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ASSOCIATION OF ONTARIO

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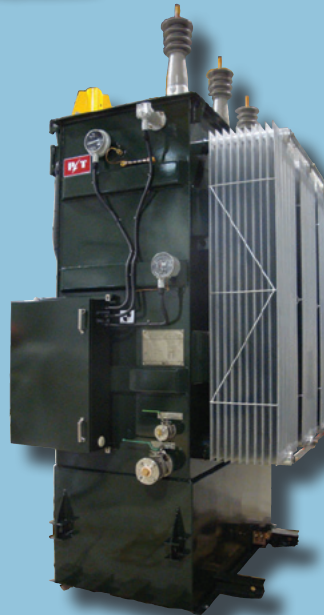


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On The Cover: View from the the Squamish Lil'wat Cultural Centre in Whistler, B.C., site of the welcome reception of the 2012 CECA National Industry Conference (see story page 8).

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that are relevant to the electrical contracting industry.*

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Jim Kellett

The President's Remarks

The recent AGM in Whistler, British Columbia marked the mid-point of my term as President of the Electrical Contractors Association of Ontario. This issue of *The Ontario Electrical Contractor* contains a report on the ECAO Annual General Meeting and Industry Conference held in partnership with the Canadian Electrical Contractors Association and the Electrical Contractors Association of British Columbia. I'd like to thank the membership and the 2012-2013 Board of Directors for renewing their support for me as President going forward and also for the great work done during my first year. The AGM was an excellent opportunity to review our progress at the end of year one of our new strategic plan and also for looking forward to the challenges of 2012-2013. It was also the right place to honour some of our best. The annual safety awards were presented and the plaques honouring our retiring directors were bestowed. Special mention goes to Ed Braithwaite who retired from the Board after 25 years of service. Please take the time to check out the articles beginning on pages 8 and 14 for the full story. It wasn't all work. Perhaps it will motivate some of you to join us next year in Niagara-on-the-Lake.

In addition to reporting the corporate events, the other theme of this issue of the magazine is Safety and Training. Over the years, ECAO contractors have differentiated their product from others by emphasizing safety of their work environment and quality of their installations.

On the safety side, I have already mentioned the presentation of the Hugh Carroll Safety Awards. The winners are showcased on page 14...and yes I am proud to be one of them representing K-Line Maintenance & Construction. In recognition of the fact that falls continue to be the major cause of construction injuries, we reprinted portions of the safety manual dealing with guardrails and fall arrest, published by the Infrastructure Health & Safety Association. We do this not only to educate readers about the specific dangers and prevention strategies, but also to familiarize readers with the resources available from the IHSA website. This message is reinforced by Rick Mei of the Quality Connection Health and Safety Program. In his article "Moving Forward", Rick reviews the impact of the internet in disseminating information about occupational health and safety and challenges us to mine "the resources hidden under the keyboard."

The Executive Summary of the ESA 2010 Ontario Electrical Safety Report is published on page 34. Over the last 10 years, the rate of electrical fatalities and injuries has been declining steadily, but

the bulk of incidents persist in specific areas such as power line contact, unsafe work procedures, unapproved equipment and older buildings. I believe that by these statistical analyses and identifying the priority areas of risk, ESA along with the industry stakeholders like ECAO will move the industry ever closer to the goal of eliminating electrical injuries and deaths.

Effective skills training is instrumental in promoting health & safety in the workplace as well as promoting quality workmanship. Be sure to check out our Ontario Skills Competition winners on page 20. At this year's event, ECAO/IBEW sponsored competitors captured Gold, Silver and Bronze to sweep the electrical portion of the competition. And in the Industry Briefs department, learn more about the Network Cabling Specialist trade and ECAO's Solar PV training and certification initiative. On the managerial front Norb Slowikowski contributes with his article, "Six Elements of Effective Leadership".

I'm sure that you will all find something useful in this edition of *The Ontario Electrical Contractor*. As ECAO's president, I wish to continue the tradition of two-way communications that has helped guide this publication. If you have any ideas or issues that you would like explored in this magazine or any comments or suggestions on anything published here, please be sure to contact the editorial staff at ECAO.



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CECA National Industry Conference – A Mountain of Possibilities in Whistler



ECAO and ECABC co-hosted the CECA 2012 National Industry Conference, which was held June 13 to 17 at the Four Seasons Resort Whistler in Whistler, British Columbia. Located in the spectacular Coast Mountains of British Columbia, and just two hours north of Vancouver, Whistler is Canada's premier, year-round destination. Whistler features two majestic mountains, four championship golf courses, more than 200 shops, 90 restaurants and bars, hiking trails, spas and arguably the best mountain bike park in the world. As host to the 2010 Olympic and Paralympic Games, the area still pulses with the spirit of the Games and its own alpine magic. In short, Whistler has everything you will ever need to have the time of your life—and we certainly did!

The conference began Wednesday with a gorgeous morning of golf. Way above par, Nicklaus North Golf Course featured snowcapped peaks, a brilliant emerald-coloured lake, majestic fir trees and

invigorating mountain air. This is the setting that inspired the great Jack Nicklaus to create the par 71, 18-hole course that winds along the gentle valley floor. We ended the tournament with a lovely barbecue and an awards ceremony for the lowest scoring team (two foursomes tied for this), highest score (most honest golfers), longest drive and closest to the pin for both the men and ladies.

CECA welcomed everyone to the conference on Wednesday night with a party at the Squamish Lil'wat Cultural Centre (SLCC). An architectural masterpiece, the SLCC evokes the traditional dwellings of the Squamish and Lil'wat peoples. The feast was held in the traditional First Nations Great Hall where the walls were awash with authentic indigenous art. To add to the excitement, a black bear decided to make an appearance and welcome us to its home! The SLCC opened its museum doors for those who wished to explore the priceless collections of First Nations art, artifacts, textiles and archival images. The





spectacular night was filled with Aboriginal entertainment, great food and great company with a classic backdrop of Whistler which set the perfect tone for an unforgettable event.

We started Thursday off right with loads of laughter with our keynote presentation of Roman Danylo and Diana Frances. These two improvisational comedians really nailed some of our industry topics right on the head! Delegates were left in stitches over their hilarious impersonations of many of our colleagues.

We focused on the business side of things for our two Thursday business sessions. The first session, "Changing Electrical Project Delivery System and The Changing Role of Electrical Contractors," was presented by Dr. Awad Hanna, University of Wisconsin-Madison.



Thanks to our Sponsors!

2012 National Industry Conference Whistler, BC

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Dr. Hanna addressed the pros and cons of various project delivery systems, including integrated project delivery/BIM and the contracts associated with these systems.

The second session, with Dan Leduc from Norton Rose OR LLP, was entitled "How to Make Contracts Work for You Instead of You for Them." Dan unleashed his considerable expertise and creativity on improving cash flow through careful attention to payment terms. He also focused on prompt payment legislation and its potential to save us from ourselves.

While the delegates were in business sessions, the partners braved the rain for a two-hour guided TreeTrek Canopy Walk situated in the valley on Blackcomb Mountain. They travelled on valley trails and over a series of suspension bridges, boardwalks and platforms high up in the canopy of the Coastal Temperate Rainforest. Some of the rarest rainforest on earth is located right between Whistler and Blackcomb mountains! The excursion revealed how lessons learned from living within a naturally sustainable ecosystem are being applied to make Whistler the most sustainable community in North America.

In the afternoon, delegates and partners had the option of either zip lining amid the tree tops or soaring above them in a helicopter. Unfortunately, the rainy weather prevailed and only a few could experience the helicopter tour before the fog made the lack of visibility unsafe for takeoff. A little rain could not stop the adventurous folks who enjoyed the cable riding adventure through the old growth forests of Cougar Mountain. They certainly reached new heights at 400 feet above the ground and speeds of up to 80 kilometres per hour!

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Friday morning started off with Jim Mathis' session, "The Economy Isn't Down – It's Different; Reinvention Made Easy." Jim's session addressed the changing economic landscape and how to keep up in our industry.

Dr. Awad Hanna concluded the business sessions of the conference with his presentation topic, "Impact of Overtime on Electrical Labour Productivity: A Measured Mile Approach." Again, Dr. Hanna engaged the delegates with his knowledge of the effect of various overtime schemes on electrical productivity.

The Friday Partner Program was a trip to the Whistler Museum where we discovered the pioneer, Myrtle Philip, who put Whistler on the map. The Whistler Museum & Archives was founded in 1986 as a non-profit organization for the purpose of collecting, cataloguing and conserving artifacts and photographs of the pioneer history of the Whistler Valley. Located in the heart of the resort village, the Whistler Museum is the place to discover Whistler's human and natural history, Olympic story and unique mountain life. The museum is currently featuring a brand new exhibit about Whistler's

Olympic Journey. Our visit was a great way to discover Whistler's unique history with stories, artifacts and multi-media presentations, while getting to know each other a little more as well!

The Friday optional events took delegates on a raft ride down the Green River or a sky-high trip between the mountains on the gondola. The Green River gave visitors to Whistler an opportunity to experience whitewater rafting and still have time to enjoy Whistler's many other attractions. The Green's moderate, fun-filled rapids, and its panorama of stunning

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snowcapped peaks, made this a memorable experience. On the placid waters of Green Lake, just five miles (eight kilometres) from Whistler Village, rafters practised and synchronized their paddle strokes before starting the downriver voyage. The 4.5-mile (seven-kilometre) Green River raft trip was fast, fun and refreshing as the glacier-cooled river splashed and filled our wetsuits! Talk about invigorating!

Spanning the distance between Whistler and Blackcomb Mountains, the PEAK 2 PEAK Gondola is a breathtaking, 4.4-kilometre ride that redefines the Whistler summer experience by creating limitless new ways to get up-close and personal with the mountains. The delegates had the opportunity to experience this engineering marvel, which breaks three world records: longest unsupported span of 3.024 kilometres, highest lift of its kind at 436 metres above the valley floor, and completes the longest continuous lift system on the globe. Many overcame their fear of heights quickly as the breathtaking 360-degree view surrounded them!

On Friday evening, at the top of Whistler Mountain, the CECA Conference attendees joined ECABC's Board of Directors for a special Diamond Dinner to recognize the newest members who will be inducted into the ECABC Hall of Fame. Guests rode the gondola up Whistler Mountain and were greeted at the top with a signature cocktail. The stunning view in all directions and snow-covered ground were a beautiful backdrop for the awards ceremony and buffet dinner. The evening's entertainment was provided by the duo Big Mountain Rhythm. At the end of the evening, guests descended the mountain

on the gondola overlooking the sparkly lights of Whistler Village.

We started Saturday morning off with the ECAO AGM. Highlights of the AGM included bestowing the R. H. (Hugh) Carroll Safety Awards; thanking the retiring directors; and listening to ECAO President Jim Kellett's presentation, which focused on the idea of the "Power of Association." Visit the publications section of the ECAO website to read the full annual report.

Mid-morning, delegates discovered Blackcomb Mountain the "Canadian way" on an ATV adventure. They splashed through the mud pit (optional) while exploring a network of wide mountain trails ascending to Blackcomb's beautiful alpine region. What a great way to experience the breathtaking views of the Whistler Valley and peaks of the Coast Mountain Range.

For those delegates who wanted to explore Whistler's trails a little more physically, our program offered the chance to go on a mountain bike tour. The group learned about the history, geography and key nature spots in Whistler while enjoying a scenic mountain bike ride.

To end the conference, the delegates were invited to a reception followed by a gala dinner in the Four Seasons Harmony Ballroom.

The reception was accompanied by the musical trio Stolen Moments Jazz. It was an excellent chance for delegates to catch up on their tales of the tours and adventures they had experienced on their trip to Whistler. The elegant appetizers and music paired well with the good company.

