Insights from a 5-Year Journey in Global EHS Transformation:

Employee Engagement, Safety Leadership, and Synergy across Data and Processes

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Speakers

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Agenda

- Challenges in the Beginning
- Setting the Foundation for Success
- Developing an EHS Roadmap
- Elements of an Effective EHS Management System
- CIRCOR EHS Policy and the Cardinal Rules
- Making EHS Performance Management — EASIER™
- Establishing New Benchmarks for Success
- Looking Ahead...
- Driving Global EHS Transformation
- Innovative Solutions to Common Challenges
- Summary & Wrap up
CIRCOR International is a global manufacturer of valves, pumps, and associated products/services. CIRCOR has 4,400+ employees at 32 manufacturing facilities and 15 services/sales centers in 15+ countries.

As a leader in flow and motion control products and services for the world’s most severe-service, mission critical applications, CIRCOR designs, manufactures, and distributes valves, instrumentation, pumps, pipeline products and services, and other engineered products and sub-systems used in the oil and gas, power generation, aerospace, defense, and industrial markets worldwide. CIRCOR: Excellence In Flow Control.
In the Beginning...

- High Number of Injuries
- No Standard Approach to Injury and Data Management
- Lack of Standardization of Processes and Systems Across All Sites
- Lack of Employee Engagement in EHS
- Limited EHS Focus - No EHS Activities, Committees or Teams
- Zero Tolerance Objectives but No Written Procedures
- No Management System – Only an EHS Policy
- Lack of Safety Leadership with Limited Experienced Professionals
- A Reactive Safety Culture
Setting the Foundation for Success - 2014 to 2018

New Vision for the EH&S Program
EH&S Roadmap and Initiatives
2014-2018 Sustainability Objectives

Investment in EH&S Improvements – Capital Funding / EHS Budgets

Development and Implementation of the CIRCOR EHSMS
Policy and Procedures
EH&S Programs
Case Management

Focus on Employee Engagement
EH&S Surveys
Behavioral Based Safety Program (Proactive Observations)
Safety Milestones / EH&S Rewards and Recognition Program

EHS Talent Acquisition
Added Full-Time EH&S Professionals at all Manufacturing Locations

Implementation of a robust EH&S Data Management and Intelligence System
Snapshot - Setting the EHS Roadmap

CUSTOMERS
Demonstrate World Class EH&S Performance

EMPLOYEES
Provide an Injury-Free Work Place

QUALITY
100% Regulatory Compliance

FINANCIAL
Deliver to Bottom Line: Reduce EH&S Costs

Our EHS
- Build and Sustain a World-Class EH&S Organization
- Engage and Empower the Workforce as Safety Champions
- Promote Transparency and Provide Timely and Open Communications... Both up and down
- Drive Accountability at all levels of the organization
- Foster a Culture of Zero Tolerance for Safety Violations

Our Goals
- Zero EH&S Compliance Violations
- World Class Performance by 2019 (TRIR <= 0.3 and LTIR <=0.1)
- 100% Employee Compliance to EH&S Training
- 100% Compliance with Regulatory Audits and Inspections
- At least 2 Proactive Observations per Employee per Quarter

Our Key Programs, Processes and Initiatives
- EH&S Data Management (EASIER) Adoption
- EH&S Learning Management Deployment
- Behavioral Based Safety through Proactive Observations
- Legal and Regulatory Compliance through Process maturity
- Pre and Post Work Start Safety Assessment

Our Finance
- Zero Regulatory Fines and Penalties
- Reduce Worker’s Comp costs and Cost per Claim (US)
- Reduce FM Global Property Loss Risks
- Achieve 2019-2023 e-Metrics Targets (20% Reduction)
The CIRCOR EH&S Management System is organized into Twelve (12) Elements that support CIRCOR’s EH&S continual improvement process, which includes planning, implementation, and measurement.
Assessment, Prevention, and Control

- Work Start Safety Assessments
- Process Risk Assessments
- Job Safety Analysis (JSA)
- Ergonomic Assessments
- Machine Guarding Assessments
- Functional Capacity Evaluations
- Emergency Contingency Plans
- Confined Space Assessments
- EH&S Integrated Management of Change
EHS Management System Elements

