

National
Transportation
Safety Board

Wrong-Way Driving Crashes Lifesavers Conference Workshop


Don Karol
Office of Highway Safety


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Wrong-Way Driving Crashes

Moderator: Don Karol, NTSB


Speakers: Nathan Warren-Kigenyi, AAA
Robert Ritter, FHWA
John Holzhauser, Caltrans

2  NTSB

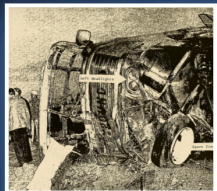


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The NTSB is an independent federal agency, charged by Congress to investigate transportation accidents, determine the probable cause, and issue safety recommendations to prevent their recurrence.

 NTSB

Wrong-Way Driving Crashes



Baker, CA (March 7, 1968)

19 fatalities
11 serious injuries



Carrollton, KY (May 14, 1988)

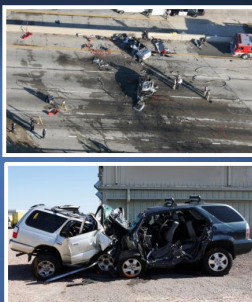
27 fatalities
34 serious injuries



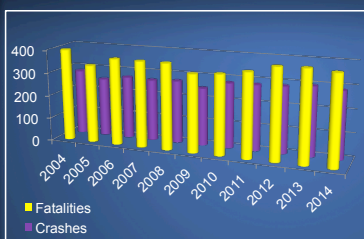
Special Investigation Report



www.nts.gov



Wrong-Way Driving Crash Data



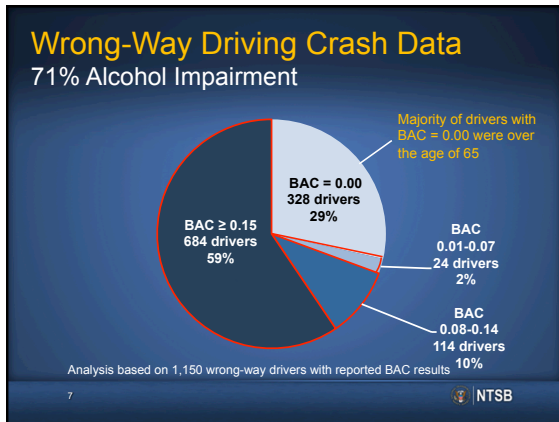
Around 373 fatalities/yr. in 287 crashes

WWD crashes much higher severity rates compared to other crashes

78 percent occur during hours of darkness



57 percent occur on weekends (Fri., Sat., Sun.)





Wrong-Way Driving Entry Locations

- Large percentage of WWDs enter highway via exit ramp
- Majority occur at Partial Cloverleaf and diamond design exit locations
- Entrance and exit ramps meet at nearly perpendicular angles with cross road



NTSB

Safety Issues and Countermeasures

- Driver
 - Alcohol Impairment
 - Older Drivers
- Highway traffic control devices and infrastructure
- Vehicle Safety Systems

NTSB

Alcohol Impairment

ROADMAP TO REACHING ZERO

- Lower BAC limit
- Increased use of high-visibility enforcement
- Use of in-vehicle alcohol detection technology
- Ignition interlocks for all offenders
- Enhanced use of Administrative License Actions
- Target repeat offenders
- Use of DWI Courts

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Older Drivers

- Drivers over age 70 over-represented in fatal wrong-way crashes
- Aging associated with loss of functional abilities such as visual processing and cognition

Uniform Guidelines for State Highway Safety Programs

OLDER DRIVER SAFETY

NTSB's research shows that older drivers are at a higher risk of being involved in crashes than younger drivers. This is due to age-related changes in vision, hearing, reaction time, and cognitive abilities. These changes can affect a driver's ability to process information and make decisions quickly. Older drivers are also more likely to be involved in crashes when they are driving at night or in poor weather conditions. To reduce the risk of crashes involving older drivers, NHTSA has developed a set of uniform guidelines for state highway safety programs. These guidelines are intended to help states identify and address the specific needs of older drivers and to ensure that they are provided with the resources and support they need to remain safe on the road.

