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**AfroSAFE: Safe System for radical improvement of road safety
in low- and middle-income African countries**

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Deliverable 4.2:
**Safe Vehicles: Report and inventory of existing vehicle
safety technical control and inspection procedures,
including suggestions for updates**

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Chalmers Industriteknik, Sweden

Document information

Author(s): Enoch F Sam (University of Education Winneba, *Ghana*)
Jaqueline Masaki (University of Dar es Salaam, *Tanzania*)
Salma Makuti (University of Dar es Salaam, *Tanzania*)
Alex Lubida (University of Dar es Salaam, *Tanzania*)
Siya Rimoy (University of Dar es Salaam, *Tanzania*)
Daniel Mwamba (Zambia Road Safety Trust, *Zambia*)
Thomas Osman Miyoba (Zambia Road Safety Trust, *Zambia*)
John-Fredrik Ehrenhofer Grönvall (Chalmers Industriteknik, *Sweden*)
Karolina Kazmierczak (Chalmers Industriteknik, *Sweden*)
Hafdis Jonsdottir (Chalmers Industriteknik, *Sweden*)
Mårten Larsson (Autoliv, *Sweden*)
Tejas Chandran (Autoliv, *Sweden*)
Mats Rosenquist (Volvo Group, *Sweden*)

Reviewer: Aliaksei Laureshyn (Lund University)

Project Coordinator

Aliaksei Laureshyn
Department of Technology and Society
Faculty of Engineering, LTH
Lund University
Box 118
221 00 Lund, Sweden
Phone: +46 46 222 91 31
Email: aliaksei.laureshyn@tft.lth.se
Website: <https://www.ictct.net/afrosafe/project>

WP4 leader:

John-Fredrik Ehrenhofer Grönvall
Chalmers Industriteknik
Göteborg, Sweden
Email: john-fredrik.gronvall@chalmers.se
Phone: +46 (0)768 504 107

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Glossary

ADAS	Advanced driver-assistance systems
AfroSAFE	EC funded project: “Safe System for radical improvement of road safety in low- and middle-income African countries”
ARS	African Regulation Standards
CoR	Certificates of Roadworthiness
DVLA	Driver and Vehicle Licensing Authority (Ghana)
ERB	Energy Regulation Board
EU	European Union
GRA	Ghana Revenue Authority
GSA	Ghana Standards Authority
LATRA	Land transport Regulatory Authority (Tanzania)
UNMTTD	Motor Traffic and Transport Department (Ghana)
MVIC	Motor Vehicle Inspection Centre
NIT	National Institute of Transport (Tanzania)
NRSC	National Road Safety Council (Tanzania)
PSV	Public Service Vehicles (Zambia)
PTI	Periodic Technical Inspection
PTW	Powered Two Wheelers
RTSA	Road Transport and Safety Agency (Zambia)
RWI	Roadworthiness Inspection (Zambia)
TBS	Tanzania Bureau of Standards
TPFCS	Tanzania Police Force Corporation Sole
TPMS	Tyre Pressure Monitoring System
TRA	Tanzania Revenue Authority
UN	United Nations
VIN	Vehicle Identification Number
WHO	World Health Organization
ZCSA	Zambia Compulsory Standards Agency

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Executive summary

There is an urgent need to significantly improve the crash roadworthiness of imported vehicles to the African countries from the exporting countries. This deliverable builds on previous deliverable with suggestions for improvements on Vehicle Standards and regulations.

This Task has reviewed the existing standards and regulations concerning vehicle periodic technical inspection (PTI) of new and used vehicles in Sweden and the three African countries – Ghana, Tanzania, and Zambia – related to passenger cars, trucks, and motorized two-wheelers.

The review observed that Ghana implements PTI standards and procedures which are enforced by Driver and Vehicle Licensing Authority (DVLA). However, Ghana should fully digitise and automate PTI nationwide to reduce human discretion and corruption, enhance roadside vehicle inspections to weed out non-compliant vehicles from the road and in the long run, prioritise public-private partnership arrangements to establish more testing centres in remote and underserved areas.

Tanzania conducts PTI through the Traffic Police, the Tanzania Bureau of Standards (TBS) and other governmental partners, but faces challenges such as limited inspection coverage, outdated technical standards, weak enforcement, and lack of centralized data systems. To address these gaps, current efforts focus on expanding inspection centres, upgrading testing facilities, strengthening enforcement, and increasing public awareness to improve vehicle safety compliance nationwide.

Zambia has made steps in institutionalizing periodic technical inspections through the enforcement of the ZS 560 standard and the Road Traffic Act No. 11 of 2002, led by the Road Transport and Safety Agency (RTSA). However, challenges such as the limited number of inspection centres, unclear procedures for non-commercial vehicles, and inconsistent roadside inspections highlight the need for a more structured and regularly enforced inspection framework.

After considering the local African circumstances, this report recommends potential updates to vehicle technical inspections. The report concludes with proposals to enhance national guidelines regarding periodical vehicle technical inspections.

There is also the need to develop clear and comprehensive vehicle scrappage policies in these countries that outlines the criteria for identifying end-of-life vehicles. Vehicles with critical safety and environmental risks which cannot be rectified should be decommissioned as soon as possible. This process will help phase out unsafe and polluting vehicles from the African roads.

1 Introduction

According to the United Nations Environment Programme, between 2015 and 2020, over 23 million used vehicles were exported from the European Union (EU) to Africa (United Nations Economic Commission for Europe, 2022). A related study by the Ministry of Infrastructure and Water Management (2020) revealed that more than 80% of these exported vehicles did not meet the EU's roadworthiness standards.

As highlighted in AfroSAFE Deliverable D4.1 (2024), Ghana, Tanzania, and Zambia—the three focus countries of the AfroSAFE project—face significant challenges in regulating vehicle imports. Weak import regulations allow unsafe vehicles to enter and operate on African roads. In fact, many such vehicles are already in circulation, posing serious safety risks.

Periodic Technical Inspection (PTI) is a key mechanism for ensuring that only vehicles meeting minimum safety and environmental standards remain in use. Faulty brakes, malfunctioning lights, or defective seatbelts—common issues in substandard vehicles—can significantly increase the likelihood and severity of road crashes.

In Europe, PTI is a well-established part of a vehicle's lifecycle. Directive 2014/45/EU mandates that vehicles undergo their first inspection four years after registration, followed by biennial checks. However, member states may impose stricter requirements. For example, Sweden mandates inspections every 14 months, while France requires a PTI certificate less than six months old at the time of vehicle sale.

PTI has a direct impact on safety. For example, research by Elvik (2023) found that a 20% increase in PTIs for heavy goods vehicles corresponded with a 4–6% reduction in crashes. Similarly, Figure 1 below presents statistics on the number of passenger cars and road fatalities in Sweden (Hibe, 2003), along with developments following key policy interventions such as the introduction of PTIs and mandatory seat belt usage.

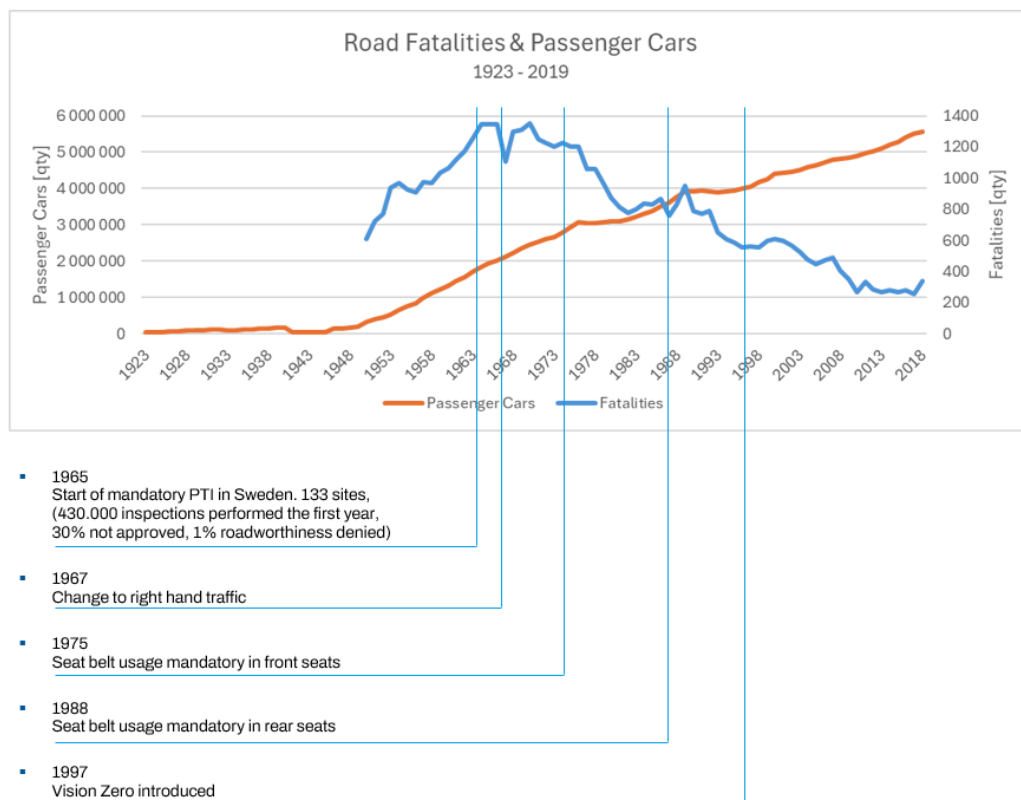


Figure 1. Road fatalities and passenger cars. Adapted from Hibe (2003)

This deliverable, part of the European-funded research project AfroSAFE, presents a review of existing systems for periodic technical inspections and offers recommendations tailored to African countries, based on international best practices. Given the generally poor technical condition of the vehicle fleet in Africa (United Nations Economic Commission for Europe, 2022), overly strict regulations could render a large portion of it illegal, leading to various negative consequences such as public resistance, corruption, and the continued use of uninspected vehicles.

Therefore, the proposed test procedures should be practical and appropriate for the local context, prioritizing the most safety-critical systems (e.g., brakes, seat belts). The scope of this deliverable covers various vehicle types, including motorbikes, cars, and trucks, and considers constraints in potential inspection settings—such as the time available for inspections, the skill level of inspectors, and the equipment available at inspection stations.

1.1 Aim

This report will present the investigation of existing systems for periodic technical inspections (PTI) and suggest updates for the three African countries – Ghana, Tanzania, and Zambia. Since the general technical conditions of the fleet is low, too strict regulations could render large share of vehicles not roadworthy with various negative consequences (public resistance, corruption, continued used of uninspected vehicles, etc.). The scope includes different vehicle types—motorbikes, cars and trucks. It needs to account for the constraints of potential inspection settings, such as time with the vehicle, skill set of the inspectors, equipment available at inspection stations, etc.

The deliverable proposes updates to improve the procedures in these three African countries based on the gap analysis to align with international best practices. For instance, the type approval status of a seat belt is shown on its label and with familiarity with such labels it is possible to discern if the belt should be used only in conjunction with other elements of a restraint system (e.g. an airbag) or by itself. This type of insight from the type approval process is deliberate to aid vehicle inspections at various stages of a vehicle's life, but may not be widely understood without prior experience with the topic.

