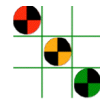


Unexploited Injury and Crash Reduction Opportunities

Michael Griffiths

Road Safety Solutions



Action towards safer vehicles

- Safe workplace - influence fleet buyers (about half of new vehicle purchases)
- Daytime running lights
- Rollover prevention
- Speed limiting
- Intelligent braking system
- Airbags
- Improved protection in side impacts
- Improved pedestrian protection

Strategies for implementation

- Maintain high-profile, credible consumer information
- Focus some resources on “implementation”
- Better monitoring and data collection and analysis
- Overcoming hurdles such as industry resistance

12 Year Progress Report

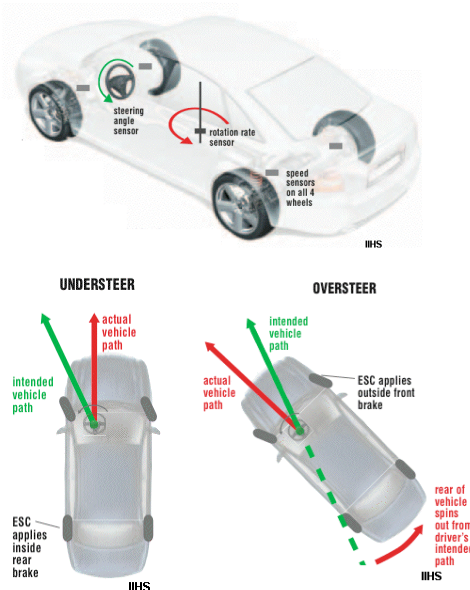
- The previous two slides are from the *1994 RTA Road Safety 2000 Review*
- Still much to be done after 12 years
- Evidence of a good start
 - 1992 ANCAP crash test results
 - 1993 RTA Safe Vehicle Policy
 - 1994 RTA Safe Vehicle Selection Workshop for fleet managers
 - 1996 Staysafe “Vehicles as workplaces”
 - 1997 NSW Govt Fleet Safe Vehicle Selection Policy prepared

Silver Bullets (aka Big Fixes)

- Some 2006 Silver Bullets
 - Electronic Stability Control
 - Safe Vehicle Selection
 - Head Protection in Side Impacts
 - Daytime Running Lights
 - Intelligent Speed Adaptation (ISA)

Electronic Stability Control

- Basic ESC detects when the vehicle is not following the intended course and applies braking to individual wheels to assist change in vehicle direction and keep vehicle facing in direction of travel
- Derived from ABS



ESC Fatality Savings

- Insurance Institute for Highway Safety (IIHS) analysed *single vehicle crashes* of passenger vehicles with and without ESC.
- 56% reduction in single vehicle fatalities (17% of all fatalities)
- 17% reduction in multi-vehicle fatalities (12% of all fatalities)
- Total saving 29% (17% +12%) of all light vehicle occupant fatalities
- Sweden similar reductions
- Similar worldwide experience of effectiveness

ESC Fitment Rates

- Sweden - in Dec 2004 70% of new cars
- USA - Feb 2006 50% of new cars, 66% of SUVs
- Australia 2006 - Less than 5% of new cars

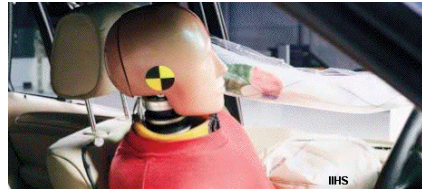
Safe Vehicle Selection

- Used Car Safety Ratings show that least safe vehicles have twice the serious injury rate of better vehicles in the same class.
- There is proven correlation between NCAP and real world crashes
- So NCAP ratings are the best guide to prospective vehicle safety
- Need for ANCAP results on windscreen sticker and better internet access

Savings from Safe Vehicle Selection

- Choosing a vehicle from the safest group in the class will half the risk of serious injury to driver
- Conservative estimate is a 15% saving in all serious injuries

