



Achieving Excellence

New CSA Standard for Robots



By John Ford

A new Canadian Standards Association Code “Z 434-03, *Industrial Robots and Robot Systems - General Safety Requirements*”, was published in March 2003. This new standard will impact greatly on companies using robotic equipment in two particularly important ways.

First, the Canadian Standards Codes are often used by the Ministry of Labour in setting standards for what level of guarding is acceptable.

CSA standards have been used in court as employers have an obligation to “take every precaution reasonable in the circumstances for the protection of a worker” under Section 25(2)h of the Occupational Health and Safety Act of Ontario.

Second, the Pre-Start Review requirements under Section 7 of the Industrial Regulations require a Professional Engineer’s seal and signature on a report that details the measures needed for

compliance to machine guarding regulations or documentation that the machine and protective elements have been built and installed to meet current applicable standards. This must be done whenever new equipment is installed or when certain modifications have been made. It is important to note that only the machine guarding sections of the CSA standard must be used, although this does bring in the control reliability aspects of the machine and protective elements. (See *Ministry of Labour Guideline for Pre-Start Reviews*). This requirement will be especially important when re-deploying older robots or modifying the protective elements on existing installations.

In order to assist you to understand the requirements of the new standard, scope your Pre-Start Reviews or Exemption Documentation, or write a “Bid Package” of requirements to ensure your next purchase of robotic equipment will be up to the new standard, we are running a seminar on this new code this fall.

For more information regarding this CSA Z434-03, please contact Barbara Ford

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★ ★ **Best Wishes & Farewell** ★ ★

★ ★ **Lisa Manary** ★ ★

★ ★ Who is leaving Training Services after 14 years to pursue a new career as a meditation instructor and author. ★ ★

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Ministry of Labour News

Neudorf Stamping Corporation fined \$45,000 for a violation of the Occupational Health and Safety Act that resulted in serious hand injuries to a young worker.

On Jan. 16, 2002, a press operator was reaching into the die area of a press to remove a 15 cm, (6 inch) power steering reservoir can when the press unexpectedly cycled without the use of the controls. The worker lost all of the fingers and most of the knuckles on both hands. A Ministry of Labour investigation found the press had deficiencies in its electrical control systems and that the probable cause of the accident was the company's failure to maintain the press in good condition.

Neudorf Stamping Corporation pleaded guilty, as an employer, to failing to ensure the press was maintained in good condition, contrary to Section 25(1)(b) of the Act.

Columbian Chemicals Canada Ltd. fined \$150,000 for a violation of the Occupational Health and Safety Act that resulted in the death of a worker.

On April 28, 2002, a utility operator, was doing maintenance work on a tank that was in close proximity to a piece of machinery with a slowly rotating shaft. The shaft caught the back of the worker's coat and continued turning, causing the worker's clothes to become entangled. The worker was pronounced dead due to asphyxia. A Ministry of Labour investigation found the surface of the rotating shaft was pitted thus increasing its tendency to catch on loose clothing. In addition, there was no guarding device on the

shaft to prevent access to moving parts.

Columbian Chemicals Canada Ltd. pleaded guilty to failing, as an employer, to ensure that an exposed moving part that may endanger a worker was equipped with a guard, as required by Section 24 of the Industrial Regulations, contrary to Section 25(1)(c) of the Act.

Richmond Hill Homeowner fined \$20,000 for a violation of the Occupational Health and Safety Act that resulted in the death of a worker.

On April 1, 2002, a trim carpenter, who was hired to install door and window trim at a new two-storey home, fell about 3.2 metres (10.5 feet) through a stairwell opening on the first floor to the basement below.

The homeowner pleaded guilty, as a constructor, to failing to ensure a guardrail system was used where a worker had access to the perimeter or open side of a floor and was exposed to a fall of 2.4 metres (8 feet) or more, contrary to Section 23(1)(a) of the Act.

3039863 Nova Scotia Limited fined \$110,000 for a violation of the Occupational Health and Safety Act that resulted in the death of a worker.

