

# EDR User Perspectives on Parameters & Data Accessibility: Independent Investigator/Consultant Accident Reconstruction

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# A Personal Introduction

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- 30+ years automotive industry
  - Former GM technical executive
- NHTSA EDR groups participation **PPV  
T&B**
- SAE & IEEE EDR Committees (3)
- Consulting – EDR, vehicle technology, & accident reconstruction
- Ph.D. – Texas A&M **Industrial Engineering  
Statistics**



# Accident Reconstruction

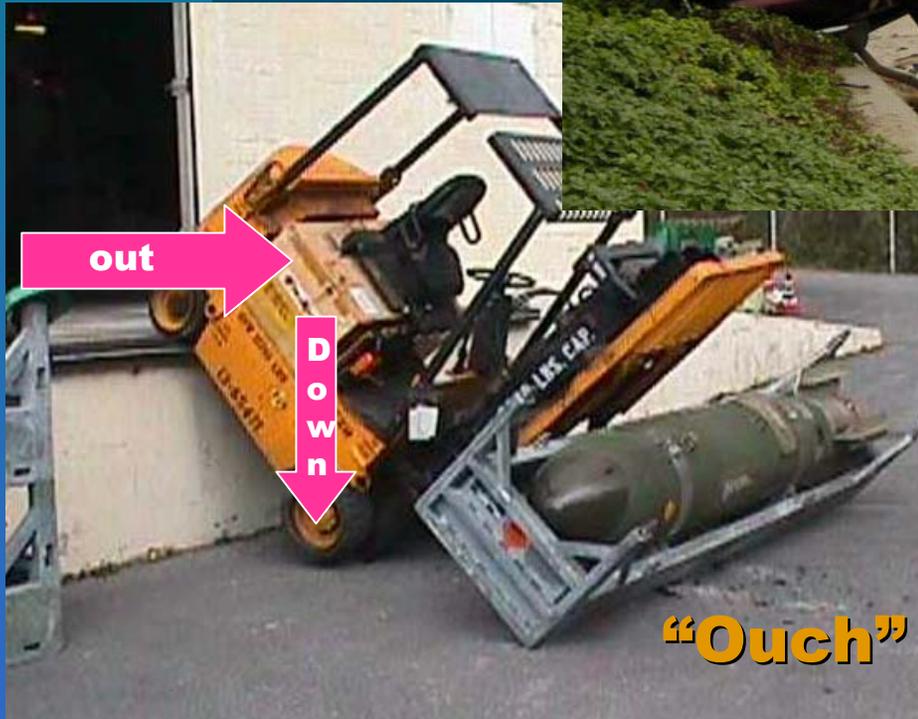
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- Traffic Traffic Accident Reconstruction is the effort to determine, from whatever information is available, *how* the accident occurred.
- Reconstruction is not determining *why* an accident happened.



# Examples

## Example #1: out & down



## Example #2: impact & final rest

Crash analysis can be simple or complex, with or without EDR.



SAE







# Accident Reconstruction

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# EDR User Perspective Issues

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- Data ownership
- Vehicles with downloadable data
- Data retrieval
- Data interpretation
- Correlation of data sources
- Report findings
- Frye hearings



# Data Ownership ( simplified )

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- **Owner / Driver of the vehicle owns the data**
- **Insurance company rights to the data**

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- **Manufacturer proprietary data**



**SAE**



# Does Vehicle Have Data ?

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- **Age / Model**
- **Manufacturer**
- **Type of impact**



# Data Retrieval

- Direct connection to EDR
- OBD connector under the dash



# Data Interpretation

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- **Type of crash**
  - Front / Side / Rear / Pedestrian / etc.
- **Pre crash events**
- **Delta V**
- **Vehicle integrity**
  - Electrical / Physical



# Correlation of Data Sources

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- EDR data
- Vehicle damage data
- Site data
- Pre impact data
- Impact data
- Post impact data



**SAE**



# Technology Challenges

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- LED and HID lamps do not have visible post impact damage profiles like “hot shock”.
- Drive by wire, steer by wire, brake by wire systems eliminate traditional technology which can be examined after a crash.



