

Department of Labour
TE TARI MAHI



Draft

Approved code of practice for

**TRAINING INSTRUCTORS AND OPERATORS OF
POWERED INDUSTRIAL LIFT TRUCKS
(FORKLIFTS)**

PART 1

ACKNOWLEDGEMENTS

This approved code of practice is the result of many years work by a group of dedicated volunteers drawn from the forklift industry, hire companies, forklift operator training organisations, general industrial users, Land Transport New Zealand (LTNZ), the Department of Labour and other interested parties.

The forklift industry working party members who have reviewed this approved code of practice are: Bob Baker, Gordon Byron, John Owen, Ron Bird, Maurice Flood, Bryn George, David Hebden, Dan Shanahan (deceased), Wayne Holah and Peter Sims.

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NOTICE OF ISSUE

I have issued this *Approved Code of Practice for Training Instructors and Operators of Powered Industrial Lift Trucks (Forklifts)*, being a statement of preferred work practices or arrangements, for the purpose of ensuring the health and safety of persons to whom this code applies and persons who may be affected by the activities covered by this code.

James Buwalda
Secretary of Labour

FOREWORD

I have approved this statement of preferred work practices, which is an *Approved Code of Practice for Training Instructors and Operators of Powered Industrial Lift Trucks (Forklifts)*, under section 20 of the Health and Safety in Employment Act 1992. When a code is approved, a Court may have regard to it in relation to compliance with the relevant sections of the Health and Safety in Employment Act. This means that if an employer in an industry or using a process to which an approved code applies can show compliance with that code in all matters it covers, a Court may consider this to be compliance with the provisions of the Act to which the code relates.

Hon. Ruth Dyson
Minister of Labour

SCOPE

This code sets out the general requirements for the training of operators and instructors of powered industrial lift trucks (forklifts). The application of this code is for forklifts used for general materials handling purposes; and while it also applies to the operation of specialised machines such as pedestrian-operated forklifts, the larger ISO freight container capable machines and order-picking machines, additional specific training will be required.

Part two of this approved code of practice is planned for issue at a later date. It is intended to cover matters related to the use of attachments for use on forklift trucks, handling suspended loads and container handling, etc.

A SUMMARY OF THE HEALTH AND SAFETY IN EMPLOYMENT ACT 1992

The object of the Health and Safety in Employment Act 1992 (the Act) is to prevent harm to all people at work and people in, or in the vicinity of, a place of work. To do this, the Act:

- promotes excellence in health and safety management
- defines harm and hazards in a comprehensive way
- imposes duties on those who are responsible for work, or do work
- sets requirements that relate to taking all practicable steps to ensure health and safety, and that are flexible to cover different circumstances
- encourages employee participation in health and safety management and that the process is conducted in good faith by all those involved.

The Act creates duties for most people connected with places of work including:

- employers
- employees (including trainees and people gaining work experience and volunteers)
- the self-employed
- principals to contracts
- persons who control a place of work
- hirers, sellers and suppliers of plant.

Regulations

Regulations are promulgated from time-to-time under the Act. Regulations may, among other things, impose duties on employers, employees, designers, manufacturers, and others relating to health and safety. These regulations may apply with respect to places of work, plant, processes or substances and may deal with particular problems that have arisen.

The Health and Safety in Employment Regulations 1995 require the provision of facilities such as toilets, meal rooms, first aid, and for employees to wash, and the provision of wholesome and sufficient drinking water. The regulations also set a range of general health and safety and welfare requirements in addition to the Act, including:

- restricting children and young people from certain hazardous work and times of work
- requiring certification of workers using some hazardous equipment
- requiring notification of particular types of hazardous work, including forestry and construction
- creating duties for the designers, manufacturers and suppliers of plant and protective clothing and equipment.

Approved codes of practice

Approved codes of practice are provided for in the Act. They are statements of preferred work practice or arrangements, and may include procedures which could be taken into account when deciding on the practicable steps to be taken. Compliance with codes of practice is not mandatory. However, compliance with an approved code of practice may be used in Court as evidence of good practice and an employer or other duty holder having taken “all practicable steps” to meet the duty.

Employers' duties

Employers have duties to ensure the health and safety of employees at work.

Employers have a general duty to take “all practicable steps” to ensure the safety of employees while at work. In particular, they are required to take all practicable steps to:

1. provide and maintain a safe working environment
2. provide and maintain facilities for the safety and health of employees at work
3. ensure that machinery and equipment is safe for employees
4. ensure that working arrangements are not hazardous to employees
5. provide procedures to deal with emergencies that may arise while employees are at work.

Taking “all practicable steps” means doing what is reasonably able to be done in the circumstances, taking into account:

1. the severity of any injury or harm to health that may occur
2. the degree of risk or probability of that injury or harm occurring
3. how much is known about the hazard and the ways of eliminating, reducing or controlling it
4. the availability, effectiveness and cost of the possible safeguards.

A person is required to take all practicable steps in respect of circumstances that they know or ought reasonably to know about.

Hazard management

Employers must identify and regularly review hazards in the place of work (existing, new and potential), to determine whether they are “significant hazards” and require further action. If an accident or harm occurs that requires particulars to be recorded, employers are required to investigate it to determine if it was caused by or arose from a significant hazard.

“Significant hazard” means a hazard that is an actual or potential cause or source of:

1. serious harm (defined in a schedule to the Act) or
2. harm (being more than trivial) where the severity of effects on any person depend (entirely or among other things) on the extent or frequency of the person's exposure to the hazard or

3. harm that does not usually occur, or usually is not easily detectable, until a significant time after exposure to the hazard.

Where the hazard is significant, the Act sets out the steps employers must take:

1. where practicable, the hazard must be eliminated
2. if elimination is not practicable, the hazard must be isolated
3. if it is impracticable to eliminate or isolate the hazard completely, then employers must minimise the likelihood that employees will be harmed by the hazard.

Where the hazard has not been eliminated or isolated, employers must, where appropriate:

1. provide protective clothing and equipment and ensure that it is accessible and used
2. monitor employees' exposure to the hazard
3. seek the consent of employees to monitor their health
4. with informed consent, monitor employees' health.

Information for employees and health and safety representatives

Before employees begin work, they must be informed by their employer of:

1. hazards they may be exposed to while at work
2. hazards they may create which could harm other people
3. how to minimise the likelihood of these hazards becoming a source of harm to themselves and others
4. the location and correct use of safety equipment
5. emergency procedures.

Employers are also required to inform employees of the results of any health and safety monitoring. In doing so, the privacy of individual employees must be protected.

Where there are employee health and safety representatives, the employer must ensure that the representatives have ready access to sufficient information about health and safety systems and issues in the place of work to enable them to be able to carry out their functions effectively.

Training and supervision of employees

An employer must ensure that every employee who:

- does work of any kind or
- uses plant of any kind or
- deals with a substance of any kind,

in a place of work, has the knowledge and experience – or is supervised by someone who has — so that they are not likely to suffer harm, or lead to the harm of others.

Every employee must be adequately trained in the safe use of all plant, objects, substances, and protective clothing and equipment that they are, or may be, required to use or handle.

Employers to provide opportunities for employee participation

Employers must provide reasonable opportunities for employees to participate effectively in ongoing processes for improvement of health and safety in the place of work. Where there are more than 30 employees, or where an employee requests it, the employer must seek agreement on, develop, implement and maintain a system of employee participation. Where agreement cannot be reached on the system of employee participation, there are default provisions set out in the Act.

Where employee health and safety representatives are elected, they are entitled to paid leave to attend approved training courses.

A trained employee health and safety representative may issue a hazard notice to an employer where they believe there is a hazard in the place of work, they have brought it to the employer's attention, and the issue has not been resolved.

Employers and employees must deal with each other in good faith while seeking agreement on, developing and maintaining a system of employee participation. The dispute resolution processes of the Employment Relations Act 2000 apply.

Responsibility for employees' work activities

An employer is also responsible for the health and safety of others arising from the work activities of their employees. They must take all practicable steps to ensure that no action or inaction of an employee while at work causes harm to any other person.

Deemed employees

People receiving on-the-job training or work experience, loaned employees, and volunteer workers are all deemed to be "employees" of an employer or self-employed person for whom they are working. Most employer duties apply, but not that to provide opportunities for employee participation. In addition, for volunteers the exceptions are:

- to provide training and supervision
- to ensure their actions or inaction at work does not harm others.

Duties of employees

Every employee must take all practicable steps to ensure:

- their own safety while at work (including using protective clothing and equipment)

- that no action or inaction of theirs while at work causes harm to any other person.

An employee has a right to refuse to undertake work that they consider likely to cause them serious harm.

The self-employed

Every self-employed person must take all practicable steps to ensure that no action or inaction of theirs while at work harms the self-employed person or any other person.

Principals

Principals to contracts are required to take all practicable steps to ensure that—
no employee of a contractor or subcontractor and
if an individual, no contractor or subcontractor—
is harmed while doing any work (other than residential work) that the contractor was engaged to do.

Hirers, sellers and suppliers of plant

The Act places duties on people to ensure that any plant or equipment that is used in a place of work is designed and made, and has been maintained, so that it is safe for its intended use. The duties apply to people who:

- hire, lease or loan plant to another person that could be used in a place of work
- sell or supply plant (other than for hire, lease or loan)
- install or arrange plant in addition to either of the above.

Only trained and authorised operators are permitted to use the forklift,

Persons in control of a place of work

The Act places duties on “persons who control a place of work” in relation to people in the vicinity, and to visitors.

A “person who controls a place of work” includes a person who owns, leases, subleases or occupies a place of work, or who owns, leases or subleases plant or equipment used in a place of work.

Accidents and serious harm (recording and notification)

The Act requires employers, the self-employed, and principals to contracts to keep a register of work-related accidents and serious harm.

For employers, this includes every accident that harmed (or might have harmed):

1. any employee or self-employed person at work

2. any person in a place of work under the employer's control.

Employers are also required to investigate all accidents, harm and "near misses" to determine whether they were caused by a significant hazard.

"Serious harm" is defined in Schedule 1A of the Act.

Any occurrences of serious harm of a kind that must be recorded, must also be notified to the Secretary of Labour (in practice, the nearest Department of Labour office), as soon as possible after the occurrence. In addition, the accident must also be reported on the prescribed form within 7 days. (Forms are available from stationers, or from the Department of Labour website.)

If a person suffers serious harm, the scene of the accident must not be disturbed unless to:

save life or prevent suffering

maintain public access for essential services, e.g. electricity, gas

prevent serious damage or loss of property.

A health and safety inspector will advise whether or not the Department of Labour will investigate the accident, and what action may be taken in the meantime.

Other legislation

You should always familiarise yourself with other applicable legislation, including but not limited to, legislation governing the transport industry, administered by the Ministry of Transport and Land Transport New Zealand. (Refer to Appendix O: Related documents).

PART 1: GENERAL

1.1 Introduction

This approved code of practice outlines the minimum standard of training that should be provided by forklift owners, managers and trainers of forklift operators. Each work environment may require additional training to suit the needs of that environment.

While this code has been based on the existing New Zealand Standard NZS/ASME/ANSI B56.1:2000 *Safety standard for low-lift and high-lift trucks*, any other Standard providing an equal or better level of safety, and recognised and approved by Standards New Zealand, will be acceptable. It should be noted that Australian Standard AS2359 (parts 1-12) is considered as meeting these criteria.

This code has been produced so that all parties involved are better able to conform to New Zealand law. This code is fundamental to ensuring a safe working environment and should be used in conjunction with the various codes of practice and other publications published by the Department of Labour including the *Safety Code for Forklift Operators*, No.s. 1- 4. (These are available on the Department's website: www.dol.govt.nz.)

1.2 Powered industrial lift truck vehicle defined

A powered industrial lift truck is a vehicle drawn, propelled and operated by mechanical, electrical or manual power, designed incorporating a powered lift principally to lift, carry or stack goods by means of:

1. a fork consisting of one or more arms which support the load
2. a platform
3. any attachment or other mechanism.

The Land Transport Act 1998 and relevant Land Transport New Zealand (LTNZ) regulations define a forklift as a motor vehicle. When used on a road, the forklift must comply with those regulations. (Refer to Appendix J: Land Transport New Zealand compatibility.)

Without limiting the above definition this includes forklifts, order pickers, side loaders, reach trucks, platform trucks, powered pallet trucks, straddle trucks and lateral stacking trucks. While this does not include straddle carriers, much of this approved code of practice is applicable to that equipment.

1.3 Commonly recognised names

The most commonly recognised names used for powered industrial lift trucks are forklift, forklift truck, forkhoist, and fork truck. Where these are not used as part of the title of standards, or where the type or name of a vehicle

described in 1.2 above is used, for the purposes of this code they should be considered as reference to a `forklift`.

1.4 Important note

It is a requirement of the Health and Safety in Employment Act 1992 (HSE Act) that all operators of forklifts are trained in their safe operation. The requirements for gaining the `F` endorsement are not sufficient on their own to meet the HSE Act requirements. Some trainers can provide both the `F` endorsement and HSE Act courses at the same time.

1.5 Authorisation to operate

1. no person shall operate a forklift without evidence of authorisation from their employer
2. this authorisation shall be issued only after training is satisfactorily completed (refer to Appendix I: Employer's written authorisation to operate a forklift)
3. possession of a current, valid LTNZ driving licence is not an authority to use a forklift.

PART 2: ACCIDENTS AND SERIOUS HARM

2.1 Causes of accidents

Analysis of accidents reported to the Department of Labour indicates that the main causes of accidents are:

- excessive speed
- not looking in the direction of travel
- carrying/lifting passengers
- poor stacking procedures
- poor forklift maintenance
- inadequate operator training
- exceeding the rated capacity of the forklift
- travelling with the load raised
- getting on and off a forklift.

