



Safety Lines



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ENGINEERING SAFETY NEWSLETTER, OCCUPATIONAL SAFETY AND HEALTH SERVICE

No. 50, June 2001

Do You Have One of These?

Recently, an 800 kg steaming vessel door, approximately 2 metres in diameter, detached under pressure and was propelled 50 metres before coming to rest. Fortunately, no one was in its path at the time. The pressure in the vessel was 138 kPa.

The steaming vessel is a pressure vessel in terms of the Health and Safety in Employment (Pressure Equipment, Cranes and Passenger Ropeways) Regulations 1999. It is used in the timber preservation process to prepare timber for treatment with preservation chemicals. Many similar units are in service throughout New Zealand.

The door and its mechanism (connected to the removed end of the vessel), seen lying in the workshop after retrieval and repair, are shown in the photo on page 2. The quick acting mechanism is interlocked with a steam whistle, which is designed to be quiescent if the circlip is correctly installed and locked in position.

The investigation report concluded that the incident occurred because the circlip had not been fully entered into the circlip groove. The force from the

Continued on page 2 ...

Welcome to the Web

Welcome to the first exclusively web-based issue of *Safety Lines*. As we estimate that virtually all our readers by now have computer (and internet) access, it has been decided to produce *Safety Lines* solely in an electronic format.

We will continue to produce four issues per year and strive to maintain and improve on the level of interest achieved in past issues. Incidentally, many of those past issues (#39 - #49 inclusive) are also available for downloading from the internet, or free in hardcopy*. A subject index of earlier issues is available on our website and these early issues too are available free in hardcopy*.

This is also the first *Safety Lines* edited by Robin Bain. Peter Williamson has handed over the reins to take a well earned rest (only from *Safety Lines*!). Thank you Peter for your editorial efforts.

*Subject to availability



Continued from page 1 ...

steam pressure on the door was sufficient to eject the circlip from its partly entered position and release the door. It appears that the interlock had been overridden or had failed in service.

It is essential for safe operation that controllers operating such a vessel, employing this design of door closing mechanism, ensure that:

- The circlip and circlip groove are kept clean.
- The circlip and circlip groove are not excessively worn.
- The locking mechanism is activated before applying steam pressure.
- The interlocked alarm is not overridden or disabled when in service.
- Operators are properly trained in the operating, servicing and maintenance of the steaming vessel and its door operating system.

Controllers are also reminded that under the PECPR Regulations they must maintain:

- Data showing that pressure equipment has been designed, manufactured and certified for operation in compliance with statutory requirements.
- A current Certificate of Inspection and archive copies of inspection reports and certificates issued by their inspection body.
- All information necessary for equipment to be safely operated, serviced and maintained.



Steaming vessel door and locking mechanism of the type involved in this incident.

Typically this should include procedures for operating, servicing, repairs and maintenance plus records of these activities.

The door and its closing mechanism were designed and manufactured by Scott's Engineering Ltd. of Christchurch. They can provide assistance to any owner requiring advice on the operation, servicing and maintenance of these closing mechanisms.

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Engineering Safety Staff Contact Details

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56-62 The Terrace
PO Box 3705
Wellington

Quality Management Systems - An Update

Where the PECPR Regulations or an approved code of practice call for a boiler or other pressure vessel to be operated within a quality management system (QMS), such a system must meet regulation 28. This means that the following two conditions have to be satisfied:

1. The system must be currently certified to a recognised industry standard, by a body accredited by the Joint Accreditation System of Australia and New Zealand.
2. The opportunity must be provided for Engineering Safety to participate in assessments of the system by the accrediting body.

Codes of practice state that a QMS is to be ISO certified. A QMS certified to another standard based on, and not less than, an ISO series standard may be acceptable to Engineering Safety.

When ISO 9001:2000 was issued it replaced ISO 9001:1994, ISO 9002:1994 and ISO 9003:1994. The Council of Standards New Zealand approved this new standard for use in New Zealand on 21 November 2000. Its title is *ASNZS ISO 9001:2000 Quality management systems - Requirements*.

Engineering Safety has reviewed the implications of these changes and the following arrangements for quality management systems will apply in the period of transition from AS/NZS ISO 9001/2:1994 (1994 series) to AS/NZS ISO 9001:2000 (2000 series):

1. An existing QMS based on the 1994 series may be used until the end of the year 2003 subject to code of practice requirements.
2. Any new QMS approved during the year 2001 may be based on either the 1994 series or the 2000 series.
3. After the year 2001, every new QMS approved must be based on the 2000 series.
4. After the year 2003, every QMS must be based on the 2000 series.

Watch That Wedge!

