

# The Ontario **ELECTRICAL CONTRACTOR**

Vol 55 • Issue 2 • Q2 2017

## Pre-Apprentice Program

Developing a Skilled Workforce  
at the Grassroots Level

Relationship Building Skills in  
Danger of Becoming Obsolete

Use of Drones Could be a  
Game Changer

Lockout Procedures





## Small Business Safety Solutions For Utility Contractors

Not all small businesses are the same—IHSA knows that this is especially true for utility companies. That's why we have developed occupational health and safety solutions specifically for you and your workers.

Visit [IHSA.ca/smallbusiness](http://IHSA.ca/smallbusiness) for free information about your legal rights and responsibilities as an employer or independent contractor. You'll find templates for creating your health and safety policies and programs, best practices, and required training.

Together we can keep you and your workers working safe for life.

Call us today or download your **FREE COPY** of IHSA's *Safety Talks* at 1-800-263-5024 or visit us at [ihsa.ca/smallbusiness](http://ihsa.ca/smallbusiness)



### Energy Efficient Lighting Ltd.

launched in 1990 the same year as the Hubble space telescope. Since then both have been around the block quite a number of times. Originally known for our Ultrasave brand of quality ballasts, EEL continues to apply its extensive lighting knowledge to LED technology.

We are confident that our products provide the best in customer satisfaction and will always be; **solutions closer to nature**



**THE SOLUTION IS OUT THERE**



Big solutions one little box



**A complete line of compatible products for state-of-the-art projects**  
The only collection of flat panel recessed luminaires available with patent pending design

### FLAT PANEL by EEL

The ultimate thin edge of technology:

Selected bezel design gives added strength, and accompanies the superior quality of LG chips and Mitsubishi lenses. Only 0.4" thick. Light weight makes for easy installation with an ultra modern look for grid, suspension, surface or recess mounting. 1x4', 2x2' and 2x4'



Lighting that makes life **Simple**

State of the art good looks, offers hassle free installation, requires no pot housing, air and water tight construction. This stylish fixture is perfect for wet locations such as bathrooms and kitchens. UltraThin installs directly into drywall via a pre drilled hole. Sturdy orange spring clips allow the unit to snap firmly in place and can be removed just as easy.



**good looks**  
with a 15 degree tilt  
patent pending

Perfectly positioned as an affordable recessed solution for wall washing applications and slope ceilings. The UltraThin Gimbal is dimmable, features a 15 degree tilt (forward or back) and is suitable for damp locations. With the attributes of our original luminaire, the Gimbal does not require a pot housing allowing maximum flexibility



**Diversified Light**  
patent pending

Converting conventional to inspirational LED has never been so rewarding. The UltraThin Retrofit is not a standard "one size, one shape, one colour" solution. In fact UltraThin retrofit, has more variety and colours available which allows you to upgrade to LED with confidence and style.



**Consistent Design**  
patent pending

When exploring lighting solution, consistency is critical in matching various applications of the same project. Gimbal Retrofit follows the same family trait found in all other models of the UltraThin line. Our smooth, modern flat panel, patent pending design is the common factor and key to a uniform look for new construction and renovation



**Call for your nearest distributor 905 415-8878**  
**Visit the web: [www.eelighting.ca](http://www.eelighting.ca)**

Energy Efficient Lighting Ltd. 331 Amber Street, Markham, ON, Canada L3R 3J7 Telephone: 905 415 8878 Toll Free Telephone: 855 415 8878





- CANADA -  
150<sup>th</sup>

From June 1 to August 31, 2017

# TOUCHDOWN

WITH  
THOMAS & BETTS

BUY  
OUR  
CANADIAN  
BRANDS\*

FOR A CHANCE  
TO WIN A TRIP TO THE

GREAT  
GAME!

OTTAWA - NOVEMBER 26, 2017  
OFFICIAL CFL TEAM JERSEYS  
ALSO TO BE WON.

IBERVILLE®

STAR  
TECK

MICROELECTRIC

marrette®

NuTek®

T&B Cable Tray®

\* Only boxes and covers in the Iberville  
line of products.

2017 **MADE  
IN CANADA**  
PROMOTION

With every purchase over two hundred dollars (\$200) of specified **Thomas & Betts Canadian products**, electrical contractors will get a chance to win a trip to the **final game** held in Ottawa, Ontario on November 26, 2017. Six prize packages will be awarded across Canada!

Find out more at [www.tnb150.ca](http://www.tnb150.ca).

Thomas & Betts. Your best connection for innovative solutions.

[www.tnb.ca](http://www.tnb.ca)

**Thomas & Betts**  
A Member of the ABB Group

## The Ontario **ELECTRICAL CONTRACTOR**

Vol 55 • Issue 2 • Q2 2017

From the President .....	6
Pre-Apprentice Program Developing a Skilled Workforce at the Grassroots Level .....	8
Relationship Building Skills in Danger of Becoming Obsolete How smart contractors develop others to think and act like the boss .....	12
ECAO/IBEW Shine Bright at the 2017 JUNO Awards .....	16
Use of Drones Could be a Game Changer in Power Line Investigations and Maintenance .....	18
Data Breaches an Increasing Risk for Businesses Large and Small .....	22
Lockout Procedures Know what you're up against .....	24
ECAO Receives COCA Chair's Award .....	25
Know the Requirements for the Installation of Pools, Spas and Tubs near Powerlines .....	26
Your Employee Assistance Program .....	28
Professional Services Directory .....	30



The Ontario Electrical Contractor is printed on 10% post-consumer FSC certified paper using soya based inks. When necessary to mail an issue in an enclosure, we use an environmentally-friendly, 100% oxo-degradable poly-wrap.



The Ontario Electrical Contractor is published quarterly for:

### ECAO

ELECTRICAL  
CONTRACTORS  
ASSOCIATION OF  
ONTARIO

10 Carlson Court, Suite 702  
Toronto, Ontario M9W 6L2  
Tel: (416) 675-3226  
Fax: (416) 675-7736  
(800) 387-ECAO (3226)  
[ecao@ecao.org](mailto:ecao@ecao.org)  
[www.ecao.org](http://www.ecao.org)

#### ECAO EXECUTIVE COMMITTEE

**President:** Dan Lancia,  
Holaco Installations Limited, Hamilton

**First Vice-President:** Mark Lloyd,  
T. Lloyd Electric Limited, Hamilton

**Second Vice-President:** Brad Walker,  
Laframboise Group Ltd., Cornwall

**ETBA Chair:** Chris Cimek

**Treasurer:** Doug Dinniwel, Western  
Mechanical Electrical Millwright Services Ltd.

**Executive Director:** Jeff Koller  
The Ontario Electrical Contractor is the official publication of  
the Electrical Contractors Association of Ontario. Its purpose  
is to provide information and editorial comment on issues  
that are relevant to the electrical contracting industry.

#### Publisher

Robert Thompson

#### Senior Editor

Ali Mintenko-Crane

#### Sales Executives

Nolan Ackman,  
April Kryswaty, Mike Manko,  
Jack Smith, David Tetlock

#### Design Specialist

Kelli McCutcheon

#### Published by:

**MediaEdge**  
[mediaedgepublishing.com](http://mediaedgepublishing.com)

33 South Station Street  
North York, ON M9N 2B2  
(866) 480-4717  
Email: [robertt@mediaedge.ca](mailto:robertt@mediaedge.ca)

531 Marion Street  
Winnipeg, MB R2J 0J9  
(866) 201-3096  
Fax: (204) 480-4420  
[www.mediaedgepublishing.com](http://www.mediaedgepublishing.com)

#### President

Kevin Brown

#### Senior Vice-President

Robert Thompson

#### Director, Business Development

Michael Bell

#### Branch Manager

Nancie Privé

All rights reserved. The contents of this publication may not  
be reproduced by any means, in whole or in part, without  
the prior written consent of the association.

