TxDOT’S SAFETY CULTURE: MISSION ZERO

Jerral W. Wyer
Director, Occupational Safety Division
Safety: Mission ZERO

TxDOT Employee on the Job Fatalities FY1984-FY2015
Safety: Mission ZERO

Number of Personal Injuries at TxDOT

FY1984-FY2015

Injuries
Safety: Mission ZERO

Number of Vehicle Incidents at TxDOT FY1985-FY2015

![Graph showing the number of vehicle incidents at TxDOT from FY1985 to FY2015. The graph shows a decrease in incidents over time.]
Safety: Mission ZERO

FY07-FY15 Miles Driven and Preventable/Recordable Incident Rates
TxDOT Plan For Success

1. 0.29 Lost Time-Rate
2. Leadership
3. Employee Involvement/Buy-In
4. Improved Accountability
5. Play of the Day – Recap
6. Recognition
7. Doctor’s Visit with Supervisor Presence

8. Return to Work Program for injured employees:
   - Modified duties
   - Alternate duties
   - Transitional duties

9. Introduction of Lost Production Days Goal

10. Employees take pride in Safety accomplishments

11. Collaboration between Safety and Operations

12. Mission Zero awareness
CONCERNS
Since TxDOT Started Keeping Records in 1938 . . .
We have suffered

52 Deaths Struck by 3rd Party in a Work Zone
15 Deaths Struck by Contractor Equipment
25 Deaths Stuck by TxDOT Equip
Back Against Traffic?
Workers on Foot Must:

- Situational Awareness
  - Keep a safe distance from traffic
  - Avoid turning your back to traffic
  - Stay behind protective barriers
- Look out for each other
  - Communicate with co-workers
- Wear high visibility clothing and headgear
Safety: Mission ZERO

TMAs Work!
Diagram: Traffic Awareness-Staging in Gore Area

Work Zone Staging; Attenuator in upright position

TxDOT Employees gathered behind attenuator in gore area
Since TxDOT Started Keeping Records in 1938 . . .
We have suffered

19 Deaths while Flagging Traffic
Safety: Mission ZERO
Traffic Control Retrieval - Employee Struck By Motorist

Employee stepped off cone trailer to retrieve cone on opposite side of road. Employee stepped into open traffic lane and was struck by truck and trailer.

Traffic was not stopped on both ends.
Since TxDOT Started Keeping Records in 1938 . . .
We have suffered

22 Deaths from Equipment Roll Over

8 Deaths from Riding on Outside of Equipment

8 Deaths from Equipment Maintenance
“Safety Circle”

- Approach only from the front – about a 60° arc. Make eye contact with the operator
Safety: Mission ZERO
Safety: Mission ZERO
Since TxDOT Started Keeping Records in 1938 . . .
We have suffered

28 Deaths on the Shoulder or ROW
5 Deaths from Flying, Thrown or Falling Objects
Traffic Awareness
Safety: Mission ZERO

Shoulder Work Safety
HOW CAN WE MAKE A POSITIVE IMPACT?
INFLUENCE BEHAVIOR AND DEVELOP A SAFETY CULTURE
AGC/TxDOT Joint Safety Task Force

- Meets monthly to discuss safety items relevant to both TxDOT and AGC members

- Jointly produces videos:
  - Highway Construction Work Zone Hazards
  - Crane Hand Signals
  - Fall Protection
  - Safer Worker Awareness
  - Attention: Work Zone Ahead, on distracted driving through work zones
Employee Recognition Programs

- Safety Awards Banquets
  - Opportunity to share a meal and celebrate group and individual accomplishments:
    - Safe Operator Award
    - No Injury Award
    - Group No Lost Time
Summer Awareness Campaign

• **123 Safe Days of Summer**
  • May 1 thru August 31
    • Highlight top performers in franchise categories
      • Rural
      • Urban
      • Metro
    • Lowest combined incidence and recordable vehicle rates
Safety: Mission ZERO

