

Republic of the Philippines
HOUSE OF REPRESENTATIVES
Quezon City

NINETEENTH CONGRESS
Third Regular Session

House Bill No. 11293



INTRODUCED BY REPRESENTATIVE PAUL R. DAZA

EXPLANATORY NOTE

Transportation-related deaths are on the rise and are now the 12th top Filipino causes of death as of 2022, compared with 15th overall in 2021 (PSA, as cited in Ordinario, 2023). In 2011, transport accidents killed 7,938 Filipinos, reflecting a 45% increase (yearly 3%) to 11,487 Filipinos (31 persons/day) who died from road crashes in 2022.

There is an increasing number of motorcycle-related road crashes in Metro Manila. Based on 2022 and 2023 data, there was a 17.3% increase in road crashes of motorcycles in 2023 as compared with crashes in 2022 (MMDA, as cited in Cabato, 2024).¹ The Metropolitan Manila Development Authority (MMDA) reported that a total of 31,186 motorcycle-related road crashes took place in 2023, swelling from the 26,599 crashes recorded in 2022.

Meanwhile, findings from the datasets developed by a team of experts revealed that children aged 5 to 7 years old and young adults aged 20 to 24 were the most vulnerable to road injuries or crashes (UP Manila-PGH as cited in Maga, F.N., 2022).²

Furthermore, in a study conducted using the *Manchester Driver Behaviour Questionnaire Logistic regression* (Seva, 2017), it was identified that the most common reason for motorcycle crashes is recklessness in driving.³ Environment-related factors such as unsafe road conditions, poor street lighting at night, presence of humps and potholes, and sudden appearance of road distractions follow as among the main reasons for the crashes. Interestingly, only 9% of the participants identify drunk driving as a reason for their accidents (Seva, 2017).

The same study described drivers in Metro Manila as “generally undisciplined.” Based on the modeling results, participants who underestimated the speed of oncoming vehicles when overtaking have higher chances of suffering serious injury. The tendency to miscalculate will most likely cause the motorcycles to crash with oncoming vehicles and the severity would likely increase as the speed accelerates.

Seva (2017) as well as Leung and Starmer (2005) claimed that it is a general tendency for drivers to underestimate the speed of slower vehicles. Drivers of slow-moving vehicles, such as motorcycles, often exhibit confidence in the perceived safety of the gap between themselves and other vehicles. This overconfidence may prompt the rider to attempt overtaking maneuvers, only to later realize that the time and space available are insufficient for a safe pass.

¹ Cabato, L. (9 Apr 2024). *MMDA logs 17.3% increase in motorcycle-related crashes in 2023*. Available at <https://newsinfo.inquirer.net/1927991/mmda-logs-17-3-increase-in-motorcycle-related-crashes-in-2023>

² Maga, F.N. (2022). *Preventing and reducing motorcycle accidents in PH*. Available at https://www.upm.edu.ph/cpt_news/preventing-and-reducing-motorcycle-accidents-in-ph/

³ Seva, R. (2017). *Modeling Motorcycle Accident Severity in the Philippines Using Helmet Use, Riding Experience, and Driving Behaviour*. Available at [http://ijtje.com/uploads/2017-08-22/6d5cf703-9ddf-cbe7ijtje.2017.7\(3\).05.pdf](http://ijtje.com/uploads/2017-08-22/6d5cf703-9ddf-cbe7ijtje.2017.7(3).05.pdf)

Next to the behaviour, studies also show that based on risk assessment of accidents in the Philippines, changing weather conditions ranked in the top 2. Slippery surfaces, especially due to wet road conditions, are a major risk factor. In such cases, technology can help to maintain stability during braking and acceleration. (Gumasing, 2020)⁴

Discouraging such behavior is essential for a society aiming to reduce the likelihood of accidents. In the absence of a guaranteed mechanism to stop these negative behaviours and to maintain vehicle stability on changing road surface conditions, the next best solution is to leverage technology to create systems that can prevent accidents resulting from reckless actions, such as speeding or unnecessary/ill-timed overtaking as well as vehicle instability during braking, accelerating, or steering.