# Report Findings

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- Are analysis and results consistent ? ? ?
  - ABS Skid Marks
  - Electronic Controls
  - Non-Filament Lamps
  - Vehicle Damage



# Frye Hearing

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- **Data admissibility in court.**
  - **Does this technology have validity which permits it to be accepted as evidence.**
  - **NHTSA EDR Working Groups.**
  - **History and development of EDR.**



# Traffic Accident Reconstruction Practical Examination

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2 Test Examples

# Real World Example # 1

## EDR or Conventional Analysis ?

But I was pushing  
on the brake



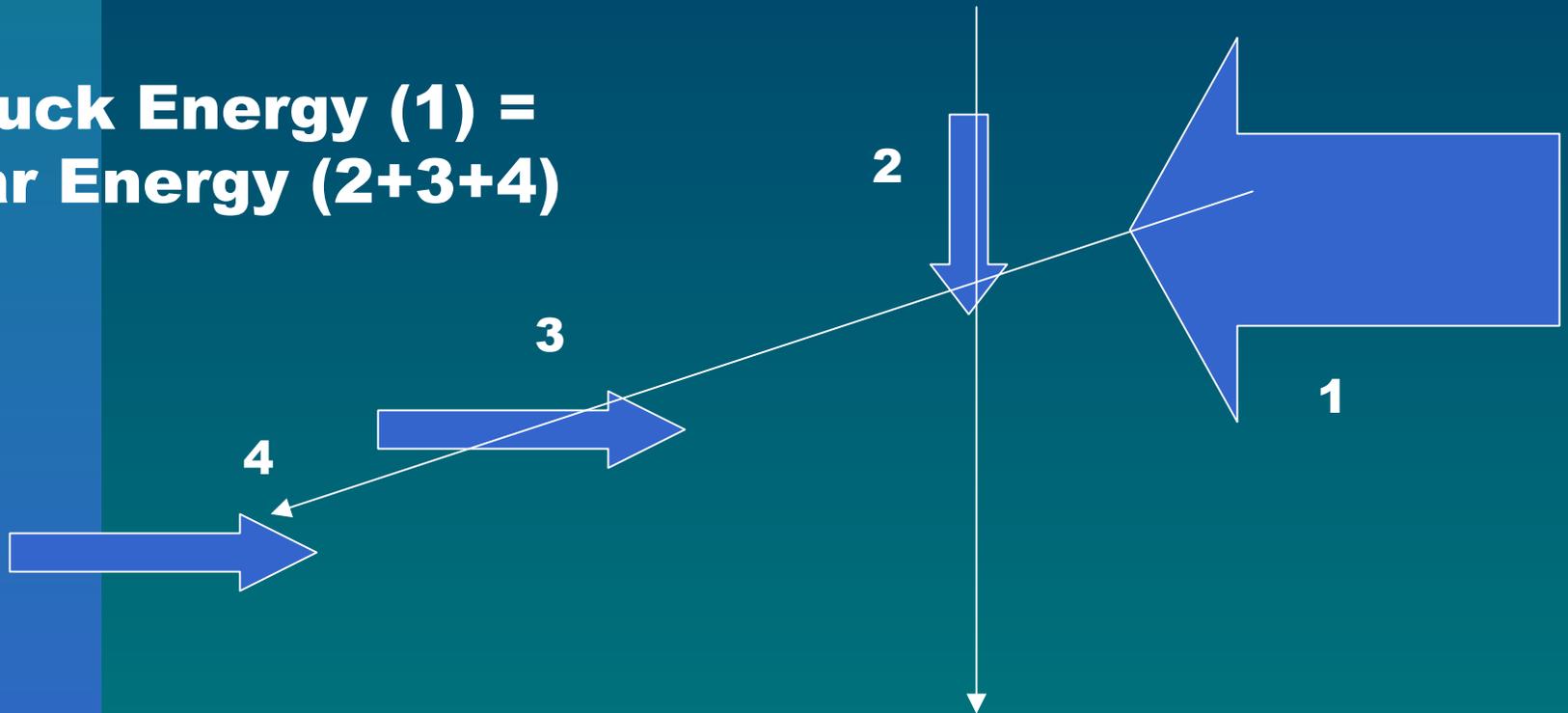
**SAE**



# Real World Example # 2

## Basic Analysis

**Truck Energy (1) =  
Car Energy (2+3+4)**



# Real World Example # 2

## Vehicle 1 = Vehicles 2+3+4



# EDR Needs

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- Standardized light vehicle data set
  - Standardized heavy vehicle data set
  - Common connector system
  - Common retrieval method
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- EDR “Policy”



# EDR “Policy” Foundation

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- NTSB identifies need for EDR
- NTSB Symposiums, #1, #2, & #3
- NHTSA working groups, PPV + T&B
- NHTSA EDR Petition Review
- SAE & IEEE Committees



# EDR Policy Solution

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- Standardize data set



# EDR Policy Benefits To Society

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- *Save lives,*
- *Increase public confidence in transportation system,*
- *Provides inherent accountability for collision vehicles, and*
- *Reduces, to some extent, the complexity of collision analysis.*





# Questions & Comments