



GUIDANCE NOTE - GN 42

(October 1993)

ROUGH TERRAIN LIFT TRUCKS ON CONSTRUCTION SITES

BRITISH INDUSTRIAL TRUCK ASSOCIATION



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IMPORTANT NOTICE

PLEASE READ CAREFULLY

- (a) The recommendations and advice contained in this Guidance Note are based on specifications, procedures and other information which have been collected by the British Industrial Truck Association Limited ("BITA") from its members. They represent what is, so far as BITA is aware, the best available data at the time of publication on the construction and use of Rough Terrain Lift Trucks in the general conditions described, and are intended to provide guidance for such use.
- (b) However, there are a wide variety of situations in which RTLTs may be used, consequently in all cases the suitability and safety of this Guidance Note must be determined by the person seeking to apply it on the basis of his own judgment, in the light of the conditions in which use is envisaged and subject to all relevant statutory requirements.
- (c) BITA accepts no responsibility for the recommendations, advice, statements, opinions and conclusions expressly or impliedly set out below and gives no warranty, representation of assurance in respect of the accuracy or validity of the same.

SCOPE & OBJECTIVE

This Guidance Note gives recommendations and advice to contractors, site managers, operators, potential purchasers and all those responsible for the operation or use of RTLTs on UK construction sites and is designed to serve as a practical framework for the correct use of RTLTs on site.

Where reference is made to 'Site Conditions' it is not the intention to offer advice on methods of site preparation as this is a user responsibility and beyond the competence of BITA to advise. Recommendations are made however where specific requirements are to be met, or where certain conditions must be avoided to ensure the correct operation of RTLTs on site.

DEFINITION

A RTLT is defined by a draft International Standard as "a wheeled, counterbalanced, powered truck which is intended and specially designed for materials handling on unimproved natural terrain or disturbed ground". Excluded from the Standard's scope are vehicles primarily intended for earth moving, for on road hauling and other similar operations. However, if such machines are adapted specifically for fork lift truck operations, they are also expected to comply with the relevant parts.

INTRODUCTION

RTLTs are designed to have a high level of inherent stability and must meet recognised stability standards. Nevertheless it must be emphasised that the term rough terrain lift truck does not imply that this machine is without risk of tipover or that one may be used without due regard to site preparation or prevailing site conditions.

From information currently available (see references a. and b.) the most likely causes contributing to a RTLT accident on site are as follows:

- a. The inexperienced or inattentive operator and especially one with a lack of suitable training.

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- b. Hazardous site conditions.
- c. Individual or collective disregard of safe work practices.
- d. Use of unsuitable RTLT for the application.
- e. Incorrectly maintained RTLT.

OPERATOR TRAINING

Special skills are required to operate RTLTs correctly and safely, therefore training of operators in the correct use of RTLTs is paramount in preventing accidents.

With the publication of the Approved Code of Practice (ACOP) and Supplementary Guidance 'Rider operated lift trucks - operator training' (see reference c.) the Health and Safety Commission brings a special legal status to operator training. The ACOP 'applies to the basic training of all employees whose employment after 1st April 1989 includes lift truck operation for the first time'. It lays down the requirements for 'basic training - the basic skill and knowledge required for safe operation'. The Supplementary Guidance also encourages employers to use the ACOP for assessing the competence and training needs of existing operators.

Training should include the following:

- a. The type(s) of RTLT which the trainee will be required to operate i.e. mast and/or telescopic.
- b. An understanding of the safe working procedure as given in the specific Manufacturers Operator Handbook.
- c. Recognition and awareness of potentially dangerous situations.
- d. Explanation of the factors which affect machine stability, including load security and integrity; rated capacity and rated load centres; centres of gravity; and speed and smoothness of operation.
- e. Use of the RTLT in conditions that the operator will meet at work including rough terrain, inclines and bad weather conditions.
- f. Special awareness of how changes in ground conditions may affect a RTLT's performance and the safety of an operation.
- g. Familiarisation with any special load handling attachments that will be used on site.

Operators must be properly authorised.

SITE CONDITIONS

Contractors should satisfy themselves that they are fulfilling their legal obligations by planning and controlling the operation of RTLTs on site to eliminate or warn of potential hazards and provide a safe system of work. The site should be kept clean of rubbish, such as discarded bricks, pallets, timber, mud etc; such debris can significantly affect the safe operation of RTLTs.

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Particular attention should be paid to the following:

a. Roads and Accessways.

Consolidated roads should be provided at the earliest possible stage of site development to minimize travel on uneven terrain. Where off road operation is necessary other arrangements must be made to provide safe conditions.

b. Inclines.

