Best Practices Identified at the UAA Canada Safety Summit May 29th & 30th 2019

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Aerial Rescue

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Aerial Rescue

- **Scenario #1**
  - Spar pole rescue – Cut by chainsaw
- **Scenario #2**
  - Rigging overhang/Limb failure – Stuck Life Line
- **Scenario #3**
  - Bucket Evacuation – Hydraulic hose failure

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Aerial Rescue

Scenario #1 – Working on a spar – Cut by chainsaw

Rescue methods

1. Use rigging equipment available on the spar – Not able to train this
2. Ascend the spar and lower victim with Pulley Saver
3. Use an adjacent tree to perform a belay rescue
4. Bucket rescue if possible

Rescue Supplies/First Aid

1. Call E.M.S
2. Blood stopper packs
3. Assess severity of injury

Remove existing hazards

1. Body wood or limb that may be partially cut
2. Chainsaw
3. Live Line

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Scenario #2 – Rigging overhang/Limb failure – Stuck Life Line

Rescue methods

1. Second rescue / access line pre-set
2. Use of a second climber to lower the victim
3. Tree to bucket rescue if possible
4. Belay rescue

Job Planning – work practices

1. Avoid tying in to the rigging stem
2. Consider a minimum size diameter when planning rigging configurations

Remove existing hazards

1. Tie off the broken section to prevent further injury

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Aerial Rescue

Scenario #3 - Bucket Evacuation – Hydraulic hose failure

Training

1. Every 6 months minimum practice
2. Random “fire drill style / mock scenario” approach to practice – on job site
3. Job planning – More emphasis on preparedness

Equipment

1. Improved equipment for method of escape
2. Readily available - In the bucket
3. Evacuation equipment inspected monthly

Bucket to Bucket

1. Wait for another truck to show up on site

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Scenario #3 - Bucket Evacuation – Hydraulic hose failure

Lowering Pump

1. All employees trained on operation of lowering pump and controls – all staff
2. Check and inspect daily

Bucket to Ground

1. L.O.A maintained
2. Send up equipment on a hand line
3. Back up belay when descending

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Tree Felling

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Best Practices

- Message to Staff – There is No Tree that MUST be Done Today
- Education of Crew – Culture – Stop to Reassess the Situation – Training – If you can't do it safely, you don't do it at all
- Fundamentals – Training - Self-Discipline to Follow the Rules Written in Blood
- No Two Trees are the Same - Not One Way of Working the Tree is the Same
- And No Two Journeypersons are the Same Either

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Best Practices

- Pre-Job Brief – Having Everyone Involved – Mix it up for the Person that's Writing the Job Plan
- More thorough Site Assessment/Tree Hazard Assessment
- Hazard Assessment of Tree itself – Condition of Tree, Lean, Escape Route, Notch, Back Cut
- BC – Documented Site Assessment for Every Tree Pre-Fall Assessment and Post Evaluation of Tree

- Felling Zone – No Regulation in Ontario for Minimum Distance to be Away when Felling a Tree
- Asplundh – 2x the Height of the Tree
- USA ANSI – 1.5x the Height of the Tree
- Canada - BC, AB, SK, MB – 2x the Height of the Tree
- 2x the Height of the Tree or Mandatory Re-Direct

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Best Practices

- Escape Route for both Sawyer and Rope Pullers
- Sawyer – Escape Route to 45 Degrees Away from Each Side of the Tree
- Escape Route for Rope Pullers is to Move Further Back, Away from Direction of Fall – Flying Objects, Deadwood, etc.
- Minimum 200 Foot Ropes – Removing 100 Foot Trees - Have 2 Ropes Available
- Utilization of the Rope is Used to get the Felling Action Started
- Worksite Inspections during work to ensure work is being performed safely and properly

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Best Practices

- Post Work Assessment – Clear indicators there whether work is being done properly or indicators to reveal what's going on when Supervisor is not on site
- Post Job Review Post Stump Inspections - Audit Completed Work - Stump Check – Technical Skill of Notching - Sawyer's Finger Print/Identity
- Follow up to see if job went properly? Notch correct? What went right? What could have been improved?
- How much they're pulling?– over pulling with trucks – Utilizing a vehicle to pull the rope can force the tree rather than using proper felling techniques – don't know how much pressure you're putting on the rope – putting enormous stress on wood, ropes and rigging

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Best Practices

- Communication Headsets – yelling all day back and forth is exhausting
- Whistle System – one blast, two blast on the whistle
- Years of Experience: 0-1: #1 for injuries 1-3 3-5 5-10 10+: #2 injuries
- But then we match the least experience with the most experienced, yet they are the least safe
- Most safe are 1-3 years and 3-5 years – Engaged and Not Yet Complacent
- Opportunity for Continuing Education – Intense Training during Apprenticeship – But Journeypersons do not Review the Fundamentals Regularly – Train/Review Basic Skills
- Opportunity for Improvement with regards to Practical Skills Evaluation

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Best Practices

- Measure Height of Tree?
- Ranger Finder – not for every tree but available
- Experience
- Buckets
- Pole Height
- “Stick Trick”; https://www.google.ca/search?ei=oiDvXPSHO8fi-gTrh7PADw&q=stick+trick+for+measuring+tree+height&oq=stick+trick+for+measuring+tree+height&gs_l=psy-ab.3...3734.6462..6839...2.0..0.417.3399.2-9j2j1.....0....1..gws-wiz.....0i71.k-c5a9kH-O0

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Best Practices

- Indicators missed that show the level of workforce competency – ex. Increase of line strikes
- Reporting All Incidents – Tracking – Trending
- Leading Indicators – Trending of Incidents – Tell the Story of What Happens Out There – Site Assessment – If You Hit a Fence, Hit the Line – Site Assessment Wasn't Adequate

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Human Performance

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Best Practices

Pre-job planning:

- Standardize job planning across industry for critical hazards
- Job plans are completed by apprentices or laborers

Post-job reviews:

- Focus on successes and failures
- Can occur throughout the day
- Safety Basics reviews

Pause and Think:

- Mid-day briefing. Planned mid-day break to refocus.

