A LEIA Code of Practice

Maintenance requirement for lifts, lifting platforms, escalators and moving walks

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Contents

Foreword

This LEIA Maintenance Code of Practice has been produced to assist LEIA members and their customers to work together to put in place a maintenance regime to match the customer's needs and which protects the people who use and work on the products covered by the maintenance agreement.

All LEIA members are required to hold ISO 9001 Quality Certification. Having selected a LEIA member following this Code of Practice, customers can be confident that they have chosen a competent organisation to carry out their maintenance.

When appended to a service agreement this LEIA Code of Practice places expectations on the Maintenance Contractor and on the Customer. These expectations can be summarised as follows:

What the Customer should expect from the Maintenance Contractor

That they will:

- make a service agreement offer in accordance with the provisions of a LEIA model contract that meets the customer's stated requirements;
- work in accordance with the LEIA Safety Charter;
- carry out a Risk Assessment and a compile a Method Statement prior to commencing work on site;
- provide an efficient plant breakdown and repair service;
- provide an adequate emergency passenger release service;
- provide an initial condition report in accordance with BS EN 81-80, BS EN 115-2 etc.;
- complete maintenance visits in accordance with a planned maintenance programme;
- report to the responsible person and post warning notices before commencing work and on completion of the work;
- immediately notify the Responsible Person of any condition that is unsafe or is likely to become unsafe within a short time;
- keep the work area tidy and uncluttered;
- Will provide a maintenance log card and make entries after each visit.
- Will advise customers of changes to relevant British & European Standards and Regulations.

What the Maintenance Contractor should expect from the Customer

That they will:

- make available the original technical information and relevant service history of the plant together with any essential special tools supplied by the manufacturer;
- provide safe access to the work areas, including suitable access ladders where required and portable landing barriers in accordance with the provisions of BS 7255, BS 7801 etc.;
- act upon the recommendations of the Contractor in a timely manner particularly in respect of defective or missing safety devices;
- make efforts to improve the safety of the plant by taking into account the recommendations of the initial condition report in accordance with BS EN 81-80, BS EN 115-2 etc.;
- where plant has been taken out of service due to an unsafe condition, not reinstate it until sufficient measure have been taken to restore it to safe use;
- arrange for the plant to undergo a periodic Thorough Examination by an independent competent person; at intervals not exceeding 6 months in respect of a passenger carrying lift or 12 months for a non passenger carrying lift in accordance with LOLER 1998.
- Will report any defects immediately to the Contractor and carry out simple daily checks as outlined in this Code of Practice.

Introduction

This LEIA code of practice addresses the maintenance of lifts, lifting platforms, escalators and moving walks. The document is an industry Code of Practice, developed to improve the general standards of maintenance within the industry and to ensure that LEIA members offer a consistent high level of service to their customers.

This document has been prepared to take into account the following:

a) the number of companies operating in the market;

b) the need to define a minimum level of maintenance and reporting of information to customers;

c) increased technological sophistication of modern equipment.

All parties entering into maintenance agreements need to recognise what is entailed and the importance of reporting equipment condition and making activities transparent with regards to what is being done or needs to be done.

It aims to enable those persons purchasing maintenance to recognise and understand their responsibilities in relation to those they do business with and the need to recognise that it requires commitment from both parties if the work is to be undertaken safely.

This code of practice recommends best practices to be employed in order to provide for well-maintained equipment and safe working conditions.

Users of this document are reminded that, as a code of practice, it recommends actions to be taken by persons undertaking maintenance and the persons responsible for arranging maintenance. It does not specify requirements or recommendations for modifications or enhancements to the product in question or safe systems of work that are covered by other standards such as BS 7255 or BS 7801.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application. It should not be quoted as if it was a specification and particular care should be taken to ensure that claims of compliance are not misleading.

It has been assumed in the drafting of this document that the execution of its provisions will be entrusted to appropriately qualified and competent persons.

1 Scope

This code of practice offers recommendations regarding the maintenance of lifts, lifting platforms, escalators and moving walks and what a maintenance agreement entered into with a LEIA member could be expected to deliver. It is a fundamental assumption of this document that both the responsible person and the maintenance contractor both work to the recommendations of BS 7255, BS 7801 etc. Recommendations for safe working in these standards are not repeated in this code of practice.

It does not define a frequency or minimum duration for maintenance visits and inspections

This document may be applied retrospectively to an existing contract only by the mutual consent of both parties but preferably should be used for new agreements.

Exclusions

This document does not address the requirements of plant in special environmental condition such as lifts in potentially explosive atmospheres, mines, tunnel, exposed masts, ships or chemically aggressive atmospheres.

It does not cover requirements related to 3rd parties (Thorough Examinations) such as those conducted by engineering plant surveyors, insurance inspectors etc. under The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER).

It does not cover non plant related equipment installed in machinery spaces or lift wells such as fire detecting equipment, sprinklers, emergency lighting, general lighting, air conditioning, heating equipment or other equipment related to the building.

NOTE These items might be included if agreed between both parties.

Whilst the above exclusions clarify the limitation of application of this document it can still be used with care in such applications.

2 Terms and definitions

For the purposes of this document the following terms and definitions apply.

Basic tools Hand tools and equipment that can reasonably be expected to be provided by the maintenance contractor.
NOTE This does not include special diagnostic tools.

Formal exclusion (schedule) written statement within or attached to an agreement clearly identifying items not covered by the agreement.

Planned/Scheduled Periodic Maintenance all the necessary operations to ensure the safe and intended functioning of the installation and its components following the completion of the installation and throughout its life cycle.

Maintenance includes:

a) lubrication and cleaning of the plant, etc.;

However, the following cleaning operations are not considered as maintenance items:

1) cleaning of the external parts of a lift well;

2) cleaning of the external parts of the escalator or passenger conveyor;

3) cleaning of the inside of the car.

4) heavy contamination of pit area or removal of water due to ingress or flooding.

b) functional checks;

c) check of passenger rescue functionality;

d) the operations of setting and adjustment;

e) repair or changing of components that are included in the maintenance agreement which may occur due to wear and tear and do not affect the characteristics of the installation.

The following are not considered as maintenance operations:

a) renewal of a major component such as the machine, the lift car/cage, the control panel, etc., or safety component such as safety gear, etc., even if the characteristics of the new component are the same as the original;

b) replacement of the installation;

c) modernisation or refurbishment of the installation, including the changing of any characteristic of the installation (such as speed, load, etc.);

d) rescue operations carried out by Fire Services;

e) Thorough Examinations and Supplementary Tests, and third party inspections.

Maintenance contractor a suitably qualified party that is contracted to maintain the scope of equipment scheduled in a maintenance agreement.

Passenger person requiring use of a lift, lifting platform, escalator or moving walk etc.

Plant lift, lifting platform, escalator or moving walk to be maintained.

Reporting act of providing a condition report to the Responsible Person for the equipment and any necessary remedial work to ensure continued safety of the equipment.

Responsible person legal entity having right of possession of a lift, lifting platform, escalator or moving walk and responsibility for its safe working.
NOTE The responsible person is usually the owner or duty holder, sometimes the occupier, of the building in which the plant is situated.

Responsible person's (owner) information manual Information provided by the installer of new equipment to the original purchaser explaining how it should be used, maintained and dismantled. For example, as provided according to BS EN 13015.

Note 1 the manual is the property of the owner but it is intended that the document is made available to any maintenance contractor.

Note 2 the document is valuable to the owner, we therefore recommend a copy (not the original) is provided to any maintenance contractor.