Head Protection in Side Impacts



Inflatable Tubular Structure

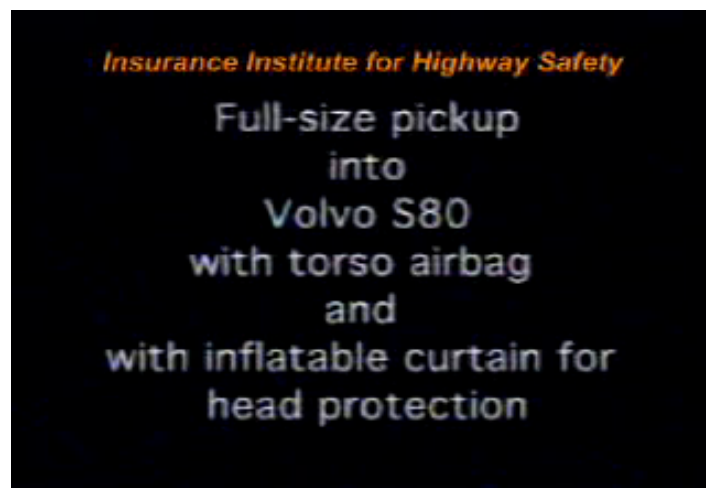


Head/thorax side airbag



Side Curtain

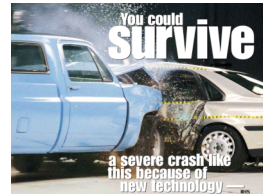
Head Protection



Head Protection

**29km/h Pole Test
With Curtain**

Real World Crashes Side Impacts



- Insurance Institute for Highway Safety (IIHS) analysed side impact crashes of vehicles with and without head-protecting side airbags.
- 45% fatality reduction in side impact crashes

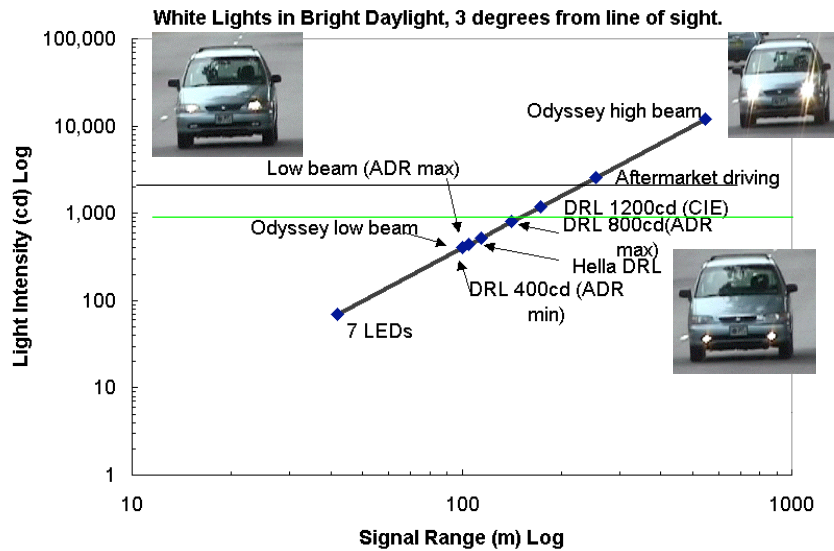
Curtain Fatality Savings

- 45% of side impact fatalities
(9% of all fatalities)
- Potential 60% of rollover fatalities
(13% of all fatalities)
- Total savings 22% of all fatal passenger car occupants fatalities

Daytime Running Lights

- Various technologies:
 - Low beam headlight
 - Dimmed high beam
 - Bright turn signals
 - Dedicated lights
- US accident data shows last two are 3 times as effective - agrees with photometric theory from traffic light design

DRLs



DDRL Savings

- European data: 25% of fatal multi-vehicle daytime crashes (10% of all light vehicle occupant fatalities)
- US data: 28% of fatal daytime pedestrian accidents (10-15% of all pedestrian fatalities)

Intelligent Speed Adaptation

- GPS (or other) technology communicates local speed limit to the vehicle
- Options range from:
 - Mild alert and voluntary compliance
 - Vehicle won't allow speeding
- Potential for setting limits by driver, time and location (eg P-platers at night)

Implementation

- On-board diagnostics connector on most passenger vehicles since 1993 (Californian environmental initiative).
- From 2000 software interface available on many new vehicles
- This has potential for retrofit of ISA and other IT technologies

ISA Savings

- 40% of all fatal crashes are speed-related
- Full compliance with speed limits would save 80% of speed-related crashes
- Approximate 30% saving in all fatal crashes

Silver Bullets

- Electronic Stability Control - 29%
 - Safe Vehicle Selection - 15%+
 - Head Protection in Side Impacts - 22%
 - Daytime Running Lights - 10%
 - Intelligent Speed Adaptation (ISA) - 32%
- (not cumulative)

Strategy for Implementation

1. Government fleet Safe Vehicle Purchasing Policy
2. All fleet vehicles adopt same requirements through Safe Workplace Policy
3. Secures a supply of safer second-hand vehicles for private buyers