On Feb. 8, 2002, a worker while operating a forklift, turned a corner around racks of drums when the forklift struck one of the vertical supports of the racking system. This caused the racking system to collapse, sending 170 litre (45 gallon) drums filled with metal chips to the ground. The worker attempted to flee the area on foot, but was struck by one or more falling

drums. This caused massive trauma to the upper torso, which resulted in the death of the worker. A Ministry of Labour investigation indicated that the worker had not been properly trained and as such was not a competent person to operate the new forklift.

3039863 Nova Scotia Limited pleaded guilty, as an employer, to failing to ensure that a lifting device was operated only by a competent person as required by Section 51(2)(a)(i) of the Industrial Regulations, contrary to Section 25(1)(c) of the Act.

F-K-P Tool Manufacturing Limited fined \$200,000 and 3 Supervisors fined \$10,000 each for a violation of the Occupational Health and Safety Act that resulted in the death of a worker.

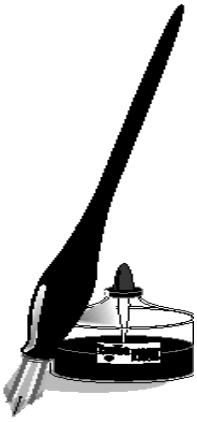
On Feb. 27, 2002, a press operator was operating a 750-ton press when the operator was struck by a 10 kilogram (22 pound) ram block that was ejected from the press.

F-K-P Tool Manufacturing Limited pleaded guilty, as an employer, to failing to ensure the press was locked out while the ram block was between the upper and lower dies, as required by Section 76 of the Industrial Regulations, contrary to Section 25(1)(c) of the Act.

In addition, 3 supervisors each pleaded guilty to jointly failing to ensure the press was locked out while a ram was between the upper and lower dies, as required by Section 76 of the Industrial Regulations, contrary to Section 27(1)(a) of the Act.

**To give anything less
than your best,
is to sacrifice your gift.**

FROM OUR READERS...



I have been reading "Achieving Excellence" for many years and always use it as lessons to learn with my managers. I actually use it like a quiz and ask how an incident could have been avoided. It is amazing how much you can learn if you are willing enough to ask the question honestly: "Could this happen here?"

I also have a great deal of respect for John Ford and the team and company he has created. In my eyes they are the leaders in our industry.

The reason I am taking the time to write is to comment on the article titled "**Case History**" April 2003

It upsets me to see a life wasted and a family destroyed over something so ignorant. Did this employer take every precaution to ensure the safety of his workers? What else concerns me is the "Lessons to be learned":

1. "Never distract a worker or allow someone to distract you while you are working on a machine".

A plant is a living machine that has people and equipment moving at all times and distractions are many and impossible to avoid. We are working with people, not robots. I can picture a plant in Canada after Mike Weir won the Masters or the Leafs won game 6 and everyone was getting prepared for game 7. I bet there were many distractions. This natural occurrence should not end up in a death.

2 & 3. "Stay completely focused on what you are doing when operating machines & never day dream or allow your mind to wander."

I put both of these in the same boat, is it really realistic? I have sat at presses for 8 hours running parts and I did think about other things. I thought about how I did not want to do this for the rest of my life, I thought about what I was going to do to surprise my wife on the weekend, I thought about my daughter's tennis match on the past weekend and how she was going to do at the next one. Maybe it's just me, but I still do it, and I now run plants.

4. "Before starting to work on a machine, always look for foreign objects that should not be there inside the machine."

I agree 100%, but it is usually done during set up or coil changes and I do not think that this would have saved a life in this case.



Do you have something to say?

We value your thoughts! If you have any comments regarding something you have read in "Achieving Excellence" please send them to Barbara Ford, Editor:
email: bford@cybertrain.on.ca or by fax to (905) 877-7147.

5. "Remember that good housekeeping around and in machines is extremely important. You are more likely to spot something that should not be there if the work area is clean." I agree 100%, it also creates an environment where people care what they do and will also affect your quality as well as sales.

