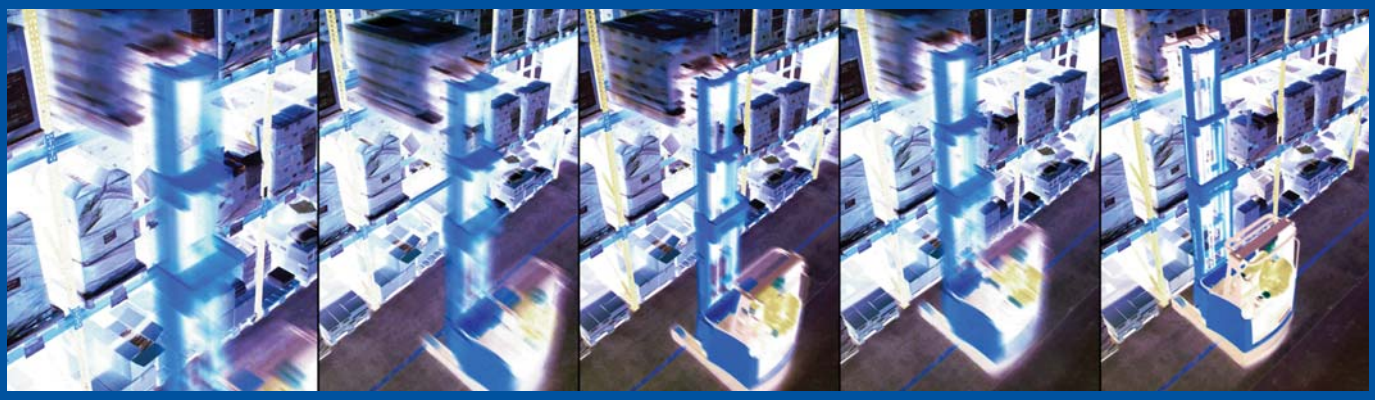
PUBLICLY AVAILABLE SPECIFICATION

PAS 90:2006

Specification for safe working practice for on-site maintenance and repair of industrial trucks



BITA

LIFTING INDUSTRY STANDARDS

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BSI Business Information

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Contents

Foreword

This Publicly Available Specification has been prepared by BSI in consultation with the British Industrial Truck Association (BITA), industrial truck industry representatives and associated user groups to provide a specification for a minimum safe working standard for industrial truck service engineers working on-site.

Acknowledgement is given to the following organizations that were involved in the development of this specification:

- **Barloworld Handling Ltd**
- **British Industrial Truck Association**
- **Fork Lift Truck Association**
- **Finning Materials Handling Ltd**
- **Jungheinrich UK Ltd**
- **Linde Material Handling (UK) Ltd**
- **Nestlé UK Ltd**
- **Rolls-Royce Marine.**

Valued advice and support has also been received from the Health and Safety Executive.

BSI invited wider comments from other interested parties. The expert contributions made by the organizations and individuals consulted in the development of this Publicly Available Specification are gratefully acknowledged.

Introduction

In order to meet legislation, standards and best practice, and in the interest of personal safety, there is a need to promote a standard of safety for industrial truck engineers (service engineers) when working on customer sites or elsewhere.

PAS 90 contains minimum safety requirements for service engineers and their employers, with the aim of increasing safety and promoting best practice in the interests of both the customer and the industry in general. Thus the minimum standard laid down in this document can be used to give vital assurance to both the industrial truck industry and their customers as to the safety competence of service engineers.

Currently the industrial truck industry and its customers comply with a wide range of safety legislation, standards and best practice. Historically the best way to meet these requirements was to participate in one of the many Safety Passport schemes available within the market place.

Due to the proliferation of these schemes and the differences between them, it has become necessary to provide a single standard that service engineers can comply with. PAS 90 is a single, recognized specification containing the minimum safety requirements applicable to service engineers. Whilst the PAS is aimed at service engineers working on customer premises, its provisions are equally applicable to service engineers working in their company workshops. Employers of service engineers are therefore recommended to consider applying these provisions to all engineers, regardless of where they are working.

There are frequent references in PAS 90 to "the employer". These refer to the employer of the service engineer who is to be accredited in accordance with PAS 90, and they indicate the management regime that needs to be in place in support of the service engineer.