PUBLICATION MAIL AGREEMENT #40063602

Return Undeliverable Items to: Electrical Contractors Association of Ontario, 10 Carlson Court, Suite 702 Toronto, Ontario M9W 6L2





# FROM THE PRESIDENT, DAN LANCIA

## A special thanks to ECAO's many volunteers

At this time of year association life typically slows down a bit as summer approaches. Many local area Electrical Contractors Associations hold their annual meetings now and some have invited ECAO to attend. What these opportunities have reminded us of is the tremendous amount of personal time that so many donate to both their local associations and to ECAO, serving either on our Board of Directors, the Electrical Trade Bargaining Agency, or any of the many regular industry or association committees that happen year-round.

These individuals take time away from their businesses and families to try to make the industry better for everyone, and they deserve our gratitude. We spend so much time with them that we sometimes forget that they are volunteers. But that is what they are and we are fortunate to have them as we benefit from their experience, knowledge, and wisdom.

One such volunteer is the president of Birnie Electric, which just celebrated its



Tim Birnie (centre) presents a cheque to SickKids Hospital staff for \$20,400 as part of the company's 50th anniversary celebration.

50th anniversary as a business. There aren't very many family-owned electrical contracting businesses that have survived intact with their original name for that period of time in this world of mergers and acquisitions and buyouts and takeovers. Company employees, past and present, came together for a celebration at the Credit Valley Golf and Country Club on April 1 for a celebration that included Mississauga Mayor Bonnie Crombie. The evening included a silent auction which raised \$20,400 for the burn unit at the Hospital for Sick Children in Toronto.

Congratulations to Tim Birnie for continuing to build on the legacy started by his father Peter in 1967, and for continuing to grow and keep the business competitive in an increasingly challenging business environment. Here's to the next 50 years.

\*\*\*

ECAO has been working with a web design company for the past few months to overhaul and redesign our website, and we will be ready to share the results of that effort very soon. It will have a completely new look, be easier to navigate, be more mobile friendly and we will be able to update and make changes to it ourselves, which will make it more responsive and allow us to keep it up to date. We should also be able to properly utilize the Members' Only and Directors' Only sections the way they are intended to be used, and have direct links to the Certi-fire website and the Working at Heights health and safety training database.

We are currently updating our bylaws so that they make sense and reflect current practice, and we will try to conduct ourselves according to those bylaws once that process is complete.

At the time of writing, the final touches are being put on our annual conference in Munich, Germany in May. We fell short of our partnership goals in securing sponsorships from suppliers, distributors and manufacturers, but we still expect the conference to be a great experience for all who are able to join us. What we have learned from our efforts is that we will have to build better relationships with our suppliers to provide more information about who we are and the members we represent, and start planning well in advance of the next conference. Our ambitions for this year's conference were a good first step that we can build upon for future events.

\*\*\*

As we continue to refine and refocus our priorities on providing value to our members, we are also trying to make the magazine and E-newsletters more professional by providing timely and relevant stories that people want to read. In this issue, you'll find an article on Toronto's pre-apprenticeship program and how that can be advantageous both for electrical contractors and for those considering entering the trade and becoming an electrician.

There's also a great article by Nic Bittle, one of the keynote speakers at our conference and the author of three books on developing our current and next generation workforce for the challenges and responsibilities that lie ahead. We are also planning a professional development seminar with Nic in September called *A Foreman's Field Guide to Developing Your Workforce*. Other articles include an overview of ECAO and IBEW's joint sponsorship at this year's Juno awards, and an article on the latest use of drone technology in our industry.

If there are topics of interest that you would like to read about, I encourage you to contact the ECAO office.



### Innovative Environmental Solutions

- Transformer & Oil Recycling/Removal
- Hazardous/ Non-Hazardous Waste Disposal
- Waste Electrical & Electronic Equipment
- PCB & Non-PCB Site Services
- Product Destruction
- Substation & Site Decommissioning
- Equipment Dismantling
- Recycling Programs
- Environmental Assessments & Audits
- Asset Recovery & Sales



www.skipwith.ca



Reliable, friendly and knowledgeable

### AS A PROUD ECAO ASSOCIATE MEMBER WE CAN SAVE YOU MONEY!

1-3 Employees - Flexibility and low cost options  
4-250 Employees - Match current or design your own plan  
One contact - daily support, booklets, coverage, claims, invoicing

**NO COST TO QUOTE - JUST CALL US  
705-734-6279 or 1-800-661-9023**

info@skipwith.ca



# PRE-APPRENTICE PROGRAM

## Developing a Skilled Workforce at the Grassroots Level

By Kevin Vallier

The IBEW prides itself on their commitment to quality work, safety and high standards, as do the contractors they work for. To achieve this culture it must start at the apprentice level. In fact, some would argue it begins earlier than that.

That's one of the reasons the Greater Toronto Electrical Contractors Association (GTECA), in partnership with IBEW Local 353, established the Joint Apprenticeship Council (JAC) more than four decades ago. The JAC is comprised of an equal number of representatives from the GTECA and Local 353 with a mission

to recruit, select, assess, counsel and educate electrical apprentices specifically within the Greater Toronto Area, including Parry Sound, Trenton and Oakville.

More than 1,100 aspiring electricians applied for the program in 2015. Annual intake is based on industry needs and the number of pre-apprentices is determined by a local joint conference board. Last year the JAC decided not to have an intake due to decreased industry demand, but this year applicant numbers exceed 900.

The program provides the pre-apprentices an opportunity to see the industry at the workplace level. Aspiring electricians can better determine if this truly is the skilled trade for them after they have been on site and seen with their own eyes the reality of the job. It's an easier way to enter and exit the industry before the significant investment of real training takes place. In other words, a feeling out process for both the contractor and the pre-apprentice.

The intake process itself takes approximately six weeks and involves a number of aspects



including: completion of an in-person application with presentation of required documents (resume, Ontario High School Diploma and official high school transcript); completion of a computerized Mechanical Aptitude Test; and taking part in a job awareness activity such as climbing an extension ladder, 8' platform ladder installation or using appropriate personal protective equipment. If the candidate successfully fulfills these requirements they are invited to move onto the personal interview at the JAC office. The final step sees the candidates ranked and put into a selection pool where they are called (based on that ranked position as the manpower needs of the industry dictate), to take the Safety and Orientation, Material and Tool Identification, and First Aid courses. Upon passing those three courses they are placed with a contractor by the IBEW Local Union 353, where they will begin their 1,800 hour Pre-Apprenticeship.

After completion of the Pre-Apprenticeship, a Registered Training Agreement (RTA) is signed and their first term of the indentured apprenticeship begins.

It's a thorough process but as Erik Hueglin, Director of Apprenticeship for the JAC, points out, there is a reason for the extensive application procedure. "Our experience in processing thousands of apprentices has told us that applicants that do not have the required education will not be successful at trade school," explained Hueglin. "The educational requirements were developed in consultation with the education community to verify the content of the specific courses, and we've determined the courses have the content that supports the base knowledge required by construction electricians," he added.

