The Safe System Approach

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Outline

- Who is the NTSB
- What is a Safe System Approach?
- NTSB Most Wanted List and Safety Recommendations
- What can you do?
NTSB Mission
NTSB Board Members

Honorable Jennifer Homendy
Chair

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NTSB Safety Investigation

We look at the roles of:

• **Humans**
  Did the driver, operator, mechanic contribute to the accident or crash

• **Machines**
  Mechanical failures, technology, management of the company

• **The environment**
  Road design, weather
We focus solely on safety, to make recommendations that could help to prevent the next accident.

- We do not determine blame or liability.
- We do not investigate intentional criminal acts.
US Transportation Fatalities in 2020 – by Mode

- **Highway**: 38,824 (95%)
  - Passenger cars: 13,472
  - Light trucks and vans: 10,352
  - Pedestrians: 6,516
  - Motorcycles: 5,579
  - Medium and heavy trucks: 938
  - Buses: 16
  - Pedalcycles: 831
  - Others: 1,120

- **Railroad**: 931 (2%)
- **Marine**: 851 (2%)
- **Aviation**: 332 (1%)
- **Pipeline**: 15 (0%)
Motor vehicle crash deaths (1975-2021)

- 51,093 (1979)
- 32,744 (2014)
- 36,096 (2019)
- 42,915 (2021)
AVIATION
Require and Verify the Effectiveness of Safety Management Systems in all Revenue Passenger-Carrying Aviation Operations
Install Crash-Resistant Recorders and Establish Flight Data Monitoring Programs

HIGHWAY
Implement a Comprehensive Strategy to Eliminate Speeding-Related Crashes
Protect Vulnerable Road Users through a Safe System Approach
Prevent Alcohol- and Other Drug-Impaired Driving
Require Collision-Avoidance and Connected-Vehicle Technologies on All Vehicles
Eliminate Distracted Driving

MARINE
Improve Passenger and Fishing Vessel Safety

RAILROAD, PIPELINE, AND HAZARDOUS MATERIALS
Improve Pipeline Leak Detection and Mitigation
Improve Rail Worker Safety
NTSB Most Wanted List – Highway Safety Items

1. Implement a Comprehensive Strategy to Eliminate Speeding-Related Crashes
2. Eliminate Distracted Driving
3. Prevent Alcohol- and Other Drug-Impaired Driving
4. Protect Vulnerable Road Users through a Safe System Approach
5. Require Collision-Avoidance and Connected-Vehicle Technologies on All Vehicles
Principles of the Safe System Approach

- Humans Make Mistakes
- Humans are Vulnerable to Injury
- Responsibility is Shared
- No Death or Serious Injury is Acceptable
- Safety is Proactive
Elements of the Safe System Approach

- Safe Road Users
- Safe Roads
- Safe Vehicles
- Safe Speeds
- Post Crash Care
Speeding is one of the most common crash factors.

Between 2010 and 2020, speeding-related crashes resulted in more than 119,000 fatalities.

Speed—and therefore speeding—increases the likelihood of being involved in a crash, and the severity of injuries sustained by all road users in a crash.
NTSB Recommendations for Reducing Speeding-Related Crashes Involving Passenger Vehicles

- Adoption of the Safe System Approach
- Remove the 85th percentile guidance for setting speed limits
- Data-driven high-visibility speed enforcement programs
- Automated speed enforcement (ASE)
- Adoption of Intelligent speed adaptation (ISA) systems
- Consistent reporting of speeding-related crashes
- National leadership—annual public awareness/enforcement mobilization campaign
NTSB Recommendations to Prevent Alcohol-Impaired Driving

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
NTSB Recommendation to Lower the per se BAC limit

In 2013, the NTSB called on all 50 states, Puerto Rico and the District of Columbia to:

Establish a per se blood alcohol concentration (BAC) limit of 0.05 or lower for all drivers who are not already required to adhere to lower BAC limits.
NHTSA Examination of Utah 0.05 BAC Law

- In 2019, Utah’s fatal crash rate dropped by 19.8%, and the fatality rate decreased by 18.3%.
- In 2019, more than 22% (about 1 in 5) of those who drank alcohol indicated they had changed their behaviors once the law went into effect.
- None of the economic impacts that had been predicted with the change from .08% to .05%.
- Alcohol-impaired-driving arrests did not climb sharply after the law went into effect.
What can you do?

- Prioritize infrastructure investments that improve safety for vulnerable road users
- Prioritize implementation of countermeasures such as setting safe speed limits, data-driven approaches to speed enforcement, expand use of speed safety cameras, and intelligent speed adaption
- Establish a per se BAC limit of 0.05 or lower for all drivers
- Implement NTSB safety recommendations
- Strengthen existing road safety laws (graduated driver licensing, automated speed enforcement, sobriety checkpoints)
- Support road safety public awareness campaigns
NTSB Safe System Approach Roundtable Series

- 6-part roundtable series featuring discussions with global road safety experts and leaders hosted by Chair Homendy
- Examines the Safe System Approach and its individual elements
- Featured Dongho Chang from WSDOT
- Recordings available on NTSB YouTube channel

https://www.youtube.com/user/NTSBgov
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