1 Scope

This PAS specifies the minimum safe working practices for industrial truck service engineers working on site. It is applicable to service engineers who carry out maintenance, repair and/or thorough examination tasks on-site. It also provides guidance on the responsibilities of employers and trainers of service engineers to enable them to work safely on site.

It is not applicable to specific engineering training for engineers or to local site specific induction.

NOTE *An example of specific engineering training is the training that an engineer receives as part of an engineering apprentice scheme.*

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN ISO 20345, *Personal protective equipment – Protective footwear.*

HSG 6, *Safety in working with lift trucks.*

3 Terms and definitions

3.1
breakdown
situation where a vehicle is immobilised or unserviceable through a failure that is not the result of an accident

3.2
service engineer
person who has appropriate practical and theoretical knowledge, and experience of the type of vehicles and/or equipment to be inspected, repaired and/or maintained and who is capable of detecting defects or weaknesses and assessing their importance in relation to the safety and continued use of the vehicle and/or equipment

3.3
jacking and supporting
procedure to raise a vehicle for the purpose of maintenance and to secure that vehicle safely in a raised state

3.4
industrial truck
wheeled vehicle – except one running on rails – designed to carry, tow, push, lift, stack or tier in racks any kind of load and controlled by an operator who either walks with the truck or rides on a seat or on a specially arranged platform

[BS EN 1726-1:1999, definition **1.2**]

4 General

4.1 Insurance
The employer shall ensure that they have insurance cover for the activities of their service engineers on site. This shall include as a minimum:

a) public liability;

b) employers liability.

4.2 Unsafe industrial trucks
The employer shall provide information and training for service engineers on the procedures to follow if an industrial truck cannot be made safe to use as a result of the maintenance or repair to be carried out.

4.3 Operating customer industrial trucks
Unless the service engineer has the appropriate certification and authorisation, he shall not operate an industrial truck on behalf of the customer for the purpose of moving goods.

4.4 Driving licence
When recruiting an engineer, the employer shall ensure that a check is made on their driving licence. The licence shall be appropriate for the vehicles to be driven. These checks shall be recorded. Further driving licence checks shall be completed at least annually.

The employer shall monitor any penalty points on a service engineer's licence and maintain a record of endorsements to identify if additional training is required.

5 Environmental awareness

5.1 Service engineers shall be trained in basic environmental issues associated with fluids that can leak or be ejected from the truck. They shall be made aware of the correct handling, storage and spillage procedures for lubricants, fuel and battery fluids. An appropriate spillage kit shall be provided on the service engineer's vehicle for emergency purposes.

5.2 Service engineers shall be trained in correct waste disposal procedures. Service engineers shall not dispose of any waste on customer sites without prior approval. If approval is not obtained, waste shall be returned to the depot or to an approved drop off point for disposal with a recognised waste contractor.

5.3 Service engineers shall take all precautions necessary to avoid an environmental incident. Should an incident take place, for example oil or battery fluid being lost down a drain, then the service engineer shall report the incident to the customer immediately, and to his employer as soon as practicable.

6 Service engineer's vehicle

6.1 General

The employer shall ensure that engineers are trained to identify and report faults on the vehicle they use so that it can be maintained in a safe and efficient working order. The employer shall ensure that a system is implemented and maintained so that defects are promptly reported, and are rectified as soon after they occur as possible, and that records of defects and actions taken are maintained. The service engineer shall keep their vehicle clean and tidy.

6.2 Maintenance

The employer shall keep records about service engineer vehicles to show that they are serviced and maintained in accordance with the vehicle manufacturer's recommendations.

6.3 Loading of vehicles

Service engineers shall not overload their vehicle.

NOTE *All equipment, spare parts, tools and chemicals, etc. should be stored and secured to prevent movement during transit and to allow easy access.*

6.4 Working lights

Where necessary, the employer shall provide the appropriate working lights for the illumination of a safe working area.

6.5 Communication system

Service engineers shall be made aware of local requirements relating to the use of mobile communications equipment.

7 Service engineer equipment

7.1 The employer's responsibilities

The employer shall ensure that service engineer vehicles carry the properly designed tools and equipment necessary to safely carry out the type of work they are required to undertake. The employer shall keep up-to-date inventories of the tools and equipment kept on each vehicle.