2.2 Safety of non-operators

Persons other than the operator may be injured by being struck by forklifts. Operators should, therefore:

- look in the direction of travel and be alert to the possibility of pedestrians stepping into the path of the forklift
- exercise due caution while manoeuvring near pedestrians
- operate at a safe speed in alleyways and yards
- ensure revolving or strobe lights, if fitted, and horns or other warning devices are working properly
- use an approved lifting platform when lifting personnel. Refer to NZS/ANSI/ITSDF B56.1:2005 [name](#) and NZS/AS 2359 [name](#).

2.3 Damage to equipment and materials

Persistent damage to equipment and materials may indicate that several factors should be checked, including:

- operator's judgement of position, distance, height, space and speed.
- sensitivity of and to forklift controls.
- any personal or health problems of the operator.

Accidents may cause substantial costs to the employer in terms of downtime, loss of product and damaged plant. Forklift owners and managers should be

aware that a trained forklift operator should reduce such costs by following safe operating practices.

2.4 Operator monitoring

Employers shall continue to monitor and assess forklift operators at regular intervals to ensure the operator maintains the required standards. Where the operator's performance has deteriorated, retraining should take place to prevent accidents.

2.5 Selection of operators

It is the employer's responsibility to ensure that the person operating the forklift is suitable in all respects.

Persons operating a forklift, or being trained to operate a forklift, shall be at least 15 years of age, in line with the requirements of the HSE Act and LTNZ regulations.

Note: Possession of a driver's licence is not sufficient evidence that the person is qualified to operate a forklift.

2.6 Operators to observe safety measures

Forklift operators have a legal obligation to comply with this and other relevant codes of practice and be responsible for their own safety, the safety of others and the safety of property.

PART 3: MAINTENANCE OF FORKLIFTS

3.1 Owners' and managers' responsibilities

Owners and managers must be aware of the requirements under NZS/ANSI/ITSDF B56.1:2005 *name* and amendments, Part II, Section 6, *Maintenance and rebuild practices*.

3.2 Maintenance and inspection

Operation of forklifts may be hazardous if maintenance is neglected, or if repairs, rebuilds or adjustments are not performed in accordance with the manufacturer's design criteria. Therefore, maintenance facilities (on- or off-premises), trained personnel and detailed procedures shall be provided.

3.3 Manufacturers' and users' recommendations

Maintenance and inspection of all forklifts shall be performed in accordance with the manufacturers' and users' recommendations and the following practices:

- a planned schedule of maintenance, lubrication and inspection shall be followed
- only personnel who can demonstrate that they are qualified in the inspection, repair, maintenance and adjustment of forklifts, and who are authorised by their employers, shall be permitted to carry out this work in accordance with manufacturer's specifications (refer to section 6.2 of NZS/ANSI/ITSDF B56.1:2005 *name* and Appendix M: Accidents and serious harm (records and notification)).

Note: This does not mean or imply that only personnel trained by forklift manufacturers or distributors are acceptable, but can include technicians authorised by an employer or forklift owners.

3.4 Maintenance of forklifts

Owners and managers of forklifts have several options for ensuring their maintenance programmes generally meet and comply with the requirements of the HSE Act, including, but not limited to, the following:

1. in-house maintenance facilities, with personnel who have recognised qualifications and experience as outlined in paragraph 3.3 above
2. contractual maintenance schemes/programmes with forklift manufacturers or their designated agents/dealers or contractual maintenance schemes with recognised forklift servicing companies or

3. an annual inspection scheme similar to that being offered by the New Zealand Forklift Manufacturers and Distributors Association (NZFMDA).

PART 4: INSTRUCTOR REGISTRATION

4.1 Procedures and requirements

All applications for registration and re-registration shall be made by sending details to the national registrar of forklift instructors (care of Competenz), giving details of the company concerned along with copies of the training programme and lesson plans. These will be assessed and, when satisfactory, an audit of the training programme can be carried out. The address details for Competenz head office are:

Building 2
Level 2, Central Park
666 Great South Road
Penrose
PO Box 62561 Central Park
Auckland
Freephone: 0800 2 SKILL (0800 275 455)
Freefax: 0800 473 754
www.competenz.org.nz

An applicant who meets the registration requirements will be given a letter of registration and a registration number. This confirms they have been registered as a forklift instructor in terms of this approved code of practice, which is issued under section 20 of the Health and Safety in Employment Act 1992, for a specified period up to a maximum of three years. All trainers shall be reassessed when their registration is due for renewal. The instructor's registration number should be quoted on all enquiries or correspondence.

Applicants must provide the following:

1. documentary evidence of having attended and passed at least one forklift operator training course, including an up-to-date certificate issued by a registered instructor
2. documentary evidence of having passed an appropriate 'train the trainer' course (refer to Appendix N: Training qualifications), or proof to the satisfaction of the registrar or his nominated agent that the applicant has had previous appropriate training or suitable teaching experience
3. an acceptable set of instructional material and visual aids, including test papers developed by the applicant instructor. Testing procedures, including test papers and answers, shall be submitted for approval
4. evidence of a thorough understanding of both the theory and practical application of the operation of forklifts - this will be assessed by the registrar or their appointed agent
5. a photocopy of a current appropriate driver's licence
6. a resumé in support of the application (to be presented ahead of time).

In addition, NZQA qualifications may assist in some of the above criteria (refer to Appendix N: Training qualifications) and the applicant must be deemed “a fit and proper person” (this is similar to the definition in the Transport Services Licensing Act 1989 for motor vehicle instructors - refer to Appendix G: Definition of a person of fit and proper character).

Applications for registration and renewal of registration must be made in accordance with the criteria outlined above. On receipt of an application, a pre-audit assessment will be undertaken and when all criteria issues and supporting documentation have been met, the applicant can then be considered for an ‘on-site’ audit of their training programme and presentation.

Any applicant wishing to have a decision reviewed, should write to the national registrar of forklift instructors (or designated agent), supplying supporting evidence for a case to be considered.

If a review is warranted, an ‘independent’ person with relevant experience, will be assigned to undertake this process.

Onsite audits will not incur any extra charges but will be included in the standard Competenz fees..

4.2 Training providers

Professional training organisations, including those offering ‘train the trainer’ courses, exist in various locations nationwide. Advice on these organisations may be obtained from Competenz.

4.3 Instructor changing employer

Where an instructor leaves employment with a training organisation, or an industry with in-house training facilities, conditions for the instructor’s continued registration must be met e.g.:

- the instructor must re-apply for registration on the basis of the new situation
- the application must meet all criteria and requirements outlined in section 4.1 above
- if using, or intending to use, previous lesson plans and materials, the applicant must provide written evidence of approval or franchise from the previous employer or original ‘owner’ of materials, to prevent any conflict of interest matters or infringement of copyright as well as to protect the intellectual property rights of the owner.

PART 5: TRAINING PROGRAMMES

5.1 Duration of training

The duration of training courses depends upon the extent of the individual training programmes required. Employers would, in consultation with training providers, choose the extent of training required for their industries. The shorter one-day courses may be more suitable for forklift operators with experience in forklift operating and/or those undergoing a refresher course. Longer courses may be required for persons with little or no experience. As a guideline, for trainee operators with little or no experience, the course could be two or three days long. The instructor must ensure that such trainees have been given adequate practical experience. For operators with experience, to cover theory lessons adequately, it is expected that approximately four hours will be required. After completing adequate theory training, the practical assessment shall have a minimum duration of 10-15 minutes per trainee. The pre-operational checks and debrief should not form part of that time.

1. Planning a training programme

When undertaking a training programme, consideration should be given to the following:

- instructor-to-trainee ratio
- training facilities
- training aids
- equipment
- duration of training
- syllabus
- assessment for theory and practice
- certification on passing the course
- that for some trainees, English may be their second language
- that some trainees may have reading difficulties
- that trainees should preferably hold a full, valid Class 1 LTNZ driving licence, or be eighteen (18) years-of-age or older.

2. Instructor-to-trainee ratio

The instructor-to-trainee ratio should be set at a maximum of ten trainees per instructor. However, during practical sessions there should be only one machine per instructor in operation at any one time.

3. Training facilities

The training shall be held in a clearly defined area where trainees will not be distracted and the safety of other people will not be endangered. It should preferably be under cover, and must be suitable for the type of equipment in use. Suitable facilities for lectures are essential.

A suitable covered or indoor facility should also be available for use in bad weather.

Layouts of practical courses should include a variety of practical operating situations e.g. truck and racking loading and unloading, manoeuvring in intersections and aisles in forward and reverse, and high level stacking and destacking.

4. Training aids

Training aids could consist of:

- safety films, videos, dvd and Powerpoint presentations
- closed-circuit television
- overhead projection equipment and transparencies
- slides
- slide-tape presentations
- computer assisted learning
- simulation testing
- printed handout material such as safety booklets
- scale models.

5. Equipment

During onsite visits, the auditor will check that the forklift being used in training is suitable for the work to be done by the trainee, i.e. if the training is for persons who will be expected to operate a reach truck, then a reach truck is used, similarly, if the trainee is expected to operate a 20-tonne capacity forklift, then the auditor will ensure a forklift of the same or similar capacity is used in training.

The equipment used must be in safe working order. The following shall be provided:

- a forklift similar to the type operated by the trainees in the course of their employment
- an adequate supply of empty and loaded pallets or equivalent loads
- containers and markers for use during practical training sessions.

Notes:

- during the practical operating session, each trainee (and the trainer) shall wear suitable effective clothing and footwear affording safety and protection - as determined by the instructor
- the forklift to be used for practical training and testing shall be inspected by the trainer prior to the course, and must be deemed as fit for the purpose and in good, safe working order. If it fails to meet these criteria an alternative machine must be provided which does satisfy such requirements.

5.2 Syllabus

A typical theory course will consist of at least the following:

- introduction
- course objectives
- legal requirements of the HSE Act (see introductory section)
- critical safety factors
- forklift terminology
- safety codes for forklift operators (refer NZS/ASME/ANSI B 56. 1 section 5).
- pre-operational checks
- video, film or dvd dealing with forklift safety
- safe driving techniques
- handling loaded and empty pallets or equivalent loads, e.g. bales, drums
- stacking and restacking, some in the 90° operating aisle recommended by the manufacturer, for the machine in use
- vehicle loading and unloading
- review using slides, films, videos or dvd
- practical exercise
- written theory test (see Appendix A: Sample theory tests for sample)
- course debrief.

See Appendix D: Summary of training course for operators of forklifts for a summary of a basic training course.

1. Introduction

This should explain the purpose of training and the duration and format of the course.

2. Course objectives

The main objective of the course is to be clearly stated, namely, to encourage operators to be more aware of the safety and mechanical implications of their driving ability and practices.

3. Forklift terminology

The description of the general principle of the forklift and its various components shall include, but not be limited to:

Capacity - The rated capacity (or safe working load) is determined on the manufacturer's data plate and/or load plate attached to the forklift. Operators must refer to this information when they need to know the actual load lifting capacity of the machine. Capacity is defined as the maximum weight that can be safely lifted at a given load centre and to a given height, with the mast in the vertical position.

Nominal capacity - The nominal capacity of a forklift is the amount it can safely handle when in its basic configuration i.e. standard double mast

and no attachments; it is not its derated capacity when fitted with a high lift mast or an attachment. On some forklifts the model number and type can be an indication of its nominal capacity.

Centre of gravity - The counterweight, the centre of gravity of the forklift, the centre of gravity of the load, and the combined centre of gravity and their various locations.

Controls - A brief description of the foot controls: the inch-brake, accelerator or monotrol type controls should be described, and hand controls should also be covered.

Counterbalance - A forklift is a counterbalance type of machine, so a brief description of the principle of counterbalance should be given.

Front axle - The front axle, which is usually the drive, brake and major load-carrying axle. It also controls the sideways stability of the forklift.

Load backrest - The necessity for the correct height and width of load backrest should be explained.

Load centre - The capacity and load centre, although covered later, should be briefly mentioned at this point.

Load rating chart - The load rating chart's location on the machine, and how it compares to nominal capacity, should be discussed briefly at this point.

Mast - The various types of masts, their advantages and/or disadvantages regarding visibility, free lift, overall height, etc. (the chains, hydraulic hoses and forks may also be included at this point).

Rear axle - The rear axle, which is usually the steering axle. Whether an oscillating axle or single wheel, it has a similar effect on the sideways (lateral) stability of the forklift. The rear axle unloaded weight multiplied by the wheelbase is equal to the rear moment of the forklift for forward stability. It should also be explained that some later model forklifts may have a variation in design which eliminates or reduces the rear axle oscillation.

Safety frame - The safety frame, or the operator's overhead load-guard. The necessity for a safety frame to be fitted must be clearly emphasised. It should be explained that the overhead guard is a falling objects protection structure (FOPS) not a roll over protection structure (ROPS).

Types of forklift - The different types of forklift and their specific uses. The difference in drive and control between counterbalanced forklifts and reach trucks etc.

Service and gross weights - The general rule for working out the approximate tare/service and gross weights of forklifts should be explained.

4. Operating safety rules and practices

Operators shall have:

- a comprehensive knowledge of the safety standards, rules, procedures and codes applicable
- an appreciation of the capital value of the forklift and equipment, and its maintenance costs. Similarly, an appreciation of the costs of damage to plant and equipment
- an appreciation of the value and type of product being handled and, in particular, the precautions to be taken.