The night was just getting started as ECAO President Jim Kellett concluded the dinner with a brief address thanking the Four Seasons' staff, the staff of ECAO and ECABC for organizing the events and, more importantly, the following sponsors: the Joint Electrical Promotion Plan, Federated Insurance, Aecon Industrial, Guillevin International, Skipwith & Associates, ECA Alberta, MLJ Coaching International, Norton Rose, TeksMed, Westburne, Adcoa Holdings Inc., Carol MacLeod & Associates, CSA Group, E.B. Horsman & Son, Electrical Business Magazine, Electrical Line Magazine, Ideal Industries, Landmarketing, MPH Graphics, Northern Display Service Inc., Quickbond and RBC Dominion Securities. He then announced the site of the next ECAO conference with a video of Niagara-on-the-Lake, and invited all delegates from across Canada to attend.

The final task was completed when Jim introduced the evening entertainment, Dr. Strangelove, best known as "Vancouver's house band." The band of six talented musicians and singers pranced onstage, the men in reflective suits and the lovely ladies in go-go boots and retro mini dresses! The group performed popular numbers ranging from Celebration by Kool & the Gang, to I Gotta Feeling by the Black Eyed Peas. The delegates got on their feet and filed onto the dance floor to show off some of their best moves leaving most of the gala seats empty! Two of the delegates even managed to get up on stage and sing a number with the band!

Last but not least, while the band rested, CECA President Colin Campbell announced the winners of the cash prize draws. Congratulations to all!

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ECAO's Annual General Meeting



R. H. (Hugh) Carroll Award recipients (from left) Alan Gardiner, Network Electric Ltd.; Jody Bernst, Grid Link; Jim Kellett, K-Line Maintenance & Construction; Jack Gibson, Aecon Industrial; and Peter Calabrese, Black & McDonald Ltd.



ECAO President Jim Kellett addresses the members at the AGM.



ECAO's Annual General Meeting held June 16 at the Four Seasons Whistler Resort.

ECAO held its Annual General Meeting on June 16 at the Four Seasons Resort in Whistler, B.C. Prior to the formal business portion of the meeting, President Jim Kellett presented ECAO's safety awards. Congratulations to the following member companies on their achievements in safety excellence:

- **Network Electric Ltd.**
(Category: Rate Group 704 – up to 50,000 Total Work Hours)
- **Vollmer Inc.**
(Category: Rate Group 704 – 50,001 to 200,000 Total Work Hours)
- **Aecon Industrial** (Category: Rate Group 704 – 200,001 to 500,000 Total Work Hours)
- **Black & McDonald Limited**
(Category: Rate Group 704 – over 500,000 Total Work Hours)

- **Grid Link**
(Category: Rate Group 830 – up to 50,000 Total Work Hours)
- **K-Line Maintenance & Construction Ltd.**
(Category: Rate Group 830 – over 50,000 Total Work Hours)

Following the safety awards presentation, President Jim Kellett thanked retiring directors, Pat Cimek (Niagara & Peninsula ECA Representative), Doug Hutchinson (ECA Oshawa & District Representative) and Ed Braithwaite (ECA Sarnia Representative) for their services. Mr. Braithwaite had contributed over twenty-five years of his time on the board. Mr. Kellett then called the meeting to order.

Secretary-Treasurer Bill McKee reviewed the Auditor's Report for the period ended December 31, 2011 and confirmed Hobb

& Company as the Auditor for the Corporation for 2012. The nominating committee report was accepted as presented by First Vice-President Dan Lancia, installing the 2012-2013 directors. The new board held its first meeting following the AGM.

The 2012-2013 directors are:

- Ove Bakmand, Greater Toronto ECA
- Rick Ball, ECA Thunder Bay
- Doug Dinniwel, Georgian Bay ECA
- George Docherty, Greater Toronto ECA
- Gary Ganim, ECA Ottawa
- Al Gordon, ECA London
- Ron Johnson, ECA Oshawa & District
- Eric Karn, ECA Central Ontario

- Jim Kellett, Director-at-large (Line Contractor Representative)
- Chris Krueger, ECA Northern Ontario
- Joe Kurpe, ECA Hamilton
- Dan Lancia, Director-at-large
- Kevin Martineau, Greater Toronto ECA
- Dave Mason, Director-at-large (ETBA Chair)
- Bill McKee, Director-at-large
- Gregg Mellon, ECA Sarnia
- John Raepple, Director-at-large
- John Salmon, Director-at-large
- John Salvatore, Windsor ECA



Executive Vice-President Eryl Roberts presents a Certificate of Recognition to retiring Director Ed Braithwaite after 25 years of dedicated service.

- Larry Shaver, Niagara Peninsula ECA
- Brad Walker, ECA Quinte-St. Lawrence

President Jim Kellett then presented an overview of the Annual Report, highlighting the activities of ECAO over the last year, and thanked the ECAO directors and committee

members, ETBA representatives and ECAO staff for their continuing support.

At the Board of Directors Meeting following the AGM, the following officers were duly elected:

- John Raepple, Past-President
- Jim Kellett, President
- Dan Lancia, 1st Vice-President
- John Salmon, 2nd Vice-President
- Bill McKee, Secretary-Treasurer
- Eryl Roberts, Executive Vice-President

A final task for the President was to announce the winner of the Member Advantage Program Survey prize – a \$200 gift card to Lululemon. Congratulations to Gregg Mellon!

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Reminders from Your Client Care Team

By Dale Legge, VP Client Care – East

Now that 2012 is in full swing, your Client Care Team would like to remind you of some things you can do in order to help us serve you better and ensure that your account information is up to date with your Workers' Compensation Board. Here we go!

1. Have you updated your account contacts and information with the board?

Most boards have authorized persons listed on your account and these are the only people who are authorized to make changes to your account and/or request certain information from the board on your account. In order to update these account contacts, most boards will accept a written letter on company letterhead. Also, confirm who your statements are being sent to in your organization. Many of our clients never see their statements: the department they are sent to is not aware of what they are, or the person they are addressed to has moved on. You can use the links to each board's employers sections at the bottom of this article to find the appropriate fax or email address for submitting statements.

2. If you have new account authorizers on your account, have you updated your authorizations with TeksMed?

In order to act on your behalf, TeksMed requires signed authorizations from the designated authorized persons stating that we are your representative and have access to act on your behalf on claims matters and have access to account information such as ERA statements and Claim Cost Statements. If you have new authorizers at your company and on your account, let your Claims Specialist or Client Care Manager know and we will provide you the appropriate authorizations to be signed and keep our access current.

3. Have you sent your latest ERA/NEER statement to TeksMed yet?

Are you submitting your monthly Claim Cost Statements to TeksMed? A valuable tool for us to ensure that you are only seeing charges on your account that are approved are your ERA/NEER/Claim Cost Statements. We review each as they come to us to make sure all injuries that are recorded on your account are only approved claims and are actually claims at your company. Errors can occur and other employers' injuries can

be put on your account. Let us make sure this doesn't happen to you. These statements can be faxed to our toll free number 1 (877) 504-1777 to the attention of the Client Care Team.

4. Did you know that you can pay your monthly premiums to TeksMed with a company credit card?

TeksMed is able to easily and on a scheduled day take your payment using credit cards. This ensures that no matter what is happening in our mail industry (work disruptions, service issues, lost letters) or with our weather coast to coast, your account is in good standing and there is never a disruption to our service to you. You can contact our Client Care Team or Finance Department to set this up at 1 (877) 850-1021.

5. Are you using TeksMed Passports to streamline your return to work process?

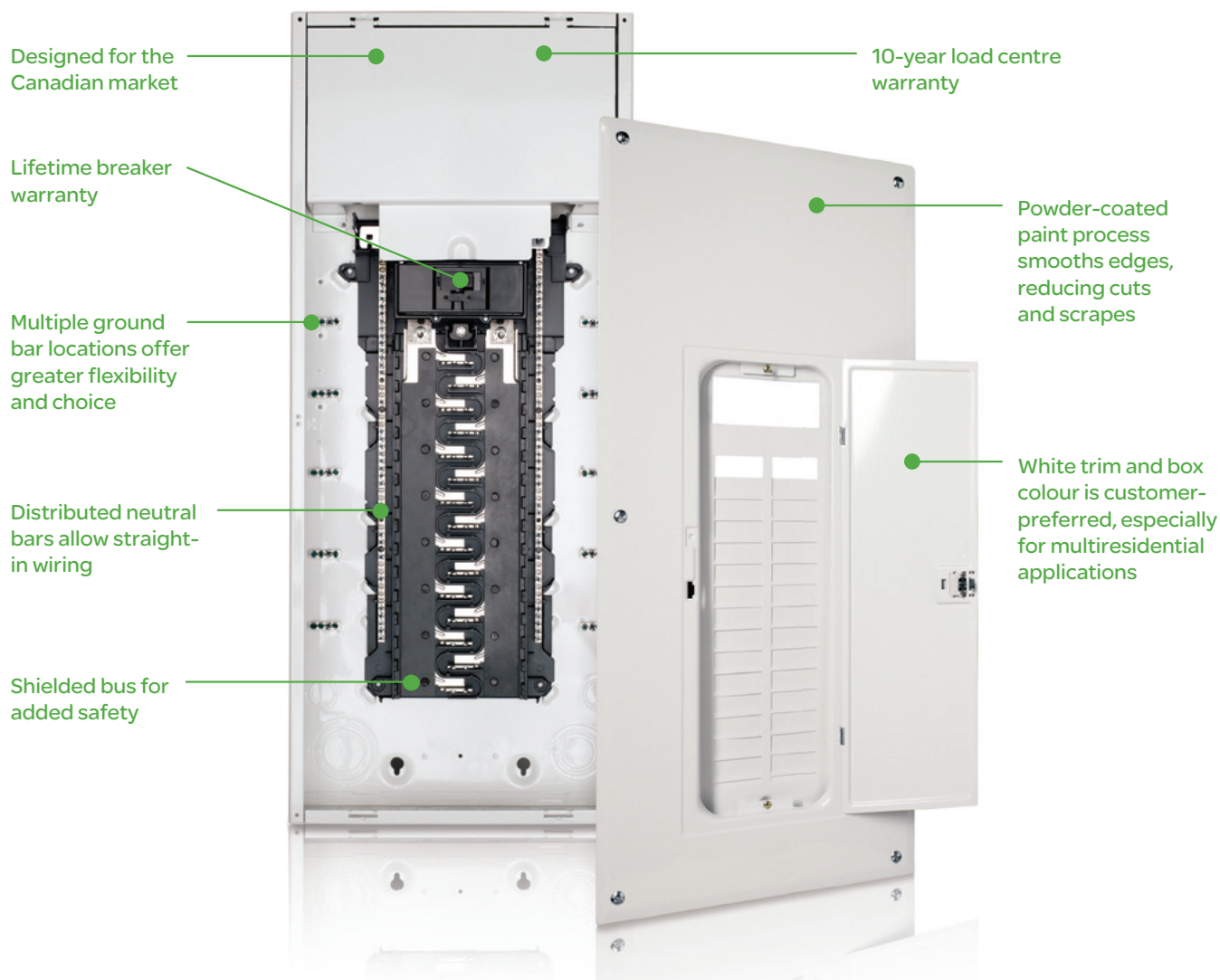
A streamlined return to work process utilizing TeksMed's Passport program can save you money. Do you see doctors' notes writing injured workers off for one or two weeks with no restrictions for minor injuries? Clients on our Passport program routinely see lost time averages on claims below three days on 90 per cent of their claims. Ask your Claims Specialist or Client Care Manager for details on how Passports can help your return to work process.

