How Can You Measure Safety?
Key Indicators

- **Occupational injury/illness rate:**
  - An *occurrence rate*
  - Cases / 100 workers / year

- **Lost time incident rate**
  - Cases / 100 workers / year

- **Lost Workday Rate**
  - Days / 100 workers / year
Accident Rates

Incidents / 100 workers /
year

Calendar Year

2000 2001 2002 2003 2004 2005 2006

- Industry Average Case Rate
- Our Recordable Rate
- Industry Average Lost Time Rate
- Our Lost Time Rate
Experience Modification Ratio

- Calculated by National Council for Compensation Insurance
- Compares Dollars Spent on Claims to Insurance Industry Expectations
  - Dollars Are Proportional to Pain
  - Average Employers Have Rating = 1.0
  - Better Employers Have Rating < 1.0
Experience Modification Ratio

CDM's Experience Modification Ratio (% of Expected Loss)
Problems with Accident Data

- Too Few Injuries
  - Random Variability Is Misread
  - False Feedback
  - Management Overreacts
- Discourages Reporting
- Reporting Levels Can Change for a Variety of Reasons
Looking at More Cases

- Near – Miss Case Reporting
- Investigate in the Same Way
- How Many Near Loss Reports are Enough?
  - Take What You Get?
  - Set a Quota?
Problems with Accident Data

- Lost Time Varies With Person
- Approach Is Reactive
  - No Power to Predict
- Delay Between Cause & Effect
- “Numbers Management”
  - Erodes Safety’s Credibility
Why Leading Indicators?

- Accidents Are **Unintended**
- Don’t Measure
  - What You **Don’t Intend**
- Measure What You **Do Intend**
  - Presence or Absence of Safe Activities.
  - Define Required Safety Activities
  - Hold Managers Accountable for Them.
Typical Performance Metrics

- “Manager Commitment”
  - Safety Contact Rate
  - % of Workforce Safety-trained
  - Rate of Safety Plan Generation
- Results of H&S Audits
- Number of Near-loss Investigations
- Perception Surveys
Why Outcome Indicators?

- How Do You Know That a Leading Indicator Means Anything?
  - Inference.
  - Faith
- How Can You Find Out?
  - Patience.
Better Outcome Indicators

◆ What Can We Do?
◆ CEO Likes 5 by 5 Matrices
  ◆ Each Case Has Two Parameters
  ◆ Injury Severity is an Obvious One
    – Rather Random, but Important
  ◆ How about Preventability?
    – Exactly What Safety Should Control
Severity Scale

1. Minor First Aid Cases
2. Stop Work for First Aid
3. Minor Recordable Injury
4. Repeated Therapy or a Few Lost Work Days
5. Weeks of Lost Time
   ♦ Death is Off the Scale)
Preventability Scale

1. Company and Employee are Blameless
2. Hard To Detect
3. Foreseeable W. Diligence
5. Obvious Hazard Ignored
Assigning Factors to a Case

- **Worker Falls from Shaky Scaffold**
  - Broken Forearm
  - Five Lost Work Days

**Preventability**

- **Scaffolds Should be Certified by Competent Person**
  - Preventability = 4

**Severity**

- **Broken Arm with 5 Lost Work Days**
  - Severity = 4
Assigning Factors to a Case

- **Driver T-Bones a CDM Car @ Stop Sign**
  - Broken Ribs
  - One Lost Work Day

Preventability

- **Drivers Sometimes Evade Collisions**
  - Preventability = 2

Severity

- **Broken Ribs**
  - 1 Lost Work Day
  - Severity = 4
Assigning Factors to a Case

- Employee Helping Subcontractor Move a Pump (200 lbs)
  - Severe Back Strain - No Lost Work Days
  - Prescription Pain Medication

Preventability
- Out-of-Scope Work
  - Preventability = 4

Severity
- Prescription Pain Medication
  - Severity = 3
Assigning Factors to a Case

◆ Carpenter Installing a Power Line
  ◆ Near – Fatal Electric Shock
  ◆ Ten Lost Work Days

Preventability

◆ Carpenters Should Not Wire
  ◆ Preventability = 5

Severity

◆ Near - Death
  ◆ Severity = 5
Severity / Preventability Matrix

Injury Ratings 2004

<table>
<thead>
<tr>
<th>Severity</th>
<th>Preventability</th>
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<tr>
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<table>
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<tr>
<th>How Severe</th>
<th>How Preventable</th>
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</thead>
<tbody>
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<tr>
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Legend:
- Const
- Consult
- Corp HQ
- Private
- Intl
- Sales 1
- Sales 2

Numbers in the grid represent specific ratings and classifications.
Severity / Preventability Matrix

Injury Ratings 2005

Severity / Preventability Matrix

How Severe

Very

Not
What Results Do We See?

- Managers Are Held Accountable
  - More Than Before
  - For The Right Issues
- They Demand Safe Work Methods
- Increased Focus on:
  - Work Methods
  - Walking and Driving
  - Universal Employee Training
Any Questions?