Operators shall be able to explain or demonstrate:

- the rated capacity of a forklift, the nominal capacity and the actual capacity at various lift heights and load centres, or with various attachments, can be much less than the nominal capacity of the forklift
- the factors affecting stability: the principle of a seesaw with its fulcrum point should be compared with a forklift, and with basic forklift stability. The principle of the stability triangle, the effect of mast lift height on stability, the effect of mast forward tilt on forward stability and rear tilt on sideways stability, should be clearly illustrated with diagrams or by demonstration. The effects of inertia, centrifugal forces and ground conditions on the centre of gravity of the forklift, whether laden or unladen, should also be understood
- the four standard tests as per NZS/ANSI/ITSDF B56.1:2005 **name** Table 1 should be shown, along with examples of the rated capacity of a common-size forklift; illustrating how the capacity reduces considerably above a certain height. The effects of widening the wheel base and stability triangle by fitting dual wheels. The effects of attachments on load capacity
- **it is recommended best practice that under no circumstances should more than one forklift be used to lift one load**
- where an unusual load is being handled, which may require more than one forklift to be used, an additional person shall supervise and be responsible for control of the operation; and a written risk assessment shall be recorded. Consideration should also be given to using alternative lifting equipment
- how the floor and ground conditions, e.g. wet surfaces, curbs, gullies, cambers and ramps, can affect the stability of a forklift. This should further explain the reduction in sideways stability with a raised load.
- the correct procedure on ramps, given the operating conditions, and where possible, keeping the load facing up the ramp whether ascending or descending. When driving a powered industrial lift truck in the empty (no load) condition, the forks should point

- downhill, whether ascending or descending, and never turn on a sloping surface. (Also refer to clause 6.3.8 of this code.)
- the procedure for reporting faults. This can be included on the pre-operational check sheet
 - the correct procedure when vision is obscured by the load is to drive in reverse, or assistance must be obtained with guidance
 - recognition of unsafe loads and stacks. It is the operator's responsibility to make safe any unsafe loads or stacks before attempting to move, stack or destack a load
 - the correct procedures using the inch-brake pedal, when applicable, shall be encouraged as most forklifts have a torque converter and inch-brake pedal. It is not necessary to apply the handbrake except as a learner or in dangerous situations such as elevating a person in an approved work platform. For internal combustion (engine) trucks that do not have an inch-brake pedal control (i.e. clutch models), select neutral and apply the park brake. On electric forklifts, apply the footbrake while stacking or destacking. The mast should have only sufficient rear tilt to maintain the forks horizontal for stacking, or to keep the load stable when stacking or destacking
 - the correct refuelling procedure for the forklift, which should include:
 - (a) special precautions for batteries in regard to naked flames, metal objects etc.
 - (b) special precautions applicable with LPG, e.g. change of bottles and change from LPG to petrol etc.
 - (c) normal procedures with combustible fuels such as petrol and diesel (not smoking etc.)
 - (d) use of protective equipment
 - (e) Refilling of LPG cylinders must comply with the requirements of the dangerous goods legislation.
 - the need for pre-operational checks and a typical pre-operation checksheet should be explained. Examples of how a forklift should be inspected, and what to look for under each topic, explained. This explanation should cover both mechanical and legal requirements
 - the following points, which should also be covered:
 - (a) brief description of the forklift hydraulic system
 - (b) brief description of the torque converter and transmission systems
 - (c) use of accelerator, inch-brake and foot brake pedals
 - (d) driving around tight corners (inside radius and pivot point)
 - (e) avoiding relief valve operating on steering or tilting
 - (f) stacking and change of direction
 - (g) use of tilt when stacking or restacking

- (h) rear axle oscillation and rear steering near sides of bay or walls (tail-end swing)
- practical skills should include the following:
 - (a) pre-operation inspection and start up - the routine pre-shift inspection check and start up procedures as prescribed by the manufacturer's or owner's checksheet
 - (b) operation - the efficient operation of the forklift within the safe limits defined by the manufacturer in accordance with NZS/ANSI/ITSDF B56.1:2005 **name**.
 - (c) controls - correct use of hand and foot controls
 - (d) travel - moving the forklift with the forks in the correct travel position, laden and unladen
 - (e) forks - inserting and withdrawing the forks correctly without damage to the pallet or load
 - (f) hazards - awareness of hazards to people, plant and buildings, including hazards to health from exhaust fumes etc.
 - (g) manoeuvring - careful manoeuvring of a loaded forklift, in both forward and reverse directions in a confined space.
 - (h) stacking - stacking and destacking a load at three critical levels, low level, eye level and high level
 - (i) tilt - demonstrate the correct use of the tilt mechanism for travel, stacking and destacking.
 - (j) loading - loading and unloading a truck or trailer, etc. safely without damage to the load, the forklift or vehicle (refer Appendix K: Vehicle loading and unloading procedures and dangerous goods)
 - (k) braking - stopping a loaded forklift without excessive braking within 150 mm of the stack or similar object
 - (l) ninety-degree stacking - approach the stacking area from the left or right, and make a 90° turn to place the load on the floor adjacent to the stack, allowing only 75 mm (approximately) between the load faces and with the front edges aligned. Repeat approaching from the right or left. The 90° aisle shall be to the dimensions recommended by the manufacturer for the machine in use
 - (m) parking and shut down - correctly parking the forklift and using the correct shut down procedures including the correct grounding of forks (tips down and the majority of the fork length grounded)
 - (n) attachments - the correct use of attachments e.g. side-shift, clamps, rotators, crane jibs etc.

Note: the pass mark for theory and practical assessments shall depend on the examination and test set by the trainer, and

therefore shall be set by the trainer so that only competent operators pass. Recommended pass marks are given in Appendix A: Sample theory tests. For NZQA unit standards competency shall be attained.

5.3 Issue of certificate

When the instructor is satisfied that the operator has passed the theory and practical examinations successfully, and is therefore deemed competent, and has completed the full course, a certificate will be issued to serve as proof of the training received (see Appendix H: Example of operator's certificate).

The ownership of the certificate is with the person named on the certificate.

Refresher training shall be undertaken every three years and the certificate issued shall reflect this. For details of refresher courses see Appendix E: Refresher training.

5.4 Authorisation to operate

1. no person shall operate a forklift without evidence of authorisation from their employer
2. authorisation to operate shall be issued only after training is satisfactorily completed (refer Appendix I: Employer's written authorisation to operate a forklift)
3. possession of a current, valid LTNZ driving licence is not an authority to use a forklift.
4. where a forklift is to be used on a road, it must meet the LTNZ requirements for warrant of fitness, registration etc. and the operator must have the appropriate driving licence and endorsements.

PART 6: EXTRACT FROM NZS/ANSI/ITSDF B56.1: 2005 **OPERATING SAFETY RULES AND PRACTICES**

Note: This extract is from Part II Section 5 of the Standard but uses a numbering sequence in line with this approved code of practice. Any changes to ANSI/ASME/ B56.1 from the 2000–2004 versions will require corresponding changes in this approved code. In addition, with effect from November 2006, the American standard will be managed by the Washington-based Industrial Truck Standards Developing Foundation (ITSDF) in place of American Society of Mechanical Engineers (ASME).

6.1 Operator responsibilities

1. Safe operation is the responsibility of the operator.

Note: The forklift must be operated in accordance with the Department of Labour publications *Safety Code for Forklift Truck Operators*, No.s 1–4, and the NZS/ANSI/ITSDF B56.1:2005 **name** and subsequent amendments.

2. The operator shall develop safe working habits and also be aware of hazardous conditions in order to protect himself, other personnel, the forklift, and other materials.
3. The operator shall be familiar with the operation and function of all controls and instruments before undertaking to operate the forklift.
4. Before operating any forklift, operators shall have read and be familiar with, the operator's manual for the particular forklift being operated and they shall also abide by the safety rules and practices in paragraphs 6.2 and 6.3.

Note: See paragraph 6.4.

5. Before operating any forklift, the operator shall be familiar with any unusual operating conditions which may require additional safety precautions or special operating instructions.

6.2 General

1. Before starting a forklift, the operator must:
 - (a) be in the operating position
 - (b) place all directional controls in neutral
 - (c) disengage clutch on manual transmission-equipped forklifts, or apply brake on power shift or automatic transmission-equipped forklifts and electric forklifts
 - (d) Start engine or turn switch of electric forklifts to ON position.
2. Do not start or operate a forklift, any of its functions or attachments, from any place other than from the designated operator's position.

3. Keep hands and feet inside the operator's designated area or compartment. Do not put any part of the body outside the operator compartment of the forklift.
4. Never put any part of the body into the mast structure or between the mast and the forklift.
5. Never put any part of the body within the reach mechanism of the forklift or other attachments.
6. Understand forklift limitations and operate the forklift in a safe manner so as not to cause injury to personnel. Safeguard pedestrians at all times.
 - do not drive a forklift up to anyone standing in front of an object
 - ensure that personnel stand clear of the rear end-swing before turning.
 - exercise particular care at cross aisles, doorways and other locations where pedestrians may step into the path of travel of the forklift.
7. Do not allow anyone to stand or pass under the elevated portion of any forklift, whether empty or loaded.
8. Do not permit passengers to ride on forklifts unless a safe place to ride has been provided by the manufacturer.

Note: A safe place is defined in special notes in paragraph 6.4.
9. A powered industrial truck is attended when the operator is less than 7.6 metres (25 ft.) from the truck, which remains in the operator's view.
10. A powered industrial truck is unattended when the operator is more than 7.6 metres (25 ft.) from the truck, which remains in the operator's view, or whenever the operator leaves the truck and it is not in his view
11. Before leaving the operator's position:
 - (a) bring the forklift to a complete stop
 - (b) apply the parking brake
 - (c) place the directional controls in neutral
 - (d) lower load-engaging means fully, (unless supporting an elevated platform); with the forks lowered to the ground, the tips down and the majority of the fork length also grounded.

In addition, when leaving the forklift unattended:

 - (e) stop the engine or turn off the controls
 - (f) if the forklift must be left on an incline, block the wheels
 - (g) fully lower the load-engaging means.
12. Maintain a safe distance from the edge of ramps, platforms and other similar working surfaces. Do not move railroad cars with a forklift.
13. Do not use a forklift for opening or closing railroad car doors, unless the forklift utilises a device specifically designed for opening and closing railroad car doors and the operator is trained in its use. The design of the door-opening device shall require the forklift to travel parallel to

the railroad car, with the force applied in the direction parallel with the door travel. Care should be exercised when engaging the door opening device with the railroad car door, in order to prevent damage to the doors and/or forks of the forklift by heavy impact forces. The entire door opening operation shall be in the full view of the operator. The forklift shall always be positioned to safeguard the dock attendant while removing the door lock pin. Whenever a railroad car door requires an abnormal force to open, the forklift operator shall report the condition to his supervisor or as instructed.

14. When forklifts are driven on and off highway trucks or trailers, the brakes on the highway trucks or trailers shall be applied and wheel chocks or other positive external mechanical means shall be used to prevent unintentional movement of highway trucks and trailers. Whenever forklifts are driven on and off semi-trailers that are not coupled to a tractor, supports may be needed to prevent upending or corner dipping.

Note: See special note in paragraph 6.4 of this code, as supports may still be needed when a semi-trailer is coupled.
15. Provision shall be made to prevent railroad cars from being moved during loading and unloading. Wheel stops, hand brakes, or other recognised positive means shall be used to prevent movement of railroad cars during loading and unloading.
16. Care shall be taken not to contact overhead installations such as lights, wiring, pipes, sprinkler systems, etc.
17. An overhead guard shall be used on all high-lift rider trucks as protection against falling objects, unless all of the following conditions are met:
 - (a) vertical movement of the lifting mechanism is restricted to 1800 mm or less from the ground
 - (b) the forklift will be operated only in an area where:
 - (i) the bottom of the top tiered load is not higher than 1800 mm, and the top is no more than 3000 mm from the ground when tiered
 - (ii) only stable, and preferably interlocked, unitised or containerised, loads are handled
 - (iii) there is protection against falling objects from adjacent high-stack areas. An overhead guard is intended to offer protection from falling objects but cannot protect against every possible impact. It should not be considered as a substitute for good judgement and care in load handling.
 - (c) the forklift is marked to identify where it can be operated.
18. A load back rest extension shall be used when necessary to guard against a load, or part of it, from falling toward the operator. (Refer paragraph 6.4 special notes.)

19. In areas classified as hazardous, use only forklifts approved for use in those areas.
Note: A separate code will be issued covering hazardous areas - see paragraph 6.4 of this code.
20. Report all accidents involving personnel, building structures and equipment to the supervisor or as directed.
21. Do not add to or modify the forklift without the manufacturer's prior written approval.
22. Do not block access to fire doors, exits, aisles, stairways or fire equipment.
23. Motorised hand trucks shall not be ridden unless they are of the hand/ rider design.
24. Whenever a forklift without controls that are elevatable with the lifting carriage or forks, is used to elevate personnel:
 - (a) use a securely attached work platform (refer to NZS/ANSI/ITSDF B56.1:2005 **name** section 4.17)
 - (b) make sure the lifting mechanism is operating smoothly and properly
 - (c) place mast in a vertical position and never tilt forward or rearward when elevated
 - (d) place forklift controls in neutral and set brake
 - (e) lift and lower smoothly and with caution
 - (f) watch for overhead obstructions
 - (g) keep hands and feet clear of controls other than those in use
 - (h) move the forklift only for minor adjustments in positioning when personnel are on the work platform, and never at more than creep speed
 - (i) remain in control position on the forklift
 - (j) restraining means such as rails etc. should be in place, or persons on the work platform shall wear a body belt and lanyard or retractable safety device.
25. In the event that a forklift becomes inoperative, breaks down and requires removal, the forklift should be towed using the appropriate towing points or pins and a suitable wire rope or chain.
Note: pushing with forks or a pallet is not advisable due to potential damage from forks slip or pallet collapse.