1.2 Method

The report was based on inventory of existing vehicle technical control and inspection procedures. The project reviewed the existing procedures in three African countries – Ghana, Tanzania, and Zambia – related to passenger cars, trucks, and motorized two-wheelers. The report was prepared through several steps:

1. Desk research of existing regulations
2. Site visits to the inspection centres
3. Interview of key stakeholders involved in the inspections process and regulations
4. Site visits to road side inspection check-points
5. Gap analysis in the three African countries

The three countries have already adopted national procedures on Periodic Technical Inspections and this report presents how these controls compare to global procedures.

2 Existing standards and regulations

This chapter presents an overview of the existing standards and regulations in Ghana, Tanzania, and Zambia for powered two wheelers, passenger cars, and commercial vehicles.

International

There are two major frameworks of regulations when considering safe vehicles. One of them is the UN agreements and the other is the United States framework with the federal motor vehicles safety standards (US FMVSS). This applies to regulations supporting type approval of new vehicles. When it comes to Periodical Technical Inspection or Vehicle Inspection, there is no counterpart in America. The different states are governing the inspections individually and very different.

The UN 1997 agreement is based on four rules. Of which, rule number two (Uniform provision for periodical technical inspection of wheeled vehicles with regard to their roadworthiness) deals with the safety specified in 8 different items or functional areas. Passive safety (safety belts etc.) is part of item #7. On item level, the regulation is very specific and includes evaluation criteria and methods.

Ghana

In Ghana, the **GS: 806:2018 Periodic Inspection and Test Manual** provides the minimum requirements and testing methods for periodic inspection of small and light motor vehicles. It thus lays down the essential requirements that motor vehicles must conform to.

In Ghana, the Driver and Vehicle Licensing Authority (DVLA) is responsible for the periodic technical inspection of vehicles and, by extension, ensuring safety on Ghanaian roads. The DVLA Act 1999 (ACT 569) specifies the function of the authority to include:

- i. Inspect, test and register motor vehicles
- ii. Issue vehicle registration certificates
- iii. Issue vehicle examination certificates
- iv. License and regulate private garages to undertake vehicle testing.

In addition, the Road Traffic Regulation, 2012 (Legislative Instrument 2180) Section 6(3) prescribes that: “The Licensing authority may, for the purpose of vehicle examination, designate a private motor vehicle testing station where motor vehicle examination may be conducted.”

Tanzania

In Tanzania, the **TZS 698:2012 Road Vehicles – Code of Practice for Inspection and Testing of Used Motor Vehicles for Roadworthiness** establishes the minimum standards and testing procedures for both roadworthiness and periodic technical inspection of motor vehicles. In addition, through the Tanzania Bureau of Standards (TBS), the country has developed the following standards;

- i. **TZS 1231 (Part 1): 2010 – Motor cycles for general use – Part 1: Specification for two wheeled motorcycles, and**
- ii. **TZS 1231 (Part 2): 2023 – Motor vehicles — Motorcycles for general use — Part 2: Specifications for three wheeled motorcycles**

These standards are used for technical inspection of powered two- and three- wheeled motorcycles. The Tanzania Police Force – Traffic Division is responsible for overseeing and monitoring the inspection of vehicles ensuring they adhere to the legal requirements outlined in The Road Traffic Act (Cap. 168) as well as safety and regulatory standards.

Zambia

The **Zambian Standard ZS 560**, made compulsory in 2006, provides the technical guidelines for periodic vehicle inspections in Zambia. It sets clear safety and operational criteria covering brakes,

steering, lights, tyres, emissions, and structural integrity-that vehicles must meet to be deemed roadworthy. This standard underpins the Road Transport and Safety Agency's (RTSA) inspection processes, ensuring consistent and thorough checks that help reduce accidents caused by mechanical faults and enhance public safety.

2.1 Review of Powered Two-Wheelers Regulations (PTW)

The share of PTW in total road traffic is higher in developing countries than in developed countries. In Africa and other developing countries, PTWs are increasingly becoming popular for personal and public transport and service delivery due to their ease of use, affordability, and manoeuvrability in traffic. In some African countries, PTWs dominate the vehicle population. Unfortunately, as these vehicles become increasingly popular in low- and middle-income countries, so does the proportion of traffic incidents attribute to them (Bezabeh et al., 2022; WHO, 2023; Chouhan et al., 2024).

Table 2.1 below specifies the inventory of requirements for various safety-critical vehicle components (e.g., lights, seat belt, tyres, etc.) for PTWs in Ghana, Tanzania and Zambia as well as in Sweden (UN 1997 agreement does not cover PTW separately).

Table 2.1: Inventory of regulations for PTW

Safety related Functions / Components	Criteria included in PTI			
	Sweden (TSFS 2017:54)	Ghana (GS: 806:2005; 2018)	Tanzania (1231 (Part 1):2010; TZS 1231 (Part 2):2023)	Zambia
Lights	Appendix 2, (7.1.3, Headlights for high and low beam) - Function (beam shape, direction, brightness) - Lamp unit integrity - Function of high beam indicator	- Undamaged and functional - Brightness (Low beam of not more than 50 meters; high beam between 50 and 100 meters)	- Fully operational, correctly aligned. - Headlamp (capable of emitting main beam and dipped beam), - Brake lights in red, indicating lights in orange visible from the front and rear, reflector (s) and tail lamp.	- Functionality Check, - Steady Illumination, - High Beam Operation, - Turn Signal Operation, - Brake Light Response, - Damage Inspection, - Headlamp Standards, - Colour Compliance, - Reflector Check, - Warning System Check
Brakes	Appendix 2, (4, Brake system) - Function of retardation - Function, brake distance - Function, brake force balance - Function, system ABS	Equal intensity on the wheels where the wheels are symmetrically placed in relation to the longitudinal centreline	- Immediate response, even pressure. - Braking force of main brake system, - Braking force of parking brake system, - Brake pedal, - Parking brake, - Brake rods and cables,	- Service brake system functioning and independence, - Parking brake system functioning and independence, - Brake performance (roller brake test or decelerometer test), - Brake imbalance (service and parking),

Safety related Functions / Components	Criteria included in PTI			
	Sweden (TSFS 2017:54)	Ghana (GS: 806:2005; 2018)	Tanzania (1231 (Part 1):2010; TZS 1231 (Part 2):2023)	Zambia
			• Brake hose and piping, • Air brake, Braking servo unit. • Riders should always be able to operate the brake pedal without lifting their foot from the footrest.	• Brake pipes and hoses condition and mounting, • Brake master cylinder, servo, valves, and connections condition and mounting, • Service brake pedal condition and anti-slip provisions, • Brake linings condition, • Brake system wiring condition and routing, • Brake drum condition
Tyres	Appendix 2, (2.1.1 Tyres) • Free from damages • Tread depth • Classification, drivability	• Undamaged	• Tread pattern not excessively worn or damaged, tyres free from excessive wear. • Each tyre and rim shall provide enough strength to support the machine when it is fully loaded.	• Tyre size, speed, and loading designation, • Tyre period of manufacture (DOT code), • Tyre tread wear indicator and depth, • Tyre condition (cracks, separation, abnormal wear, deformation), • Tyre's general condition and compatibility, • Tyre serial number and date of manufacture, • Wheels condition and compatibility, • Wheel nuts and studs' condition and tightness

2.2 Passenger Cars

Table 2.2 specifies the inventory of requirements for various safety-critical vehicle components (e.g., lights, seat belt, tyres, etc.) for passenger cars in Ghana, Tanzania and Zambia, as well as based on UN 1997 and in Sweden.

Table 2.2 Inventory of regulations for passenger cars

Safety related Functions/Components	Criteria included in PTI				
	UN 1997, Rule No.2	Sweden TSFS 2017:54	Ghana (GS: 806:2005; 2018)	Tanzania (TZS 698:2012; TZS 1231 (Part 2):2023)	Zambia
Seat belt, Anchorage point	7.1.1, (Security of safety belts/buckles mounting) Integrity	Appendix 1, 6.2.1, (Safety belt) Integrity	Suitability/tightness	All seats shall be fitted with the safety belts of at least two - point type.	
Seat belt, Retractor	7.1.2, (Condition of safety belts/buckles) - Present - not missing, - Function - not damaged, - Acc. to spec	Appendix 1, 6.2.1.1, (Safety belt) 6.2.1.3, (Safety belt retractor) - Present - not missing, - Function - not damaged	Functional (good working condition)/Automatic lock	Missing in the standard	Reject if any seat belt assembly does not function as designed (retractor)
Seat belt, Buckle	7.1.2, (Condition of safety belts/buckles) - Function, - Not damaged	Appendix 1, 6.2.1.2, (Safety belt buckle) - Function, - Not damaged	Functional (good working condition)	Missing in the standard	Reject if any seat belt assembly does not function as designed (buckle)
Seat belt, Load limiter	7.1.3, (Safety belt load limiter) - Present - not missing, - Function	Function*	Functional	Missing in the standard	
Seat belt, Pre-tensioners	7.1.4, (Safety belt Pre-tensioners) - Present - not missing, - function	Appendix 1, 6.2.1.4, (Belt tensioner) Function*	Functional	Missing in the standard	
Airbag	7.1.5, (Airbag) - Present - not missing, - Function,	Appendix 1, 6.2.3.12, (SRS-indication) Function**	Functional (not prioritize though)	Missing in the standard	Reject if any airbag is missing and if any airbag cover has been painted or repaired

Safety related Functions/Components	Criteria included in PTI				
	UN 1997, Rule No.2	Sweden TSFS 2017:54	Ghana (GS: 806:2005; 2018)	Tanzania (TZS 698:2012; TZS 1231 (Part 2):2023)	Zambia
	Operative				
Airbag, Warning label	N/A	Appendix 1, 6.2.3.8, (Airbag warning sign) Present - not missing		Missing in the standard	
Tyres	5.2.3 (Tyres) - Tyre specification matching the vehicle - Clearance for the tyre - Integrity	Appendix 1, 2.1.1, (Tyres) - Free from damages - Tread depth - Classification, drivability	- Manufactured for use in hot and normal weather (temperature class A or B). - Suited to withstand the maximum permissible loads of the motor vehicle to which they are fitted. - Minimum tread depth of not less than 1.6 millimetres and not have a break in its fabric	Tread pattern not excessively worn or damaged, tyres free from excessive wear	- Tyre size, speed, and loading designation, - Tyre period of manufacture (DOT code), - Tyre tread wear indicator and depth, - Tyre condition (cracks, separation, abnormal wear, deformation), - Tyre's general condition and compatibility, - Tyre serial number and date of manufacture, - Wheels condition and compatibility, - Wheel nuts and studs condition and tightness, - Spare wheel & carrier (External Carrier only)