ZERO Injuries
Better to lose one minute in life... than to lose one life in a minute.
Safety: Mission ZERO

Communication Both Ways

- Zero
- Commission
- Administration
- OCC Division
- DDO
- Area Engineers
- Supervisors
- Section Directors
- Safety Officers
- Employees
The Vision of Safety: Mission Zero

- Department Wide Commitment to:
  - Zero Injuries
  - Zero Lost-Time
  - Zero Preventable Incidents
  - Zero Fatalities
- Incorporate Safety into decision making at all levels of operations
- Ultimate Goal:
  - Prevent that “One” fatality we statistically face every year...
Safety: Mission ZERO

Details!

F - Find and recognize hazards
O - Openly search to correct and eliminate hazards
C - Coordinate the use of resources
U - Understand the risks at all times
S - Safety will save your life
Communication

- PLAN
- COMMUNICATE
- FOLLOW-THROUGH
Plan Safety Into Every Job

- **Play of The Day!**
  - Discuss Traffic Control Plan
  - Discuss Internal Traffic Control Plan
- **Recap – End of the Day**
- **Safety: Every Second Every Day!!**
EVALUATE TXDOT’S DRIVER IMPROVEMENT PROGRAM
Defensive Driving

- Every three years
- All driving employees
- Classroom/Online
Smith System of Driving

– 6,500 trained last three years
– Focus on building space cushion
– Reduced severity of incurred liability claims
5 Keys to Stay Alive

Key 1 Aim High In Steering®
Key 2 Get The Big Picture®
Key 3 Keep Your Eyes Moving®
Key 4 Leave Yourself An Out®
Key 5 Make Sure They See You®

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Dump Truck Roadeo
Drive Along Observation

Training Employees to be Safer Drivers

– Encompasses 100 observations of various driving skills and methods.

– All drivers complete or review the Drive Along Form prior to the drive.

– Each driver session involves a one hour office discussion about numerous safe driving issues followed by an intensive two hour on-road assessment.

– Follow up within 30 days on identified improvement areas.
Accountability

• Preventable Incident Disciplinary Plan
  • Three and Out
• Backing Policy
  • Walk Around
  • Spotters
  • Avoid backing
  • Charge back
This is not a phone booth.
RETURN TO WORK PROGRAM
Return To Work: Recover on the Job

– Supervisor attends doctor’s visit
  • Discuss duties
    ▪ Modified duties
    ▪ Alternate duties
    ▪ Transitional duties

– Collaboration between Operations/HR/Safety
HOW DO YOU MANAGE AND COMMUNICATE YOUR SAFETY AND HEALTH SYSTEM?

There is a role for everyone!
Working the System

- Leadership and Management Commitment
  - Priority setting
    - Safety can suggest, so can committees
  - Policy development
    - Mission statement/goals
- Accountability
  - Pro-active discipline, and expectations
- Employee involvement
- Recognition by supervision
- Budget
Safety Culture Balance

- Outstanding Performance
- Positive Environment
- Trust Between Employees
- Safety Interdependence
- Mgt. Demonstrates Strong Leadership Qualities
- Positive Emotional Bank Accounts
- Peer Review (BBS)
- Employee Involvement
- Clear Planning

- Poor Performance
- Negative Environment
- Mistrust Between Employees
- Safety Dependence- Independence
- Poor Leadership Qualities
- Negative Emotional Bank Accounts
- Hide from Authority
- No Employee Involvement
- No Planning
Role of a Safety Professional

- Knowledge transfer: “Sell it, don’t tell it”
  - Training
  - Coaching
  - Teach others “how to fish on their own”
- Be THE resource!!
- Communicate with All Levels of Management
- Provide Check and Balance
- Team Member!
- Must spend majority of their time in the field
- PASSION FOR THE JOB! Lead By Example!
- Listen and listen well!!!!!!!!!!!!!
What Do We Need?

