

IMPACTing Safety

Beyond the Long Shift: Fatigue, Safety, and Performance in Ironworking



Iron Workers – IMPACT International Call to Safety



Kevin P. Bryenton

Book No. 1141680

- Born in San Diego, California; second-generation ironworker
- Joined Local 721, Toronto, Ontario in 1987 while completing Bachelor of Education
- Completed apprenticeship as an ironworker generalist; recognized as Outstanding Apprentice of the Year
- Extensive experience in industrial and ornamental sectors
- Served Local 721 as instructor, apprenticeship coordinator, and in multiple elected offices, including President and Business Agent (1999 onward)
- Appointed General Organizer (2009)
- Appointed General Vice President (2015)
- Appointed Executive Director of Canadian Affairs (2019)
- Appointed General Secretary (2024)
- Unanimously elected International General President (effective January 1, 2026)



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Introducing Today's Panelists



Special Panel



Rob Branyan
The Boldt Company



Claire Bryant
National Safety Council



Brad DeBoer
DeBoer Safety Group

Claire Bryant

- Public health professional leading workplace wellbeing initiatives at the National Safety Council (NSC)
- Plans, implements, and evaluates programs focused on:
 - Substance misuse
 - Fatigue and impairment
- Provides analytical support for technical reports and future program development
- Certified Health Education Specialist (CHES)
- Develops employer tools to manage:
 - Substance misuse risks
 - Fatigue-related safety concerns
 - Overall workforce wellbeing
- Promotes holistic safety interventions, including:
 - Training programs
 - Impairment detection strategies
- Previous experience:
 - Clinical quality improvement at Mercy Health Center (Athens, GA)
 - Injury prevention program development with Atlanta-area nonprofits (e.g., Shepherd Center)
- Education:
 - Master of Public Health (Policy & Management), University of Georgia
 - Bachelor's degree in Health Promotion and Behavior, University of Georgia



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First Polling Question

How many hours of sleep do you average per night during a typical work week?

- A. Less than 5 hours
- B. 5–6 hours
- C. 6–7 hours
- D. 7+ hours



Second Polling Question

What most often prevents you from getting enough sleep?

- A. Long work hours or commute
- B. Family or personal responsibilities
- C. Screen time (phone/TV)
- D. Stress or trouble sleeping



Third Polling Question

Do you think your current sleep habits impact your safety at work?

- A. Not at all
- B. Slightly
- C. Moderately
- D. Significantly



Defining Fatigue

Fatigue describes the feelings of tiredness, sleepiness, reduced energy and increased effort needed to perform tasks at a desired level.

Factors that influence fatigue

Worker

- Time of day
- Sleep deprivation
- Time on task and repetitive motion
- Highly physical and mental tasks
- Biological factors (sleep disorders, medical conditions)

Workplace

- Shift scheduling practices
 - Rest breaks
 - Hours on shift
 - Time of day
- Work environment (lighting, air quality, noise, temperature)
- High job demand

Safety Impact of Fatigue

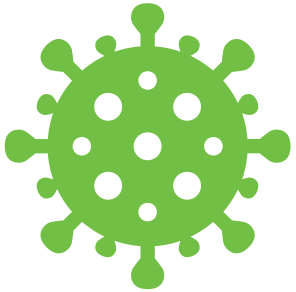
- **13% of work injuries** could be attributed to sleep problems
- **65% of construction workers** report feeling tired at work and **45% of construction employers** report related safety incidents
- Driving on 4-5 hours of sleep means you are **four times more likely** to crash

Fatigue impairment:

- Decreases in performance
- Lapses in attention and vigilance
- Delayed reactions
- Impaired reasoning and decision-making
- Reduced situational awareness
- Low motivation to perform “optional” activities
- Poor assessment of risk

