Building safer, greener, and connected cities with micromobility

Bolt's annual e-Scooter safety report 2022

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A comment from the CEO

At Bolt we have ten operating principles that have guided decision-making at all levels of the business since it was founded in 2013. All the principles are important but it is significant that number one on the list is ‘Customer First’. That means always starting from the customer’s needs and working backwards to solutions, optimising for a positive impact on the world, not profits or personal gain.

A critical part of delivering the best possible customer experience across our mobility products – from ride-hailing to car-sharing to micromobility – is to make sure that all customers can reach their destinations safely. Throughout 2021, we implemented a range of new safety initiatives across all our products, and we’re continuing to work hard to understand what more we can do to enhance customer safety.

This report showcases the key safety developments in our e-scooter business over the last year which will stimulate further thinking about how we can revolutionise urban transportation systems to be more safe and sustainable for everybody.

- Markus Villig, CEO

Our safety vision

Bolt's mission is to help people shift from private cars to sustainable, convenient, and affordable shared mobility. An important part of this vision is providing alternative transport options that include micromobility modes like shared e-scooters – which can help city inhabitants move around safely and sustainably.

Compared to cars and bikes, rental e-scooters are a new phenomenon that invites curiosity. As more people notice shared e-scooters in their cities, a natural question for many citizens and policymakers is how e-scooters impact the safety of transport users and the general public.

Despite some perceptions that e-scooters make city streets more dangerous, there's strong evidence that the overall safety impact is positive.

A report from the International Transport Forum (ITF) demonstrated that riding e-scooters is generally no more dangerous than riding a bike and that the greatest risk to all road users, including pedestrians, is posed by motor vehicles. While it's still early days for the shared e-scooter industry, and there are certainly avenues to improve safety, we believe that e-scooters can ultimately have a positive safety impact by helping to reduce the number of cars on the road.

Safety is a critical priority at Bolt. However we cannot bring our vision of safe micromobility to fruition alone. While we persistently develop educational materials and safety features, the reality is that we rely on users to ride responsibly and follow our rules and local regulations.

Similarly, as the ITF report notes, our city partners have a crucial role in providing safe road infrastructure, including protected lanes for micromobility. These lanes keep micromobility users safe from motor vehicle traffic and ensure that e-scooter traffic is less likely to harm pedestrians.

As the e-scooter industry develops, we hope to have transparent and productive collaboration with users and cities to ensure that we make sustainable micromobility as safe as possible.

To achieve this goal, transparency is crucial in understanding the challenges and measuring performance. We published our first-ever e-scooter safety report at the end of 2020, and this report is a follow-up. It reviews our developments in 2021, including updated safety metrics and information on our new safety features.

2021 by the numbers

Our e-scooter-sharing service experienced massive growth during 2020–2021, with the total number of rides increasing by roughly **400%** during that span.

While the total number of e-scooter accidents did increase along with our ride growth, the accident rate per 10,000 rides decreased by **13%**. The injury rate per 10,000 rides dropped even more – by **26%**.

Similarly, we saw significant improvement in accidents and injuries per 1 million km of riding distance. Bolt e-scooters had 10.92 accidents per 1 million km ridden – a **12%** improvement compared to 2020.

Meanwhile, the number of injuries per 1 million km ridden decreased from 8.07 in 2020 to 5.95 in 2021 – a **26%** improvement. Given that these improvements happened during a major increase in ridership, it's clear that we're scaling rapidly and responsibly.

It's worth noting that e-scooter accident reporting methods are inconsistent across the industry, making it difficult to compare our performance against our peers directly.

However, publicly reported data suggests that our riders experience injuries at a considerably lower rate than on other platforms. Moving forward, improving data reporting consistency and transparency across the industry will go a long way toward building a broader understanding of how e-scooters can improve urban traffic safety for everyone. Bolt is taking the initiative to foster more transparency and cooperation around e-scooter accidents, through Micro-Mobililty for Europe.