6. Have you sent in your employee list?

TeksMed now collects, on a monthly basis, the employee list from our clients to ensure all injuries filed with the board under your company name are for current and active employees. Unfortunately, many ex-employees try to file claims against former employers after they are let go from their employment. By verifying that the names we see on WCB correspondence and on injury notices are active employees, we are able to protect you from these claims and act on your behalf before the claims get too far and cost you money.

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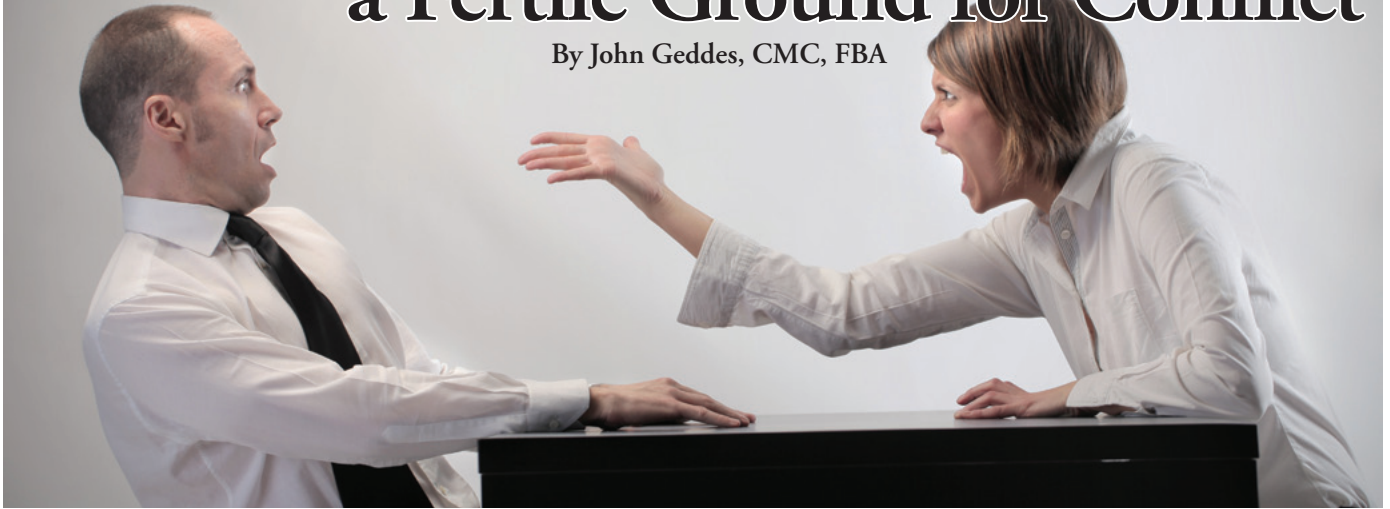
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Family Actions and Business Actions

a Fertile Ground for Conflict

By John Geddes, CMC, FBA



We spend much of our time consulting to owner-managed businesses in the area of managing conflict. Conflict among upper management is common given the differing values and opinions of each manager, and initial disagreements on everyday operations issues can be exacerbated when decisions of critical importance arise. One example

of such a critical decision would be the sale of the business. When is the right time to sell? What is an acceptable offer? How should the company be transitioned? These uncertainties can be a breeding ground for conflict. Dissatisfaction with other management members' decisions and opinions can be made even more vocal when the business

is family-owned and operated. Although many try to separate personal feelings from professional actions, the line between home and work life is often blurred, causing an escalation of conflict among disagreeing family members that can have effects that reach far beyond the office doors. There are a number of conflict management tools we use to help an ownership team or a business family deal with conflict and help them get through difficult decisions as a team.

Despite the fact that conflict is so prevalent, many business owners still seem reluctant to deal with it. This article will provide a method to help you prepare for conflict before it arises in order to better equip you to manage it if it does. The goal is to maintain a degree of harmony among the upper management team, family-operated or otherwise, with a focus on preserving or enhancing the productivity and success of the business. The tool we often use is the development of a business charter. A more specialized family business charter can also be developed depending on the context of the relationships that exist within the business. These charters are proactive, conflict management tools which attempt to enhance cohesiveness by addressing five key areas we call the five "C's":

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Communication details how you will communicate with each other: the frequency of meetings, how decisions will be made, and how to ensure everyone understands the flow of information through the organization. We often assume that people will simply understand what is happening by osmosis, but in today's fast-paced world, it is important for the owner or senior management to make the time to share the information people need to know to do their jobs well.

Clarity might seem like communication. We know, however, that people interpret information differently and that they assume their perceptions are accurate. Often we do not take the time to validate what we have communicated in order to ensure a consistent understanding of the information. Taking time to assure clarity often prevents conflict from arising later.

Consistency is the uniform application of agreements reached with family members or employees in the business. We have all experienced being told different things by the same person about the same thing. Only later, when mistakes are made or work is done incorrectly, do we realize we have not been consistent in our instructions or we have left some information out.

Changeability is being willing to adapt as situations change. While many of us do not like change, it is tough to survive in business if we cannot adapt as the organization evolves and the business environment changes. A charter addresses how the organization will deal with change as it occurs or needs to happen to keep the organization competitive.

A Culture of Fairness is needed in every organization, but particularly in a family business. If a business adheres to the four principles above, a culture of fairness will emerge. This does not mean that all parties will necessarily be fully satisfied with every option, but all stakeholders do need to agree – after discussing and sharing relevant information – on what decisions will be made.

A meeting or two with the family or management team is all it takes to discuss and agree on each of these five dimensions and outline your business charter. The critical part of this process is to write down how you will

deal with each element once there is agreement around the table. This charter does not have to be an elaborate, formal document, but it can prove to be very useful as a touchstone when decisions are being made or conflict emerges.

By referring back to the charter to see the commitment you made with respect to how you will deal with situations that might involve conflict, there is little room for argument as to which actions should be taken. We have seen this work many times in the past

with our clients and we recommend it as one critical step to helping you to achieve further success in your business.

John Geddes is a Managing Director of EKSIT Strategies Inc. He has worked with over 200 companies, primarily assisting in the areas of strategic and succession planning. John is the author of the recently published book Succession and the Family Business – A Road Full of Potholes or Paved with Gold. Visit www.federated.ca for contact information.



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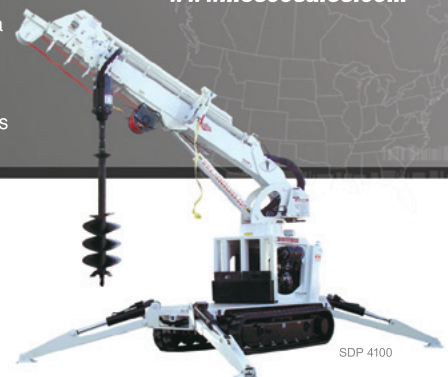
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Industry Briefs

IBEW Members Sweep Skills Competition

Thanks to our Sponsors!



Corina Hicks, Chair of Electrical Skills Committee (left), and Susan Boorman, Human Resources Manager at ECAO, with medalists (from left) Ryley Smuk, Sean Abbott and Tom Carroll.

This year's Skills competition was especially exciting as it was the first time since 1998 that IBEW took a full sweep of the Post-Secondary competition. This year's medalists represented three regions of the province; Ryley Smuk (gold) Local 804 Central Ontario (Kitchener), an apprentice currently working for Roberts Onsite, Sean Abbott (silver) Local 773 Windsor, an apprentice currently working for Lear Electric, and Tom Carroll (bronze) Local 894 Oshawa, an apprentice currently working for Ducan Electrical.

| | |
|--|--------|
| Total # of Medalists between 1998 – 2012 | 45 |
| Total # Medalists that are IBEW | 31 |
| Percentage of Medalists that are IBEW | 68.89% |

The Joint Electrical Promotion Plan has been a financial contributor to Skills and sponsor of the electrical wiring competition for the Secondary and Post-Secondary levels for many years. Interested in getting involved? Find out how to become a contributing sponsor, competition judge, or volunteer apprentices to participate with young students in an elementary workshop or interact with students at the career exploration booth by contacting Susan Boorman, Manager, Human Resources at sboorman@ecao.org for more information.

IN RECOGNITION

ECAO and IBEW CCO would like to recognize the following companies & organizations for their support in donating materials and resources for the Skills Ontario Electrical Wiring Competitions.



IBEW Local 105 Hamilton
IBEW Local 353 Toronto
IBEW Local 804 Kitchener

Iberville



Hubbell-Canada
Swift Devices



ELECTRICAL CONTRACTORS ASSOCIATION OF ONTARIO
INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS

Franklin Empire acquisition of Electra Supply



We are pleased to announce that Franklin Empire Inc. has acquired all the operations of Electra Supply. This includes the 3 branches in Cambridge, London and Windsor. At the same time, Franklin Empire has been appointed the Exclusive Distributor of Siemens Automation

and Control products for Southwestern Ontario. We anticipate the closing of this transaction to occur at the end of July. In business since 1942 and celebrating our 70th anniversary, Franklin Empire has 12 branches in Quebec and, now, 8 in Ontario. Franklin Empire's philosophy is to be a value-added distributor and we have consistently demonstrated a willingness to invest in the business, for the benefit of our customers, suppliers and employees alike. Our product/service offering is different than any of our competitors and we look forward to the opportunity to present our portfolio to Electra's existing and future customers.

Network Cabling Specialist – Trade Code, 631A

The Origin

The creation of a new trade in Ontario – the Network Cabling Specialist (NCS), an employer-established trade – was officially approved September 15, 1995. Both ECAO and IBEW/CCO recognized the importance of this new trade, and in the 2001 Principal Agreement the NCS trade was included in the Employee Classification section (communications - green pages). In November of that same year, the Designation Orders for the collective bargaining entities of ECAO and IBEW/CCO were amended by the Ministry of Labour to include the NCS trade.

On April 7, 2003, almost eight years after the trade was official approved, Jim Stewart became the first IBEW member certified as a Network Cabling Specialist in the Province of Ontario.

The NCS trade traces its origin to Ottawa, where in the early 1990s a group of influential communication cabling contractors proposed to the Ministry of Training, Colleges and Universities (MTCU) that there be some form of recognition for their tradespeople. Many of these cabling contractors perceived electricians as licensed professionals and they wanted their personnel to possess the same status.

The Early Years

Before a new trade could be launched, a number of credentialing components needed to be developed. These included (in no particular sequence):

- Curriculum standards;
- In-school curriculum standards;
- Ontario Certificate of Qualification examination;
- Exemption tests;
- Competency analysis profile;
- Prior learning assessment and recognition; and

- The French translation for some of the previously listed elements.

None of this could have taken place without the full support and co-operation of a number of experienced college professors and the enthusiastic support staff from the MTCU. Also, and of equal importance, is the support from passionate industry volunteers who collectively dedicated countless hours to bring this trade to fruition. This vital support came from industry stakeholders representing cabling contractors, cable vendors, cable installation specialists,

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curriculum advisors and members of the Industry Advisory and Local Apprenticeship committees.

Legislation

The NCS trade falls under the *Service Sector of the Apprenticeship and Certification Act (ACA)*, and is deemed an unrestricted trade. That means a Certificate of Qualification (C of Q) is not required to work in this segment of the industry. Currently, the NCS C of Q has no expiry, and certified tradespeople are not required to renew their licence. Although certification is voluntary, many IBEW members from all areas of Ontario have taken up the challenge – get trained, get licensed.

At present, this trade is not recognized as an Interprovincial Standards Red Seal Program. This may change in the future after other provinces establish similar credentialing.