Note 3 it is intended that the manual is updated throughout the life of the plant when modifications and changes to the original specification are made.

Note 4 The information manual includes information on the use of essential special tools and software access codes.

Risk assessment comprehensive estimation of the probability and the degree of possible injury or damage to health in a hazardous situation, in order to select appropriate safety measures.

Thorough examination an examination conducted by a party independent of the maintainer for example as under LOLER paragraph 1, 2, or 3 of regulation 9.

Special tools tools and/ or software essential for maintenance which can only be purchased direct from the original manufacturer and cannot be purchased on the open market
Note special tools may include electronic tools and software.

User person making use of the services of a lift, lifting platform, escalator or moving walk
NOTE A user is not necessarily the same as a passenger and includes persons waiting for a lift, lifting platform etc. or those working on it.

Workplace premises or part of premises where work is carried out

NOTE 1 This can include:

a) any place which is accessible to those at the workplace;

b) any means of access to/from the workplace e.g. staircase, corridor, road.

NOTE 2 A workplace is usually non-domestic, although the term can refer equally to domestic premises.

3 Purpose of maintenance

3.1 Maintenance objective

The level of maintenance will depend on what the responsible person wishes to achieve. The aim may be to:

- satisfy the legal requirement;
- plan financial expenditure and therefore an agreement that covers the cost of repairs will make it easy to forecast costs for coming years;
- protect the investment made in equipment and to keep it running at optimum performance.

Regardless of how good the equipment purchased, it will wear and deteriorate through use.

Due to the complexity of modern systems and dangers in the environment, only specialists trained in this field will know what to do and how to do it in safety.

In the market place maintenance contractors may offer products that cover more than that described within this document or may give their service agreement a commercial name different to that described here. This code of practice does not preclude such offering but any offering should at least include what is described within this document if compliance with this code is claimed.

3.2 Constituents of maintenance

3.2.1 Planned visits

The basic constituent of a maintenance agreement is an agreed number of planned maintenance visits.

The work to be undertaken on planned maintenance visits and the frequency of visits should be defined following the initial survey of the equipment and an assessment of maintenance requirements.

A typical schedule of work undertaken as part of a maintenance visit is shown in Annex B. Other or different items should be included in the schedule according to the particular equipment and the maintenance requirement identified.

The frequency of maintenance visits should be sufficient to enable the maintenance contractor to identify where items of equipment are becoming dangerous through wear. Clearly, a higher frequency is more appropriate where the equipment can deteriorate rapidly through the intensity of its use or environmental factors. An adequate frequency of visits, relative to the age and condition of the equipment, also allows for improved reliability and performance. Caution is therefore urged on reducing the number of visits without an adequate assessment being undertaken by, and agreed with, the maintenance contractor.

3.2.2 Call-outs or breakdowns

The scope of attendance to breakdowns or calls should be defined as part of the maintenance agreement.

See 3.2.4 for calls from the emergency communications system.

Where some call-outs are included and others are not included, e.g. call-outs for misuse/ vandalism excluded or call-outs out of normal working hours excluded, these should be clearly specified as part of the agreement.

3.2.3 Parts and exclusions

The extent to which the supply and replacement of parts is included as an element of the maintenance agreement should be defined. In particular, parts not included should be clearly defined.

Typically, maintenance can vary from a basic level where no replacement of parts is included to a fully comprehensive form (usually over many years) with no or very few exclusions. Typically, however, even maintenance described as “comprehensive” often has exclusions.

Exclusion could typically be:

- items such as lift car lighting, cleaning of decorative finishes inside the lift or on landings, cleaning of glass exterior of the lift car or in the lift well, hydraulic cylinders dismantling or in the case of cylinder in bore hole its inspection, concealed hydraulic pipe work;
- work outside normal working hours of the maintainer, disposal of waste materials, storage of materials and or lubricants;
- specific parts e.g. inspection or replacement of ropes, machine, control system or where components have failed due to mis-use or vandalism
- Parts, assemblies or items of equipment no longer in production, stock or supported by the original manufacturer or alternatives legally available on the open market.

NOTE Where a maintenance agreement has a comprehensive element to cover the replacement of parts, this is not usually consistent either with a low frequency of maintenance visits or with a short term agreement (less than 2 years).

3.2.4 Emergency alarm calls

Where relevant due to the carrier being enclosed, e.g. lifts and enclosed lifting platforms, are provided with an emergency communication system linked to a rescue service, the maintenance provider should ensure that alarm calls from the equipment are received and acted upon. The response of the maintenance contractor should be defined as part of the maintenance agreement.

Arrangements should be put in place between the responsible person and the maintenance provider to ensure that there is a permanently available communications link. The responsibility for this link is usually with the responsible person e.g. where the public telephone network is used.
NOTE Attention is drawn to the requirements of BS EN 81-28.

3.2.5 Remote monitoring

Where required to monitor the equipment as an aid for collecting data or for diagnostic purposes, the equipment might be linked to the maintenance provider’s system. A

number of features are typically available including: basic monitoring of the equipment and whether it is in service, the ability to make some checks remotely (e.g. check operation of the lift and doors in the event of an alarm call), gathering of data on the reliability and performance of the equipment, condition monitoring of key aspects etc.

3.2.6 Training in emergency release

The training of individuals in the responsible person's organisation would usually be appropriate only where there were suitable competent and trained persons available. Reference should be made to the guidance in BS 7255, BS 7801 etc.

Where training is agreed, this should be provided by the maintenance provider who should be invited to risk assess the equipment and assess the competence of those being offered for training. Refresher training should be provided at least annually.

3.3 Examples of types of maintenance systems and features of each type

The following are not prescriptive and are intended to be informative descriptions of typical levels of maintenance offered.

3.3.1 Type 1 is a basic maintenance agreement, where the contractor will agree to periodically inspect the equipment to enable them to identify where items of equipment are becoming dangerous through wear.

This type of agreement often aims to minimise the basic cost of planned maintenance by limiting the frequency of maintenance. It therefore may not aim to minimise unplanned shut down or ensure the equipment is operating at the peak of its performance. However, a higher frequency of maintenance visits, relative to the age and condition of the equipment, could allow for improved reliability and performance.

The aim of basic maintenance is to keep the equipment clean enough to minimize fire hazards and inform the responsible person when a particular item of equipment needs to be replaced or repaired to enable it to continue to operate in safety. The responsible person is provided with a condition report by the maintenance contractor after each visit clearly identifying any item needing attention to maintain safety and/ or reliability. Any report should explain, in simple language, why an item needs attention and by when. The responsible person should agree to take action to have the defective item repaired or replaced within the agreed time scale. If this is not done by the specified date, the maintainer should advise the responsible person if continued operation of the plant places users at risk and the need for the plant to be removed from service by the responsible person.

3.3.2 Type 2 With this type of maintenance the contractor agrees to comprehensively maintain all the equipment and to replace parts included in the scope of the agreement should the part fail through general wear and tear.

The maintenance contractor may formally exclude certain items such as failures resulting from misuse or abuse that are outside the maintainer's control. Exclusions should be clearly stated in a schedule of exclusions. This arrangement should, subject to the exclusions, enable the responsible person to foresee the cost of operating the plant and make appropriate budgetary provisions.

This type of maintenance is intended to manage the cost of maintenance including parts

not excluded. It may not minimise the number of unplanned breakdowns or ensure that equipment is operating at peak performance. It should also include the requirements of Type 1 maintenance where similar comments about frequency of maintenance visits apply.

