U.S. COAST GUARD

American
Waterways
Operators

U.S. Coast Guard – American Waterways Operators Safety Partnership
National Quality Steering Committee

Towing Industry Safety Statistics
1994 – 2008

Established Safety Metrics

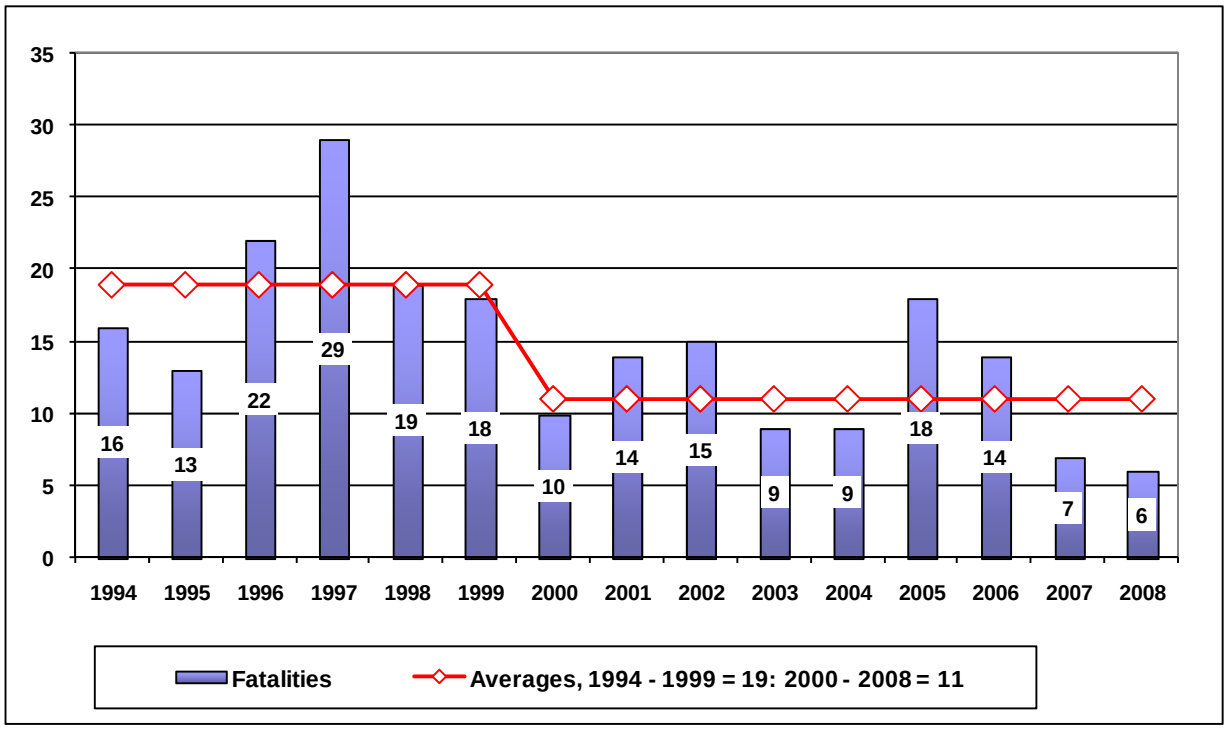
For approximately 8 years, the partnership has used three measures to track overall trends in safety and environmental protection. While not all-encompassing, the measures are considered to be useful indicators, given the non-regulatory scope of the partnership. The three safety measures, presented in this document, are:

- Crew fatalities per 100,000 towing industry workers.
- Gallons of oil spilled from tank barges per million gallons transported.
- Number of vessel casualties, (overall or by incident severity.)

Crew Fatality Counts

Crew fatalities include all deaths and missing crew members on towing vessels or barges. Deaths due to natural causes, deaths of external parties, shipyard, or shore-side workers are excluded. Chart 1 shows the annual fatality counts from 1994 – 2008.