Safety related Functions/Components	Criteria included in PTI				
	UN 1997, Rule No.2	Sweden TSFS 2017:54	Ghana (GS: 806:2005; 2018)	Tanzania (TZS 698:2012; TZS 1231 (Part 2):2023)	Zambia
Lights	4.1.1 Condition & operation 4.1.2 Alignment 4.1.3 Switching 4.1.4 Compliance w requirements 4.1.5 Levelling devices 4.1.6 Headlamp cleaning device	Appendix 1, 7.1.3, (Headlights for high and low beam) - Function (beam shape, direction, brightness) - Lamp unit integrity - Function of high beam indicator	- Undamaged and functional - Brightness (Low beam of not more than 50 meters; high beam between 50 and 100 meters)	- Fully operational, correctly aligned. - Brightness of headlamps and orientation of main optical axis; - Luminous intensity, Orientation of main optical axis. - Lighting devices and reflectors; - Colour of lighting, - Brake lights, - Number plate lights, - Parking lights, - Reverse lights, - Indicating device, - Indicator lights, - Reflectors, function and damage. - Warning system; - Warning lights, - Hazard warning flashing lights	- Functionality Check, - Steady Illumination, - High Beam Operation, - Turn Signal Operation, - Brake Light Response, - Damage Inspection, - Headlamp Standards, - Colour Compliance, - Reflector Check, - Warning System Check
Brakes	- Mechanical condition & operation - Service braking performance & efficiency - Secondary (emergency) braking performance &	Appendix 1, 4 (Brake system) - Function of retardation - Function, brake distance - Function, brake force balance - Function, system ABS	- Functional (in good working order and condition whenever the motor vehicle to which it is fitted is operated on a public road - Functional parking brakes	- Immediate response, even pressure. - Braking force of main brake system, Braking force of parking brake system, - Brake pedal, Parking brake, Brake rods and	- Service brake system functioning and independence, - Parking brake system functioning and independence,

Safety related Functions/Components	Criteria included in PTI				
	UN 1997, Rule No.2	Sweden TSFS 2017:54	Ghana (GS: 806:2005; 2018)	Tanzania (TZS 698:2012; TZS 1231 (Part 2):2023)	Zambia
	efficiency (if met by separate system) • Parking braking performance & efficiency • Endurance braking system performance • Anti-lock braking system • Electronic brake system • Brake fluid		• Braking efficiency and per axle (threshold 50%)	cables, Brake hose and piping, Air brake, Braking servo unit	• Brake performance (roller brake test or decelerometer test), • Brake imbalance (service and parking), Brake pipes and hoses condition and mounting, • Brake master cylinder, servo, valves, and connections condition and mounting, • Service brake pedal condition and anti-slip provisions, • Brake linings condition, • Brake system wiring condition and routing, • Brake drum condition

For details, see appendix 9a.

*Function can confirm that the function/component is present. But with only electrical diagnosis tool for evaluation, how know if vehicle is expected to have the feature?

**Above + how to know how many airbags are expected in the vehicle? – “tamper detection”

2.3 Commercial Vehicles

Table 2.3. specifies the inventory of requirements for various safety-critical vehicle components (e.g., lights, seat belt, tyres, etc.) for commercial vehicles in Ghana, Tanzania and Zambia as well as based on UN 1997 and in Sweden.

Table 2.3: Inventory of regulations for commercial vehicles

Safety related Functions/ Components	Criteria included in PTI				
	UN 1997	Sweden TSFS 2017:54	Ghana (GS: 806:2005, 2018)	Tanzania (TZS 698:2012)	Zambia
Tyres	5. For 2.3 (Tyres) • Tyre specification matching the vehicle. • Clearance for the tyre • Integrity • Winter tyres, studded tyres mounting on same axle. • Load capacity class. • TPMS (Tyre Pressure Monitoring System) chec	Appendix 1, 2.1.1, (Tyres) • Minimum thread depth 5mm. • No damage wear area or sides. • Winter tyres, studded tyres mounting on same axle. • Load capacity class. • TPMS check	• Manufactured for use in hot and normal weather (temperature class A or B). • Suited to withstand the maximum permissible loads of the motor vehicle to which they are fitted. • Minimum tread depth of not less than 1.6 millimetres and not have a break in its fabric	• Tread pattern not excessively worn or damaged, • Tyres free from excessive wear	• Tyre size, speed, and loading designation, • Tyre period of manufacture (DOT code), • Tyre tread wear indicator and depth, • Tyre condition (cracks, separation, abnormal wear, deformation), • Tyre's general condition and compatibility, • Tyre serial number and date of manufacture, • Wheels condition and compatibility, Wheel nuts and studs' condition and tightness, • Spare wheel & carrier (External Carrier only)
Lights	• Condition & operation • Alignment • Switching • Compliance w requirements • Levelling devices	Appendix 1, 7.1.3, (Headlights for high and low beam) • Function (beam shape, direction, brightness) • Lamp unit integrity	• Undamaged and functional • Brightness (Low beam of not more than 50 meters; high beam between 50 and 100 meters)	• Fully operational, correctly aligned. • Brightness of headlamps and orientation of main optical axis; • Luminous intensity,	• Functionality Check, • Steady Illumination, • High Beam Operation, • Turn Signal Operation, • Brake Light Response, • Damage Inspection,

Safety related Functions/ Components	Criteria included in PTI				
	UN 1997	Sweden TSFS 2017:54	Ghana (GS: 806:2005, 2018)	Tanzania (TZS 698:2012)	Zambia
	Headlamp cleaning device	- Function of high beam indicator - Reverse light function - Work area light function - Position lights, reflectors tractor, trailer		- Orientation of main optical axis. - Lighting devices and reflectors; - Colour of lighting, - Brake lights, - Number plate lights, - Parking lights, - Reverse lights, - Indicating device, - Indicator lights, - Reflectors, function and damage. - Warning system; - Warning lights, - Hazard warning flashing lights	- Headlamp Standards, - Colour Compliance, - Reflector Check, - Warning System Check
Brakes	- Mechanical condition & operation - Service braking performance & efficiency - Secondary (emergency) braking performance & efficiency (if met by separate system) - Parking braking performance & efficiency - Endurance braking system performance	Appendix 1, 4 (Brake system) - Function of retardation - Function, brake distance - Function, brake force balance - Function, system ABS - Trailer brake	- Functional (in good working order and condition whenever the motor vehicle to which it is fitted is operated on a public road - Functional parking brakes - Braking efficiency and per axle (threshold 50%)	- Immediate response, even pressure. - Braking force of main brake system, - Braking force of parking brake system, - Brake pedal, - Parking brake, - Brake rods and cables, - Brake hose and piping, - Air brake, - Braking servo unit	- Service brake system functioning and independence, - Parking brake system functioning and independence, - Brake performance (roller brake test or decelerometer test), - Brake imbalance (service and parking), - Brake pipes and hoses condition and mounting,

Deliverable 4.2: Vehicle safety technical control and inspection procedures

Safety related Functions/ Components	Criteria included in PTI				
	UN 1997	Sweden TSFS 2017:54	Ghana (GS: 806:2005, 2018)	Tanzania (TZS 698:2012)	Zambia
	• Anti-lock braking system • Electronic brake system • Brake fluid / Air brake system				• Brake master cylinder, servo, valves, and connections condition and mounting, • Service brake pedal condition and anti-slip provisions, • Brake linings condition, • Brake system wiring condition and routing, • Brake drum condition.
Seat belt	• See table 2.2	• Function, integrity, buckle	• Functional (good working condition)		Reject if: • Any manufacturer's seat belt is missing • Any seat belt assembly does not function as designed (buckles, retractors, etc.) • Any seat belt is frayed, torn or cut. • Any aftermarket seat belt does not display RTSA certified mark of approval. • Seat belt lamp does not function as designed. • Seat belt audible warning does not function as designed

3 Current situation of vehicle test centres

When PTI was introduced in Sweden in 1965, one of the critical topics was the capacity to perform the inspections. As shown in the Table 3.1 below, the capacity at both country level as well as the PTI centres in general has improved significantly. With the deregulation of performing the inspections, Sweden now has a capacity well over 100% but focus has changed to accessibility.

The official number of vehicle inspections done in Tanzania was not readily available in any public report. However, both Ghana and Zambia published these statistics - indicating that there is a significant deficit in capacity in the countries.

The theoretical maximum capacity for PTIs were calculated based on a few assumptions. We assume that each PTI centre has 3-4 lanes and can inspect about 25-30 vehicles per day over 300 working days a year. So, the theoretical maximum number of PTIs in the countries are calculated as;

Theoretical Maximum PTIs

$$= \text{Number of stations} \times \text{Number of lanes} \times \text{Number of vehicles per day} \\ \times \text{Number of working days in a year}$$

Table 3.1 Comparison of number of PTIs performed in each country

	Sweden 1965	Sweden 2023	Ghana	Tanzania	Zambia
Population		10 600 000	35 000 000	61,741,120 ¹	22 000 000
Vehicle fleet	2 000 000 ³	6 584 881 ⁸	3 314 215 ⁸	3 225 017 ⁸	899 186 ⁸
PTI's conducted theoretical		6 330 000	2 160 000	661 500	472 500
PTI conducted actual	430 000 ³	6 250 000 ⁴	1 437 521 ⁵	Unknown ⁶	177 474 ⁷
PTI Centers	133	211	72	55 ^c	32

¹Data from 2022 census survey (The United Republic of Tanzania (URT), Ministry of Finance and Planning, National Bureau of Statistics, & President's Office – Finance and Planning, Office of the Chief Government Statistician, Zanzibar)

²Data from The Citizen Reporter. (2023, May 4) and Land Transport Regulatory Authority (LATRA). (2023)

³Based on data from Bilprovningen (Hibe, 2003)

⁴Date based on Transportstyrelsen (2024)

⁵Data for 2022 from Ministry of Transport (2024) medium term expenditure framework (mtef) for 2024-2027

⁶No sources available to verify the statistics. The National Road Safety Policy (2009) published by the Ministry of Infrastructure Development points out that Tanzania has no reliable statistics on this.

⁷Data for 2023 from the Road Transport and Safety Agency's 2023 Road Transport and Safety Status Report.

⁸Data from the WHO Global Status Report on Road Safety 2023

Figure 2 shows a comparison of the number of PTIs performed per 1000 vehicles in each of these countries. The three African countries have a significant opportunity for improvement as is seen from the rise in Sweden between 1965 and 2023. Zambia's current tests per 1000 vehicles corresponds to the level in Sweden in 1965.

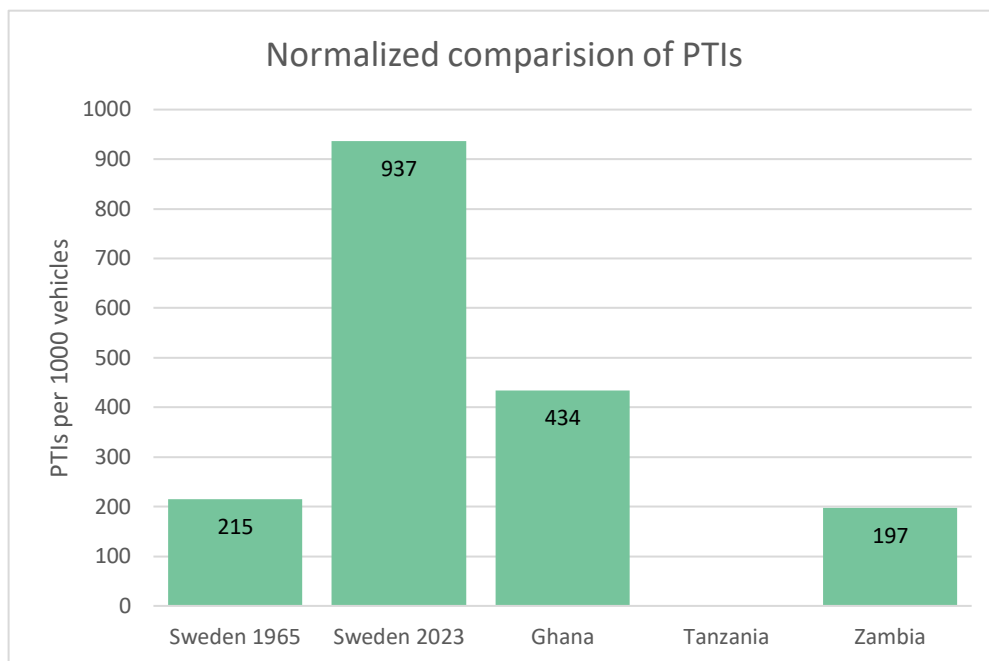


Figure 2 Number of PTIs per 1000 vehicles

3.1 Sweden

As of October 2024, there were 211 car inspection stations in Sweden. These include both private and corporate-owned centres:

- 68 stations (about 32%) are independently owned.
- 143 stations (about 68%) are part of larger brands such as:
 - Bilprovningen (Governmental company)
 - Opus
 - Besikta Bilprovning
 - DEKRA Automotive AB

Approximately 6.3 million vehicle inspections are conducted annually in Sweden. These inspections are mandatory and follow a structured schedule:

- First inspection: 36 months after the vehicle is first registered.
- Second inspection: 24 months after the first.
- Subsequent inspections: Every 14 months thereafter.