3.3.3 Type 3 covers a range of premium maintenance arrangements which aim to minimize breakdowns and keep equipment running, ensure all parts of the plant are cleaned, lubricated where necessary, inspected and operating as they should. This will mean the contractor would replace parts scheduled within the terms of the agreement where the performance of the plant would deteriorate if replacement is not made. Such arrangements are ideal where tenants demand high level of service due to high rental charges or where a high level of service is critical due to the type of activity being undertaken on the premises.

This type of maintenance may have a wide range of aspects such as remote monitoring, to make limited checks on performance, or condition based monitoring. These are intended to improve reliability and the response by the maintenance company. However, they also make it difficult to include prescriptive requirements for what should be included as maintenance companies will have differing options and solutions.
NOTE This form of maintenance would not usually be appropriate for lifting platforms which are by their nature not subject to frequent use.

4. Maintainer's responsibilities

4.1 Pre-agreement

Prior to entering into a maintenance agreement, a prospective maintenance contractor should review the information provided by the responsible person and, if necessary, gather further details needed to make an offer. This may include surveying the plant and eliciting further details from the responsible person such as the performance history and the availability of any essential special tools etc.

From these details, the prospective maintenance contractor should make an offer including a clear explanation of the following:

- the type of maintenance agreement offered;
- the scope of what work is included in maintenance visits;
- the frequency of intended maintenance visits to be undertaken;
- parts included and exclusions;
- Provision for call-outs and breakdowns;
- Handling of emergency alarm calls;
- Remote monitoring if required;
- Whether items such as landing barriers are included or to be provided by the responsible person;
- Any extra provisions required e.g. attendance during Thorough Examinations or any Supplementary Testing required.

5. Responsible person

5.1 Pre-agreement

When the responsible person is intending to seek a new maintenance contractor, e.g. at the end of a warranty period or at the end of the previous maintenance agreement, the responsible person should:

- allow potential new maintenance contractors sufficient time and access to inspect/ survey the plant, if needed, prior to submitting an offer;
- make available the Health and Safety file and draw the attention of the prospective maintenance contractor to any relevant hazards;
- make available the responsible person's instruction manual, records of modernisation work completed since installation, previous service history including breakdowns and repairs, records from the original test and placing into service, and the reports of Thorough Examinations and any Supplementary Tests.
- Specify their maintenance objectives (see section 3) and advise on issues such as the frequency and intensity of usage of the plant and any additional/ special features e.g. fireman's/ firefighting/ evacuation.
- Where original manufacturers documents have been lost the responsible person should make endeavours to source replacements from the original manufacturer where possible.
- Make available any essential special tools provided with the plant.

4.2 Responsibility for work on site

Work on site is to be performed safely according to BS 7255 or BS 7801 without risk to those performing the work or persons in its proximity. This is a **joint** responsibility of the responsible person and maintainer and requires the **close** cooperation of both parties at all times. Where issues of safety are discovered that cannot be easily addressed by procedures adopted by the maintainer, the maintainer should report them in writing to the responsible person and discuss and agree a practical resolution.

4.3 Reporting procedures

When a new maintenance contractor is appointed and takes over the maintenance of the equipment or within a reasonable time, they should survey the plant and provide an initial condition report to the responsible person. Annex A lists suggested survey checks and a reporting format but other items might be required appropriate to the individual plant and should be identified from the survey. Thereafter, the maintenance contractor should update this report with any changes of equipment or subject to the requirements of the standards listed in Annex A.

Reports should be provided to the responsible person on an agreed regular time scale, the reports should contain the details of the plant such as:

Address where units are fitted

Location within the building (if required)

Identification Number

Date of maintenance / inspection

5.2 Responsibility for work on site

Work on site is to be performed safely according to BS 7255 or BS 7801 without risk to those performing the work or persons in its proximity. This is a joint responsibility of the responsible person and maintainer and requires the close cooperation of both parties at all times. Where issues of safety are discovered that cannot be easily addressed by procedures adopted by the maintainer, the maintainer should report them in writing to the responsible person and discuss and agree a practical resolution.

5.3 Reporting procedures and retention of records

The responsible person should retain reports of the condition of plant made by a maintenance contractor and thereafter when updated.

The responsible person should keep a record of maintenance activities for each item of plant. To assist the responsible person in this task the maintenance contractor should provide the responsible person with a record of maintenance activity.

Wiring diagrams /technical information are essential for the safe investigation of faults and such diagrams are the property of the responsible person and not the maintenance company.

The responsible person should keep a record of any inspections, Thorough Examinations and any supplementary tests undertaken and make these available to the maintenance contractor.

The responsible persons should report in writing any issues reported by the maintenance contractor under RIDDOR where necessary to the appropriate authorities.

The responsible person should report to the maintenance contractor any tests or inspections of the electrical supply to the plant. In particular, the responsible person should report any changes which

The reports should contain details of the items inspected and / or maintained together with any recommendations, and depending on the type of maintenance agreement should identify items that were replaced or renewed or that require attention clearly stating by when they should be completed.

If a critical safety problem is reported it should be ensured that it has been received by those that require the report and in a position such that agreement can be confirmed on the actions to be taken.

The report should also contain recommendations such as safety issues listed in BS 7255 and BS 7801, and improvements such as:

Adequate access to machinery spaces

Adequate lighting and emergency lighting in / or around the equipment.

Adequate safety rails and access ladders.

Adequate guarding of dangerous parts.

The maintenance contractor should report in writing to the responsible person any issues reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR).

4.3.1 Changes to relevant standards

The maintenance contractor should inform the responsible person in writing of relevant changes to safety standards relevant to existing installations. e.g. BS EN 81-80, BS EN 115-2, BS 7255, BS 7801.

4.4 Qualifications, training and competence

Maintenance should be performed by competent personnel who should be suitably trained, qualified by knowledge and practical experience, provided with necessary instructions and supported have been made including items such as voltage reduction/ optimisation systems since these may have adverse effects on plant performance and reliability.

The responsible person should monitor the operation of the plant, in particular, carry out the checks outlined in Annex D and should notify the maintenance contractor of any defects found.

5.4 Competence of sub-contractors

The responsible person should ensure that any work carried out on plant is performed only by authorized and competent persons. Where these persons are not the regular maintenance contractor the

within their maintenance organisation to enable the required maintenance operations to be safely carried out.

Suitable levels of training qualification are described in BS 7255 clauses 5.2.2 and 5.2.5, BS 7801 clauses 5.1.2 and 5.1.5.

The competency of all trained persons should be assessed and documented annually. Documentation should list the competencies achieved, and made available where requested.

4.5 Agreement renewal

Where an agreement is arranged so that its renewal is automatic, the maintainer should notify the responsible person or company with which the agreement is held in advance of the renewal date. The early notification of renewal should make clear any changes to terms and conditions of the maintenance agreement.

4.6 Removal of plant from service

The maintenance contractor should advise the responsible person that the plant will need to be removed from service as part of the maintenance work.

The maintenance contractor should display safety signs before work commences, to warn others that the plant is out of service.

If the maintenance contractor is of the opinion that the plant is in a dangerous condition, or likely to degrade to a dangerous condition before repairs can be made, then the maintenance contractor should report this to the responsible person (see 4.3 reporting procedure), record this and then not return the plant to service. The maintenance contractor may isolate the plant but should not immobilise the plant e.g. if an isolator is padlocked off, the key should be given to the responsible person.

responsible person should advise the regular maintainer of the work performed.

NOTE Work by persons other than the regular maintenance contractor may have implications for the plant and the maintenance agreement in place. Following work by others, the regular maintenance contractor may therefore want to carry out operational and safety checks of the plant prior to recommencing their maintenance regime.