Our methodology

Any time there is an issue or incident related to Bolt's scooters – ranging from faulty equipment, to collisions, underaged riding, poor parking, and many others – these events are reported to our Customer Service team by riders as well as third parties like police departments and other road users. Our Customer Service agents investigate these reports to determine what exactly took place, and then classify the incident into one of the dozens of incident categories that we track.

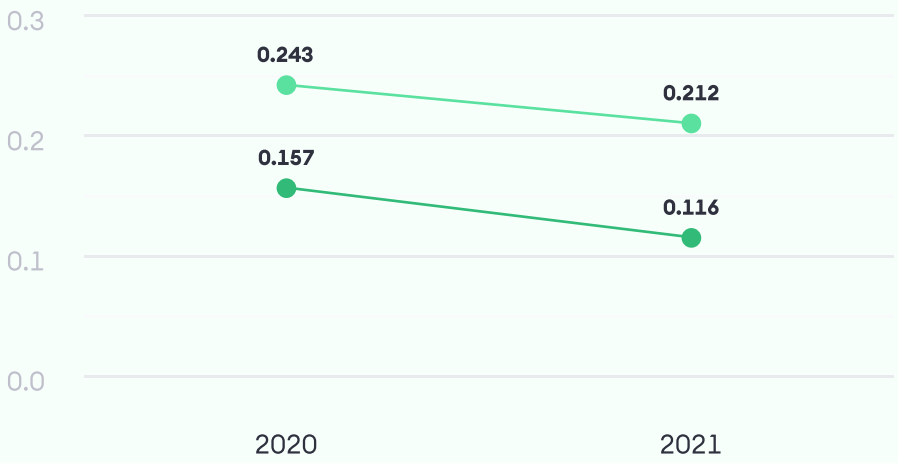
During the investigation, we try to determine whether the incident resulted in an accident and/or injuries to anybody involved. Based on the reports we receive, as well as the investigation results, we can determine how often riders are involved in accidents of all severities, from falls that result in no injuries to more severe accidents that require medical attention.

We measure the frequency of these events in terms of how often they happen per 10,000 rides (also called the Event Frequency Rate, or EFR). We also measure frequency based on how frequently they occur per 1 million km of riding distance.

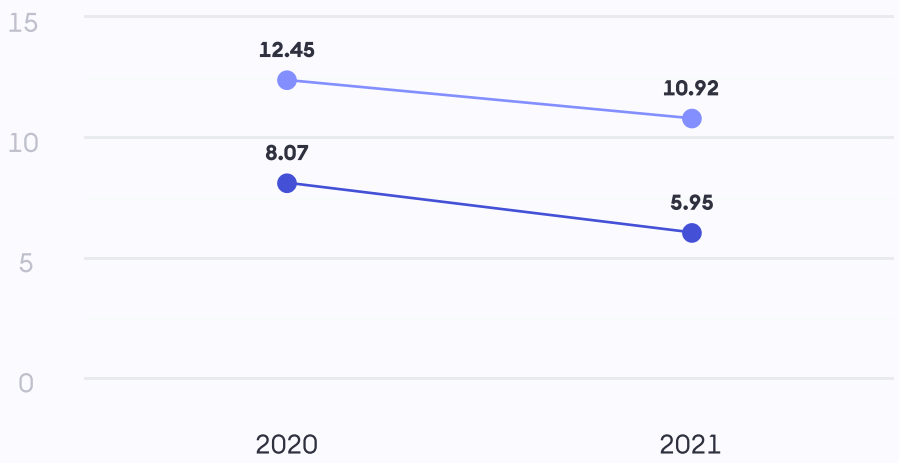
While we track dozens of incident categories, this report focuses on those that lead to an accident and/or injury because these are the most critical in measuring how our performance impacts the safety of our riders and other road users.