GTECA Executive Vice-President Bob O'Donnell says contractors have greatly benefited from the program, allowing new workers in the industry to familiarize themselves with the work environment. "Contractors and foremen have the opportunity to assign pre-apprentices more entry-level tasks, like material handling and clean-up, and assisting more experienced crew members, which in turn allows senior apprentices and journeymen to focus more on the higher skilled work, resulting in contractors being more productive and competitive," said O'Donnell.

It's important to note that acceptance into, or completion of, the pre-apprenticeship program does not mean automatic acceptance into the electrical apprenticeship program. Candidates who successfully complete the pre-apprenticeship program and wish to pursue an electrical apprenticeship are still required to adhere to the existing entry process established by the local area JAC.



## TOROMONT CAT POWER SYSTEMS THE POWER TO BE PREPARED

- 24/7/365
- Generators 20kW-2000kW
- Load banks
- Transformers
- Distribution equipment
- Transfer switches
- Temperature control equipment

### 1600 DEALER OUTLETS

Delivers the power you need, when you need it, where you need it. Trust Toromont Rental Power to deliver the equipment, manpower, service and confidence you expect from Cat.

**24 HOUR** CALL US ON OUR RENTAL HOTLINE  
**1-866-667-5544**



powersystems@toromont.com  
www.toromontpowersystems.com



Pre-apprentices with the Joint Apprenticeship Council learning the skills they need to know as they move towards journeyman status and a career as a certified electrician (also pages 9 & 10).





Equally as important to note is that pre-apprentices are paid employees, unlike non-union, OYAP and College pre-apprentice programs.

The program is divided into classroom and on-the-job training. Classroom instruction covers electrical construction terminology, safety and orientation, job site roles and responsibilities, electrical material identification and handling, hazard identification, as well as use and care of electrical tools and equipment.

On-the-job training, which makes up 80 per cent of the overall experience, includes: unloading and unpacking electrical materials; on site electrical material inventory control and traffic; supplying crews with electrical materials



and equipment; electrical area job site clean-up and salvage material management; as well as basic electrical work under the direct supervision of three journeymen to one apprentice.

All candidates will have their own counsellor with a personalized training plan who will monitor and record the apprentices' progress while providing life skills counselling. The applicant is evaluated at the conclusion of the one-year probationary period and, if selected, would then begin their apprenticeship.

Those involved with the program are finding that the next generation of potential electricians have a different perspective on a career in the trades.

"We are finding in the last few years that new candidates are less sure of what career they want," said O'Donnell. "It could be a generational thing, but we are finding that more pre-apprentices are voluntarily exiting the program and we also have more pre-apprentices quit that have the skills, but just not the interest in pursuing it as a career."

The success of the electrical contracting industry rests on a skilled workforce and the effective management of that workforce, while at the same time continually adapting to demands, new technologies and competitive pressures of the market. The pre-apprenticeship program can play a key role in the development of that skilled and competitive workforce.

**MERSEN**  
**SURGE-TRAP®**  
**UL/CSA TYPE 1**  
**SPD LINE**

EP.MERSEN.COM

**MERSEN**  
Expertise, our source of energy

**Electrical Engineering Technician, Technology, and Electrician Graduates Ready to Hire.**

The next generation of **Electrical Engineering Technicians, Technologists, and Electricians (309A)** are being trained right now at Centennial College.

Our Co-op Diploma Apprenticeship program is the **only one of its kind in the province** offering both apprenticeship training and a college diploma.

Students complete Levels 1 to 3 of their theoretical and practical training for the Electrical trade (309A). Upon completion, students graduate with Co-op work experience as well as an Electrical Engineering Technician Diploma with training on Power Generation and Distribution, AutoCAD, Project Management and Development, and other Electrical related courses.

Talented graduates are available!

**To learn more**

- Visit: **centennialcollege.ca/electrician-construction**
- Call: **416-289-5000, ext. 2356**
- Email: **coda1@centennialcollege.ca**

**See where  
experience  
takes you.**





The "Boss Man," Nic Bittle, will be delivering a seminar on Sept. 28 at ECAO's office – *A Foreman's Field Guide to Developing Your Workforce*.

# Relationship Building Skills in Danger of Becoming Obsolete

# How smart contractors develop others to think and act like the boss

Many electrical contractors are asking themselves: Who will my next generation of leaders be? Who will replace those in my organization who will retire in the years ahead? What will our workforce look like in the future?

If you have asked yourself these questions, you are in good company. When we look at the volume of talent that is retiring in the next four to 14 years and then at the level of commitment and experience of those now entering the workforce, our concern is warranted.

I catalogue many of the issues I see in our workforce as The Four Core Competencies:

## Communication

**The Shift** - How young men and women communicate today is completely different from those who entered the workforce 30 years ago. Face-to-face and voice-to-voice conversations are becoming a thing of



the past. (This is not a good change, by the way.) Their ability to accept constructive criticism or deal with conflict is significantly diminished. Conversations that once took place in person or on the phone are being replaced with text messages and an unmanageable number of emails. The quantity of information, often unnecessary, is trying to replace the good old-fashioned conversation.

**The Problem** – Take away one’s ability to have a meaningful face-to-face conversation with another person, and you take away that person’s ability to build a relationship. Most of those who prefer text and email claim it’s more efficient or just a personal preference. There is a time and place where text and email chains are the perfect way to “deliver information.” Building relationships is different. Business follows relationships. Take away your ability to build a relationship with another person, and you may cripple your ability to perform at your best. Today’s leaders rely heavily on relationships for success, but for a large part of the next generation entering the industry, this skill is becoming obsolete.

## Self-Leadership

**The Shift** – Self-leadership is about leading oneself, not someone else. It takes one set of skills to lead a group of men on the battlefield or on the job site. It takes a completely different set of skills to show up on time or put away your personal cell phone for the whole day.

**The Problem** – Many of our organizations are trying to figure out how they are going to train this next generation of leaders when they have not developed a level of self-leadership in our workforce. The cell phone issue is not a technology issue. Having a member of your crew on Facebook or texting his girlfriend constantly is not a technology issue. This is an integrity issue. If the cell phone itself were the problem, then everyone with a cell phone would have the same behaviour.

## Professionalism

**The Shift**—The construction industry already has a tough reputation with regards to professionalism. We have guys who look like they got dressed out of their glove box and smell like they slept under a bridge last night. When I ask about their basic appearance, behaviour, or general odour, I often hear, “This is how I roll, and I do damn good work, so it shouldn’t matter.”

**The Problem** – It does matter. The individual who doesn't care about their professionalism fails to realize that they are representing more than just themselves. They are representing the trade, the company they work for, and their Local if they are a member. This is damaging our reputation, which damages our ability to be successful.

## Entrepreneurship

**The Shift** – Entrepreneurship includes basic knowledge around how man-hours are created. We are seeing a generation of people entering the workforce who are entitled and do not care whether the contractor is successful. They do not understand how many hours a contractor must generate to replace the \$300 drill they just lost. When I ask a room full of apprentices how much money a contractor makes on a million-dollar job, the number one answer is “one million dollars.”

Take away one's ability to have a meaningful face-to-face conversation with another person, and you take away that person's ability to build a relationship.

**The Problem** – The contractors’ margins are getting tighter. The work schedules are getting compressed. The little mistakes are adding up, and those mistakes are proving to be catastrophic. Basic business sense and personal financial responsibility are becoming lost arts.