6.3 Travelling

1. Observe all traffic regulations including authorised plant speed limits. Under normal traffic conditions, keep to the left. Maintain a safe distance, based on speed of travel, from the forklift ahead, and keep the forklift under control at all times.

2. Give the right of way to pedestrians and emergency vehicles such as ambulances and fire trucks.
3. Do not pass another forklift travelling in the same direction at intersections, blind spots, or at dangerous locations.
4. Slow down and sound audible warning device(s) at cross aisles, doors and other locations where vision is obscured.
5. Cross railroad tracks at an angle whenever possible. Do not park closer than 2.5 metres to the nearest rail of a railroad track.
6. Keep a clear view of the path of travel and observe for other traffic, personnel and safe clearances.
7. If the load being carried obstructs forward view, travel with the load trailing.
8. Ascend or descend grades slowly, and with caution.*
 - (a) when ascending or descending grades in excess of 5%, loaded rider trucks shall be driven with the load upgrade
 - (b) unloaded forklifts should be operated on all grades with the load engaging means downgrade*
 - (c) on all grades the load and load engaging means shall be tilted back to clear the road surface
 - (d) on grades, ramps, or inclines, normally travel straight up and down; avoid turning if possible and use extreme care.

Note: High-lift order picker trucks are not normally intended for operation on a grade. Consult the manufacturer's operating instructions for recommended operating details.

* For roll-on/roll-off ship operations see special note in paragraph 6.4.

9. Under all travel conditions; operate the forklift at a speed that will permit it to be brought to a stop in a safe manner.
10. Travel with the load-engaging means or load low and, where possible, tilted back. Do not elevate the load except during stacking. This does not apply to forklifts that are intended normally to be operated with the load or load-engaging means elevated.
11. Make starts, stops, turns or direction reversals in a smooth manner so as not to shift the load and/or overturn the forklift.
12. Do not indulge in stunts or horseplay.
13. Slow down for wet and slippery floors.
14. Before driving over a dock-board or bridge-plate, be sure that it is properly secured. Drive carefully and slowly across the dock-board or bridge-plate, and never exceed its rated capacity.
15. Do not drive forklifts onto any elevator unless specifically authorised to do so. Approach elevators slowly, and then enter squarely after the elevator is properly levelled. Once on the elevator, neutralise the controls, shut off the power and set the brakes. It is advisable that all other personnel leave the elevator before the forklift is allowed to enter or leave.

16. Avoid running over loose objects on the roadway surface.
17. When negotiating turns, reduce speed to a safe level consistent with the operating environment and turn hand steering wheel in a smooth, sweeping motion. Except when manoeuvring at a very low speed, turn the hand steering wheel at a moderate, even rate.
18. The operation of a counterbalanced, centre control, high-lift truck with a sit-down, non-elevating operator, requires special safety considerations as follows:
 - (a) a forklift, loaded or unloaded, may tip over if an operator fails to slow down to a safe speed before making turns. Indications that a forklift is being driven at an excessive speed during turning manoeuvres include:
 - (i) tyre skidding
 - (ii) forklift side sway
 - (iii) wheel lift
 - (iv) the need to grip the steering wheel tightly to keep from sliding out of the seat.
 - (b) the likelihood of a lateral tip-over is increased under any of the following conditions:
 - (i) overloading
 - (ii) travelling with the load elevated
 - (iii) braking or accelerating sharply while turning
 - (iv) rearward tilt or off-centre positioning of the load
 - (v) travelling on an uneven surface
 - (vi) travelling at excessive speed.
Note: see special note 6.4.
 - (c) tipping forward can occur and its likelihood is increased under the following conditions, or combination of them:
 - (i) travelling with the load tilted forward and/or elevated
 - (ii) overloading
 - (iii) hard braking while travelling forward
 - (iv) suddenly accelerating while travelling in reverse.
 - (d) the operator should stay with the forklift if lateral or longitudinal tip-over occurs. The operator should hold on firmly and lean away from the point of impact
 - (e) the operator should stay with the forklift if it falls off a loading dock or ramp. The operator should hold on firmly and lean away from the point of impact
 - (f) where the environment presents a severe hazard, or there are other unusual operating conditions, the user may need to establish different and/or additional safety precautions and special operating instructions appropriate for the conditions.

19. Any active operator-protection device or system, when provided, shall be used. In the event of tip-over, operator protection is intended to reduce risk of entrapment of the head and torso between the forklift and the ground, but may not protect the operator against all possible injury.
20. Motorised hand truck operation requires special safety consideration as follows:
 - (a) never operate with greasy hands
 - (b) foot protection is recommended
 - (c) do not sit on the truck;
 - (d) keep feet clear of the truck frame while operating
 - (e) always keep hands and fingers inside the protected area of the control handle
 - (f) be cautious when travelling in reverse (load end leading) due to steering characteristics
 - (g) be careful of drive-end swing when turning while operating with the load end leading
 - (h) use caution when turning into an aisle
 - (i) never travel at a speed greater than normal walking speed (approximately 5 km/h)
 - (j) always place both hands on the control handle when operating with the load end leading
 - (k) always operate with one hand on the controls and, when possible, walk ahead and to the side of the tongue when travelling forward. (Load end trailing)
 - (l) enter elevators or other confined areas with the load end leading.

6.4 Special notes

Section 4.1.2 of Part II of NZS/ANSI/ITSDF B56.1:2005 **name** states that “unusual operating conditions may require additional safety precautions and special instructions”.

In such circumstances, the following special notes may apply to the paragraphs indicated:

6.1

4. Where a forklift operator’s manual is no longer available from the New Zealand distributors for the forklift, then an appropriate forklift operator’s safety handbook may be substituted.

6.2

8. A safe place is defined as a seat, or place to stand, specifically built on by the manufacturer of the forklift.
14. Whenever forklifts are driven on and off semi-trailers, supports may still be necessary to prevent upending or corner-dipping, even when still coupled to the tractor unit.

18. Where a load back rest (carriage back rest) is not required, or removed, stops must be fitted to prevent forks from inadvertently falling off the ends of the fork carriage.
19. Hazardous areas: a separate code will be issued covering hazardous areas. Where Dangerous Goods are to be handled refer to Appendix K: Vehicle loading and unloading procedures and dangerous goods.

6.3

8. For certain stevedoring and shipboard operations e.g. roll-on and roll-off work, it may not always be possible to travel on ramps with the load upgrade. In such cases, given the operating conditions, assistance must be gained with guidance.

Note: High-lift order picker trucks are not normally intended for operation on a grade or slope. Consult the manufacturer's operating instructions for recommended operating procedures.

18. (b) In addition, the following can increase the likelihood of lateral tip-over:
 - (i) under-inflated or punctured tyre(s)
 - (ii) unladen forklift turning at speed
 - (iii) travelling with a suspended load, e.g. suspended bulk bags.

APPENDIX A: SAMPLE THEORY TESTS

Instructors and trainers may use the following sample questions as the basis of theory test papers.

Instructors are required to have several sets of different test papers following the recommendations set out below.

Theory test papers should contain at least 20, and preferably 35, questions. Test papers shall consist of a mixture of multi-choice, true/false and written response questions and questions from Section 1 of this appendix.

At least three questions from Section 1 of this appendix should be considered as compulsory.

Notes:

1. Additional questions may be included to meet the requirements of LTNZ 'F' endorsement of driving licences.
2. Correct answers to questions in Section 1 are mandatory before a certificate can be issued.
3. A pass mark of at least 80% will apply to Sections 2 and 3 of this appendix. For NZQA unit standards competency shall be attained.

Section 1: Arithmetic questions

This section includes questions that could be regarded as requiring some simple arithmetic.

Test papers shall include at least two questions related to load capacity charts and at least one related to tare/gross weights of forklifts.

Suggestions for load capacity charts are:

1. Using the load charts provided, what weight can be safely lifted to a height of XXXX mm if the pallet is xxxx mm square?
2. Using the load charts provided, what is the maximum size of pallet (or load centre) that can be safely lifted to xxxx mm if the load weighs zzzz kg?
3. Using the load charts provided, to what height can a load of zzzz kg be safely lifted if it is on a pallet 1200 mm x 1000 mm, and the forks have entered on the 1200 mm side?
4. Using the load chart provided, if you have to lift a load 1400 mm square weighing xxxx kg with a gap between the load and carriage back rest of xxxx mm, what is the maximum height you can safely lift it?

Suggestions for tare/gross weights are:

1. If you are operating a forklift with a load of yyyy kg and have to drive over a bridgeplate with a maximum SWL (safe working load) of xxxx kg, can you safely proceed?
Yes/No/Don't know

2. You are operating a forklift carrying a load of zzzz kg and are about to enter a building, when you notice a sign saying “maximum floor loading zzzz kg”. Can you safely proceed?

Yes/No/Need more information

Experienced instructors will have no difficulty in preparing questions similar to those shown, or filling in the weights/heights etc. suitable to the situation for which operators are being trained.

Section 2: True/False or written answer questions

Questions in this section are based on a TRUE/FALSE or written response from the trainee. Some suggestions are:

1. What are the five things you must do when parking a forklift?
2. Name four things which could cause a forklift to fall forwards.
3. What is the nearest you can park a forklift to a railway line?
4. When driving a forklift, with or without a load, in what position should the forks be placed?
5. Back tilt at high lift has no effect on the side stability (lateral stability) of a forklift.

TRUE/FALSE

6. List at least six things you must inspect as part of a pre-operational check.
7. What effect do attachments have on forklift capacity?

Special note: Instructors may conduct these tests orally for those trainees who have a reading or writing difficulty, or for those with English as a second language.

Section 3: Multi-choice questions

The instructor shall select at least 20 questions from the following list, or similar:

1. The forklift load chart shows a rating of 2220 kg at a load centre of 600 mm. What does this mean?
 - (a) That the forklift will safely lift any weight up to 2220 kg.
 - (b) That the forklift will safely lift up to 2220 kg provided that the centre of gravity of the load is not more than 600 mm from the face (heel) of the forks.
 - (c) That the forklift will only safely lift up to 2220 kg if the load measures more than 1200 mm in length.
- (2) What procedure do you follow when the load on your forklift blocks your view in front?
 - (a) Dismount, check that the way is clear, then drive slowly forward sounding the horn.
 - (b) Travel in reverse looking in the direction of travel.
 - (c) Raise the load so that you can see under it.

- (3) How should you normally drive your forklift?
- (a) Slowly and deliberately at all times.
 - (b) At a speed consistent with the type of load and general work conditions.
 - (c) Fast enough to keep up with the pressure of work.
- (4) A fault occurs while driving your forklift. What action do you take?
- (a) Park the forklift as safely as possible, remove its key, reporting the fault to your supervisor.
 - (b) Carry on until a convenient break and then report it.
 - (c) Try to repair the fault yourself.
- (5) What position should the forks be in while driving a forklift?
- (a) As near to the ground as possible and level.
 - (b) About 100 mm to 150 mm from the ground and level.
 - (c) About 100 mm to 150 mm from the ground, but high enough to clear obstructions, and tilted back.
- (6) What is the procedure to follow when you discover a patch of oil on the floor in the aisle or roadway?
- (a) Tell your supervisor, the next time you see him/her.
 - (b) Drive carefully around it.
 - (c) Stop your forklift and clean it up.
- (7) What position do you place the forks in when parking your forklift?
- (a) 100 mm to 150 mm from the ground tilted fully forward.
 - (b) Resting on the floor tilted fully back.
 - (c) Resting on the floor tilted forward.
- (8) Who is responsible for the safety of persons working in a forklift area?
- (a) The forklift operator.
 - (b) Each person within the area.
 - (c) The manager.
- (9) Are you allowed to hoist (lift) personnel on your forks?
- (a) Only if a sound wooden pallet is fitted.
 - (b) Only if an approved work platform is fitted.
 - (c) Only if an observer is present.
- (10) When must you use back tilt on your forklift when travelling?
- (a) When the forks are loaded.
 - (b) When the forks are not loaded.
 - (c) At all times.
- (11) When driving an empty forklift down a ramp, in what direction should the forks point?
- (a) Downhill.
 - (b) Uphill.

- (12) When driving a loaded forklift down a ramp, in what direction should the forks point?
- (a) Downhill.
 - (b) Uphill.
- (13) Is the carrying of passengers allowed on forklifts?
- (a) Never.
 - (b) Only if travelling a long distance.
 - (c) Only if travelling a short distance.
 - (d) Only if a passenger seat is provided by the manufacturer.
- (14) Are fork extensions permitted where a load is too long?
- (a) Never.
 - (b) Only on long loads.
 - (c) Only if authorised by the manufacturer.
- (15) How should you determine the rated capacity of a forklift?
- (a) Testing with various loads.
 - (b) Reading the load plate.
 - (c) Guesswork.
- (16) When is the forklift operator required to look in the direction of travel?
- (a) Always.
 - (b) When persons are in the area.
 - (c) When driving on an uneven surface.
- (17) How often is a forklift operator required to check the brakes?
- (a) Pre-operation, at the start of each day or shift.
 - (b) Weekly.
 - (c) Monthly.
- (18) What action is required when the load is unstable?
- (a) Back tilt the load.
 - (b) Stop and re-stack the load.
 - (c) Call for assistance to support the load.
- (19) Are you allowed to turn a forklift on a ramp or slope?
- (a) Only if the forklift is not loaded.
 - (b) Only if travelling down a ramp.
 - (c) Only if travelling up a ramp.
 - (d) No, not at any time.
- (20) Are you permitted to cross a bridge plate with a forklift when loading a truck from a docking platform?
- (a) No, Not at any time.
 - (b) Only if ordered to do so.
 - (c) Only if the truck wheels are secured (chocked) and the bridge plate is strong enough.