As of May 2025, the Swedish vehicle fleet is composed of approximately 7.25 million registered vehicles, broken down by type as follows:

- Passenger cars: ~5.3 million
- Light trucks and vans: ~700 000
- Heavy trucks: ~90 000
- Buses: ~15 000
- Motorcycles: ~350 000
- Mopeds (EU class only): ~120 000
- Tractors and off-road vehicles: ~400 000
- Trailers and semi-trailers: ~270 000

These figures are based on data from Transport Analysis (Trafikanalys) and Statistics Sweden (SCB), which regularly publish detailed breakdowns by region, ownership, and fuel type. In Sweden, all Periodic Technical inspections are done by certified inspectors.

Below are some examples of test being done in Swedish PTI-centres:



Figure 3: Test Hall for passenger car



Figure 4: Headlight test

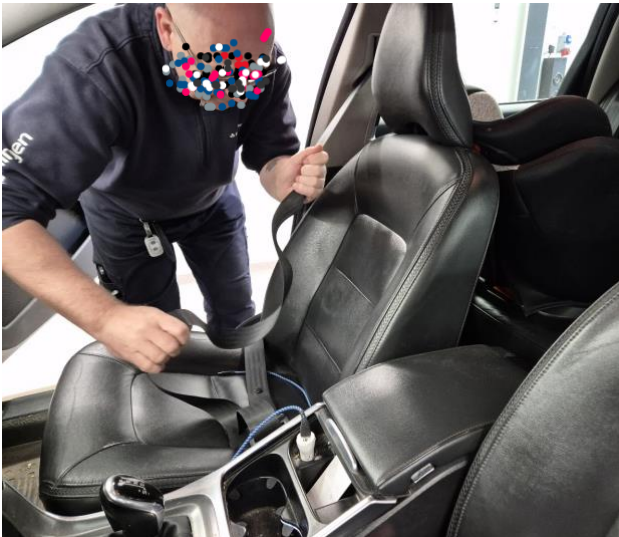


Figure 5: Inspection of seat belt



Figure 6: Brake test



Figure 7: Inspection for corrosion and body structure

Findings from interviews

On May 16, 2024, a detailed discussion was held regarding the evolution and current state of vehicle inspection services in Sweden, focusing on the transition from a monopoly to an open market. The conversation highlighted the historical context, where Bilprovningen held a monopoly on vehicle inspections until 2010, and the subsequent market liberalization that introduced competition and increased the number of inspection stations from approximately 200 to over 600.

Key points discussed included the regulatory framework governing vehicle inspections, emphasizing the role of the Swedish Transport Agency (Transportstyrelsen) in setting standards and the importance of accreditation by SWEDAC for both companies and individual inspectors. The discussion underscored the rigorous certification process for inspectors, which ensures high standards of competence and impartiality.

The conversation also addressed the challenges and benefits of market liberalization. While the increased competition has led to more inspection stations and improved accessibility for customers, it has also resulted in higher prices compared to the monopoly era. The participants noted that the expectation of lower prices due to competition was unrealistic given the need for all companies to be profitable without subsidies.

Technological advancements and their impact on vehicle inspections were also discussed. The current regulatory framework does not fully accommodate modern vehicle technologies such as advanced driver-assistance systems (ADAS), highlighting a gap between vehicle innovation and inspection standards. Efforts are underway at both the EU and national levels to update these regulations, but progress is slow.

The meeting concluded with a discussion on the integrity of the inspection process, including measures to prevent fraud and ensure the accuracy of inspections. The use of sophisticated systems to monitor inspection quality and the implementation of whistleblower mechanisms were highlighted as critical components in maintaining trust in the system.

This narrative provides a comprehensive overview of the key themes and insights from the discussion, offering valuable context for the AfroSAFE project as it explores best practices in vehicle inspection and regulatory frameworks.

3.2 Ghana

As of May 2024, there were 35 car inspection stations in Ghana.

Approximately 1.8 to 2 million vehicle inspections are conducted annually in Ghana.

As of May 2025, the Ghana vehicle fleet is composed of approximately 3.75 million registered vehicles, broken down by type as follows:

- Passenger cars: ~ 1.75 million
- Light trucks and vans: ~ 410 000
- Heavy trucks: ~ 240 000
- Buses: ~ 320 000
- Motorcycles (incl. Mopeds): ~1.0 million
- Tractors and off-road vehicles (incl. Trailers and Semi-trailers): ~ 30 000

Vehicle inspection in Ghana is conducted in a five-stage procedure. Prior to the official vehicle inspection and testing (**pre-inspection procedure**), the following processes are initiated: the customer presents the vehicle documents and pays the required roadworthy renewal fees, the vehicle data (vehicle type, model, vehicle identification number, cubic capacity, fuel used, gross weight, etc), plate number and document date, year of manufacture, and owner's particulars (e.g., name) are registered into the testing centre's database.

Vehicle inspection procedure

Stage 1: Above carriage check

At the above carriage check, the vehicle inspector conducts visual checks on the vehicle identity (number plate, engine and chassis number), lighting equipment (e.g., headlamps, stop lamps, front

and rear lamps, direction indicators, etc), bodywork, vehicle modification/accessories, road wheel and tyres, and other general items, such as seat belts, horn, windscreen, safety devices, etc. (see Figure 8 and Figure 9).

A vehicle may fail the test if the following are observed at this stage: Hydrocarbon content exceeding 1200 part per million (ppm) maximum for a continuous period of 5 seconds and Carbon content exceeding 3.5% for a continuous period of 5 seconds.



Figure 8: Visual and underneath inspection



Figure 9: Headlight testing

Stage 2: Exhaust emission test

At this stage, the inspector checks the vehicle' exhaust emission level. A probe is inserted into the exhaust pipe to collect gas sample for measurement. The emission test results may not form the basis for failure. The vehicle owner and drivers are advised on what to do to reduce the emission levels.

Stage 3: Alignment, suspension and brake performance tests

Three major tests are carried out at stage 3. First, the vehicle is checked for alignment of the wheels. The lateral movement of the front wheels is measured on a side-slip tester (see Figure 11). A reading of more than 14 is a reason for failure. Suspension and brake performance tests are then carried out with the Suspension tester to assess imbalance across the axle (see Figure 10). A reading of more than 30% between left hand (LH) and right hand (RH) is a reason for failure. The condition of the steering wheel is also inspected using the wheel shaker.



Figure 10: Roller brake testing



Figure 11: Sideslip and shaker testing for tyres and shock absorbers

Stage 4: Result review and validation

The test results from the various stages are then entered directly into the IT system; tests conducted by test equipment are transmitted automatically into the server, and those done manually are entered by the respective inspectors. Test data is then transmitted to the quality controllers for review and validation.

Stage 5: Certification

An inspection report is printed for a vehicle which has successfully undergone inspection (see Figure 12). A DVLA sticker (i.e., roadworthy sticker/certificate) (Figure 13) is then delivered to the customer. The record of the inspection and the next inspection due date are entered into the driver's vehicle inspection certificate validation book (Figure 14). Vehicles that fail the tests are issued with the inspection report indicating “Retest”.

Test Report
DEPARTMENT OF MOTOR VEHICLE AND SERVICES
VEHICLE INSPECTION CENTER
P.O. BOX WJ 460 ACCRA
TEL: 0204819704 0550586161 EMAIL: info@dmvsghana.com




Owner: ENOCH SAM		Contact: 0	
Address: BOX 25, WINNEBA		Date: 2024-09-18	
Plate No.: GX 1551 -21		Invoice No.:	
Chassis No.: 060012		Fuel Type: Petrol	
Year:		No of Axles: 2	
Make: TOYOTA		Capacity: 3500	
Vehicle Type: Motor Vehicles more than 2000cc		Lane: LEEWIN	
Vehicle Use: Private		Inspector:	

PASSED

Gas Tester	Idle speed				High Speed			
	Max	Min	Avg	Status	Max	Min	Avg	Status
HC								
CO								
Lambda								
CO2								
O2								
NO								

Smoke Tester	1st	2nd	3rd	4th	Avg	Status
N						
K						

Headlight	Left	Status	Right	Status
High Beam Light Intensity				

Sideslip	Measurement	Status	Standard
Front Axle	10.27		-13mm-13mm

SeP.24

Suspension	Front				Rear			
	Left	Right	Dif	Status	Left	Right	Dif	Status
Suspension Efficiency	80	78	2	v	84	82	2	v

Brake Test	1st Axle		2nd Axle		3rd Axle		Standard
	Left	Right	Left	Right	Left	Right	
Brake Force (N)	3178	2866	1612	1597			
Brake Force Difference (%)	10		1				≤35%
Parking Brake Efficiency (%)			35				≥15%
Total Load (KG)			2102				
Total Brake Efficiency (%)			67				≥50%
Total Hand Brake Efficiency (%)			23				≥15%

Visual	
--------	--

RESULT OF INSPECTION



CS S with CamScanner

PASSED

Sign & Stamp



Figure 12: A sample vehicle inspection report



Figure 13: A sample roadworthy sticker issued after successful vehicle inspection



The interviews were conducted with the officials from the DVLA (headquarters), Elie Company Limited (ECL) (a DVLA-accredited local vehicle inspection company) and traffic police (national and local).

Inspection or testing stations are expected to be 5km apart. There are 35 private testing stations or inspection centres nationwide (at the time of the interview), with about half the number located in Accra, the capital city alone. To improve the coverage, the DVLA is focusing on encouraging private sector participation in areas of need.

All vehicles in the country are subjected to Legislative Instrument (L.I.) 2180 of the Road Traffic Regulation, 2012. The PTI covers the following vehicle safety equipment: seat belt, brakes, airbags, tyres, suspension, vehicle alignment, lights, emission test and body/construction of the vehicle (i.e., rust or tear and wear of the vehicle). Further, the hinges, locks, latches, steering wheel, dashboard indicators, windscreen (for cracks), wiper blades condition and undercarriage leakages, mudguards, wheel and mud flaps, horns, first aid kits, warning rings among others are also inspected.