5.5 Agreement renewal

No requirements.

5.6 Removal of plant from service

In the event that the maintenance contractor has reported that the plant is in a condition where it should be removed from service, the responsible person should not reinstate the plant until sufficient measures have been taken to allow the plant to be returned to service.

4.7 Housekeeping

If required, the maintenance contractor, in conjunction with the responsible person, should establish procedures for the temporary protection of floor coverings and walls used to access landings and machinery spaces.

4.8 Landing entrances and escalator landings

The provision of items such as landing entrance barriers are crucial for safe working. The size of these is such that they are not usually considered to be tools, but provided by the responsible person on site. In the case that the responsible person provides these, the maintenance contractor should ensure that they are in a safe and acceptable condition. If their condition is not satisfactory, or they are not available on site, the maintenance contractor should advise the responsible person accordingly (see 4.3 reporting procedures).

4.9 Emergency alarm calls

Where the carrier or lift well is enclosed e.g. lifts and enclosed lifting platforms, and provided with an emergency communication system linked to a rescue service, the maintenance contractor should ensure that the emergency communication system:

- is working;

5.7 Housekeeping

If required, the responsible person, in conjunction with the maintenance contractor, should establish procedures for the temporary protection of floor coverings and walls used to access landings and machinery spaces.

The responsible person should not allow machine rooms and machinery spaces to be used for storage of materials or any other purpose.

5.8 Landing entrances

Persons engaged in the maintenance and the inspection of lifts, or in effecting the release of passengers, may need to open a landing door while the car is not at that landing, e.g. in order to gain access to the pit or to the roof of the car. In such cases it is essential that the responsible person only makes the unlocking key available to trained and authorised persons and any persons (other than those working on the lift) be prevented from making use of such a landing entrance.

NOTE Whenever a landing door is unlocked, or open with the car not stationary or at the level of that landing, there are many hazards to which persons on that landing might be exposed.

All protective barriers should incorporate relevant safety signs. For further information relating to barriers see BS 7255, BS 7801 etc.

5.9 Emergency alarm calls

Where there is an emergency alarm device requiring it, arrangements should be put in place by the responsible person to ensure that there is a permanently available communications link.

NOTE 1 Attention is drawn to the requirements of BS EN 81-28. The responsibility for this link is usually with the responsible person e.g.

- Is programmed with correct numbers to reach their rescue service (where using autodialler type systems);
- alarm calls from the equipment are received and acted upon;
- the rescue service is able to recognise the source of the alarm call where transmitted by the alarm equipment;
- the operation of the emergency alarm equipment (including the line or communications link) is verified at least every 72 hours where the alarm equipment has been supplied to BS EN 81-28 and so supports this ;
- if the equipment depends on a battery backup in the event of a power failure, the health of this supply is checked as part of a schedule of regular checks.

Note Attention is drawn to the requirements of BS EN 81-28.

At the end of the maintenance period, prior to relinquishing the maintenance agreement, the maintenance contractor should provide adequate instructions to allow the new maintenance contractor to be able to programme their new numbers into the equipment.

4.10 Training in release procedures

Where training is requested by the responsible person, this should be agreed with the maintenance contractor. Prior to arranging any training, the maintenance contractor should:

- risk assess the equipment to determine the level of skill required to undertake safe rescue and release procedures;
- prepare any instructions required (if the manufacturer's instructions are not available);
- assess the competence of those being offered for training

where the public telephone network is used.

NOTE 2 Some emergency alarm systems e.g. as provided under BS EN 81-28, might not make an alarm call if a lift car is at a landing level with doors open. This is because persons are assumed not to be trapped in the lift car in this case.

5.10 Trapped passenger rescue procedures

The responsible person should retain landing door unlocking keys and machinery space access keys secure and establish control measures for their issue and use.

NOTE In many cases, passengers trapped in enclosed lifting platforms or in lift cars are not in immediate danger. Release and landing door unlocking procedures undertaken by untrained personnel could result in trapped passengers and others in the vicinity being placed at risk.

Rescue and release procedures should usually be carried out only by

against the skill requirements identified.

The maintenance contractor should undertake the training and then assess the competence of the trainees. The scope of rescue and release procedure for which they have been assessed to be competent, and the time before they need refresher training, should be clearly set out. Refresher training should be provided at least annually.

4.11 End of maintenance agreement

At the end of the maintenance agreement, the maintenance provider should ensure that all documents, drawings, tools, including essential special tools, software access codes, and equipment provided by the responsible person is handed back to the responsible person. The maintenance provider should ensure that no changes are made to the plant which result in it either becoming unavailable for use or result in it becoming not maintainable by the subsequent maintenance provider.

trained and competent personnel. The training of individuals is the responsible person's organisation would usually be appropriate only where there were suitable competent persons available. Reference should be made to the guidance in BS 7255, BS 7801 etc.

5.11 End of maintenance agreement

At the end of the maintenance agreement, the responsible person should ensure that any documents, drawings, tools, including essential special tools, software access codes, and equipment returned by the maintenance provider are retained so that they can be made available to the subsequent maintenance provider.

Bibliography

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BS EN 81-2: 1998 +A3: 2009; Safety rules for the construction and installation of lifts – Part 2: Hydraulic lifts BS 7801

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BS EN 81-41: 2010; Safety rules for the construction and installation of lifts - Special lifts for the transport of persons and goods - Part 41: Vertical lifting platforms intended for use by persons with impaired mobility

BS EN 81-80: 2003; Rules for the improvement of safety of existing passenger and goods passenger lifts

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DD CEN/TS EN 81-83; Safety rules for the construction and installation of lifts – Existing lifts – Part 83: Rules for the improvement of the resistance against vandalism

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BS EN 115-2: 2010; Safety of escalators and moving walks – Rules for the improvement of safety of existing escalators and moving walks

BS EN ISO 9001: 2008; Quality management systems. Requirements

BS EN 13015: 2001 +A1:2008; Maintenance for lifts and escalators - Rules for maintenance instructions

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BS 5655-12: 2005; Lifts and service lifts. Code of practice for the undertaking of modifications to existing hydraulic lifts.

BS 5656-1: 1997; Safety rules for the construction and installation of escalators and passenger conveyors. Specification and proformas for test and examination of new installations

BS 5900: 2012; Powered homelifts with partially enclosed carriers and no liftway enclosures – Specification

BS 6440: 2011; Powered vertical lifting platforms having non-enclosed or partially enclosed liftways intended for use by persons with impaired mobility

BS 7255: 2012; Code of practice for safe working on lifts

BS 7801: 2011; Escalators and moving walks. Code of practice for safe working on escalators and moving walks.

Annex A - First inspection visit

In an ideal situation before an item of plant is taken onto a maintenance agreement the proposed maintainer should inspect the item of plant to be maintained to determine their condition and the frequency of maintenance or amount of repairs work that would be required to get the plant to a safe condition.

In some instances such as tendering bulk agreement pre inspection is not always possible. In such situations an initial inspection should be made within 4 months of securing the agreement or at the first scheduled maintenance visit and a report of condition issued to the responsible person.

The initial report of condition should include at least the following indicative checks (as applicable) but individual companies may wish to add or customise it in some manner according to the needs of the equipment, maintenance offered etc. This is perfectly acceptable but certain elements are essential such as the risk level for any particular defect or issue.

The condition report may result in the need for the responsible person to place an order for corrective works to be undertaken. In such situations it will assist the responsible person if they know what is vital or critical as against desirable.