RTLTLs can generally obtain sufficient wheel grip (especially when laden) to climb inclines steeper than those they can be safely driven down. However, a RTLTL capable of being driven up an incline may not always be controlled safely on that incline and this is especially so if:

- (i) The laden/unladen state is changed.
- (ii) The recommended driving direction is not adopted (see c. ii).
- (iii) The RTLTL has traction and braking facilities on one axle only or is four wheel drive but is operated in the two wheel drive mode.
- (iv) The RTLTL has been properly maintained.
- (v) The RTLTL is driven too fast and/or is subjected to abrupt changes of speed or direction.
- (vi) The surface of the incline is irregular or slippery due to rubbish, mud etc.

c. Operating on inclines

It should be recognised that RTLTLs must never be parked on a steep incline. If, in an emergency there is no alternative and a RTLTL has to be parked on an incline, the wheels must be chocked. When approaching an incline the correct driving direction and travelling position (see ii below) must be adopted.

It is important to note that brake testing by the manufacturers is carried out on clean dry concrete and the required minimum parking brake performance of 15% is designed to hold an RTLTL on at least a 1 in 6.6 gradient with dry concrete or consolidated asphalt surface. If a truck is operated on inclines which are steeper than this or with an inferior surface, the parking brake may not be able to hold the RTLTL stationary or the wheels may slip on the surface.

RTLTLs are capable of climbing gradients in excess of their parking brake capability. Should steep inclines exist on site and it is necessary to negotiate them with a RTLTL there are precautions which must be taken and operating techniques adopted to provide adequate safety:

- i. Carefully choose routes or prepare the terrain to avoid very steep inclines and slippery or loose surfaces.
- ii. Adopt the correct driving direction and travelling position for negotiating an incline i.e. when a load is carried, the load should face uphill. When no load is carried the fork arms should face downhill.
- iii. On inclines and undulating ground the fork arms should be tilted backwards and raised just enough to clear the ground.

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- iv. Always avoid turning on or traversing an incline (unless the machine is specifically equipped for this manoeuvre) and always descend straight down the gentlest gradient of an incline, instead of driving diagonally across it.
- v. Never attempt to stack/destack a load on an incline.
- vi. Avoid sharp turns when travelling on an incline.

Warning. The manufacturer should be consulted on the choice of truck where greater braking performance is essential. However, where severe travel conditions prevail e.g. ice, snow, slurry, mud etc. it is probable that lack of tyre adhesion will limit the steepness of any incline which may be negotiated safely.

LOADING & STORAGE AREAS

Contractors should:

- a. Provide and designate a firm, level area separate from the storage area for the unloading of road transport and a permanent and level base construction for storage of materials.
- b. Provide loading-out towers or scaffolding of suitable load bearing capacity which should be erected on a firm level base and have level, compacted and uncluttered approach areas.
- c. Provide a competent banksman to guide the operator by means of the recognised hand signals (see reference d.) where there is a restricted view.

MACHINE MAINTENANCE & FITNESS FOR WORK

It is the operator's responsibility to ensure that the RTLT is in a safe condition for work before commencement of each shift or when taking charge of the truck from someone else.

Before checking or operating the machine the operator must read and fully understand the instructions and warnings given in the manufacturers operators handbook.

All pre-start checks and weekly maintenance should be carried out in accordance with manufacturer's (and employer's) instructions.

Any apparent faults should be notified to supervisors in accordance with the employers' instructions, and the RTLT not operated until faults have been rectified and the machine declared fit for work by an authorised competent person. It should be noted that any mechanically propelled vehicle operated on a site to which the Construction (General Provisions) Regulations 1961 apply are required by regulation 34 (a) to be in an efficient state, in efficient working order and in good repair.

WORKING PLATFORMS

Although the primary function of a RTLT is the carriage, raising and lowering of articles/materials, its use with working a platform may present advantages from a safety point of view over other means of access to heights such as a ladder. However, it is essential that trucks, when used for elevation maintenance, be equipped with a properly designed and approved working platform and the safeguards as detailed in the Health and Safety Executive Guidance Note PM 28 are observed. This may require certain modifications to the RTLT. BITA GN 48 Specifications for Working Platforms also contains constructional and operation details.

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- b. Safety in working with lift trucks (HS(G)6) HMSO 1979 ISBN 0 11 883284 0.
- c. Rider operated lift trucks-operator training. Code of Practice and Supplementary Guidance HMSO ISBN 0 11 885459 3.
- d. Hand signals.
 - BS 7121 Part 1 :1989. Code of practice for safe use of cranes.
 - ISO DIS 9925 :1988. Code of practice for cranes and lifting appliances.
 - BS 6736 :1986. Code of practice for use in agricultural operations.
 - BS 5744 :1979 Code of practice for safe use in cranes.
 - CP 3010 :1972 Code of practice for safe use in cranes.
- e. Working platforms on fork lift trucks. HSE Guidance Note PM 28.
Specifications for working platforms. BITA Guidance Note GN 48.
- f. The Construction (General Provisions) Regulations 1961.

Bibliography

BITA Operator's Safety Code for Rough Terrain Lift Trucks.