Safety Services

Carter Machinery

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Agenda

- Overview
- Cat Detect for Personnel
- Cat SmartBand Technology
- Driver Safety System (DSS)
- Operator Training
- Conclusion
OUR SAFETY JOURNEY // 2003 – 2016

92% RIF IMPROVEMENT

INJURY RATE REDUCTION = 72,367 INJURIES PREVENTED

56% INCREASE IN WORKFORCE

RECORDABLE INJURY FREQUENCY
Culture & Fatigue

Commitment. Accountability. Involvement.

ZIP PROCESS

ENGAGE & COMMUNICATE
ASSESS
CHECK
BUILD
IMPLEMENT
DEVELOP
ENGAGE & COMMUNICATE

SMARTBAND

FATIGUE AVOIDANCE SCHEDULING TOOL (FAST)

DRIVER SAFETY SYSTEM (DSS)

EXPERTS, CONSULTANTS, TOOLS, SYSTEMS, SERVICES, MONITORING, REPORTING & ANALYSIS

CAT DETECT FOR PERSONNEL

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80% of us have Optimism Bias

The tendency to believe that one is less at risk of experiencing a negative event as compared to others.
Fatigue & Distraction

Layers of Protection

- Technology
- Scheduling
- Training
- Policies
- Culture
CDP – CAT DETECT FOR PERSONNEL
BLIND SPOT RISK MITIGATION – NIOSH REPORT
Cat Detect for Personnel

Active Alerts! People Detection Tool!

RFID Wearables

Risk Management with Targeted & Timely Information to Change Behavior

Video Overview ~
Cat Detect

In-cab/External Alarm when tagged person or object is in detection zone

RFID safety vest and/or hard hat identifies workers

RFID tag attached to objects to identify hazards

PL/VL Integration* with telematics for near-miss alerts and notifications

*PL/VL Integration
Current SCAN-MINE Version - Custom integration w/digital switch inputs on ECM
New 2 Conversion - Optional ProductLink integration module (Available Q2 2016)

Leveraging RFID technology, antenna detects personnel and signals an in-cab alarm when personnel enter detection zone. When wired to the Product Link digital switch, this also relays an event to VisionLink reports & alerts.

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CUSTOMER - LESSONS LEARNED
CAT DETECT FOR PERSONNEL

- Information Helped Define Base Line of Risk Events
- Shift Changes Were Increasing Foot Traffic Around Equipment
- Learned that Current Traffic Patterns Were Creating Unnecessary Risk
- Leverage Antenna Adjustments to Optimize Danger Zone Coverage
- Management Used Information to Re-trained Employees
Operator Fatigue

FATIGUED OR FIT FOR DUTY?
SmartBand Technology Example

Sleep

TODAY

5HR 45MIN
Sleep quantity

9 pm 12 am 3 am 6 am

6 /10 (OK)
Quality indicator is estimated from the metrics below

Awakenings
3 Total
0.5 Per hour

Time awake
135 Minutes
28% Time lost

Alertness

88 Average today

88 High risk at 12:50 AM

Learn more about your Alertness Score
Stay Alert!
TECHNOLOGY // DRIVER SAFETY SYSTEM (DSS)

- **Technology**
  - Measures eyelid closure
  - Measures head orientation
  - Creates Compressed Video File

- **Fatigue events**
  - Eyes closed (duration > 1.5sec)
  - Machine in motion (speed > 4mph)

- **Distraction events**
  - Look away from road (duration > 4.5sec)
  - Machine in motion (speed > 10mph)
FRA – FATIGUE RISK ASSESSMENT

80% REDUCTION IN FATIGUE EVENTS
Carter Machinery has recognized the need for training on construction equipment to help our customers succeed and has made a significant investment into equipment and certified Instructors to be able to offer a wide range of training services for equipment operators, safety needs and technicians.

In January 2019, our catalog will be launched to include some of the following:

OSHA 10-Hour certification for construction trades  
Customized on-site or at Carter facility operator training, including classroom, simulated instruction and ‘in the dirt’.  
Full 3-week training program inclusive of safety, preventive maintenance, equipment walk-around/inspections, classroom, simulated and in the dirt instruction on the core four machines; HEX, Loader, Dozer and Articulated Trucks.  
We offer Level 1 (beginner) and Level 2 (intermediate) operator courses on most Caterpillar equipment.
Resources

• For additional information, please visit:
  www.carteru.com
CAT® SAFETY SOLUTIONS

THANK YOU!