Health Impact of Fatigue

Immune function



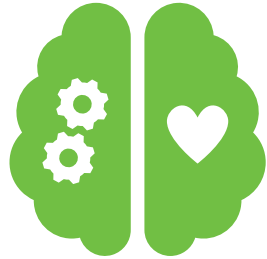
Physical function



Hormones and mood



Mental performance



Appetite and metabolism

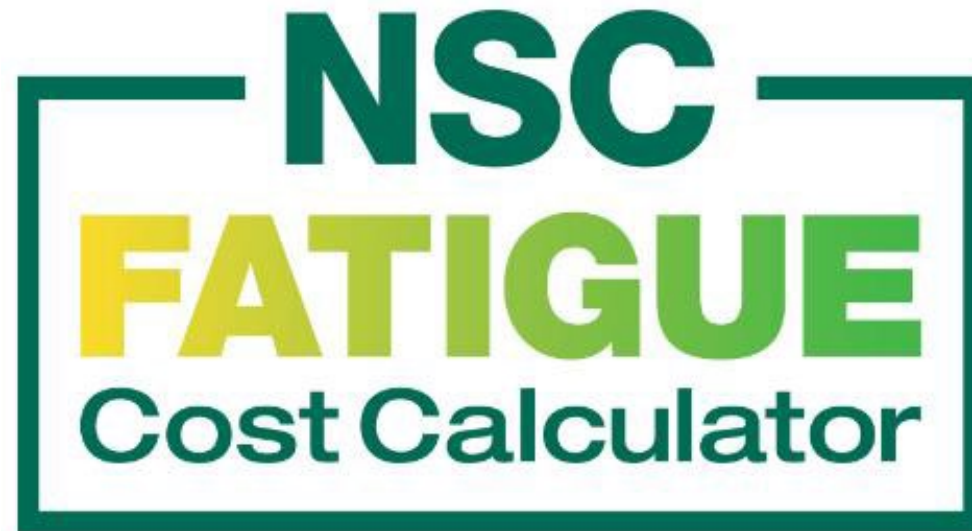


Chronic conditions



Cost Impact of Fatigue

- A single worker with sleep problems **costs \$3,500 a year** in lost productivity, absenteeism and increased health care costs
- An employer in the construction industry with 700 employees can expect to pay over **\$1 million a year** for tired employees



nsc.org/tiredatwork

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Best Practices

Worker

- 7-8 hours of sleep a night
- Limit work to 10 hrs/day, 50 hrs a week
- Take breaks and use caffeine lightly
- Minimize commute times when possible
- Communicate with foreman and crew
- Seek care for health concerns

Workplace / Job Site

- Breaks and check ins
- Provide 12 hours between shifts
- Shifts
 - Forward rotation
 - Minimize unpredictable schedules
- Education and screening
- Applying controls for environmental factors
- Embed fatigue into SMS – safe reporting

Rob Branyan

- Third-generation Ironworker; began career in the field (1996)
- B.A. in History, University of Toledo
- Advanced through ranks: Ironworker → Steward → Field Leadership
- Business Agent, Ironworkers Local 55 (2010–2016)
 - Elected unopposed for two terms
- Director of Labor Relations, Black & Veatch (2016–2020)
- Vice President of Labor Relations, The Boldt Company (2020–2026)
- Promoted to Vice President of Field Operations, Boldt (Feb. 2026)
- Industry leadership roles:
 - Chairman, North American Contractor Association (NACA)
 - Board Member, The Association of Union Constructors (TAUC)
 - Committee Member, National Maintenance Agreement Policy Committee (NMAPC)
 - Trustee, Trades Futures & Helmets to Hardhats



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Fourth Polling Question

How often are you or your crew working extended schedules (e.g., 6×10s, 7×12s, or significant overtime)?

- A. Almost always
- B. Frequently
- C. Occasionally
- D. Rarely or never



Fifth Polling Question

Which impact of fatigue do you see most often on your jobsites?

- A. Slower reaction time / decreased alertness
- B. Reduced work quality or rework
- C. Poor decision-making or risk-taking
- D. Increased near-misses or incidents



Overtime & Fatigue Best Practices Guidelines

Boldt schedules are typically based on a forty (40) hour workweek: Monday–Friday (eight [8] hours/day) or, where contractually allowed, Monday–Thursday (ten [10] hours/day).

On projects with aggressive schedules, especially outage and shutdown work, overtime and/or weekend work may be required. Use the guidelines below when work exceeds forty (40) hours and/or five days per week.

- Limit scheduled shifts to no more than twelve (12) hours per day when overtime is necessary.
- Ensure employees have at least eight (8) hours off between shifts. Union agreements typically require overtime (and in some cases double time) if an employee returns to work prior to having an eight (8) hour break in service.
- Weekly schedules should not exceed more than six (6) consecutive days in one week.
- Employees' working weekly schedules that do exceed six (6)) consecutive days must take a mandatory day off after working thirteen (13) consecutive days.
- If planning indicates employees must work more than seven (7) consecutive days and/or more than twelve (12) hours per shift, or for unplanned overtime resulting in a shift longer than twelve (12) hours, the Operations Manager and Regional Safety Director must be consulted to confirm best practices and develop a risk mitigation strategy specific to the project.