One of such technology-based interventions is the installation of active safety technology such as anti-lock braking system (ABS) in motorcycles and electronic stability control (ESC) in passenger cars.

As the term suggests, ABS helps in preventing the wheels from locking up during an episode of hard braking on different road surfaces and conditions, which is the natural or intuitive reaction of a rider during a potential accident such as a collision. An ABS is a part of a cohesive technology where the two-wheelers' 'ecosystem' is made safer and the ride more enjoyable. These systems allow the detection of skidding movements as well as potential wheel locks of vehicles and automatically assist in managing them. In the case of light vehicles and passenger cars, an ESC also supports the prevention of under- and over-steering to keep stability on four wheels in curves, thereby enhancing overall safety. ABS and ESC systems enhance control and stability, mitigate falls and crashes, and increase rider confidence.

Based on data, ABS technology significantly improves motorcycle safety by maintaining stability during hard braking situations (Padway, 2024).⁵ It was also estimated by the US Insurance Institute for Highway Safety that motorcycles equipped with ABS have a 31% lower chance of fatal crashes, according to a direct comparison between the same models of motorcycle, that is, one with optional ABS and one without (as cited in Padway, 2024).

Meanwhile, an estimate by the Swedish Road Administration indicated that all severe and fatal motorcycle accidents that involved motorcycles above 125cc could have been reduced by 48% if the motorcycles had been equipped with ABS systems (as cited in Padway, 2024).

These ABS for motorcycles are not mere 'optional' features. Societies should recognize these systems as necessary and critical safety mechanisms that can ensure safer stops and lessen injurious and fatal crashes. Saving lives should always be a State's priority.

Based on documented advantages, Europe enacted legislation mandating ABS in 2012, with implementation commencing in 2016.⁶ Following suit, India became one of the earliest adopters among emerging markets, mandating ABS for motorcycles in 2018. A pivotal study estimated that 33% of powered two-wheeler accidents with casualties on Indian highways could be prevented by motorcycle ABS (Lich, Kumaresh, and Moennich, 2015).

There are indeed concerns about the higher price points for motorcycles with important safety mechanisms. However, according to the Malaysian Institute of Road Safety Research (MIROS, 2022)⁷, the

⁴ Gumasing, Ma. Janice & Magbitang, Rommel. (2020). Risk Assessment Model Affecting the Severity of Motorcycle Accidents in Metro Manila. 1093-1099. 10.1109/ICIEA49774.2020.9102063.

⁵ Padway, M. (2024). Motorcycle ABS: *What Is It and Why You Should Have It*. Available at <https://www.motorcyclelegalfoundation.com/motorcycle-abs/>

⁶ European Parliament. (2012). Upgraded type-approval rules for motorbikes. Retrieved from <https://www.europarl.europa.eu/news/en/press-room/20121116IPR55754/upgraded-type-approval-rules-for-motorbikes>

⁷ Lich, T., Kumaresh, G., and Moennich, J., "Benefit Estimation of Anti-Lock Braking System for Powered Two Wheeler On Indian Highways," SAE Technical Paper 2015-26-0167, 2015, <https://doi.org/10.4271/2015-26-0167>.
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installation cost of ABS ranges from USD 120 to 240 per unit, causing the motorcycle price to increase by 10%. Other sources suggest a significantly lower cost of about USD 40 for ABS installation (Woodford, 2024)⁸. Despite these cost considerations, the value of human life remains beyond monetary measure. Numerous studies have demonstrated that ABS is estimated to be 26-39% effective in reducing collisions, injuries, and fatalities among motorcyclists.

In the context of Thailand, the implementation of motorcycle ABS is projected to save between 6,000 to 9,000 lives within five years of the regulation's enforcement. The anticipated reduction in road crashes involving motorcyclists is expected to save the country around USD 0.3 to 0.45 billion annually, amounting to USD 4.5 to 6 billion over five years. Similarly, in India, road crashes have resulted in economic losses amounting to USD 38.8 billion annually, representing 1.35% of the country's GDP. These losses could be significantly reduced by promoting the adoption of active vehicle safety systems (Kumaresh and Saldanha, 2021). These estimations underscore the dual potential of active vehicle safety systems to save lives and yield substantial economic benefits on a national scale.