- (21) Is it safe to stack goods on an incline or slope?
- (a) Only if the load is on pallets.
 - (b) Only if a temporary measure.
 - (c) Not at any time.
- (22) Is it safe for any person to operate a forklift?
- (a) Only if they are a holder of a driving licence.
 - (b) Only if they are trained and authorised to do so.
 - (c) Yes, but only temporarily.
- (23) When is it allowable to move your forklift with its load fully raised?
- (a) At any time.
 - (b) To assist when turning.
 - (c) When stacking and destacking.
- (24) Is it permissible to park your forklift on a ramp or slope?
- (a) Only if left in gear.
 - (b) Only if the wheels are chocked.
 - (c) Only if the forks are on the ground.
- (25) Should the rated capacity of a forklift ever be exceeded?
- (a) Only if the counterweight is increased.
 - (b) Only if lifting the load within 1 metre.
 - (c) Not at any time.
- (26) In what position should a LPG cylinder safety valve be, when fitted to a forklift?
- (a) At the top.
 - (b) At the bottom.
 - (c) Midpoint.
- (27) Is it permissible to tow a railway wagon using a forklift?
- (a) Only if moving it short distances.
 - (b) Not at any time.
 - (c) Only to align it with the platform.
- (28) Can the counterweight of a forklift have its weight increased?
- (a) Only if the load to be lifted is too heavy.
 - (b) Only to allow more traction and steering control.
 - (c) Not at any time.
 - (d) Only if approved by the manufacturer.
- (29) From which position in a narrow aisle should a forklift approach a corner when turning to the left?
- (a) From the left-hand side.
 - (b) From the right-hand side
 - (c) From the middle of the aisle.

- (30) What distance should there be between moving forklifts?
- (a) Close up to communicate with the driver of the other forklift.
 - (b) As far apart as possible.
 - (c) A safe braking distance.
- (31) When is the forklift horn to be used?
- (a) Only when necessary.
 - (b) To acknowledge your friend.
 - (c) Only if operating on a public road.
- (32) How close to a railway line can you park a forklift?
- (a) 1 metre.
 - (b) 2.5 metres.
 - (c) 5 metres.
- (33) How should you travel across railway lines when operating a forklift?
- (a) Cross diagonally and only if the lines are recessed.
 - (b) Cross at right angles to the railway track.
 - (c) Railway lines should not be crossed at any time.
- (34) What action do you take should the brakes fail on your forklift?
- (a) Lower the forks to the ground.
 - (b) Use the gear change to attempt a stop.
 - (c) Jump clear.
- (35) Which of the points below affect the stability of a forklift?
- (a) Driving too fast.
 - (b) Load too heavy.
 - (c) Driving over drainage.
 - (d) Driving on an incline.
 - (e) Driving on uneven surfaces.
 - (f) Cornering too sharply.
 - (g) Driving with the load raised.
 - (h) All of the above..

Answers to the sample multi-choice questions

1. B	7. C	13. D	19. D	25. C	31. A
2. B	8. A	14. C	20. C	26. A	32. B
3. B	9. B	15. B	21. C	27. B	33. A
4. A	10. C	16. A	22. B	28. D	34. A
5. C	11. A	17. A	23. C	29. A	35. H
6. C	12. B	18. B	24. B	30. C	

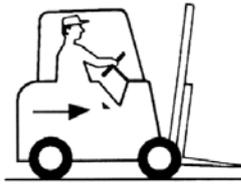
APPENDIX B: PICTORIAL DISCUSSION PAPER

The illustrations on the following four pages are designed to create discussion and therefore answers may be expanded upon.

1. Which forklift is travelling safely?



A

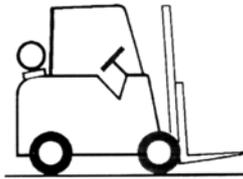


B

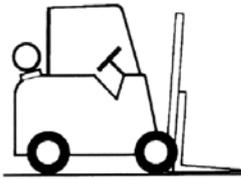


C

2. Which forklift is parked safely?



A

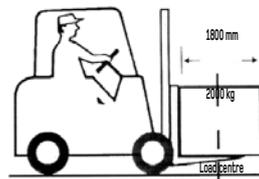


B

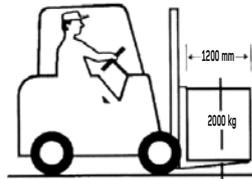


C

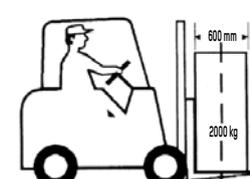
3. Which forklift is overloaded?



A



B



C

4. Which forklift is being operated correctly on a ramp?



A



B



C

5. Which forklift is being driven safely toward the ramp?



A

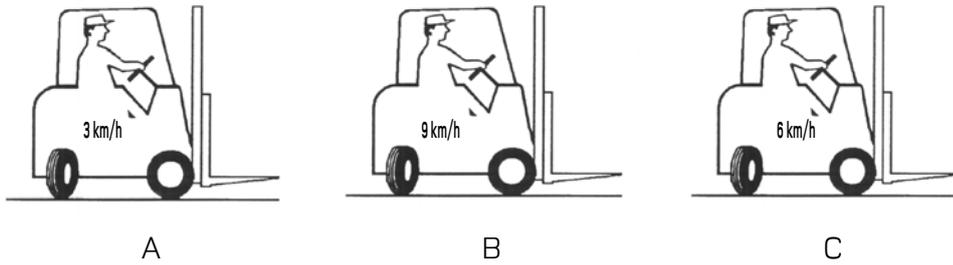


B

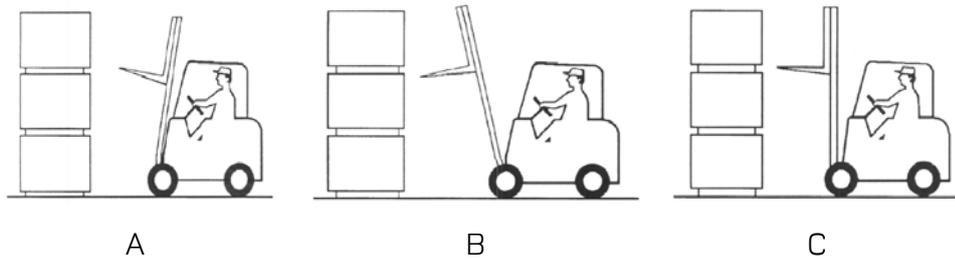


C

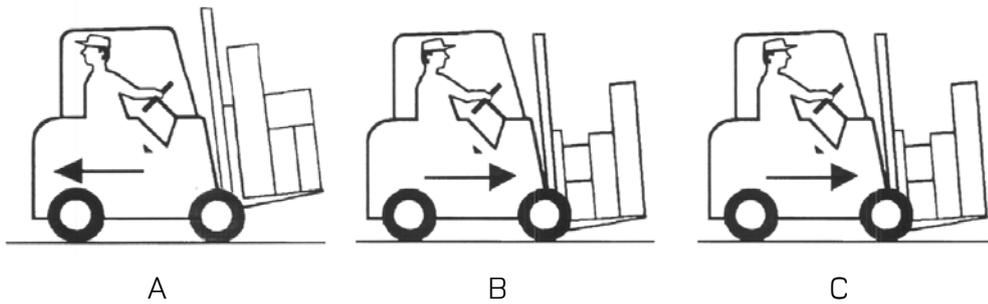
6. These short-based forklifts are turning at full lock. The forward speed is 3 km/h, so the rear end swing will travel at ___ km/h?



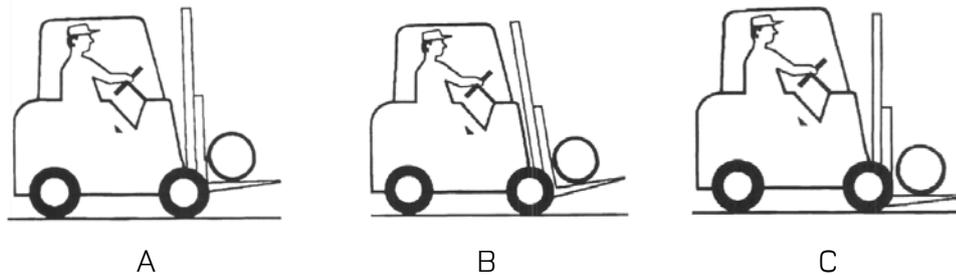
7. Which forklift is being correctly driven towards the stack.



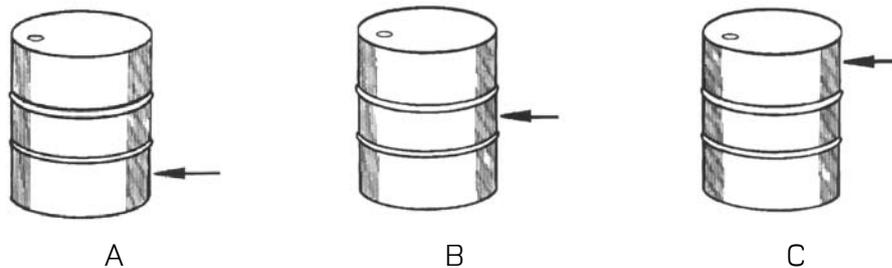
8. Which forklift has the safest load?



9. Which forklift is carrying the load correctly?



10. Which is the correct clamping point for a steel drum if using a squeeze clamp attachment?



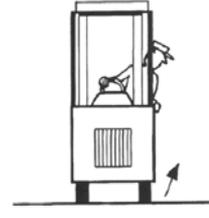
11. Which forklift is travelling safely?



A

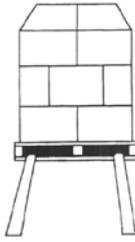


B

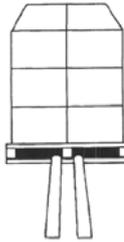


C

12. Which pair of forks is spaced correctly?



A



B



C

13. Each load contains one tonne evenly distributed. Which forklift has the most weight on its back wheel?



A

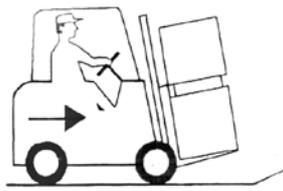


B



C

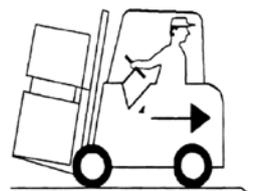
14. Which forklift is being driven towards the ramp in the safest way?



A

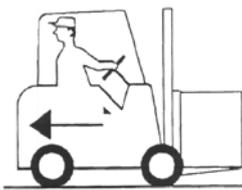


B



C

15. Which forklift is carrying the load safely?



A



B



C

Answers to questions in pictorial discussion paper

- | | | | | |
|------|------|------|-------|-------|
| 1. A | 4. C | 7. C | 10. B | 13. C |
| 2. B | 5. B | 8. A | 11. B | 14. C |
| 3. A | 6. B | 9. B | 12. A | 15. B |

APPENDIX C: PRACTICAL CHECKLIST

The lists of faults set out below are common faults that a registered instructor shall be aware of, and which should not occur during the practical tests.

1. Start position

- (a) Fails pre-start machine check.
- (b) Fails to ensure the forklift is in neutral. (Neutral gear position is dependent on the type of forklift used.)
- (c) Fails to release handbrake.
- (d) Fails to raise forks to an acceptable height and tilt forks backward.
- (e) Fails to check steer-wheels are straight.
- (f) Fails to ensure way is clear.
- (g) Makes jerky start.

2. Pick-up position

- (a) Forks scrape the ground.
- (b) Fails to enter pallet correctly.
- (c) Hits pallet.
- (d) Incorrect positioning of forks in pallet.
- (e) Fails to use inch-brake (when fitted) while operating hydraulic controls.
- (f) Hits load hard when lifting or during pick-up.
- (g) Fails to apply rear tilt after lifting the load a little.

3. Travel through course – forward and reverse

- (a) Hits objects, walls or any part of the course.
- (b) Jerky driving.
- (c) Puts hands or legs outside body of the machine.
- (d) Uses inch-brake pedal (where fitted) instead of brake only for travel.
- (e) Uses left foot on brakes while throttle applied.

4. Deposit and extract from racking in a 90° aisle

- (a) Incorrect approach to racking.
- (b) Turns when load raised high when unnecessary.
- (c) Fails to use inch-brake pedal (if fitted) to declutch transmission and brake forklift in a controlled operation while using hydraulics.
- (d) Lifts load with mast tilted fully back, thus requiring forward tilt at height prior to placing load.
- (e) Hits stack with bottom of mast due to excess rear tilt.
- (f) Tilts forward before load is over racking.
- (g) Hits racking.

- (h) Unsatisfactory placing of pallet on racking.
- (i) Fails to stop and lower forks when empty.
- (j) Incorrect positioning of forks in pallet.
- (k) Fails to check behind prior to reversing.
- (l) Travels too far in reverse before lowering forks/pallet to a safe travel height.
- (m) Fails to tilt forks backward before travelling.
- (n) Lifts or lowers while travelling in racking aisles.

5. Return to pallet pick-up position

- (a) Poor alignment of load on original pallet pick-up position.
- (b) Drops load too heavily.
- (c) Forks bind during withdrawal from pallet.

