SAFETY PUBLICATION SERIES

GOOD PRACTICE GUIDE

Annual Roadworthiness Inspection Scheme for Mobile Cranes Mounted on Non-standard Chassis

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CPA Good Practice Guide

Working in Partnership

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Foreword

Roadgoing mobile cranes are a common sight on the roads of this country and, as with all vehicles, have the potential to cause great harm if they are not maintained in a roadworthy condition. The majority of vehicles on the road in Great Britain are required by law to have an annual roadworthiness inspection. The purpose of the inspection (often known as the “MOT test”) is to ensure that vehicles are roadworthy and meet the requirements of the various regulations governing construction and use.

Some large vehicles, including mobile cranes mounted on bespoke chassis, which form the majority of the UK mobile crane fleet, are not included in the regulatory regime for the annual testing requirements.

In the interest of road safety, the CPA’s Crane Interest Group has decided to introduce a voluntary annual roadworthiness scheme for those mobile cranes exempted from the HGV testing requirements. As well as providing an annual record of the crane’s condition, the inspection will provide valuable monitoring of the effectiveness of the crane owner’s maintenance regime. The CPA scheme is based on the requirement of the Driver and Vehicle Standards Agency’s *Heavy Goods Vehicle Inspection Manual* taking account of the derogations permitted by *The Road Vehicles (Authorisation of Special Types) (General) Order 2003* (STGO).

The scheme has been developed by a working group with many years’ experience in the operation and maintenance of road going mobile cranes. Both the Department for Transport (DfT) and the Driver and Vehicle Standards Agency (DVSA) have provided invaluable assistance with the process and, as can be seen below, have expressed their support for the scheme.

This document sets out the requirements of the scheme, providing guidance on the management of the process, inspection personnel, inspection requirements, records, equipment and facilities, and quality assurance. The advice in the document is straightforward, comprehensive and easy to adopt.

Whilst this voluntary roadworthiness inspection scheme is primarily aimed at mobile cranes outside the scope of the plating and testing regulations it may be applied to other vehicle mounted equipment such as MEWPs operating under STGO.

I thank those who have been involved in its preparation and commend the scheme to all those responsible for operating and maintaining roadgoing mobile cranes. Please read this document and adopt the voluntary roadworthiness inspection scheme for your mobile crane fleet.

Kevin Minton
Chief Executive
Construction Plant-hire Association

A properly maintained vehicle fleet is crucial to keeping our roads safe. This is just as true for specialised heavy vehicles as for any others.

When the Government changed the law in 2017 to bring a wider pool of specialist vehicles into statutory annual testing, bespoke chassis cranes and other plant, as well as all vehicles operating under the special types order, retained their exemptions. This was because of the practical difficulties of testing such atypical or outsized vehicles at authorised testing facilities. At the time the Government encouraged industry parties to come forward with workable solutions for testing these vehicles on a voluntary basis.

I am delighted that this scheme has been developed as a consequence, in collaboration with the Driver and Vehicle Standards Agency. It provides a clear framework to help operators discharge their legal obligation to maintain a roadworthy fleet. I would encourage all operators of relevant vehicles to consider taking it up.

Gordon MacDonald
Head of Enforcement Policy
Driver and Vehicle Standards Agency

Driver & Vehicle
Standards
Agency

1.0 Introduction and Summary

The majority of heavy goods vehicles on the road in Great Britain are required to have an annual roadworthiness inspection. The purpose of the inspection (often known as the "MOT test") is to ensure that the vehicle is roadworthy and meets the requirements of the various regulations governing its construction and use.

Some large vehicles, listed in Schedule 2 of the *Goods Vehicles (Plating and Testing) Regulations 1988 (as amended),* are exempt from plating and the annual testing requirements.

Previously the list of exempted vehicles included mobile cranes, engineering plant and tower wagons (vehicle mounted MEWPs). In September 2017 *The Goods Vehicles (Plating and Testing) (Miscellaneous Amendments) Regulations 2017*, were published. These remove the exemption from the regulations for certain categories of vehicle based on a standard goods vehicle chassis, including mobile cranes, engineering plant, tower wagons and road construction vehicles, from the 20th May 2018. Mobile cranes mounted on a "bespoke" chassis continue to be exempt from plating and annual testing. (see **Table 1**)

Vehicle Type	Statutory MOT Test	Voluntary Roadworthiness Scheme
Mobile crane or MEWP mounted on HGV chassis in full compliance with Construction and Use Regulations	*Required*	*Not applicable*
Mobile crane or MEWP mounted on HGV chassis **not** in full compliance with Construction and Use Regulations and operating under STGO	*Exempt*	*In Scope*
Mobile crane or MEWP mounted on a bespoke chassis and operating under STGO	*Exempt*	*In Scope*

Table 1 – Statutory MOT Test Requirements for Mobile Cranes and MEWPs

To avoid overloading testing facilities the Department for Transport has decided to adopt a phased approach for those vehicles coming into the scope of testing. Details of this can be downloaded from https://movingon.blog.gov.uk/wp-content/uploads/sites/45/2017/11/Roll-out-of-testing-for-newly-in-scope-heavy-vehicles_nov17.pdf

It should be borne in mind that although some vehicles are exempt from annual testing, they are still required by the *Road Vehicles (Construction and Use) Regulations 1986 (as amended)* to be maintained so that "… *no danger is caused or is likely to be caused to any person in or on the vehicle or on a road".* Equally for those crane owners with an Operator's licence for their transport fleet any roadworthiness issues with mobile cranes may well result in the revoking, suspension or curtailing of that licence. Detailed information on vehicle maintenance is given in the DVSA publication *Guide to maintaining roadworthiness - Commercial goods and passenger carrying vehicles* (see **Annex K**).

Vehicles mounted on "bespoke" chassis rather than standard commercial vehicle chassis, generally do not comply with all requirements of the *Road Vehicles (Construction and Use) Regulations 1986 (as amended)* (C & U), particularly in terms of gross vehicle weight, axle weight and brake performance. Consequently, they operate under the *Road Vehicles (Authorisation of Special Types) (General) Order 2003* (STGO). Large vehicles such as mobile cranes may have a gross vehicle weight of over 100 tonnes and travel the length and breadth of the UK.

***NOTE**: Standard commercial vehicles operating outside the limitations of C & U will operate under STGO.*

In the interest of road safety, the CPA has decided to introduce a voluntary annual roadworthiness scheme for those mobile cranes exempted from the HGV testing requirements. As well as providing an annual snapshot of the crane's condition the inspection will provide valuable feedback on the effectiveness of the crane owner's maintenance regime. The CPA scheme is based on the requirement of the Driver and Vehicle Standards Agency's *Heavy Goods Vehicle Inspection Manual* taking account of the derogations permitted by STGO.

NOTE: *Whilst this voluntary roadworthiness inspection scheme is primarily aimed at mobile cranes outside the scope of the plating and testing regulations it may be applied to other vehicle mounted equipment such as MEWPs operating under STGO.*

This document sets out the requirements of the scheme, providing guidance on the management of the process, inspection personnel, inspection requirements, records, equipment and facilities, and quality assurance.

The scheme is owned by the Crane Interest Group of the CPA who will review and amend this document as and when required to take account of changes to legislation, DVSA vehicle inspection requirements and current practice.

2.0 Definitions

2.1 *bespoke chassis*

see **2.2**

2.2 *non-standard chassis*

a specially designed chassis for mounting a mobile crane, or other item of plant referred to in this document as “a vehicle”

2.3 *standard commercial chassis*

a volume manufactured chassis generally used for goods vehicles, but which may have a mobile crane or other item of plant mounted on it

NOTE: *The 2017 regulations refer to a “motor vehicle chassis”*

2.4 *vehicle inspector*

person with the necessary skills, knowledge, training and experience to carry out roadworthiness inspections on vehicle chassis to the required standard

3.0 Legal Requirements

3.1 *Health & Safety at Work etc. Act 1974 (HSWA)*

The Health and Safety at Work Act places a duty on employers to ensure the health and safety of employees and others who may be affected by their work activities. Similar duties are placed on the self-employed and persons in control of premises. Employees, managers and directors also have responsibilities. The HSWA also places a duty on construction plant owners and users, where their work activity involves plant being used where it could affect the general public.