2020-2021 accident and injury rates	2020	2021
Accidents per 10k rides (EFR)	0.243	0.212 **(13%)**
Accidents per 1 million km	12.45	10.92 **(12%)**
Injuries per 10k rides (EFR)	0.157	0.116 **(26%)**
Injuries per 1 million km	8.07	5.95 **(26%)**

Accidents and injuries per 10,000 rides



Accidents and injuries per 1 million km



New levels of e-scooter safety

Preventing unsafe riding – tandem riding, intoxicated riders, not following traffic rules – is a complicated challenge that all e-scooter operators face. Safety is a critical part of our user-first approach at Bolt, which is why our team is tirelessly developing and releasing new safety features regularly.

> Bolt is committed to addressing safety both proactively and reactively. We seek to address potential safety issues before they become a problem for riders while also making sure that we investigate, address, and learn from issues as they come to our attention.
>
> We develop safety features based on facts and data, as well as input from our users and city partners. We are listening, studying, learning, and taking action.

- Dmitri Pivovarov, VP of Rentals @ Bolt

Responsible parking

We're working closely with city authorities to encourage responsible parking. Bolt e-scooters must be safe for all members of the community (not just riders) and especially for vulnerable groups. We've partnered with the National Council for the Blind of Ireland to better understand the impacts of e-scooters on visually impaired people.

In addition, to get our riders up to speed on all things related to parking, we took our message to the streets of cities across Lithuania, where we launched our 'Nedėk skerso' campaign (translated as 'Don't block the pavement with your scooter').

The campaign urged users to consider their fellow commuters when ending a ride. It focused on preventing obstructions for pedestrians, cyclists, and cars. It also highlighted crucial safety themes such as road traffic rules, speed, vigilance, helmet-wearing, and responsible driving.

The campaign's visual identity was inspired by examples of irresponsibly parked e-scooters. By showcasing these examples across Lithuania, we're raising e-scooter parking awareness at a national level. For maximum exposure, we promoted the campaign on our social networks to reward riders who could identify examples of badly parked e-scooters. We also joined forces with Vilnius City Municipality Communication Services at European Mobility Week.

We'll continue to provide parking and road safety education as we bring the benefits of low-emission rides to the rest of Europe.

Rider education

Our internal research and also external research demonstrate that accidents are most likely among inexperienced riders, so we understand that it is critical to educate our users about how to ride safely.

To do that, we engage with our users through in-app educational safety messages, safety-oriented events where users can learn how to ride safely, and regular helmet giveaways through our app and social media channels.

Here, our Safety Toolkit comes into play. Besides ride tips, safety instructions, and an introduction to local traffic rules, it also includes a Beginner Mode, which lets users cap the maximum speed as they learn to ride. This is especially important as inexperience and excessive speed are two significant contributors to e-scooter accidents.

Skid detection

We are rolling out a skid detection feature to combat dangerous activities such as excessively fast riding or drifting by using on-board technology to detect such behaviours and then educating users on safer riding practices.

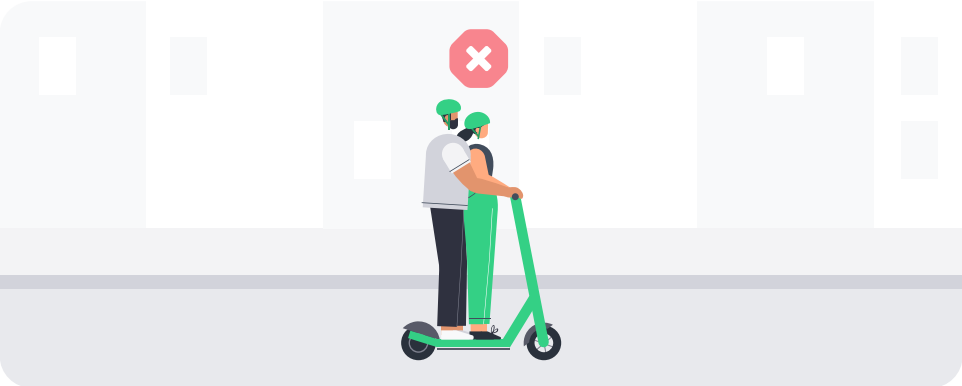
The system detects when an e-scooter's back wheel is locked up due to rapid braking, and the rider is then warned through the app with a push notification.