The employer shall ensure that appropriate tools and equipment are examined, tested and inspected for defects by a competent person and calibrated as necessary. Records shall be kept of these inspections and calibrations. The employer shall ensure that a system is in place to ensure that defects are promptly reported and rectified as soon after they occur as possible. Appropriate records shall be maintained.

NOTE *Attention is drawn to the Provision and Use of Work Equipment Regulations 1998.*

7.2 Service engineer responsibilities

Service engineers shall regularly check the condition of all the equipment under their control and report any defects as soon as possible.

7.3 Jacks and wooden blocks

Jacks, wooden blocks and wheel chocks shall be inspected for serviceability prior to use.

Jacks shall be regularly thoroughly examined by a competent person at least every 12 months. Records of the thorough examinations shall be kept at least until the next thorough examination record is obtained.

NOTE *It is recommended that the records of thorough examination are kept for a minimum of 3 years for general management purposes.*

7.4 Lifting and slinging equipment

Lifting and slinging equipment shall be thoroughly examined by a competent person at least every 6 months.

Service engineers shall only use lifting equipment for which they have received training.

Service engineers shall not use customers lifting equipment unless permission has been given and a current report of thorough examination has been seen.

7.5 Coveralls

The employer shall ensure that coveralls appropriate to the work to be performed and in sufficient quantity are available to the service engineer. Coveralls shall only be cleaned by commercial cleaning methods.

NOTE *Home cleaning should not be used due to the risk of cross contamination with other clothing.*

7.6 Display screen equipment

Where appropriate engineers shall be trained in the correct use of computer equipment and in the recognition of the hazards and injuries associated with its use. Display

screen equipment shall only be operated with the vehicle stationary, hand brake applied and in a safe parking location.

7.7 Personal protective equipment

The employer shall provide engineers with suitable personal protective equipment based upon a risk assessment of the type of work carried out and activities undertaken.

NOTE *Attention is drawn to the Personal Protective Equipment at Work Regulations 2002.*

The employer shall ensure that engineers are trained in the use of personal protective equipment. Such equipment shall be used as indicated by the risk assessment

Service engineers shall be made aware of replacement procedures for any such equipment.

7.8 Portable electrical appliances

The employer shall ensure that all portable electrical appliances are maintained in a safe condition.

NOTE *For guidance on maintaining portable electrical appliances in a safe condition, see HSG 107, Maintaining portable and transportable electrical equipment.*

Service engineers shall not use customer portable electrical appliances unless authorised by the site representative.

8 Working environment

A safe wording environment shall be provided for the service engineer. The employer shall liaise with the customer to achieve this requirement.

The service engineer shall be trained in:

- how to assess the safety of the working environment that he is expected to work in;
- his employer's company policy on what constitutes a safe working environment; and
- the appropriate actions to take if the working environment provided by the customer does not meet his employer's company policy.

NOTE *Annex B gives advice on the provision of safe working environments. The customer has the primary responsibility for providing a safe working environment for the service engineer.*

On arriving at the place where the customer expects the service engineer to work, the service engineer shall assess the safety of the working environment and take the appropriate action in accordance with his employer's company policy.

The service engineer shall ensure that any work that he carries out does not pose a risk to the safety of any person, equipment or facility.

9 Health and safety

9.1 Standards of fitness for service engineers

Standards of fitness for service engineers shall be in accordance with appendix 2 of the Health and Safety Executive's guidance HSG 6.

9.2 Working at heights

Service engineers shall be trained in working at height procedures, and in the correct use of equipment and personal protective equipment appropriate for the task. Service engineers shall not climb up the mast, nor stand on the forks or cab of a truck. Service engineers shall be trained in the correct use of any equipment they may be required to use.

9.3 Lone working

When service engineers are working on site and no other staff are present a "safe system of work" shall be used that allows checks to be made on the safety of the service engineer and accidents to be reported.

NOTE *This is a joint employer/customer responsibility. Attention is drawn to the HSE guidance on lone working contained in INDG73(rev),* Working alone in safety – Controlling the risks of solitary work.

9.4 Fire

Service engineers shall be conversant with the customer's emergency procedures and any local rules relating to the avoidance of the risk of fire, e.g. hot working, smoking, entry into zoned areas.