- **Total Involvement**
  - Employees empowered and engaged
    - Employee ownership
  - Leadership creates and sustains a safety culture
  - Every decision involves Safety
  - Focus on “Safe Production”

- **Accountability**
  - With ourselves and each other
Work Zone Intrusions Threaten Safety

**CAUSES OF ROADWAY FATALITIES**

Total Work Zone-Associated Worker Fatalities 2003-2010: **962**

- **46%** STRUCK BY VEHICLE
- **10.5%** OTHER CONTACT WITH OBJECTS
- **5.3%** STRUCK BY FALLING OBJECT
- **5.2%** FALLS
- **3.9%** OTHER

Source: Bureau of Labor Statistics

**More than half (58.7%) of backovers involve a dump truck**

In about one-third (31.1%) of backover fatalities, no back-up alarm was functioning.

**In about 1 out of 10 fatalities, workers were flagging (3.3%) or performing traffic control duties (6.3%)**

About 20% were wearing high visibility clothing.

**Falls to lower level killed 4.1% of workers**

A third were not using fall protection yet workers were working on bridges or overpasses.

**4% killed by contact with electricity**

Trench collapses killed 2.4% of road workers

Less than 2% of workers were killed by a drunk driver.
Work Zone Intrusions Threaten Safety

Jan. 2014, Scott Schneider, LHSFNA Director of Occupational Safety & Health

Each year, about 100 road construction workers are killed on the job.

"Inside work zones, the most common fatalities are workers struck or backed over by dump trucks or other construction vehicles," says LIUNA General Secretary Treasurer and LHSFNA Labor Co-Chairman Armand E. Sabitoni, noting that many of these tragedies can be prevented through the better use of internal traffic controls, technology, planning and proper training.

"Unfortunately," Sabitoni continues, "the other major problem – intrusions, motorists crashing into work zones and hitting workers – is a lot harder to control."
Temporary Rumble Strips

Lane closures on conventional highways with posted speed limit of 75 mph or less
Automated Flagging Assistance Devices (AFADs)

**Type 1**
STOP/SLOW

**Type 2** (Right)
Red/Yellow lens

Both types required gate arm per TxDOT Standard

TCP (1-6) – 12
### AWARE
- Combined technologies:
  - Advanced RADAR
  - Situational Awareness
  - Threat deterrent

### Technology Breakdown:
1. Advanced RADAR
2. Situational Awareness
3. Threat Deterrent (Sirens, Lights)
Raven Sensor

Description

• Integrates the RADAR with:
  • High definition video camera

• Mounts to any vehicle to detect potential collisions
  • Tracks both position and velocity
  • Sensing algorithms detect when vehicle is on collision course going too fast to stop
  • Very low false-alarm rate

Technology Breakdown:

1. Raven Sensor
Sample Videos – Initial Test at a Quarry with LRAD

- Triggers when vehicle swerves into lane
• Considering an automatic trigger for the panic light system
We Remember...
Just One...

It takes one minute to write a safety rule
It takes one hour to hold a safety meeting
It takes one day to hold a safety class
It takes one month to put a plan into operation
It takes one year to win a safety award
It takes one lifetime to make a safe worker
It takes one second to destroy it all with...

One Incident
A pedestrian is killed every day in Texas, on average.
• Watch for pedestrians.
• Don’t block the crosswalk with your vehicle.
• When you’re a pedestrian crossing a street, watch out for traffic and stay off your phone.

Speed is a factor in over 70% of deaths a year in Texas.
• Obey the posted speed limit.
• Adjust to road conditions.
• Don’t drive aggressively.
• Keep proper distance behind the vehicle in front of you.

Over 100 Texans are killed in work zone every year.
• Slow down and drive the posted speed in work zones.
• Watch for workers.
• obey all signs and be prepared to stop.
• Keep a safe distance from the car in front of you.

On average, a cyclist is killed every 11 days in Texas.
• Watch for cyclists in traffic.
• They are smaller & harder to see.
• Allow 5 feet of clearance when passing a cyclist. (It’s the law.)
• Never drive in a bike lane; cyclists are allowed this entire lane.