Road Safety Guidelines

for the Asian and Pacific Region

4.9

VEHICLE SAFETY STANDARDS

Asian Development Bank

4.9

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Without vehicle construction regulations governing safety standards, for systems such as braking, lighting, and signaling, there can be little control over the general safety of the country's vehicle fleet. For public service vehicles (PSVs), standards of comfort, access, and additional safety requirements are also needed. For heavy goods vehicles (HGVs), standards of size, gross vehicle weight, and maximum axle loads are necessary to ensure the safety of all road users and to minimize damage to the environment. Imported used vehicles must always be checked on arrival in a country to ensure they comply with national safety standards. Statutory testing is required to ensure that at regular intervals, vehicles meet a minimum acceptable standard of safety. The most important items that should be inspected are as follows:

- braking system;
- steering;
- tires; and
- lights.

While there is no international fixed agreement on the age of first testing of vehicles, it is recommended that light vehicles in developing countries are tested after three or four years and then annually, whereas high utilization vehicles such as HGVs, PSVs, and taxis should be tested after one year, and then annually with inspections every six months after 10 years of age. These are recommendations for minimum testing frequencies. In order of priority, the components necessary for an effective vehicle roadworthiness testing system are as follows:

- a legal framework;
- a coordinating and managing authority;
- trained and qualified staff;
- adequate testing facilities and equipment; and
- an enforcement and backup operation.

PRIORITY ACTIONS NEEDED

1. Vehicle defects most likely to contribute to road accidents and casualties should be targeted in routine and roadside vehicle inspections.

2. Checklists, assessment forms, increased controls, and training programs should be used to encourage uniform testing standards and procedures between stations and inspectors and to minimize corruption.

3. Random roadside inspection checking should be introduced involving the police and vehicle inspectors day and night to encourage compliance with safety standards.

Vehicle safety standards are necessary to ensure unsafe vehicles are not imported and to develop a safety culture among vehicle operators, owners, and users. They must be backed by adequate roadside checks in order that the overall standard of vehicles is gradually raised. The end result should then be a reduction in the contribution of vehicle defects to road accidents.

1 INTRODUCTION

These sector guidelines on "Vehicle Safety Standards" are from a set of Road Safety Guidelines for the Asian and Pacific Region policymakers, developed as part of a regional technical assistance project (RETA 5620) funded by the Asian Development Bank (ADB).

They deal with the need for effective control of vehicle design, construction, operation, and maintenance standards and the means by which these can be assured in order to reduce to a minimum the effect of poor vehicle condition on road users and infrastructure. These sector guidelines consider the need for enforcement of vehicle standards, how standards are assured, and the essential links in a vehicle standards system.

2 WHY THE NEED FOR VEHICLE SAFETY STANDARDS?

Studies carried out in the United Kingdom (UK) in recent years have indicated that between 5 percent and 8.5 percent of accidents are directly caused by vehicle condition faults. Other recent studies in the country indicate that 25 percent of goods vehicles and 11 percent of large passenger carrying vehicles involved in accidents have contributory defects.

In developing countries, it is likely that vehicle defects are more often a factor in accidents as vehicle condition is generally much worse. The vehicle fleet is usually older with many vehicles imported second-hand from other countries. And there may be difficulty in obtaining suitable spare parts.

In addition to a shortage of specialized equipment and tools, maintenance skills are often scarce and knowledge of modern repair techniques is frequently poor. Short-term thinking often dominates maintenance and repair decisions. Lack of a formal apprenticeship system or of technical training colleges can result in poor maintenance as there is little incentive to develop trained technical repair staff.

Lighting defects are common in developing countries. Roadside surveys conducted in Kathmandu, Nepal, in 1996 found only 40 percent of trucks and buses inspected had front lights and a nighttime survey of long distance buses found two thirds with one or no rear lights. Vehicle lighting is even more important in developing countries where road lighting, and road marking, and signs are inadequate and driving conditions poor.

Bus accidents are likely to be serious with a high loss of life when they occur in inhospitable regions remote from rescue services. For example, a bus accident in Peru in 1995 killed more than 30 people when the vehicle rolled down a mountainside after the driving lights had failed and the driver steered the vehicle with one hand while holding a flashlight out of the window in order to follow the road. Similar accidents are common where the predominant form of passenger transport is the bus.