These are the four core competencies we must begin to develop in our workforce if we want to be successful in the future. Most would say the issues above fall under the umbrella of “common sense,” but common sense isn’t all that common anymore.

Take a look at your organization. Once you remove those who will retire in the next four to 14 years, who will take their place? And then who will take their place? The smart contractors are the ones who are working every day to develop not only their crews, but also tomorrow's leaders.

*Nic Bittle will be hosting a seminar, A Foreman's Field Guide to Developing Your Workforce, on Sept. 28 at ECAO. Email [ecao@ecao.org](mailto:ecao@ecao.org) to register.*

*Nic Bittle is the founder of Work Force Pro and works with contractors that want to prepare and develop their workforce to lead with impact, act like a pro, and perform at their best on a daily basis.*



**Used/refurbished power equipment specialists**

---

**Transformers (in stock 100 KVA to 60 MVA)**

- Liquid filled & dry type
- Rewind & repair shop / Emergency rentals

**Switchgear**

- load break switches (5, 15, 25, 35kV)
- 600V air circuit breakers (all makes & models)
- circuit breakers 5kV to 230 kV
- medium voltage starters (all makes)
- parts: Ct's, Pt's, fuses, relays

**We sell, rent & repair / We buy your surplus**











1-800-265-5608 / (450) 772-5608 / St.Pie, QC

[www.mgbtransformers.com](http://www.mgbtransformers.com)





YEARS  
OF BUSINESS  
EXCELLENCE  
1967-2017

Proud to be celebrating a half century of business excellence.

What started with one man 50 years ago is now one of Canada's Best Managed Companies, COR certified, and voted Canada's Safest Employer in the utility sector. K-Line is one of the first contractors in Ontario to earn the Sustainability Award through the IHSA and is certified to both ISO 9001 & OHSAS 18001. A special thank you to the K-Line team, customers, and utility partners for making the first 50 years a great success.

[www.k-line.ca](http://www.k-line.ca)



Here's to the  
next 50 years!

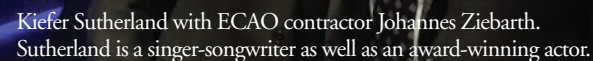


By Jennifer Priest



Kardaras and Ziebarth had a chance to speak with JUNO nominees, top Canadian music industry executives, and even actor/singer Kiefer Sutherland.

The Juno Awards event was the start of a campaign to help the public understand the value of electrical work in many aspects of our lives.



16

© 2015 Aclimation Industries, Inc.





# Use of Drones Could be a Game Changer

## In Power Line Investigations and Maintenance By Kevin Vallier

The popularity of unmanned aerial vehicles (UAV), commonly referred to as drones, is sky high. No longer just a function of military intelligence gathering or deployed as military weapons, UAVs have expanded into commercial and recreational use in huge numbers.

During the past couple of years they have also been used in the electrical industry to investigate powerline damages or for regular powerline maintenance assessments.

Windsor was one of the first cities in Ontario to use drones for infrastructure assessment and inspection.

After six months of working with Transport Canada, Enwin Utilities received a standing Special Flight

Operations Certificate to fly drones for use in infrastructure inspection and maintenance. The utility company can

Many electrical contractors who specialize in line work see great potential in the use of remote-controlled drones

use the small flying machines to check transformers, powerlines and other infrastructure necessary to maintain

the safety and reliability of the local distribution system.

If the power does go out, the utility can use the drones to locate and assess the cause, without the time and expense of sending out a helicopter. This will also improve response times, and help avoid potential emergency situations.

They must work within Transport Canada guidelines, which authorize flight over public property and easement areas, photographing and transmitting images of the equipment and infrastructure owned by the utility.

Safety is always a top priority in working with electrical power, and post-storm scenarios are often fraught with danger. With the help of drones, workers

will be able to assess damage safely and quickly, from afar.

The longer drone flights can cut costs of inspections which typically involve the use of helicopters for such operations, and provide better images and data. Helicopter fly-bys go quickly because they cost so much per hour. If you have a hovering operation (with a drone), you can take more detailed pictures.

Concerns over safety also drive interest in drone operations. Hovering in a helicopter next to a transmission line with people in it is one of the riskier things you can do.

Enwin is also able to pass on information about electrical fires, downed wires and other potential hazards to local fire and rescue services.

Sudbury Hydro has also used drones to examine the conditions of their powerlines. The utility thinks the unmanned aerial vehicle, comparable to a fancy remote-controlled helicopter, might be a useful tool in its field work. It could be particularly beneficial in northern Ontario where lines are often found in densely forested areas or other hard-to-access places where there might be some hot spots difficult to see with the naked eye.

Of course, privacy is always a hot button issue when it comes to the use of drones. Sudbury Hydro sent a letter to residents of Copper Cliff to let them know the drone would be flying over the community, assuring residents that their privacy will be protected, as the drone would only focus on hydro lines.

While the use of drones in Canada is still fairly limited by regulatory and licensing parameters, Transport Canada has acknowledged that UAVs operate in diverse environments and in high risk roles, including but not limited to telecommunications relay platforms, survey and inspection of remote power lines and pipelines as well as emergency and disaster monitoring.

Electrical contractors who specialize in line work see great potential in the use of remote-controlled drones to do the often-dangerous work of inspecting power

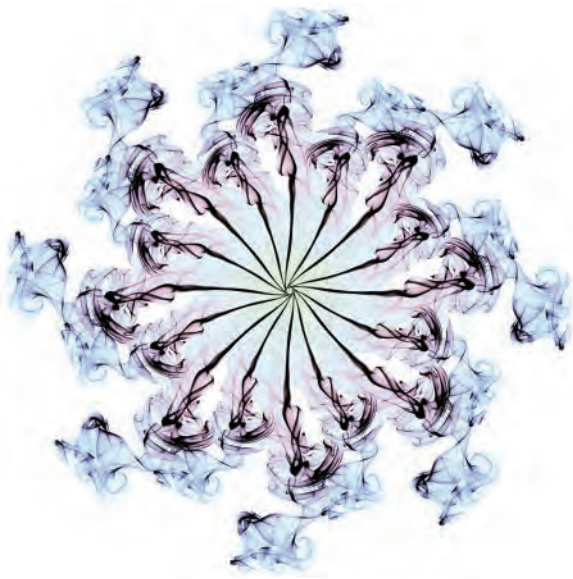
lines and transmission towers, but strict regulations have so far slowed adoption of the technology.

The remote-controlled devices make the work of linemen safer, more efficient and less expensive, according to the American based non-profit research group Electric Power Research Institute.

Utilities spend millions of dollars inspecting power lines, which are often in hard-to-access places. In North America

the industry has been interested in the potential use of drones for years, but has been slower than European companies to adopt the technology because of tighter regulatory restrictions in both Canada and the United States.

While hobbyists can fly drones without certification, the Federal Aviation Administration in the U.S. requires special certification for commercial users. There are numerous conditions and limitations:



### Numbers speak louder than words. They also whisper if you listen carefully.

It's not about seeing the obvious. It's about having the vision to see beyond. To see both the obstacles and the opportunities. To recognize the risks and the rewards. As Canada's leading independent actuarial consulting firm, Eckler has been helping multi-employer pension plans manage uncertainty for more than 70 years through the delivery of informed and unbiased advice. It's all about innovation and creativity – and the discipline to get the numbers to reveal the bigger picture.