9.5 First aid

Service engineers shall be trained in the procedures to follow in the event of personal injury. Service engineers shall be provided with a first aid kit and trained in its use. The kit shall be regularly checked and maintained.

9.6 Manual handling

Service engineers shall be trained in manual handling techniques. They shall also be trained in the recognition of the hazards and injuries associated with manual handling.

9.7 Hazardous substances

Service engineers shall be trained in the recognition of the dangers when storing and handling or clearing up spillages of the various hazardous substances used as part of their daily tasks and the precautions that should be taken.

NOTE *Attention is drawn to the Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations 2004 which may be applicable if service engineers carry hazardous substances. Attention is also drawn to the Dangerous Substances and Explosive Atmospheres Regulations 2002, and the Control of Substances Hazardous to Health Regulations 2002.*

9.8 Accident reporting

Any accidents shall be reported by the service as soon as possible to both the customer and the employer.

9.9 Alcohol and drugs

Service engineers shall not be under the influence of alcohol or drugs when at work.

10 Training

10.1 Recruitment

When recruiting a service engineer the employer shall check the details of any claimed engineering qualification or apprenticeship to ensure it shows the required level of competence for the job.

10.2 Service engineer competence

Service engineers shall be trained and assessed in the correct inspection, testing, maintenance and repair techniques of the vehicles they are expected to work on.

NOTE *For example to work on the LPG components of a truck, the service engineer needs to have completed a recognised LPG engine course.*

10.3 Service engineer driver training

The service engineer shall be trained by an accredited industrial truck training provider and shall hold a valid certificate for the training that he/she has undertaken. The extent of the training shall be the same as that given in HSE Booklet L117, Appendix 2. It shall be appropriate to the operations that the service engineer would be likely to carry out as part of the maintenance or thorough examinations that they are expected to undertake.

NOTE 1 *For information on accredited industrial truck training providers, contact one of the recognised accrediting bodies listed in HSE booklet L117, Rider operated lift trucks: Operator training: Approved Code of Practice.*

NOTE 2 *Attention is drawn to Regulation 9 of The Provision and Use of Work Equipment Regulations, 1998.*

10.4 Site induction training

Service engineers shall be familiar with customer site rules and requirements, such as Permits to Work, safe systems of work, site hazards that relate to the work they carry out, etc.

Service engineers shall attend customer site induction courses where required.

10.5 Food and drink industry specific training

Where a service engineer is to work on a site that is involved in food and/or drink manufacture, the service engineer shall be trained in hygiene in accordance with Annex A.

10.6 Records of training and assessment in relation to PAS 90

The employer shall provide the service engineer with:

a) a record of the training that they have received in a form that can be produced on request to any responsible customer representative;

b) the dates of the assessments carried out with an indication of the outcome of the assessment;

c) the signature of the training provider's representative to confirm that it is a true record of the field service engineer's training and assessment;

d) the official mark of the employer.

The record shall include a photograph of the field service engineer, endorsed by the training provider's representative to confirm that the training record is the correct and accurate one for the field service engineer shown, the name of the training provider, date of the training course, statement that the training was in accordance with PAS 90, name of the engineer, renewal date of the record, and confirmation that the food and drink module was completed if appropriate.

11 Verification of compliance with PAS 90

The employer of the service engineer shall set up an independent verification process to ensure that the training requirements specified in PAS 90 are met.

NOTE 1 *For the purposes of this PAS "independent verification" can mean first party, second party or third party verification. However attention is drawn to the advantages of using third party verification due to the credibility that comes with it.*

NOTE 2 *The verification process may be carried out by an accredited third party certification body that has been appointed to evaluate an employer's quality management system (QMS), provided that the training requirements of this PAS have been included in the scope of the QMS certification.*

The verification process shall be carried out at least annually and a report obtained on the findings. This report shall be made available to a customer's representative on request. If the verification process is done as part of an evaluation of the employer's QMS by an accredited third party certification body, the report provided on request shall be a copy of the relevant quality certification plus any observations, improvement or non conformities applicable to the training provided to the field service engineers.

The employer shall provide each service engineer with evidence that the person has received the training requirements laid down in this PAS (see **10.6**). The evidence shall include a photograph of the individual and certification that is signed and dated by an appointed representative of the employer to confirm that the service engineer has attained the training requirements laid down in PAS 90.