Overloading is a serious problem in many developing countries. Each vehicle has a designed maximum weight, which depends on the structural strength of the chassis, suspension, braking system, tires, and engine power. In addition, many countries regulate the effect on road surfaces and bridges by controlling the gross vehicle weight and individual axle load to a figure lower than the gross vehicle design weight.

Unofficial modification of goods vehicles by welding reinforcements or extensions to the chassis or the addition of an extra axle can result in a vehicle with a seriously compromised safety performance. This practice is common in many countries that have ineffective regula-

tion of construction standards. Trucks may use a combination of chassis strengthening and an extra axle to double their load carrying capacity. Unfortunately, even the extra axle may only increase braking capacity by 50 percent, whereas the gross weight may have increased by two thirds.

Buses are often constructed on truck chassis using materials and designs that offer little or no protection to passengers in the event of an accident. Leg room between seats is often exceptionally poor in order to squeeze the maximum number of seats in the vehicle, and the seat frames themselves are usually formed from angle steel, frequently causing amputation of limbs in an accident. Emergency exits, when provided, are often blocked by a row of seats, making their use difficult.

Secondary safety in general, i.e., what happens to occupants during an accident, is a subject the vast majority of local vehicle builders appear to know little about. They rarely incorporate safety elements during indigenous vehicle construction or adaptation.

Some form of regulation of vehicle builders, especially those in the informal sector who build bodies on basic chassis, is an essential step on the way to providing safe transport for all sectors of the community.

Vehicle construction standards can also influence the extent of injuries incurred in road accidents. Seat belts, pedestrian-friendly vehicle fronts, and safety glass are examples of how vehicle standards can help protect and minimize casualty severity. Conversely, the construction of vehicle bodies from timber can result in severe injuries in even minor accidents as the wood splinters rather than deforms as sheet steel should, and it absorbs more of the impact energy in so doing.

Vehicle gaseous, particulate and noise emissions also have major effects on the environment. When at high concentrations, and in conjunction with certain other atmospheric conditions, these can present a major health hazard. This is especially important in cities within the tropics where large numbers of people live and work on the streets, or where the topography does not permit easy dispersal of such gases.

Plate 1: Simple low cost inspection ramp in Fiji.

3 KEY COMPONENTS

In order that a vehicle can be maintained in a safe, roadworthy condition it is necessary for various legal and operational systems to be linked. These systems include:

1) legislation;
2) management and administration;
3) equipment and facilities;
4) training and staffing; and
5) ownership.

These constitute the key components that must be in place for this sector to operate effectively in terms of road safety. Each of these is discussed briefly below.

3.1 Legislation

Before any testing system can be embarked upon, the legal framework by which it is to be regulated should be produced. The legislation should include the components or systems, standards, and authority for testing. It is essential that the legislation is in the form of an enabling bill that is unambiguous, clear, and general rather than specific. The specific requirements of a testing scheme should then be detailed in separate regulations that can be easily updated and are enabled by the main legislation.

Procedures (including monitoring) are the responsibility of the relevant government body and should draw on best practices of existing methods from other countries. For example, the relevant European Community directive (77/143/EEC[1] and amendments) forms an excellent basis for any roadworthiness scheme and can easily be modified to cope with local conditions. Similarly, the British Vehicle Inspectorate publications[2-6] on the inspection of

the different classes of vehicles are models of clarity and are freely available.

Similarly, the regulation on construction and use may be drawn up with reference to legislation from other countries adapted as appropriate to local needs, conditions, and resources. These should define the requirements for the various types of vehicles and what initial inspection (type testing) of locally-built or imported second-hand vehicles is necessary.

In order to ensure that vehicles are presented for test when required by law, it is necessary to have an easily identifiable control system. This, if enforced, can help to ensure all vehicles undergo inspection testing and can control the flow of vehicles through testing. Many countries have legislated the use of color-coded windshield stickers that give the vehicle inspection date and that make it easier for police and other enforcement authorities to see when a vehicle is due for retesting. This encourages compliance with testing requirements.

Plate 2: Training of vehicle inspection staff in Fiji.

Given the reliance on imported vehicles (both new and reconditioned) in many Asian and Pacific countries, regional standardization and harmonization of vehicle design and construction safety standards would prove useful for the motor vehicle importing nations, ensuring safe vehicle standards. There is nothing intrinsically wrong with importing second-hand vehicles as long as they are roadworthy. Care should, however, be taken to ensure that these vehicles have not been imported because of dangerous faults. Any second-hand vehicles imported should be subject to a roadworthiness inspection that is, of necessity, more rigorous than the routine inspection. A system of type approval should be established that requires all imported vehicles to comply with safety requirements of the major vehicle manufacturing standards in international use.

