warning device to be mandatory
- Helmet wearing to be mandatory
- Riding on the footway (pavement) or footpath to be prohibited
- Rider age limit of at least 16 years
- Carrying of a passenger to be prohibited
- Drink driving, dangerous or careless riding, and handheld mobile phone use to be prohibited
- In-person rider training and third-party insurance are recommended



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