



Session No. 618

Benchmarking Crash Frequency for Multiple State Fleets with Multiple Vehicle Types

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So What Happens on the Roads



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What Really Happens on the Roads

- Over 41,000 people killed as a result of motor vehicle crashes
- Vehicle restraint use is 82%
- 54% of the vehicle occupants were not restrained
- Close to 13,000 people died in crashes involving alcohol
- Speeding related crashes killed just over 13,000 people

September 2008 NHTSA Motor Vehicle Traffic Crash Fatality Counts and Estimates of People Injured for 2007



What do the Numbers Tell us?

- The cost to everyone is significant
- Lack of knowledge does not play as large a role as behaviors
- Assuming people will obey the law is not a good assumption
- Knowing how you compare to others is a good place to start to protect your business



Benchmarking Crashes Would be Easy if we all had:

- The same vehicle types
- The same business operations
- The same areas of operation
- All drove the same number of miles per year

But, we don't.....



Where we Started

- We knew how many vehicles we insured
- We knew what types of vehicles they were
- We knew where they were garaged
- We knew who owned them
- We knew how many claims/crashes we had




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What did we find?

- There are differences in crash rates based on the type of vehicle
- There are differences in crash rates based on the industry
- There are differences in in crash rates by state


There are other differences but to keep the sample size large enough for strong conclusions we looked at the main differences and developed relativities for each



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Relativities

- Used to measure difference from baseline
- Vehicle, Industry and State adjust for differences from average frequency




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Vehicle Type Impact

- Passenger
- Light Trucks
- Medium Trucks
- Heavy Trucks
- Extra Heavy Trucks

Vehicle type relativity ranged from 1 to 2.57
Mileage would play a role in differences between the types




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Industry Impact

- Manufacturing
- Contracting
- Mercantile
- Transportation
- Other

Industry type relativity ranged from .73 to 1.36
 Use of the vehicle would play a role in differences between the types




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State Impact

- All 50 states
- Vehicles by state will vary and may have impact


State type relativity ranged from 1 to 6.52



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State Weighting

- Liability premium used
- % of total premium for a state used in weighted average



Crash Rates

Using the 3 relativities allows us to have and expected crash rate. Actual crash rates are compared to expected crash rates.



Example

Type of Vehicle	Number of vehicles	Expected per Vehicle	Expected Crashes
Passenger Cars	10	0.02	0.24
Light	10	0.04	0.36
Medium	20	0.04	0.87
Heavy	10	0.05	0.55
Extra Heavy	10	0.06	0.61
Extra Heavy Tractors	10	0.06	0.61

* Two mid range States

Total Expected Crashes	3.23
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Expected vs. Actual Crash Rate

Actual Number of liability Crashes	Total Expected Crashes	Actual as % of Expected
3	3.23	93%



Impact of Driver Quality

- Driver quality measured by
 - % Clear
 - % with serious violations
 - % with multiple violations

Time period 3 years for moving 5 years for serious violations



MVR Distortions

- Most data is purchased from vendors
- State data can vary in length
- Some states allow “driver charm school” which removes violations if safety classes are taken
- Differences between states may not tell you what you think they tell you



Measuring Driver Quality

- Look at drivers not hiring criteria
- Measure % in three groups
 - Clear records
 - Serious violations
 - Multiple violations and crashes



MVR Benchmarks by Industry

- Clear records 60% to 80%
- Serious violations 1% to 5%
- Multiple violations or crashes 0% to 3%



MVR Benchmarks by Geography

- Clear records 58% to 79%
- Serious violations 1% to 4%
- Multiple violations or crashes 0% to 3%



Program Benchmarks

- Compare your program to those used by others with low crash rates
- Use programs to control risk
- Do not rely on "Training" to control crashes
- Have expectations for driver performance
- Effectively communicate your expectations
- Enforce your policies
- Use technology



Driver Records

- Obtain MVR at hiring
- Review at least annually
- Compare MVR to written criteria
- Have disqualification criteria
- Ask for violations and convictions
- Require notification of violations, convictions, suspensions and revocations
- Remove drivers from positions requiring operation of motor vehicle if they do not meet criteria
- Track overall driver quality



Managing who can Drive

- Drivers must pass road test
- Maintain a list of authorized drivers by type of vehicle
- Prohibit use by family and employees not on list of approved drivers
- Prohibit non business use



Specific Policies

- Lock vehicles when not in use
- Restraint use
- Expect compliance with motor vehicle laws
- Prohibit driving while impaired
- Mirror adjustment
- Policies on non standard vehicle use for business
- Prohibit unauthorized passengers
- Prohibit U turns



Crash Investigations

- Have written instructions
- Provide crash reporting packets for the vehicles
- Review crash investigations
- Use crash investigations to review program
- Use as a quality check on management
- Review crashes for preventability
- Cameras for on site investigations



Vehicle Operations

- Have route planning process
- Monitor off route use
- Hours of use issues



Personal Vehicles

- Program applies to personal vehicles used on company business
- Insurance limits
- Document insurance
- Notification of loss or change of insurance
- Vehicle expectations



Training

- Provide training on your program and expectations
- Provide training on crash investigations
- Provide on going training on safety concepts



Vehicle Maintenance

- Schedule maintenance
- Document maintenance
- Pre trip inspections
- Vehicle defect reports
- Policy on not using vehicles with defects



Program Documentation

- Have written program
- Document policies
- Document communication on program and training
- Review program for updates and changes
- Have policy statement showing top management support



Performance Reviews

- Review compliance with program policies
- Monitor performance
 - Technology
 - Observations
 - Routine contact with drivers



The People Behind the Numbers

- Wisconsin DOT web site
- Zero in Wisconsin
- Emotional but true



Summary

- Know how your crash rate compares
- Set improvement goals
- Have written programs
- Have high performance expectations
- Communicate expectations
- Monitor performance
- Enforce your policies

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