3.2 Management and Administration

The policy implications of operating a particular vehicle testing regime need to be carefully evaluated by the responsible body. The requirements need to be continuously monitored and the degree to which performance targets are met assessed. Inspection frequency and length of inspection determine staffing requirements but the organization of test stations is also critical for staffing needs.

It is vital that clear lines of reporting are constructed that allow two-way communication between the headquarters and the test stations. These comments apply equally whether the inspections are carried out in the private sector or in the public sector. Irrespective of who does the actual testing, the overall policy and management should be kept within the government.

Clear manuals and documentation are necessary to ensure that common systems, and standards of testing and enforcement are used throughout the region, and that all essential vehicle systems are checked. These manuals should include procedures and failure modes and should also be freely available to the public in order that their confidence in the system is not only generated but maintained.

Public perception of vehicle testing in many countries is that illicit payments to the vehicle inspector will result in preferential treatment. The regular checking of testing premises, procedures, and recently tested vehicles is necessary to ensure that the system can be seen to be open and honest. Wherever possible, direct and private contact between the tester and vehicle owner or operator during the test procedure should be eliminated in order to reduce opportunities for corrupt payments to influence the test outcome.

3.3 Equipment and Facilities

Requirements will vary considerably, depending on the resources available in a particular country, the stage that existing and proposed testing has reached, and the technical education and skills of the users. The use of low-cost, locally manufactured equipment may often be preferable to expensive high-cost equipment that requires skilled use and maintenance, often at a high regular cost. Basic testing of brakes and lights can be done even with simple equipment. The exact equipment requirements are not listed here as they are beyond the scope of this Guidelines. They would obviously be customized to the requirements and resources of any country requiring them. De-

pending on sophistication required, the cost could range from US$100 to US$100,000 per test lane.

Although equipment is essential for many of the standard tests used in more developed countries, it is not totally indispensable and it may often be feasible to replace it with simplified test procedures. Although precision and accuracy may suffer, similar tests may be carried out with low-cost, locally produced equipment. Table 1 below gives an indication of equipment requirements for different levels of roadworthiness testing.

It should be noted that computers are now relatively inexpensive so that even the lowest-cost organization should actively consider their introduction for all aspects of administration.

Equipment is often designed by a manufacturer for a particular market. When sold in a new market, the problem arises of lack of know-how, both in equipment operation and maintenance. The provision of equipment without maintenance contracts is unfortunately all too common even where the inspectors have been given instruction in operation of the equipment. In several countries roller brake testers have been observed in an unserviceable condition because of a lack of maintenance and parts. In other countries this may be compounded by the donation of equipment through bilateral aid without any training or maintenance backup.

The preparation of clear, written procedures, where possible in the local language but most definitely in the official language, is essential. These procedures should include elementary fault finding, routine calibration, cleaning, and basic maintenance. Where the results from testing a system are dependent on the design of that system, then amplification notes must be provided. More complex maintenance should be contracted to the local agent for the equipment or to a reputable local company with skills in the maintenance of electro-mechanical equipment.

Monitoring of pass rates by inspector, test station, and vehicle class can quickly identify departures from the norm. Although computerization of testing is feasible, it is likely to be impractical given available resources. How-

Table 1: Equipment Requirements

Level of testing	Equipment/characteristics
Basic • No previous effective testing • Below 20 vehicles/1,000 inhabitants • Gross domestic product (GDP) per capita below US$500/year • Widespread evasion of testing	Low-cost equipment • Headlamp pattern marked on wall • Black smoke visual inspection • Brake test on road using decelerometer
Medium • Testing carried out but has been restricted due to domestic situation or lack of resources • Below 100 vehicles/1,000 inhabitants • GDP per capita above US$500/year • Evasion common	Mixture of equipment • Optical headlamp meter • Black smoke meter • Tire tread depth gauge [low-cost] • Roller brake tester for heavy vehicles • Brake test on road using decelerometer for light vehicles • Steering free play meter
High • Routine testing to consistent international standards • Above 100 vehicles/1,000 inhabitants • GDP per capita above US$3,000/year	High-quality, standardized equipment • Optical headlamp meter • Black smoke meter • CO/HC meter • Tire tread depth gauge • Roller brake tester for all vehicles • Steering free play and suspension checking equipment
State of the art • High motorization with need for control of vehicle numbers • High income GDP per capita above US$10,000/year	Computer controlled equipment minimizes operator subjectivity and maximizes throughput. • Possible full control by one organization • High security documentation and control paramount

Plate 3: Singapore training station.

ever, computerization of all testing data results will permit rapid evaluation of performance. A quick response to irregularities will have much more effect than disciplinary action 6 or 12 months after the effect. Such monitoring should take place weekly to ensure upholding of standards.