3.2 *The Road Traffic Act 1984, 1988 and 1991*

The Road Traffic Act covers requirements for the use of all vehicles on highways and any other road to which the public has access. The act covers the construction and use of vehicles, including requirements for testing.

3.3 *The Road Vehicles (Construction and Use) Regulations 1986 (As amended) (C & U)*

The Road Vehicles (Construction and Use) Regulations, made under the Road Traffic Act 1972, specifies detailed requirements for the construction and use of all road vehicles, including mobile cranes. Part of the requirements for use is a requirement (Regulation 100) that all vehicles, including mobile cranes, are maintained so that "… *no danger is caused or is likely to be caused to any person in or on the vehicle or on a road".*

3.4 *The Road Vehicles Lighting Regulations 1989 as amended*

The Road Vehicles Lighting Regulations made under the Road Traffic Act 1988 set out the requirements for the lighting of road vehicles.

3.5 *The Road Vehicles (Authorisation of Special Types) (General) Order 2003 (STGO)*

This Order, made under Section 44 of the Road Traffic Act 1988, authorises the use on the road of certain types of vehicle, including mobile cranes, which do not fully comply with the Construction and Use Regulations. The Order also specifies the requirements that must be met by such vehicles.

3.6 *The Goods Vehicles (Plating and Testing) Regulations1988 (as amended)*

The Goods Vehicle (Plating and Testing) Regulations, made under the Road Traffic Act 1972, set out the requirements for the annual testing of most goods vehicles. Schedule 2 lists those vehicles which are exempt from the regulations. Schedule 2 has been amended by the The Goods Vehicles (Plating and Testing) (Miscellaneous Amendments) Regulations 2017 (see **3.7**).

3.7 *The Goods Vehicles (Plating and Testing) (Miscellaneous Amendments) Regulations 2017*

The Goods Vehicles (Plating and Testing) (Miscellaneous Amendments) Regulations amend the list of exempted vehicles in Schedule 2 of the 1988 regulations. The amendments remove mobile cranes from the list of exemptions from plating and testing. However, those mobile cranes running under STGO (see **3.5**) continue to be exempt by virtue of Regulation 44(e) of the Goods Vehicle (Plating and Testing) Regulations 1988

4.0 Management of Annual Roadworthiness Inspections

4.1 *Introduction*

Annual roadworthiness inspections of exempted vehicles can either be carried out by an in-house inspector or by a third-party inspection body. In either case it is essential that the person carrying out the inspection is competent and has the necessary independence and impartiality to allow objective decisions to be made. Part of the independence is being free from pressure to pass an unroadworthy vehicle.

Carrying out annual roadworthiness inspections in-house may have the benefit that the inspector is very familiar with the vehicle being inspected, however procedures must be in place to ensure independence and impartiality. Inspection by a third party will ensure independence.

4.2 *Use of a third-party inspection body*

The benefit of a third-party inspection body is that the vehicle inspector will, by definition, be independent from all aspects of the maintenance and operational management of the mobile crane. They may, however, not have the detailed product knowledge that an in-house vehicle inspector might possess, but they will have been comprehensively trained and assessed in vehicle roadworthiness inspection techniques and will know when to ask for product specific information. They will look at a crane chassis from a different perspective than someone regularly involved in the maintenance of that type or model of crane.

Third party inspection bodies should be selected with care, as not all bodies will have the required level of generic and specific product knowledge required for the effective roadworthiness inspection of mobile cranes chassis.

Use of a third-party body will require management input from the crane owner and user in terms of making the mobile crane available, providing details of maintenance carried out, preparation of the crane for the roadworthiness inspection and management of roadworthiness inspection reports. Both parties must also be prepared to take a crane out of service if the third-party vehicle inspector carrying out a roadworthiness inspection identifies defects which do not meet the pass criteria.

It is essential that the mobile crane owner and the vehicle inspector, or their employer, agree and periodically review, the programme and information requirements for annual roadworthiness inspections. Written records of these reviews should be made, both as evidence that the reviews have been undertaken and to evaluate long term trends. This maximum interval between reviews should be 24 months.

NOTE: *A list of third-party inspection bodies able to undertake roadworthiness inspection on mobile crane chassis will be available on the CPA website and will be updated from time to time*

4.3 *In-house annual roadworthiness inspections*

The requirements for the management of in-house annual roadworthiness inspections are covered in **Annex H.**

5.0 Inspection Personnel - Attributes, Training and Assessment

5.1 *Introduction*

It is essential that the roadworthiness inspection is always carried out by persons who have been assessed as competent and have adequate training, information and independence to carry out the work required.

5.2 *Attributes*

Vehicle inspectors carrying out the roadworthiness inspections should have the following attributes:

Personal Attributes

- Be mentally and physically capable of carrying out the work to be undertaken;
- Have a responsible attitude;
- Be able to adequately assimilate information;
- Be able to make objective assessments;
- Be able to communicate clearly with other personnel;
- Be aware of their responsibilities under the Health and Safety at Work etc Act, supporting regulations and other relevant regulations and industry guidance;
- Be trained in the use, pre-use checks and maintenance of their personal protective equipment and capable of using it correctly.

Knowledge Base

- Have a full understanding of the inspection criteria for HGV vehicles;
- Have an understanding of chassis design and vehicle engineering;
- Have knowledge of appropriate test procedures which may be employed and the interpretation and limitations of those techniques;
- Be aware of their own limitations and have the ability to seek guidance.

Practical Skills

- Be capable of identifying defects or weaknesses in vehicles which could compromise the roadworthiness of that vehicle;
- Have sufficient knowledge and experience to assess the importance of defects or weaknesses in the chassis and identifying what actions need to be taken in order to rectify them. In particular they should be able to:
    - where necessary specify any limitations on the use of the vehicle;
    - carry out any testing required as part of roadworthiness inspections;
    - report on the findings of the roadworthiness inspection;
- Be able to apply engineering judgment to non-standard vehicle components.

5.3 *Qualifications and Experience*

Vehicle inspectors should have both appropriate recognised formal qualifications and a relevant level of practical experience in a motor vehicle engineering field.

A list of suitable qualifications for vehicle inspectors is given in **Annex F**

Employers must determine competence of each individual person, both existing employees and new entrants, based on the attributes listed above, together with formal qualifications.

5.4 *Vehicle Inspector Selection*

Vehicle inspectors should be selected through a formally documented assessment process. An example of a competence assessment form based on the DVSA Technical Competency Framework is shown in **Annex I**.

The purpose of the assessment, which must include a sufficiently robust technical interview and other elements, is to determine whether or not the interviewee has the general aptitude and appropriate level of relevant underpinning knowledge and understanding to perform the intended duties of a vehicle inspector when combined with the training provided by the employer.

The competences required by a vehicle inspector are:

- Effective DVSA Inspection manual navigation;
- Understanding STGO requirements;
- Categorisation of defects and prohibition procedures;
- Assessment of component wear including pass/fail criteria;
- Vehicle Inspection procedure and methods;
- Inspection documentation writing skills;
- Braking system performance testing and calculations;
- Demonstration of practical ability in carrying out vehicle inspections.

5.5 *Training Plan*

An individual training plan should be drawn up for each person who is to carry out the roadworthiness inspection of vehicles. Achievement of this plan and continuing professional development should be monitored at frequent intervals as part of the management review process (See **8.0**) and included in the quality system (e.g. ISO 9001) auditing process. The maximum interval between reviews should be 24 months.

5.6 *Authorisation*

Once a vehicle inspector has completed any training required and have been assessed as competent to carry out roadworthiness inspections; they should be formally authorised and instructed by their employer in writing.

5.7 *Irtec Qualifications*

Irtec is a renewable and voluntary accreditation scheme, run jointly by the Society of Operations Engineers and the Institute of the Motor Industry, that assesses the safety and competence of technicians who maintain and repair vehicles in the commercial vehicle, trailer and passenger carrying industries.

Iretec licences are available at four levels:

- Service Maintenance Technician
- Inspection Technician
- Advanced Technician
- Master Technician

The Inspection Technician qualification is particularly appropriate for people carrying out roadworthiness inspections of mobile crane chassis'. Details of the requirements are given in **Annex G**.

There are currently 23 assessment centres located throughout England Scotland and Wales.

Details of the Iretec scheme can be found at http://www.soe.org.uk/irtec-licensing-scheme/

5.8 *Training Courses*

Details of some providers of training in vehicle inspection are given in **Annex J**.