Visit [eckler.ca/innovation](http://eckler.ca/innovation) - we'll help you hear what the numbers are really saying.

**Eckler**  
CONSULTANTS + ACTUARIES

Vision Accomplished.™





TOTAL FLEET  
MANAGEMENT



Vehicle Selection

Any make, any model, new or used.



Lease Structure

Customized lease terms that match your unique needs.



Fleet Operations

Always available, one-on-one service means problems are taken care of.



Customization & Delivery

Need upfitting or branding? Let us take care of it for you.



Fuel & Maintenance

Our Fleet Card offers you access to 1,000's of fuel & maintenance vendors.



Remarketing

Our expert team will ensure you maximize your resale value.

Jim Pattison Lease delivers flexible and leading edge vehicle leasing and fleet management solutions. With a total fleet management philosophy, we take care of you at every stage, making your job easier.

 **Jim Pattison Lease**  
Canada's Leader in Customized Fleet Management  
Find out more: [www.jimpattisonlease.com](http://www.jimpattisonlease.com)

The drone operator needs a pilot's licence, the aircraft must weigh less than 55 pounds, flights can go no more than 200 feet above the ground, and the drone must be operated in the pilot's line of sight.

The FAA treats the operation of drones like any other aircraft for safety reasons, and commercial operators face strict rules for getting permission to use them, according to the agency.

Despite the strict regulations, more than 20 utilities have tested unmanned aerial vehicles for inspecting transmission and distribution lines for damage from storms and normal wear and tear. The new rules allow companies in the electric power and other sectors to fly drones weighing no more than 55 pounds below 400 feet without obtaining a waiver from the FAA.

Here in Canada there are different rules and regulations depending on if you are flying a drone for recreational purposes versus research, academic, or commercial reasons. The Canadian government, through Transport Canada, has primary jurisdiction over the regulation of UAVs in this country. All commercial operators of UAVs must obtain a Special Flight Operations Certificate (SFOC) from Transport Canada prior to use unless an exemption applies. There are a number of SFOC application processes depending on the nature and use of the UAV. The more complex and risky the proposed operation, the more thorough and onerous the SFOC application process is.

There are those in the industry who picture a day in the not-too-distant future when line companies could put some of the smaller drones on every single company truck, so that when they go to sites, they could zip it up and down a pole to do inspections that would normally require someone climbing to the top and back. With thousands of miles of transmission lines and distribution lines in Ontario, there are limits to visual-line-of-sight inspections.

Companies in this line of work still have some way to go before they incorporate drones as a regular part of their operations, but clearly regular use of UAVs is on the horizon.

# IBEW Construction Council of Ontario

John Grimshaw, Executive Secretary Treasurer  
James Barry, Executive Chairman  
Lorne Newick, President  
John Bourke, Vice President  
Steven Martin, President, Power Council  
Glen Drewes, Vice President, Power Council

Representing 11 IBEW Local Unions  
across the Province of Ontario  
serving over 17,000 Electricians,  
Communication Workers and Linemen

IBEW CONSTRUCTION  
COUNCIL OF ONTARIO  
209-61 International Blvd.  
Toronto ON M9W 6K4  
Tel: 416-674-6940

105 HAMILTON  
Lorne Newick, B.M.  
Stuart McLellan, Pres.  
Tel: 905-387-1721

115 KINGSTON  
Bill Pearce, B.M.  
Jason Kish, Pres.  
Tel: 613-547-4115

120 LONDON  
John Gibson, B.M.  
Jim Dumaresq, Pres.  
Tel: 519-652-2929

303 ST. CATHARINES  
Mark Cherney, B.M.  
Rob Wall, Pres.  
Tel: 905-354-4303

353 TORONTO  
Steven Martin, B.M.  
Robert White, Pres.  
Tel: 416-510-3530

402 THUNDER BAY  
Glen Drewes, B.M.  
Gary McMahon, Pres.  
Tel: 807-623-5759

530 SARNIA  
Mick Cataford, B.M.  
Frank Harris, Pres.  
Tel: 519-344-4154

586 OTTAWA  
John Bourke, B.M.  
Bruce Parsons, Pres.  
Tel: 613-741-5664

773 WINDSOR  
Karl Lovett, B.M.  
James Dodman, Pres.  
Tel: 519-948-2221

804 KITCHENER  
George Couch, B.M.  
Mark Watson, Pres.  
Tel: 519-648-3993

1687 SUDBURY  
Bruce Palmer, B.M.  
Trevor Almenar, Pres.  
Tel: 705-566-1687

INTERNATIONAL OFFICE  
Bill Daniels, IVP  
Tel: 905-564-5441





# Data Breaches an Increasing Risk for Businesses Large and Small

By Mauro Di Tullio

In the current era of smartphones and “The Internet of Things,” cyber breaches are becoming more and more common. Searching “data breach” into Google News will land you roughly 1,870,000 results. Entities both big and small are becoming targets of cyber-attacks. Just ask the Internal Revenue Service south of the border, who were recently hit with a cyber-breach that resulted in the personal data of more than 100,000 people being exposed to cyber criminals.

A recent study from Ponemon Institute – an independent research company focusing on privacy, data protection and information security policy – and IBM revealed that the average cost of a data breach has increased 23 per cent over the past two years, with the average cost per record lost or stolen rising from \$145 last year to \$154 this year. Note that these average costs do not take into account mega-breaches such as those suffered by JPMorgan Chase, Home Depot, and Target.

The healthcare and education industries are the most at risk for costly breaches, with average costs roughly twice as much as the total average.

Derek Browne, Chief Information Security Officer for Northbridge Insurance, has provided us with key points, both good and bad, that Canadians should take away from the Ponemon report.

- **The good news:** “Canadian businesses are least likely to be breached globally (along with Germany).”
- **The bad news:** “If they do experience a breach, it is most likely a malicious attack rather than glitch or human error.”

A recent survey from PricewaterhouseCoopers found that 88 per cent of Canadian private companies agreed or

strongly agreed that cybersecurity is an important issue, yet 42 per cent of respondents have never conducted formal cybersecurity employee training. On top of that, 52 per cent of respondents feel that employee training related to cybersecurity isn’t a top priority for their business. This can be attributed to the fact that businesses view investing in cybersecurity as a discretionary cost, not a business enabler. Canadian business owners need to shift their mentality and acknowledge that cybersecurity should be viewed as an imperative business investment.

Clearly, all Canadian businesses would do well to increase their cybersecurity awareness. We can expect ongoing active communication on the subject including moderated forums, industry conference seminars and trade publication articles. Taking note and conducting some internal company brainstorming can help tackle this issue. The exposures should also be reviewed by your risk management specialist.

Browne refers to a report from global management consulting firm McKinsey & Company which analyzes and discusses the cyber risks that are prevalent in today’s digital age.

Browne’s key takeaway from this report: “79 per cent of North American companies self-assessed that, on a scale of one to four, they were below a two in terms of cybersecurity maturity.” It seems clear that Canadian companies need to become more and more proactive in their cybersecurity defences if they wish to remain unscathed in today’s Internet-centred era.

It’s not just large corporations that have to worry; smaller companies aren’t immune to cyber-attacks either. Just as an example, two Ontario companies were hacked within the last year costing each company thousands of dollars. The hackers lock the company server and essentially demand a ransom be paid to unlock it.

