



Safety Lines



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National Forklift Drivers' Competition 2001

The final of the 10th national forklift drivers' competition, run over 2½ days, concluded in Auckland on 22nd November. This year, the annual event was sponsored by Loadlift Equipment Ltd and OSH. The competition is designed to encourage the improvement of forklift operator skills, resulting in increased workplace productivity and safety. Thirteen forklift operators, dubbed the 'Best of the Best', qualified in regional events to compete in the national finals.

The overall winner, who received the \$1,000 prize (in addition to \$300 for regional first prize), was Danny Doughty from NZ Pharmaceuticals of Palmerston North.

As in previous years, Allan Ayers of Loadlift Equipment Ltd was the competition manager, and Maurice Flood of OSH was the chief judge. Maurice, who is also the OSH registrar for forklift instructors, was assisted by other OSH judges.

A short but demanding course, constructed mainly from pallets and racking, was set up in Loadlift Equipment's premises. The course was created to present sufficient difficulties to require above-average skill in performing a variety of manoeuvres.

Competitors were expected to display awareness and skill in a number of operational areas such as the daily check, driving, picking up loads, placing loads,



A winner's concentration!

use of attachments, parking, and general safety awareness. Thirty seven specific criteria were used in the judging, and these fell under the following categories:

- Failure to check equipment
- Fork mast control
- Careless driving
- Control of forklift when travelling
- Improper use of controls
- Failing to stack load correctly
- Failing to park correctly.



Penalty points were awarded for ‘faults’ incurred and there was a maximum circuit time for realism. Actual circuit time was also recorded and factored into the results.

This year, for the first time, a ‘novelty’ event was introduced where the operator had to lift a ball which was perched on top of a ‘witches hat’, and then carefully place it into a 44-gallon drum. The drum itself was on top of a stack of pallets. Despite the

novelty appearance of this trial, it made unique demands, which most operators met with distinction, a few only missing the mark.

About 300 drivers took part in the various regional competitions around New Zealand and, according to Allan Ayers and Maurice Flood, the driving skills were to a very high standard. The placings of the 13 finalists are given in the table below.

Place	Name	Company	Region
1st	Danny Doughty	NZ Pharmaceuticals	Palmerston North
2nd	Mike Pennall	Kiwi Co-op Dairies (Pahiatua)	Palmerston North
3rd	Paddy Didovich	CHH Tissue	Hamilton
4th	Mark Sutton	Woolworths	Christchurch
5th	Andy Isle	TNL Freight	Nelson
6th	Mark Reynolds	Kiwi Co-op Dairies (Hawera)	Palmerston North
7th	Bruce Young	Anchor Products	Hamilton
8th	Wally Rota	Tranz Link (Hamilton)	Auckland
9th	Daryl Puru	Independent Fisheries	Christchurch
10th	Mark Pene	Foodstuffs	Palmerston North
11th	Stuart Mitchell	NZ Post	Dunedin
12th	David Nielson	Tranz Link	Wellington
13th	Murray McLean	Heinz Wattie	Hastings

Footnote: Maurice Flood is a member of the Engineering Safety team. He is a machinery inspector, registrar of forklift trainers, and amusement devices registrar.

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Air Receivers

Recent queries about air receivers have prompted us to include some points of clarification on current requirements. Familiarity may be breeding contempt with respect to these ubiquitous pressure vessels, which are covered by *the Approved Code of Practice for Pressure Equipment (Excluding Boilers)*.

Matters relating to the calculation of pV values

The pV value is calculated for pressure vessels as the product of design pressure (mPa) and volume (L). The effect of this value on design verification and inspection for small air receivers is shown in the following table.

pV	
100 -1,000	<ul style="list-style-type: none">• Hazard level C• Needs design verification and certificate of inspection
>150	<ul style="list-style-type: none">• Needs in-service inspection by an inspection body

Some issues which have been raised are as follows:

1. The volumetric extent of the receiver was questioned, particularly when connected to piping and even another receiver, without intervening valves. The volume to be used for calculating pV values is that of the vessel excluding external pipework.
2. The use of the safety valve setting for calculating pV has been questioned due to possibly significant differences between this setting, the original design pressure of the vessel, and the compressor's working pressure. The inference is that this situation may lead to tampering with safety valves to reduce the pV value.

The safety valve setting is appropriate. Tampering with safety valves would be in breach of the Act and Regulations. Resetting downward of safety valves must follow a documented procedure and be performed either by a competent person or an inspection body depending on the factors of the case.

Internal inspection

The need for internal inspection has been questioned in relation to the smaller sizes of air receiver. The cost of pipework removal is quoted as a strong disincentive to internal inspection in many cases. The following points should be noted:

1. Internal visual inspection is required for all air

receivers with a pV in excess of 150 MPa.L, supplemented as may be required by other methods. Fittings/branch removal may be required to facilitate this. Openings should be in accordance with the design standard or BS 470 if none is specified (and the receiver is over 50 litres capacity).