6 & 7. "Always make sure the guards, especially side and back guards are in place to prevent parts or scrap or other machine parts from being ejected out the sides and back & machines should be shielded or guarded, when possible, to prevent the ejection of parts."

I agree 100% but these guards also need to be interlocked to ensure they are in place and being used properly. The statement "when possible" has always bothered me when I hear of someone dead on the floor. There was no way to determine where the slug was going to go, and on a hard transfer press, the front or access side is left open as long as there is a two-button hand control with interlocks.

8. "Die design must prevent part ejection." I have never seen a die design that would avoid 2 parts being left in a die but I have seen part-in-place sensors, or off chutes, that detect parts. Both of these options would prevent a press from cycling if a part was detected inside a die or a part has not passed through the off chute.

These options can also be equipped with a supervisor's key to ensure the process is inspected correctly prior to start up. Both of these options also prevent parts from getting to your customer incomplete. This simple act would have prevented a death of a person and a family.

I am sure this person was told not to put 2 slugs in this die, but like 100% inspection is only 80% effective, telling someone is not enough when it comes to safety. Your process needs to ensure it!

If I have learned anything from being in this business is that I have learned that people are people and they are our greatest asset and it is our responsibility to protect them even if it is from themselves.

Thanks for listening.

Scott Young
General Manger,
Ventramex,
Queretaro, Mexico

Ask The Expert...

Q. *I have machines that were installed in my plant after October 2000 and are currently in production. A Professional Engineer has not issued pre-start review reports on any of this equipment. What should I do now?*

A. There are a couple of options that should be explored;

1. Do the machines have safe guarding devices that signal the machine to stop? (e.g. light curtains, two-hand controls or interlocked guards). If these types of safe guarding are **not** used, but instead fixed guards or barriers are employed, then Section 7 of the OSHA does not apply and a pre-start review is not required.
2. Do any of these machines qualify for Pre-Start Exemptions? Perhaps you can establish documentation from the manufacturer and installer that the machine and the safe guarding devices were manufactured and installed to meet the latest applicable standards. For example, in the case of punch presses CSA Z142-02, if this documentation can be compiled, a pre-start review is **not required**.

If the above options do not apply to your machines, then action needs to be taken to ensure these machines meet the latest applicable standards. A Pre-Start Health and Safety Review may not be the best approach at this time. You do not want to risk being in possession of a report from a Professional Engineer with a list of items that should have been addressed and corrected. The machines have been in operation for some time and the Safety Review is supposed to be done and acted on before the machines are started and used for production. Instead we would propose to conduct a broader based machine safety audit for all machines and work with your staff to develop an action plan to address all areas of the latest applicable standards and ensure compliance. A pre-start review report would then be provided for all machines that are in compliance.



Fraser Dimma
P. Eng.
Associate

Fraser is an expert in manufacturing and has a good working knowledge of CSA, ANSI and European Safety Codes and Legislation. This experience qualifies Fraser as an ideal person to conduct your Pre-Start Health and Safety Reviews as required by Section 7 for equipment additions and modifications. For more information please contact Fraser directly by phone: (905) 873-3031 Email: borah@oix.com

NEW! Worker Rights & Responsibilities

Objectives:

- To teach participants key requirements of the Occupational Health & Safety Act, Industrial Regulations and the Workplace Safety & Insurance Act
- To review the offences and penalties for workplace contraventions
- The rights, powers and functions of Joint Health & Safety Committee members

Content: Occupational Health & Safety Act

- Key definitions
- Duties of Supervisors & Workers
- Right to refuse unsafe work

- Stop Work Directives by Certified Committee Members
- The role of the Joint Health & Safety Committee
- Housekeeping Standards

Content: Workplace Safety & Insurance Act

- Back injuries and material handling concerns.
- Reporting requirements
- In case of injury and Form 82
- Worker responsibilities and co-operation required

Who Should Attend: Front Line Supervisors, Lead Hands, all workers and new employees

Length: Four hours

Blame And Punishment Can't Cure Rule-Breaking

Courtesy of Bonguarde Media Co. "The Safe Supervisor"

A small number of employees might follow the philosophy that rules are made to be broken. They've got little love for their jobs, bosses or co-workers.