Insurance companies are now offering coverage for this type of incident at a cost of around \$100 per year depending on the company and extent of the coverage.

*Mauro Di Tullio is the Senior Account Representative for Associations at Federated Insurance.*



**NEW!**

**REDLITHIUM™**

**HIGH DEMAND™ 9.0**

## SHATTERING CORDLESS EXPECTATIONS



M18™ REDLITHIUM™ HIGH DEMAND™ 9.0 BATTERY PACK (48-11-1890)

UP TO  
**5X**  
MORE  
RUN-TIME

UP TO  
**35%**  
MORE  
POWER

RUNS  
UP TO  
**60%**  
COOLER



M18 FUEL™ 7-1/4" Circular Saw Kit (2731-22HD)



M18 FUEL™ SAWZALL® Recip Saw (2720-22HD)



M18 FUEL™ 1-9/16" SDS Max Rotary Hammer Kit (2717-22HD)



M18 FUEL™ SUPER HAWG™ Right Angle Drill Kit w/ QUIK-LOK™ (2711-22HD)





# Lockout Procedures

Know what you're up against

By Workplace Safety & Prevention Services

The key to preventing lockout incidents, says WSPS consultant Michael Wilson, is understanding which hazardous energies you are dealing with. Up to eight potential sources must be controlled tools before a worker can safely carry out maintenance and repair tasks.

"If you take a look at incidents, very often you can trace root causes back to not being ready for the job, not appreciating what you are up against," he says.

So how does an employer ensure workers are ready? Wilson provides tips and advice in an impactful video, *Machine Safeguarding – Control Hazardous Energy with a Lockout Program*.

## 6 steps to lockout

In the video, he lists the six basic steps in a lockout program:

- identification of machinery to be locked out;
- proper shutdown sequence;
- isolation of hazardous energy;
- control of any stored energy;
- lockout; and
- verification of control.

These steps are the heart of a lockout program, but as Wilson explains, there's more to keeping people safe. To watch the video visit [www.wspss.ca/Information-Resources/Videos](http://www.wspss.ca/Information-Resources/Videos).

## Identify energy courses

A critical first step before implementing a program and training workers, says Wilson, is to inventory all energy sources connected to your machines. These sources may not be obvious.

"Whenever we do lockout training, participants typically identify just three possible energy sources. But there are actually eight, which we discuss in the course: electric, thermal, hydraulic, chemical, radiation, gravity, compressed air, and kinetic."

How do you conduct an inventory? "Start with the manufacturer's information manuals. Your maintenance, engineering and operations staff would certainly be able to tell you what energy sources are in play. And of course, you can always invite WSPS consultants to help you with this task."

## Establish procedures

Once you know what you're dealing with, create step-by-step procedures for controlling hazardous energy in your equipment prior to conducting maintenance, he says.

Workers executing lockout should have knowledge, training and experience relating to these steps and to the sources of energy they are dealing with. "Don't forget about supervisors. They also need to be aware of lockout procedures to ensure workers follow the process," he adds.

Developing machine-specific lockout instructions is a wise practice, especially when posted on individual placards for each machine. "It's a nice little review of training," says Wilson. "For example, workers can go up to the placard, and say, 'Okay, here are the energy sources I am dealing with, and I need this many locks, I shut down the electrical over here, and I shut down the air over there.' As a result, they're better prepared to do the job."

## Verify control

The last step in the lockout process is to check that you are actually in control of the equipment. "I advise employers and workers to take a second and try to start it. Try to operate it, to make sure you are truly in control of that machine before you stick a hand or arm inside."

## How we can help

Watch the *Machine Safeguarding – Control Hazardous Energy with a Lockout Program* video.

Take a training course: Lockout/Tagout Safety Essentials, a 1/2 day course available in a public classroom or on site, outlines a comprehensive process for creating a program based on CSA standard Z460.

Talk to a WSPS machine safety expert. We can help you conduct hazardous energy inventories and develop your lockout/tagout program and procedures.

# ECAO Receives COCA Chair's Award



ECAO was honoured to receive the 2016 Chair's Award from the Council of Ontario Construction Associations (COCA) at their Annual General Meeting held this past February. The Award is presented at the discretion of the Chair and recognizes a volunteer or an organization whose contributions to the success of COCA go above and beyond what is normally expected.

*Pictured in photo from left are: Gary van Bolderen, COCA Board Chair and Jeff Koller, ECAO Executive Director.*

Intertek is pleased to offer field labelling and inspection for both electrical equipment to SPE-1000 as well as medical electrical equipment to SPE-3000. The ETL mark on our Special Inspection label is visual proof to inspectors, or AHJ's, that the product meets nationally accepted standards. Its unique serial number documents your product's compliance and is recorded in your report.



## Field Labelling of Electrical Equipment & Medical Electrical Equipment



To schedule a special inspection in Ontario please call 905-678-7820, email [sarah.martin@intertek.com](mailto:sarah.martin@intertek.com) or visit [www.intertek.com/inspections](http://www.intertek.com/inspections)



# Know the Requirements for the Installation of Pools, Spas and Tubs near Powerlines

By Patrick Falzon, Powerline Safety Specialist, Electrical Safety Authority

Section 68 of the Ontario Electrical Safety Code (OESC) has safety requirements for the installation of pools, spas and hot tubs near or under powerlines.

## Overhead Powerlines

Overhead primary (above 750V) powerlines are typically bare conductors, whereas secondary powerlines (below 750V), may be insulated. However, the insulation of these conductors may fray or crack due to harsh environmental conditions such as snow, ice and scorching heat; therefore, it's always the safest assumption to consider all power lines as non-insulated.

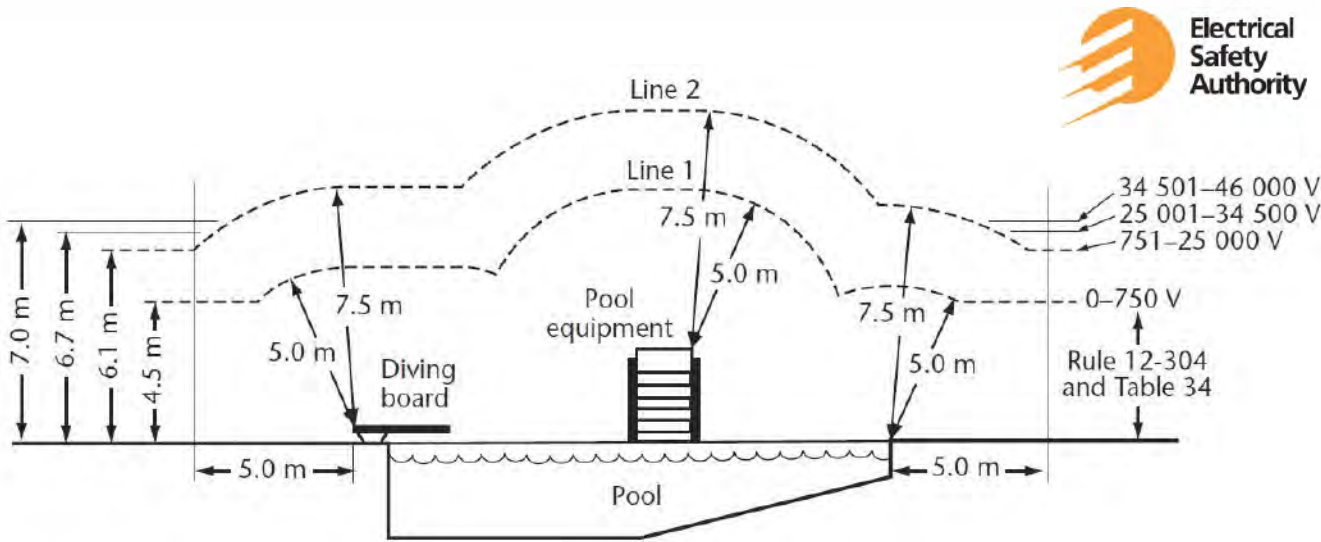
Any conductive object (i.e., pool skimmer or ladder) that makes contact with these lines or jump ("arc") may become energized and can seriously injure or kill people around it.