5.9 *Refresher Training*

Refresher training covering changes to legislation, DVSA inspection requirements and current practice, should be undertaken at intervals of not more than three years.

5.10 *Technical Product Awareness*

Before carrying out the roadworthiness inspection on a specific make and model of vehicle all personnel should have access to relevant technical information from the chassis manufacturer or the employer.

5.11 *Assessment*

It is important that all vehicle inspectors are assessed on appointment, within 12 months and at regular intervals (not exceeding five years) thereafter. Assessment should form part of any training.

5.12 *Continuing Professional Development*

Continuing Professional Development (CPD) is the conscious updating of professional knowledge and the improvement of a vehicle inspector's competency throughout their working life. This is a joint responsibility between the vehicle inspector and their employer.

5.13 *Training Records*

There should be a comprehensive individual training record for all personnel carrying out roadworthiness inspections. This should be updated as training is undertaken.

6.0 Information for Roadworthiness Inspection Personnel

6.1 *Introduction*

The wide variation of designs and the increasing complexity of bespoke chassis technology make it essential that all roadworthiness inspection personnel are supplied with adequate information to enable them to carry out their duties effectively and safely. Maintenance information comes in various forms and from several sources.

Employers of inspection personnel should ensure that a robust system is in place to provide adequate up to date information to inspection personnel. This may be achieved in a number of ways including:

- Provision of paper manuals using a system which will ensure frequent updating is taking place;
- Provision of electronic manuals using a system which will ensure frequent updating is taking place;
- A central technical information function which can be contacted for up to date information whenever roadworthiness inspection is taking place.

NOTE: *It is essential that a system is in place to ensure that manual updates, safety alerts and other information are communicated immediately to those who need to know.*

Where a third party inspection body is used to carry out roadworthiness inspections the crane owner should ensure that they are supplier with all necessary information to enable them to carry out roadworthiness inspections effectively. This may include provision of the manufacturer's contact details.

6.2 *Manufacturer's Information*

Information supplied by the non-standard chassis manufacturer will be the main source of instructions and specifications when carrying out maintenance. The primary document will be the maintenance manual for the specific chassis model (and in some cases serial number), supplemented by technical information bulletins.

Care should be taken to ensure that the information is up to date and relevant to the chassis being inspected.

6.3 *In-House Technical Information*

Some vehicle owners will have their own technical information dealing with specific issues relating to the vehicles in their fleet. This can be a useful source of information for inspection personnel; however, care should be taken to ensure that information is current and obsolete data has been withdrawn.

6.4 *Information Formats*

Paper information such as manuals and bulletins are rapidly being replaced by electronic formats such as CD-ROM and website downloads. This has the advantage that physical storage space is kept to a minimum and, in the case of website downloads; information should be up to date at the point of access. However, the use of electronic display devices, such as laptop computers, during maintenance is not always easy or practical. Information may therefore have to be printed out for use on site, in which case care should be taken that for any subsequent use the data is still current and relevant.

6.5 *Management of Information*

Information should be managed effectively if it is to be of maximum benefit to those involved in the inspection process. Outdated information can at best waste time and at worst may well affect safety. It is therefore essential that organisations carrying out roadworthiness inspections on non-standard chassis ensure that they have robust systems and procedures to ensure that inspection personnel are supplied with adequate information that is both up to date and accurate. The chassis manufacturer should be consulted to ensure that information is current.

7.0 Inspection Procedures and Requirements

Roadworthiness inspections will be carried out within twelve months of the start of this scheme and then at least annually. The inspections and tests will be based on the DVSA *Heavy Goods Vehicle Inspection Manual*, with amendments reflecting the requirements of STGO (see **Annex B**).

Vehicles coming into the country should be accompanied by evidence of a current roadworthiness inspection or be inspected under the voluntary scheme. New vehicles should be inspected within twelve months of being taken into use.

Where a mobile crane is on site for a long period and the annual roadworthiness inspection certificate expires before the crane leaves site it is permissible for the crane to be driven from the site directly to a suitable location for inspection. Before doing this the crane owner should ensure that the crane is in a roadworthy condition.

7.1 *Preparation of the vehicle for inspection*

The vehicle must be clean enough to allow the component parts to be inspected. In practice, the chassis and running gear must be power washed to remove mud and grease so that the inspector can inspect all necessary parts of the chassis. The vehicle must also be in a condition which does not put the inspector at risk during the inspection and tests.

When presented for inspection the vehicle must be in the configuration specified on the manufacturer's plate.

Adequate time must be allowed in the vehicle's work programme for the inspector to complete the necessary inspections and tests thoroughly.

7.2 *Inspections and tests to be carried out*

Annex B lists the *HGV Goods Vehicle Inspection Manual* inspections and tests that are applicable to the vehicle within the scope of this scheme.

Requirements for brake testing are set out in **Annex A**. For cranes with a one person cab, such as city cranes, where the inspector is unable to travel with a decelerometer, the use of a rolling road should be considered.

If a smoke meter is not available, exhaust emissions should be checked using the visual emission test set out in Section 05 of the *HGV Goods Vehicle inspection Manual*.

Where a headlamp tester is not available, headlamp aim should be checked with the vehicle standing on a level surface by projecting the headlamp beams onto a flat vertical surface and measuring their height and horizontal positions.

7.3 *Pass/fail standards*

The standards set out in the *HGV Goods Vehicle Inspection Manual* will be applied during the inspection. Serious defects should be assessed in accordance with the section of the *HGV Goods Vehicle Inspection Manual* entitled "*Standards for Prohibition Issue at Annual Test".*

7.4 *Defect categorisation*

Deficiencies found during the inspection shall be categorised in one of the Groups shown in **Table 2**.

7.5 *Recording the results of the inspection and tests*

The results of the inspection and tests carried out will be recorded during the inspection on the CPA Inspection Record Form VR1 (see **Annex C**). A satisfactory pass will result in a Pass Certificate VR2 being issued (see **Annex D**).

Failure of the inspection will be indicated on the Failure Notification Form VR3 (see **Annex E**). This will state that there is a major or dangerous defect which poses a significant risk of injury to persons and must be rectified before the vehicle travels on the highway.

The Pass Certificates, CPA Inspection Record Forms and Failure Notifications Forms (where applicable) must be completed at the end of inspection, issued to the presenter and a copy sent to the crane owner.

Category	Explanation
Minor	Deficiencies having no significant effect on the safety of the vehicle or impact on the environment and other minor non-compliances. If only defects of a minor nature are present, a pass certificate will still be issued.
Major	Deficiencies that may prejudice the safety of the vehicle, have an impact on the environment, put other road users at risk or other more significant non-compliances. A major defect will result in the issue of a failure notification
Dangerous	Deficiencies constituting a direct and immediate risk to road safety or having an impact on the environment. A dangerous defect will result in the issue of a failure notification

Table 2 – Defect Categorisation

7.6 *Time allowed for inspection and tests*

It is important that inspectors are not put under time pressure to complete inspections as this could reduce the thoroughness and effectiveness of the process. To an extent the time required for inspection will depend on the size of the vehicle and number of axles. **Table 3** gives guide inspection times for various sizes of vehicle which may be useful for planning purposes.

NOTE: *These guide times do not include the time required to complete brake tests or the time required to prepare the vehicle for inspection*

Number of Axles	*Guide Inspection Time (hours)*
2	1
3	1.5
4	2
5	2.5
6	3
7	3.5
8	4
9	4.5

Table 3 – Guide Inspection Times (not including brake tests and preparation)

7.7 *Re-inspection*

Where a vehicle has failed the inspection, the defects identified should be rectified prior to travelling on public or private roads. The rectified defects should then be re-inspected within 14 calendar days by the inspector who carried out the original

inspection. Only then can a Pass Certificate be provided if the reinspection has been satisfactory.

NOTE: *The reason for specifying reinspection within a period of 14 calendar days by the inspector who carried out the original inspection, is to limit the time required to assess the adequacy of the rectification of those defects which led to the original failure. A greater interval between original inspection and reinspection may well lead to a longer reinspection time being required.*

NOTE: *Where complex repairs are required, and the repair period extends beyond 14 days the crane should be re-inspected as soon as the repairs have been completed.*

7.8 *Retention of records*

Copies of all Inspection Record Forms, Pass Certificates and Failure Notification forms must be kept by the inspection facility for at least 5 years. These records should be stored securely and, in the case of electronic records, be adequately backed up against accidental erasure.

