

Enhancing Highway Safety Via Event Data Recorders

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Highway Safety Affects Us All

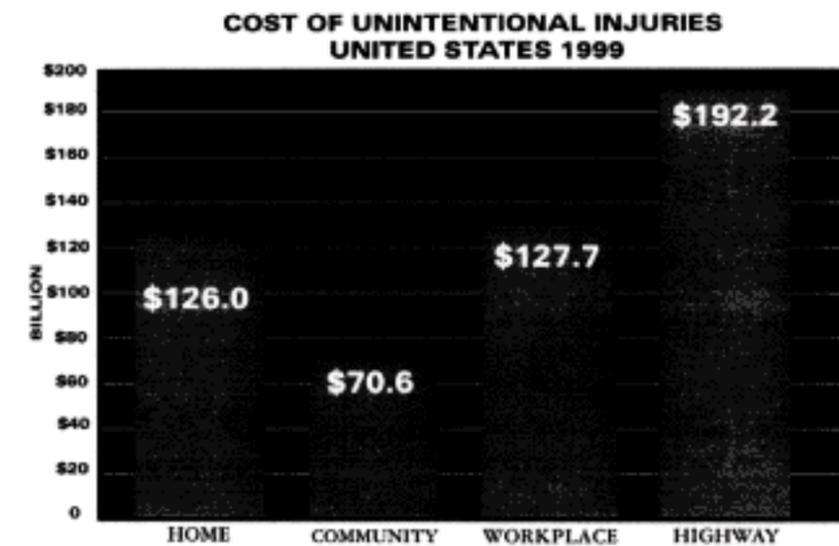


While We Have Had Success,
We Need To Do More

“It requires a very unusual mind to
undertake the analysis of the
obvious”

Alfred North Whitehead

Motor Vehicle - Related
Injury and Death is the Nation's
Largest Public Health Problem.



If the Current Trend Continues,
the First Decade Of This Century
Will Result in Deaths and
Injuries affecting the Equivalent
of **Every Man, Woman, and
Child** Now Living In:

- Alaska
- Arizona
- Delaware
- Washington, DC
- Hawaii
- Idaho
- Kansas
- Maine
- Mississippi
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Mexico
- North Dakota
- Oklahoma
- Oregon
- Rhode Island
- South Dakota
- Utah
- Vermont
- West Virginia
- Wyoming

\$ 2 Trillion
Economic Cost

Human Loss Affecting Family
and Friends of the **33 Million**
Victims

“Safety” is a Priority in America



National and State Customer
Survey Confirm Highway Safety
a Top Transportation Concern

USDOT Declares Safety Its
“North Star”

Many States Place Safety at the
Top of Their List of Priorities

World wide automobile industry has
demonstrated its commitment by
incorporating safety features in new
vehicles

However, There Has Yet To Be a
Highway Safety Countermeasure
That Has Resulted in Significant
Reductions To Deaths, Injuries,
and Crashes

One Reason is Because of the
Increasing of Demand on the
Transportation System

People Are Driving More Miles
Each Year, Resulting in
Congested Roadways

Over the Past Fifteen Years,
Vehicle Miles Traveled Has
Increased 35 %, Yet New Road
Mileage Has Risen a Mere 1 %

Safer Cars, Roadway
Improvement, Enhance
Emergency Medical Services,
Increased Seat Belt Use and
Other Factors Cut the Rate Of
Highway Deaths per 100,000
Population Nearly in Half Since
1972 - To 15 Deaths per 100,000
Last Year

More Americans of Every Age
Between 1 and 29 Die From
Motor Vehicle Crashes Than any
Other Cause

1999, An Average of 112 People
Were Killed Every Day of the Year -
Every 13 Minutes, for a Total of
41,611

Highway Fatalities Account For
94 % of All Transportation
Deaths

In 1998, 41,471 People Were
Killed On Our Nation's Roads,
and Almost 3.2 Million Were
Injured

About 13 Percent, or 5,374, of
the Fatalities Involved Large
Trucks and Four Percent, or
127,000, of the Injuries Involved
Large Trucks

In Part, These Statistics Reflect
the Major Role That Commercial
Vehicles (Mostly Large Trucks,
but Also Motor Coaches) Play in
Our Motor Vehicle
Transportation System

Commercial Vehicle Operations
in the U.S. Account For Nearly
\$400 Billion in Annual
Revenues, Representing More
Than 80% of the Nation's Freight
Bill

Commercial Trucks and Buses
represent Nearly 10% of All
Registered Motor Vehicles and
Industry Employs 10 Million
People, Including 3 Million
Drivers