Training On-the-Job

The NCS trade does not use number-of-hours as the basis for tracking on-the-job training completion requirements. Instead, the trade is competency based, where an apprentice is deemed competent in performing a specific task (skill set) by their supervisor.

Competency is documented through eight performance objectives consisting of a total of 60 skill sets. These skill sets range from *practising safe work habits to identifying and repairing asynchronous and synchronous equipment*. With this many skill sets, there is a risk

that an apprentice does not have the opportunity to acquire all the competencies because a cabling contractor may not be able to provide the opportunity to practise the full range of skills outlined in the training standard. Therefore, eleven of the skill sets are optional and the apprentice does not need to complete, or have signed off on, these skill sets. Of these eleven optional skill sets, eight involve installing and terminating outside-plant cables.

Despite on-the-job training being competency based, the recommended training time (minimum/maximum) has been established at 4,000 to 4,250 hours.

Training In-School

Along with the on-the-job training, NCS apprentices are also required to complete approximately 570 hours of in-school training. The delivery of the in-school training may be attained in multiple ways – block or day release (typically one day a week), or night school. For the NCS trade, the block release delivery method consists of two sessions (levels): 10 weeks for Level I and nine weeks for Level II.

The in-school training expands an apprentice's trade theory and training, covering varied topics ranging from *trade calculations* and *cable management systems*, through to *wireless technology*.

Algonquin College in Ottawa was the first to offer NCS apprentices in-school training, quickly followed by both Durham College and Humber College in the Greater Toronto Area. Recently, the Ontario Electrical Industry Training Trust Fund (OEITTF), the renamed training sector of the Joint Electrical Promotion Plan (JEPP), was granted Training Delivery Agency (TDA) status for the NCS trade. Obtaining TDA status allows the OEITTF to deliver training that is identical to the training offered by the colleges.

Certification

A Certificate of Apprenticeship is granted to apprentices who successfully complete both their on-the-job and in-school training. Certificate of Apprenticeship holders may apply to write the Certificate of Qualification examination. Currently, the three-hour exam consists of 100 multiple-choice questions that assess a candidate's on-the-job trade knowledge. The only reference material an examination candidate is given is a current copy of the Canadian Electrical Code (CEC). As with all certified trades in Ontario, the pass rate is 70 per cent. NCS Certificate of Qualification holders may have their examination fee reimbursed by the OEITTF.

The Future

In the near future, this trade will be governed by the newly established Ontario College of Trades. The selection and appointment of NCS Trade board members is still to be completed. Following that, it is hoped that an industry committee will be reconstituted for this dynamic trade, and this committee will fine-tune the training and credentialing practices.

Copies of the Network Cabling Specialist – Apprenticeship Training Standard may be obtained from any of the 25 MTCU apprenticeship offices in Ontario.

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Solar Photovoltaic Installation Training

Training Development

The crucial need for solar photovoltaic installation training was realized shortly after the Ontario Government introduced the *Green Energy and Green Economy Act*, in May of 2009. Later that year, in September, the Ontario Power Authority (OPA) launched the Feed-in Tariff program. These initiatives resulted in a demand for a large number of trained, qualified electricians to install solar equipment. This training requirement drove the need for quickly implementing a solar photovoltaic installation training program.

Based on time constraints, it was decided to look for a suitable existing training program instead of developing a solar PV installation training program in-house. A review of available solar PV training programs and certification bodies was conducted. Based on the review, it was decided to adopt a program developed by the National Joint Apprenticeship and Training Committee (NJATC) and amend it to match Canadian and Ontario environmental and regulatory requirements. The NJATC develops and provides high quality, standardized training programs for the electrical industry and is supported by both the National Electrical Contractors Association (NECA) and International Brotherhood of Electrical Workers (IBEW).

Train the Trainer

Because the NJATC had a contractual arrangement with Jim Dunlop, the author of the *Photovoltaic Systems* textbook, to conduct training sessions for IBEW members, he was contracted to conduct a four-day

train-the-trainer (TTT) session. In September 2009, 24 instructors from 11 IBEW locals attended this TTT session. Following the TTT session, the local training centres were supplied with hands-on training equipment that provides students with an opportunity to experience hands-on solar PV fundamentals such as module efficiency and shading analysis.

Training Resources

The resource material used in the training offered to IBEW members consists of the NJATC *Photovoltaic Systems* textbook and the companion *Photovoltaic Systems* student workbook. These two publications are augmented with a *Supplementary Student Workbook* that supplants U.S.-designed training material with Canadian content. Examples of these replacements include references to Canadian insolation data and references to the Ontario Electrical Safety Code (OESC) instead of the National Electrical Code (NEC).

Province Wide Training

With the training resources and instructors in place, a pilot class was used to assess the program. Following some small alterations, the program was ready to deliver to all IBEW members in Ontario. Currently, over 900 IBEW electricians have taken the course. Each course graduate is issued a Solar Photovoltaic Photo ID card indicating their credentials.

National Training

After liaison with electrical training providers in other provinces, it became apparent that there was a great deal of commonality when it came to solar







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PV training. Based on this feedback, in December 2009, under the direction of the National Electrical Trade Council (NETCO), it was decided to develop a national solar photovoltaic certification program. It was also determined that this program would be designed exclusively for licensed construction electricians (electricians certified under the Interprovincial Standards Red Seal Program).

Under the expert guidance of Carol MacLeod, of Carol MacLeod & Associates, a team of subject matter experts (SMEs) representing a wide and diverse range of industry stakeholders was assembled. Their task was to draft a National Occupational Analysis for solar PV installation, an analysis that focuses primarily on the additional competencies required by electricians to install solar PV systems. This national analysis is used as the basis for developing comprehensive solar PV installation training programs. A copy of this analysis is available at: <http://www.cec.org/netco/NOACESolarPVSystemsCertifiedMay2011.pdf>.

Along with training programs, what was also needed was a national, third-party, independent, certification management system.

CSA Personnel Certification Program

To provide the certification structure, CSA was contracted to manage the accreditation process under their Personnel Certifications Program. The CSA accreditation process adheres to the international standard, ISO 17024 'General Requirements for Bodies Operating Certification Systems of Persons.'

One of the major tasks that needed to be undertaken was the development of the credentialing exam. Here, a group of volunteer SMEs who are not involved in providing training were assembled to develop a set of comprehensive test questions based on the previously developed occupational analysis. Another group of approximately 100 electricians experienced in the solar PV industry were invited to participate in writing the beta test. From there, the psychometricians took over, analyzing the validity of the exam.

A copy of the *CSA Personnel Certification Guide* is available at: <http://www.csa-america.org/pdf/SPVC-Handbook.pdf>.

Reimbursements

The Joint Electrical Promotion Plan (JEPP) Board of Directors agreed to reimburse IBEW Construction Council of Ontario Local Union members who successfully complete the Construction Electrician (NOC 7241) Solar Photovoltaic (PV) Systems in 2011 and 2012. Successful recipients may receive reimbursement for their application fee and their examination and certification fee totaling \$345. Currently, twelve IBEW electricians have received reimbursements.

Contractor Training

Recently, ECAO launched a companion training program geared for electrical contractors wishing to pursue the Construction Electrician (NOC 7241) Solar Photovoltaic (PV) Systems Certification. The first session was completed in Kitchener. The next training session is scheduled for the Hamilton contractors. In the following months, additional sessions will be conducted throughout Ontario.

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Toolbox Talks

002: SIX STEPS TO SAFETY

Six steps

1. Ask, "What are the dangers?" This is the first question of safety.
2. Ask, "What can I do to protect myself?" This is the second question of safety.
3. Look. When you enter an area, look around. Look for what is out of place—this is what police, firefighters, SWAT teams, and soldiers are trained to do. Something that is out of place is probably dangerous.
4. Listen. Many dangers announce themselves. As you enter an area, don't talk—listen for humming or other unusual sounds. Pay attention when background noise changes. Protecting your hearing with the proper PPE is an important part of maintaining the ability to use this safety technique.
5. Observe. Be aware of your surroundings. Sights, sounds, smells, and the activities of others can alert you to changing circumstances and new dangers. Look for others working in your area before you start an activity that might be dangerous to them.
6. Act. Knowing is good, but doing makes you safe. To be safe, know what to do and make sure you do it.

Discussing some myths about safety.

- "It's the foreman's job to identify the dangers." Whose job is this, really?
- "If there's no sign requiring a particular PPE and it's not mentioned in the procedure, you don't need it." What is wrong with this line of thinking?

- "It's the company's fault if a danger is present." Does blame protect you? Why does "whose fault it is" thinking not increase your personal safety?
- "Background noise is just noise." What information might "background noise" provide you? Can anyone give an example?
- "I was here first. It's other people's job to let me know if they are going to change something." How does this myth differ from what really goes on? Whose job is it to protect you from changes in the work area?
- "If my foreman doesn't tell me to do it, I don't have to." This myth defies logic. If your shoe is untied, what should you do?

Review and discussion

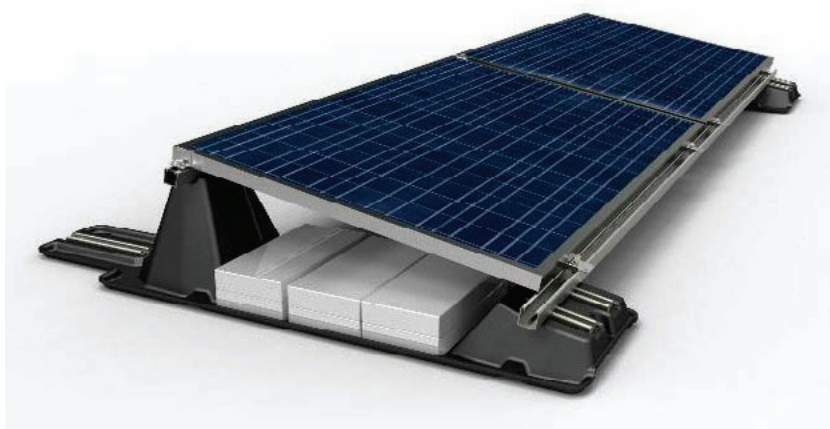
1. Suppose it's your job to set several switch-board panels in place for a new service. What are some dangers, and how should you protect yourself?
2. Tomorrow, you have to pull several runs of 400 MCM cable. What can go wrong, and how can you protect yourself?
3. What are some dangers you might notice by quickly looking around before entering an equipment vault? How about a trench?
4. When you enter an area, you should look for liquids spilled on the floor. What are some other things you should look for?
5. We may not know welding is taking place until we see the flash. When you enter an area, what sounds would warn that welders are working? How should you protect yourself?

6. What are some abnormal sounds that indicate danger? In answering this, describe the danger associated with the sound. For example, a loud transformer hum indicates an overloaded transformer.
7. Do you need your foreman's permission before taking a safety action?
8. What does your foreman need to know about safety problems you find?
9. An MSDS shows that a solvent you have to use is highly caustic. The recommended PPE is listed on the MSDS and on the container label, but that PPE isn't on site and the job is on a tight schedule. What should you do?
10. A worker from another trade has left scraps on a stairway your crew is using frequently. You have cleaned up the mess twice and told this worker both times. Now you see yet another mess of scraps on that same stairway and it's the same worker leaving them. What should you do?

This Toolbox Talks article is reprinted with permission from Toolbox Talks 2 - 100 Safety Training Talks for Electrical Construction Work, 2007, National Electrical Contractors Association (US). The complete set is available in Canada through the Canadian Electrical Contractors Association (CECA). Visit the CECA website at www.ceca.org to place your order or call 1-800-387-3226.