A.1 Electric and Hydraulic Lifts

Site address Plant identification number or name Agreement Number Customer contact (responsible person) phone number and name			
No	**Item inspected**	**Priority level**	**Comment**
	Load plate details in the lift car, CE mark and original number?		
	Safety check-list in Annex B of BS EN 81-80		Check-list should be completed as part of first inspection.
	Items in Annex A of BS 7255		Check-list should be completed as part of first inspection
	Machinery access?		
	Access lighting?		
	Machine room lighting?		
	Is there written evidence of electrical supply test?		Refer to BS 7255/ BS 7671.
	Safety signage as per BS 7255?		
	No lockable main isolator? Ellison isolator in place?		No lockable isolator is very dangerous as is the Ellison type due to carbonation of the oil in it (explosion risk). These are vital safety items which should be reported to the responsible person to be replaced.
	Proof of governor calibrations?		

	General condition of governor? Groove condition, bearings etc.		
	Machine traction sheave groove condition?		
	Machine brake condition and lining condition?		It should be considered if the machine is able to drive through the brake.
	Brake in need of dismantling and internal inspection and cleaning?		
	Controller general condition, cleanliness etc?		
	Controller fitted with correct fuses?		
	Unenclosed controller with exposed conductive parts?		To be enclosed with suitable protective cabinet.
	General condition of contactors and switches		
	Governor tension frame condition? Fitted with electrical switch?		
	Buffer condition (polyurethane degraded, hydraulic buffer fitted with switch)? Lubricant level?		
	Pit condition and access. Pit access ladder condition?		Pit should be dry and free of refuse.
	Pit stop switches mushroom type?		
	Distance from counterweight to top of buffer (measured with car level at top floor). State dimension in mm. Is it satisfactory to avoid collision between car and top of well obstructions?		If run-by under counterweight will result in collisions the situation is to be reported for immediate attention.

	Check emergency alarm device operation normally and with electrical power supply disconnected.		
	Check condition of rechargeable batteries used in: • lift car emergency lighting; • emergency alarm devices; • rescue systems which depend on battery backup.		
	Identification and check of any operation in the event of fire: • No special operation. • Recall to floor(s). • Firemans lift to BS 2655. • Firefighting lift to BS 5588-5. • Firefighters' lift to BS EN 81-72.		
	Other observations.		Any other relevant issues from the type of equipment, usage or environment.
Company contact telephone number and name..... Name of person that inspected the lift..... Date of inspection.....			

A.2 Lifting platforms

Site address

Identification number or name

Agreement Number

Customer contact (responsible person) phone number and name

Type of drive: (Traction, Hydraulic, Screw and nut, Chain, Rack and pinion, Scissor mechanism, Other?)

Type of lifting platform: (Open platform/open liftway, Open platform/enclosed liftway, Partially enclosed platform/open liftway, Partially enclosed platform/enclosed liftway, enclosed platform/enclosed liftway)

No	Item inspected	Priority level	Comment
	Load plate details, CE mark and original number?		
	Machinery access?		
	Access lighting?		
	Safety signage as per BS EN 81-41, BS 6440, BS 5900 etc.?		
	Is there written evidence of electrical supply test?		
	Lockable mains isolator?		
	Controller general condition, cleanliness etc?		
	Controller fitted with correct fuses?		
	Unenclosed controller with exposed conductive parts?		

	General condition of contactors and switches		
	Pit stop switches mushroom type?		
	General condition of safety components		
	General condition and cleanliness of the major components: - Drive system - Brake - Controller		
	Guards in place		
	Sensitive edges and surfaces working		
	Check emergency alarm device operation normally and with electrical power supply disconnected.		
	Check condition of rechargeable batteries used in: • platform emergency lighting; • emergency alarm devices; • rescue systems which depend on battery backup.		
	Operation in the event of fire alarm: • No special operation. • Recall to floor(s).		
	Other observations.		Any other relevant issues from the type of equipment, usage or environment.
Company contact telephone number and name..... Name of person that inspected the unit..... Date of inspection.....			

A.3 Escalators and moving walks

Site address Identification number or name Agreement Number Customer contact (responsible person) phone number and name			
No	**Item inspected**	**Priority level**	**Comment**
	Load plate details, CE mark and original number?		
	Safety check-list in Annex B of BS EN 115-2		Check-list should be completed as part of first inspection.
	Machinery access?		Areas should be dry and free of refuse.
	Access lighting?		
	Is there written evidence of electrical supply test?		Refer to BS 7801/ BS 7671.
	Safety signage		
	Lockable main isolator?		
	Controller general condition, cleanliness etc?		
	Controller fitted with correct fuses?		
	Unenclosed controller with exposed conductive parts?		To be enclosed with suitable protective cabinet.
	General condition of contactors and switches.		
	Gaps between steps/ pallets.		
	Handrail tension.		

	Chain tension		
	Other observations.		Any other relevant issues from the type of equipment, usage or environment.
Company contact telephone number and name..... Name of person that inspected the unit..... Date of inspection.....			

Annex B - Typical examples of checks to be included in maintenance

The following are basic checks which should be made as part of a schedule for maintenance visits. Not all checks would be needed on every visit and frequency of checks should be assessed depending on the equipment, its condition, usage etc.

Other checks might be applicable on different types of lifts whereas some of these listed might not be applicable. The schedule of checks should include all the manufacturer's checks and might be modified according to the equipment, from the first inspection/ survey and from later experience with the equipment.

B.1 Electric lifts

Item	Check
General	Check all components are clean and kept free from dust and corrosion.
Pit area	Check for excess oil/grease at bottom of guides. Check the pit area is clean, dry and free from debris. Check counterweight screen. Check shaft division screens (if required).
Anti-rebound device and switch (where fitted)	Check for free movement and operation. Check for equal tension of ropes. Check switch where fitted. Check lubrication.
Buffers – energy dissipation (hydraulic type)	Check condition. Check oil level. Check lubrication. Check switch where fitted. Check fixings.
Buffers – linear energy accumulation (spring type)	Check condition. Check fixings.
Buffers - non-linear energy accumulation (polyurethane)	Check condition (check deterioration especially if subject to sunlight). Check fixings.
Terminal floor speed reduction system (if applicable)	Check operation.

Drive motor/Generator	Check bearings for wear. Check lubrication. Check condition of commutator.
Gear box	Check gear for wear. Check lubrication. Check fixings of gearbox and any outboard bearings. Check isolation between machine raft and supports.
Traction sheave	Check condition and grooves for wear. Check for evidence of rope slip.
Brake	Check braking system. Check parts for wear. Check stopping accuracy. Check brake coupling and brake linings for fixings and wear.
Controller	Check cabinet is clean, dry and free from dust. Check contactors.
Hand winding and rescue system	Check parts are available e.g. hand-winding wheel. Check notices displayed/ available. Where system relies on batteries in the event of power failure, check battery health.
Overspeed governor and tension pulley	Check moving parts for free movement and wear. Check operation. Check switch.
Main rope diverter pulley(s)	Check condition and grooves for wear. Check bearings for abnormal noise and/or vibrations. Check guarding. Check lubrication.
Car/ counterweight guides	Check for film of oil where required on all guide surfaces. Check fixings.
Car/ counterweight guide shoes	Check guide shoes/rollers for wear. Check fixings. Check lubrication where necessary.

