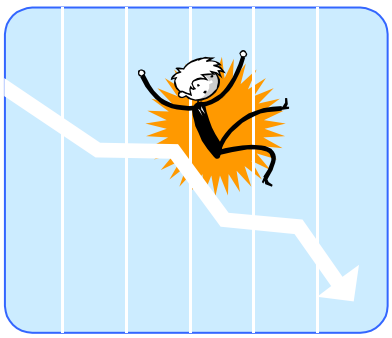
The Blue Bolt

***WINTEK* Engineering Ltd.**
Spring 2006 Edition

The intention of these articles is to inspire thought, not provide a solution. All safety design should be conducted by a professional engineer.

Reducing the Number of Lost-Time Injuries to Ontario Workers



Every day, approximately three work related injuries occur in Ontario work places. These injuries are often the result of unsafe working conditions, poor training and inexperience. For this reason the Ontario government along with the WSIB and Ministry of Labour has spent the last two years implementing their "Workplace Health and Safety Strategy".

"Fewer Ontarians are being injured at work, and businesses are avoiding huge costs. We are well on track to reduce the lost time injury rate by 20 per cent by 2008"

Announced Labour Minister Steve Peters at the annual Industrial Accident Prevention Association Conference. Peters went on to describe that there have been 14,649 fewer lost-time injuries to Ontario workers over the past two years and that as a result businesses have avoided over $960 million in costs associated with workplace injuries.

Article continued on page 3…..

TRADE SHOW TIME!!!

WINTEK Engineering will be hosting a booth at the 2006 Southwestern Ontario Industrial Show (SOIS). The show takes place:

June 7 from 9 am to 8 pm
June 8 from 9 am to 6 pm
Kitchener Memorial Auditorium (Booth 501)

Come by and talk to our engineers! We'll be glad to discuss anything that is on your mind. Whether it's a safety problem, or an introduction to other aspects of WINTEK, we'll be happy to see you!

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"Can You Hear Me?"
Factory Noise and Hearing Protection

How Loud is Too Loud? – Scientific studies have shown that people exposed to noise levels of 85 decibels and above for over 8 hours or longer will gradually lose their hearing over time. How loud is 85 dB? Well, if you have to shout to be heard by another person 3 feet from you, the noise level is probably above 85 dBA.

What Does Noise Do to Our Ears?

Excessive noise can cause damage to the nerves in the inner ear. Our ears can recover from a short exposure to loud noise, but being around too much noise over an extended period of time will eventually cause nerve damage and hearing loss. Continued exposure to workplace noise over a number of years often leads to gradual but permanent hearing loss. Below is a chart outlining different work place noise levels.

WORK NOISE	COMPARISON	dBA
Quiet Office	*Whisper*	*40*
Manual Machine Tools	*Highway Traffic*	*80*
Handsaw		*85*
Electric Drill	*Motorcycle*	*95*
Factory Machine	*Boom Box*	*100*
Woodworking Machine		*100*
Power Saw	*Car Horn*	*110*
Pneumatic Drill	*Jet Plane at Ramp*	*120*
Heavy Machinery		*120*
Chain Saw	*Auto Stereo, Max*	*125*
Air Raid	*Stock Car Race*	*130*

Article continued on page 3…..

WINTEK Announcements

As the need for safety reviews and safety circuit integration heats up due to the increasing presence of the MOL, so will the demand for our services.

If you think you will need us but are not sure when, find out about our ***SAFE-T-PLAN retainer based service****. We'll be there when you need us and can offer preferential rates over "off the street" clients.*

Contact Dave Windley or come see us at the SOIS in June for more information.

Below is WINTEK Engineering's new Logo. We will be integrating the new logo in the coming months.

The new circle aspect of the LOGO serves to represent WINTEK's ability to provide ***complete electrical engineering solutions*** *to our clients. Look for the logo in the near future. Also your comments and feedback are much appreciated.*

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ELECTRICAL ENGINEERING SOLUTIONS

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Reducing Lost Time Injuries *(…Continued from page 1)*

Included in the governments plans to reduce workplace injuries by 20 per cent by 2008 are:

- *Hiring 200 new health and safety inspectors. Of these, 131 are already working across Ontario. All 200 will be carrying out inspections of high-risk workplaces early next year.*
- *Focusing ministry inspections on firms with the highest injury rate and highest WSIB costs, up to 6,000 workplaces annually, and inspecting them up to four times a year.*
- *Giving more than 5,000 other workplaces per year a "last chance" to voluntarily improve their health and safety records with the help of the WSIB and safety professionals across the province.*

An increased number of MOL inspectors across the province means an increase in the number of facilities inspected and also in the frequency of inspections to higher risk workplaces.

How WINTEK Can Help You Stay off the Ministry's Radar

- *Wintek can perform an assessment of your facility to help you identify the equipment that is most hazardous.*
- *We can provide PHSRs on equipment and can even help develop lockout and operating procedures.*
- *Finally, Wintek can help you make any upgrades to ensure that your plant and equipment meet the applicable standards.*

Contact Wintek at wintek@wintek-eng.com for more information on plant facility assessments.

Can You Hear Me? *(…Continued from page 2)*

What Can You Do to Protect Your Employees?

- Conduct employee noise evaluations
- Reduce noise levels with reasonable controls if the eight hour average noise level exceeds 90 dBA
- Ensure employees wear hearing protection when exposed to eight hour average noise levels of 85 dBA or greater. Both ear muffs and ear plugs can reduce dBA levels by as much as 25 dBA
- Train employees on the effects of noise and use of hearing protection
- Periodically check employee's hearing with audiometric testing
- Post warning signs at high nose areas above 115 dBA

ASK THE EXPERTS

Meeting the Press Code - Hydraulic Control Reliability

What is Control Reliability?

Many are familiar with the term control reliability and some even understand what it means especially when it comes to electrical circuitry. But how does control reliability apply to hydraulic circuitry? First let's review the meaning of control reliability. A control reliable safety system is one that is designed, constructed and applied such that it is redundant with monitoring and that any single component failure (including monitoring) shall not prevent the stopping action of the equipment, in this case a hydraulic press.

How is Control Reliability Achieved Hydraulically?

There are three essential requirements for safe press hydraulic circuitry.

- *The first is monitoring of the directional control hydraulic valve. This valve is monitored to ensure that if there is a fault, a safety circuit shall generate a stop. Wintek previously published an article that talked about using pressure switches to achieve this monitoring because at the time, hydraulic valves with monitoring were not readily available.*
- *To make the system redundant there needs to be a second safety valve which must also be monitored. This second valve ensures that pressure is not supplied to the directional valve should the directional valve fail. Monitoring on the secondary valve is necessary to detect failure and safely stop the press.*
- *Finally, a pilot operated check valve with monitoring shall be placed directly on the cylinder itself to prevent the cylinder from falling due to hydraulic failure or a burst line.*

The safety control system shall be hardware-based or alternatively wired to a safety PLC. The safety control circuits shall be independent of the normal program control circuit and shall not be bypassed or removed without being detected. We await the release of the press control clock for the Jokab Pluto safety PLCs which promise to simplify safety design.

Single Cylinder Systems

For a single cylinder system, a mechanical restraint device (ratcheting system) and/or hydraulic restraint device (second cylinder attached to upper die) shall be incorporated. Why is this required? There have been known cases where the upper bolster has broken away from the single cylinder. If this were to happen in a single cylinder system without a hydraulic or mechanical restraint, a gravity fall would not be prevented.