Accident and defect data records will be an important way of evaluating the relevance of the vehicle inspection process and should be carefully maintained. The need for an accident inspection capability should be evaluated in connection with the police and insurance companies, and a clear funding mechanism should be established.

All vehicle inspection services should charge fees to recover costs and generate funds for investment in equipment and control systems. This applies to operations carried out by both the public and private sectors. It will also apply to regulatory work carried out by a government body to oversee private testing.

3.4 Training and Staffing

Inspection and supervisory staff, qualified to a set standard of technical ability in order to make judgmental decisions on pass/fail criteria, are necessary in any system. Training of inspection staff in methods, standards, administration, and control of the systems and equipment is essential before any testing regime can be adopted. The training could be from either the public or private sector, depending on the local situation, or could be carried out locally by trainers from other countries. It can be carried out in public sector or private institutions, but may involve overseas training or visits by experienced staff in order that best international practices may be assimilated.

The Vehicle Inspectorate in the UK, for example, runs numerous courses on vehicle inspection and has team of expert trainers that are available for training staff in all aspects of vehicle testing, to a variety of technical standards.

Plate 2 shows a group of examiners in Fiji being shown vehicle testing methods and techniques using videos produced in Germany and the UK as part of practical and theoretical instruction on location. Such training should always be focused on the vehicles and equipment that are available in the test stations in the home country.

Courses should all be aimed at qualified mechanics who should have a detailed knowledge of vehicle technology, repair, and operation. The training itself can then concentrate on "how to inspect a vehicle". It should concentrate on components and systems to be inspected, how to inspect them, and reasons for failing them. Such a course could cover all vehicle types and classes within a two-week period. Each course would train up to eight inspectors with one trainer being involved per class. This will obviously depend on a common language between trainer and students.

Frequent information updating and in-service training sessions are important for maintaining the professional standards of vehicle inspectors. Staffing requirements will obviously vary with the complexity of the inspection and facilities.

3.5 Ownership

Different countries adopt different policies towards ownership and control of vehicle testing facilities. Each has its own advantages and disadvantages that may be more suitable to the country, its demographic situation, and legal, political, and financial policies. The vehicle inspection system can be privately or publicly operated or a combination of both. In any event it should be regulated by the government via the local ministry of transport. The key features of these alternative approaches are outlined below.

Private ownership and operation: Full private ownership reduces the capital costs to the state to a minimum but necessitates strong and independent supervision of testing standards, facilities, and training of testing station staff.

This system has been adopted by Singapore where three main contractors (all qualified to International Quality Assurance Standard ISO 9002) have been licensed. There is, in addition, an enforcement regime operated by the Registrar of Vehicles and the police. A government testing station, formerly the only standards enforcement facility, is available for testing suspect vehicles by government examiners. Testing of light vehicles in the UK is also carried out by the private sector with appropriate control and enforcement by the government.

Public ownership/private operation: Public ownership of the testing facility but operated by a private enterprise is one of three systems operated in Hong Kong, China and regularly offers the business out to contract. This has the advantage of lowering the immediate capital cost to small operators interested in tendering. Since government maintains a presence in the testing station for booking and other functions, it is also possible to monitor standards closely. It increases the government capital outlay but ensures it keeps closer control over property and land rights.

Public ownership and operation: Public ownership and operation of the facility is the system used in the UK for much of the testing of HGVs and PSVs. It ties up considerable governmental capital but can offer an unbiased and relatively corruption-free service whose running costs are completely funded from test fees. It is appreciated by most vehicle operators, whose associations canvased for its retention when privatization of the testing system was proposed. This system is also used for testing of all types of vehicles in a number of Asian and Pacific countries. Effective monitoring of activities is, however, necessary. In many such countries, public servants are extremely badly paid and the possibilities of corruption may be higher within an inefficient government system than in a closely regulated private system.