The certification of an individual service engineer shall be valid for three years from the date it was signed. The certification shall only be renewed after three years from the date it was signed if the employer is satisfied that the service engineer remains competent in the areas covered in PAS 90.

Annex A (normative)
Food and drink

A.1 General

The employer of any service engineer entering a food or drink facility shall ensure that they have received training in accordance with this annex within the preceding three years.

A.2 Understanding how food or drink can be contaminated

The employer shall ensure that the service engineer knows and understands:

a) the different types of contamination that can occur from the service engineer's activities (physical, chemical or biological);

b) how food or drink can be contaminated by their personal hygiene;

c) the potential consequences to the consumer, the food or drink supplier and the field service engineer's employer of food or drink becoming contaminated;

d) how the service engineer can avoid this contamination occurring.

Annex B (informative)
The provision of a safe working environment

NOTE Customers are responsible for the provision of a safe working environment for all personnel working on their premises whether they are contractors, employees or visitors. Service engineers have a joint responsibility with the customer for ensuring that their actions do not put others at risk (see Clause 8).

B.1 General

Clauses B.2 to B.7 contain examples of provisions that can be followed in order to provide the service engineer with a safe working environment. There may be other provisions that apply to any particular workplace. It is the responsibility of the employer to work with the customer to consider each case on its own merits and to take appropriate measures.

B.2 Working area

The service engineer working area should be a pre-designated area having sufficient space to allow the engineer to move freely around the side of vehicles being worked on. The area should have sufficient heating and lighting, and sufficient space to allow for the use of such equipment as mast access equipment, lifting frames, etc. It should include sufficient work surfaces and space for the storage of spare parts and tools. The area should be dry, reasonably clean, free of vermin and infestation, and with a sufficient supply of fresh air. The service engineer should be provided with working conditions that enable him to work under cover wherever possible.

B.3 Resident engineers

Resident engineers should have a dedicated workshop or allocated area with all the equipment necessary to carry out their role safely. This would typically include good quality floor surfaces, suitable lighting, heating, dry, work surfaces, lifting equipment, storage, exhaust ventilation and restricted access. The service engineer should have access to rest and toilet facilities.

B.4 Battery bays

Service engineers should not be permanently based or work for long periods of time in battery bays due to the health and safety risks.

NOTE Attention is drawn to the Management of Health and Safety at Work Regulations 1999.

B.5 Gangways

Service engineers should not normally work in gangways due to the risk of collision. However if working in a gangway is unavoidable then the working area should be secured with signs and safety fencing.

B.6 House keeping

Service engineers should maintain their work area when on-site to a good standard to avoid fire risks, tripping hazards and the risk of falling objects.

B.7 Hygiene

Customers should provide service engineers with sufficient toilet and washing facilities.

Bibliography

Standards publications

BS EN 166, *Personal eye protection – Specifications.*

BS EN 352-1, *Hearing protectors – General requirements – Part 1: Ear-muffs.*

BS EN 388, *Protective gloves against mechanical risks.*

BS EN 397, *Specification for industrial safety helmets.*

BS EN 471, *High-visibility warning clothing for professional use – Test methods and requirements.*

Other publications

Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations 2004

Control of Substances Hazardous to Health Regulations 2002.

Health & Safety at Work etc. Act 1974.

Lifting Operations and Lifting Equipment Regulations 1998.

Management of Health and Safety at Work Regulations 1999.

Manual Handling Operations Regulations 2002.

Personal Protective Equipment at Work Regulations 2002.

Provision and Use of Work Equipment Regulations 1998.

The Electricity at Work Regulations 1989.

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995.

The Dangerous Substances and Explosive Atmospheres Regulations 2002.

Workplace (Health, Safety and Welfare) Regulations 1992.

HSE publication – EH40 – *Occupational exposure limits.*

HSE publication – HSG6 – *Safety in working with Lift trucks.*

HSE publication – ACOP L117 – *Rider operated lift trucks: Operator training – Approved Code of Practice.*

HSE publication – *Guidance note PM28 – Working platforms on fork lift trucks.*

HSE publication – HSG107 – *Maintaining portable and transportable electrical equipment.*

HSE publication – INDG73(rev) – *Working alone in safety – Controlling the risks of solitary work.*

British Industrial Truck Association Guidance Note Set.

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