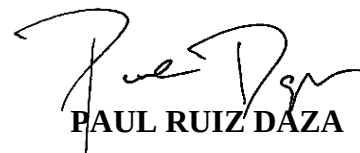
Furthermore, crash avoidance systems in four-wheel vehicles, such as anti-skid technology, have already significantly contributed to the prevention of hundreds of thousands of loss-of-control crashes and have saved tens of thousands of lives. The Global New Car Assessment Programmes (NCAP), in their "Stop the Crash" campaign, highlights the proven benefits of Electronic Stability Control (ESC).

Seventeen case studies conducted between 2001 and 2007 have demonstrated that ESC is highly effective, reducing single-vehicle crashes by approximately 30%. In the European Union, where ESC became mandatory in all new cars on November 1, 2014, it is estimated that since 1995, at least 188,500 crashes involving injuries have been prevented, and more than 6,100 lives have been saved due to ESC. In the United States, where ESC became mandatory in 2012, it is estimated that over 6,000 lives have already been saved.

ESC is now mandatory in several countries, including Australia, Canada, the European Union, Israel, Japan, New Zealand, Russia, South Korea, Turkey, and the USA, with Argentina soon to follow. However, Global NCAP asserts that the current global fitment rate of ESC, just over 60% of new passenger cars and light-duty vehicles, is insufficient and aims to increase this rate to 100% by 2020.

Global NCAP recommends that all United Nations (UN) Member States, particularly those with significant automobile production, mandate ESC in all new models by 2018 and in all vehicles in production by the end of the UN Decade of Action for Road Safety in 2020. The United Nations has adopted a global standard for ESC, facilitating easier governmental support for the mandatory application of the system worldwide.

In view of the foregoing, the passage of this bill is earnestly sought.



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⁸ Woodford, M (2024). Steps the Philippines can immediately take to reduce road casualties, https://www.rappler.com/voices/thought-leaders/steps-philippines-can-immediately-take-reduce-road-casualties/?utm_medium=Social&utm_source=Facebook&utm_campaign=SocialFlow

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AN ACT
MANDATING VEHICLE SAFETY FEATURES SUCH AS ELECTRONIC STABILITY
CONTROL (ESC) FOR PASSENGER CARS AND ANTI-LOCK BRAKING SYSTEM (ABS)
FOR MOTORCYCLES

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

1 **SECTION 1. *Short Title*** – This Act shall be known as “Mandatory Active Vehicle Safety
2 Technology Act of 2024.”

3 **SECTION 2. *Declaration of Policy*** – Section 5 of the Philippine Constitution mandates that “the
4 maintenance of peace and order, the protection of life, liberty, and property, and promotion of the general
5 welfare are essential for the enjoyment by all the people of the blessings of democracy.” Section 15 of the
6 Constitution also provides that the “State shall protect and promote the right to health of the people and instill
7 health consciousness among them.”

8 Pursuant to these, it is hereby declared that the State shall prioritize the safety of its citizens and
9 promote innovation in the transportation sector through inclusive, safe, and modern mobility solutions. To
10 ensure public safety in this sector, the government shall ensure road worthiness of vehicles by mandating
11 relevant government agencies and stakeholders to collaborate in instituting and implementing effective
12 measures and technologies following global standards and best practices.

13
14 **SECTION 3. *Coverage***—This Act shall apply to all motor vehicles under Categories L1, L2, and
15 L3 (two-wheels) and Categories M1 (vehicles comprising not more than eight seats in addition to the driver’s
16 seat with GVW up to 5000 kgs) and N1 (vehicles having a maximum mass not exceeding 3,500 kg), or such
17 other proper designation as classified by the Land Transportation Office (LTO).