Private ownership/public operation: Private ownership of the facility with testing carried out by public sector inspectors is a system now being encouraged in the UK. The private operator (often a transport operator with a large fleet of vehicles) installs equipment in the premises to the specification of the Vehicle Inspectorate. Tests are booked through the parent Vehicle Inspectorate Testing Station by operators who wish to have their vehicles tested in the facility. A vehicle inspector visits the premises and carries out the tests. This has the advantage of providing a more immediate service to the customer, reducing traveling and down time but increases staff costs to the Inspectorate.

Much of the specified equipment should already be held by large organizations for regular maintenance and diagnostics, providing a safer operation; it has the disadvantage of possibly adding a capital cost to their operation for any extra equipment not already needed for maintenance. However, some of this cost can be recouped by charging a fee to visiting operators.

3.6 Spot Checks and Enforcement

Random roadside spot checks, using a joint team of police and vehicle inspectors, are of crucial importance in reminding drivers and operators of the continuing need to upkeep vehicles for safety. These checks can be combined with document and weight checking, forming a useful enforcement tool that can be installed for long or short periods at a variety of locations.

The standards of vehicle maintenance and operation can be effectively controlled only by regular vehicle condition checks carried out in approved and regulated testing premises and by frequent roadside spot checks so that all drivers feel at risk of prosecution if they drive a vehicle without a valid roadworthiness certificate.

4 STAGES OF DEVELOPMENT

The most simple systems should be considered first. They are the least likely to be affected by corruption, will need the least funding and training, and can proceed with the minimum of outside help.

Countries should be realistic about the number of vehicles they can test in relation to the number of trained staff available. Frequently a country's existing inspection system is struggling under the weight of requirements of testing every six months and lack of staff. Consequently, one of the ways to reduce the number of vehicles to be tested is to increase the time to initial test for new vehicles, reducing the severity and range of vehicles to be tested. As a general rule, fewer good tests of dangerous vehicles are preferred to many tests of minimal value.

Training should be carried out in the home country and tailored appropriately to the vehicle type and systems of the country.

Monitoring systems should be established and should be rigorous and independent. Data should be collected frequently and analyzed quickly to identify unusual patterns in pass rates.

Fees should be set at a level that will enable the organization's costs to be recovered and that will allow investment in improved control procedures and equipment.

Routine inspection should be reinforced by frequent random roadside checks undertaken by police and vehicle inspectors working in collaboration.

5 BENEFITS AND EFFECTS

Maintaining vehicle safety standards has the following three main benefits:

1) safety culture is promoted and all motorists know they have a responsibility and obligation not to drive unsafe or unroadworthy vehicles on the road;
2) vehicle defects are a contributing factor in a smaller proportion or road accidents; and
3) the severity of injury of casualties is reduced as vehicles are safer.

Perhaps the most important aspect of a vehicle roadworthiness scheme is the promotion of a safety culture. Knowing that the vehicle has to meet certain minimum standards of safety will encourage drivers to think about safety and why the roadworthiness requirements are there. Safe driving and vehicle condition are closely interconnected as it is difficult to care about driving standards when you do not care about the condition of the vehicle you drive and the safety of your passengers.

The phrase "minimum acceptable standard" has a very clear meaning and is one that should be appreciated by all vehicle operators. It means these are the lowest standards at which vehicles should be allowed to operate. Vehicles that are maintained to barely "acceptable standards" will be unsafe and in an unroadworthy condition for most of their time on the roads. It therefore follows that vehicles should be maintained to a higher standard to allow for any deterioration between servicing to ensure that they do not reach a condition in which they are unsafe to use.

Safer vehicles will generally be involved in fewer accidents. Even when accidents do occur, less serious injury may result because of the safety features (e.g., seat belts or safety glass). When all systems are working correctly, it is possible that drivers may be able to reduce speed more quickly and take evasive action such that the effects of an impact are minimized, perhaps with reduced injury.

It should be emphasized that vehicle inspection is a safety inspection. Incorporation of too many nonsafety-related items can have a detrimental effect on the inspection, and it is strongly advised that these are kept to a minimum and only included if they are directly relevant to the operation of the vehicle; e.g., exhaust emission testing.

6 EXAMPLES OF GOOD PRACTICE

Singapore has what is probably the most sophisticated and closely regulated system in the world for control of vehicle standards. Plate 3 shows the interior of one computer controlled and automated station, owned and operated by Singapore Technologies Automotive (STA). A third station is shortly to open.