Chart 1. Crew Fatalities 1994-2008



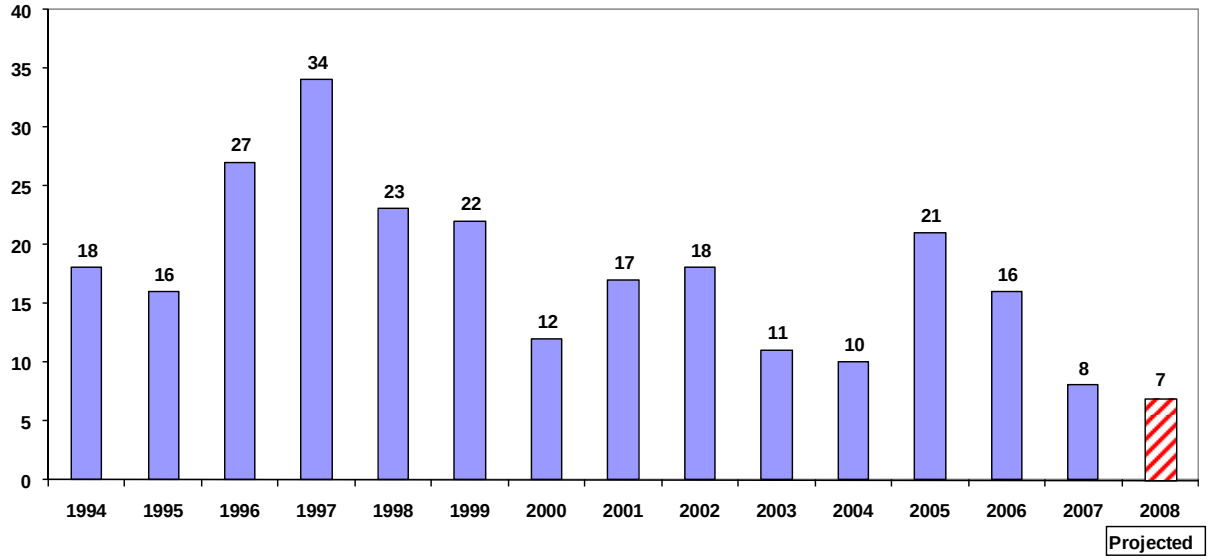
The data show that 2007 and 2008 are record lows. However, the two-year decline from the local peak of 2005 is not sufficiently long to mark a statistically valid trend.

The Crew Fatality Rate

Using the "Mercer Model" that was developed with AWO-funded research, the crew fatality rate is shown on Chart 2. The denominator for this rate is derived from the number of towing vessels in operation, as reported by the U.S. Army, Corps of Engineers. The most recent data is calendar year 2007. The 2008 rate is a projection.

This information can be used in comparisons with other industries. For example, the Bureau of Labor Statistics reports[1] that the fatality rate for all workers, including office workers, is 3.8 per 100,000. Conversely, commercial fishing ranks the highest of all occupations, at 111.8.