**Accountability**
- Defined EH&S Roles and Responsibilities for All Job Functions
- Integration of EH&S into Performance Management (Annual Review)
- Annual Letter of Management Commitment

**Planning**
- EH&S Annual Plans (including Sub-Plans)
- EH&S Compliance Calendars (Annual Plan Component)
- Annual EH&S Road Map and Initiatives
- EH&S Budget Planning (Annual Plan Component)

**Policy**
- EH&S Policy and Procedure Updates
- EH&S Cardinal Rules
- EH&S Minimum Operating Requirements
CIRCOR EH&S Policy

Safety is Our Value

We make environment, health and safety integral components of all business processes that will impact our products, services, and operations worldwide.

We will not be satisfied until:

☐ Our workplace is safe from hazards
☐ Our employees are injury free
☐ Our products and services are safe
☐ Our commitment to protecting the environment is unmatched

This is the CIRCOR EHS Policy and we hold ourselves, as employees of this organization, accountable to respect and adhere to this policy.
CIRCOR’s “Zero Tolerance” policy

- A mandatory requirement related to employee safety.
- Not following these rules and procedures could result in serious injury or fatality.
- Willfully violating a Cardinal Rule, even if there is no incident or injury, may lead to strong disciplinary action, up to and including termination of employment.

Cardinal Rules Programs:

- Machine Guarding
- Material Handling
- Confined Spaces
- Electricity
- Powered Industrial Vehicles
- Compressed Gases
- High Pressure Testing
- Lock Out / Tag Out
- Heights
EHS Management System Elements

Organization

- EH&S Council Implementation
- EH&S Committees and Teams
- Annual EH&S Professional Development Conference

Rules and Procedures

- EH&S Policies

Education and Training

- EH&S Training Plans (Annual Plan Component)
- Learning Management (Recordkeeping)

Communications

- EH&S Communication Plans (Annual Plan Component)
- Visual Factory Standards
EH&S Communications

- Communications Plan – Internal & External
- Toolbox Talks / Daily Safety Tips
- EH&S Alerts
- EH&S Council / Safety Meetings
- Posters / Banners / Electronic Media
- Job Safety/Hazard Analysis (JSA/JHA)
- Newsletters / Bulletin Boards
- EH&S Training
- EH&S Website
- Regulatory and Community Communications
EHS Management System Elements

Inspections and Audits

• EH&S Audit Plans (Annual Plan Component)
• CAPA Tracking

Incident Investigations

• Injury and Illness Case Management
• OSHA Recordkeeping Training – Globally
• CAPA Tracking

Program Evaluation

• Corporate EH&S Assurance Reviews – Internal Compliance
• Legal & Regulatory Reviews – External Compliance

Documents and Records

• EH&S Data Management and Recordkeeping System
EASIER

CIRCOR’s EH&S Data Management Overview
EASIER – EH&S Data Management

Focused Applications

- Incident Management
- Performance Management
- Audits Management
- Task Management/Calendar
- Events Management
- Training Management
- Management of Change
- EHS Apps – Powered by ProcessMAP AppBuilder™ Platform

Benefits

- Simplified Dashboard
- Cloud Based Solution / SSO
- CAPA Tracking and Notification (Incidents, Audits, Calendar, etc)
- MOC Approval and Action Tracking
- Training Scheduling and Notification
- Calendar and Event Management
- Sustainability (E-Metrics) Reporting
- Mobile App (Auditing)
EH&S Data Management

Operational Benefits of the EASIER System

Corrective and Preventive Actions

- Corrective and Preventive Action Notification
- CAPA Tracking, Trending, and Reporting (Overdue Reporting)

Employee Training

- Training Tracking and Notification (Scheduled, Completed, Overdue)
- Training Notification to Manager / Supervisor
**EH&S Data Management**

**Incident Management**
- Simplified Incident Reporting with Notifications
- Injury and Illness Metrics Tracking, Trending, and Reporting