2. The nominal period for internal inspection is 4 years - see AS/NZS 3788:2001 Table 4.1. The period may be extended out to 12 years in accordance with clause 4.4.4.6.

Design standards

A question was raised about the acceptability of various design standards for air receivers. Generally air receivers built to BS 5169 or AS 2971 are acceptable in New Zealand as are others provided they have been manufactured and design verified against a recognised standard.

Safety valves

The following points need to be noted:

1. All receivers must be protected by a safety valve (mounted on an integral compressor is acceptable).
2. In the case of a remote receiver it would be acceptable without a directly mounted safety valve provided there was no valve between the receiver and the safety valve.
3. The safety valve must be rated for at least the compressor discharge volume.

Pipework

In some instances the conventional receiver is supplemented or even replaced by extensive pipework. Such pipework must be treated as pressure piping.

Containment/pV factoring

The suitability of location of receivers and special reduction factors applying to pV values in relation to isolation have provided some confusion of late. The following points may help to remove this confusion.

1. There is no absolute requirement for an air receiver to be in an isolated location.
2. AS 4343 does permit a reduction of hazard level in certain circumstances such as an isolated location. From the point of view of this article this reduction, in the case of air receivers, is most likely to affect the design verification requirements of vessels with a pV of over 1,000. This factoring is not applicable in relation to in-service inspection periods as given in AS/NZS 3788.

Self-Erecting Tower Cranes

The self-erecting tower crane has been available in Europe for many years and has more recently come into New Zealand for use in situations where a conventional tower crane cannot gain access, e.g. for setup within a building, typically to remove and/or insert material for refurbishment of the building. The ability to quickly erect and dismantle the crane has obvious advantages.

The manufacturer's manual will describe a visual check that must be carried out prior to erection. Every time the crane is set up there are checks to be carried out before the crane is used, such as checking that all the limit switches are working and correctly set. These required checks are also documented in the crane manufacturer's manual which must be available to the operator. The logbook must record these checks having been carried out and the entry must be signed by the person responsible.

In many cases controllers will already be maintaining appropriate document control of these cranes, but Engineering Safety considers that the matter needs to be more fully addressed in the code than it is presently. Currently the *Approved Code of Practice for Cranes* contains only a brief mention of self-erecting tower cranes, and this will be substantially expanded to more fully cover the use of this equipment.

The amendment process, which is about to commence, will include invited comment on the draft changes, followed by further editorial input, and finally Ministerial approval. It is envisaged that this process will be complete by about mid 2002.

Congratulations SGS!

The Occupational Safety Department of the Ministry of Manpower in Singapore has approved SGS New Zealand Ltd to certify locally manufactured pressure equipment for use in Singapore.

SGS is now authorised, for the purposes of Singapore's Factory Act, to conduct design reviews, fabrication surveys, and certifications of pressure systems during construction.

Location of an Unattended Boiler In a Process Area

A question has been raised about locating an unattended gas-fired package boiler in a process area of a factory (i.e. not in a separate boiler house).

Provided the requirements of the various relevant items of legislation are met (HSE Act, HSNO Act, PECPR Regulations, Gas Act, etc.) there is no reason to disallow such a boiler location. Probably the principal concerns would centre around health and hygiene (i.e. effects of escaping fumes on the product). It is likely that the primary need would be to satisfy the requirements of the Building Industry Authority.

With respect to the *Approved Code of Practice for the Design, Safe Operation, Maintenance and Servicing of Boilers*, which does not absolutely prescribe boiler location, the following clauses have a bearing on location:

- 1.27.3 relating to protection of persons from heat, noise, harmful substances and gases (wording is slightly altered in the latest draft).
- 1.27.5 relating to the operation of the boiler within its design limits (wording altered in the latest draft).
- 1.29.1 relating to security against tampering with controls etc. (this is unchanged as 1.30.1 in the latest draft).
- 1.29.2 relating to protection of the boiler from the immediate environment (this is unchanged as 1.30.2 in the latest draft).

It is advisable to consult the latest draft version of the code which is freely available for download from the OSH website. It can be accessed by visiting www.osh.dol.govt.nz and clicking on the following in turn:

1. Learn about health and safety law (click on the graphic)
2. OSH publications on legislation
3. Drafts
4. Draft Codes of Practice for the Design, Safe Operation, Maintenance and Servicing of Boilers
5. Draft Code of Practice for the Design, Safe Operation, Maintenance and Servicing of Boilers

Pile Driving Cranes

When a crane is set up for pile driving it is advisable to remove the safe load indicator, as it is likely to be damaged by the impacts and rendered useless for general operation. A better solution is to use equipment which is specially set up for pile driving, rather than a general-purpose crane.

It was found on a particular crane, which was being used for pile driving, that several lacing members of the lattice boom had been badly bent out of line. This rendered the boom unsuitable for general-purpose work.