Crane owners should retain their copies of Pass Certificates and Failure Notification Forms in the crane's history file for the duration of the period in which the crane is in their ownership.

8.0 Crane Operator/Owner Management Review of Roadworthiness Inspection Records

8.1 *Introduction*

A regular management review of roadworthiness inspection is essential for the safe and efficient operation of a vehicle fleet. The review should be carried out initially at least monthly. Once a suitable level of confidence in the systems has been established the review frequency may be reduced in the light of experience.

The review ensures that management can be confident that robust maintenance and roadworthiness inspection systems are in place and will rapidly highlight any shortcomings and the need for corrective action. It may be beneficial to include vehicle inspectors or the employer of third party vehicle inspectors in this process.

8.2 *Benefits*

The benefits of regular management review of roadworthiness inspection records are:

- Confidence that the system is functioning correctly;
- Ensuring that there is evidence of annual roadworthiness inspections which can be presented to the Police and/or DVSA in the event of an incident and a subsequent investigation;
- Providing a measure of the effectiveness of vehicle maintenance;
- Establishing trends over time;
- Feedback to the roadworthiness inspection activity;
- Ensuring that defects are rectified in a timely manner.

8.3 *Review Frequency*

The review should be carried out initially at least monthly. Once a suitable level of confidence in the systems has been established the review frequency may be reduced in the light of experience.

8.4 *Review Methodology*

The review should aim to identify that roadworthiness inspections are carried out in accordance with the requirements of the scheme, together with the results of internal audits.

8.5 *Review Records*

It is essential that written records of the management review are made, both as evidence that the reviews have been undertaken, to evaluate long term trends and gain the benefits set out in **8.2**.

9.0 Facilities Required

9.1 *Introduction*

Roadworthiness inspections require adequate facilities and equipment to enable them to be carried out effectively, efficiently and safely. The size and sophistication of the facilities will depend on the size of vehicles to be inspected.

Where a third party inspection body is undertaking the roadworthiness inspection the inspector and crane operator/owner should agree on the adequacy of the facilities for the inspection to be carried out.

Roadworthiness inspections must only be undertaken following a suitable and sufficient risk assessment, by both the occupier of the premises and the employer of the inspector. This assessment should identify any control measures required to reduce risks to an acceptable level. The outcomes of the risk assessment should be used to put a safe system of work in place. This safe system of work should be documented in a method statement, which may be generic for frequently repeated tasks. Control measures will include the training, assessment and authorisation of all personnel required to carry out the tasks and may also include the provision of suitable Personnel Protective Equipment (PPE). If PPE is used personnel must be instructed in pre use checks, correct usage and maintenance.

Inspection activities involving work at height must be planned and carried out in accordance with the following hierarchy:

- **Avoid** work at height where possible;
- Use work equipment or other measures to **prevent** falls where working at height cannot be avoided;
- Where the risk of a fall cannot be eliminated, use work equipment or other measures to **minimise** the distances and consequences of a fall should one occur.

Where the use of an inspection pit is required, the risks of working in confined spaces should be taken into account and consideration given to the use of a lockout/tagout entry (LOTO) procedure.

If the inspector is being assisted by a person in the vehicle cab, it is essential that adequate means of communication between both parties is available to avoid unintended movement during inspection.

9.2 *Inspection Areas*

Adequate level, well drained, hardstanding with adequate lighting is essential if roadworthiness inspections are to be carried out successfully. The hard standing should have adequate load bearing capacity for the loads to be imposed.

Provision of or access to an adequately sized building is preferable.

Where pits are provided for under-chassis inspections they must be provided with adequate access, egress, lighting, ventilation and edge protection.

As an alternative, it may be possible to use the cranes outriggers to raise the chassis to provide under-chassis access. If this method is used it should be included in the Safe System of Work for the inspection process.

Barriers should be provided to prevent unauthorised personnel from entering the inspection area and all inspection and other authorised personnel should be briefed on site specific hazards and emergency procedures.

9.3 *Welfare Facilities*

Suitable welfare facilities should be provided for the use of all employees and visitors.

9.4 *Test and Measuring Equipment*

Sufficient test and measuring equipment must be available to enable all testing and measurement to be carried out accurately. Such tests and measurement equipment should include:

- Approved decelerometer;
- Approved tyre tread depth gauge;
- Approved and calibrated diesel smoke meter (not mandatory);
- Approved headlamp aim tester (not mandatory);
- Approved roller brake tester (not mandatory).

All test and measuring equipment should be marked with a unique identification number and entered on an asset register to ensure that the equipment can be monitored and tracked throughout its life. Equipment should be stored in a dry and secure location.

NOTE: *Lists of DVSA approved equipment can be found at* https://www.gov.uk/government/collections/authorised-testing-facilities-atfs-guidance-forms-and-updates

9.5 *Calibration*

All test and measuring equipment should be subjected to periodic calibration to nationally traceable standards, marked with the calibration expiry date and records kept of the calibration. The calibration interval should be set taking into account the manufacturer's guidance, together with the frequency and conditions of use.

Annex A – Brake Test Requirements from CPA TIN 104 Issue D

The majority of mobile cranes operating in the UK are not able to comply fully with The Road Vehicles (Construction and Use) Regulations 1986 (as Amended), therefore they operate under the requirements of The Road Vehicles (Authorisation of Special Types) (General) Order 2003 (STGO).

The STGO Regulations permit certain derogations from the requirements for the type testing of vehicle brakes set out in European Directive 71/320/EEC. As a consequence, the requirements for in-service brake testing set out in the DVSA Heavy Goods Vehicle Inspection Manual are not appropriate for mobile cranes subject to STGO. The purpose of this document is to set out the requirements for mobile cranes when operating under STGO.

A.1 Performance Requirements

A.1.1 *Service Brakes*

The minimum primary and secondary braking performance requirements for service brakes during in-service brake testing of mobile cranes running under STGO are:

Service Braking Performance STGO Mobile Crane			
Category	Mean Deceleration at Normal Engine Speed	Stopping Distance Measurement	
		Initial Test Speed	Stopping Distance
A	3 m/s^2	40mph (64km/h)	62.5m
B	3 m/s^2	40mph (64km/h)	62.5m
C	3 m/s^2	30mph (48km/h)	36.9m
Notional Braking Efficiency = 30%			

Secondary Braking Performance STGO Mobile Crane			
Category	Mean Deceleration at Normal Engine Speed	Stopping Distance Measurement	
		Initial Test Speed	Stopping Distance
A	1.45m/s^2	40mph (64km/h)	118.8m
B	1.45m/s^2	40mph (64km/h)	118.8m
C	1.45m/s^2	30mph (48km/h)	68.6m
Notional Braking Efficiency = 15%			

NOTE: A mobile crane which meets the requirements for braking efficiency or deceleration or stopping distance is deemed to have passed the in-service brake test.

NOTE: Mobile Cranes with an axle weight in excess of 16,500kg are deemed to be “Engineering Plant”, meeting the requirements of Schedule 3 of STGO, with a maximum travel speed of 30mph on motorways and 12mph on any other road. The requirements for brakes on mobile cranes designated as Engineering Plant are set out in Clause 7 of Schedule 3.

A1.2 *Parking Brakes*

The parking brakes of mobile cranes, when applied by the driver from his driving position, should be capable of holding the laden vehicle stationary on an 18% up or down gradient.

A.2 Testing Methods

A2.1 *In-service Bakes*

The three alternatives for in-service brake testing in order of preference are:

- Roller brake testing
- Decelerometer brake testing
- Stopping distance test

A.2.1.1 Roller Brake Testing

Testing on a Roller Brake Tester is the preferred method of in-service brake testing as it requires a minimum of space, is carried out in controlled conditions and measures the performance of the brakes on individual axles. This is of particular importance on multi axle crane chassis where a satisfactory overall deceleration or stopping distance test may mask a problem with individual brakes.

The disadvantage of roller brake testing for mobile cranes is finding a suitable Roller Brake Tester with adequate axle weight capacity located in a building of sufficient size to accommodate the mobile crane. Mobile cranes have axle weights of up to 16,500kg, lengths of up to 22m, widths of 3m and heights of 4.4m.