Chart 2. Crew Fatalities per 100,000 FTE[2], 1994 - 2007

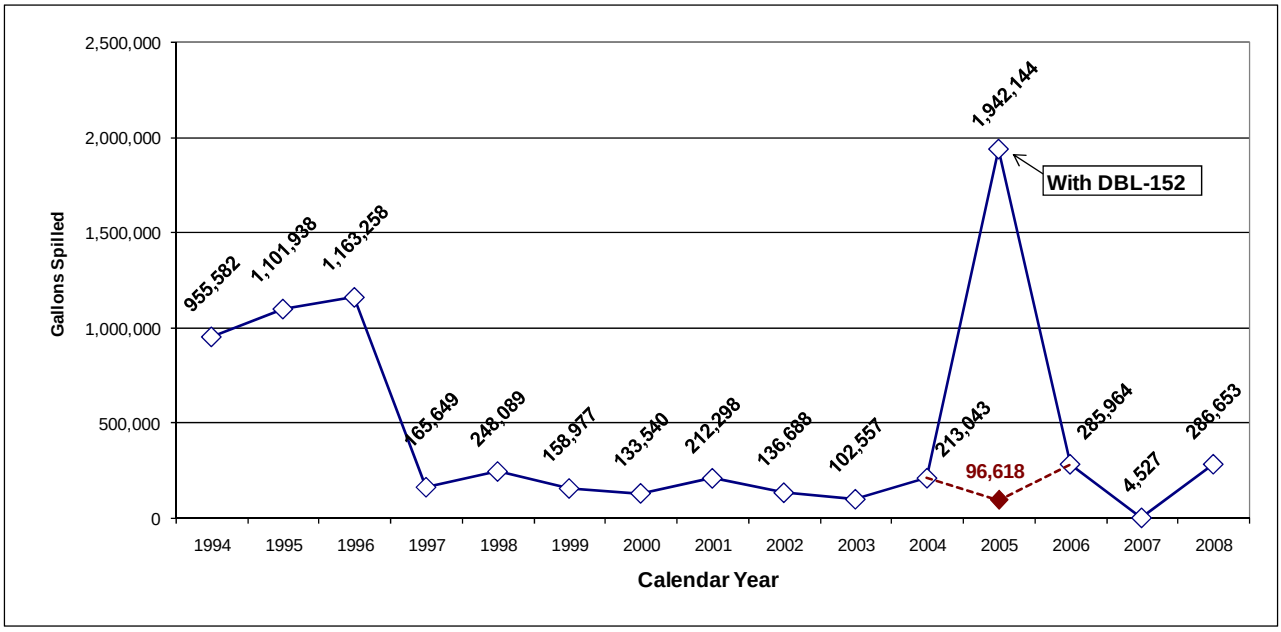


[1] http://www.bls.gov/iif/oshwc/cfoi/cfch0006.pdf, page 16, accessed on 2 July 2009.
[2] An FTE, or full time employee, is the equivalent of one person working a 40-hour work week.

Oil Spill Volumes

Chart 3 shows the gallons of oil spilled from tank barges. Within the period of the safety partnership the highest spill amount, 1.9 million gallons, occurred in 2005. The 2005 spill amount included 1.8 million gallons from the allision of the tank barge DBL-152 with an oil platform that was sunk by Hurricane Rita. The chart also shows this series without the hurricane-related spill as the dashed line. More recently, 2007 shows the lowest spill amount from tank barges since 1973, when the Coast Guard recordkeeping began.

Chart 3. Gallons of Oil Spilled from Tank Barges 1994-2008



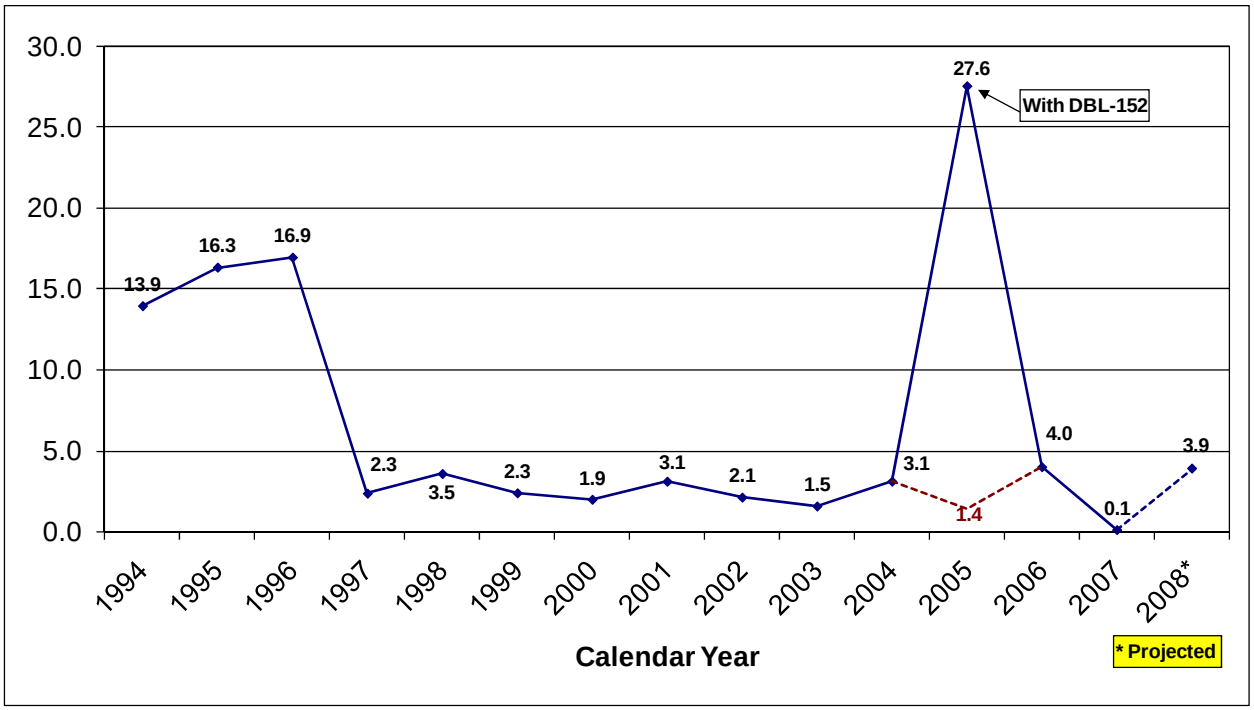
In addition, historic spill data shows that, in any given year, one spill accounts for the majority of the total spill volume. The 2007 record low includes no significant incidents. Conversely, nearly all of the oil discharged for 2008 came from the MEL OLIVER/TINTOMARA collision (282,828 gallons).

