Maintenance Safety Initiatives

Louisiana DOTD
SE Maintenance Peer Exchange
October 22, 2019
Maintenance Safety Initiatives

➢ Why now?

➢ Moving operation (limited crew)

➢ Maintenance uniforms

➢ Equipment warning lights

➢ Truck/Trailer mounted attenuators
Fallen LA DOTD Employees

- Paul V. Featherston, 24 year employee
  July 3, 2017
  District 03

Employee was patching a pothole, when a private vehicle failed to stop. The private vehicle crashed into him and his work truck.
Paul Featherston Accident
Fallen LA DOTD Employees

- Johnny Cole, 11 year employee
  June 18, 2019
  District 05

- Employee was performing routine sign installation work on LA 563 in Lincoln Parish as part of the District’s sign crew when Johnny was struck by an 18-wheeler that failed to stop.
What can we do to make a difference?
Moving operations (stop & go)

- Example: Pothole Patching, sign replacement

- Pre-Job Conference
- Follow Traffic Control Handbook and available JSA’s
- Park Trucks in a safe location
MOBILE OPERATION
- Intermittently (Stop and Go)
- Short Duration (Up to 1 Hour)
- Two-Lane Road
- Low Traffic Volume

Minimum Requirements

Use emergency flashers.

Crewman flags if needed.
See Flagging Procedures page 38.

Work vehicle is mounted with a flashing warning light.

Use another work vehicle equipped with flashing warning light, attenuator, road work ahead sign for crew protection when available.
MOBILE OPERATION

- Intermittently (Stop and Go)
- Short Duration (Up to 1 Hour)
- Two-Lane Road
- High Traffic Volume

Minimum Requirements

- Work vehicle is mounted with a flashing warning light.
- Use emergency flashers.

Maximum 3 miles.

Assigned Flagger

Second flagger taken from crew if needed.

See Flagging Procedures page 38.

Use another work vehicle equipped with flashing warning light and attenuator for crew protection when available.

See Table 2, page 9 for minimum sign spacing. Maximum is 3 miles between flagger signs.
MOBILE OPERATION
- Intermittently (Stop and Go)
- Short Duration (Up to 1 Hour)
- Two-Lane Road
- Sight Obstruction

Minimum Requirements

See Flagging Procedures page 38.

Work vehicle is mounted with flashing warning light.

Third flagger optional.

Use another work vehicle equipped with flashing warning light or attenuator for crew protection when available.

Two flaggers are assigned.

See Table 2, page 9 for minimum sign spacing.
Moving operations (stop & go)

- Use of a spotter with industrial whistle (For emergency use only)
- Cone (middle of lane)
- Under 55mph 100ft behind truck
- Over 55mph 150ft behind truck
Current PPE

➢ Orange Safety Vest
➢ Class 2
➢ Industry standard moving towards high visibility yellow/green
Proposed New Uniform
Benefits of Upgrading to Uniforms

➢ Reflective Class 3 shirts fulfill the safety role of the vest
  – Vests can easily be forgotten
  – Safety shirt is always on the employee

➢ Full Uniforms have a more professional look
  – Unique look is more noticeable and eye catching to the traveling public
  – Helps establish DOTD’s brand
Gangs to Wear the Uniform

➢ Maintenance
  - District maintenance gangs (parish maintenance, signs, signals, striping, bridge, maintenance specialist), and roadside development coordinator

➢ Statewide and Survey
  - Sec 30 survey, Dist Survey, Sec 42 statewide equipment, Sec 45 signal and sign, Sec 50 Loss Prevention, Sec 51 Bridge

➢ Construction
  - District construction gangs

➢ Ferries
  - Dist 58, Dist 07, and Sec 42 Ferry gangs
Warning Lights

Current LA DOTD Standard is red-amber

➢ Directive states “at roof line, top of body of vehicle”
➢ Each district purchases and installs its own lights = 9+ variations at best
➢ Not uniformly installed
➢ Inconsistent flash patterns
Warning Lights

Goals:

➢ New color = unique identifier
➢ Consistency = same configuration, same light pattern
➢ Achieve brighter daytime effect, also implement a passive nighttime setting
Going Green
Warning Lights

Why change colors?

➢ Driving public desensitized to amber only
➢ Green/Amber can distinguish DOTD from other roadside vehicles
➢ Green has superior daytime visibility vs. amber and can achieve a higher intensity than red
Warning Lights

➢ Ohio DOT, Michigan DOT, have implemented for snow & ice equipment only

➢ Connecticut DOT – moving to a green-amber light configuration fleetwide
Warning Lights

Next Steps....

➢ Finalize standard layouts and light spec
➢ New equipment will be outfitted at HQ before picked up by district
➢ Legislation to specify green as unique to DOTD
➢ 3+ year to retrofit existing light installs
Reflective Vehicle Striping
TMA – CRITERIA for use/need

➢ CRITERIA
- ADT>20K and Spd>=40 mph
- Slow moving operation – sweeping, striping, buttons, herbicide
- Shoulder work – stationary or moving
- Static lane closures on rural roads – mud jacking at bridge ends
- Curvy and hilly roads
- Retrieving items out of the lanes on interstates and 4 lane highways
- Every crew would have one at their disposal
Trucks used for the TMA

➢ TMA’s are most often mounted to trucks that are old and in poor condition.

➢ The AC usually doesn’t work

➢ The seat is typically a bench seat

➢ The last man on the totem pole or bravest or the loser of paper, rock, scissor gets to drive
District 04, Gang 550 Scorpion on a 1991 Kodiak
District 04, Gang 550 TMA Seat
Fixes

Reduce driver fatigue

- Keep the AC unit working, especially for hot days when the work train is moving very slow.
- Rotate drivers every couple of hours
Fixes

Trucks

- Install seats that have adjustable head rests for driver and occupant
- 4 point harness for use while its deployed
Other Concerns

Inadequate training
- Proper setup
- Knowing roll ahead distance
- Recognizing vertical / horizontal blind spots
- Proper vehicle mass

Quantity - Not enough for all work gangs in each district.
Fixes

Formal Driver Training

➢ Pursuing options to implement adequate and relevant training

➢ ATSSA has an “Operation and Application of Truck-Mounted Attenuators (TMAs)” that is Classroom or Online. 4 hour course.
FIXES

- Increase the quantity of TMAs and Trailer Mounted Attenuators in each district
  - Currently working with districts to identify actual needs
  - Will pursue financing package to expand the TMA Fleet
  - Pool of TMA’s to be maintained at Equipment Unit for immediate replacement of impacted units
# of Attenuators within the Department

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<th>DISTRICT &gt;</th>
<th>02</th>
<th>03</th>
<th>04</th>
<th>05</th>
<th>07</th>
<th>08</th>
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<td>3</td>
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<td>4</td>
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<td>3</td>
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# of Gangs that could use an attenuator

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<th>04</th>
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# Difference between Needs and Haves

## Table

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Total Difference: 106
COSTS

Rental Cost
- TMA from United Rentals (includes the truck) is:
  - $459.30/day
  - $1148.47/week
  - $2871.19/month (yearly rental = $34,454.28)
  - Limited availability

Purchase Cost
- Trailer mounted attenuators purchases FY19 ~ $25,000
- Max need (106 units): $2,500,000
Other Discussion Topics

Cable Barrier Repair

➢ Issues with mobilization costs in maintenance contracts.
Other Discussion Topics

Maintenance Academy

➢ Which states have them? Target populations?
Other Discussion Topics

TMA Reimbursement

➢ What is your level of success of collection from insurance?