6. Return forklift to original position

- (a) Fails to raise forks to correct travel height.
- (b) Fails to check way is clear.
- (c) Poor alignment of forklift in marked area.
- (d) Fails to leave forks on ground with tips down and majority of fork length touching ground.
- (e) Fails to ensure truck is in neutral. (see 1. b above).
- (f) Fails to apply handbrake.
- (g) Fails to ensure steer-wheels are in the straight-ahead position.

7. General

- (a) General appraisal of performance during practical test.
- (b) Excessive manoeuvring.
- (c) Stalls engine.
- (d) Excessive use of footbrake.
- (e) Unnecessarily races engine.
- (f) Fails to look before and while reversing.
- (g) Climbs on or off the forklift incorrectly.
- (h) Uses brake and throttle simultaneously.
- (i) Incorrect use of inch-brake and foot-brake pedals.
- (j) Incorrect use of mast tilt.

APPENDIX D: SUMMARY OF TRAINING COURSE FOR OPERATORS OF FORKLIFTS

This summary outlines how a course may be developed, step-by-step, to prepare trainees for testing. Each element should build on previous elements. Theory instruction is essential but could be spread through the course at appropriate stages. At each stage of the practical instruction, the instructor should EXPLAIN, DEMONSTRATE then SUPERVISE the trainees' practice.

Driving

- Introduction to controls.
- A daily or pre-operational check can be usefully practised by trainees, under supervision, at the start of each successive day's training.
- Moving forward/reverse, in straight line, open area. Instructor to set forks in correct travel position (height and tilt).
- Steering left and right, forward/reverse, open area.
- Steering forward/reverse around an object, easier side, open area.
- Steering forward/reverse around an object, other side, open area.
- Steering forward/reverse around an object, closed area.
- Steering forward/reverse around an object, more difficult course.
- Picking up/setting down an empty pallet, ground level, straight approach.
- Driving forward/reverse around simple course with loaded pallet.

Theory: Forklift stability

- The principle of counterbalance, the "seesaw" effect.
- The rear axle, oscillation and basic triangle of stability.
- International stability (tilt platform) tests.
- Forward stability, mast and load fully raised, mast vertical.
- Forward stability, load in travel position i.e. forks lowered to correct height and mast tilted fully back.
- Lateral/side stability, mast and load fully raised, full back tilt.
- Lateral stability, no load, mast in travel position i.e. forks lowered to correct height and mast tilted fully back.
- Effects of inertia on centres of gravity and stability.
- Effects of unusual loads etc.

Theory: Power units, transmissions and hydraulic systems

- The different engine types and electric motors used to power forklifts.
- Brief outline of the drive train and torque converter transmissions.
- The hydraulic system.
- Correct use of hydraulic controls. Lift and lower, tilt, auxiliary.

- Daily and pre-operational check procedures.
- Examples of checklists, pre-operational, daily, weekly etc.

Driving theory: Operating practices and load handling

- Picking up and setting down pallet/load, 90° approach, in enclosed area.
- Vehicle loading/unloading procedures (refer Appendix K: Vehicle loading and unloading procedures and dangerous goods).
- Stacking pallets, various heights, straight line approach.
- Stacking pallets at various heights, 90° approach, in enclosed area.
- Safe operating practices, 'do's and don'ts'.
- Videos and/or films.

Tests: Theory and practical

- A theory test paper – refer Appendix A: Sample theory tests and Appendix B: Practical discussion paper.
- Practical test incorporating all the usual tasks met during day-to-day forklift operating, e.g. travel with load forward and reverse in restricted spaces (chicane), high level stacking in a 90° aisle with approach from left and right, low- and mid-level pick up and deposit. Correct parking procedures, pre-operational checks etc.

APPENDIX E: REFRESHER TRAINING

Current forklift operators' certificates are valid for three years, after which time a refresher is required. Refresher courses shall take the following format:

1. Prerequisites

Trainees attending a refresher course must have a forklift operator certificate issued by a registered instructor.

2. Format

Refresher courses should have a short theory session, recapping in brief the main points covered in formal training. A training video may also be included.

Following this session, a theory test paper shall be taken which is at least the same standard of difficulty as that normally used. Minimum pass marks are suggested in Appendix A: Sample theory tests.

Note: A selection of theory test papers should be available.

A practical test shall be given covering the same factors as the test course used in one- or two-day courses.

The practical test shall include travel with load through a chicane in both forward and reverse; stacking in a 90° aisle and stacking/destacking at different levels e.g. low level/eye level/high level; correct start-up and parking procedures etc.

Note: The recommended 90° aisle should be to the operating dimensions that may be prescribed by the manufacturer of the forklift used in the test; or with practical operating clearances.

3. Duration of course

The overall duration of the course should be no less than 3 hours and the practical assessment should take at least 10-15 minutes of that time. The pre-operational checks and debrief SHOULD NOT form part of that 10-15 minutes.

4. Revalidation of a certificate to operate a forklift

Trainees who successfully complete both theory and practical assessments may be issued with a new (revalidated) forklift operating certificate. Trainees who DO NOT successfully complete BOTH assessments will be required to attend a full training course before reissue or revalidation of a certificate.

5. General

Ensure that the refresher course is suitable for the type of machine that the trainee is likely to be operating as part of their normal job.

It is recommended that seasonal workers undertake refresher training prior to the commencement of each season.

APPENDIX F: INSTRUCTORS

1. The importance of their contribution

Successful training of forklift operators is dependent on the effectiveness of instructors. Good instructors are essential for laying the all-important foundation to the development of a safe and efficient working environment.

It is customary for forklift instructors, once qualified, not only to take charge of the operator training, but also to carry out assessments of their trainees' operating ability and to certificate those who reach the prescribed standard.

The role of the instructor is an important one and should be undertaken in a responsible manner.

2. Selection

Potential instructors must be selected with care.

They must be highly skilled and experienced in operating the types of forklift on which they are expected to instruct.

However, experience alone is not enough (at worst this may have been founded on unsatisfactory instruction) and may only have served to reinforce bad habits.

Conversely, operating skill that is newly acquired, and unsupported by reasonable operating experience, is insufficient basis for undertaking an instructor course.

The training of operators is largely accomplished through demonstration and explanation followed by supervised practice. It is essential that each demonstration by the instructor is a model, free from technical errors and misjudgements. Anyone who is not highly proficient would not be a suitable choice and would not merit the investment of an instructor training course.

In addition to operating skill and experience, individuals should have a strong interest in becoming an instructor. Also they should:

- have a confident manner, be able to get on with people from a variety of backgrounds and to adapt their approach to suit different needs
- be literate and numerate
- be able to lead and supervise others
- be able to devise, implement and supervise operator courses on completion of an instructors' training course
- be reliable and mature, with the ability to do their important job in a responsible and efficient manner
- comply with other conditions that may be set by the registrar.

3. Training

Once selected, the prospective instructor will require training. A number of training courses for instructors are available, leading to qualification.

Only instructors who have successfully completed a recognised 'train the trainer' course in instructional techniques, will be considered qualified to provide training, assess operators and to issue certificates. For example, attendance at any approved training course such as the New Zealand Institute of Management 'train the trainer' course or equivalent. (Refer Appendix N.)

4. Aims of courses

To achieve the required standard, approved 'train the trainer' courses will cover the following:

- (a) techniques of structuring training material into a logical sequence for teaching skills and knowledge
- (b) an effective style for teaching skills appropriate to the type of forklift involved and its specific applications
- (c) an objective and critical approach towards the effectiveness of the instruction they present
- (d) an appropriate, approved method of assessment of trainees' progress and testing their basic skills.

5. Objectives of training

On completion of their training, individuals shall be able to prove, by examination, their ability to:

- prepare a breakdown of instruction by analysis of the task or skills required;
- plan, prepare and present periods of instruction appropriate to the content of the task;
- obtain maximum trainee involvement by use of appropriate participation techniques
- select and use appropriate training aids
- discriminate between basic training, job specific training and familiarisation training
- apply the recognised "pattern for instruction" when presenting instruction
- identify errors in trainee performance and take appropriate remedial action
- conduct recognised assessments of trainee operating ability
- analyse trainee performance and produce appropriate reports
- certificate operators who have achieved the recognised standard in basic operating skills.

6. Certification and registration of instructors

The instructional techniques content of approved courses provide skills which are transferable. In addition, it is essential that instructors are competent and experienced in operating whatever equipment they are required to use. The registration certificates issued to instructors are evidence that their names are recorded by the appropriate accrediting body (the national registrar of forklift instructors **[Competenz]**).

These certificates of registration (or re-registration) are to be valid for a specified period which may be up to a maximum of three years, after which instructors shall attend a period of refresher training and be re-examined to ensure that they are sufficiently competent to remain registered. Experience has shown that candidates who have had minimal opportunity to practise their instruction skills stand little chance of achieving the standard required to be re-registered. Similarly, experience indicates that trainers who do not conduct courses on a regular basis may have difficulty in maintaining the standards required by this code of practice.

7. In-house and public trainers

Instructors are registered as either an in-house trainer or a public trainer.

- (a) An in-house trainer is a person, appointed/nominated by the employer to carry out training in forklift operations for other employees of the same company or group. The training materials used, unless franchised from a recognised and registered forklift instructor, are considered as being the property of the employer and developed solely for use in the training of other employees within that company or group. (This may also include associated companies and subcontractors e.g. owner operators.)
- (b) A public trainer is a person who, having developed their own lesson plan and training materials etc., or holds a franchise from a recognised and registered forklift instructor, conducts training for members of the public or for companies or employers that do not have an in-house instructor. It follows that polytechnics and other similar training establishments will fall into this category.
- (c) There is no difference in the standards by which in-house and public instructors will be assessed by an auditor. Both are required to meet the same training criteria, the general requirements of this approved code of practice, and the prerequisite listed in part 4.1 of this approved code.
- (d) However, in-house instructors who leave their employment and wish to set up as a public forklift instructor must comply with the requirements of part 4.3 of this approved code and:
 - must re-apply for registration on the basis of the new situation. The application must meet all the prerequisites in section 4.1 of this code
 - if planning to use the training material and lesson plans used in their previous employment, instructors must provide written

approval from the previous employer or original 'owner' of the training materials, or written evidence of being franchised to use such materials. This is to avoid any conflict of interest or copyright infringements occurring.

Where there is any doubt regarding conflicts of interest, the national registrar of forklift instructors (Competenz) will be the sole arbiter.

8. De-registration of instructors

Where evidence exists that a registered instructor or trainer has failed to comply with the code, or a complaint has been upheld, the registrar (Competenz) will have the power to de-register the instructor concerned.

Where complaints are made that an instructor is not upholding the standards required by the code (including the criteria for a 'fit and proper person of good character'), the complainant must provide written evidence to support the complaint including:

- (a) details of the course attended, including date, venue, duration etc.
- (b) name and registration number of the instructor involved
- (c) copies of any supporting documentation such as invitation/enrolment form, agenda or syllabus, certificate issued, receipt for payment etc.

Additionally, a letter from other persons who attended the course would be considered as a supporting document.

The instructor who is being de-registered will have the right to appeal in line with the review procedures set out in section 4.1 of this approved code.

The definition of a fit and proper person shall follow similar criteria to those used by the LTNZ, see Appendix G: Definition of a person of fit and proper character.

APPENDIX G: DEFINITION OF A PERSON OF FIT AND PROPER CHARACTER

This approved code of practice has adopted the general principles of a fit and proper person as defined by the Transport Services Licensing Act (1989).

Applicants for registration as a forklift trainer are required to meet the fit and proper person criteria.

Factors which may be taken into account when determining if a person meets these criteria are:

- criminal conviction history, including charges or convictions relating to violent or sexual offences
- drug or firearm offences, or offences involving organised criminal activity
- offences related to safety in transport or materials handling operations
- any history of mental health or behavioural problems
- any past complaints related to forklift operations or training of forklift operators.

Note: The national registrar of forklift instructors (**Competenz**) may take into account other matters considered to be relevant.

APPENDIX H: EXAMPLE OF A CERTIFICATE TO OPERATE A FORKLIFT

Trainees who have passed all the theory and practical assessments of basic operating skills, conducted by a registered forklift instructor, shall receive a certificate.

Certificates may be issued as appropriate by accredited commercial training organisations, by employers who have their own training scheme which is accredited, or by the accrediting bodies themselves.

Essentially, the certificate is intended to note what basic training has been provided and to record the trainee's known standard of operating ability. For this to be realised, the following information shall be provided:

- full name of the successful trainee
- dates on which the training took place
- date of completion of testing
- description of the forklift (to include type, motive power and rated capacity, together with attachments if any) used for training and assessment
- name (legibly written), signature and registration number of the instructor responsible for the training
- name (legibly written), signature and registration number of the examiner responsible for the assessments.

Note: Training and assessments may be carried out by the same person, but in those instances where separate individuals are involved, details of both must be provided.

- name of either the accredited training organisation or of the employing company responsible for its own training.

An example of a certificate is given on the next page.

A register and/or database shall be kept of all certificates issued. An auditor may ask to see these records during a visit or audit.

Retraining shall be undertaken every three years and the certificates issued should reflect this.

The certificate is the legal property of the person to whom it is issued and whose name is on the certificate.