Brad DeBoer

- Founder, DeBoer Safety Group; safety consultant specializing in real-world system performance
- 15+ years in high-risk construction environments with major clients (e.g., Ontario Power Generation, BHP-Billion)
- Works with organizations across North America to stress-test safety systems under real conditions
- Focuses on how systems perform under:
 - Production pressure
 - Schedule changes
 - Human error and fatigue
- Key question driving his work: *Do safety controls hold up when workers are rushed or overwhelmed?*
- Helps companies move beyond compliance to improve:
 - Supervisor decision-making
 - System reliability in real work conditions
- Experience supporting organizations in regulatory and legal settings
- Primary focus: proactive injury prevention—identifying and closing gaps before incidents occur

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Sixth Polling Question

“How tired do you feel, right now?”

- A. I’m ready to rock, LET’S GO!
- B. I could us a coffee ... maybe a stretch.
- C. I’m here, aren’t I?
- D. Its gotta be getting close to last call...
- E. GO AWAY, MOM!



Seventh Polling Question

How comfortable are ironworkers on your jobsites speaking up about fatigue before it becomes a safety issue?

- A. Very comfortable—open, high-trust culture
- B. Somewhat comfortable—depends on the crew or supervisor
- C. Not very comfortable—hesitation to speak up
- D. Not comfortable at all—rarely discussed

