SAFETY IN NIGHT WORK OPERATIONS: WHAT DOES THE DATA SAY?

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October 9, 2007
Why is Safety a Concern at Night?

- Reduced visibility
- Drunk/drugged drivers
- Drowsy drivers
- Higher operating speeds past the work area

Implies that crash risks, and maybe crash severity, is higher when working at night.
Drunk Driving in Work Zones

The graph shows the percent of crashes during daytime and nighttime in work zones and non-work zones.

- **Daytime**
  - Work Zone: 2
  - Non-Work Zone: 1

- **Nighttime**
  - Work Zone: 12
  - Non-Work Zone: 12

The data indicates a higher percent of crashes in work zones compared to non-work zones, especially during nighttime.
Drowsy Driving in Work Zones

The bar chart shows the percentage of crashes during daytime and nighttime in work zones and non-work zones. The chart indicates a significantly higher percentage of crashes in work zones compared to non-work zones, especially during nighttime.
Drowsy Workers in Work Zones

- 20% report sleep-related disorders
- Dynamic schedules disrupt adjustments
- Supervisory personnel have daytime duties as well
- Older workers more likely affected
- Data very limited on performance
- No evidence that night work increases worker injuries or deaths
Effect of Night Work on Crash Risk

- Sullivan (1989) – crashes during night work increase 87 percent
- Ullman et al. (2004) – crashes at night increased 102 percent

Major unanswered question: How would crashes have been affected if the work had been done during the day?
SEVERE TRAFFIC CRASHES

![Bar chart showing the percent increase in crashes for different work zones and time of day.](chart)

- **Work Active w/ Lane Closures**: Higher increase in daytime compared to nighttime.
- **Work Active w/o Lane Closures**: Moderate increase in both daytime and nighttime.
- **Work Zone Inactive - No Lane Closures**: Minimum increase in both daytime and nighttime.
ADDITIONAL CRASH COSTS: WORK ACTIVITY w/ LC

Additional Crash Costs per 100 Hours of Work Activity (with Lane Closures) Per Mile of Work Zone

- Daytime
- Nighttime
- Expon. (Daytime)
- Expon. (Nighttime)
ADDITIONAL CRASH COSTS: WORK ACTIVITY w/o LC

Additional Crash Costs per 100 Hours of Work Activity (w/o Lane Closures) Per Mile of Work Zone

Daytime
Nighttime
Expon. (Daytime)
Expon. (Nighttime)
WORK ZONE INACTIVE: NO LC

Additional Crash Costs per 100 Hours of Work Inactivity Per Mile of Work Zone

- Daytime
- Nighttime
- Expon. (Daytime)
- Expon. (Nighttime)

AADT
Questions?

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