The job clearly doesn't fit, and nothing will improve until that person finds another job, or is fired.

Many other workers also break safety rules, for various reasons, and being heavy-handed with them is no solution, says Bill Gow, a training consultant with www.CyberTrain.on.ca, a division of John A. Ford & Associates Inc. of Georgetown, ON.

"It's important to get away from blame and punishment and come to an understanding that a change in their work performance, or meeting company standards will be required," he told *The Safe Supervisor*.

Gow says even employees who are normally conscientious break the rules. They could be bored and feel unchallenged. They could be preoccupied by conflicts with their spouses, children or co-workers. They also could have been trained improperly by an unqualified person or by someone who passed on unsafe habits in the process.

Tackling safety compliance concerns requires sitting down with the employee and getting a commitment to deal with the problems, with your help.

Gow says the approach should be positive, to get the employee on board. For the employee, the rewards might include career advancement, a better salary, more acceptance and more respect from peers. For the company, benefits include better productivity, increased morale and most important, improved safety performance.

"The supervisor has to do his homework prior to sitting down and talking with the worker. He has to go back and look at the employee's past performance and the company's procedures on training standards," says Gow.

"You need to take a look at what the common rules are

that have been broken and need to be dealt with, and explain to the worker that although he felt the practice was acceptable, it was not."

Sometimes employees are ignorant of the rules and the reasons behind them. You'll need to learn why the employees were not aware, and what changes are needed to better train employees to prevent future knowledge gaps.

"You need to give people responsibility for their assignments - for example, making them responsible for the quality of the product they're turning out, for housekeeping standards, and for ensuring that the efficiency of the operation is being maintained," says Gow.

"Installing responsibility will help alleviate some of the boredom of mundane jobs, as will job rotation," he says.

If a worker seems preoccupied with a personal problem, or has alcohol or drug abuse issues, he or she should be encouraged to seek counseling through an employee assistance program or an outside agency.

An estimated 30-40 percent of workplace injuries result from chemicals such as legal medications, drugs or alcohol. "Chemicals in the system impair judgment, vision or coordination. They certainly lower your defenses," says Gow.

If intervention fails and a worker continues to break the rules, a supervisor may have no choice but to temporarily suspend, demote or terminate that person's employment.

"Both the worker and the supervisor at all levels must be committed to investing in a positive program if we are to be successful." ❧



Today's Paycheques have more deductions than a Sherlock Holmes story.

If there is anyone to whom
I owe money,
I am prepared to forget it if they are.
Errol Flynn



What Have I Learned In Life?

I've learned that, no matter what happens or how bad it seems today, life does go on, and it will be better tomorrow.

I've learned that you can tell a lot about a person by the way he/she handles 3 things: a rainy day, lost luggage and tangled Christmas tree lights.

I've learned that making a "living" and making a "life" are not the same thing.

I've learned that life sometimes gives you a second chance.

I've learned that you shouldn't go through life with a catcher's mitt on both hands. You need to be able to throw something back.

I've learned that if you pursue happiness, it will elude you. But if you focus on your family, your friends, the needs of others, your work and doing the best you can, happiness will find you.

I've learned that even when I have pains, I don't have to be one.

I've learned that whenever I decide something with an open heart, I usually make the right decision.

I've learned that I still have a lot to learn.



An Idiot decides to start up a chicken farm, so he buys 100 chickens to get up and running.

A month later, he returns to the dealer, to get another 100 chickens because the first lot had died.

Another month passes, and he's back at the dealer's for another 100 chickens. "I think I know where I'm going wrong..."

He tells the dealer, "I think I'm planting them too deep."



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WHY DO BANKS CHARGE YOU A
"NON-SUFFICIENT FUNDS FEE"
ON MONEY THEY ALREADY KNOW YOU DON'T HAVE??



Excellence Through Education

Here's a thought...

If you got into a taxi and the driver started driving backward, would the taxi driver end up owing you money??