Tandem riding prevention

We're also improving micromobilty safety standards in new areas. In 2021, our engineers developed a patent-pending tandem riding prevention feature that aims to stop the practice of two people riding the same e-scooter at the same time. This is one of the most dangerous behaviours on an e-scooter. It poses a significant danger to riders and pedestrians, making it a high-priority issue for our city partners and us.

The feature uses the e-scooter's built-in accelerometer, which was taught to detect sudden changes in mass that indicate multiple people riding a single e-scooter. Once the e-scooter detects tandem riding, the user is sent a push notification on their app.

Tandem riding is prohibited by law in some cities and Bolt's Terms of Service, so the feature helps enforce local regulations and our policies as efficiently as possible. We're continuing to scale the feature to new markets in 2022.



Improved maintenance processes

We revamped our e-scooter maintenance process in 2021 by creating central maintenance warehouses for spare parts, improving supply chain logistics for distribution, and developing standardised workplace layouts and maintenance procedures to enhance our operational efficiency. This means that our e-scooter mechanics have more time to dedicate to the maintenance of our fleet, we are better able to fix broken scooters as quickly as possible, and ultimately ensure that we have as many scooters as possible available on the street for our riders' convenience.

Intoxicated riding prevention

We implemented a cognitive reaction test in the Bolt app to deter intoxicated users from riding Bolt e-scooters. When the share of intoxicated driving accidents is at its highest (usually nights and weekends), our app asks riders to react to different instructions on the screen to measure their cognitive reaction time before allowing them to ride an e-scooter. If users fail the test, they're encouraged to request a Bolt ride home instead of taking an e-scooter.

The feature is available in over 40 cities and continues to be rolled out gradually. So far, we've conducted over 1 million tests since we introduced the feature. In addition, we voluntarily take more specific local measures in certain circumstances to prevented intoxicated riding, for instance by taking scooters off the street during major public events.

ISO certifications for safety and management systems

Ensuring the safest possible e-scooter operations requires considerable work behind the scenes.

Thanks to our efforts, Bolt was granted an ISO 45001 certification for Safety Management Systems in 2021. This internationally recognised certification applies to all Bolt working spaces and products under the brand. It thus guarantees that we design and maintain our e-scooter fleet to a set of accountable, internationally recognised standards that ensure safe operations.

We pride ourselves on being an industry leader when it comes to safety. This involves the development of new technology for our hardware, new app innovations, and obtaining certifications following ISO standards.

Achieving ISO 45001 and ISO 9001 certification for Quality Management Systems in 2021 was confirmation that our processes meet or exceed the highest global standards.

Bolt has a mature approach to the identification, assessment, and mitigation of risks associated with its products.

The assessment of every identified risk is measured monthly and trended to ensure the controls are effective. Where adverse trends are identified, root causes are established, and further controls are developed and implemented. This ensures Bolt is always focusing on continual improvement.

We not only target improvements in the app itself but equipment and behavioural risk mitigation strategies. The combination of this three-tiered approach means we're covering all potential hazards and preventing harm to our customers.

- Dougie Bleasel, Head of Risk and Safety @ Bolt

Insurance for all drivers

Despite efforts to make Bolt e-scooters as safe as possible, the unfortunate reality is that accidents still happen. This is where our partnership with Allianz comes in. It provides the safety net that e-scooter users need in the busy urban environments where they use Bolt e-scooters.

Nearly all riders are now covered by two types of Allianz insurance as soon as they start a ride. Our riders in Germany, France, Malta and Poland are also insured with the help of other partners. The single rental fee covers everything without any hidden extra charges.

The first type of coverage, Personal Accident Insurance, insures riders for potential severe injuries and provides financial support until a rider fully recovers.