The requirement does not change for vehicle types except for the duration of testing. Commercial vehicles are inspected twice a year (every six months), and private vehicles once a year. There is no difference in inspection procedure between private and commercial vehicles. For PTWs, PTI covers brakes and headlamps (the two basic things), brake lamps, indicators, brakes and tyres.

These requirements compare to international standards such as the African Standards Organisation from which the ECOWAS standards are carved. Occasionally the ECOWAS subregion organise forum for member countries to compare PTI policies and standards.

The following tools are used in testing the various components:

- 22

- Suspension: Suspension test bench
- Vehicle alignment: a side slip is used
- Headlight: Headlight tester
- Emission test, rust or tear and wear, hinges, locks and latches, dashboard instrument, windscreen wiper blades, wheel locks and leakages: visual inspections are done

Inspectors Training

Vehicle inspectors usually have qualifications in automobile engineering. However, the DVLA provides mandatory periodic training for vehicle inspectors across the country. Last quarter, the DVLA co-organised a Trainer of trainers' program with TRANSAID on vehicle tyres. The DVLA aims to standardise training content for inspectors.

Consequences of non-compliance with PTI requirements

A vehicle that does not meet the minimum threshold of any test item automatically becomes a failure. However, some defects may be considered low risk and thus passed with caution. For example, airbag malfunction. For a dangerous fault, the vehicle is failed outright. For example, worn tyres, leakages, missing mirror, cracked windscreen, etc. The testing process is automated; digital signals or reports go into a computer, which is printed at the end of the process. The customer is advised on what and how to address the defects, if any.

Vehicles which fail the PTI are required to reappear in two weeks for retesting after fixing the fault. That is, the customer is advised to continue to fix the problem until the vehicle is roadworthy. After the grace period of two weeks, the customer is required to pay for re-inspection.

Some common issues or defects observed to lead to most PTI failures include worn tyres, bad brakes, bad seat belt, bad dashboard instrument panel, tyre wear, headlight fault, poor lighting and shock absorber problems.

VIC started in 1993 where the DVLA conducted mainly physical inspection of the vehicles until 2012. In 2013, four (4) private vehicle testing stations (PVTs) started operation across the country and now there are 35 of such centres.

Familiarity with current PTI regulations and standards

The DVLA has had several trainings in the past to stay informed about current PTI regulations and standards. For instance, last year, the DVLA had funding from the World Bank to undertake a training workshop for all vehicle examiners across the country. Additionally, the Ghana Automotive Development Centre provides training for vehicle examiners on modern vehicle models. However, the country lacks the necessary equipment to inspect many of the modern vehicle models.

Timeline and requirements for first PTI for new and used imported vehicles

New vehicles from Automobile companies only undergo regulatory inspection checks (e.g., seat belts, body construction, vehicle features, etc.); equipment-based inspections are not carried out. Further, the vehicle may not undergo PTI for the first two years or the first 10,000 kilometres, whichever comes first.

However, used imported vehicles undergo equipment-based test and regulatory inspections every six months in the case of commercial vehicles and one year in the case of private vehicles.

PTI pass and failure rates

Between 27 and 35% of vehicles fail the PTI at the national level, depending on the period (time/month). The peak period is the first quarter of the year when there is high turnout, which translates to high failure rates. The lean session is the third and fourth quarters when there are low failure rates. These data have been helpful for policy and regulatory decisions. For instance, the data have helped in some interventions regarding tyres, enacting scrap policy (which is currently non-existent in the country), reduction in import traffic since existing high-cost accounts for the continuous use of over-aged vehicles.

3.3 Tanzania

As of May 2024, there were 55 car inspection stations in Tanzania in which some are fully operational, and some are still under construction.

Approximately 800 000 vehicle inspections are conducted annually in Tanzania.

As of May 2025, the Tanzanian vehicle fleet is composed of approximately 2 500 000 registered vehicles, broken down by type as follows:

- Passenger cars:
- Light trucks and vans:
- Heavy trucks:
- Buses:
- Motorcycles:
- Mopeds:
- Tractors and off-road vehicles:
- Trailers and semi-trailers:

The United Republic of Tanzania national Vehicles Inspection Centre (VIC) was established in July 2015 and is hosted by the Ministry of Transport's National Institute of Transport (NIT). It is used as a testing site to ascertain quality of vehicles in all matters related to road worthiness as well as a training facility for vehicle inspectors all over the country. The centre plays a major role in improving issues related to road safety by ensuring that, the vehicles visiting the centre are well inspected and tested to comply with required vehicle standards and producing qualified and experienced vehicle inspectors in the country. Its mission is to provide credibility through assessment of vehicle safety and roadworthiness and training professional vehicle inspectors who are required to follow specific Standards of Practice and Code of Ethics that will ensure consumers receive service of the highest quality and calibre. The NIT-VIC vehicle inspectors professionals training courses are of 6 months duration at an advertised training fee of TZS 560,000/- (<https://www.nit.ac.tz/vehicle-inspection/>). NIT-VIC inspects, diagnose and tests all type of vehicles using modern and computerized machine available in the centre by skilled personnel on all aspect of vehicle quality and safety. Various types of inspection are conducted such as initial or imported used vehicles inspection, modification or alteration inspection, renewal or periodic inspection and mandatory inspection. Inspection is carried in all part and systems of the vehicle including:

- Tyres
- Undercarriage
- Suspension system; driver's assisted devices and safety controls
- Engine diagnostics
- Transmission and safety system
- Speed and brake check
- Head lamp testing
- Emission testing
- Noise level and
- Wheel alignment measurements.

Figure 15 below shows an inspection of a heavy goods vehicle at the Vehicle Inspection Centre.



Figure 15: National Institute of Transport (NIT) Vehicle Inspection Centre (VIC) with heavy goods vehicle under inspection (Source: NIT Facebook Page, Image of July 13th, 2016)

Tanzania national periodic vehicle inspection is mandated to the National Road Safety Council (NRSC) through holding annual National Road Safety Weeks. The National Road Safety Week campaigns typically start with a national launching ceremony graced by a top government official and thereafter a week long campaign over which owners / operators of private motor vehicles are asked to present their vehicles over a window of up to two (2) months to vehicle inspectors at police stations and other designated areas countrywide, paying TZS 7,000/- for commercial vehicle, TZS 5,000/- for private non-commercial vehicle and TZS 2,000/- for two and three wheeler motorcycles inspection fee per vehicle. A sticker is issued to owners / operators as proof that the vehicle has passed muster.

Figure 16 shows Tanzania Police Force officers exhibiting a dummy of the vehicle inspection sticker issued during the National Road Safety Week.



Figure 16: Image of Tanzania Police Force officers exhibiting a dummy of the vehicle inspection sticker issued during the National Road Safety Week

In 2020 Land Transport Regulatory Authority (LATRA) floated a tender for Construction of LATRA Motor Vehicle Inspection Centres/Yards. As recent as early 2024 Tanzania Bureau of Standards (TBS) and the Tanzania Police Force (TPF) partnered to undertake vehicle inspections through use of modern digital facilities. The TBS signed a Memorandum of Understanding (MoU) with the TPF that the initiative is geared at protecting people's lives from road fatalities. With that partnership, inspection of vehicles will be carried out using modern digital equipment from TBS thus ensuring safety of the automobiles and of the users. The partnership marks an important move from inspecting vehicles manually to using modern digital equipment thus enhancing efficiency and assuring safety to road users. TBS intends to deploy vehicle inspection experts and modern equipment to inspect and measure all vehicles in the country as per the Road Traffic Act 168. The initiative will not only enhance road safety of passengers and other road users but contribute significantly to addressing unnecessary road fatalities. Initially vehicle inspections were conducted manually where some parts could not easily be reached and remained unattended thus endangering passengers and other users. Vehicle inspections refer to the URT Vehicle Inspection Report Form (PF 93) Figure 17 and issued roadworthiness certificates may assume the format of Figure 18.

Figure 17: Sample United Republic of Tanzania Vehicle Inspection Form (Source: Tanzania Road Safety Ambassadors (RSA) Facebook Page 3rd January 2018)

TANZANIA BUREAU OF STANDARDS


 (Made under Regulation B(1))

TBS/QMD/

CERTIFICATE OF ROADWORTHINESS

Make:	Mitsubishi
Model:	ROSA
Type of Vehicle:	Bus
Chassis Number:	BG-----
Engine Capacity:	4890
Year of Registration:	2007
Inspected Mileage (Odometer Reading):	108468
Bill of landing / Identification mark:	N
Inspection date:	30 Sep 2021

Remarks: This is to certify that the above vehicle has been inspected by Tanzania Bureau of Standards and found to conform to TZS

Date: 30 Sep 2021


 Dr. Ngenya, A.Y.
 DIRECTOR GENERAL

THIS CERTIFICATE REMAINS THE PROPERTY OF TANZANIA BUREAU OF STANDARDS AND SHALL BE VALID FOR THE INSPECTED VEHICLE WITH PARTICULAR ABOVE. THIS CERTIFICATE SHALL BE SURRENDERED ON DEMAND.

Figure 18: Sample roadworthiness certificates issued by TBS (Source: <https://trade.tanzania.go.tz/procedure/449?l=en>)

Results from interviews

Findings from the interviews with stakeholders will be presented here. The interviews were conducted with National Traffic Police, National Institute of Transport-Vehicle Inspection Center and TBS.

Inspection centres

The vehicle inspection centres are distributed in all regions in the country. There are about 25 centres in every regional headquarters under Region Transport Offices (RTOs). The centres use manual checking of mainly brake systems and safety belts. Additionally, Dar es salaam, the biggest business city in the country has 3 centres of which one is fully operational with modern equipment. Ministry of Home affairs is planning to establish 56 fully functional centres to support inspection activities.

Key requirement for periodic technical inspections (PTI)

Vehicle registration is under The Road Traffic Act 1973. Key requirement for PTI includes:

1. Skilled human resources who are the vehicle inspectors,
2. Road safety course that are currently taught in different institutions like NIT, VETA, Arusha Tech and University of Dar es Salaam,
3. Vehicle inspection course that is done for 9 months, and
4. Electronic inspection plant that is established in partnership with TBS

For passenger and commercial cars, the following are tested

- Active (safety systems, brake systems, safety belts)
- Passive (airbags – currently not tested)
- Power two wheelers (PTW) are not tested

Roadworthiness Inspection (RWI) in compliance with Tanzania Standards TZS 698:2012 by Tanzania Bureau of Standards (TBS). TBS is registered (ISO-9001) – inspection and testing. Standards for emission TZS 698:2012, TZS 239:2013.

Tools used in PTI

Evaluation is based on pass or fail. In case of failure, temporary deregistration is done by removing plate numbers, until the failed part is rectified.

NIT, which is fully functional centre, uses the following tools:

- Technical equipment for locks,
- Tyre checker profile,
- Roller brake tester,
- Light intensity and direction angle,
- Head lamp tester, and
- Integrity tester (to be procured)

Inspectors Training

Inspectors with basic education on safety related areas, such as vehicle inspection course, vehicle safety course are trained for 6 months at NIT, VETA or Arusha Tech and given 3 months field work at SCANIA, SUPERDOL, IHET, Police Workshop and Military Workshop.