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19 **SECTION 4. *Definition of Terms***—As used in this Act:

20 **(a) *Active Vehicle Safety Technology*** (AVST) – is a system of technology-based features that give
21 the driver more control in dangerous situations. Simply put, active safety systems avoid or mitigate an
22 accident pre-impact – so before it happens or contact is made. If a collision is really unavoidable, active
23 safety technology is also able to reduce its impact. Slowing the speed of a vehicle by a few kilometers before

impact can save lives, for example. Active safety systems have the potential to not only reduce the number of accidents, but also can reduce the consequences of an accident if a collision cannot be avoided.

(b) **Anti-Lock Braking System** (ABS) is a closed-loop part of the braking system that monitors the speed at which wheels are rotating and rapidly modulates brake pressure when it detects that the wheel(s) are about to lock. This allows the motorcycle to stop with no or minimal skidding.

(c) **Categories (of vehicles)**

(c.1) **Category L1:** Two-wheeled vehicles with a maximum design speed of not more than 50 km/h and an engine capacity not exceeding 50 cm³.

(c.2) **Category L2:** Three-wheeled vehicles with a maximum design speed of not more than 50 km/h and an engine capacity not exceeding 50 cm³.

(c.3) **Category L3:** Two-wheeled vehicles without a sidecar, capable of speeds exceeding 50 km/h or with an engine capacity exceeding 50 cm³.

(c.4) **Category M1:** Motor vehicles used for the carriage of passengers, comprising not more than eight seats in addition to the driver's seat, with a Gross Vehicle Weight (GVW) up to 5,000 kg.

(c.5) **Category N1:** Motor vehicles used for the carriage of goods and having a GVW not exceeding 3,500kg.

(d) **Combined braking system** (CBS) has the ability to control both the front and rear brakes simultaneously and proportionally. In other words, the rider can apply both the front and rear brakes using a single brake lever. This allows the rider to come to a stop more quickly and safely. Additionally, it reduces the risk of skidding during sudden braking.

(e) **Electronic Stability Control** (ESC) - is an advanced safety feature designed to help drivers maintain control of their vehicles during extreme maneuvers or in slippery road conditions. It monitors the vehicle's speed, steering wheel angle and lateral acceleration. When it detects a potential loss of control, it automatically applies brakes to individual wheels and reduces engine power if necessary. This helps prevent the vehicle from skidding.

(f) **Skidding** - refers to the loss of traction between a vehicle's tires and the road surface, causing the vehicle to slide uncontrollably in a direction other than that intended by the driver.

(g) **Yaw rate** - refers to the rate at which a vehicle rotates around its vertical axis, typically measured in degrees per second. The yaw rate is an important factor in determining a vehicle's stability during turns or sudden maneuvers.

SECTION 5. Mandatory Active Vehicle Safety Technology – All motor vehicles under Categories L1, L2, and L3 (two-wheels) and Category M1 (vehicles comprising not more than eight seats in addition to the driver's seat with GVW up to 5000 kgs), or such other proper designation as classified by the Land Transportation Office (LTO) shall be equipped with Active Vehicle Safety Technology such as but not limited to Anti-Lock Braking System (ABS) for Categories L1, L2, and L3 (two-wheels) and Electronic Stability Control (ESC) for Category M1 and N1, in accordance with the United Nations Economic

Commission for Europe (UNECE) Regulations on Vehicle Classification. Failure to comply shall be penalized as provided in Section 15 of this Act.

SECTION 6. *Technical specifications.* – the following shall be required for safety technologies as provided for in this Act:

(a) All motorcycles in Categories L1, L2, and L3 must be equipped with an Anti-Lock Braking System (ABS). The ABS must meet the following specific requirements:

(a.1) ABS should activate during braking to prevent wheel lock, especially on slippery surfaces.

(a.2) Vehicles with ABS must be equipped with a yellow warning lamp to indicate a malfunction. This lamp should illuminate when the ignition is switched on and extinguish once the system check is completed. It must remain on if a malfunction is detected.

(a.3) Generally, the ABS cannot be deactivated by the rider. However, for vehicles designed for off-road use, ABS deactivation is allowed under specific conditions, such as when the vehicle is stationary and the deactivation is deliberate (e.g., via a switch or menu option).

(a.4) ABS must be integrated into the braking system in a way that ensures it can monitor wheel speed and modulate brake pressure to prevent wheel lock.