The second tier is Rider General Liability, which covers damages caused to third parties while riding Bolt e-scooters (provided a rider hasn't broken Bolt's Terms & Conditions or traffic regulations). An example would be riding under the influence of alcohol or other substances, which is strictly prohibited and can result in a permanent ban from Bolt services.

Safety through sustainability

Getting to the other side of the world in 24 hours; a variety of goods on our supermarket shelves; same-day delivery to your doorstep; thickening smog; rising respiratory diseases.

As always, every coin has two sides. Has humankind's rapid economic growth caused us to irreversibly contaminate the air we breathe?

We can still minimise our impact – but we need to act now.

Urban environments worldwide are experiencing congestion, transport inequality, and high CO2 emissions, which negatively impact the quality of life. In addition, road traffic is a major driver of air pollution, which kills up to 4.2 million people every year, according to the World Health Organisation.

Micromobility powered by clean energy is paramount in making roads safer and reducing the long-term negative health impact of emissions.

Research by the Norwegian Institute of Transport Economics shows that we're playing an important role in this shift by using our multimodal platform to nudge users from cars to e-scooter rides. And by providing affordable e-scooter rides, we're making these vehicles accessible to everyone – driving a shift to low-emission and safe micromobility.

We're committed to designing and sustaining the most efficient e-scooter operations system on the market.

To realise this, we:

- Operate a **sustainable development chain** for our custom-built recyclable e-scooters, which reduces waste;
- Use **renewable energy** in our warehouses where possible;
- Use **state of the art operational software** that minimises the travel distance to recharge e-scooters and helps us optimise routes for necessary trips;
- Prioritise **renting warehouses closer to city centres,** reducing the distance to e-scooter deployment and pick-up points;
- Use **energy-efficient vehicles** (electric or zero-emission vehicles where possible) to distribute and collect our e-scooters and e-bikes.

Considering all stages of our electric scooter lifecycle, **we are climate positive in our e-scooter operations**, providing benefit to our environment and human health.

Innovation on two wheels: Bolt 5

In early 2022, we began to roll out the latest generation of our e-scooters, the Bolt 5. We've designed our new e-scooter to meet the needs of users and city authorities by providing the highest standards of safety, sustainability, and comfort.

And as always, safety is our top priority. The e-scooter offers better grip and easy manoeuvring with slightly curved handlebars and a wider floorboard. A bigger front wheel and hydraulic suspension allow riders to negotiate urban obstacles safely and comfortably, while front and rear indicator lights let riders communicate their movement intention – improving safety for the rider and other road users. The Bolt 5 features side reflectors to improve visibility, and it's equipped with a front electromagnetic brake and a rear drum brake to help riders manage their speed efficiently.

Another addition to Bolt's latest generation of electric scooters is a high capacity swappable battery (48V instead of the industry-standard 36V), which translates into an increased range of up to 55 kilometres. This means the Bolt 5 is more sustainable and readily available for users due to fewer battery swaps.

There will also be fewer battery charging operations, making for a smaller overall carbon footprint. Our latest micromobility offering is made of 100% recyclable aluminium and has an expected lifecycle of up to 60 months.

“Our flagship e-scooter model is built based on feedback from cities and users. The goals of our city partners and Bolt are aligned — we’re looking for the best ways to integrate micromobility into the public transport infrastructure of urban communities.

The safe, sustainable, and durable Bolt 5 is the latest step in that direction. It offers an incentive for people to quit private car ownership and enjoy the perks of shared mobility.”

- Dmitri Pivovarov, VP of Rentals @ Bolt

As we deploy 20,000 Bolt 5s across various markets, we’ll continue to scale, develop, and improve the safety initiatives we launched in 2021. We have an exciting schedule of new features, partnerships, and other initiatives that will continue to improve the safety of our products and advance the wider micromobility industry’s approach to safety.

Our plans are ambitious, but we won’t settle for less. We’re proud to be leading the shift towards a safer, greener, and more holistic urban environment, one ride at a time.


Bolt