Example of a certificate to operate a forklift

ABC Training Ltd, Newtown

OPERATOR'S CERTIFICATE

This is to certify that

JOE BLOGGS

has attended a course of training
and has passed safety, theory and practical test(s)
of forklift operating skills in accordance with the
Department of Labour publication

*Approved Code of Practice for Training Operators and Instructors
of Powered Industrial Lift Trucks (Forklifts)*

Type of training: Basic Refresher Advanced Specialist

Length of course: Half day One day Two or more days

Date of test: ___ / ___ / ___ **Date of issue:** ___ / ___ / ___

Name of instructor/examiner:

Instructor's registration number:

Instructor's signature:

Certificate no.: **Expiry date:** ___ / ___ / ___

Forklift type: Counterbalanced front-loading Reach truck
 Pallet truck Order picker Other

Motive power: Petrol/LPG Diesel Battery electric

Nominal capacity: kg at minimum load centres

Type of attachments:

This certificate is valid for forklifts up to a nominal lifting capacity of kg.

*Retraining is to be undertaken every three (3) years.
This certificate is the legal property of the person to whom it is issued.*

APPENDIX I: EMPLOYER'S WRITTEN AUTHORISATION TO OPERATE A FORKLIFT

Employers shall not allow personnel to operate forklifts without written authority. An example of such authorisation is given on the next page.

This authorisation shall be issued only after formal training (including job training and familiarisation training) is satisfactorily completed in respect of each forklift and/or attachment specified on the certificate.

Authority to operate may only be issued by the employer; it is the employer's acknowledgement that the named holder is authorised to operate a specific forklift or forklifts unsupervised. The authorisation may be limited to specific environments or place of work (which may include roads, subject to the operator having an 'F' endorsement on their [LTNZ](#) driving licence).

The employer should keep the authorisations. A copy should be issued to the named holder. It may be useful to combine this with a statement or summary of the company's rules affecting work with forklifts within a defined area or place of work.

Authorisations are not transferable to other employment, as they relate specifically to the named employer's forklifts and for use with the loads in the operator's present work situation.

When training in all three aspects is given for additional forklift types, the individual's authorisation should be amended to include the extra details.

These certificates will normally be acceptable as the basis of satisfactory evidence that employers have fulfilled their duty, under the Health and Safety in Employment Act 1992, to provide adequate training for their forklift operators.

Example of a written authority to operate a forklift

It is recommended that this written authorisation be comprised of two sections:

1. The certification of basic training (completed by the training authority) and
2. The authorisation to operate a lift truck (completed by the company management).

A sample of such authorisation is shown below.

ABC Training Co.	AUTHORITY TO OPERATE A FORKLIFT
CERTIFICATE	(Company Name)
This is to certify that	This is to certify that
_____	_____
has attended a course of training on	having successfully completed specific job and familiarisation training, is authorised to operate the following forklift(s):
_____	_____
at	Job type: _____
_____	Area(s): _____
and has passed safety, theory and practical test(s) of basic forklift operating skills in accordance with the	_____
<i>Approved Code of Practice for Training Operators and Instructors of Powered Industrial Lift Trucks (Forklifts).</i>	Forklift type(s): _____
Issuing authority: _____	_____
Date of test: ____ / ____ / ____	Date of issue: ____ / ____ / ____
Name of instructor or examiner _____	Signed: _____
Signature _____	Position: _____
This certificate expires: ____ / ____ / ____	Authorisation number: _____

APPENDIX J: LAND TRANSPORT NEW ZEALAND 'F' ENDORSEMENT REQUIREMENTS

1. Gaining your 'F' endorsement

It is a requirement of the Health and Safety in Employment Act 1992 (HSE Act) that all operators of forklifts are trained in their safe operation. If the forklift is driven on a road you will also need to hold a full class 1 or 2 (depending on the weight of the forklift) and an 'F' endorsement. You can contact Land Transport New Zealand (freephone 0800-822-422) or www.landtransport.govt.nz for a list of approved course providers.

Contact the course provider and arrange a time and place for the training and or assessment for the endorsement.

To meet the competency standard required to obtain an F endorsement you will be required to answer a series of questions, and demonstrate your skills, related to driving a forklift on a road. The questions and the skill demonstration are included in the forklift operator training programme.

On successful completion of the assessment you can apply for an F endorsement at your nearest driver licensing agent. You will need to take your endorsement certificate (which is provided by the course provider) to any one of the following driver licensing agents to upgrade your licence:

- New Zealand Automobile Association
- Vehicle Testing New Zealand (VTNZ)
- Vehicle Inspection New Zealand (VINZ)
- On Road New Zealand

You need to take to the licensing agent:

- a completed DL19 application form or fill in one while you are there
- your current driver licence
- evidence of your name and address, such as a bill or an account statement
- a certificate showing you have successfully completed an appropriate and approved course
- a cheque, cash or EFTPOS card to pay the application fee.

You'll have to pass the eyesight screening check or present an eyesight certificate. Eyesight certificates must be from either a New Zealand-registered medical practitioner or a New Zealand-registered optometrist, and must not be more than 60 days old.

2. Definition of a road for the purpose of forklift operations

The definition of a road, as outlined in the Land Transport Act 1998: Road includes a

- (a) street
- (b) motorway
- (c) beach
- (d) place to which the public have access, whether as of right or not and

all bridges, culverts, ferries, and fords forming part of a road or street or motorway, or a place referred to in paragraph (d) and

all sites at which vehicles may be weighed for the purposes of the Act or any other enactment.

To further clarify this definition (as it applies to forklift operations) Land Transport New Zealand has provided the following guidelines:

Working guide

While the definition of a road appears to be very wide and open-ended, the Courts have imposed restrictions to make it workable. The following comments are a guide only in relation to '(d) A place to which the public have access, whether as of right or not' – this working guide will not cover every possible situation.

A road is essentially an area principally used for vehicle or pedestrian traffic, which the general public uses as a thoroughfare to gain access to another place. In practice this will generally be areas and thoroughfares that the general public use and expect to be able to use such as a street or supermarket car parks.

Access may be restricted by many devices, including any or all of the following:

- physical barriers e.g. gates, barrier arms;
- security checks e.g. guard or controlled barriers;
- signs limiting who may enter or conditions under which access is permitted.

It is impossible to cover all situations. Therefore, there will still be occasions for the courts to look at all the facts and make a decision.

3. Requirements for 'F' endorsement

The Land Transport Act 1998 and related regulations define a forklift as a motor vehicle.

In order to drive a forklift on a road, as defined above, the appropriate full class New Zealand driver licence and an 'F' endorsement is required. (Refer to the Land Transport (Driver Licensing) Rule 1999.)

To drive a forklift on a road a person must hold a current, valid full Class 1 **or** Class 2 licence, (whichever is appropriate for the gross weight of the vehicle being driven) and an 'F' endorsement.

Note, your 'F' endorsement will expire on the same date as your driver licence.

An 'F' endorsement on its own, does not override any legal obligation under this approved code of practice and the HSE Act to ensure training and certification of forklift operators i.e. a person driving and operating a forklift on a road shall possess a current certificate to operate a forklift, issued by a registered forklift instructor and an 'F' endorsement.

An 'F' endorsement can only be issued to a person who holds a current full New Zealand driver licence of class 1 or higher, except class 6. You cannot get an 'F' endorsement on an overseas driver licence.

The class of full driver licence you hold (except class 6) determines the gross laden weight of a forklift that may be driven. The gross laden weight is the weight specified as the gross laden weight of the vehicle by the manufacturer. A full class 1 driver licence permits you to drive a forklift on a road with a gross weight not exceeding 18,000 kg. For forklifts that weigh above this you will need a full Class 2 licence.

4. Safety when operating a forklift on a road

Loading and unloading a vehicle

Using a forklift to load and/or unload a vehicle on a road should be avoided wherever possible. If, however, this cannot be avoided, it is imperative to follow safety rules and avoid inconvenience to other road users.

- Use safety cones, warning notices and flashing or revolving orange lights to warn other road users that a forklift is operating.
- Have a third person on hand to warn other road users and to maintain safety around the operating area.
- Make sure all people working or associated with the operation of the forklift wear high visibility clothing.
- Establish clear pedestrian exclusion zones.
- During the hours of darkness or when visibility is low, for example during inclement weather, make sure the working area has plenty of light and is clearly identified to other road users. Alternatively you should suspend operations altogether until the visibility improves.
- When driving and/or operating a forklift on a road you must be very aware of the effects of sun strike particularly in the morning and late afternoon and/or early evening not only on your vision but also those of other road users.
- If you must carry a load on your forklift on a road then you must ensure the load is secure and cannot fall off.
- The forklift's braking efficiency may also be reduced when your forklift is carrying a load on a road.
- If a forklift is used to carry dangerous goods on or across a road you must be aware of, and comply with, the General Safety Requirements for moving

Dangerous Goods. You may also require a dangerous goods endorsement ('D' endorsement), on your driver's licence.

- Watch for overhead obstructions.

Safe driving principles

A forklift is considered to be a vehicle as defined by the Land Transport Act 1998, and must meet the relevant traffic and transport licensing regulations, e.g. it must be registered, licensed, have a current warrant of fitness and licence plates, etc. for use on a road. Contact your local Land Transport NZ office for details

If your forklift is fitted with seatbelts they must be used by the driver/operator when driving a forklift on the road.

When driving a forklift on a road you must comply with all road rules and local by-laws for driving a vehicle see Land Transport (Road User) Rule 2004. In particular you need to be aware that due to design of the forklift (rear wheel steering) and lack of suspension, the directional stability of your forklift can be seriously affected by your speed and any unevenness in the road surface, example potholes, road works etc.

A driver of a forklift must ensure that forklift he or she is driving complies with the permitted legal maximum vehicle mass and dimensions as detailed in Land Transport (Vehicle Dimensions and Mass) Rule 2002. Specifically a driver of a forklift on a road must ensure that:

- The maximum width of the vehicle does not exceed 2.5 metres or 1.25 metres either side of the longitudinal centre line and,
- The maximum height of the vehicle, including any load, does not exceed 4.25 metres, and
- The maximum frontal overhang, measured from the front edge of the driver's seat, when the seat is in its rearmost position, to the foremost point of the forklift or its load, does not exceed 3 metres and,
- Any load that overhangs the front or rear of the forklift by more than one metre or overhangs either side by more than 200 millimetres is suitably identified by an approved flag and,
- The maximum weight on any single-tyred axle does not exceed 6,000 kilograms and,
- The maximum weight on any twin tyred axle does not exceed 8,200 kilograms.

It is recommended that employers check their insurance policies to ensure coverage in the event of accidents or incidents involving a forklift; whether on-road or off-road.

5. Effect of disqualification from holding a driver licence

If a court has disqualified you from holding a driver licence, then you must not drive a forklift on a road or in a public place until you have regained your full licence.

Note: Refer to the glossary for definitions of 'drive' and 'operate'.

6. Examples of signage

The following signs are not approved by Land Transport New Zealand for use on public roads but may be used where forklifts are operating in private areas (factories, warehouses etc.) to meet hazard management requirements under the HSE Act.

Forklift operating



No thoroughfare



Customer car parking



Visitors



Conditions of entry



'F' endorsement self-test

QUESTION 1

If you are driving a forklift on a road what should you do to safeguard against an uneven road surface affecting the directional stability of the machine?

- A Move to a part of the road where the surface is more even
- B Slow down
- C Drive in reverse so that your steering wheels encounter the hazard first
- D Hold onto the steering wheel much tighter

QUESTION 2

Who is responsible to ensure that a forklift that is being driven on a road displays the necessary documentation?

- A The forklift owner
- B The Police
- C Your supervisor
- D The driver

QUESTION 3

If a queue of traffic starts to build up behind your forklift when you are driving it on a road what should you do?

- A Speed up to get to destination quicker
- B Move to the left and hope that they have enough room to pass
- C Pull to left and stop when it is safe to let the other vehicles pass
- D Do nothing because you are not likely to be travelling very far anyway

QUESTION 4

What documentation is not required by a forklift that has a gross vehicle mass of less than 3,500 kilograms?

- A Certificate of fitness
- B Warrant of fitness
- C Current licence label
- D Registration (number) plates

QUESTION 5

What three major pieces of legislation relate to driving and operating a forklift on a road?

- A Land Transport (Road User) Rule
- B Health and Safety in Employment Act 1992
- C The Industry Training Act 1992
- D Land Transport (Driver Licensing) Rule

QUESTION 6

When carrying a load on a forklift on a road what must you do?

- A Drive slowly so that if the load does fall off you are less likely to damage it.
- B Have another person walk beside the forklift to steady the load to stop it falling off.
- C Drive in reverse so that if the load does fall off you are less likely to run over it.
- D Make sure the load is secure and will not fall off.

QUESTION 7

What is the maximum distance any part of the forklift or the load it is carrying can project in front of the front edge of the driver's seat?

- A 3 metres
- B 2.5 metres
- C 3.5 metres
- D There is not legal distance but the projections must not interfere with other road users.

QUESTION 8

Apart from a normal pre-use safety check what other checks are required before you drive a forklift on a road?

- A The warrant of fitness is current and the forklift is displaying number plates.
- B The warrant of fitness and registration licence are current and the forklift is displaying number plates.
- C The forklift is displaying a certificate of loading.
- D The forklift is displaying a current road user (distance) licence.

QUESTION 9

What is the maximum permitted weight on a forklift's axle that is fitted with twin tyres?

- A 6,000 kilograms
- B 7,100 kilograms
- C 8,200 kilograms
- D 14,200 kilograms

QUESTION 10

What is the maximum permitted width of a forklift being driven on a road, including any load it is carrying?

- A 3 metres or 1.50 metres either side of the longitudinal centre line.
- B 2.0 metres or 1.00 metre either side of the longitudinal centre line.
- C 3.5 metres or 1.75 metres either side of the longitudinal centre line.
- D 2.5 metres or 1.25 metres either side of the longitudinal centre line.