**Audit Management**
- Simplified Audit Completion, including the Audit App (Android and iOS)
- Audits Tracking and Trending

**Compliance Management**
- Integrated EH&S Compliance Calendar and Actions Tracking
- Environmental Metrics Tracking, Trending, and Reporting
- EH&S Actions Tracker Management, Tracking, and Reporting
Overall Benefits to the CIRCOR EHSMS

- Increases and Promotes Transparency / Drives Accountability
  - Increased Visibility to Compliance Issues
  - Traceability to Corrective and Preventive Action – Real-time visibility to open and closed CAPAs
  - Improved Management Oversight

- Improves Employee Engagement
  - Immediate Employee Communication and Feedback / Help Chain

- Risk Management and EH&S Planning
  - Risk Assessment – Analysis and Process Management
  - Change Management and Budget Planning Processes

- Enhanced EH&S Reporting
  - Trending of EH&S Findings
  - Overdue Notifications
  - No More Paper Records to Lose

EH&S Solutions Made EASIER
Establishing New Norms for EH&S Success
Establishing New Norms for Success

**Drive Safety Leadership (Top-Down and Bottom-Up)**

- Weaponize EH&S Committees / Councils to make meaningful operational changes
- Focus on Leading Indicators rather Than Lagging Indicators: Use Data to Drive Decisions
- Establish Robust EH&S Goals and Initiatives: Require early development of EH&S Annual Plans by All Sites (Q1)
- Visible EH&S Leadership: Letter of Management Commitment to Safety by all Plant Managers / Quarterly Safety Townhall Meetings
  
  On-Time Closure of CAPAs: No CAPA's Greater Than 30 Days Old
- Hold Leaders Accountable through Quarterly EH&S Reviews and Monthly Operational Reviews
- On-Time Reporting of Incidents: Executive One on One Review of All Significant EH&S Incidents (Recordable, Lost-Time Injury, Significant Near Hit, etc)
Establishing New Norms for Success

Drive Employee Participation and Collaboration

1. Over Communicate: Tailgate / Tier Meetings, Communication Boards
2. Make It Accessible: Employee Participation on EHS Council, Committees, and Teams / Employee Access to EH&S Training
3. Embrace Employee Feedback
4. Empower frontline employees to be Safety Champions
5. Collaborate on Employee Performance Goals: Safety Expectations / Proactive Observation Goals / Employee Training Completion Targets
6. Don’t Lose Employee Confidence in Management: Deliver on Commitments, Manage Risks, and Track Open Actions to Completion
7. Promote the Use of Stop Work Authority for Unsafe Conditions
8. Celebrate Safety: Reward and Recognize Safety Performance
Establishing New Norms for Success

Robust Case Management

Drive Operational Efficiencies

- Simplification of EH&S Process and Checklists: Software Solutions
- Mandatory Management of Change Process: Procurement Stop-Gap
- Transformation of the Safety Culture: New Approaches to Behavioral Safety
The Impact of Proactive Observations

- Direct Correlation between Safety Performance and Proactive Employee Engagement in Safety.
- Sites that work to identify and resolve unsafe behaviors in the workplace demonstrate an overall improvement in safety performance.
Realized Benefits

**Improved Management and Employee Engagement and Collaboration**
- Employee’s Comfortable Reporting Injuries
- Employee’s Engaged in Risk Management / Improvement Process

**Reduction in EH&S Incidents: Injury, Illness, Environmental Release**
- Lower Worker’s Compensation Costs

**Minimum Workplace Disruptions**
- Increased Productivity and Operational Efficiencies
- Reduced Operational Downtime due to Injury

**Ready / Easy Access to Documents, Records, and Metrics**

**Increase in Employee Morale**
- Confidence in a Safe Work Environment
- Appreciated Employees are Productive Employees

**Better Communication and Transparency**
- Immediate notification and faster resolution of issues
The CIRCOR Journey – By The Numbers

Recordable Injuries Trend

- Injuries-CIRCOR
- TRIR

World Class Performance (TRIR <0.3)

Company Proprietary - Not For Distribution

* Acquisition Years
Looking Ahead...