Consequences of non-compliance with PTI requirements

Police inspector may grant a temporary de-registration on motor vehicle or suggest to Tanzania Revenue Authority a full de- registration. No award of road worthiness certificate, until all issues are rectified. Only pass and fail. Pass means the car has passed all minimum requirements described in the standards. If one item fails, the results is Fail. For any fault detected, the car must be repaired before being rechecked. Police Form (PF93) lists the defective items. Temporary de-registration can be granted while waiting for repair.

The car owner can be given 21 days to repair the car. Number of days can be extended depending on financial situation of the owner. Failing multiple inspections can be subject to penalty fees of deregistration. Some common issues or defects that observed to lead to most PTI failures include 1. Tyre breaks, 2. Headlights, 3. Safety systems, 4. Tyre (Life span (Normally five years)).

Example of a challenging situation encountered during an inspection

During our inspection we face a lot of challenges such as:

1. Most of the vehicle owners are forcing to have unlawfully compensation from insurance companies.
2. Owners conspire with vehicle inspectors to avoid deregistration in case their vehicle fails test.

From experience, some of the issues that are faced during inspection are the existence of a huge number of unqualified technical personnel who repairs vehicles in most of the available garages. Most of the vehicles are being damaged because of that. Another issue could be the language barrier, most of the manuals are in Japanese language.

Familiarity with current PTI regulations and standards

Police inspectors work hand in hand with other government agencies, especially TBS and TANROADS to align with standards. Procedures are under way to establish PPP. There is a technical committee from industry that works with TBS regarding updating standards. Mandatory updating of standards is done after 5 years, where it starts with thorough review.

Collaboration with other stakeholders, such as vehicle manufacturers and regulatory bodies

Police inspection department under ministry of home affairs have partnership with TBS, JICA and NIT on the issues of inspection. Regarding vehicle industry, the department collaborate with German car plant and SWEROAD (Swedish organization). NIT collaborate with Volkswagen, Total Tanzania, TBS and LATRA on the issues of vehicle inspection.

Timeline and requirements for first PTI for new and used imported vehicles

New vehicles that are 3 years old from date of manufacture are not inspected. All the rest are inspected for seat belts, body construction, and other vehicle features. There are differences in inspection requirements for private and commercial vehicles. Private vehicles are inspected once per year while commercial cars are inspected twice per year. Commercial cars are frequently improved because of several checks.

PTI pass and failure rates

Number of vehicles that have passed or failed country wide is not available. But in terms of estimated percentage, currently at NIT centre, around 55% of vehicles passed the test while 0.01 % of vehicles were rejected. The rest failed test and needed to be rectified.

Requirements and procedures for converting goods-carrying vehicles into passenger vehicles

There is a big trend of owners converting goods-carrying vehicles to passenger vehicles. The following is the procedure:

- Application for converting vehicle,
- Applicant called for interview to verify the reason,
- Vehicle inspection against the requirements,
- Vehicle inspectors to issue recommendations for or against converting vehicle (Also recommends to TRA for or against registration of the vehicle)

Most common challenges encountered during conversion is the determination of gross weight of a car. Therefore, it leads to the rejection of most cars. Very difficult to attain safety standards (safety belts, brakes).

3.4 Zambia

As of December 2024, there were 32 car inspection stations in Zambia.

Approximately 300 895 vehicle inspections are conducted annually in Zambia.

As of May 2025, the Zambian vehicle fleet is composed of approximately 900 874 registered vehicles, broken down by type as follows:

- Passenger cars
- Light trucks and vans
- Heavy trucks
- Buses
- Motorcycles
- Mopeds
- Tractors and off-road vehicles
- Trailers and semi-trailers

History and Evolution:

The increase in motor vehicle use in Zambia over the past three decades has highlighted the need for standardized periodic vehicle inspections to improve road safety. To address the rising road traffic accidents linked to vehicle conditions, the Road Transport and Safety Agency (RTSA) established a comprehensive vehicle inspection system under the Road Traffic Act No. 11 of 2002. This system mandates regular technical inspections to ensure vehicles meet national safety standards, focusing on critical components such as brakes, lights, tyres, and emissions. The initiative aligns with Zambia's Vision 2030 and the Revised Sixth National Development Plan, reinforcing the country's commitment to reducing road accidents through improved vehicle roadworthiness. RTSA operates testing centres nationwide equipped with modern tools and trained personnel to conduct these inspections and promote public awareness on vehicle safety.

Legal Framework:

Zambia's legal framework for periodic vehicle technical inspections is anchored in the Road Traffic Act No. 11 of 2002, which empowers RTSA to enforce vehicle roadworthiness standards. The Act requires all vehicles, especially public service vehicles, to undergo regular inspections-quarterly for passenger service vehicles and annually for others-to obtain a valid Certificate of Fitness before they can legally operate on public roads. Key provisions include mandatory examination procedures, issuance of test certificates, and penalties for non-compliance, emphasizing the importance of maintaining safe vehicle conditions. This framework supports Zambia's broader road safety goals and adherence to international best practices, ensuring that vehicles on the road are mechanically sound and less likely to contribute to accidents.

This version eliminates repetition, focuses solely on periodic technical inspections, and removes unrelated import registration content, addressing the comment effectively.

Step-by-Step Process:

1.Pre-Inspection: Vehicle owners must submit a Request for Inspection, ensuring their vehicle is prepared according to the manual's guidelines (Ministry of Transport and Communications, Republic of Zambia, 2016. Vehicle Inspection Manual. May)

2.Inspection: A thorough examination covers on-board diagnostics, interior and exterior components, lighting, steering, suspension, tyres, brakes, and exhaust emissions.



Figure 19: An RTSA inspector conducts a visual inspection on a public service vehicle at MIMOSA, Lusaka's largest inspection centre, ensuring compliance with road safety standards.

The Road Traffic Act No. 11 of 2002 (Test Certificate Regulations)

OWNER:
 Company
 120220032102
 AMAANS LOGISTICS LIMITED
 PLOT NO. 5943M OFF ZAMBEZI RD
 LUSAKA

EXAMINATION REPORT FOR MOTOR VEHICLE OR TRAILERS

Engine Number: 221007006127
 VIN / CHASSIS Number: LZZPCL580NJ255951
 Make: SINOTRUK
 Model: HOWO
 Model Number: 12642
 Color: White
 GVM kg: 9500

INSPECTION FINDINGS

1	Front Suspension	7	Wheels & Tyres	13	Seat Belt Condition
2	Rear Suspension	8	Service Brake System	14	Engine Cleanliness
3	Fuel System	9	Hand Brake Effectiveness	15	Compulsory Accessories
4	Engine Performance	10	Transmission	16	Statutory Requirements
5	Exhaust System	11	Chassis Frame	17	Any other defects
6	Emissions	12	Body Cleanliness		

I certify that the above findings are the correct position of the motor vehicle/trailer mentioned above as found by me. The motor vehicle/trailer has:

(Tick the appropriate box)
☒ Passed ☐ Failed

Date: 25/03/2024 Vehicle Examiner: [Signature] Date for Re-inspection: 25/03/2024

Figure 20: Sample vehicle examination report from MIMOSA, Lusaka, Zambia.

3.Post-Inspection: Successful vehicles receive a Roadworthiness Certificate, while those failing are issued a defect list for rectification before re-examination

Results from interviews

Findings from the interviews with stakeholders will be presented here. The interviews were conducted with the Principal Investigation Officer, Main Vehicle Inspection Centre Manager, an Insurance Officer and Traffic Desk Manager and Commanding Officer.

Report on Findings from Stakeholder Interviews on Current Practices of Periodic Technical Vehicle Inspections in Zambia

Introduction: This report presents the findings from interviews with stakeholders involved in the Periodic Technical Inspection (PTI) of vehicles in Zambia. The interviews were conducted with the Zambia Vehicle Inspection Centre Manager and the Principal Vehicle Examination Officer at the Road Transport and Safety Agency, as well as an Insurance Officer from Madison Insurance.

Overview of Inspection Centres:

- i) The Zambia Vehicle Inspection Centre Manager provided a comprehensive overview of the inspection centres in Zambia. Lusaka has the most centres (4), while other provinces have one or two centres each. Almost every town has a vehicle examination centre.
- ii) The Principal Vehicle Examination Officer at the Road Transport and Safety Agency confirmed that there are 28 centres in total, with Lusaka having the most (4), and Northwestern having the least (1). Some areas, like Kaoma, do not have a centre and are serviced by a neighbouring province.

Key Requirements for PTI:

- i) Vehicles are categorized into private, public service, and car hire/driving school vehicles. The inspection frequency varies for each category, with private vehicles inspected annually, and public service vehicles like public service passenger vehicles inspected every four months if they have a long-term license.

Inspection Process:

- i) There are two methods of inspection: mechanized and manual. The mechanized method is used for unregistered motor vehicles, while the manual method is used for subsequent inspections. The manual method involves the use of naked eye, small gadgets like tyre depth gauges, and visual inspections.

Consequences of Failed PTI:

- i) The Zambia Vehicle Inspection Centre Manager explained that if a vehicle fails the inspection, the examiner will indicate what is wrong, and a certificate of fitness will not be granted. There are no specific penalties or fines for non-compliance.
- ii) The Principal Vehicle Examination Officer stated that when a vehicle fails an inspection, the owner is given a list of defects and a 14-day period to make the necessary repairs and bring the vehicle back for a re-inspection.

Implications for Insurance Coverage:

- i) The linking of insurance to road tax has made it impossible for a vehicle to have insurance without a valid certificate of vehicle fitness. Therefore, if a vehicle involved in an accident has not fulfilled or passed PTI requirements, it will not have insurance coverage.

Verification of PTI:

- i) Insurance companies verify that a vehicle has undergone PTI by uploading the insurance details onto the RTSA portal. The portal will only allow the vehicle to get road tax if it has a valid certificate of vehicle fitness.

Steps for Vehicle Owners to Maintain Insurance Coverage:

Vehicle owners expected to ensure that they have a valid certificate of vehicle fitness before buying insurance. They should also make sure that their insurance details are uploaded onto the RTSA portal to get road tax.

Insurance Industry's Requirements for Vehicle Condition and Parts:

The Insurance Officer from Madison Insurance stated that this is a grey area in the industry, as they have not had many issues with illegal or unapproved modifications in the Zambian market. However, they advised that vehicle owners should notify the insurance company of any modifications and their cost, so that the sum insured can be adjusted accordingly.

Assessment of Risk Associated with Illegal or Unapproved Modifications:

There was no clear or comprehensive response to the question regarding the assessment of risk associated with illegal or unapproved modifications in Zambia. This is because there have been no reported cases of such modifications in the country. As a result, it is difficult to determine the potential risks and impacts of these modifications on the safety and performance of vehicles. However, it is important for insurance companies and regulatory authorities to remain vigilant and monitor the situation to ensure that any potential risks are identified and addressed in a timely manner.

Steps for Vehicle Owners to Ensure Compliance with Insurance Requirements:

Vehicle owners are expected to make sure that they:

- i) have a valid certificate of vehicle fitness
- ii) buy insurance
- iii) upload their insurance details onto the RTSA portal to get road tax.

4 Roadside vehicle technical inspections

While PTIs capture many vehicles that are not roadworthy, road-side inspections play a crucial role in continuous enforcement and preventing circumventions of the PTI framework, such as temporarily changing faulty parts such as tyres to pass the PTI. Road-side inspections are typically surprise checks done by the police together with technical experts.