Rule 68-054(1) does not permit a pool to be placed under or near overhead powerlines or permit overhead powerlines to be placed over or near a pool. Rule 68-054(2) goes further to include elevated surfaces associated with the pool such as diving structure, slide, swings, observation stand, tower or platform.

However, sometimes this is unavoidable due to limited space on the property. There are exemptions in the rule that under certain conditions will permit a pool to be placed under or near overhead powerlines. Diagram 1 (Appendix B note) clearly illustrates the exemptions to the rule.

Diagram 1: Clearance for overhead lines on, over and around pools

Note: No conductors would be permitted under any circumstances in the area under Line 1.



## Underground Powerlines

Rule 68-056 requires horizontal separation between the inside walls of the pool and underground powerlines. The horizontal separation shall not be less than that shown in Table 61. This does not apply to the underground bonding conductors or wiring associated with the pool that is protected by a Class A ground fault circuit interrupter.

**Table 61**  
Minimum buried cable horizontal separations from pools  
(See Rule 68-056.)

Type of installation	Minimum horizontal separation, m	
	Direct buried unjacketed cable with bare neutral or cables with a semi-conducting jacket	Cables with a non-conducting jacket or conductors in non-conducting ducts
Communication conductors	1.5	1.0
Power conductors		
0-750 V	1.5	1.0
751-15 000 V	3.0	1.5
15 001-28 000 V	6.0	2.0

The following steps provide a safe installation from all electrical hazards and avoid costly and timely relocation of the overhead or underground powerlines.

## Perform a visual

Determine if there are existing overhead wires located in the vicinity of the proposed pool location. Determining if underground powerlines are present can be difficult. Look for signs such as a meter base located at the rear of the house, or power supplied to an existing shed on the property.

Contact the Local Distribution Company/Utility well in advance to determine if they own any underground powerlines on or around the property. If overhead powerlines are present, they will confirm ownership of the powerlines. If they do own the powerlines, they will need to verify if the location of the proposed pool will meet overhead clearance requirements of their code.

## Call before you dig

Contact Ontario One Call ([www.on1call.com](http://www.on1call.com)) to locate all utility owned underground infrastructure.



**THURSDAY, SEPT. 28**  
**NIC BITTLE**  
A FOREMAN'S FIELD GUIDE TO DEVELOPING YOUR WORKFORCE

## WHAT SMART LEADERS ARE DOING TO DEVELOP THEIR WORKFORCE

In *A Foreman's Field Guide to Developing Your Workforce*, Nic will walk your foremen and supervisors through how to develop their team for long-term success. As natural mentors on the job site it is up to the Foremen and Supervisors to develop their crew to be the next leaders of the industry.

ECAO Members' 2017 Professional Development Series

Register Today! \$525 per person  
416-675-3226 or [ecao@ecao.org](mailto:ecao@ecao.org)

Thursday, Sept. 28

8:30 a.m. to 4:00 p.m.

ECAO Office  
10 Carlson Crt. Suite 702 Toronto

Nic Bittle is the founder of Work Force Pro and works with contractors that want to prepare and develop their workforce to lead with impact, act like a pro, and perform at their best on a daily basis. [nicbittle.com](http://nicbittle.com)

Space is Limited.

[www.ecao.org](http://www.ecao.org)

@ECAOntario







# Your Employee Assistance Program

If you have a bereavement leave policy, consult with your HR advisor regarding suspected abuse. Employees on funeral leave, responsible for managing the affairs of the deceased, may experience additional distress or suffer from grief that affects them later because they postponed self-care while attending to the needs of others. Suggesting the EAP is always a good idea for any problem. Dozens of things could explain the absence, but you can refer your employee to the EAP based on a finding of funeral leave abuse. EAPs have discovered that problems like this often are multifaceted. An employee may be grief-stricken, depressed, abusing leave, relapsing into an addiction problem, looking for

another job, taking vacation, or all of these things at the same time! This is why EAPs exist – to help sort out the issues and help organizations retain valuable workers.

Your employee may be abstinent from meth use, and his occupational and social functioning may be dramatically improved, but alcohol use following treatment for meth addiction could or could not be a problem for this employee's particular situation, background, and related factors. It may be recommended in this employee's recovery efforts to abstain from all substances, including alcohol, to help avoid relapse to the drug of choice. Your job, of course, is monitoring performance and not focusing on the employee's personal decisions outside work, no matter how ill-advised they may be. Relapse and its effect on performance may be evident in a week, a year, or more. If or when that time comes, engage the EAP.

Employees with creativity and drive tend to have skills often associated with entrepreneurial thinking. Meet with your employees regularly, and talk to them about what makes them excited and what makes them feel engaged. Keep the following in mind: Do you have employees who like dreaming up new ideas? Are any employees naturally prone to spotting new business opportunities? Do any employees consistently demonstrate their ability to spin positivity out of disappointment and see the silver lining of the cloud? Do you have employees who take initiative

**NORTON ROSE FULBRIGHT**

Wherever you are, you're never that far from our experienced team of construction, engineering and infrastructure law professionals.

Law around the world  
nortonrosefulbright.com

Dan J. Leduc  
613.780.1536  
dan.leduc@nortonrosefulbright.com

on the job to undertake something new without being asked? Evidence of these behaviours can often be spotted even in the most controlled, uninspiring, and limited work settings. Employees who are courageous and unafraid to think outside the box will find a way to get their needs met, even if it is not in your company, so working with your managers to create opportunities is one key strategy for retaining them and reaping the benefits of their talent.

Your employee's behaviours could be explained by mental illness, such as a type of schizophrenia, but an evaluation would be needed to learn more. Those affected by schizophrenia (about one per cent of the population) may have their first overt episode of the illness in young adulthood or later. It may therefore be witnessed on the job, and it can be alarming to unwitting coworkers when delusions or auditory hallucinations are shared. Effective medications exist for schizophrenia, and unlike decades ago, they allow employees to function quite adequately. The risk that an employee with mental illness will become violent is overblown, but a fitness-for-duty evaluation afforded by your personnel policies is appropriate if behaviour interferes with or is disruptive to the work situation.

Meet with your employees regularly, and talk to them about what makes them excited and what makes them feel engaged.

You can start by suggesting the employee visit the EAP, or consult with the EAP about the steps to take.

Diversity and inclusiveness awareness can be suitable for any work group, not necessarily because of existing problems but to reinforce and strengthen a positive work culture that already exists. Think "preventive maintenance." Remember, if you have 50 employees, turnover is a natural part of the organizational process, and this alone could support a rationale for ongoing education. Many education programs enhance and reinforce existing strengths. A seminar on workplace communication is a good example.