The Public Importance of Commercial
Vehicle Safety is Underscored by the
Fact That Approximately 2/3 of All
“Harm” from Large Truck Crashes, and
Approximately 85% of Fatalities,
Occur “Outside of” the Truck; i.e., to
Other Vehicles and Vehicle Occupants
Involved in Crashes With Trucks

Commercial Drivers Are Generally Good Drivers

The Majority of Car-Truck Crashes Are Related More to the Errors and Misbehaviors of Car Drivers Than to Those of Truck Drivers



Commercial Drivers are Less Likely Than Non-Commercial Drivers to Seriously Violate Speed Limits or Engage in Aggressive or Risky Driving Behaviors

However, Because of the High Mileage Exposure of Trucks and the Oftentimes Severe Consequences of Their Crashes, There is a Premium on Making Trucks, and Truck Drivers, Safer



The Crash Involvement Rate Per Mile Traveled of Combination-Unit Truck (Tractor-Semi Trailer) Drivers is Less Than One-Half That of Non-Commercial Drivers

The Public Has a Right To Expect Commercial Vehicle Operations To Exhibit A High Standard of Safety Behavior and Performance



Total Life-Cycle Crash Cost Are More Than Four Times Greater for a Combination-Unit Truck Than for a Passenger Car

Because Per-Vehicle Crash Cost Are so Much Greater For Trucks Than For Cars, There Are Greater Per-Unit Benefits Associated With Crash Reductions

Commercial Vehicles Are Also
the Platform of Choice for Early
Development, Testing, and
Deployment of Many Traffic
Safety Interventions

And, Since Commercial Vehicle
Travel is Regulated by
Government and Generally
Managed Through Fleet
Operations, There Are Better
Opportunities for Controlled
Testing and Evaluation of New
Safety Interventions

The Vehicle Safety Problem is
Multi-Faceted



Incompatibility Among Vehicle
Size and Design Has Resulted In
Almost 4,000 Fatalities Due to
Rear-End Truck Underride
Collisions Over The Past Ten
Years.

In Motor Carrier-Related Fatal Crashes, Fire Is Associated With Almost Twice As Many Crashes As In Passenger Cars



Over The Past Five Years, Rollover-Related Deaths Have Increased By Nearly 1,000 Per Year



At the Current Rate, Over 100,000 People Will Die in Motor Vehicle Crashes Even Though They Are Wearing Safety Belts Without Improvements to Passenger Compartment Integrity and Improved Occupant Protection Systems

Over The Past Five Years, The Number Of Buckled Drivers And Occupants Who Have Died In Crashes Has Increased From 9,680 To 11,295

No Significant Effort Has Been Undertaken To Understand The Failure Mechanisms Associated With These Deaths And Explore Potential Restraint Enhancements That Could Favorably Impact These Deaths

Large Trucks Represent 3% of All Registered Vehicles, 7% of Total Vehicle Miles Traveled, And 9% of All Vehicles Involved In Fatal Crashes

Event Data Recorder
Technologies Can Serve As A
Catalyst For A National Debate
On The Efficacy Of Emerging
Transportation Safety
Technologies

Event Data Recorders Will
Accelerate Deployment Of
Driver-Assisted Technologies,
Collision Avoidance Systems,
Vehicle Diagnostic Systems and
Advanced Medical Response
Capabilities

Event Data Recorder Technologies Will
Include Retrieving, Gathering, and Storing
Objective Data Which Will Improve
Highway Efficiency, Mobility,
Productivity, and Environmental Quality
By Providing Timely And Compelling
Evidence Of The Types Of Crashes, The
Role Of Human Error, Systems
Engineering And Systems Integration
Issues.

Click Incorporated Recommends
Classifying EDR's and Thereby
Segmenting Goals Which Will
Assist In Rapid Deployment to a
Large Fleet and Will Overcome
the Obstacle of Obtaining Data
From a Large Sample in a
Shorter Time Period

An Event Data Recorder (EDR)
Is An On-Board Device Capable
Of Monitoring, Recording, and
Displaying Pre-Crash, Crash, and
Post-Crash Data Element
Parameters From a Vehicle,
Event & Driver

The Overall Objective of
Utilizing EDR Data is to Increase
The Safety of Our Highway
Transportation System

Classification Of EDR's
TYPE I TYPE II

·REAL TIME
·LOCATION IN GPS
·PRINCIPLE DIRECTION
·VELOCITY
·OCCUPANTS
·SEAT BELT USAGE

ALL OTHERS

North Carolina School Bus / Car
Crash 10/6/2000



Crash Map