Oil Spill Rate

Shown in Chart 4 is the tank barge oil spill rate. The denominator for this measure is provided by the U.S. Army, Corps of Engineers publication "*Waterborne Commerce Of The United States*", Table 2-3. The most recent data year of that publication is 2007. The 2008 value is a projection.

For 2007, the Corps of Engineers reported that 269.9 million short tons, or approximately 73.9 billion gallons of oil was transported by barge on U.S. waterways. That amount represents 73.5% of all domestic oil carriage. When compared to the amount transported, the spill rate for 2007 is a record low of 0.1 gallon per million gallons transported.

Chart 4. Gallons of Oil Spilled From Tank Barges, Per Million Transported

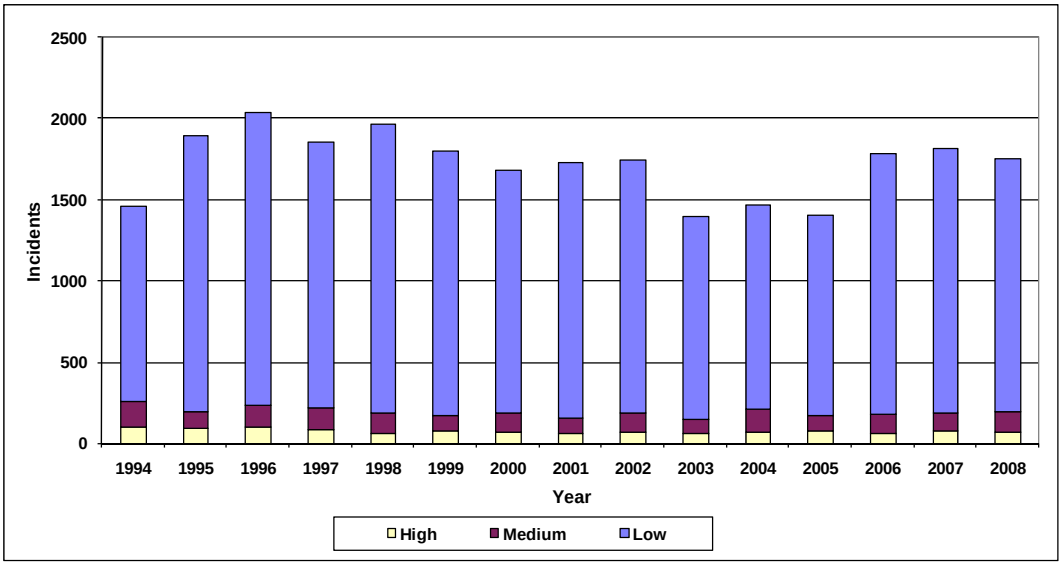


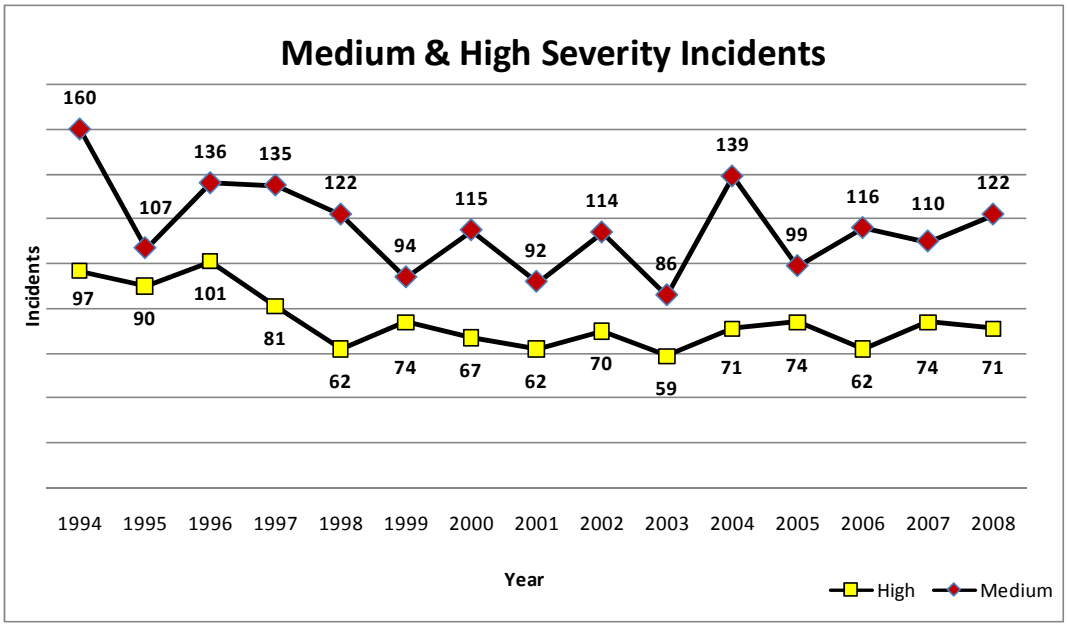
Vessel Incidents