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Sollega Inc. manufactures modular rooftop ballasted solar racking systems. We are happy to announce that the InstaRack 15 degrees (IR15) will be available in Ontario, Canada starting in mid 2012. The IR15 is being manufactured in Ontario and will meet all domestic content and OPA Feed-in Tariff requirements.

The IR15 ballasted solar racking system is quick to install. The unique one-piece molded design enables solar modules to be installed with the least number of parts of any other racking system currently on the market. All grounding is performed through the strut rail, greatly simplifying bonding of the array. Manufactured from 100% recycled HDPE (high-density polyethylene) with a built-in UV inhibitor, the IR15 is engineered to withstand years of exposure in the harshest environments.

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- **Simple and Innovative Design:** requires only 1 tool for assembly
- **Quick Installation:** up to 3 kW per person per hour
- **Universal System:** compatible with modules 30" - 44" in width
- **Integrated Grounding:** performed through strut rail with use of Wiley WEEB
- **Flexible Design:** contours and adjusts to roof obstacles

- **Wind Tunnel Tested:** in accordance with ASCE 7-05; 120 MPH Rating
- **Fully Ballasted:** optional mechanical attachments for seismic and high wind loads
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This powerful saw can cut through 3/4" EMT in only three seconds, and will deliver over 150 cuts per charge with the included M12™ REDLITHIUM XC High Capacity battery. With a 1-5/8" x 1-5/8" cut capacity and low vibration, the M12™ Band Saw delivers clean cuts on the most common small diameter metal cutting applications such as 3/4" EMT, 3/8" threaded rod and 1-5/8" x 1-5/8" Unistrut. Complete with a variable speed trigger

and LED light, the new tool is easy to use and provides fast, clean cuts.

The M12™ Band Saw will also include the new Milwaukee® 48-39-0572 18 TPI Sub-Compact Portable Band Saw Blade and should only be used with this blade. Replacement Milwaukee blades can be purchased separately as well.

Powered by revolutionary M12™ RED LITHIUM™ Battery technology*, the new band saw is compatible with the entire M12™ System, now offering over 40 cordless lithium-ion products. The M12™ platform is the largest sub-compact system in the industry, offering innovative solutions in power, productivity, and portability.

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In addition, all M18 FUEL™ products include the new multi-voltage charger to allow users to charge all M12™ and M18™ batteries with one charger.

Injury Prevention Tips

– GUARDRAILS

A worker at risk of falling certain distances (see below) must be protected by a guardrail system or, if guardrails are not practical, by a travel-restraint system, fall-restricting system, fall-arrest system or safety net. In many cases, guardrails are the most reliable and convenient means of fall protection and they must be your first consideration.

Guardrails or, if guardrails are impractical, other appropriate methods of fall protection must be used when:

- A worker could fall more than 3 metres (10 feet) from any location;
- There is a fall hazard of more than 1.2 metres, if the work area is used as a path for a wheelbarrow or similar equipment;
- A worker could have access to the unprotected edge of any of the following work surfaces and is exposed to a fall of 2.4 metres (8 feet) or more:
 - a floor, including the floor of a mezzanine or balcony
 - the surface of a bridge

- a roof while formwork is in place
- a scaffold platform or other work platform, runway, or ramp;
- There are openings in floors, roofs and other working surfaces not otherwise covered or protected;
- There are open edges of slab formwork for floors and roofs; and
- A worker may fall into water, operating machinery, or hazardous substances.

Basic requirements for wood guardrails (Figure 33) include:

- Top rail, mid rail and toeboard secured to vertical supports;

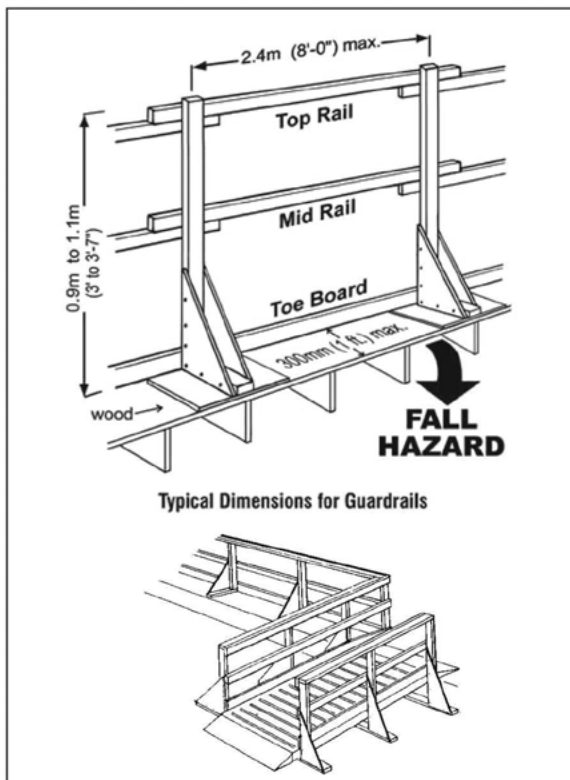


Figure 33

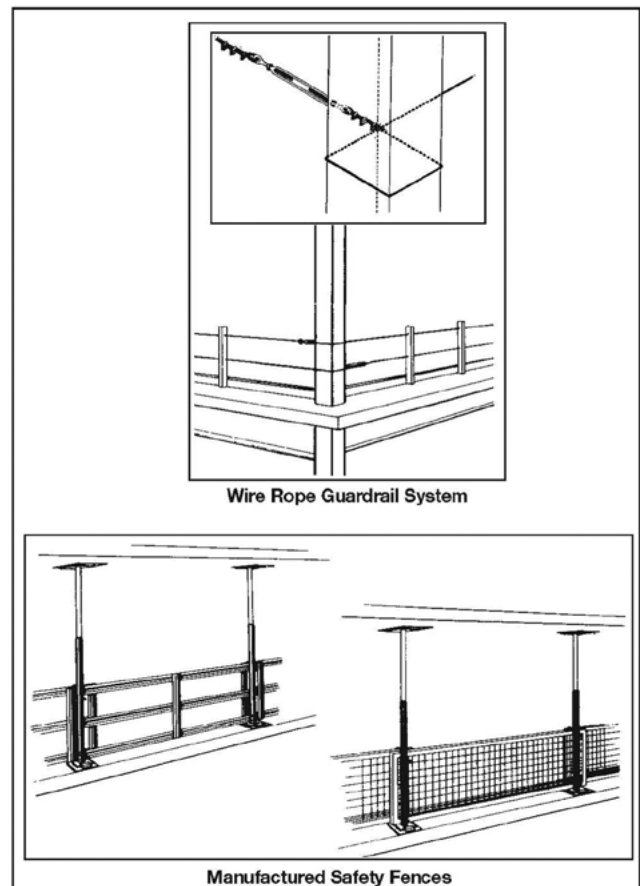


Figure 34

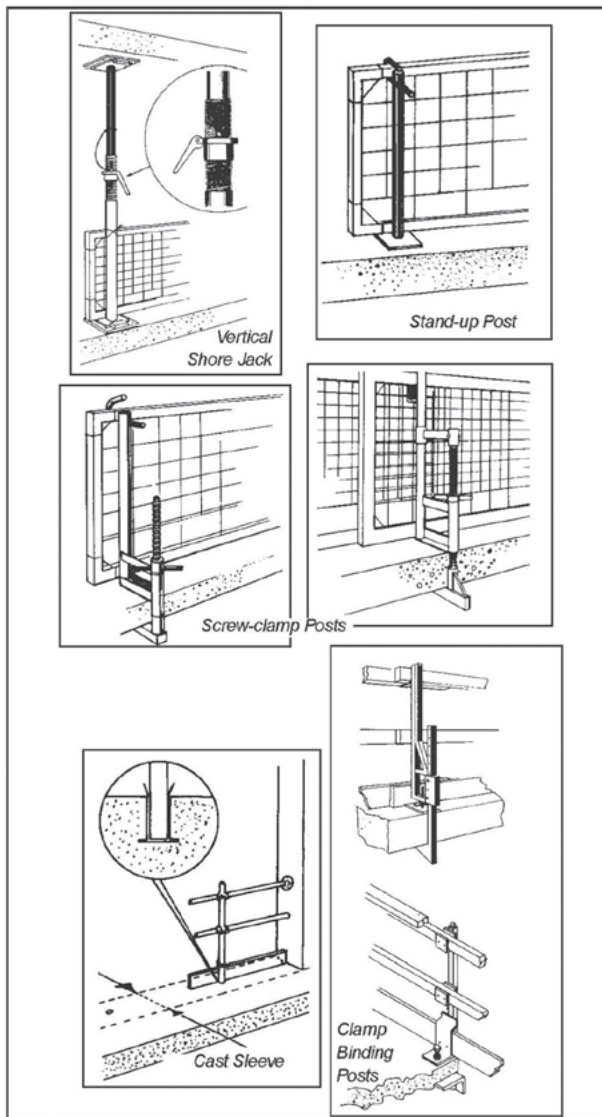


Figure 35

- Top rail between 0.9 m (3 feet) and 1.1 m (3 feet 7 inches) high;
- Toeboard at least 100 mm (4 inches) high – 89 mm (3 1/2 inches) high if made of wood – and installed flush with the surface; and
- Posts no more than 2.4 metres (8 feet) apart.

Other systems are acceptable (Figure 34) if they are as strong and durable as wood guardrails with the same minimum dimensions.

Guardrails must be installed no farther than 300 mm from an edge.

A guardrail must be capable of resisting – anywhere along its length and without exceeding the allowable unit stress for each material used – the following loads when applied separately:

- A point load of 675 newtons (150 lb) applied laterally to the top rail;

- A point load of 450 newtons (100 lb) applied in a vertical downward direction to the top rail;
- A point load of 450 newtons (100 lb) applied in a lateral or vertical downward direction to the mid-rail; and
- A point load of 225 newtons (50 lb) applied laterally to the toeboard.

Support

Typical methods of supporting wood guardrails are shown in Figure 33. Posts extending to top rail height must be braced and solidly fastened to the floor or slab.

Shoring jacks used as posts should be fitted with plywood softener plates top and bottom. Snug up and check the posts regularly for tightness.

For slabs and the end of flying slab forms, manufactured posts can be attached to the concrete with either clamps or inset anchors (Figure 35).

Maximum Strength

To strengthen guardrails, reduce the spacing of posts to between 1 and 2 metres (3 feet and 4 inches and 6 feet and 8 inches) and double the 2 x 4 top rail. Posts on wooden guardrails must not be further apart than 2.4 metres (8 feet).

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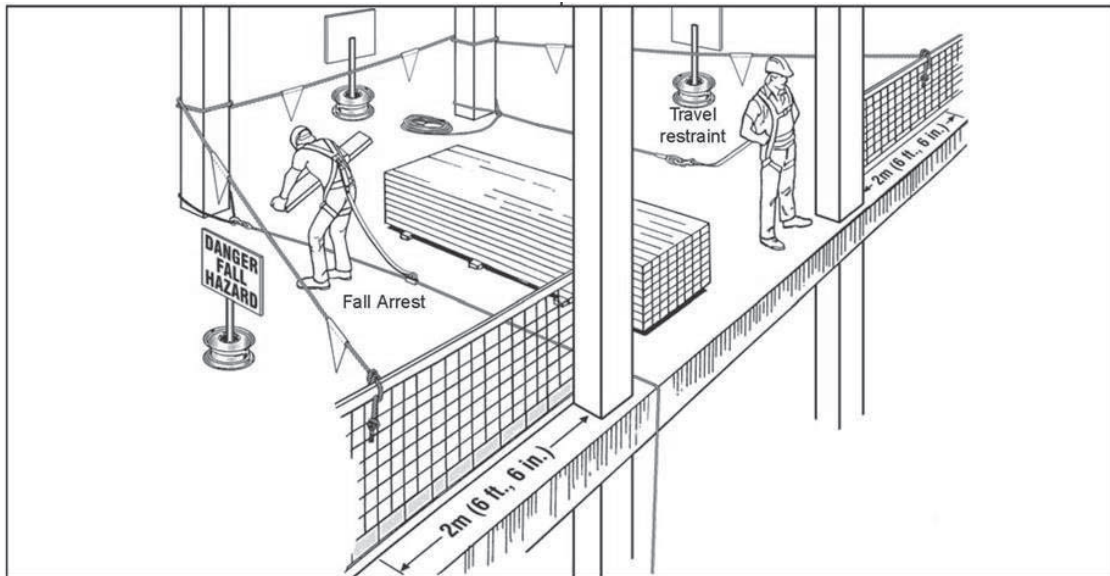


Figure 36

Where guardrails must be removed, open edges should be roped off and marked with warning signs. Workers in the area must use a fall-arrest or travel-restraint system (Figure 36).