(b) All passenger cars in Category M1 must be equipped with an Electronic Stability Control (ESC). The ESC must meet the following specific requirements:

(b.1) The ESC system must be automatically activated under normal driving conditions and should provide automatic intervention without requiring the driver's input.

(b.2) The vehicle must have a malfunction indicator light (MIL) that illuminates if the ESC system is not functioning correctly.

(b.3) The ESC system must include specific components, such as sensors for yaw rate, steering angle, and wheel speed, as well as actuators to apply brake force to individual wheels.

SECTION 7. *Performance Criteria* - the following shall be used as performance criteria in the safety technologies as provided for in this Act:

(a) The following are the performance criteria for ABS:

(a.1) The ABS must ensure that the motorcycle meets specified stopping distances under various conditions, such as dry or wet surfaces, without wheel lock.

(a.2) The ABS should modulate braking to achieve a minimum deceleration rate, ensuring controlled braking without skidding or loss of vehicle control.

(a.3) The ABS should react within a defined time frame to changes in wheel slip, modulating brake pressure rapidly enough to prevent lock-up and maintain vehicle stability.

(b) The following are the performance criteria for ESC:

(b.1) The ESC must effectively reduce the vehicle's yaw rate when a skid is detected, maintaining control within specific thresholds.

(b.2) The ESC must manage lateral acceleration to prevent the vehicle from spinning out or sliding excessively during sudden maneuvers, such as emergency lane changes.

(b.3) The ESC must apply and modulate braking force correctly to individual wheels to maintain vehicle stability without exceeding a specified deceleration rate or causing unintended vehicle behavior.

SECTION 8. Role of the Department of Trade and Industry –The Department of Trade and Industry (DTI), through its Bureau of Philippine Standards (BPS), shall be tasked with the oversight and enforcement of product safety standards as mandated under this Act. The DTI shall undertake the following responsibilities:

- (a) Formulate, update, and enforce the safety standards for ABS and ESC as required for vehicles under Categories L1, L2, L3, and M1. These standards should be in alignment with the United Nations Economic Commission for Europe (UNECE) regulations and other relevant international standards to ensure the safety and quality of motor vehicles sold in the Philippines.
- (b) Establish a certification and compliance testing program to ensure that all motor vehicles manufactured, imported, and sold within the Philippines adhere to the mandatory safety standards prescribed by this Act. This program should include routine testing of ABS and ESC systems and random checks to ensure ongoing compliance.
- (c) Conduct regular market surveillance and compliance monitoring activities to detect non-compliant vehicles. These activities will include inspections, sample testing, and audits of vehicle manufacturers, importers, and retailers.

SECTION 9. Mandatory importation, production and sale of vehicles with Active Vehicle Safety Technology – Beginning 1 January 2027, all vehicles to be imported and sold in the Philippines in the categories stipulated in this Act shall already carry the required ABS and ESC systems; *Provided* that all importers, manufacturers, and retailers, which could not comply on said date shall be required to request for extension of such deadline until 1 January 2028 subject to a corresponding extension fee to be determined by and paid through the Bureau of Philippine Standards (BPS) of the Department of Trade and Industry (DTI).

SECTION 10. Incentives for early compliance on the importation, production and sale of vehicles with ABS and ESC – Beginning 1 January 2026, all vehicles to be imported and sold, in the Philippines in the categories stipulated in this Act, which shall already carry the required ABS and ESC systems ahead of the deadline under Section 9 shall be given incentives such as but not limited to tax credits for the period prior to the deadline stipulated therein; *Provided* that all importers, manufacturers, and retailer/distributors, which could comply on an earlier date shall be required to request for incentive subject to a corresponding application fee in the amount to be determined by and paid through the Bureau of Philippine Standards (BPS) of the Department of Trade and Industry (DTI).

139 **SECTION 11. *Incentives for individual owners for early compliance on the use and vehicles with***
140 ***EPS*** – Beginning 1 January 2026, individual owners (of vehicles in the categories stipulated in Section 4)
141 who shall decide to register their vehicles with ABS and ESC systems ahead of the deadline under Section
142 9 shall be given incentives such as but not limited to at least 40% discount in LTO registration fee for the
143 period prior to the deadline stipulated in Section 6; *Provided* that the vehicle owner will submit a Certificate
144 of No Pending Apprehension.