Administrative Control and Adherence:

- Engage all staff in yearly review of policies/procedures and ask for feedback on potential changes.

Questioning Attitude:

- Leaders need to create the environment that is conducive to asking questions.

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Best Practices

- Crew level team dynamic. Develop a good crew dynamic.
- How do you deem an employee competent/qualified? Occupational Training Manual
- Build an electronic system for employee concerns where it tracks and flags issues with accountability and deadlines.
- 360 feedback between supervisors and employees.
- Supervisory development programs (PODS): Supervisors receive training on corporate priorities to give them a sense of why decisions are made.

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Best Practices

What can UAA (or other associations) do to help?

- Support to smaller owners/companies. Share ideas/lessons learned.
- Work with schools to get a course/module to raise awareness of utility arborist work.
- Communicate industry incident trends (causal factors, error precursors). A way to share lessons learned from the industry.
- Develop working committees and webinars to help drive conversations.

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Struck by Sharp Objects

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Best Practices

- Hazards assessments that go beyond the usual use of the equipment
  - For example; tripping and falling on a saw, or reaching for unseen equipment, maintenance of equipment, changing chipper blades
  - Distinction between high level and low level risk. Do not neglect lower level risk situations
- Finding new ways to communicate incidents and lessons learned
  - Weekly safety calls with contractors
  - Recognition for close call/near miss reporting. Fostering a proactive culture.
  - New ways of getting messages to crews - Texts, videos to tablets, constant safety reminders
  - Stressing the Safety over Productivity Message. Explaining the importance of safety in achieving contracts (ISN)
- Supporting our Supervision
  - What kind of supervision/leadership styles are we promoting, just because they are a good tradesperson does not make them a good leader
  - Consistency for calling out safety infractions. Calling out every infraction, no matter who is making it
  - Quit burying supervisors in administrative tasks and let them supervise
  - Creating a culture that doesn't normalize risk

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Best Practices

Hierarchy of Controls

- Continuing review of Engineered Controls
  - Sheaths, Bar covers, Pole bags for pruners
  - Equipment Purchasing (ie eliminating top handle saws)
- Bringing awareness to hazards through Administrative Controls
  - Worksite Observations, Blitzes
  - Tactile Training,
  - Daily Safety/Tailgate talks
  - Reviewing past weeks/days incidents, TCIA reports
  - Frequent review of policies , Arborist safe work practices
- PPE
  - Looking at the condition of PPE (ie cuts in PPE but no reported incidents=close calls, Rubber gloves in perfect condition=are they being worn)
  - Cut resistant gloves- some clients requiring use of cut resistant gloves at all times
  - Purchasing quality items

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Electrical Hazards

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Electrical Hazards – Review of Incidents

2016 Electrical Contact Statistics from TCIA

22 deaths recorded in the USA associated with electrical contact with power lines;

2 (contact by poles / aluminum ladders)
7 (indirect contact, tree limbs)
13 “unknown causes”

Electrical Hazards – Closer to Home

In Thunder Bay ON a worker trimming a tree suffered significant injuries to hands and feet after making contact with a energized primary.

Damage is both external and internal and can be devastating.

Hydro One has an alliance with Sunnybrook Hospital to attend to electrical burn victims

Thunder Bay

Use extra caution around power lines, safety advocates urge

CBC News · Posted: Apr 10, 2019 8:15 AM ET | Last Updated: April 10

The Electrical Safety Authority is reminding people to use extra caution when doing work around power lines, such as trimming trees. (Radio-Canada)

Best Practices

Worker Skills

- Competent workers key to protecting against electrical incidents
- Defining competent difficult – varies from province (State), utility and contract, no standard consistent list of skills required – more companies and utilities in Ontario use the MTCU 444B UA program as the standard to measure against
- Quebec – using workers compensation board to standardize competencies
- Labour shortage / mobility - A “qualified” worker in Alberta might not be considered “qualified” in B. C. or other provinces
- New Employee – ensure adequate orientation to electrical hazards, provide training for electrical hazards (safety in line clearing, UWPC), combination of education and experience are necessary – IBEW training program

Best Practices

Electrical Hazards - Safety Basics

- Identify, Eliminate, Control, Protect, Minimize – integrate in all work practices

Identify Hazard

- At the planning and execution stage – notification and daily planning, use of software to share information/location of electrical hazards throughout all steps of project – shared chat, notification software

Eliminate and Control Hazard

- Eliminate through Isolation / de-energising – asking and receiving less resistance – safety concerns – make it a joint effort to work on circuit change out defects
- Control – applying hold-offs, rubber cover-up, rubber gloves, live line tools

Lessons Learned

Consensus from all Participants

- Qualifications should be standardized throughout Canada and U.S. – How? Restricted Trade – changes to contract specifications – Quebec model
- Further meetings needed between utilities, contractors, purchasing agents

Skill Development - Training Methods

- Use of Virtual and Augmented Reality – provide the experience without having to be in the situation

Mechanical Technology

- Incorporate tech - remote- controlled grapple and saw – back-yard aerial devices
- Challenge / support industry designing mechanical means which will remove workers from the electrical environment

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