NOTE: *Some mobile cranes with axle weights in excess of 16,500kg are categorised as "Engineering Plant". Roller brake testing of these cranes will require a Roller Brake Tester with a minimum capacity of 20,000kg.*

NOTE: *If the mobile crane is taken to an Authorised Testing Facility or a DVSA vehicle test station, the RBT will be pre-programmed to apply the minimum brake performance criteria for the statutory annual HGV test (* 50% service brakes and 25% secondary *brakes). This will generate at automatic fail on the printout for the majority of mobile cranes. However, as long as the braking efficiencies shown on the report are in excess of those given in Section* ***A1*** *of this document the crane brakes will meet the performance requirements for mobile cranes operating under STGO.*

A.2.1.2 Decelerometer Brake Testing

If testing on a Roller Brake Tester is not practicable decelerometer testing is the next preferred method, using a DVSA approved decelerometer. A list of approved decelerometer is available at:
https://www.gov.uk/government/publications/approved-decelerometers

Decelerometers must be calibrated in accordance with the DVSA specification for decelerometers at intervals not exceeding two years.

The decelerometer should be set up in accordance with the decelerometer manufacturer's instructions and the test carried out in the following conditions:

- A straight test road with a firm, level surface and an absence of standing water;
- Sufficient distance to allow acceleration to a speed of 20mph, application of the brakes and braking to a halt;
- Vehicle ABS systems should not be disconnected;
- Any switchable retarders should be switched off;
- Measurements should be taken in both directions and averaged out to allow for any variation in gradient;
- A minimum of two measurements should be taken in each direction.

A.2.1.3 Stopping Distance Test

Measuring the stopping distance of a mobile crane requires similar conditions to a decelerometer test, with the exception that the minimum speed at which the brakes are applied is 30mph.

The difficulty with this test is the accurate measurement of the stopping distance. but unfortunately, these devices are significantly more expensive than a DVSA approved decelerometer.

A2.2 *Parking Brakes*

Testing of mobile crane parking brakes can be under taken by either:

A2.2.1 Using a Slope

This is carried out by locating a suitable slope with a gradient of 18% (10.2° or 1 in 5.5). The crane should be parked facing uphill and the parking brake applied. If the crane remains stationary the requirement will have been met. The test should then be repeated with the crane parked facing downhill. If the crane remains stationary in both directions, the requirement will have been met.

A2.2.2 Using a Decelerometer

An alternative approach is to use a decelerometer. In this case the DVSA specify a minimum brake efficiency of 16%.

A.3 STGO Mobile Crane Categories

Under the STGO Regulations mobile cranes are divided into three categories A, B and C depending on the maximum axle weights. Full details are given in Schedule 2 of STGO and a brief summary is set out below.

STGO Category	***Max Axle Wt***	***Max No. Axles***	***Max GVW***
A	11,500 kg (drive) 10,000 kg (non-drive)	4[1]	36,000kg
B	12,500 kg	Not specified	Dependant on number of axles[2]
C	16,500 kg	9	150,000kg[3]

NOTE[1] See Table below

NOTE[2] Max GVW limited to N x 12,500kg where N is the number of axles on the crane

NOTE[3] Max GVW limited to N x 16,500kg where N is the number of axles on the crane

Category A: Axles and Gross Weight		
Number of Axles	**Distance Between Outermost Axles**	**Maximum Gross Weight of Crane**
2	3 metres	20,000 kg
3	5 metres	30,000kg
4	6 metres	36,000kg

Annex B – Inspections and Tests to be Carried Out

Item	HGV Manual Inspection No.	Subject	Applicable?	STGO Derogations		
				Category A	Category B	Category C
1.	1	Registration Plate	Yes	No	No	No
2.	3	Seat Belts & Supplementary Restraint Systems	Yes	No	No	No
3.	5	Exhaust Emissions (visual check only required)	Yes	No	No	No
4.	6	Road Wheels and Hubs	Yes	No	No	No
5.	7	Size and Type of Tyres (STGO Table 9)	Yes	No	Yes	Yes
6.	8	Condition of Tyres	Yes	No	No	No
7.	9	Sideguards, Rear Under-Run Devices and Bumper Bars (STGO Table 9)	Yes	No	Yes	Yes
8.	10	Spare Wheel and Carrier	Yes	No	No	No
9.	11	Vehicle to Trailer Coupling	No	N/A	N/A	N/A
10.	12	Trailer parking and Emergency Brake and Air Line connections	No	N/A	N/A	N/A
11.	13	Trailer Landing Legs	No	N/A	N/A	N/A
12.	14	Spray Suppression, Wings and Wheel Arches (STGO Table 9)	Yes	No	Yes	Yes
13.	15	Cab Security	Yes	No	No	No
14.	16	Cab Doors	Yes	No	No	No
15.	17	Cab Floor and Steps	Yes	No	No	No
16.	18	Seats	Yes	No	No	No
17.	19	Security of Body, Containers and crane support legs	Body only	No	No	No
18.	20	Condition of Body	Yes	No	No	No
19.	22	Mirrors and Indirect Vision Devices	Yes	No	No	No
20.	23	Glass and View of the Road	Yes	No	No	No
21.	25	Windscreen Washers and Wipers	Yes	No	No	No

Item	HGV Manual Inspection No.	Subject	Applicable?	STGO Derogations		
				Category A	Category B	Category C
22.	26	Speedometer/Tachographs	Speedo only	No	No	No
23.	27	Horn	Yes	No	No	No
24.	28	Driving Controls	Yes	No	No	No
25.	30	Steering Control	Yes	No	No	No
26.	33	Speed Limiter	No	N/A	N/A	N/A
27.	34	Pressure/Vacuum Warning and Build Up	Yes	No	No	No
28.	36	Hand Lever Operating Mechanical Brakes	Yes	No	No	No
29.	37	Service Brake Pedal	Yes	No	No	No
30.	38	Service Brake Operation	Yes	No	No	No
31.	39	Hand Operated Brake Control Valves	Yes	No	No	No
32.	41	Condition of Chassis	Yes	No	No	No
33.	42	Electrical Wiring and Equipment	Yes	No	No	No
34.	43	Engine and Transmission Mountings	Yes	No	No	No
35.	44	Oil Leaks	Yes	No	No	No
36.	45	Fuel Tanks and Systems	Yes	No	No	No
37.	46	Exhaust System and Nuisance	Yes	No	No	No
38.	48	Suspension	Yes	No	No	No
39.	53	Axles, Stub Axles and Wheel Bearings	Yes	No	No	No
40.	54	Steering Mechanism	Yes	No	No	No
41.	57	Transmission	Yes	No	No	No
42.	58	Additional Braking Devices	Yes	No	No	No
43.	59	Brake System and Components	Yes	No	No	No
44.	62	Rear Markings and Reflectors	Yes	No	No	No

Item	HGV Manual Inspection No.	Subject	Applicable?	STGO Derogations		
				Category A	Category B	Category C
45.	63	Lamps	Yes	No	No	No
46.	66	Direction Indicators and Hazard Warning Lamps	Yes	No	No	No
47.	67	Aim of Headlamp	Yes	No	No	No
48.	71	Service Brake Performance (STGO Table 9)	Yes	No	Yes	Yes
49.	72	Secondary Brake Performance (STGO Table 9)	Yes	No	Yes	Yes
50.	73	Parking Brake Performance (STGO Table 9)	Yes	No	Yes	Yes
51.	74	Other dangerous defects	Yes	No	No	No

Annex C – CPA Inspection Record Form VR1

CPA Roadworthiness Inspection Scheme Record Form VR1

Vehicle type and model:																		
Fleet identification:								*Registration No.*										
VIN/Chassis number																		
Date of inspection:						*Inspection location:*								*Odometer reading:*				
STGO Cat	A	B	C		*Inspection type*	Annual inspection		First inspection		Re-inspection		Other						