**Embracing Technology for Current and Future Needs**
- Promote Technology Partnerships that Drive Success
- CIRCOR and ProcessMAP Relationship
- Streamlining EH&S Systems and Processes
- Paper to Digital Transformation
- Custom Apps for Web and Mobile via ProcessMAP AppBuilder™
- Real-Time Notification and Feedback on a Global Scale
- Mobile Learning

**Flexibility for Future Expansion and Growth**
- Adaptable for Organizational Changes – Mergers, Acquisition, and Divestitures
- On Demand Analytics via Insight™
- Updates and Enhancements adapted to new technology and innovations
Transforming EHS with Enterprise Wide EHS Software Solutions
# Global EHS Transformation

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Support Management Systems

Overall Management System

Individual Components

- Incident Management
- Audit Management
- Activity & Task Management
- Document Control
- Risk Assessment
- Training Management
- Management of Change
- Sustainability Performance Management
PROCESSES

Standardization and Automation of Processes

COMPLIANCE

Ensuring Compliance with Regulations and Corporate Policies
Accountability and Empowerment

- Empower Frontline Employees
- Responsibility for Safety

- Available at Point of Use
- Offline Availability

- Corrective and Preventive Actions
- Notifications

- Across Departments and Locations
- Problem-Solving

Employee Engagement
Improved Reporting
Action-Oriented
Increased Collaboration
Enterprise Transparency

✓ Data Consistency
✓ Real-time Notifications
✓ Dashboards
✓ Predictive Analytics
✓ Smart Agents
## Enterprise Wide EHS Software Solutions

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Enterprise Wide EHS Software Solutions: Benefits

- One Enterprise System
- Enterprise Transparency
- Compliance
- Automation of Processes
- Employee Engagement
- Accountability
- Improved Performance
- Enterprise Consistency
- Informed Decisions
- Support Management Systems
- Institutionalized Knowledge
- Action-Oriented
- Collaboration & Teamwork
- Risk Reduction
Enterprise Wide EHS Software Solutions: Perceived Challenges

- Costs
- Integrations
- User Adoption
- Unique Processes
Health & Safety By The Numbers

4,679 workers were killed on the job in the US alone.

$5.2M is the average cost of each fatality (direct and indirect).

1.2M was the number of days-away-from-work cases.

For each $500 occupational health accident, an employer would have to:
- Sell 61,000 cans of soda
- Bake and sell 235,000 donuts
- Deliver 20 truckloads of concrete

$1B is approximately how much employers pay in direct worker’s comp. costs weekly.

$250B was the total cost of occupational injury & illness.

Source: http://www.asse.org/professionalaffairs/action/return-on-investment-for-safety/
Return on Investment

- Reduction in time spent on data collection, mining & reporting
- Efficiencies gained due to the new EHS System
- Savings on penalties due to increased compliance
- Claims Cost savings due to reduced incident rates
- Recordable and Lost Time Injuries (LTIs)

Average annual salary of Site & Corporate EHS & Risk employees
Monthly Recordable Incident Rate Across Customers

Correlation
- Near Miss reported within 24 hours Rate
- Near Miss Investigations completed within 24 hrs of Occurrence rate
- Injury/Illness Reported within 8 Hours

Leading Indicators Rate Increasing

RIR decreasing
Integrations

**Integration Stack** to Streamline Connectivity and Leverage Internal and Vendor Systems

- Customer Intranet Portal
- Customer Energy Management System
- Customer Fleet Management System
- Customer Datawarehouse and BI Platform
- Customer Fuel Management System
- MSDS/SDS Management System
- LMS
- Laboratories
- Payroll System
- Human Resources System (HRMS)
- Workers Comp. TPA
- Risk Information Management System (RIMS)

**ProcessMAP**
User Adoption

- **Available**: 24/7
- **Ease of Use**
- **Lead by Example**
- **Action Oriented**
- **Vendor Assistance**
- **Communication & Training**
Delico