Using a scale that was previously approved by the QSC, Chart 5 shows all towing incidents by severity. Towing incidents include all reportable casualties, per C.G. Regulations, that involve any towing vessels or barges. Each incident is counted only once, regardless of the number of vessels involved.

The data shows that, throughout the history of the safety partnership, most casualties (~89%) are low severity. Medium and high severity incidents were 7% and 4% of all incidents, respectively. A description of the severity scale is provided at the end of this report.

Chart 5. Vessel Incidents, By Severity



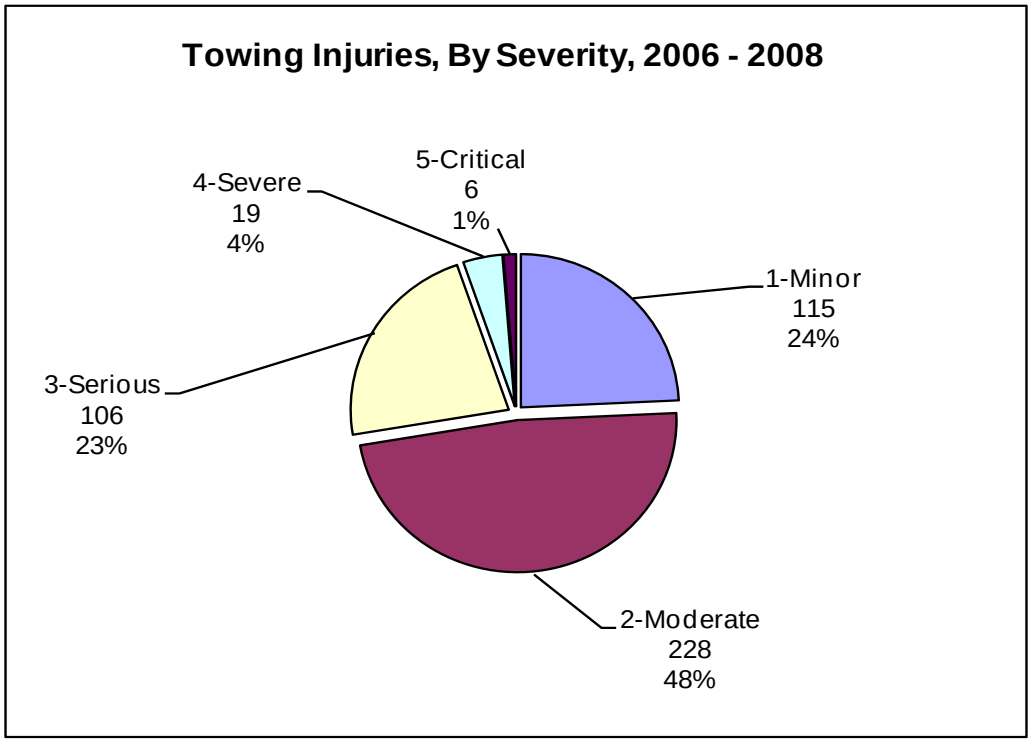


Possible New Measure – Crew Member Injuries

In mid-2005, the Coast Guard began collecting injury severity indicators with personnel casualty investigations. This new information will allow better analysis of injury data, because minor incidents can be examined separately. Thus, the QSC may find some injury statistics useful. A description of the injury severity scale is provided at the end of this report.