Item	HGV Manual No.	Inspection	Pass	Fail	Advisory		Item	HGV Manual No.	Inspection	Pass	Fail	Advisory
1.	1	Registration Plate					25.	36	Hand Lever Operating Mechanical Brakes			
2.	3	Seat Belts & Supplementary Restraint Systems					26.	37	Service Brake Pedal			
3.	5	Exhaust Emissions					27.	38	Service Brake Operation			
4.	6	Road Wheels and Hubs					28.	39	Hand Operated Brake Control Valves			
5.	7	Size and Type of Tyres (STGO Table 9)					29.	41	Condition of Chassis			
6.	8	Condition of Tyres					30.	42	Electrical Wiring and Equipment			
7.	9	Sideguards, Rear Under-Run Devices and Bumper Bars (STGO Table 9)					31.	43	Engine and Transmission Mountings			
8.	10	Spare Wheel and Carrier					32.	44	Oil Leaks			
9.	14	Spray Suppression, Wings and Wheel Arches (STGO Table 9)					33.	45	Fuel Tanks and Systems			
10.	15	Cab Security					34.	46	Exhaust Systems			
11.	16	Cab Doors					35.	48	Suspension			
12.	17	Cab Floor and Steps					36.	53	Axles, Stub Axles and Wheel Bearings			
13.	18	Seats					37.	54	Steering Mechanism			
14.	19	Security of Body					38.	57	Transmission			
15.	20	Condition of Body					39.	58	Additional Braking Devices			
16.	22	Mirrors and Indirect Vision Devices					40.	59	Brake System and Components			
17.	23	Glass and View of the Road					41.	62	Markers and Reflectors			
18.	25	Windscreen Washers and Wipers					42.	63	Lamps			
19.	26	Speedometer					43.	66	Direction Indicators and Hazard Warning Lamps			
20.	27	Horn					44.	67	Aim of Headlamp			
21.	28	Driving Controls					45.	71	Service Brake Performance (STGO Table 9)			
22.	30	Steering Control					46.	72	Secondary Brake Performance (STGO Table 9)			
23.	33	Speed Limiter					47.	73	Parking Brake Performance (STGO Table 9)			
24.	34	Pressure/Vacuum Warning and Build Up					48.	74	Other dangerous defects			

Notes relating to defects

Result of Inspection:	Pass	Fail	Advisory(s)	Delete as appropriate
Name of Inspector:			*Signature:*	

Annex D - Pass Certificate VR2

CPA Roadworthiness Inspection Scheme Pass Certificate VR2

Certificate Serial No. | | |

The vehicle of which the registration mark

is | | | | | | | | | with

VIN/chassis No. | | | | | | | | | | | | | | | | | |

Fleet No. | | | | | | | | | | | | | | | | | |

has been examined in accordance with the requirements of Clause **7.2** of the CPA *Annual Roadworthiness Inspection Scheme for Mobile Cranes Mounted on Non-standard Chassis* and it is hereby certified that the vehicle was found to comply with the statutory requirements prescribed under that section.

This certificate is valid from the date of issue until the last day of the month of:									
(a) Date of issue of certificate:									
(b) Date inspection completed (if different from (a)):									
Name of Inspector:									
Signature:									
Location at which inspection was carried out:									
Odometer reading at time of inspection									

Notes

1. Nature of Inspection Certificates

This certificate relates only to the condition of the vehicle at the time of inspection. It should not be regarded as evidence of its condition at any other time. It should not be taken as evidence that the vehicle is free from defects. It is not evidence of the general mechanical condition of the vehicle. Nor can it be taken to remove the requirement for the user to ensure that the vehicle is roadworthy at all times when it is used on a road.

2. Validity and Renewal of Certificates

This certificate should be renewed on or before its expiry date if the vehicle is to continue in use. Arrangements for a renewal inspection should be made in good time. Certificates are issued for a period of twelve months. This period can be extended if the crane is inspected up to two months prior to the expiry of the current certificate.

3. Retention and Production of Inspection Certificates

You are advised to keep this certificate readily available for inspection in order to demonstrate that the vehicle has been inspected under the CPA Roadworthiness Inspection Scheme within the past twelve months. You should also produce it (whether or not its expiry date has passed) when the vehicle is next subjected to an annual roadworthiness inspection.

4. Loss

If this certificate is lost or defaced a duplicate should be obtained from the organisation who carried out the inspection.

Annex E – Failure Notification Form VR3

CPA Roadworthiness Inspection Scheme Failure Notification VR3

Document Serial No. | |

The vehicle of which the registration mark or serial number

is | | | | | | | | | with

VIN/chassis No. | | | | | | | | | | | | | | | | |

Fleet No. | | | | | | | | | | | | | | | | |

has been examined in accordance with the requirements of Clause 7.2 of the CPA *Annual Roadworthiness Inspection Scheme for Mobile Cranes Mounted on Non-standard Chassis*. I refuse a Pass Certificate on the grounds that:

1. This vehicle has a major/dangerous defect or defects, indicated on the CPA Inspection Record Form, which poses a significant risk of injury to persons and must be rectified before the vehicle travels on the highway. *
2. A full examination of its braking system or systems as required by the Regulations could not safely be carried out because of the defects in the construction or condition of the vehicle, as indicated on the inspection record, which were present at the time of the examination. *

* Delete as appropriate

Date of issue of fail notification:
Name of Inspector:
Signature:
Location at which inspection was carried out:

Notes

1. Where a vehicle does not comply with the inspection requirements, the item, or items, with which this does not comply will be indicated on the CPA Inspection Record Form. In addition, the inspector may give additional information about the failure to comply in the section “notes relating to the defect marking”. A Pass Certificate will not be issued.
2. When any defects on the vehicle have been rectified it should be submitted for reinspection to the organisation and inspector who carried out the original inspection

Annex F – Suitable qualifications for vehicle examiners

Qualification Title	Qualification Reference Code	Organisation Name	Qual. Level	Qual. Type
Current Qualifications				
City & Guilds Level 5 IVQ Advanced Technician Diploma in Motor Vehicle Engineering	500/5982/8	City & Guilds	5	QCF
City & Guilds Level 3 Diploma in Light Vehicle Maintenance and Repair Principles	501/0019/1	City & Guilds	3	QCF
City & Guilds Level 3 Diploma in Light Vehicle Maintenance and Repair Competence	501/0017/8	City & Guilds	3	QCF
City & Guilds Level 3 Diploma in Heavy Vehicle Maintenance and Repair Principles	500/9983/8	City & Guilds	3	QCF
City & Guilds Level 3 Diploma in Heavy Vehicle Maintenance and Repair Competence	500/9984/X	City & Guilds	3	QCF
IMIAL Level 3 Diploma in Heavy Vehicle Maintenance and Repair Principles	500/9812/3	IMI Awards Ltd	3	QCF
IMIAL Level 3 Diploma in Heavy Vehicle Maintenance and Repair Competence	500/9823/8	IMI Awards Ltd	3	QCF
IMIAL Level 3 Diploma in Light Vehicle Maintenance and Repair Competence	500/9815/9	IMI Awards Ltd	3	QCF
IMIAL Level 3 Diploma in Principles of Bus and Coach Engineering and Maintenance (Mechanical/Electrical)	600/0541/5	IMI Awards Ltd	3	QCF
IMIAL Level 3 Extended Diploma in Heavy Vehicle Maintenance and Repair Principles	600/1690/5	IMI Awards Ltd	3	QCF
IMIAL Level 3 Extended Diploma in Light Vehicle Maintenance and Repair Principles	600/1691/7	IMI Awards Ltd	3	QCF
IMIAL Level 3 Extended Diploma in Motorsport Vehicle Maintenance and Repair	600/2760/5	IMI Awards Ltd	3	QCF
IMIAL Level 3 NVQ Diploma in Bus and Coach Engineering and Maintenance	600/0323/6	IMI Awards Ltd	3	NVQ
IMIAL Level 4 Diploma in Vehicle Maintenance & Repair Competence	600/0177/X	IMI Awards Ltd	4	QCF
IMIAL Level 4 Diploma in Vehicle Maintenance & Repair Principles	600/0439/3	IMI Awards Ltd	4	QCF
Edexcel Level 3 BTEC National Certificate in Vehicle Technology	500/2320/2	Edexcel Limited	3	VRQ
Btec Diploma in Engineering (Automotive)	500/3903/9	Edexcel Limited	3	VRQ
Edexcel Level 3 BTEC National Diploma in Vehicle Technology	500/2321/4	Edexcel Limited	3	VRQ
IMIAL Level 3 Diploma in Transport Engineering Maintenance for Passenger Carrying Vehicles	100/5972/6	IMI Awards Ltd	3	VRQ
IMIAL Level 3 Diploma in Vehicle Maintenance and Repair	100/5570/8	IMI Awards Ltd	3	VRQ
IMIAL Level 3 NVQ in Vehicle Maintenance and Repair	100/5533/2	IMI Awards Ltd	3	NVQ
IMIAL Level 3 National Diploma in Vehicle Maintenance and Repair	100/5583/6	IMI Awards Ltd	3	VRQ
City & Guilds Level 3 Certificate in Vehicle Maintenance and Repair	100/5344/X	City & Guilds	3	VRQ
City & Guilds Level 3 Diploma in Vehicle Maintenance and Repair	100/5345/1	City & Guilds	3	VRQ
City & Guilds Level 3 NVQ in Vehicle Maintenance and Repair	100/5230/6	City & Guilds	3	NVQ
IMIAL Level 3 National Diploma in Vehicle Maintenance and Repair	100/4642/2	IMI Awards Ltd	3	VRQ
EDI Level 3 NVQ in Transport Engineering and Maintenance	100/4498/X	Education Development International plc	3	NVQ
IMIAL Level 3 NVQ in Transport Engineering and Maintenance	100/4495/4	IMI Awards Ltd	3	NVQ
EAL Level 3 NVQ in Automotive Engineering	100/3572/2	EMTA Awards Limited	3	NVQ