Counterweight	Check filler weights adequately retained. Check general condition of counterweight frame and tie-rods if used. Check condition of pulley, pulley bearings, rope guards.
Electric wiring	Check insulation.
Trailing flexes	Check terminations. Check condition.
Lift car	Check normal and emergency lighting. Check car control buttons, key switches, visual and audible indicators (if fitted), speech unit (if fitted). Check fixings of panels and ceiling. Check functionality of overload device (if fitted).
Safety gear(s)/ ascending car over speed protection means	Check moving parts for free movement and wear. Check lubrication. Check fixings. Check operation. Check safety contact.
Suspension ropes/chains/ belts	Check for wear and condition. Check ropes against wire discard criteria, condition and nominal diameter. Check lubrication only where intended. Check even tensions. Check elongation (sufficient car over-travel/ counterweight under-travel). Check condition monitoring devices and any system counting the number of cycles.
Rope/ chains/ belts terminations	Check for deterioration and wear. Check fixings. Check tensioning devices/ tension equalisation devices. Check correct fitting according to type (check fixing correctly tightened where rope grips used).

Compensation chains or ropes (if fitted)	Check terminations. Check condition.
Landing entrances	Check operation of landing locks. Check emergency unlocking device. Check doors for free running. Check door guiding. Check security of fixings, check bottom track runners. Check door gaps. Check wire rope, chain or belt when used, for integrity. Check lubrication.
Car door	Check door closed contact or lock. Check doors for free running. Check door guiding. Check door gaps. Check wire rope or chain when used for integrity. Check passenger door protective device. Check lubrication. Check door reversal device and record force required to prevent doors closing. Check and record kinetic energy of closing doors.
Floor level	Check stopping accuracy at landing. Record worst case levelling deviation and the landing.
Final limit switches	Check operation.
Motor run time limiter	Check setting
Motor overload protection	Check setting.
Electric safety devices	Check operation. Check electric safety chain. Check correct fuses are fitted.
Emergency alarm device	Check operation. Check operation with electrical supply disconnected.
Landing controls and indicators	Check operation.
Well lighting	Check operation

B.2 Hydraulic lifts

Item	Check
General	Check all components are clean and kept free from dust and corrosion.
Pit area	Check for excess oil/grease at bottom of guides. Check the pit area is clean, dry and free from debris. Check shaft division screens (if required).
Buffers - energy dissipation (hydraulic type)	Check condition. Check oil level. Check lubrication. Check switch where fitted. Check fixings.
Buffers – linear energy accumulation (spring type)	Check condition. Check fixings.
Buffers - non-linear energy accumulation (polyurethane)	Check condition (check deterioration especially if subject to sunlight). Check fixings.
Hydraulic jack	Check for oil leakage and waste oil collection. Check fixing to car frame or piston head pulley.
Telescopic jack	Check for synchronisation.
Controller	Check cabinet is clean, dry and free from dust. Check contactors.
Overspeed governor and tension pulley	Check moving parts for free movement and wear. Check operation. Check switch.
Main rope pulley(s)	Check condition and grooves for wear. Check bearings for abnormal noise and/or vibrations. Check guarding. Check lubrication.

Car/ jack guides	Check for film of oil where required on all guide surfaces. Check fixings.
Car/ jack guide shoes	Check guide shoes/rollers for wear. Check fixings. Check lubrication where necessary.
Electric wiring	Check insulation.
Trailing flexes	Check terminations. Check condition.
Lift car	Check normal and emergency lighting. Check car control buttons, key switches, visual and audible indicators (if fitted), speech unit (if fitted). Check fixings of panels and ceiling. Check functionality of overload device (if fitted).
Safety gear/ pawl/ clamping devices	Check moving parts for free movement and wear. Where safety gear engaged by slack rope, check actuation mechanism. Check lubrication. Check fixings. Check operation. Check safety contact.
Suspension ropes/ chains	Check for wear and condition. Check ropes against wire discard criteria, condition and nominal diameter. Check lubrication only where intended. Check even tensions. Check elongation (sufficient car over-travel/ counterweight under-travel).
Ropes/ chains terminations	Check for deterioration and wear. Check fixings. Check tensioning devices/ tension equalisation devices. Check correct fitting according to type (check fixing correctly tightened where rope grips used).

Landing entrances	Check operation of landing locks. Check emergency unlocking device. Check doors for free running. Check door guiding. Check security of fixings, check bottom track runners. Check door gaps. Check wire rope, chain or belt when used, for integrity. Check lubrication.
Car door	Check door closed contact or lock. Check doors for free running. Check door guiding. Check door gaps. Check wire rope or chain when used for integrity. Check passenger door protective device. Check lubrication. Check door reversal device and record force required to prevent doors closing. Check and record kinetic energy of closing doors.
Floor level	Check stopping accuracy at landing. Record worst case.
Final limit switch	Check operation.
Motor run time limiter	Check operation.
Motor overload protection	Check setting.
Electric safety devices	Check operation. Check electric safety chain. Check correct fuses are fitted.
Emergency alarm device	Check operation. Check operation with electrical supply disconnected.
Landing controls and indicators	Check operation.
Well lighting	Check operation
Anti-creep device	Check operation
Rupture valve/ restrictor.	Check condition.

Hydraulic power unit	Check hydraulic fluid level. Check tank and valve unit for leakage. Check valve block filters.
Pressure relief valve	Check operation.
Manual lowering valve	Check operation.
Hand pump	Check operation.
Hose/Pipe work	Check for damage and leakage.

B.3 Lifting platforms

Item	**Check**
General	Check all components are clean and kept free from dust and corrosion.
Pit area	Check for excess oil/grease at bottom of guides. Check the pit area is clean, dry and free from debris. Check operation of prop and safety contact.
Pit stop switch	Check operation.
Controller	Check cabinet is clean, dry and free from dust. Check contactors.
Drive system (general)	Check components for wear. Check lubrication. Check condition of motor. Check guarding in place.
Screw and nut drive system.	Check condition and lubrication of screw and nut and correct lubricant used. Check condition of waste lubricant. Check correct alignment of threads at joints in the screw. Check wear on drive nut. Check condition, setting and operation of safety nut and safety contact.
Brake	Check braking system. Check parts for wear. Check stopping accuracy.
Hydraulic drive system	Checks as appropriate to hydraulic jack, power unit and rupture/ restrictor valve (see above). Check lowering valve. Check hand pump (if fitted). Check pressure relief valve. Check hose and pipework.
Anti-creep device	Check operation

Hydraulic power unit	Check hydraulic fluid level. Check tank and valve unit for leakage. Check valve block filters.
Hydraulic jack	Check for oil leakage and waste oil collection. Check fixing to platform frame or piston head pulley.
Hand winding and rescue system	Check parts are available e.g. hand-winding wheel. Check notices displayed/ available. Where system relies on batteries in the event of power failure, check battery health.
Guides	Check for correct lubricant and, if required, film of oil where required on all guide surfaces. Check fixings. Check alignment.
Guide shoes	Check guide shoes/rollers for wear. Check fixings. Check lubrication where required.
Electric wiring	Check insulation.
Trailing flexes	Check terminations. Check condition.
Lifting platform	Check normal and emergency lighting. Check control buttons, key switches, visual and audible indicators (if fitted). Check fixings of panels and ceiling. Check safety edges around sides and on carriage. Check safety edges under platform (where applicable). Check functionality of overload device (if fitted).

