AMTA Alberta Motor Transport Association

THE VOICE
THE STANDARD
THE RESOURCE

How Can I Benefit from Safety Research?
Strategies for Navigating the Many Options to Move from Compliance Management Into Safety Management

April 3rd, 2025

INTRODUCTIONS - AMTA

Member Services: Provide guidance on workplace and fleet-specific safety

Advocacy: Represent Alberta's trucking industry at all levels of government

Research and Innovation: Conduct research in new technologies and strategies in the trucking and busing industries

Training: Provide industry-specific training solutions

COR/SECOR: Certifying Partner for the trucking industry

Networking: AMTA hosts regular regional meetings across the province to deliver important updates on key issues of the day

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INTRODUCTIONS – DAVE ELNISKI

Industry background:

- Long-haul flatbed trucker
- Fleet safety manager
- Industry Advisor, Safety & Compliance, for the Alberta Motor Transport Association
- CTSP, CRSP

Educational background:

- MA in Women and Gender Studies, University of Lethbridge (2023): studied the impacts of social factors on safety performance at Alberta-based trucking companies
- PhD student in Public Health, University of Saskatchewan: researching impacts of safety system management on truck driver health, safety, and wellness

LEARNING OBJECTIVES

1. Understand the differences between compliance management and safety management
2. Gain insight into what some companies are already doing to move beyond compliance
3. Learn systems for navigating safety research data to make informed decisions

OVERVIEW

Part I | Compliance versus Proactivity

- Language
- Theory
- Prescriptivity

Part II | Understanding Your Options

- Today's safety technology and management practices
- Quality evidence and its interpretation
- Sophisticated examples

Part III | Making Your Own Trail

- System 1: Evaluating efficacy and return on investment
- System 2: Organizational self-awareness
- System 3: Literature searches (not reviews)
- System 4: Pilot projects

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PART I

COMPLIANCE VERSUS PROACTIVITY

LANGUAGE

- Compliance
- Proactive safety management (i.e., proactivity)
- Sources of evidence: primary, grey, personal, etc.
- Quantitative versus qualitative data
- Descriptive versus inferential data
- Bias
- Methods
- Generalizability
- Theory versus practice

SOME THEORY ON COMPLIANCE

PRESCRIPTIVITY

PART II

UNDERSTANDING YOUR OPTIONS

SOME OF TODAY'S SAFETY TECHNOLOGIES AND MANAGEMENT PRACTICES

Vehicle-based (i.e., field-level) STEs:

- Adaptive cruise control
- Adaptive steering
- ADAS integration platforms
- AI-based route optimization
- Automatic emergency braking
- Automatic trailer coupling systems
- Autonomous yard vehicles
- Blind spot monitoring
- Camera-based monitoring systems
- Collision avoidance and pedestrian detection systems
- Driver-facing cameras
- Electronic inspection and critical events monitoring
- Electronic logging devices for hours-of-service management
- Electronic stability control
- Forward collision warning
- Heads-up display
- Intelligent speed adaptation
- Lane departure warning
- Lane keep assist
- Lane-centering assist
- Mobile fleet safety apps
- Premium clusters
- Rain and light sensors
- Real-time weather monitoring systems
- Rear cross-traffic alert systems
- Road-facing cameras
- Roll stability control
- Smart parking assistance systems
- Speed governors/limiters
- Tire pressure monitoring systems
- Traffic sign recognition systems
- Vehicle-to-infrastructure communication
- Vehicle-to-vehicle communication

Office-based STEs:

- Audit preparation and documentation management software
- Collision reconstruction software
- Contractor safety management tools
- Cross-border compliance software
- Customizable reporting engines
- Cybersecurity management tools
- Driver risk profile monitoring systems
- Electronic logging devices for hours-of-service information
- Emergency response management and planning software
- Fatigue management software
- Fleet management system
- Fuel and emissions reporting software
- General safety management and compliance software
- Incident reporting systems
- Integration platforms
- Learning management systems
- Pre-employment screening and hiring tools
- Predictive maintenance software
- Simulators and virtual reality
- Telematics (general concept)
- Transportation management systems

SMPs:

- Active management of STEs
- Active program or system administration
- Advanced driver substance abuse programs
- Competency assessments – initial and ongoing
- Competent safety professionals
- Compliance management
- Contract driver safety management
- Driver compensation structure
- Driver engagement programs
- Driver health and wellness programs
- Emergency response planning
- Fatigue management
- Hazard identification, assessment, and control
- HR and safety collaboration
- Incident investigation program
- Industry engagement
- Integrated safety frameworks
- Journey management
- Management commitment
- Metrics
- Proactive inspection program
- Risk management
- Safe driver hiring practices
- Safety-centric procurement and sales
- Safety committees and representatives
- Safety incentive programs
- Sleep apnea programs
- Temporary foreign worker safety management

Abbreviations: Safety Technology Element (STE) | Safety Management Practice (SMP)

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FINDING AND INTERPRETING QUALITY EVIDENCE

INITIAL FINDINGS

1. With more data comes more responsibility
2. Technology is allowing employers to focus on immediate causes with reported success
3. Employers are concerned with their safety culture and its internal and external perception
4. Return on investment (ROI) lags, efficacy leads
5. Safety performance improvements are motivated by finances and ethics
6. Organizations of mostly all sizes and types can move from compliance into proactivity

A sophisticated example:

- Large (>1,000 power units) trucking company uses driver-facing cameras with artificial intelligence (AI) to reduce unsafe driver behaviours while largely automating associated safety and HR processes

PART III

PAVING YOUR OWN ROAD

SYSTEM 1 – EVALUATING EFFICACY AND ROI

Efficacy:

1. Confirm the definition of “efficacy”
2. Get details on metrics being used
3. Compare information with other sources
4. Consider specific applications
5. Ask about factors that impact efficacy

Return on investment (ROI):

1. Ask about efficacy
2. Verify the ROI calculation method
3. Request time-related details
4. Request cost-related details
5. Get context
6. Request data and testimonials
7. Ask about management requirements

SYSTEM 2 – ORGANIZATIONAL SELF-AWARENESS

What best describes the organization?

1. The Non-Compliant Organization
2. The Reactive, Compliance-Focused, and Content Organization
3. The Reactive, Compliance-Focused, and Discontent Organization
4. The Somewhat Proactive Organization
5. The Proactive, Advanced Organization

SYSTEM 3 – LITERATURE SEARCHES (NOT REVIEWS)

Literature search process:

1. Define research question(s)
2. Identify search engine(s)
3. Write out search entries using appropriate operators
4. Conduct searches
5. Scan first 10 entries for each search, then move on
6. Assess results and repeat as-needed

SYSTEM 4 – PILOT PROJECTS

Running your own pilot project:

1. Establish baseline data (internal > external)
2. Identify main areas of poor safety performance
3. Select validated solutions (STEs and/or SMPs)
4. Design pilot project with as much variable control as possible
5. Implement
6. Measure pre-project, interim, and post-project efficacy

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QUESTIONS?

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