QUESTION 11

If you are driving a forklift on a road that is fitted with seat belts under what circumstances are you required to wear them?

- A When you are driving a forklift in a flow of traffic.
- B Whenever you are driving a forklift on a road.
- C When the speed of the forklift is greater than 25 km/h.
- D When the forklift is carrying a load.

QUESTION 12

What is the minimum class of driver licence you must hold before you can get an F endorsement?

- A Class 1 learner licence
- B Class 2 full licence
- C Class 1 restricted licence
- D Class 1 full licence

QUESTION 13

What is the maximum permitted weight on a forklift's axle that is fitted with single tyres?

- A 6,000 kilograms
- B 7,100 kilograms
- C 8,200 kilograms
- D 14,200 kilograms

QUESTION 14

What is the maximum permitted height of a forklift that is being driven on a road including any load it is carrying?

- A 4.25 metres
- B 4.00 metres
- C Any height is permitted provided it clears any overhead obstructions.
- D 4.50 metres

QUESTION 15

In addition to an F endorsement what else is required before you can legally drive and operate a forklift on a road?

- A A forklift operators' certificate issued by a registered forklift trainer.
- B A learner driver licence of the next higher class.
- C The services of another person to warn road users that a forklift is operating.
- D A certificate of responsibility from the owner of the forklift.

QUESTION 16

You can use a flush median painted on the road surface:

- A To park your forklift when it is not in use.
- B As a safe unloading space.
- C As a safe place to stop before turning right.
- D As a passing lane.

QUESTION 17

If you park your forklift on a road what must you do before getting down off the machine?

- A Check that you will not step into the path of any traffic coming up alongside you.
- B Ring your boss to tell him/her where the forklift is parked.
- C Make sure that the fuel valve on the LPG cylinder is turned off.
- D Complete your driver logbook.

APPENDIX K: VEHICLE LOADING AND UNLOADING PROCEDURES

When commercial transport vehicles, trucks or trailers are being loaded or unloaded, there is potential hazard to anyone entering the forklift operating area. This procedure is a minimum standard to ensure the safety of all people within the area.

It is imperative that during all loading and unloading operations, the vehicle driver or any assistants are in full view of the forklift operator at all times. Except for attending to the load curtains, straps etc., the vehicle driver or assistants must stand well clear at either end of the vehicle. When it is necessary for the vehicle driver to give signals or guidance to the forklift operator, the driver must be positioned well clear of any potential danger zone and remain in the full view of the forklift operator.

- Employers and employees must ensure a safe-practice working policy for loading and unloading vehicles is established in their workplaces.
- Forklift operators are ultimately responsible for the safety of all people working within the fork truck operating area.
- Forklift operators are under the guidance of the vehicle driver when positioning loads on the vehicle.
- The vehicle driver and forklift operator will advise any person approaching the loading area, that it is unsafe, i.e. a 'no-go area'.
- The forklift operator shall ensure that no persons are in the 'no-go area' before commencing loading or unloading.
- A 'no-go area' is defined as the minimum safe distance to protect any person in the area from a falling load. The areas at both sides of a vehicle are regarded as 'no-go zones'.
- Forklift operators must approach the vehicle tray with the unit load close to the ground so that they have full forward vision. If forward vision is restricted, the vehicle driver will act as observer and give guidance from a safe distance.
- Drivers and forklift operators should wear high-visibility garments.
- If the vehicle driver is not within eye contact or sight of the forklift operator, no loading/unloading should take place. If the vehicle driver is known to be clear of the area, loading/unloading may continue with caution.
- Where it is necessary to load or unload a vehicle on a road, the forklift operator must ensure that all practical steps are taken to ensure the safety of the operation and the people in the area. This includes wearing high-visibility clothing, correct use of marker cones and adequate warnings for others in the area – including other vehicles. In addition, local authority traffic management schemes must be observed. Refer Unit Standard 18496.
- IF IN DOUBT, ALL LOADING SHOULD CEASE.

APPENDIX L: DANGEROUS GOODS

Dangerous goods are a potential life-threatening hazard to vehicle drivers, forklift operators and others who are employed in areas where such goods may need to be handled, transported or stored. It is imperative that appropriate training is given and the relevant legislation complied with.

Where there is a possibility of forklift operators having to work with, load or unload dangerous goods, it is the employer's responsibility to ensure that operators are appropriately trained.

Where dangerous goods are present, or to be loaded, handled, unloaded or stored, refer to:

- The Land Transport Rule Dangerous Goods 1999
- The Hazardous Substances and New Organisms Act 1996

and any other relevant legislation e.g. maritime (IMO), air transport (IATA/IMA); whether in advisory or regulatory capacity.

Reference may also be made to NZS 5433 (1999) The Transport of Dangerous Goods on Land

APPENDIX M: ACCIDENTS AND SERIOUS HARM (RECORDS AND NOTIFICATION)

The Health and Safety in Employment Act 1992 defines “accident” to mean an event that:

- (a) Causes any person to be harmed; or
- (b) In different circumstances, might have caused any person to be harmed.

This means that “accident” includes both near misses and accidents that result in harm to a person or might have caused any person to be harmed.

Every employer is required to maintain a register of accidents and serious harm, and record particulars relating to:

- (a) Every accident that has harmed (or, as the case may be, might have harmed):
 - (i.) any employee at work; or
 - (ii) any person in a place of work controlled by the employer; and
- (b) Every occurrence of serious harm to an employee at work, or as a result of any hazard to which the employee was exposed while at work, in the employment of the employer.

Where there occurs any serious harm or accident an employer must:

- (a) As soon as possible after its occurrence, notify the Secretary of Labour of the occurrence; and
- (b) Within 7 days of the occurrence, give the Secretary of Labour written notice, in the prescribed form, of the circumstances of the occurrence.

The notification to the Secretary of Labour applies to:

- (a) Every occurrence of serious harm to an employee at work, or the occurrence of serious harm as a result of any hazard to which the employee was exposed while at work, in the employment of the employer; and
- (b) Accidents of a kind or description required by the regulations.

APPENDIX N: TRAINING QUALIFICATIONS

Train the trainer requirements

Section 4.1 of this approved code lists the prerequisites for registration as a forklift instructor.

Among these is evidence of successfully completing an acceptable 'train the trainer' course.

Suitable courses include (but are not limited to) the following:

- A certificate in adult learning from a recognised training establishment e.g. a polytech, university etc. The certificate should give accreditation for at least NZQA unit standards 7097, 7106, 7108 and/or 7114 plus 4098 and 11552.
- A New Zealand Institute of Management (NZIM) certificate for their train the trainer course.
- Plus NZQA unit standards 4098 and 1.1552 for any of the above.

The registrar (Competenz) has the authority to accept other qualifications, provided those qualifications are judged by the registrar as meeting the same general standards and requirements.

Note: NZQA unit standards are reviewed on a regular basis, so those outlined above may be superseded or revised. If this proves to be the case, the revised or replacement unit standard will apply.

APPENDIX 0: RELATED DOCUMENTS

- ACC, New Zealand audit system. Powered Industrial Lift Trucks; 1984.
- Department of Labour, NZ. Safe Stacking and Storage, 1985.
- Department of Labour, NZ. Safety Code for Forklift Operator; Nos. 1, 2, 3 and 4, 1995.
- The Health and Safety in Employment Act 1992.
- The Land Transport Act 1998.
- Transport Act 1962
- Land Transport Rule, Driver Licencing 1999.
- Traffic Regulations 1976
- NZS/ANSI/ITSDF b56.1: 2005 *Safety standard for low and high lift trucks (and subsequent amendments)*.
- NZS/AS 2359.1:1985 Design and manufacture of industrial trucks.
- NZS/AS 2359.2:1985 Industrial truck operation.
- Department of Labour, N.Z. Accident Alert, *Issues Related to Forklift Operations*.
- LTNZ, Land Transport Rule Dangerous Goods 1999

ADDENDUM: COMPATIBILITY WITH AUSTRALIAN AND OTHER OVERSEAS CERTIFICATION

Compatibility with Australian certification

Under the Trans-Tasman Mutual Recognition Act 1997, the New Zealand Department of Labour is looking into the possibility of interchangeability of New Zealand and Australian certification. The general aim being recognition of the standards of operator training in both countries.

Currently there is no Australian federal code of practice for forklift operator training. Each state has its own code and training requirements. However, a common federal code is being considered.

Compatibility with other overseas certification

If an overseas certificate is deemed by the registrar to be equivalent to, or exceed, the New Zealand requirements under this approved code of practice, it will be accepted with the proviso that the expiry date shall fall into line with the New Zealand practice of being valid only for 3 years from the date of issue.

On expiry of an accepted overseas certificate, the operator must undertake refresher training in order to revalidate that certificate.

A person with an overseas certificate to operate a forklift can be assessed by a New Zealand registered instructor, and if found competent, the instructor can issue a certificate valid for three years.

In case of dispute, the registrar shall have the final decision on acceptance of any overseas certification to operate a forklift.

GLOSSARY

This glossary is intended to establish uniformity of terminology and meanings for forklifts and attachments, where they are relevant to this approved code of practice.

Shall/Should	For the purposes of this approved code of practice, <i>shall</i> is taken to be mandatory and <i>should</i> is taken to be advisory.
Drive/Operate	For the purposes of this code of practice, <i>drive</i> is taken to mean horizontal travel of the forklift (laden or unladen) and <i>operate</i> is taken to mean the operation of the hydraulics to lift/lower, tilt or other hydraulically powered action, in order to load/unload or stack/destack loads or pallets etc.
Bridge-plate/ Dock board	A steel plate designed and engineered specifically for the travel of loaded forklift from a loading dock onto a road vehicle deck or trailer.
Capacity	The rated capacity (or safe working load) is determined on the manufacturer's data plate and/or load plate attached to the forklift. Operators must refer to this Information when they need to know the actual load-lifting capacity of the machine. Capacity is defined as the maximum weight that can be safely lifted at a given load centre and to a given height, with the mast in the vertical position.
Nominal capacity	The nominal capacity of a forklift is the amount it can safely handle when in its basic configuration i.e. standard double mast and no attachments, it is not its derated capacity when fitted with a high-lift mast or an attachment. On some forklifts the model number and type can be an indication of its nominal capacity.
Carpet boom	A ram or boom attachment which can be inserted into hollow objects for lifting purposes e.g. carpets, coils.
Cold store protection	Modifications made to standard forklifts to enable them to work in low temperature situations e.g. cold stores, chillers etc.
Crane boom, crane jib	An attachment having a raised cantilevered boom to which one or more crane hooks may be fitted.
Crane arm	See crane boom above.
Data plate	The manufacturer's plate, giving details of Model type, serial number etc This plate normally gives some technical details such as service weight and nominal capacity.
Flame protected forklifts	Modifications to forklifts to enable them to be used in situations or operations where substances in the area present a hazard of explosion or ignition. In such cases the appropriate certification of the vehicle, by an approved authority, is mandatory and the forklift manufacturer must be consulted.
Fork locking pins	The devices which allow forks to be manually adjusted side to side, but which lock the forks in place after adjustment.

GLOSSARY

Forks	The load arms by means of which a load is picked up and supported. Usually two (or more) forks are arranged to be used together to handle palletised and similar loads. They are fitted on to the carriage of the forklift and located by the fork locking pins. At no time should loads be lifted or handled using only one fork. Forks are also referred to as tines.
Fork extensions	Metal sleeves which slide on to the forks and locked into place by some means. They enable the handling of loads of different lengths. They should not exceed the forks on which they are fitted by more than 50% and the load carried should not overhang the extensions. Fork extension are also referred to as fork slippers.
Gross weight	The laden weight of a forklift i.e. the service (or tare) weight of the machine plus its load.
Hazardous areas	Areas which have, or may be likely to have, chemical, physical or other conditions which pose a risk/hazard to people, property or environment.
Incline/Gradient	A slope on which a forklift may have to travel.
Load engaging means	Is a term for (but not limited to) forks, clamps, jibs or attachments for the carrying of loads by a forklift.
Load plate or load chart	This plate gives details of the actual/rated capacity for various load centres and lift heights. The information is usually in the form of a chart/graph, but is sometimes in tabular format. The load plate must be used by the operator to determine what loads can be safely handled.
NZQA	The New Zealand Qualifications Authority.
Pedestrian trucks	Sometimes called walkie trucks, are industrial trucks, which the operator is intended to control while NOT riding on the truck.
Push-pull attachment	A hydraulically-powered attachment arranged to enable the load to be pushed off, or pulled on to, the load-supporting forks, platens or platform.
Railroad track	Usually referred to in New Zealand as railway line.
Safety frame/ Overhead guard	Is a falling objects protection system (FOPS) NOT a rollover protection system (ROPS)
Side shift	An attachment, usually hydraulically powered, which enables lateral movement of the load or load-holding attachment (forks, clamp, etc) to facilitate picking up and placement of the load.
Special attachments	These include side-shifts, fork extensions, booms, crane jibs, clamps and rotators etc. i.e. an additional piece of equipment added to the forklift to enable a specialised operation to be carried out. Such equipment may call for job-specific training to be undertaken.

GLOSSARY

Tare or service weight	The weight of an unladen forklift. Usually referred to in specification and data sheets as service weight. On battery electric-powered forklifts this is often shown as without battery, the battery weight being shown separately. (Note: Refer also to gross weight definition.)
Tines	Refer to forks definition. Generally referred to as forks or fork arms. The Australian standards discontinued the use of the term tines in favour of the term fork arms in 1988.