Chart 6 summarizes crew member injuries by severity, for calendar years 2006 – 2008. The data shows that most injuries (72%) were minor or moderate in severity, requiring limited amounts of medical treatment.

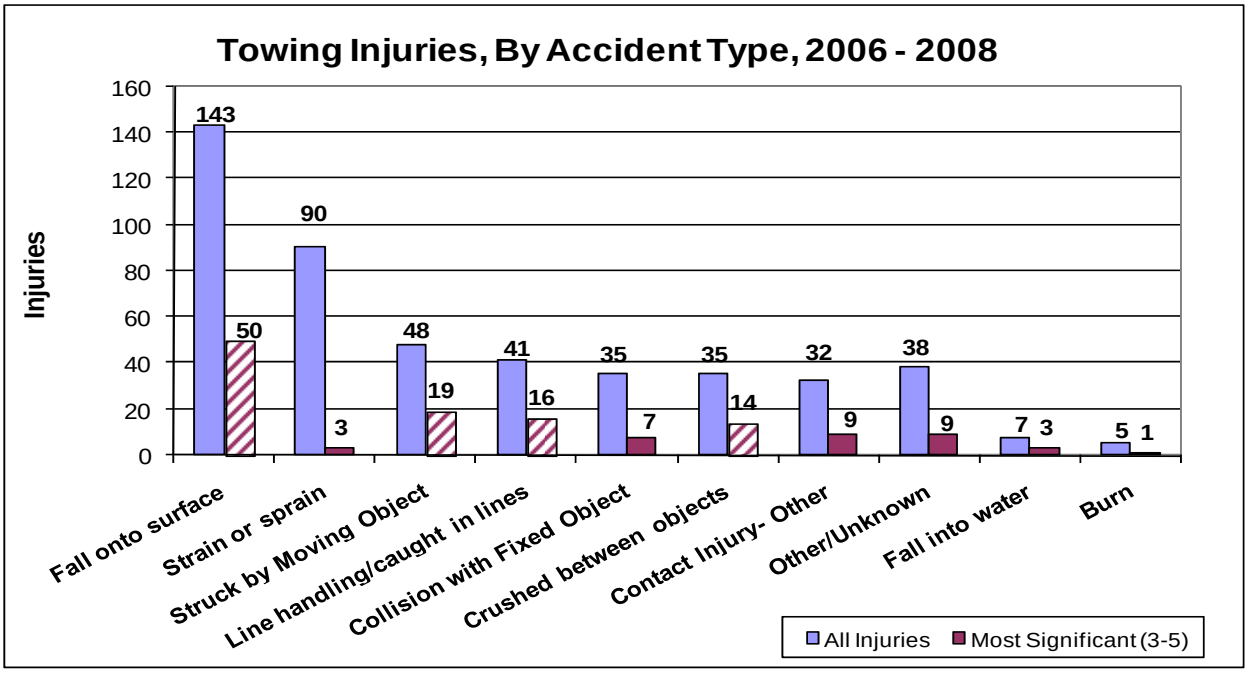
Chart 6. Crew Member Injuries



Injury data may also be grouped by type of accident. As shown in Chart 7, four accident types appear to account for most of the higher severity injuries:

- Fall onto surface,
- Struck by moving object,
- Line handling/caught in lines, and
- Crushed between objects

Chart 7. Injuries, By Accident Type



Severity Classes for Vessel Casualties

Incident Severity	Description
Low	Damage: $0 - $50,000 or not reported No injuries or deaths Pollution: 0 - 10 gallons of oil spilled CG Casualty Class: None/Routine
Medium	Damage: $50,001-$250,000 No injuries or deaths Pollution: 11-1000 gallons of oil spilled CG Casualty Class: “Significant”
High	Damage: $250,001 or more ANY injuries or deaths Pollution: 1,001 or more gallons spilled Casualty Class “Serious” or “Major”

Injury Severity Scale