In the European Union, Directive 2014/47/EU stipulates that each member state conducts at least as many roadside inspections as 5% of the total vehicles registered, following which the information is communicated to the European Commission. During these roadside inspections, initial checks consist of roadworthiness certificate and PTI report, a visual inspection of the vehicle, and a visual inspection of cargo to determine whether a more detailed inspection is required. Deficiencies are categorized as minor (no significant effect on safety or environment), major (can put other road users at risk) or dangerous (immediate and urgent risk). If a vehicle is stopped with dangerous defects, the member state where the inspection takes place should also inform the member state where the vehicle is registered. This directive standardises the requirements of reporting – which is important for commercial transport as they often drive through country borders.

4.1 Sweden

Roadside Inspections are normally done by certified inspectors in Sweden, together with Police. The inspectors have personal certification and normally have background from PTI's in test centres. The tests can be done along the Road at any locations, but

The inspectors have direct data connections to Road administrations data systems for vehicle registration details and drivers licence information.

During the roadside together with Intoxication test and Road worthiness control, For commercial vehicles, additionally Load securement and Driver time controls are done.

Along the Roadside locations, Police motorbikes patrol, to scout and flag specific vehicles to be tested.



Figure 21: Inspection of commercial truck



Figure 22: Checkpoint for roadside technical inspection



Figure 23: Laser speed measurement

Findings from interviews

The project visited a typical roadside inspection during May 2024, where Swedish Police performed an inspection combined with speed check and alcohol intoxication test. Both passenger cars and commercial vehicles were checked. In Sweden roadside inspections are performed by Certified Police Inspectors.

4.2 Ghana

Roadside vehicle inspection in Ghana is routinely conducted by the Motor Traffic and Transport Department (MTTD) of the Ghana Police Service and the Driver and Vehicle Licensing Authority (DVLA) to ensure that vehicles on the roads meet safety and regulatory standards. These inspections are generally random and are often conducted at checkpoints on highways and major roads with the primary goal to enhance road safety and enforce compliance with road traffic rules and regulations. During these inspections, the DVLA mainly focus on vehicle registration and roadworthiness. The MTTD enforces road traffic laws and ensure compliance with vehicle and driver regulations.

During special operations, the MTTD collaborates with other agencies, including the National Road Safety Authority (NRSA) and the Customs Division of the Ghana Revenue Authority (GRA) to

conduct road safety surveillance and education and tax compliance (i.e., the relevant revenues are paid), respectively.

Non-compliance with vehicle inspection standards can result in fines, on-the-spot penalties, and even vehicle impoundment. For serious offenses or if a vehicle is deemed not roadworthy, it may be towed to a police station until corrective actions are taken. In cases of expired vehicle documents or unlicensed drivers, the offenders may face additional penalties or charges in court.

Inspection process and criteria

The following checks are conducted during roadside vehicle inspections:

- **Vehicle documentation:** The inspectors check if the vehicle has valid documentation, including roadworthy certificate, insurance, and driver's license. These documents confirm that the driver and vehicle are legally authorised to be on the road.
- **Physical condition of the vehicle:** The vehicle's exterior is inspected for visible defects, such as broken lights, cracked windshields, worn-out tyres, etc.
- **Safety equipment:** Vehicles, especially commercial ones, are checked for mandatory safety equipment such as fire extinguishers, reflective triangles, seat belt, and first-aid kits.



Figure 24: An MTTD officer ensuring traffic flow

Findings from interviews

Interviews with officers from the National Traffic Police and Local Traffic Police confirmed that roadside inspections typically focus on vehicle speed, insurance validity, and roadworthiness. Officers use speed radars to monitor speeding and QR scanners to verify insurance and roadworthy certificates.

The police work with the DVLA to receive periodic training on identifying vehicle safety issues. They cited the Road Safety Act (Act 264) and the Road Safety Regulations (2012) as their primary references for training. Officers involved in roadside inspections participate in refresher courses to keep their knowledge and practice up to date.

4.3 Tanzania

Road-side vehicle inspections are done as the way of certifying that the vehicle conforms to the safety regulations and rules. The inspection can include the following parameters: legitimate of the ownership, driver behaviour, legal speed, legitimate of insurance sticker, vehicle worthiness, etc. (The Road Traffic Act, 1973).

- **Legitimate of the ownership**

Certificate of registration to be carried in the vehicle

13 (1) Every person driving or being in charge of any motor vehicle or trailer shall carry with him the original certificate of registration or duplicate copy thereof duly authorized by the registrar, issued in respect of such motor vehicle or trailer and shall produce it for inspection by any police officer or vehicle inspector who may demand an inspection of the certificate.

(2) Any person who fails to comply with any of the requirements of subsection (1) shall be guilty of an offence and shall be liable, on conviction, to a fine not exceeding ten thousand shillings or to imprisonment for a term not exceeding two years or to both such fine and such imprisonment.



Figure 25: Tanzanian Police Force officers during roadside inspection

- **Driver behaviour**

44. Any person who, while under the influence of drink or drug to such an extent as to be incapable of having proper control of a motor vehicle or trailer, drives or attempts to drive or in charge of a motor vehicle or trailer on any road or other public place shall be guilty of an offence.

- **Legal speed**

51(1) Any person who drives or who aids, abets, counsels or procures any other person to drive, a motor vehicle or trailer of any class or description on a road at a speed greater than the maximum speed limit prescribed for that class of motor vehicles or trailers in respect of that road under the provisions of this Act shall be guilty of an offence.

(2) Any person who drives, or who aids, abets, counsels or procures any other person to drive, a motor vehicle or trailer on any road or in any public place at a speed in excess of a speed limit lawfully imposed in relation to that road or public place shall be guilty of an offence.

- **Vehicle worthiness**

81. Examination of vehicle on road

Any police officer may stop and examine any motor vehicle or trailer on a road or public place if he is of the opinion that such motor vehicle or trailer:

- a) is in such a condition as to be unfit for the purpose for which it is intended; or
- b) is in such a condition that the driving of the motor vehicle or trailer by day or by night is likely to be a danger to any person or to the public; or
- c) has a load greater than the load capacity declared by the manufacturers of the chassis of the motor vehicle or trailer or greater than the load capacity determined by a vehicle inspector under the provisions of this Act; or
- d) is loaded in such a manner as to make it a danger to the public or any person,

and when the examination reveals that such motor vehicle, or trailer is unfit or a danger to any person or that it has a load greater than the load capacity declared by the manufacturers of the chassis of the vehicle or determined by a vehicle inspector he may:

- i. if he considers it sufficiently safe, taking all the relevant facts into consideration for the motor vehicle or trailer to be moved under its own motive power, order that it be driven forthwith to

- the nearest police station or workplace of a vehicle inspector, whichever is the more convenient; or
- ii. if he considers that the motor vehicle or trailer is overloaded or that it is not safety loaded, order the motor vehicle or trailer to be driven forthwith to the nearest weight bridge and weighed or order the load to be made safe before the motor vehicle or trailer is moved; or
 - iii. if he considers it unsafe for the motor vehicle or trailer to be driven under its own motivepower, order that the motor vehicle or trailer be towed forthwith to the nearest police station or workplace of a vehicle inspector whichever is the more convenient.

Legitimate of insurance sticker,

Regulations

114. (i) The Minister may, subject to the provision of subsection (2), make regulations for the better carrying into effect the provisions and purposes of this act and in particular but without prejudice to the generality of the foregoing may make regulation -

(ae) requiring such evidence as may be specified of the fact that the motor vehicle has been insured as required by Motor Vehicles Insurance Ordinance to be displayed on the vehicle in such manner as may be specified and providing for a penalty of a fine not exceeding fifteen thousand shillings or imprisonment for a term not exceeding three years for any contravention of regulations made under this paragraph

Findings from interviews

From the interviews it was revealed that on 17th May 2024, the government announced a five-year initiative, the Mandatory Vehicle Inspection Project, which will begin once a partner is secured. The project seeks to leverage modern technology to reduce road accidents caused by unroadworthy vehicles, while also enhancing efficiency by modernizing the police force and improving the quality of services on vehicle inspections delivered to citizens.

4.4 Zambia

Roadside vehicle inspection in Zambia faces challenges due to factors like the non-financial viability of concessions, lack of resources, and unclear policies in Public Private Partnership (PPP) projects in the road sector (Chilala, 2019). Additionally, the use of second-hand degraded tyres contributes to accidents in Zambia, with users and dealers lacking awareness of minimum quality expectations and safety standards (Heum, 2015). To address road safety concerns, a ban on night travel for public service vehicles in Zambia significantly reduced road crashes, indicating the effectiveness of such interventions in reducing accidents (Kamanga, 2016). Implementing a road-side parking vehicle inspection apparatus with geomagnetic sensors and data processing devices could enhance monitoring and compliance in outdoor parking lots in Zambia (Moonga and Hangoma, 2021). These insights highlight the importance of improving road safety measures and inspection protocols to mitigate risks and enhance transportation safety in Zambia

Roadside vehicle inspections in Zambia are conducted by the Road Transport and Safety Agency (RTSA) as part of the country's vehicle roadworthiness enforcement. These inspections ensure that vehicles on public roads meet safety standards to reduce accidents caused by mechanical failures. Vehicles, especially Public Service Vehicles (PSVs), must undergo regular safety checks-quarterly for PSVs and annually for other vehicles over five years old.

During roadside inspections, RTSA officers check key safety components including tyres, brakes, lights, steering, chassis and exhaust system. They also verify the presence of safety equipment such as fire extinguishers, warning triangles, and first aid kits. Vehicles that fail the inspection are required to undergo repairs and retesting within a specified period, with a reduced fee for retests done within

one month. A valid Certificate of Fitness (roadworthiness certificate) must be displayed on the vehicle's windshield, indicating the vehicle has passed inspection and is safe to operate.

The inspections are supported by the Road Traffic Act No. 11 of 2002, which makes it an offence to drive without a valid certificate. RTSA operates testing centres nationwide and conducts roadside checks to enforce compliance. The process is designed to identify unsafe vehicles proactively, preventing accidents caused by mechanical faults and promoting safer roads in Zambia.

Costs for roadworthiness tests are standardized (around K64 for private vehicles and K55 for public service vehicles), and failure to comply can result in fines. RTSA also runs public awareness campaigns emphasizing the importance of regular vehicle inspections for safety and legal compliance. This structured roadside inspection regime is a critical part of Zambia's broader road safety strategy.

Findings from interviews

Interview with Traffic Desk Manager and Commanding Officer revealed that currently, roadside inspections are conducted on a random and unstructured basis. There are no longer formal checkpoints. The decision to carry out inspections largely depends on the initiative of the officers on duty. If they decide to conduct inspections, they proceed; if not, they may focus on other activities. This approach lacks consistency and planning.

Scope of Inspection:

During roadside inspections, officers check for:

- 1) Vehicle fitness, including:
- 2) Functionality of the lighting system (headlights, brake lights, indicators)
- 3) Condition and performance of the braking system
- 4) Tyre condition: checking for wear, defects, and overall roadworthiness
- 5) Windscreen visibility: whether it is cracked, shattered, or obstructing the driver's view

Driver fitness, which may involve:

- 1) Verifying if the driver holds a valid driver's license
- 2) Assessing if the driver appears fit and competent to drive

Some of these roadside inspections are conducted jointly with RTSA (Road Transport and Safety Agency), while others are conducted solely by the police.