The Singapore vehicle testing system might be perhaps better described as ideal practice. The inspection flow chart for Singapore testing stations is shown in Figure 1. Other countries within the region with good vehicle testing systems include People's Republic of China; Hong Kong, China; Republic of Korea; and Malaysia.

In the UK, the testing system has evolved over many years. The testing of buses started in an informal way early this century and developed until it was formalized in 1982. Inspection is carried out to a strict regime by examiners of the Vehicle Inspectorate in authorized premises equipped with specified facilities.

HGVs have been subject to this scheme since 1968. HGVs, PSVs, and taxis (i.e., including most public passenger carrying vehicles) are tested annually from the end of their first year of service.

Testing of private cars and other light vehicles was introduced in 1960. The date of first test was originally at ten years old but this pe-

Plate 4:
UK Testing station.

riod was reduced to three years. Light vehicles (under 3.5 tonnes design gross weight or 12 passenger seats) can be tested in private garages. There are about 18,000 of these throughout the country, authorized and supervised by officers of the Vehicle Inspectorate.

All testing systems are subject to continuous development to improve standards, and harmonization with European and international requirements, such as braking and environmental pollution. The HGV and PSV system in the UK is being developed to adapt it to computer control. It will maintain the depth of human inspection necessary to accommodate a wide range of vehicle ages, which can be difficult to achieve with the fully computerized systems used in some countries. Plate 4 shows a UK Vehicle Inspectorate Testing Station carrying out a close visual examination of a front wheel system.

The UK's period of testing is annual after three years for small private vehicles and annual after one year for HGVs, PSVs, and taxis. This is stricter than the equivalent European Union standards and the justification for more frequent testing is difficult to make. Some countries, such as Singapore, with its highly productive and sophisticated test system, specifies inspections every six months for HGVs, PSVs, and taxis.

7 REFERENCES AND KEY DOCUMENTS

The International Motor Vehicle Inspection Committee is a nonprofit making organization that exists to exchange information and experience continuously among its members within the field of safety and environmental inspection of vehicles. An International Motor Vehicle Inspection Committee, Comite International Del Inspectorate Technique Automobile (CITA), 1991 survey[7] of 21 countries in Africa, Asia, Europe, and North America concluded that there should be standardization throughout every country on methods of compulsory periodic inspection, the number of testing stations in relation to in-service vehicles, the testing station equipment, the minimum period of test for each type of vehicle, and a time limit during which different countries should comply. It also recommends that for developing countries, plans should be made to introduce progressive training for testing staff and the necessary testing equipment. The paper also considers, using information current at the time, and the pros and cons of the various types of testing organization, whether they are private or publicly owned and operated.

The UK's Vehicle Inspectorate has been converted to agency status and information available in its Annual Report gives a considerable degree of information that would be valuable in the setting up of a similar institution in other counties. The manuals for vehicle inspection and operation of a testing scheme are also published in the UK by the Stationery Office and are useful. The most useful documents in this sector are listed below: The relevant European Community Directives are EC Directive 77/143/EEC and amendments on the approximation of the laws of member states relating to roadworthiness tests for motor vehicles and their trailers.

2 United Kingdom Vehicle Inspectorate. Cars and Light Commercial Vehicle Testing (ISBN 0 11 551053 2).

3 United Kingdom Vehicle Inspectorate. Motor Cycle Testing (ISBN 0 11 551005 2).

4 United Kingdom Vehicle Inspectorate. Heavy Goods Vehicle Inspection Manual (ISBN 0 11 551063 X).

5 United Kingdom Vehicle Inspectorate. Public Service Vehicle Inspection Manual (ISBN 0 11 551070 2).

6 United Kingdom Vehicle Inspectorate. Ministry of Transport Testing Guide (ISBN 0 11 551056 7). The Stationery Office.

7 Ing Guido. CITA Working Group, "Promotion of the Vehicle Inspection." Paper: "Technical Inspection." CITA absi, Rue de la Technologie 21/25B 1082, Brussels, Belgium. Tel: (32 24) 69070; Fax: (32 24) 690 795.

Items 2-6 can be obtained from Stationery Office Bookshop, P.O. Box 276, London SW8 5DT, UK. Tel: (44 171) 873 0011; Fax: (44 171) 873 8200.

Road Safety Guidelines for the Asian and Pacific Region

The Guidelines cover 14 individual sectors affecting road safety, with four introductory chapters and four appendices. Information is presented in a series of freestanding documents that can be extracted for distribution and discussion.

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