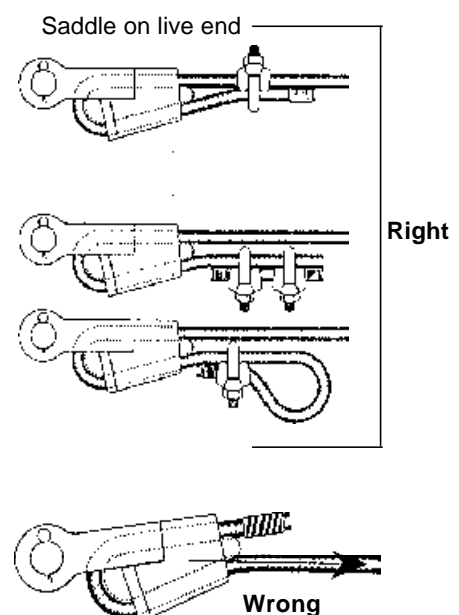
A recent accident involved a crane with a main hook and separate auxiliary hook on the same length of boom. The auxiliary hook had to be raised in order to clear the way for the main hook also to be raised. During the change over of winch engagement and footbrake release, there was a delay in raising the auxiliary hook, and this resulted in the auxiliary hook striking the main hook and then its load. With the auxiliary hook supported on the rising load, its rope went slack.

On the same job, and with a later movement of the crane boom, the auxiliary hook fell to the ground. On inspection it was found that the wedge, which is responsible for locking the rope in the wedge socket, was missing.

There was no evidence of rope grips being used and therefore it is likely that the slack rope, having sufficient stiffness, pushed the wedge and rope end up and out of the socket. After this there would have been no attachment for the auxiliary hook.

Some points to note from this incident are:

- It is strongly recommended that properly fitted rope grips be used in every case – see sketches.
- Ensure that the wedge is the correct size for the wedge socket.
- If a similar incident occurs where the rope becomes slack, check the wedge and hook security before continuing the operation.



Recognised Inspection Bodies

The following organisations are currently recognised (as of June 2001) as inspection bodies under Regulation 25 of the Health and Safety in Employment (Pressure Equipment, Cranes and Passenger Ropeways) Regulations 1999. They are able to provide inspection and/or design verification services for equipment covered by the regulations.

This schedule notes the main office(s) only of an inspection body. The inspection body may also have national or international branches, which are able to provide inspection services.

New Zealand or Australian branches of a local or

overseas inspection body will be recognised only if IANZ or NATA has accredited them.

The recognition status of inspection body branches, operating in countries other than Australia or New Zealand, is available from Engineering Safety.

The scope of services that a recognised inspection body operating in New Zealand or Australia may provide is obtained from its accreditation schedule or, by contacting the relevant accrediting organisation, IANZ or NATA.

The scope of services that other recognised inspection bodies may provide is available from Engineering Safety.

New Zealand Inspection Bodies Providing Design Verification Services

M & I Safety Inspection Services Ltd
PO Box 27 347
Wellington
Technical Manager: Bill Black
Phone (04) 382 9666
Fax (04) 385 9311

Transfield Worley
PO Box 705
New Plymouth
Technical Manager: Grant Notley
Phone (06) 759 6300
Fax (06) 759 6301

New Zealand Inspection Services Ltd
PO Box 58 134
Greenmount
Auckland
Technical Manager: Martin Beddows
Phone (09) 273 5224
Fax 09 273 5441

SGS New Zealand Ltd
PO Box 8032
Riccarton
Christchurch
Technical Manager: John Phillips
Phone (03) 341 2282
Fax (03) 341 2283

New Zealand Inspection Bodies Providing Fabrication and In-Service Inspection Services

Donnellan & Associates Ltd
PO Box 40 100
Upper Hutt
Wellington
Technical Manager: Mike Donnellan
Phone (04) 528 8057
Fax (04) 528 6008

Lloyd's Register
66 Wyndham Street
Auckland
Technical Manager: Nigel Johns
Phone (09) 373 3311
Fax (09) 309 5786

New Zealand Inspection Services Ltd
PO Box 58 134
Greenmount
Auckland
Technical Manager: Martin Beddows
Phone (09) 273 5224
Fax (09) 273 5441

SGS New Zealand Ltd
PO Box 13-518
Onehunga
Auckland
Phone (09) 634 3637
Technical Manager: John Phillips
Phone (03) 341 2282
Fax (03) 341 2283

Advanced Testing Computed
(Hamilton) Ltd
Unit 1, 87 Higgins Road
Frankton
Hamilton
Technical Manager: Harold Templar
Phone (07) 846 6366
Fax (07) 846 6362

M&I Safety Inspection Services Ltd.
PO Box 27 347
Wellington
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Phone (04) 382 9666
Fax (04) 385 9311

Nortel Ltd
PO Box 1271
Whangarei
Technical Manager: Steve Mabbett
Phone (09) 438 1512
Fax (09) 438 1230

Indespect Surveys Ltd
PO Box 6088
Invercargill
Technical Manager: John Leslie
Phone (03) 214 9283
Fax (03) 214 9284

Overseas Inspection Bodies Providing Design Verification Services

Lloyds Register Industry Division
Lloyd's Register House
29 Wellesley Road
Croydon, CR0 2AJ
United Kingdom

Royal & Sun Alliance Engineering Ltd
17 York Street
Manchester, M2 3RS
United Kingdom

Plant Safety Ltd
Parklands
Wilmslow Road
Didsbury
Manchester M20 2RE
United Kingdom