It is important to note that RTSA does not have the legal authority to arrest or charge an individual on their own. According to the law, only police officers are vested with arrest powers. Therefore, for any enforcement action to be taken, police officers must be present alongside RTSA personnel.

Recommendations from the Traffic Desk Manager and Commanding Officer:

While the current practice is largely unsystematic, there is a strong need for a structured and consistent inspection schedule. If we are serious about improving road safety, roadside inspections should be conducted quarterly or more frequently, and not left to impulse-driven or informal decisions.

5 Gap-analysis and recommendations for improvements

The following subchapters outline the identified gaps in each of the three countries and provide corresponding recommendations for improvement.

5.1 Ghana

Although Ghana has good standards and regulations for periodic technical inspections, a few shortcomings are worthy of attention.

Table 5.1: Gaps and recommendations for improvements in Ghana

Area of analysis	Gaps identified	Recommendations for improvement
Bribery and corruption during PTI	Periodic technical inspections, including roadside vehicle inspections are flawed with corruption and bribery. A recent study by Sam (2022) highlighted significant corruption and bribery in roadside vehicle inspections, where motorists pay bribes (willingly or coerced) to avoid inspection and penalties. Further, most vehicles are rarely inspected at vehicle inspection centres but possess roadworthy certificates due to corruption and the activities of middlemen, popularly called “ <i>Goro boys</i> ”.	The DVLA should strictly monitor PTI, especially in remote areas and non-compliant vehicle inspection centres, by deploying relevant technology
Inconsistent enforcement	Enforcement can be inconsistent, with some vehicles managing to bypass inspections due to location or timing, leading to a mix of compliant and non-compliant vehicles on the roads.	The DVLA and the MTTD should enhance their roadside vehicle inspections to weed out non-compliant vehicles from the road.
Inadequate resources	Resource constraints sometimes limit the extent of inspections, particularly in remote areas where fewer traffic police and inspection tools are available.	The DVLA and the relevant agencies should prioritise their public-private partnership arrangements in establishing testing centres in remote and underserved areas.

5.2 Tanzania

PTI is not well practiced in Tanzania, although the standards are well set. Below are the gaps identified.

Table 5.2: Gaps and recommendations for improvements in Tanzania

Area of analysis	Gaps identified	Recommendations for improvement
Bribery and corruption during PTI	Periodic technical inspections, including roadside vehicle inspections are flawed with corruption and bribery. There are cases where goods carrying vehicles that failed inspection and were recommended for deregistration, are still in operation.	The Traffic Police should strictly monitor PTI, especially in remote areas and non-compliant vehicle inspection centres, by deploying relevant technology

Inadequate resources for PTI	Interviews shows that there is reasonable number of trained staff as well as already established inspection centres in all regions across the country. However, the centres are lacking modern equipment for inspection. Only manual checking is done.	Plans are underway to establish 56 centres and equip them with modern tools. Only National Institute Transportation (NIT) is fully equipped with modern tools for inspection
PTW are not tested	Another alarming issue is regarding handling Power Two-Wheeler (PTW). The drivers are unlicensed, untrained, over speeding and overloading, no riding skills, use of alcohol and drugs. Essentially, they are not following any rules or regulations. PTW are not tested.	PTW should undergo proper PTI
Lack of coordination	Different organizations are operating under different ministries without coordination. Example LATRA (Land Transport Regulatory Authority) under the Ministry of Transportation; Police force (vehicle inspection authority) under the Ministry of Home affairs; TBS (standards authority) under the Ministry of industries and Trade; TRA (registration and deregistration) the Ministry of Finance and NIT (training institution) under Ministry of Transportation. Lack of overall organization to coordinate the vehicle inspection creates a negative impact on road safety. For example, inspection for passenger vehicles is done several times a year but goods carrying vehicles as well as private vehicles are not well inspected. The problem with coordination has led to the situation where none of the organizations feels fully responsible for collecting and sharing information about inspection. No failure trends can be generated because of lack of data.	Tanzania could enhance its road safety framework by designating one of its existing agencies as an overseeing road safety authority. Given the current focus on improving road safety and the critical role of vehicle inspection as a safety pillar, centralizing responsibilities would improve coordination and streamline oversight. There is a mismatch between the theoretical ambition and road safety activities set at national level and the actual implementation of road safety activities.
Safety issues when goods-carrying vehicles converted to passenger vehicles	The safety of passenger vehicles cannot be guaranteed when converting goods-carrying vehicles into passenger vehicles. It is difficult to determine gross weight.	Proper guidelines and standards should be established to ensure safety on this issue

5.3 Zambia

A table showing Gap Analysis of Vehicle Inspection Systems in Zambia: Identified Issues and Recommendations for Improvement.

Table 5.3: Gaps and recommendations for improvements in Zambia

Area of analysis	Gaps identified	Recommendations for improvement
Overview of Inspection Centres	Need for more inspection centres in underserved areas like Kaoma. Expansion may not meet the increasing demand.	Increase the number of inspection centres annually, particularly in rural or underserved provinces. Focus on improving geographical accessibility.
Inspection Requirements	Lack of clarity on inspection requirements for non-commercial vehicles (e.g., personal vehicles).	Establish clear and standardized inspection requirements for all vehicle categories, including non-commercial/private vehicles.
Inspection Process	Absence of comprehensive checks on vital vehicle components (e.g., airbags, tyres, lights, brakes, modifications).	Standardize and expand the inspection checklist to include critical components, ensuring safety and regulatory compliance.
Consequences of Failed Inspections	Delays in enforcement of defect orders; unclear process for ensuring vehicles comply after repairs.	Establish a clearer and more robust enforcement mechanism for failed inspections and ensure consistent follow-up on vehicle repairs.
History and Evolution of Vehicle Inspections	Limited data on the full evolution of inspection standards and practices.	Document and make available the historical evolution of vehicle inspection practices, regulations, and improvements to inform future development.
Inspector Training	No formal training programs for inspectors; reliance on informal criteria such as Grade 12 mechanics qualification.	Develop and implement a formal, standardized training and certification program for vehicle inspectors. Include continuous professional development.
Defects & Common Issues in Inspections	Lack of systematic collection of data on common defects causing failed inspections.	Create a database to track common vehicle defects, identify patterns, and inform public awareness campaigns.
Regulations & Standards	Lack of detailed regulatory framework to guide inspections and enforcement consistently.	Develop a detailed, accessible regulatory framework, ensuring uniformity and clarity in PTI enforcement across Zambia.
Inspector Qualifications	Ambiguity regarding the full spectrum of qualifications required for inspectors.	Define and standardize inspector qualification requirements to ensure competence, including specific training for various vehicle types and components.
Data Management and Sharing	Lack of centralized data-sharing systems between inspection centres. Each centre manages its own data independently.	Implement a centralized data management system that enables seamless data sharing and tracking across all inspection centres.
Fraud Prevention	Fraud prevention measures are limited; technology integration is minimal.	Introduce advanced technologies (e.g., blockchain) to ensure secure verification of

		inspection records and prevent fraudulent practices.
Linking PTI with Insurance	Weak enforcement of insurance requirements linked to PTI. Transparency in verifying PTI records is insufficient.	Strengthen the link between PTI and insurance, ensuring that all vehicles with valid PTI records are insured. Improve transparency in the verification process.
Modifications and Vehicle Safety	Unapproved modifications that affect vehicle safety are not adequately regulated or checked during inspections.	Establish clearer guidelines for inspecting and regulating vehicle modifications that could affect safety. Develop strict compliance measures for unapproved modifications.
Workforce and Specialized Tools	Shortage of inspectors and lack of specialized tools for certain types of inspections.	Hire more inspectors and equip them with specialized tools and technology for comprehensive vehicle checks, particularly for modern vehicles.
Safety-Related Recalls	Lack of full enforcement for safety-related recalls. Not all affected vehicles are checked.	Develop stronger enforcement and tracking mechanisms to ensure that all vehicles with safety recalls undergo inspections and necessary repairs.
Roadside Inspections	Inconsistent execution of roadside inspections, with some vehicles bypassing them due to corruption.	Increase transparency and accountability in roadside inspections through random checks and digital tracking. Conduct inspections at main bus stations. Buses or any motor vehicles that are not fit to be on the road should not be allowed to carry passengers.

6 Conclusions

Conclusions are summarized in the tables below.

Table 6.1 Ghana

Timing	Action	Prioritize
Short-term (1 year)	- The DVLA should strictly monitor PTI, especially in remote areas and non-compliant vehicle inspection centres, by deploying relevant technology. - Digitise and automate PTI to reduce human discretion. - Establish independent anti-corruption oversight units at vehicle inspection centres	High
Near-term (1-5 years)	- The DVLA and the MTTD should enhance their roadside vehicle inspections to weed out non-compliant vehicles from the road. - Develop and deploy a centralised traffic enforcement database linked to the DVLA and MTTD. - Intensify joint stakeholder reviews (DVLA, MTTD and NRSA) to track PTI enforcement progress. - Train and upskill inspection and enforcement officers.	High
Long-term (5 years)	- The DVLA and the relevant agencies should prioritise their public-private partnership arrangements in establishing testing centres in remote and underserved areas. - Increase budget allocation for the relevant PTI equipment.	High

Table 6.2 Tanzania

Timing	Action	Prioritize
Short-term (1 year)	- Ensure all vehicles comply with mandatory annual or quarterly safety inspections (Road Fitness Test) as per RTSA requirements. - Enforce valid insurance and road tax payments before inspections. - Strengthen public awareness campaigns on vehicle safety and inspection importance. - Implement anti-corruption measures at roadside inspection points and roadblocks, including secret monitoring and strict penalties for corrupt officers.	High
Near-term (1-5 years)	- Upgrade inspection centres with modern equipment and train inspectors to improve test accuracy and consistency. - Establish transparent, accountable systems for inspection and licensing processes.	High
Long-term (5 years)	- Harmonize vehicle safety standards and inspection procedures with UN Vehicle Safety Regulations. - Establish an integrated, automated Accident Information System for better data collection and targeted interventions. - Foster regional and international cooperation to continuously improve vehicle safety frameworks. - Integrate anti-corruption frameworks into national road safety and transport policies.	High

Table 6.3 Zambia

Timing	Action	Prioritize
Short-term (1 year)	• Ensure all vehicles comply with mandatory annual or quarterly safety inspections (Road Fitness Test) as per RTSA requirements. • Enforce valid insurance and road tax payments before inspections. • Strengthen public awareness campaigns on vehicle safety and inspection importance. • Implement anti-corruption measures at roadside inspection points and roadblocks, including secret monitoring and strict penalties for corrupt officers.	High
Near-term (1-5 years)	• Upgrade inspection centres with modern equipment and train inspectors to improve test accuracy and consistency. • Establish transparent, accountable systems for inspection and licensing processes.	High
Long-term (5 years)	• Harmonize vehicle safety standards and inspection procedures with UN Vehicle Safety Regulations. • Establish an integrated, automated Accident Information System for better data collection and targeted interventions. • Foster regional and international cooperation to continuously improve vehicle safety frameworks. • Integrate anti-corruption frameworks into national road safety and transport policies.	High

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