Floor Openings

Guardrails are the preferred method for protecting workers near floor openings but may not always be practical. Narrow access routes, for

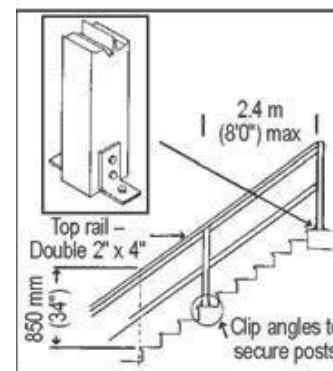


Figure 37
Guardrails on Stairs

example, may rule them out. In such cases, securely fastened covers – planks, plywood, or steel plates – may be the best alternative.

Use 48 mm x 248 mm (1 7/8\" x 9 3/4\") full-sized No. 1 spruce planks.

Make opening covers stand out with bright paint. Include a warning sign: DANGER! OPENING – DO NOT REMOVE! DO NOT LOAD!

Fasten the cover securely to the floor to prevent workers from removing it and falling through the opening.

Stairs

The open edges of stairs require guardrail protection. Specifications for a wooden arrangement are shown in Figure 37.

This excerpt is taken from Chapter 18 – Guardrails – of the Construction Health and Safety Manual produced by the Infrastructure Health and Safety Association (IHSA). The full text is available on the Resource Downloads section of the IHSA website at www.ihsa.ca.

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Employees' Vehicles for Business Use

By Tom Ross, Federated Insurance, Training Manager

Companies that have employees using their own personal vehicles in the course of business have the potential of serious problems for both the employer and the employee. Obviously, these vehicles will not be scheduled on the company's automobile policy and there is a very real possibility that a claim may be denied under the employee's own policy as it was being used for business purposes.

What are the risks?

Generally, an employer will be held responsible for the acts of an employee while the employee is engaged in the employer's business. In the case of an automobile claim arising from a company's operations, that company can expect to be held liable for the employee's actions even if the organization does not own the vehicle. Further, the fact an employee may have violated instructions to operate the vehicle carefully and in observance of all traffic laws will not prevent the company from being held liable if there is an accident for which the employee is fully or partially at fault.

Relying on an employee to maintain their own insurance for business use of their personal vehicles is dangerous. Has there been full disclosure to the insurer of the intended use of the vehicle? Are Third Party Liability Limits adequate for the potential exposure? Are there any possible scenarios that exclude coverage under the policy? How will legal expenses be paid if the company is named in a subsequent lawsuit?

What are your options?

Besides restricting usage to company vehicles, another possible recourse is through a Non-Owned Automobile Policy purchased by the company.

What Vehicles are covered?

Other automobiles not owned by the company, but used on the company's behalf including, employees' vehicles while being used in connection with business of the company, vehicles rented by the company or on its behalf, and those vehicles operated for the company under contract are covered.

Who is covered?

The policy provides coverage for the Named Insured (the company) and every partner or employee who drives, in connection with the business, a vehicle not owned by the organization, or by any person residing in their same premises (e.g., coverage for spouse).

What is covered?

The Non-Owned Automobile policy provides Third Party Liability

coverage that responds when a non-owned vehicle is uninsured or has insufficient limits and covers defence costs.

When the non-owned vehicle is insured elsewhere, Third Party Liability under the Non-Owned Automobile policy applies on an excess basis over the owner's automobile policy. For a company, defence costs may pose a more frequent exposure. Regardless of whether the company is ultimately found liable, the Non-Owned Automobile policy can respond for costs incurred from a lawsuit.

It is highly recommended that companies review the features and benefits of a Non-Owned Automobile policy with their Risk Services Coordinator as part of an overall risk management program.

For more information, contact a Risk Services Coordinator at 1-800-387-5953 (Mississauga) or 1-800-461-3117 (London). The information provided is intended to be general in nature, and may not apply in all provinces. The advice of independent legal or other business advisors should be obtained in developing forms and procedures for your business. The articles are designed to provide information, but should not be construed as eliminating any risk or loss.

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Six Key Elements for Effective Leadership

There are six key elements of leadership that need to be emphasized if your staff and field supervisors are to be highly productive, effective and efficient.

Communicate and Clarify Expectations

The supervisor and employee should reach mutual agreement in five basic areas:

- The work to be done. Explain the quality standards and set a deadline for each task;
- How the job fits into the total picture and why it is important;
- Define the performance factors: quality, quantity, job budgets, safety and material and equipment control and customer relations;
- How and when performance will be measured. It may be through quantitative measures or a series of statements describing satisfactory performance; and
- How performance will be rewarded, such as a pay for performance system.

Let Employees Know Where They Stand

Accentuate the positive. Give your employees positive reinforcement when they do something well. Make sure the feedback is specific, timely and relevant while focusing on results accomplished. This type of feedback, like other leadership techniques, is another way of creating ownership for one's job. Remember, when you reinforce positive behaviour, it tends to repeat itself.

Establish a Sound Communications Network

Effective leadership requires a network of communication that is both company and employee centred. An approach to communication that goes beyond basic job information can accomplish several things. It promotes a sense of identification, a feeling of being a key member of the team. This, in turn, fosters the interest, commitment and closeness that are so important to harmony and co-operation. A sound communication system breeds involvement and decreases the likelihood of an employee stating, "I just do my job. That's what I'm paid for." When people feel valued, they tend to be more productive and will enjoy coming to work every day.

Establish a Positive Work Climate

Give people the freedom to do their work without constant interference. Take positive action when an employee makes a mistake – be a coach, not a critic. Provide help and assistance in problem solving as opposed to always giving the answer. Get them to specifically identify the problem along with the underlying causes. Ask them to provide suggested solutions.

Delegate Effectively

Delegation is sharing responsibility and authority with others and holding them accountable for performance. Delegation is like a "three-legged" stool, where each leg depends on the others to help support the whole and no two can stand alone:

- Responsibility – the task to be completed on time with quality results;
- Authority – the amount of decision-making power you will give an employee; and
- Obligation – the employee's promise to complete the tasks in an effective and efficient manner.

When delegating, the supervisor must do the following:

- Think and plan first;
- Know the strengths of your people and delegate accordingly. Select the right person;
- Clarify the results expected;
- Decide on controls and checkpoints; and
- Be sure to follow up – check, assess, coach and correct.

Gain Commitment

The word "commitment" means "I promise." The foreman's job is to encourage the crew members to do their best work every day. This can be accomplished by doing the following:

- Review the schedule and quality specifications with them;
- Set production goals with them – the specific tasks with deadlines;
- Encourage people to ask for help when they are not sure of what to do or how to do it. Offer support and assistance; and
- Give them the necessary resources to do their job.

In the end, besides being an effective manager, you must also be a formidable leader by committing to an ongoing process of inspiring excellence in others. The process cannot be broken down to "command and control." Rather, it's about marshalling the talents of others to do their best work, day in and day out, while remaining adaptable and flexible to challenges as they arise. Bottom line: move forward and implement these six key elements to unleash the talents of your people.

Norb Slowikowski is President of Slowikowski & Associates, Inc., Darien, Illinois. He may be contacted at norbslow2@gmail.com.

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2010 Ontario Electrical Safety Report

Executive Summary

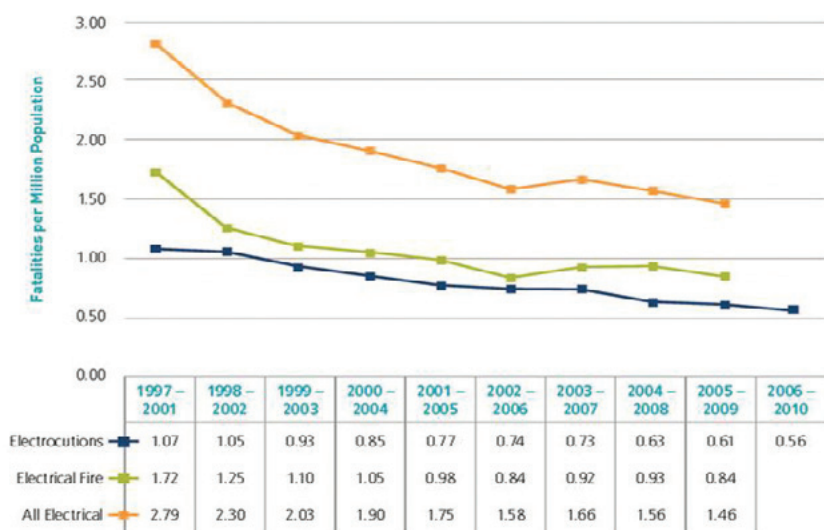
The Ontario Electrical Safety Report (OESR) has evolved over the past ten years to provide a comprehensive assessment of electrical fatalities and incidents that occur in Ontario. The data presented in this report have been compiled from multiple sources, investigations and root cause analyses. This report is broadly used by safety stakeholders and business operators to gain a better understanding of potential electrical risks, high-risk areas and to encourage the development of

initiatives to improve the state of electrical safety in Ontario.

Over the past ten years there has been a steady decline in the rates of electrocutions, fire fatalities (where the ignition source was identified as electrical) and electrical injuries in Ontario. While progress is being made to reduce the number of incidents, the causes and contexts of the serious ones remain the same. Concerted efforts are needed for rates to continue to decrease.

Comparison of Electrocutions to Fire Fatalities, per million population, 2001-2010

Overall Five-year Rolling Average Fatalities in Ontario



Conclusion: The five-year rolling average fatality rate has decreased 38% over the last five years.

Source: ESA and Coroner's records

Electrical Fatalities

In the past ten years, Ontario has reported 164 electrical fatalities. From 2001 to 2010, 83 people died by electrocution and 81 died as a result of fires where the ignition source was identified as electrical, though electricity may not have been the primary source of the fire. In comparison, for the 10-year period from 2000 to 2009, there were 207 electrical fatalities – 90 electrocutions and 117 fire deaths.

Electrocutions

The rate of electrocutions (accidental death caused by contact with electricity) continues to decline:

- From 2001 to 2005, there were 47 electrocutions, a rate of 0.77 per million population.
- From 2006 to 2010, there were 36 electrocutions, a rate of 0.56 per million population; a decrease of 38 per cent.

Powerline electrocutions, which have accounted for more than half (53 per cent) of all electrocutions in the past ten years, are continuing to decline:

- From 2001 to 2005, 51 per cent of all electrocutions in Ontario were from powerline contact.
- From 2006 to 2010, 39 per cent were powerline-related.

Occupational electrocutions continue to outnumber non-occupational deaths by a ratio of 2 to 1:

- From 2001 to 2005, 34 of the 47 (72 per cent) electrocutions were occupational.
- From 2006 to 2010, 23 of the 36 (64 per cent) electrocutions were occupational.