Overseas Inspection Bodies Providing Fabrication Inspection Services

Australia

C J Wallis Pty Ltd
PO Box 6404
Baulkham Hills
Sydney
NSW 2153
Australia

ETRS Ply Ltd
PO Box 4002
West Footscray
Victoria 3012
Australia

Canada

Alberta Boilers Safety Association
#200, 4208 - 97 Street
Edmonton, Alberta
T6E 5Z9 Canada
Chief Inspector & Administrator:
Dr K T Lau

Germany

FM-TUV-BV Technische Inspektions
GmbH
Steubenstrasse 53
D-45138
Essen
Germany

Japan

Nippon Kaiii Kyokai
4-7, Kio-Cho
Chiyoda-Ku
Tokyo 102-8567
Japan

South Africa

SGS Engineering Inspection
Company (PTY) Ltd
PO Box 21151
Bluff 4036
South Africa
Division Head: Danny Bageloo
Divisional Secretary: Debbie Kriedeman

Sweden

DNV Inspection AB
Box 49306
SE-100 29 Stockholm
Sweden

United States of America

Commercial Union Insurance Company
One Beacon Street
Boston
MA 02108-3100
United States of America

The Hartford Steam Boiler Inspection
and Insurance Co.
PO Box 5024
Hartford,
CT 06102-5024
United States of America

Kemper Insurance Companies
1 Kemper Drive
Long Grove
Illinois, 60049-0001
United States of America

Factory Mutual Insurance Company
1301 Atwood Avenue
Johnston
RI 02919
United States of America

United Kingdom

Lloyds Register Industry Division
Lloyd's Register House
29 Wellesley Road
Croydon, CR0 2AJ
United Kingdom

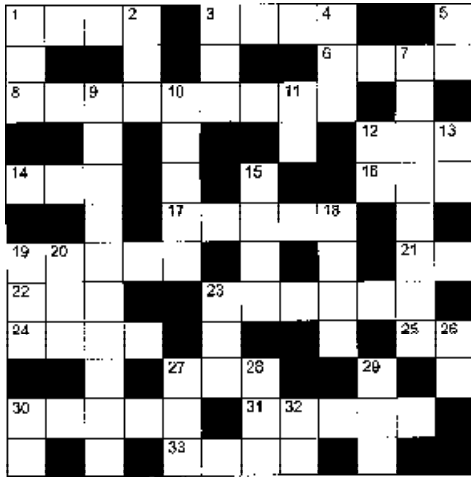
Plant Safety Ltd
Parklands
Wilmslow Road
Didsbury
Manchester M20 2RE
United Kingdom

Royal & Sun Alliance Engineering Ltd
17 York Street
Manchester, M2 3RS
United Kingdom

TUV UK Ltd
Surrey House
Surrey Street
Croydon, CR9 1XZ
United Kingdom

Zurich Certification Ltd
54 Hagley Road
Birmingham, B16 8QP
United Kingdom

Puzzle Place



The answers to this crossword include some abbreviations and acronyms

ACROSS

- 1 Legislation governing hazardous substances etc.
- 3 An official code of practice
- 6 British senior citizens
- 8 Narrowly defined in regulation 4
- 12 A noisy unit?
- 14 A minimal screen resolution today
- 16 Old-fashioned pressure unit
- 17 Numbers frequently need these
- 19 Set by the designer (of capacity, etc.)
- 21 Degrades people and plastic
- 22 An American engineering body
- 23 Industrial strength kettle?
- 24 New Zealand's accreditation body
- 25 Alien
- 27 You may need one to operate 23 across
- 30 Extremely nasty vapour explosion
- 31 Professional engineering body
- 33 The useful stuff on computers

DOWN

- 1 OSH largely administers this
- 2 Well known printer manufacturer
- 3 Goal
- 4 Container or electrical equipment
- 5 Short for poison?
- 7 People and vessels can't take too much of this
- 9 The most automated kind of 23 across
- 10 A bit too far out
- 11 A simple rejection
- 12 Big in petroleum business
- 13 Symbolic of an element
- 15 Not last in but first out
- 18 Shelf or slab
- 19 What they used to call OOS
- 20 A really good rating
- 23 This medical measure increases with stress
- 26 To view
- 27 A machine may have one but not for sleeping on
- 28 Adopt a position to do an exam
- 29 You can't get a whole lot less than this
- 30 Will sort earlier than an engineering degree
- 31 The latest technology
- 32 Useful person

Answers can be obtained by email from:

robin.bain@osh.dol.govt.nz

New NFPA Standard

NFPA has published NFPA 85, *Boiler and Combustion Systems Hazard Code*, 2001 edition which combines and replaces the following previous standards:

- NFPA 8501, *Standard for Single Burner Boiler Operation*
- NFPA 8502, *Standard for the Prevention of Furnace Explosions/Implosions in Multiple Burner Boilers*
- NFPA 8503, *Standard for Pulverized Fuel Systems*
- NFPA 8504, *Standard on Atmospheric Fluidized-Bed Boiler Operation*
- NFPA 8505, *Standard for Stoker Operation*
- NFPA 8506, *Standard on Heat Recovery Steam Generator Systems*

NFPA's on-line catalogue is at:

<http://catalog.nfipa.org>

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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