EDI Level 3 Certificate in Transport Engineering and Maintenance	100/2723/3	Education Development International plc	3	VRQ
EDEXCEL Level 3 BTEC National Diploma in Vehicle Repair and Technology	100/1389/1	Edexcel Limited	3	VRQ
EDEXCEL Level 3 BTEC National Certificate in Vehicle Repair and Technology	100/1388/X	Edexcel Limited	3	VRQ
Qualifications No Longer Available				
City & Guilds Motor Vehicle Craft Studies	3810	City & Guilds	3	N/A
City & Guilds Repair & Servicing of Road Vehicles - Light Vehicle	3830	City & Guilds	3	N/A
City & Guilds Repair & Servicing of Road Vehicles - Heavy Vehicle	3830	City & Guilds	3	N/A
City & Guilds Motor Vehicle Technicians	390	City & Guilds	2	N/A
City & Guilds Motor Vehicle Technicians	390	City & Guilds	3	N/A
City & Guilds Full Technological Certificate	390	City & Guilds	4	N/A
BTEC Full Technological Certificate	Not Known	BTEC (Now Edexcel)	3	N/A
BTEC/SCOTVEC in Engineering	Not Known	BTEC (Now Edexcel)	3	N/A
BTEC/SCOTVEC in Motor Vehicle Studies	Not Known	BTEC (Now Edexcel)	3	N/A
ONC/HNC in Engineering (with suitable vehicle based modules)	Not Known	Not Known	3	N/A
SQC-HNC (Scottish) Automotive Management with Tech	Not Known	Not Known	3	N/A
National Craftsman's Certificate	Not Known	City & Guilds et al	3	N/A
Other Acceptable Awards				
IMI ATA Registration at Diagnostic Technician Level		IMI Awards Ltd	3	N/A
IRTE IRTEC Registration at Advanced Technician Level		IRTE	3	N/A
Engineering Council Registration at Engtech Level		Engineering Council	3	N/A
Artificers Warrant Officer 1 or 2 Rank		Not Known	3	N/A
VM Class 1	not known	Not Known	3	N/A

Annex G – Irtec Inspection Technician License Requirements

The minimum entry requirement is 3 years industrial experience or a Level 3 S/NVQ (or equivalent qualification) **plus** at least one year's experience in a relevant industrial environment.

In order to achieve an irtec licence, a technician must first carry out an hour-long theory (Under Pinning Knowledge) test at an irtec-approved assessment centre, before completing a practical assessment.

Practical assessments are carried out at an irtec-approved assessment centre, although they can be carried out in the workplace (under controlled conditions) by an irtec-approved assessor (additional charges may be applicable).

Once accredited, irtec technicians agree to abide by the Irtec code of conduct, receive a licence card, certificate and are placed on the Irtec technicians register.

The practical assessments in the Inspection Technician Licence are as follows:

1. Inspection of Vehicles
2. DVSA/OCRS (theory test)

As part of the underpinning knowledge test related to your industry sector you will also be asked fifty **theory** questions, e.g. large commercial vehicle, bus and coach or trailer.

30% of the questions will be **legislation** related, 70% will be **technical**.

Once the candidate has completed the Under Pinning Knowledge theory test, they have 12 months in which to successfully complete all the practical assessments.

Annex H – In-house Roadworthiness Inspection

H.1 *In-house Roadworthiness Inspection Management Structure*

If the vehicle roadworthiness inspection is being undertaken in-house an effective management structure should be put in place to ensure that everyone involved in the activity is aware of their responsibilities, properly briefed on their duties and that systems are in place to demonstrate independence and enable effective feedback, including the monitoring of inspections. A sample structure is shown in **Figure. H1.**

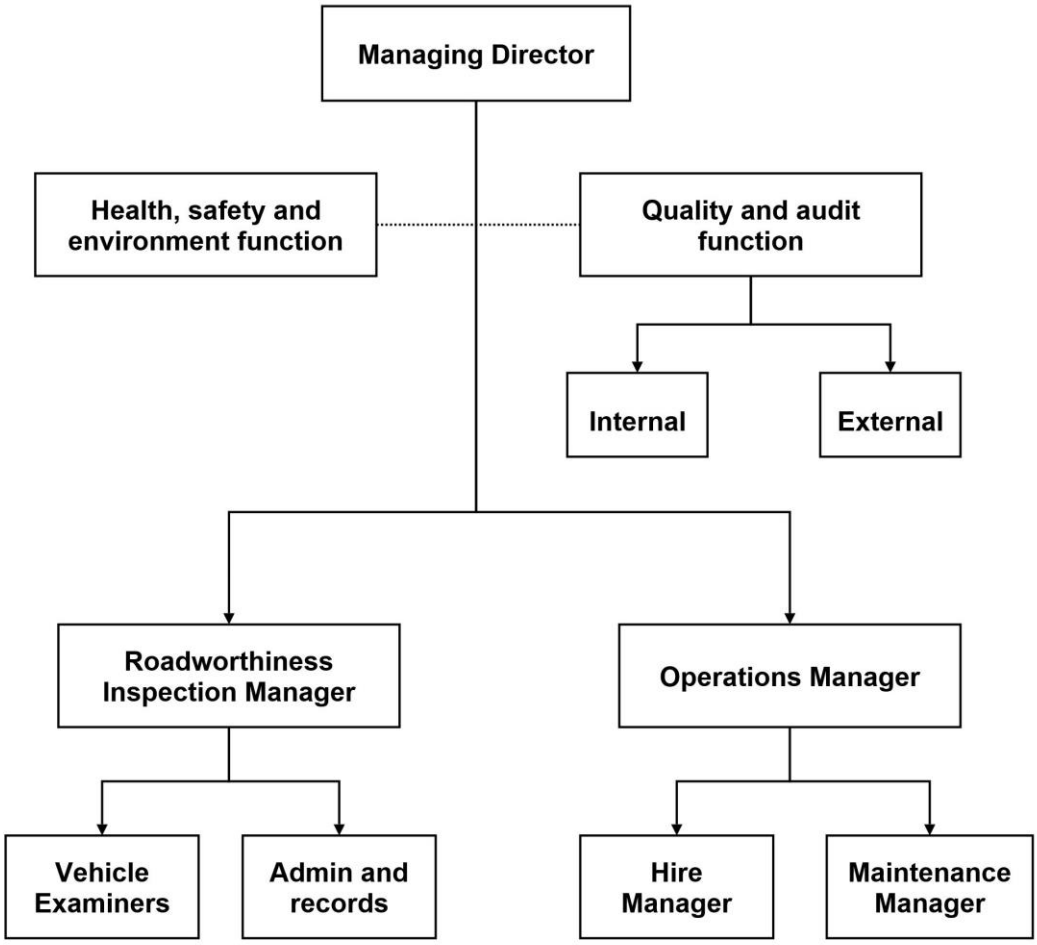

Figure H1. – Typical In-house Roadworthiness Inspection Organisation Structure

A number of measures can be taken which will help establish the independence of the competent persons:

- A fully documented, detailed and independently audited quality system such as ISO 9001;
- The roadworthiness inspection function reporting directly to the Managing Director or equivalent;
- An undertaking that the inspector will never inspect their own maintenance work, be involved in the operational management of the vehicle or be involved in any other conflicting activities;
- A statement that in the case of any conflict, the Managing Director will always back the inspector against commercial pressures from other parts of the organisation;
- The inspector has the authority to stop a vehicle owned or operated by the company from leaving the inspection area and travelling on the highway;
- The inspectors should be given adequate time to complete the inspection thoroughly;

- From this it is also clear that roadworthiness inspections, where a member of the maintenance team inspects their own work would not have the required degree of independence.