Electricians accounted for 14 per cent of electrical occupational electrocutions between 2006 and 2010, and they continue to be critically injured on the job when working on energized electrical panels.

Non-occupational electrocutions rates are also declining. The low number of incidents makes trending difficult; however, five-year rolling averages can assist in identifying trends:

- The five-year average number of non-occupational electrocutions has decreased from 4.8 to 2.6 over the last ten years.
- The rate of electrocutions per million population has decreased from 0.42 to 0.20. This is a decline of 52 per cent.

Fire Fatalities and Events

The rate of fire fatalities (where the ignition source was identified as electrical) declined from 0.77 per million population to 0.61 per million population in the 2000 to 2009 period.

The number of electrical fire incidents declined 17 per cent between the years 2005 to 2009.

Cooking-related fires continue to be the most common type of electrical fire, although the rates are declining:

- In 2000, there were 1,554 cooking fires.
- In 2009, there were 1,002 cooking fires. This is a 36 per cent reduction.

Electrical distribution fires, as defined by the Office of the Fire Marshal (OFM) ¹, are also declining:

- In 2000, there were 902 electrical distribution fires.
- In 2009, there were 604 electrical distribution fires. This is a 33 per cent reduction.

Priority Issues

The Electrical Safety Authority (ESA) uses the incident data presented in the Ontario Electrical Safety Report to identify those areas that present the greatest risk to Ontarians, to track changes in incident data and to identify emerging trends. Based on data collected over the past 10 years, ESA has identified that 70 per cent of all electrical injuries and fatalities occur in specific areas. These areas have been identified as priorities for reducing electrical fatalities, serious injuries, damage and loss in Ontario:

- Powerline contact – Powerline contact has accounted for almost half of all electrocutions in the past 10 years. ESA's efforts to reduce these numbers include the formation of a Powerline Safety Strategy and introduction of specific and targeted initiatives for high-risk groups, such as dump truck operators, the farming community and small contractors in siding, roofing and painting.
- Electrical workers – Electrical worker incidents are primarily associated with unsafe work practices and procedures. Fatalities to the electrical trade accounted for 22 per cent of all occupational fatalities between 2006 and 2010. In addition, there are at least two critical injuries to electricians each year.
- Misuse of electrical products and unapproved or counterfeit products – The use or misuse of electrical products has resulted in more than 1,000 fires and an average of five fatalities each year. These fires are mainly caused by the misuse of stove-top equipment where unattended cooking has resulted in fire fatalities.
- Older buildings and electrical infrastructure – Fires in older buildings account for roughly 1,000 fires, and result in five fatalities, annually. Older residential facilities with less safety protection than new ones, e.g., GFCIs, have resulted in two deaths in the past five years.

¹ The OFM definition of "distribution equipment" is electrical wiring, devices or equipment, the primary function of which is to carry current from one location to another. Thus, wiring, extension cords, termination, electrical panels, cords on appliances, etc. are considered distribution equipment. This is different than Distribution Equipment as defined by Local Distribution Companies.

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Initiatives

In 2009, ESA introduced a Harm Reduction Strategy to focus initiatives on addressing those harms with the highest priority based on the factual understanding of electrical

harms. These harms include powerline safety, worker safety, product safety and consumer/home safety. These initiatives are documented in ESA's annual report and business plans, and are available at www.esasafe.com.

What is more significant is the work and initiatives of the many safety partners and stakeholders within the electrical safety system that ESA encourages, promotes and supports. The electrical safety system includes all types of organizations, from those that generate and distribute electricity – such as electrical equipment manufacturers, standards organizations, safety organizations, installers of electrical equipment, educators, facility owners, injury response and treatment providers, government, researchers and injury prevention specialists, safety regulators and worker safety advocates – to those who are the end users of electricity.

Feedback from our stakeholders reinforces that the data and information compiled in the Ontario Electrical Safety Report is used by:

- Government ministries and agencies;
- Safety stakeholders: LDCs, product sector, worker and industry associations, business owners, consumers/property owners;
- Universities and colleges;
- Hospitals and healthcare organizations; and
- The Ontario public for whom we seek to improve electrical safety.



In recognition of the contribution others make to improve electrical safety, ESA launched the annual Ontario Electrical Safety Awards program in 2010. This program recognizes exemplary contributions to powerline safety, worker safety, product safety and consumer/home safety. More information on the Awards program is available using the following link: http://esasafe.com/Corporate/ontario_electrical_safety_awards_program.php?s=0.

Together with others in the electrical safety system we continue on the collective journey of “Getting to Zero.”

For the full 2010 Ontario Electrical Safety Report, visit the Electrical Safety Authority website at http://esasafe.com/Corporate/sfr_002.php?s=33

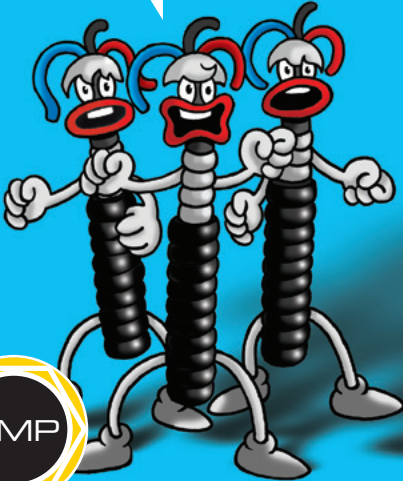
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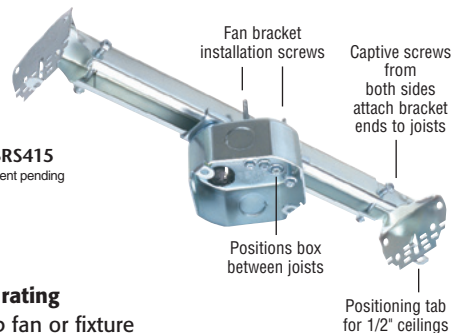
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The NEW Canadian Electrical Code, 2012 Addresses Renewable Energy Applications

With the increased interest in energy generated from renewable sources, such as wind and solar, it is important to have established safe practices for installation and maintenance personnel and to help ensure optimum performance of installed equipment.

The expanding markets for renewable energy systems has also led to a need for electrical safety requirements to ensure public safety and provide a level regulatory playing field for installers and manufacturers. Revisions to the new 2012 Canadian Electrical Code (CEC), Part I, respond to this market need through the addition of Section 64 on “Renewable Energy Systems” and adoption of required revisions to Section 50 “Solar Photovoltaic Systems.” Stakeholders that have developed these requirements for renewable energy for use in Canada are recognized international professionals, including engineers, manufacturers, regulators, utilities, project developers, insurers and academics.

The foundation of the Canadian electrical safety system rests on the installation requirements in the CEC, Part I, product safety requirements in the CEC, Part II series of standards, and enforcement of the CEC Part I through adoption as regulation.

In the CEC, Part 1, the newly developed Section 64 was formulated through extensive research of existing international documents, and the results reflect the principles of global standards and industry practice and address the unique installation requirements for a variety of renewable energy systems, including wind, hydrokinetic, micro-hydro and fuel cell systems for Canada. As a result of major updates to Section 50 and the addition of Section 64, the 2012 CEC, Part 1 covers electrical installation requirements for renewable energy systems including off grid and utility connected systems.

The new requirements for renewable energy systems cover 15 pages in the 2012 CEC, Part 1 and apply to all types of occupancies, including residential, commercial and industrial establishments. Among the many new requirements contained in Section 64 are requirements for grounding of renewable energy systems, disconnection means, and the installation and connection of storage batteries.

While Section 64 covers many new technologies, requirements for solar photovoltaic systems in Section 50 have been substantially updated to reflect many technology specific

requirements, including new cabling and connection products, marking requirements, details about permissible voltage drop, safety devices, installation practices and voltage/current temperature correction calculations.

In support of the new installation rules in the CEC, Part I, there is also a great deal of activity in the CEC, Part II series of standards for electrical product safety. New standards are either under development or have already been published to address a wide variety of new technologies in the PV industry, including purpose-built PV cables, arc fault protection, connectors, combiner boxes and other related electrical products.

In addition to the modifications to the CEC Parts I and II, CSA Group has published standards for the wind energy industry that provide requirements for design, power performance, acoustic noise measurement and lightning protection for wind turbines, along with design requirements for offshore wind turbines. CSA Group is also currently working with many expert technical committees to adopt existing IEC Wind Energy Standards as National Standards of Canada and to develop new standards that meet Canadian requirements for the wind industry.

Furthermore, CSA Group is in the process of developing PV rooftop installation best practice guidelines for rooftop projects.

Additionally, CSA Group offers training and supporting products to help users understand and apply the more than 180 key changes and updates in the 2012 CE Code, including CE Code Update Training in workshop, online or onsite formats, the 2012 CE Code Handbook and the 2012 CE Code Calculators. CSA Group provides a wide range of other electrical-based specialty training, including Installation and Maintenance of Renewable Energy Systems and PV Installation and Safety Requirements.

About the 2012 Canadian Electrical Code

Developed by committees of experts representing a broad spectrum of industry stakeholders from across Canada, the Canadian Electrical Code, Part I is published on a three-year cycle and adopted as regulation in all provinces and territories. The 22nd edition of the CE Code was published in January 2012 and features over 180 major changes, in addition to the new Section 64.

About the Author of this Article

Tim Pope, C.E.T., is a Senior Project Manager in the electrical standards program and is responsible for the Canadian Electrical Code, Part I.

About CSA Group

CSA Group is an independent, not-for-profit membership association dedicated to safety, social good and sustainability. Its knowledge and expertise encompass standards development; training and advisory solutions; global testing and certification services across key business areas such as hazardous location and industrial, plumbing and construction, medical, safety and technology, appliances and gas, alternative energy, lighting and sustainability; as well as consumer product evaluation services. The CSA certification mark appears on billions of products worldwide. For more information about CSA Group visit www.csagroup.org.

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| View sent messages | Press Alt and O |
| View voicemail messages | Press Alt and V |
| View text messages | Press Alt and M |
| View call logs | Press Alt and P |



MOVING FORWARD

The Quality Connection Health and Safety Program has been available to all of Ontario's unionized electrical contractors for the past 20 years. During that time, its content and form of delivery have undergone a considerable change. It is change that "moves us forward," whether in our private lives or business operations. There is usually a constant factor associated with this change, and that is our goal. Twenty years ago, the Quality Connection Health and Safety Program had one primary goal: "to protect the health and safety of a worker." Today that goal remains the same.

As contractors, the task of keeping up with change and addressing issues that affect your business can indeed seem daunting at times. Given the continually changing government regulations, new training requirements, Ministry of Labour blitzes, Workplace Safety and Insurance Board requirements, and the introduction of new programs sponsored by government agencies, one may feel like a small vessel surrounded by a dense fog. My experiences tell me you are not alone. They also tell me that as contractors, the tools available that will assist in lifting that fog are not used as extensively or to the depth that is possible.

By now I am sure you are aware that the tool I am referring to is the Internet – the World

Wide Web, the highway of information, or whatever name you wish to call it. It is usually close at hand and right in front of you. Let's give it a try: search "gov occ health and safety ont." This will bring you to some 55 pages for services and information relating to Government of Ontario health and safety, private sources, out-of-country information and safety products, along with much more. These sites will lead to links, leading to more links, which is a process that seems endless. Although many links are repeated, stay focused. The information is there.

Usually, when searching for a specific topic or information bite, you will come across information that you were not aware of and perhaps should be. For example, the Ministry of Labour has a four-month inspection blitz that focuses on new and young workers at industrial, healthcare and construction workplaces. It began May 1, 2012. By linking to that site you will find videos, posters for new and young workers, laws, information on filing a complaint, employment standards, and many additional portals into a sea of information.