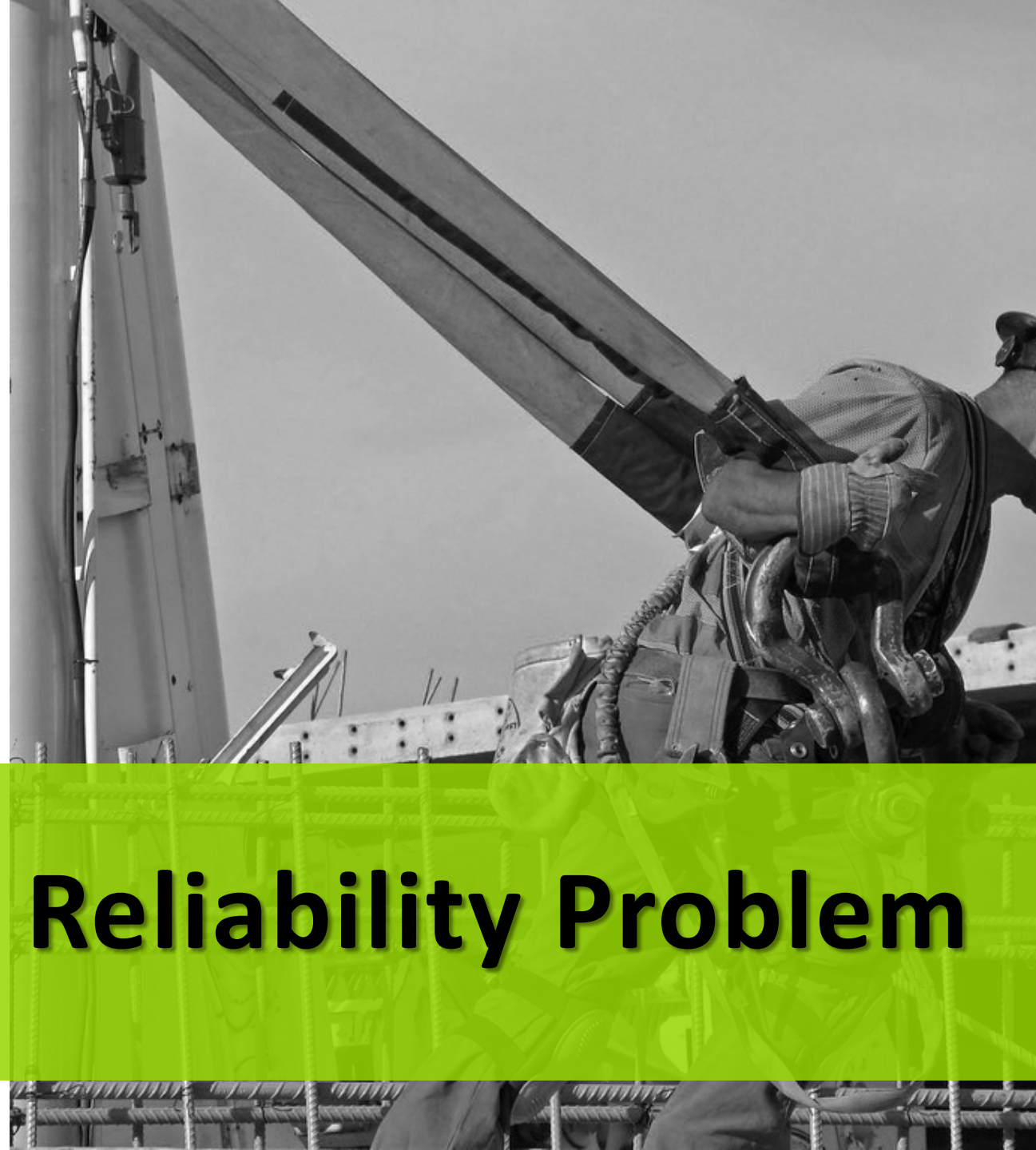


Fatigue: A Wake-Up Call for Our Safety Systems



- Not as simple as 'tired' and get more sleep ...
 - Not worker failure
 - Not HR / wellness
-

Fatigue is a System Reliability Problem





- **Slower decisions**
- **Reduced situational awareness**
- **More shortcuts**
- **Missed steps**



**What Does Fatigue
Look Like in the Field?**



Why Awareness (only) Fails

- Awareness $\neq$ Control
- Programs always assume perfect performance



Fatigue degrades the capability programs rely on

HAZARD: Fall from height

EXPOSURE: Worker at height

Primary CONTROLS:

- 1) 100% Tie-off
- 2) Engineered anchors and systems
- 3) Control movement

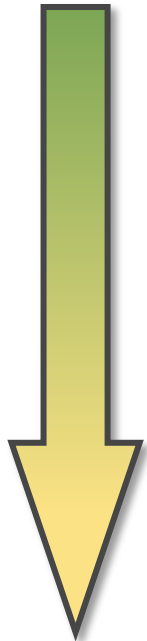
HUMAN ACTIONS
(@ Worker)

- Actual tie-off 'decision'
- Hazard awareness and appreciation
- Follow movement control / SWPs

VERIFICATION
(@ Supervisor/System)

- Observations
- Checks & Audits
- Corrective measures;
commendation and consequence

**The
Safety System**



Where
Fatigue
DEGRADES
the Safety
System

FATIGUE DEGRADATION

-system stressor

COGNITIVE

- Reduced attention
- Slower decision-making
- Impaired judgement

PHYSICAL

- Slower reaction time
- Reduced coordination
- Increased effort for basic tasks

BEHAVIOURAL

- Missed tie-off point
- Shortcutting / rushing
- Missed check

SYSTEM EFFECTIVENESS

- Inconsistent controls
- Less frequent verification
- Errors go unrecognized



Where
Fatigue
BREAKS
the Safety
System

FAILURE EVENT: Loss of
tie-off control

INCIDENT ACTION:
Worker steps over exposed edge

FALL INCIDENT



PRESSURE TEST

The Safety System

Do CONTROLS /
ACTIONS /
VERIFICATIONS hold
under fatigue?

HAZARD: Fall from height

EXPOSURE: Worker at height

Primary CONTROLS:

- 1) 100% Tie-off
- 2) Engineered anchors and systems
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HUMAN ACTIONS (@ Worker)

- Actual tie-off 'decision'
- Hazard awareness and appreciation
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VERIFICATION (@ Supervisor/System)

- Observations
- Checks & Audits
- Corrective measures;
commendation and consequence



The Wake-Up Call: **What do we do about it?**



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IRON WORKERS INTERNATIONAL



Wayne Creasap



Christie Rose



Jeff Norris



Blue Coble

SAFETY AND HEALTH DEPARTMENT

Contact the IWI Safety & Health Department



1-833-355-SAFE (7233)



Safety@iwintl.org



Iron Workers – IMPACT International Call to Safety

Hosted by

Pete Hayes
CEO - Red Cedar Steel

Wednesday, November 4, 2026
2:00 PM ET