Safety gear and overspeed governor	Check moving parts for free movement and wear. Where safety gear engaged by slack rope, check actuation mechanism. Check lubrication. Check fixings. Check operation. Check safety contact.
Suspension ropes/ chains/ belts	Check for wear and condition. Check ropes against wire discard criteria, condition and nominal diameter. Check lubrication only where intended. Check even tensions. Check elongation (sufficient car over-travel/ counterweight under-travel). Check condition monitoring devices and any system counting the number of cycles.
Suspension ropes/ chains/ belts terminations	Check for deterioration and wear. Check fixings. Check tensioning devices/ tension equalisation devices. Check correct fitting according to type (check fixing correctly tightened where rope grips used).
Pulley(s)	Check condition and grooves for wear. Check bearings for abnormal noise and/or vibrations. Check guarding. Check lubrication.
Landing entrances	Check operation of landing locks. Check doors for free running. Check door guiding. Check door gaps. Check emergency unlocking device. Check doors self-close (relock?). Check doors self-lock when no power.

Cabin door (if any)	Check door closed contact or lock. Check doors for free running. Check door guiding. Check door gaps. Check wire rope or chain when used for integrity. Check passenger door protective device. Check lubrication. Check door reversal device and record force required to prevent doors closing. Check and record kinetic energy of closing doors.
Internal surfaces of well	Check surfaces are smooth, flush and undamaged. Check clearances to lifting platform.
Floor level	Check stopping accuracy at landing. Record worst case.
Final limit switch	Check operation.
Motor run time limiter	Check operation.
Motor overload protection	Check setting.
Electric safety devices	Check operation. Check electric safety chain. Check correct fuses are fitted.
Emergency alarm device	Check operation. Check operation with electrical supply disconnected.
Landing controls and indicators	Check operation. Check keyswitch operation (if fitted).
Lighting	Check operation and adequate lighting levels to platform and landings. Check emergency lighting.

B.4 Escalators and moving walks

Item	Check
Controller	Check cabinet is clean, dry and free from dust. Check contactors.
Gear box	Check gear and associated parts Check lubrication
Drive motor	Check bearings for wear Check lubrication.
Brake	Check braking system. Check parts for wear.
Auxiliary brake	Check braking system. Check parts for wear.
Intermediate gear box	Check gear and associated parts. Check lubrication.
Main drive chain	Check for tension and wear. Check lubrication.
Step/pallet chain	Check for tension and wear. Check lubrication.
Step/pallet	Check step/pallet and step/pallet wheels for integrity. Run the unit and examine it for at least one complete cycle of the steps/ pallets. Check visually for excessive clearances between steps/ pallets and skirting. Check that step treads and risers have no obvious signs of damage. Listen for any excessive or unusual noise.
Conveyor belt	Check for condition and tension.
Drive belt	Check for condition and tension.
Clearances	Check step to step and step to skirting clearances.
Combs	Check condition. Check meshing and clearances with steps, pallets or belt.

Comb plate	Check clearances and operation.
Handrails	Check for free running and condition. Check tension. Check synchronisation between step/pallet band and the handrail.
Track system	Check for condition and wear. Check fixings.
Safety devices	Check operation.
Deflector devices	Check condition.
Lighting: • Comb; • Handrail; • Skirting; • Under step.	Check operation.
Display	Check operation.
Remote starting (if fitted) and traffic lights	Check operation.
Signs/pictograms	Check condition.
Balustrade	Check condition of panels. Check fixings of interior claddings. Check exterior guards.

Annex C - Relevant legal framework

C.1 Legal environment

Lifts, lifting platforms, escalators and moving walks are subject to many pieces of legislation depending on their type, place of installation and use. The main legislation driving the need for maintenance is the Health and Safety at Work etc Act (HSAWA). The regulations make it illegal to cause injury to persons and it is inevitable that if equipment is not maintained it will deteriorate eventually through use to the point of becoming dangerous. Therefore equipment must be maintained at suitable intervals to keep it safe.

C.2 and C.3 below deal with the Provision and Use of Work Equipment Regulations (PUWER) and the Lifting Operations and Lifting Equipment Regulations (LOLER). These may not apply to many lifts (e.g. lifts for public use in car parks and shopping precincts) and lifting platforms not used as work equipment whilst LOLER does not apply to escalators and moving walks. Instead the responsibility of the owner is outlined in Sections 3 and 4 of the Health and Safety at Work Act 1974. Whilst not as specific as LOLER, the HSAWA clearly states that persons in charge of premises used by others, having equipment within such buildings accessible to be used by them, have a duty of care to ensure that such equipment is safe to use and maintained to such a degree as will avoid injury.

Whilst it does not give any specific intervals at which the equipment is inspected to ensure it is considered safe to use, it is suggested in HSE joint guidance with the Safety Federation (SAFed) that following the same requirements as given in LOLER will satisfy the requirements of the HSWA.

C.2 Provision and Use of Work Equipment Regulations 1998 (PUWER)

These Regulations came into force on 5th December 1998, they apply to both new and existing work equipment and replaced Regulations under the same title dated 1992.

The lift owner either as the employer of those using the lift or as the person employing the services of those undertaking the maintenance of the lift, has a responsibility for ensuring its suitability for the work to be undertaken.

Work Equipment means any machinery, appliance, apparatus, tool or installation for use at work. There is an apparent anomaly in the requirements in that where a lift is primarily for the use of members of the public, for example in a shopping centre, it is not subject to the Regulations as it is not considered to be 'Work Equipment'. However, the owner of such a lift still has to satisfy the requirements of the Health and Safety at Work etc Act and it is stated such requirements should be satisfied by compliance with these (PUWER 98) Regulations. The same can be said for the requirements of the Lifting Operations and Lifting Equipment Regulations.

Therefore PUWER 98 cannot be read in isolation. The Regulations need to be considered together with other statutory duties which will also include the Management of Health and Safety at Work Regulations 1999 to which reference was made in the previous section. Risk Assessment is the method to be used in the selection of suitable work equipment and work procedures taking into account the tasks to be undertaken and conditions of use.

PUWER 98 Regulation 5 requires every employer to ensure that work equipment is maintained in an efficient state, in efficient working order and in good repair. 'Efficient' the word used in the Regulations actually relates to the condition of the equipment and how it might affect health and safety. It is important therefore that equipment is maintained so that its performance does not deteriorate to the extent that it puts people at risk. Maintenance should only be undertaken by those who have received adequate information, instruction and training.

Whilst it is not practicable to detail specific requirements under PUWER 98 which might relate to lift applications – these can vary according to circumstances – a good example would be guarding of dangerous parts of machinery. The Health and Safety Executive (HSE) definition of a dangerous part is any piece of work equipment that when used in its foreseeable way can cause injury. The main parts of lift equipment to be guarded could, dependant upon the results of a risk assessment, include traction sheaves, multiplying and diverter pulleys, fixed flywheels and exposed rotating safety governor sheaves.

C.3 The Lifting Operation and Lifting Equipment Regulations 1998. (LOLER)

Like the previous item these Regulations came into force on 5th December 1998 and stem from the same European Directive as PUWER which itself was amended in 1995.

The main feature of LOLER – so far as lifts that carry persons are concerned – is the undertaking of a thorough examination at least every six months, or in accordance with a written scheme. In the case of goods only lifts, thorough examinations are to be undertaken at least every twelve months or in accordance with a written scheme. The thorough examination should be undertaken by a competent person. A competent person is defined within the LOLER Approved Code of Practice (ACoP) as someone who "has such appropriate practical and theoretical knowledge and experience of the lifting equipment to be thoroughly examined as will enable them to detect defects or weaknesses and to assess their importance in relation to the safety and continued safe use of the lifting equipment".