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146 **SECTION 12. *Mandatory Vehicle Inspection of the Land Transportation Office*** – Beginning 1
147 January 2028, vehicles falling under the categories enumerated in this Act shall be subject to mandatory
148 inspection by the LTO through the existing registration system. The LTO, through the registration and
149 homologation systems, shall ensure that the vehicles are properly equipped or retrofitted with ABS and ESC
150 and allowed for use on public roads. All other vehicles (under the categories enumerated in this Act) procured
151 before 1 January 2027 shall not be covered by the mandatory features as prescribed in this Act; *Provided*
152 that they shall continue to be covered by existing rules and regulations on vehicle registration, safety, and
153 roadworthiness.

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155 **SECTION 13. *Record of Preventive Maintenance of Vehicles*** – Records of the maintenance of the
156 vehicles as covered in this Act and certification of inspection from the LTO as part of the registration process
157 shall always be kept ready for investigation. As seen necessary for the investigation, these shall be
158 surrendered, unless agreed otherwise, to authorized government personnel, legal bodies, and able courts that
159 are tasked to investigate and prosecute criminal activities and civil offenses.

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161 **SECTION 14. *Education and Practical Learning on the Preventive Maintenance of Vehicles*** –
162 The Department of Transportation (DOTr), Department of Education (DepEd), DTI, Department of Health
163 (DOH), Department of Public Works and Highways (DPWH), Department of the Interior and Local
164 Government (DILG), Commission on Higher Education (CHED), and LTO shall collaborate to develop and
165 implement comprehensive education and capacity-building programs on the importance and use of Active
166 Vehicle Safety Systems, such as ABS and ESC. These programs shall be integrated into various platforms,
167 including school curricula through the DepEd and the CHED, public health campaigns by the DOH,
168 infrastructure safety programs by the DPWH, and local road safety initiatives by the DILG and LGUs, among
169 others.

170 Local Government Units (LGUs), driving schools, and academic institutions shall also play a key
171 role in promoting awareness and understanding of these safety systems. Educational and practical learning
172 opportunities shall be provided through a variety of means, including but not limited to simulations,
173 seminars, workshops, and short courses.

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175 The private sector including motor vehicle manufacturers, importers, dealers, retailers, the different
176 chambers of commerce, and other associations, shall be encouraged by the DTI to implement information
177 dissemination and public outreach campaigns on responsible driving behavior and vehicle safety.

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SECTION 15. *Penal Provisions* – Any person, owner, representative, of companies engaged in the importation, manufacturing, and sale of the vehicles enumerated in this Act, whose vehicle has been involved in accidents and traffic disturbances due to faulty brake systems or any other mechanical malfunction/failure shall be ultimately liable therefor. Violators shall pay a fine of five hundred thousand pesos (P500,000) or, if proper, have their business permits and licenses suspended or revoked by the pertinent government agency, or both, upon the discretion of the court.

SECTION 16. *Fund Sources*. – The amounts necessary to implement this Act shall be included in the annual General Appropriations Act.

SECTION 17. *Implementing Rules and Regulations* – Within ninety (90) days from the effectivity of this Act, the Land Transportation Office (LTO), the Department of Transportation (DOTr), and the Land Transportation Franchising and Regulatory Board (LTFRB) in consultation with the appropriate government agencies and other stakeholders shall promulgate the necessary rules and regulations to implement this Act.

SECTION 18. *Separability Clause* – If any provision or part of this Act be declared unconstitutional or invalid, such shall not affect the provisions otherwise valid and legal.

SECTION 19. *Repealing Clause* – All other laws, presidential decrees, executive orders, resolutions, and other administrative issuances or part thereof which are inconsistent or in conflict with this Act are hereby repealed, amended, or modified accordingly.

SECTION 20. *Effectivity* – This Act shall take effect after fifteen (15) days following its publication in the Official Gazette or any newspaper of general circulation in the Philippines.

Approved,