Search "gov wsib heat stress," as we have currently been experiencing high temperatures with summer just around the corner, and the information you obtain can become an important part of the heat stress policy you've

been contemplating. Or, it may answer some questions regarding heat stress and your company's responsibilities related to heat stress.

Search "workplace violence and harassment," and the result clearly indicates that the information and resources seem endless. Don't give up or become frustrated. Take and use the information you need; it's all at your fingertips. If you are looking for the latest developments under the *Occupational Health and Safety Act*, try www.e-laws.gov.on.ca. The information here is reportedly updated every two weeks. Once again, one address will lead to various links that may fulfill your information search or, as in most cases, will lead to valuable bits of information that your search excluded.

The Infrastructure Health and Safety Association (IHSA) has recently introduced the Certificate of Recognition (COR) to Ontario. Search www.ihsa.ca/cor/Steps-to-cor.cfm. The COR program is a health and safety management system that was developed more than 20 years ago in Alberta. A comprehensive internal and external audit forms part of the program. The audit (audit instrument) is based on the following 19 elements: policy statement, hazard analysis, safe work practices, safe job procedures, company rules, personal protective equipment, preventive maintenance, training and communication,

workplace inspections, investigations and reporting, emergency preparedness, statistics and records, legislation, occupational health, first aid, health and safety representative/joint health and safety committee, workplace violence and harassment, return to work and management review.

One senior management and one designated full-time employee must take the prescribed training offered by IHSA. The full-time employee will be designated the internal auditor. Training times include the following:

- Senior management: COR Essentials - ½ day; and
- Full-time employee: COR Essentials - ½ day, basic auditing principles - one day, COR internal auditor - one day, principles of effective training - three days,

construction health and safety representative - five days or home study.

There are other requirements and conditions for the COR program. The Certificate of Recognition may play an important part in your company's future operations and is well worth looking into.

Recently, the Workplace Safety and Insurance Board released the Funding Fairness Review Report by Professor Harry Arthur. The review investigated the following issues as related to the financial situation within the WSIB: WSIB unfunded liability, premium rate setting, rate groups, employer incentive programs, funding occupational disease claims, and indexation of benefits for partially disabled workers. Once again, the findings and recommendations ignored, adopted in whole or in part may affect your company's

future. The report is quite lengthy, however, so to review a summary and its highlights, search "wsib funding fairness summary and highlights."

On some government sites you may set up your email address to receive information alerts that will assist in keeping you informed. You may also express your opinion or offer suggestions online at various sites. Your contribution counts. Staying informed is simply a matter of staying connected to the resources hidden under the keyboard.

Have you searched ECAO lately?

*Richard Mei
Quality Connection
Health and Safety Program*

QUARTERLY FINANCIAL STATISTICS

Quarterly Financial Statistics FOR ENTERPRISES – CONSTRUCTION

| | 1st quarter 2011 | 2nd quarter 2011 | 3rd quarter 2011 | 4th quarter 2011 | 1st quarter 2012 |
|----------------------------------|------------------|------------------|------------------|------------------|------------------|
| Selected financial ratios | | | | | |
| Profit margin (%) | 3.5 | 4.9 | 5.4 | 5.6 | 6.4 |
| Return on equity (%) | 11.8 | 17.5 | 18.9 | 17.7 | 17.8 |
| Debt to equity (ratio) | 1.453 | 1.528 | 1.509 | 1.435 | 1.363 |
| Return on capital employed (%) | 6.5 | 7.5 | 8.4 | 8.8 | 9.8 |

Source: Statistics Canada – Quarterly Financial Statistics for Enterprises – Construction – Table 8-2.

OESC 2012 Requirements for Electric Vehicle (EV) Charging Systems

In Ontario, Ontario Electrical Safety Code (OESC) 2012 became effective on May 1, 2012. As a result of the anticipated increase in the utilization of electrical vehicle technology there are several new rules and amendments in OESC 2012 related to requirements for electrical vehicle (EV) charging systems.

Some of the changes related to requirements for EV charging systems are:

- 1) The Code does not apply to an electric vehicle inlet or on-board charging system that is an integral part of the vehicle.

The new Appendix B note to Ontario amendment, Rule 2-000(h), is added to clarify that the Code does not apply to an electric vehicle inlet or on-board charging system that is an integral part of the vehicle. This new Appendix B note is similar to Rule 86-100 Appendix B note added to the electric vehicle inlet definition to clarify that the electric vehicle inlet is considered to be part of the electric vehicle and not part of the electric vehicle charging equipment for the purpose of the Code.



Photo 1 - Electrical vehicle inlet

2) Demand factors for EV charging system loads.

These additions are intended to address circuit loading requirements for electric vehicle charging equipment and to assist the installers and designers with calculation of a minimum ampacity of service and feeders conductors.

The new Rule 8-200(1)(a)(vi) states that when determining the minimum ampacity of service or feeders conductors supplying a single dwelling, one must consider a demand factor of 100 per cent for any electric vehicle charging equipment loads.

Additionally, since the charging load is continuous, the electric vehicle charging equipment loads shall not exceed 80 per cent of the rating of the overcurrent device as per Rule 8-104(5). Where the equipment is not known then the load shall be considered to be 80 per cent of the rating of the overcurrent device.

To display the impact of this code change on the calculated load for a typical single family dwelling, the following example shows the calculation for 2000 ft² or 186 m² of living area.

The following need to be included in the calculated load, for a typical house:

- A total of 7000 W for the living area;
- 6000 W for a single electric range where the rating does not exceed 12 kW;
- 1375 W for a clothes dryer, taken at 25% of 5500 W because a range has been provided for; and
- 4000 W for the A/C unit taken at 100 per cent.

Table 1 – Calculated load for a typical house

| Typical single family dwelling (with living area of 2000ft² or 186 m²) | | |
|---|-------------------------------|--------------------|
| | | |
| Living area | | 186 m ² |
| First 90 m ² of living area @ 5000 w | (96 m ² remaining) | 5000 |
| Next 90 m ² of living area @ 1000 w | (6 m ² remaining) | 1000 |
| Remaining portion of living area @ 1000 w | | 1000 |
| Electric Range (less than 12 kw range)@ 6000 w | | 6000 |
| Electric Dryer (25% of 5500 w) | | 1375 |
| Air Conditioning @ 100% | | 4000 |
| Electrical Vehicle charging equipment @ 2000 watts@ 100% | | 2000 |
| Calculated load expressed in Watts | | 20375 |
| Calculated load expressed in Amps | | 85A |

This would provide a total of 18.4 kW or 77 A of calculated load which would require a 100 A service to be installed.

If the requirements for electric vehicles were applied, assume 2000 W for the electric vehicle charger added at 100 per cent demand, as per the manufacturer's nameplate rating.

Table 1 – Calculated load for a typical house

The addition of this load would increase the calculated load to 20.4 kW or 85 A. Although in the above example the service (100 A) is not required to be changed, it is important to be aware of the impact that the addition of electrical vehicle charging may have on the loading of existing services and service conductors.

The amended Rule 8-200(3) clarifies that the portion of the load made up of an electrical vehicle charging system shall not be considered continuous for the calculation of service and feeder conductors for single dwellings, and shall be continuous for the calculation of branch circuit conductors as per Rule 86-302. Readers may be familiar with this clarification since it aligns with similar requirements for air conditioning units.

Similar to the new Rule 8-200(1)(a)(vi), new Rule 8-202(3)(d) requires any electric vehicle charging equipment loads not located in dwelling units to be added with a demand factor of 100 per cent.

3) Requirements for receptacles for use with electric vehicle charging equipment


New Rule 26-710(o) specifies that where required by the National Building Code of Canada, receptacles for use with electric vehicle charging equipment as specified in Rule 86-306 shall be provided for car spaces in a garage or carport serving buildings of residential occupancies. The rationale for this addition is to introduce installation criteria for receptacles and dedicated branch circuits for electric vehicle charging equipment when the requirement for electric vehicle charging equipment infrastructure is mandated by the building code or local by-laws.

4) Height of the electric vehicle charging equipment

New Rule 86-404 specifies that the height of the electric vehicle charging equipment shall be located at a height of not less than 450mm and not more than 1.2m above the floor level.



Photo 2 – EV charging station



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CFAE Corner

CFAE Online Renewal Program

The long awaited CFAE online renewal program has been launched.

The online program has been designed to allow individuals to complete it without having to sit in a traditional in-class environment. This works especially well for individuals in remote locations who cannot easily access a training facility.

The process is quite simple. An individual is required to complete the online registration form, and, after the candidate has been screened, ECAO will provide them with a

student manual and code reference binder along with a user name and password. The ULC standards required for the course are not provided through ECAO therefore the students need to secure their own copies independently.

From there it is a simple process to log into the program and work through the modules and quizzes. Each student is given 90 days in which to complete the program from the initial date they log into the course. This averages out to approximately four hours per week, which is

estimated to be an ideal time frame. If a student does not complete the program within that 90-day period they will be required to re-register for it and pay the registration fee again.

Upon completion of the course, the student registers for an available exam date. The exam will be conducted in pencil and paper in a third-party proctored facility.

More information is available on the ECAO website at www.ecao.org.



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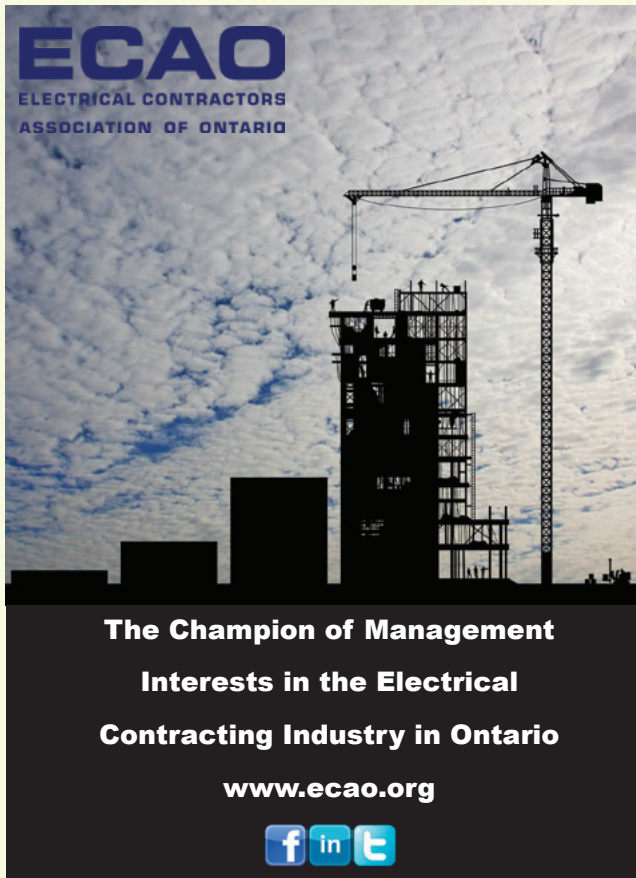
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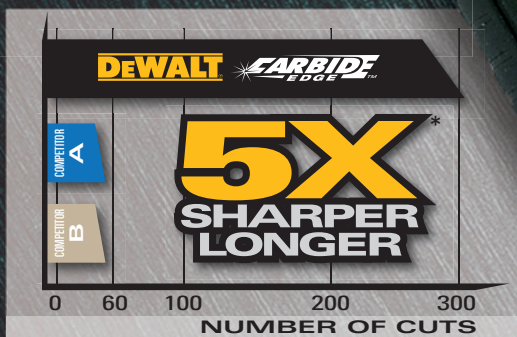
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