With regard to the examination and competent persons the HSE guidance is as follows:

> *It is essential that the competent person is sufficiently independent and impartial to allow objective decisions to be made. For this reason, it is not advisable for the same person who performs routine maintenance to carry out the thorough examination, as they are then responsible for assessing their own work'.*

Therefore it is the responsibility of the owner to appoint a "competent person", who should not be part of the lift maintenance organisation, who will determine the details of the examination to be undertaken i.e. the frequency, what testing is required, who is competent to carry out these tests, etc.

Where the competent person is not able, or fully competent to carry out specific testing for themselves they can subcontract these "supplemental tests" to those who are able to do it.

The reports of these supplemental tests should be given to the competent person, who has the responsibility to draw up the final report on the lifts safety and give it to the owner/duty holder in order to enable the owner/ duty holder to action any remedial work which may be necessary for the continued safe use of the lift.

The Regulations set down the required information to be contained in a report of a

thorough examination which includes the following:

1 the name and address of the employer for whom the thorough examination was made.

2 the address of the premises at which the thorough examination was made.

3 particulars sufficient to identify the equipment and where known its date of manufacture.

4 the date of the last thorough examination.

5 the safe working load of the equipment.

6 in relation to the first thorough examination, that the equipment has been installed correctly and is safe.

7 identification of any part found to have a defect which is or could become a danger to persons;

particulars of any repair, renewal or alteration required to remedy any such defects;

in the case of a defect which is not yet but could become a danger to persons – the time by which it could become such a danger and particulars of any remedial work necessary;

the latest date by which the next thorough examination must be carried out;

where the thorough examination included testing, particulars of any test;

the date of the thorough examination.

8 the name, address and qualifications of the person making the report;

whether he is self-employed or, if employed, the name and address of his employer.

9 the name and address of a person signing or authenticating the report on behalf of its author.

10 the date of the report.

C.4 Fire Safety Regulations

The Regulatory Reform (Fire Safety) Order 2005 (RRO) came into force on 1 October 2006, replacing many earlier pieces of fire safety legislation, and applies in England & Wales. The Fire Safety (Scotland) Regulations 2006 and The Fire Safety Regulations (Northern Ireland) 2010 have similar requirements in Scotland and Northern Ireland. These regulations apply to a very wide range of buildings and require that lifts used in the event of fire are subject to a suitable system of maintenance and are maintained; this is of interest to members.

Scope and introduction

The legislation applies to almost all buildings except single private dwellings. It places duties on the person responsible or duty holder for premises ("responsible person" or RP although this term in not used in the Scottish or Northern Ireland Regs.) to provide and maintain sufficient fire precautions so that people can live or work in safety, and escape safely in the event of a fire or other serious event. The RP must carry out a fire risk assessment, make an emergency plan and undertake other fire safety duties related to these.

Implications for lifts with special control in the event of fire

The legislation includes articles placing responsibilities on the RP (or duty holder) to maintain equipment. Two articles, with implications for maintenance of lifts, require that:

- any facilities, equipment and devices provided in respect of the premises are subject to a suitable system of maintenance and maintained in an efficient state, working order and good repair.
- any facilities, equipment and devices provided in respect of the premises for the use by or protection of fire-fighters are subject to a suitable system of maintenance and maintained in an efficient state, working order and good repair.

NOTE Equipment which is not part of the lift equipment will require separate maintenance arrangements and cooperation between the RP and the lift maintenance contractor to check e.g. secondary power supplies, lift pit pumps, shaft pressurization equipment etc.

Annex D - Responsible person checks

In addition to those examinations and tests which building maintenance managers are responsible for having undertaken by a competent person, there are certain inspections/checks which they should carry out in their own interest.

Checks by the building maintenance manager are not a substitute for the checks to be undertaken by the maintenance contractor.

In the event of a defect being discovered, the unit should be switched off and the maintenance contractor called.

Daily checks for Lifts

1 Visual inspection of the lift car operating panel.

2 Check that all the indicators are working correctly.

3 Ensure the alarm/communication system functions correctly.

4 Check that the lift doors open when the 'door open' button is depressed.

5 Check that all position indicators on the landing are working correctly.

6 Check all lighting is in working order.

7 Check any mechanical/electronic door protection device (safety edge) such that when the safety edge is operated the door re-opens and after operation and removal of any obstruction the door closes.

8 Check that the floor in the immediate vicinity of the landing door is in a clean and safe condition. Check that the lift stops level at each floor.

9 Check the landing doors/gates and architraves ensuring there is nothing which can snag a passenger's clothing.

10 Clean door bottom tracks.

11 Undertake a full ascent and descent to assess for any unusual noise.

Cautionary note: Caution needs to be exercised when carrying out the following tasks:-

- Moving heavy equipment, i.e. safes and office machinery due to weight and dimensions.
- Keeping secure from other than authorised persons, the machine room/ machinery area access key and keeping control of landing door emergency release keys and the distribution of car preference control keys.
- Cleaning enclosures for glass lifts. No person should have access to the lift well without the lift maintenance engineer present.

Checks for lifts with special operation in the event of fire

Many lifts have special features e.g. for use in the event of fire or evacuation. These should be checked as follows:

- Fireman's, firefighting or evacuation lift switches should be checked weekly;
- A failure of the primary electrical supply should be simulated monthly to check the secondary supply and operation of the lift on the supply.
- An annual test of all functions including communication systems. This should be specified to be included as part of the maintenance agreement.

Daily checks for Lifting platforms

1 Visual inspection of the platform operating panel.

2 Check that all the indicators are working correctly.

3 Ensure the alarm/communication (if any) system functions correctly.

4 Check that the lift doors are closed and locked if the platform is not at that level.

5 Check that the inside face of the enclosure is smooth and undamaged.

6 Check all lighting is in working order.

7 Check any mechanical/electronic door protection device (safety edge) such that when the safety edge is operated the door re-opens and after operation and removal of any obstruction the door closes.

8 Check that the floor in the immediate vicinity of the landing door is in a clean and safe condition and that check lift levelling at each floor.

9 Check the landing doors/gates and architraves ensuring there is nothing which can snag a passenger's clothing.

10 Clean door bottom tracks.

11 Undertake a full ascent and descent to assess for any unusual noise.

Cautionary note: Caution needs to be exercised when carrying out the following tasks:-

- Moving heavy equipment is not usually permitted on lifting platforms which are designed for people with impaired mobility. The unit must be used only according to the manufacturer's instructions.
- Keeping secure from other than authorised persons, the machinery area access key and keeping control of landing door emergency release keys and the distribution of any keys controlling access.
- Cleaning enclosures for glass lifts. No person should have access to the lift well without the maintenance engineer present.

Daily checks for escalators and moving walks

1 A visual inspection of the escalator/moving walk for any deficiencies e.g. cracked glass or loose panels.

2 Check that approaches to all landings are free of obstructions and provide sufficient unrestricted space (usually at least 2.5m deep).

3 Check that all lighting is adequate – especially at top and bottom.

4 Check that all walking surfaces are free from tripping or slipping hazards.

5 Check handrails for damage.

6 Check skirting/deflector devices are securely fixed.

7 Check that the comb plates at the top and bottom of the escalator or at the ends of the moving walk do not contain broken teeth.

8 Check that all warning signs and safety pictographs are clearly visible. Other signs or indicators e.g. for shop guide or advertisements should be kept clear of landings.

9 If all the above are acceptable and the escalator/ moving walk is clear of passengers, run the unit and examine it for at least one complete cycle of the steps/ pallets. Check visually for excessive clearances (greater than 4mm) between steps/ pallets and skirting. Check that step treads and risers have no obvious signs of damage. Listen for any excessive or unusual noise. Check escalator stop buttons.