1. IDENTIFY AND ASSESS NEEDS

States should conduct research to identify the specific needs of older drivers in their state. This research should include data on the number of older drivers, the types of crashes involving older drivers, and the factors that contribute to these crashes. States should also conduct research on the effectiveness of various interventions designed to improve the safety of older drivers.

2. PROVIDE EDUCATION AND TRAINING

States should provide education and training to older drivers on safe driving practices and on the latest safety technologies. This education and training should be tailored to the specific needs of older drivers and should be provided in a format that is accessible and understandable to them.

3. ENHANCE VEHICLE SAFETY

States should encourage older drivers to use safety technologies such as backup cameras, lane departure warnings, and adaptive cruise control. States should also encourage older drivers to use vehicles that are designed for older drivers, such as vehicles with larger fonts, high-contrast colors, and easy-to-use controls.

4. IMPROVE INFRASTRUCTURE

States should improve road infrastructure to make it safer for older drivers. This includes measures such as widening lanes, adding crosswalks, and improving lighting. States should also ensure that roads are well-maintained and free of hazards.

NHTSA HSP Guideline No. 13

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Wrong-Way Signage




Standard signage in the MUTCD to deter Wrong-Way Entry

- 'ONE WAY' sign
- 'DO NOT ENTER' sign
- 'WRONG WAY' sign

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Wrong-Way Pavement Markings

Standard pavement markings in the MUTCD to deter Wrong-Way Entry

- Wrong-Way Arrow 
- Turn Lane-Use Arrow 
- Turn/Through Lane-Use Arrow 

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Improvements to Signage

State DOT and local jurisdiction improvements to signage at exit ramps

- Lowering sign height
- Using oversized signs
- Mounting multiple signs on the same post
- Implementing standard wrong-way sign package
- Applying red retro-reflective tape to the vertical posts

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Positive Guidance Leaving No Room for Confusion



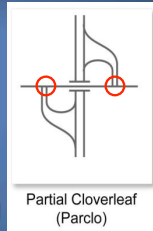
Courtesy of the New York State Department of Transportation

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Improvements to Exit Ramp Design

- Changes to exit ramp design can be costly
- Change ramp geometrics
 - Obtuse angle
 - Sharp corner radii
 - Non-traversable medians
- Additional roadway lighting



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Vehicle Safety Systems

- Use of existing GPS navigation technologies to provide wrong-way movement alerts
- Provide consistent messages or alerts that are intuitive to the driver



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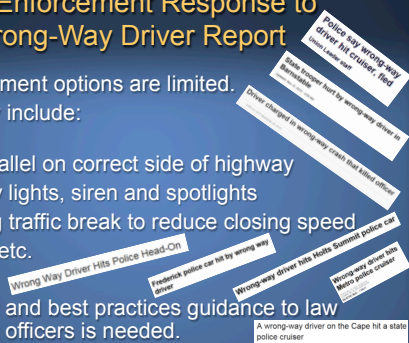


Law Enforcement Response to Wrong-Way Driver Report

Law Enforcement options are limited. Options may include:

- Driving parallel on correct side of highway
- Emergency lights, siren and spotlights
- Conducting traffic break to reduce closing speed
- Ramming, etc.

Model policy and best practices guidance to law enforcement officers is needed.



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Crash Investigators = Lifesavers

- Crashes provide an opportunity to **learn** and prevent future crashes
- Thorough on scene investigation essential (even in cases without criminal prosecution)
- Collaborate with local DOT
- Driver profile information:
 - Wrong-Way entry location (improvements needed?)
 - 24 to 72-hour history
 - Place of last drink

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“Learning from Tragedy”



“From tragedy we draw knowledge to improve the safety of us all.”





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