In another instance, the anti-two block device was removed (to gain extra height) for pile driving and was not subsequently replaced. This resulted in damage to the sheave blocks when the crane was returned to general-purpose use.

Problems such as the above can be avoided by using dedicated pile driving equipment.

Reminder: “Yard” cranes, which are covered in Part 12 of the *Approved Code of Practice for Cranes*, may in some cases need to have an anti-two block device fitted—see Appendix A.

Email Reminder

Many people have already asked to be reminded when *Safety Lines* is posted on the Internet. If you would like to be included on our early warning system, please send your email address to sl-list@osh.dol.govt.nz. As a navigation aid the reminder includes a link directly to the *Safety Lines* location.

Puzzle Place

Answers include abbreviations and acronyms.

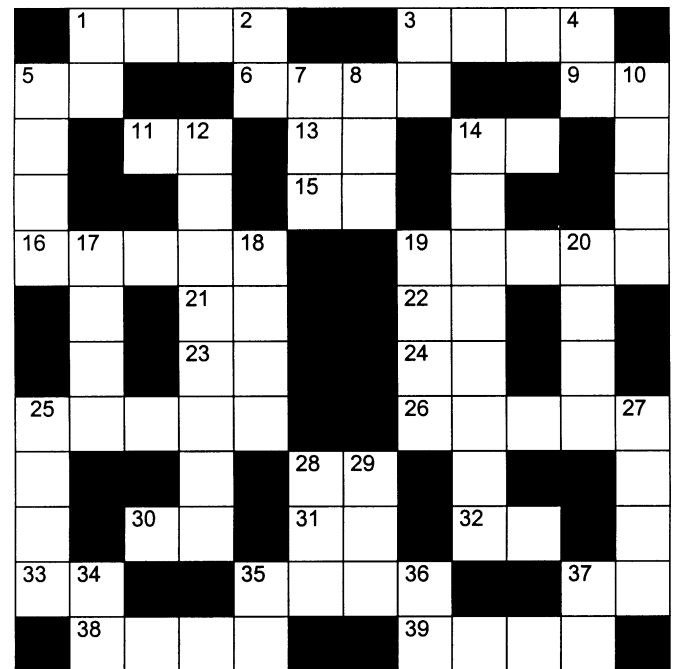
ACROSS

- 1 Obtain
- 3 Individual thing
- 5 Heave
- 6 Talk
- 9 Identification
- 11 Chemical element
- 13 Système International
- 14 Unit of volume
- 15 Expression of hesitation
- 16 Lines which radiate
- 19 Move
- 21 Degree
- 22 Logical operator
- 23 Not out
- 24 Scandium
- 25 Unit of frequency
- 26 Bush
- 28 Island
- 30 Title
- 31 Alright
- 32 Street
- 33 Knockout
- 35 Cut
- 37 Short for long mile
- 38 Facts
- 39 Widespread

DOWN

- 1 Depart
- 2 US State
- 3 Derivative of GMT
- 4 Titanium
- 5 Unit of pressure
- 7 An important Act
- 8 The atmosphere
- 10 Sandy mound
- 12 Type of sword
- 14 Buildings of public worship
- 17 Prestigious engineering society
- 18 In the accreditation business
- 19 One in charge
- 20 Influential teacher
- 25 For hanging on
- 27 Prosperous time
- 28 This may have lost or gained electrons
- 29 Used in snow
- 34 A diameter
- 35 African nation
- 36 Short for two of a kind
- 37 Opposite SW

Answers can be obtained by email from:
robin.bain@osh.dol.govt.nz



Answers to *Safety Lines* Issue 51 Crossword

Across

1. Ski 3. Eloper 8. We 9. Ugh 11. Chi 12. Icing
14. Ask 16. Zap 18. IANZ 20. kPa 22. SI 23. Dr
24. RS (Royal Society) 26. Ne (Symbol for Neon)
28. Ere 29. Lute 30. CoP (Code of Practice) 32. Wet
35. Nudge 38. ISO 40. Cot 42. Re 43. Impose 44. End

Down

2. IPENZ 3. Emu 4. Oohs 5. Etc 6. psi 7. Sizzle 8. WI (Wisconsin) 10. GA (General Arrangement) 13. Gas
15. Kid 17. Pi 19. Are 20. Kelvin 21. Art 25. Sew
26. NC (Non Conformance) 27. Eon 31. Purge
33. Echo 34. To 36. De 37. EOT (Electric Overhead Travelling) 39. Ohm 41. Tue



Merry Christmas!

We wish all our readers a merry Christmas and a happy New Year.

Engineering Safety will be closed from 24th December to 2nd January inclusive.

The next issue of Safety Lines will be published on the internet late March 2002.

Safety Lines is a publication of the Engineering Safety Unit of the Occupational Safety and Health Service, Department of Labour, PO Box 3705, Wellington.

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