Off-Road Technology: Collision Warning Systems

Pilot – Chula Vista, CA
GOAL
Reduction of Mobile Equipment Incidents

1. Lytx DriveCam Haul/Water Units
   - Reduce Distractions & Inattentiveness
   - Behavior Modification
   - Two 775Fs
   - One 775Gs

2. Camera/Radar Haul/Water Units
   - Reduce Blind spots
   - Visual/Audible Alerts
   - Two 775Fs
   - One 775Gs

3. 360 Degree Camera Shipping Loaders
   - Reduce Blind spots
   - Visual/Audible Alerts
   - 980M and 972XE

Assessed Vendor
Lytx DriveCam
Rear View Systems
VIA 360

*Tire pressure monitoring system (TPMS) Sensors have been installed to work with technology vendor (Geotab)
Lytx DriveCam – Triggered Events

1. **In-Cab Triggers**
   - Driver Smoking
   - Food and Drink
   - Handheld Device
   - No Seat Belt
   - Inattentive
   - Lens Obstruction

For most triggers, audible alert occurs in-cab to permit operator to self-correct behavior.

2. Triggers only create the 12 second event that gets sent to Lytx to review prior to becoming coachable by Vulcan employees.
Camera and Radar - Assessment

Lytx Storage Hub (must have DriveCam in the unit to work)

Lytx DriveCam monitoring: distracted behaviors and seat belt use.

Exception based events sent to Lytx for uploading, review and storage with DriveCam Video. Allows incidents to be reviewed utilizing the 2 camera views + Lytx internal and external camera view.

Front/ Rear/ Side radars (detection range 131’ with close detection <2’; audible and visual alert)

Lytx DriveCam Video Monitor (HD3KM9010VS)

Visual display of cameras

4 Cameras with 160 degree field of view

TPMS: monitors tire pressure and temperature

151 Camera

151 Camera

151 Camera

151 Camera

5” Recording DVR Monitor (HD3KM9010VS)
Camera was moved to the right to better view the blind spot to the front right of the cab.
Video of Quad-View Monitor

Here is a sample of the quad video in action. The boxes are proximity detection zones of when something enters into within 8.5 feet of the radar.
Individual able to be seen in crossover mirror.

Front camera moved to the right to make visible on screen
Geotab – Telematics Features

- Asset tracking is available using telematics, and an overhead satellite view shows where assets are in the plant.
- Additional operational measurements (idling, etc.) can be derived from Geotab
3 Radar Sensors (Dynamic Detection with audible alerts when possible collision)
Videos taken by operator while parking brake was set and while supervised.