H.2 *Auditing of In-house Roadworthiness Inspection Management Systems*

Once an in-house roadworthiness inspection system has been established it is important that it is independently audited at least every six months to ensure that the system is being adhered to and that it is functioning correctly. Auditing should be carried out by a qualified auditor from outside the company.

If a business has a formal quality management system such as an ISO 9001 accredited system the vehicle inspection activity should be integrated into that system and the scheduled audits.

One provider of inspection system auditing services is the Freight Transport Association (FTA).

See http://www.fta.co.uk/services/vehicle_inspection_service/commercial_vehicle_inspections.html

Where companies do not have adequate resources and/or are not able to achieve the required degree of independence they should outsource the inspection of vehicles to a third party.

Annex I – Competence Assessment Form

Vehicle Inspector Competence Assessment		
The required competencies for Vehicle Inspectors carrying out annual roadworthiness test listed below. Record comments during interview to justify the assessment. Score after each interview: 4 Exceeds Criterion, 3 Meets Criterion, 2 Almost Meets Criterion, 1 Criterion Not Met. Review the scores to establish if each competence criteria has been met by the candidate.		
Competency 1 - Knowledge of Vehicles		
Competency Description - Up to date and in-depth knowledge of vehicles		
Competency Indicators	**Comments and Assessment**	**Score**
• Understands and is able to describe a vehicles main components and their operation; Includes; o Vehicle Structure o Vehicle braking systems (hydraulic or air) o Suspension systems (air/hydraulic or mechanical) o Steering systems (including geometry) o Running Gear/Power Train o Chassis o Tyres o Lighting/electrical systems		
• Has documented experience in the area of vehicle engineering, repair or maintenance.		
• Keeps self up-to-date with technical continuous professional development.		
Competency 2 - Vehicle Examination		
Competency Description - Has experience of undertaking an examination of a vehicle's components and/or systems to determine compliance with legislation or test standards and/or serviceability.		
Competency Indicators	**Comments and Assessment**	**Score**
• Correctly uses inspection equipment;		
• Uses the relevant procedure(s) for testing all the vehicle systems/components identified as being part of the test;		
• Is able to identify those components that are defective or non-compliant to legislation or service standards;		
• Carries out vehicle examinations in accordance to relevant health and safety policies and procedures;		
• Remains composed and assertive when faced with conflict, provocation or high-pressure situations;		

Competency 3 – Personal Specification		
Competency Description – Has the necessary personal competencies to carry out vehicle examination successfully		
Competency Indicators	**Comments and Assessment**	**Score**
Making effective decisions • Make and record effective decisions following the appropriate decision making criteria, framework or guidance		
• Undertake appropriate analysis to support decisions or recommendations		
• Investigate and respond to gaps, errors and irregularities in information		
Leading and communicating • Put forward their own views in a clear and constructive manner, choosing an appropriate communication method, e.g. email/telephone/face to face		
• Act in a fair and respectful way in dealing with others		
• Ask open questions to appreciate others' point of view		
Collaborating and partnering • Proactively contribute to the work of the whole team		
• Try to see issues from others' perspectives and check understanding		
• Listen to the views of others and show sensitivity towards others		
Managing a quality service • Act to prevent problems, reporting issues where necessary		
• Encourage customers to access relevant information or support that will help them understand and use services more effectively		
• Take ownership of issues, focus on providing the right solution and keep customers and delivery partners up to date with progress		

Annex J - Training Providers

- Training courses covering the practice of roadworthiness inspections and irtec technician accreditation at Service Maintenance Technician and Inspection Technician level are available from The Manchester College at: http://www.tmc.ac.uk/courses/irtec-inspection-technician

- A course on HGV Inspection Procedures and Standards which is available from the FTA. The course is advertised as giving the required knowledge to candidates wishing to undertake the irtec License underpinning knowledge test and practical assessment.

  Details of the course are at:
  http://www.fta.co.uk/services/training/assessments_and_tech_training/hgv_inspection_procedures_and_standards.html

- Courses on inspection procedures and standards incorporating the use of the Driver and Vehicle Standards Agency's Heavy Goods Vehicle Inspection Manual are undertaken by a number of training providers including:
  - Vehicle Inspection and Training Services at http://viats.com/Home.php
  - Lloyd Morgan Group at http://www.lloydmorgangroup.co.uk/
  - GTG at https://www.gtg.co.uk/

Annex K - Bibliography

Legislation

The Road Traffic Act 1984, 1988 and 1991

The Road Vehicles (Construction and Use) Regulations 1986 (As amended)

The Road Lighting Regulations 1989

The Road Vehicles (Display of Registration Marks) Regulations 2001

The Road Vehicles (Authorisation of Special Types) (General) Order 2003

The Goods Vehicles (Plating and Testing) Regulations1988 (as amended)

The Goods Vehicles (Plating and Testing) (Miscellaneous Amendments) Regulations 2017

Other Guidance

The Heavy Goods Vehicle Inspection Manual 2018 edition, DVSA
(download free from https://www.gov.uk/government/publications/hgv-inspection-manual)

Guide to maintaining roadworthiness - Commercial goods and passenger carrying vehicles, DVSA (download free from https://www.safedrivingforlife.info/sites/default/files/guide-to-maintaining-roadworthiness.pdf)

Categorisation of Defects - 2018 edition, DVSA (download free from https://www.gov.uk/government/publications/categorisation-of-defects)

Requirements for In-service Performance Testing of the Chassis Brakes of Mobile Cranes Operating Under STGO, Construction Plant-hire Association Technical Information Note
(download free from https://www.cpa.uk.net/crane-interest-group-publications-guidance)

Notification Requirements for Mobile Cranes and Engineering Plant, Construction Plant-hire Association Technical Information Note (download free from https://www.cpa.uk.net/crane-interest-group-publications-guidance)

Plating and Testing of Mobile Cranes Mounted on an HGV Chassis, Construction Plant-hire Association Technical Information Note (download free from https://www.cpa.uk.net/crane-interest-group-publications-guidance)

Useful websites

Department for Transport	www.gov.uk/government/organisations/department-for-transport
Driver and Vehicles Standards Agency	www.gov.uk/government/organisations/driver-and-vehicle-standards-agency
Freight Transport Association	www.fta.co.uk/
Institute for the Motor Industry	www.theimi.org.uk/
Road Haulage Association	www.rha.uk.net/
Society of Operating Engineers	www.soe.org.uk/

Annex L - Working Group Membership

Role	Name	Employer	Representing
Chairman	C Wood	Construction Plant-hire Association	CPA Crane Interest Group
Member	P Bradley	Baldwins Crane Hire Limited	CPA Crane Interest Group
Member	R Douglas-Jones	International Powered Access Federation	IPAF
Member	E Hudson	Liebherr (Great Britain) Limited	CPA Crane Interest Group
Member	S Leinster	Marsh Plant Hire Limited	CPA Crane Interest Group
Member	J Miller	Manitowoc Cranes UK	CPA Crane Interest Group
Member	J Moran	Flannery Plant Hire	CPA Member
Member	B Murphy	Camfaud Concrete Pumps Limited	British Concrete Pumping Interest Group
Member	N Peveller	Mammoet UK	CPA Crane Interest Group
Member	B Reilly	Reilly Concrete Pumping	British Concrete Pumping Interest Group
Member	G Weights	Ainscough Crane Hire Limited	CPA Crane Interest Group
Member	D Wheatley	Quinto Crane and Plant Limited	CPA Crane Interest Group
Secretary & Editor	T P Watson	Construction Plant-hire Association	CPA Crane Interest Group

NOTE: *The above list includes all those who have kindly given freely of their time and expertise to work on any of the versions of the guidance document and does not necessarily reflect the current membership of the Working Group.*

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