There is always more to know about it. Although you perceive a high-functioning and inclusive workgroup, you can never be sure that covert, unspoken, or unacknowledged biases exist and that they have been felt. Diversity awareness plays an intervening role in averting potential problems.

*This article was originally published in the 87th edition of Aspirations: Manager's Toolbox, published in March 2017.*

**Do You Recognize These CGE MCC Model Numbers?**

**CR7092C**  
**CR2000**

**We Do!**

**We Supply CSA Approved FACTORY ORIGINAL:**

- Renewal Parts
- Replacement Plug-in Units
- Retrofits
- Add-on Sections
- New MCC Installations

**W.A. Electric Controls Ltd.**  
280 Perry St., Peterborough, ON, K9J 2J4  
Phone: (705) 742-2688 • Fax: (705) 742-1514  
Email: waec@waelectric.ca  
Website: www.waelectric.ca

**SUPERSEAL**  
LIQUID TIGHT CONDUIT

- Strength and flexibility to handle stress and strain
- Designed for dry, damp or wet locations
- Temperature: -30° to +75° C
- Bi-directional

**CONDUITS FLEXIBLES SUPERIOR FLEXIBLE CONDUITS**

**FOR MORE INFO:**

TEL: 1.800.561.4216  
FAX: 1.800.230.9573  
sales@superiorflex.com  
www.superiorflex.com

Quote Promo Code EC0716 for a 5% discount on orders over \$1,000.

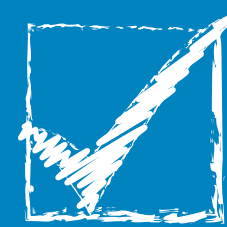


# The Ontario **ELECTRICAL CONTRACTOR**

## PROFESSIONAL SERVICES DIRECTORY

Vol 55 • Issue 2  
Q2 2017 • [www.ecao.org](http://www.ecao.org)

Actuaries <b>Eckler Ltd.</b> .....19 <a href="http://www.eckler.ca">www.eckler.ca</a>	Field Evaluation <b>Intertek</b> .....25 <a href="http://www.intertek.com">www.intertek.com</a>	Lighting <b>EE Lighting</b> .....3 <a href="http://www.eelighting.ca">www.eelighting.ca</a>
Education <b>Centennial College</b> .....11 <a href="http://www.centennialcollege.ca">www.centennialcollege.ca</a>	Generator/New, Used & Refurbished <b>Toromont Cat Power Systems</b> .....9 <a href="http://www.toromontcat.com">www.toromontcat.com</a>	Motor Control Centres <b>W.A. Electric Controls Ltd.</b> .....29 <a href="http://www.waelectric.ca">www.waelectric.ca</a>
Education & Training <b>YOW Canada Inc.</b> .....Digital <a href="http://www.yowcanada.com">www.yowcanada.com</a>	Health & Safety <b>Occupational Health &amp; Safety/Ground</b> .....12 <a href="http://www.groundprogram.ca">www.groundprogram.ca</a>	Power Tools & Accessories <b>Milwaukee</b> .....23 <a href="http://www.milwaukeetool.ca">www.milwaukeetool.ca</a>
Electrical Components <b>Thomas &amp; Betts</b> .....4 <a href="http://www.tnb.ca">www.tnb.ca</a>	Infrastructure Health & Safety Association ...Inside Front Cover <a href="http://www.ihsa.ca">www.ihsa.ca</a>	Switchgear & Transformers <b>mgbelectric</b> .....13 <a href="http://www.mgbelectrique.com">www.mgbelectrique.com</a>
Electrical Fittings & Connectors <b>Arlington Industries</b> .....17 <a href="http://www.aifittings.com">www.aifittings.com</a>	High Voltage Construction <b>K-Line Group of Companies</b> ..... 14 & 15 <a href="http://www.k-line.ca">www.k-line.ca</a>	Unions & Associations <b>IBEW Construction Council of Ontario</b> .....21 <a href="http://www.ibewcco.org">www.ibewcco.org</a>
Electrical Flexible Conduits <b>Superior Flexible Conduits</b> .....29 <a href="http://www.superiorflex.com">www.superiorflex.com</a>	Insurance <b>Federated Insurance</b> ..... Inside Back Cover <a href="http://www.federated.ca">www.federated.ca</a>	Vehicle Leasing <b>Jim Pattison Lease</b> .....20 <a href="http://www.jimpattisonlease.com">www.jimpattisonlease.com</a>
Electrical Products & Tools <b>Stanley Black &amp; Decker Inc.</b> ..... Outside Back Cover <a href="http://www.stanleyblackanddecker.com">www.stanleyblackanddecker.com</a> <a href="http://www.dewalt.com">www.dewalt.com</a>	<b>Skipwith &amp; Associates Insurance Agency Inc.</b> .....6 <a href="http://www.skipwith.ca">www.skipwith.ca</a>	Waste Disposal & Recycling <b>Green-Port Environmental</b> .....7 <a href="http://www.green-port.com">www.green-port.com</a>
Electrical Supplies & Service <b>Mersen</b> .....10 <a href="http://www.ep-ca.mersen.com">www.ep-ca.mersen.com</a>	Law Firm <b>Norton Rose Fulbright Canada</b> .....28 <a href="http://www.nortonrosefulbright.com">www.nortonrosefulbright.com</a>	



## Recommended insurer of the ECAO

The risks you face as an Electrical Contractor are unique.

Federated Insurance can design specialized and comprehensive programs specific to the needs of you and your business.



Call **1.844.628.6800** and speak to a  
Commercial Insurance Specialist today.

[www.federated.ca](http://www.federated.ca)



Knowing  
your business  
matters.



# TOUGH BEYOND MEASURE™



**13'**  
**STRAIGHTER  
STANDOUT\***



## INTRODUCING THE NEW DEWALT® XP™ TAPE MEASURE



### TOUGHER BLADE COATING

9 IN. OF HEAVY-DUTY THERMOPLASTIC COATING AT THE END OF THE BLADE TO REDUCE BREAKAGE NEAR THE HOOK

### TOUGHER CASE

DUAL-CORE™ TECHNOLOGY-A PATENTED SPRING SYSTEM THAT UTILIZES TWO RETRACTING SPRINGS IN AN IMPACT RESISTANT, PC/ABS HEAVY-DUTY CASE. SURVIVES A 60 FT. DROP\*\*

### TOUGHER HOOK CONNECTION

TOUGHEST HOOK CONNECTION\*\*\* REINFORCED TO REDUCE BLADE BREAKAGE.  
EXTRA LARGE END HOOK GRABS CONSTRUCTION MATERIAL FROM ALL FOUR SIDES



Copyright ©2017 DeWalt. The following are examples of trademarks for one or more DeWalt power tools and accessories: The yellow and black color scheme. Tougher Case, Tougher Blade Coating, Tougher Hook Connection claims based on comparisons to DWHT36107, DWHT36109, DWHT36105, DWHT33976L, DWHT33976, DWHT33975, DWHT36027. \* Standout claim based on maximum performance at 10' compared to DWHT33975. \*\* Useable after a 60' drop onto packed soil. \*\*\* Compared to DWHT36107, DWHT36109, DWHT36105, DWHT33976L, DWHT33976, DWHT33975, DWHT36027.

Learn More at [xptapemeasure.dewalt.ca](http://xptapemeasure.dewalt.ca)

#TOUGHINTHENORTH

**DEWALT®**  
**GUARANTEED TOUGH®**