• Engages Users
• Increases system and new feature adoption
• Helps Users to complete tasks
• Eliminates User confusion
• Provides product and new feature updates
• Reduces the dependency on support teams.
• Manages all user resources in a single source
What about paper based forms that are still used to collect critical EHS Data?
Paper to Pixels

PROCESS DIGITIZATION
Collect, Collate, Analyze, Track Data in an Efficient Manner

WORKER ENABLEMENT
Virtualize Individual Work, Powerful Enablers for Knowledge Sharing

PERFORMANCE MANAGEMENT
Changing the Process of Strategic Decision-making
ProcessMAP AppBuilder™

- Create and Launch Apps in Minutes
  - Allows you to build custom apps for web and mobile availability without any need of programming skills.

- Mobile Ready Apps
  - Forms created via the web are automatically available on both web and mobile without any delay.

- Flexible and Powerful
  - Allows user to create new apps and modify existing ones as per your business needs.

- Secure and Permissions Driven
  - Provides an intuitive way to assign security permissions on the fly and make business logic decisions accordingly.

- Easy Sharing of Apps
  - Enables you to share apps/forms with users, locations, roles, etc.

- Integration with ProcessMAP Platform
  - Facilitates transparent data flow to and from the ProcessMAP Platform.

- Never Miss a Deadline
  - Stay up to date with notifications generated when Action Items are due.
Ready-to-Use Apps
Ready-to-Use Apps

**Driver's Vehicle Inspection Report (CSA Pre-Trip)**

The Federal Motor Carrier Safety Administration (FMCSA) requires drivers to inspect and ensure motor vehicles are in safe operating condition prior to their operation.

ProcessMAP’s Driver’s Vehicle Inspection Report (DVIR) app is designed specifically for use with tractor trailers and tanker trucks. Included in the app is a checklist including Behavior Analysis and Safety Improvement Categories (BASICs) to help ensure career and driver compliance with FMCSA’s Compliance, Safety, Accountability (CSA) program. The app allows drivers to quickly and easily document inspections, report defects, and review previous inspection records directly from their mobile device. Defect reports can be routed to maintenance for repair and certification of repairs, and all inspection records are stored and available as needed.

**Key Features**
- Configurable – Modify to fit specific business needs
- Mobile Online and Offline Capabilities
- Ability to Customize Notifications
- Export Records in Excel and PDF Format
- Upload Pictures and Attachments

**Key Benefits**
- One-stop solution to identify defective items identified during inspection using configurable, built-in checklists
- Easily upload pictures during inspection to document defective items and/or damage
- Ability to customize notifications of unsatisfactory conditions directly to maintenance personnel
- Quickly review completed inspections using built-in filters
- Easily satisfy pre-ride or post-ride inspection requirements and reduce the risk of compliance violations

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**Driver's Vehicle Inspection Report (Light Duty)**

The Federal Motor Carrier Safety Administration (FMCSA) requires drivers to inspect and ensure motor vehicles are in safe operating condition prior to their operation.

ProcessMAP’s Driver’s Vehicle Inspection Report (DVIR) app is designed specifically for use with pickup trucks and light duty vans. The app allows drivers to quickly and easily document inspections, report defects, and review previous inspection records directly from their mobile device. Defect reports can be routed to maintenance for repair and certification of repairs, and all inspection records are stored and available as needed.

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**Driver's Vehicle Inspection Report (Non-D.O.T.)**

Reduce the risk of trouble on the road and eliminate downtime and unscheduled maintenance by ensuring vehicles are road worthy and safe prior to operation.

ProcessMAP’s Driver’s Vehicle Inspection Report (DVIR) app for Non-D.O.T. vehicles provides drivers the ability to take a close look at their vehicle components to ensure they are in a safe operating condition prior to getting on the road. The app also helps to ensure drivers have the correct safety equipment and PPE before leaving for their destination.

Avoid costly emergency repairs, reduce the opportunity for incidents, and gain peace of mind by ensuring all fleet vehicles are road worthy.

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- Support Management Sys.
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- Action-Oriented
- Collaboration & Teamwork
- Risk Reduction
Thank You
Questions