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Chubb Construction
Risk Engineering

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Introduction

Loss Analysis/Loss Trending:

Loss Analysis/Loss Trending is a valuable instrument used in part to analyze and monitor the safety performance of an organization, from divisions to individual projects. This allows a construction company to gauge the overall safety performance year over year and measure how their divisions and projects are performing in comparison with the overall company results. It also allows a company to compare/measure itself against competitors.

Performing this exercise will help a company to identify a division or project that may be underperforming regarding safety, which in turn may be impacting the overall company safety results. Once a project or division is identified as having a questionable safety performance, action can be taken to further investigate potential cause. By honing in on such projects or division to identify what the potential issues and causes may be, appropriate actions can be introduced to determine corrective steps necessary to improve that performance.

Using man-hours as a common denominator, similar to the BLS (*Bureau of Labor Statistics), will allow a company to fairly compare each project regardless of size or complexity.
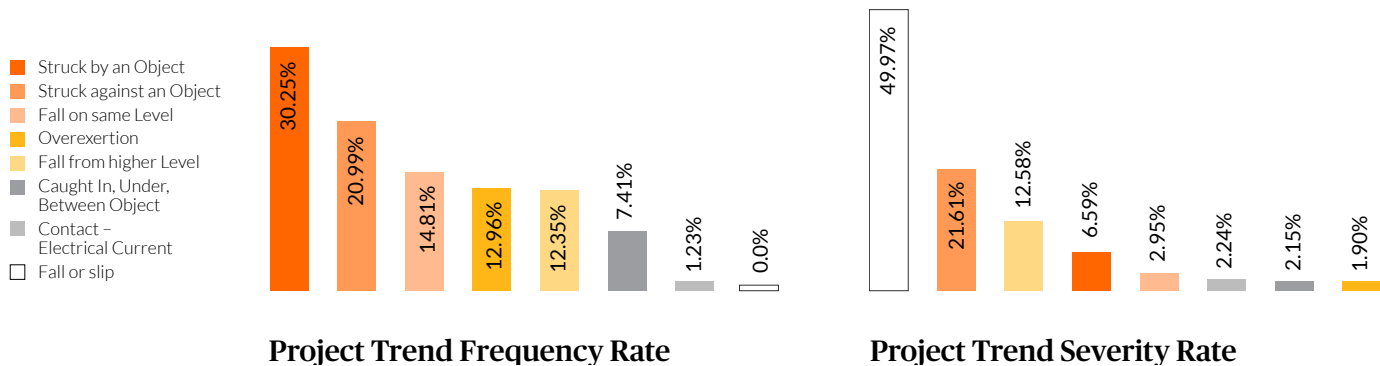
Effective loss analysis helps you to quickly and easily focus on the critical few issues driving losses in order to start identifying the root cause. Losses are indications that there are opportunities to improve workplace safety.

The purpose of loss analysis is to determine the cause of the accident so that action can be taken to prevent it from occurring again. In performing loss analysis, you may use several types of analysis in your efforts such as but not limited to:

- Frequency analysis
- Severity analysis
- Causal analysis

A loss analysis uses frequency (the number of losses) and severity (the cost of losses) as factors to determine areas of priority to further evaluate. An essential follow-up to the analysis is corrective action. The reason for performing a loss analysis is to find out what went wrong in order to fix it and prevent that loss from ever happening again.

Key Loss Trends

Legend:
- Struck by an Object
- Struck against an Object
- Fall on same Level
- Overexertion
- Fall from higher Level
- Caught In, Under, Between Object
- Contact – Electrical Current
- Fall or slip

Project Trend Frequency Rate

- 30.25%
- 20.99%
- 14.81%
- 12.96%
- 12.35%
- 7.41%
- 1.23%
- 0.0%

Project Trend Severity Rate

- 49.97%
- 21.61%
- 12.58%
- 6.59%
- 2.95%
- 2.24%
- 2.15%
- 1.90%

Trend Analysis

Before a causal analysis can be done, loss trending needs to be performed to determine which areas have the greatest impact on profitability.

To complete the loss analysis, you need sources of information. This can be either your own first report of injury reports, Occupational Safety Health Administration (OSHA) logs, accident investigation reports, or a loss run provided by your insurance company. A good loss run will include but not limited to:

- Description of loss and injuries
- Date and time of loss
- Location of loss
- Activity being performed
- Supervisor name
- Claimant name
- Length of employment
- Amount paid for medical, indemnity and expenses
- Amount reserved for medical, indemnity and expenses
- Total incurred for medical, indemnity and expenses
- Total number of losses

The accuracy of the loss information used has a direct impact on the usefulness of its results. If accident and investigation reports are not completed diligently, it's unlikely you'll be able to come to reliable conclusions and corrective actions.

Using the insurance carrier's loss runs can provide the most comprehensive frequency and severity data, giving the broadest picture of the trends affecting the organization.

The insurance carrier's losses should include all claims submitted to the carrier (not just OSHA recordable) including medical-only and notification-only claims. Near-miss information can be supplemented using the company's internal data.

Together, using all claim types and near misses will show a more detailed and accurate picture of claims and potential loss frequency within your organization, highlighting where to invest additional time to further evaluate the potential for loss. Just because a near-miss did not cause harm to workers or property, it still occurred and should be included in the frequency and trend analysis.

Not including all claim types can create gaps in the trending data, leaving out opportunities to proactively address your company's losses, such as missed opportunities for training, PPE enhancements, procedural updates, etc.

A trend analysis is a grouping of losses by common factors. The trend is generally completed first as it helps determine what areas to evaluate further. The trend also provides support and rationale for concentrating on a certain type of loss or activity. The trend analysis factors may include such things as:

- Type of loss (e.g., lift-truck accidents, slip and falls, manual material handling losses);
- Type of Work – Occupations, Job Tasks, Activities
- Project
- Stage of Construction
- Project Manager
- Time and/or shift
- Date of Loss
- Type of injury (e.g., laceration, sprain)
- Body part injury (e.g. eyes, hands, feet)
- Experience of injured employees
- Age
- Other factors which allow a grouping of losses by similarities

Type of injury and type of loss are the most frequently used factors for trend analysis, since these are usually present in available loss information. The usefulness of trend analysis is that it permits efficient arrangement of a large number of losses.

Keep in mind that trend analysis never answers why the losses occurred and therefore must be followed by a Causal Analysis.

After completing the analysis, totaling the frequency and severity will help to identify the priority group(s) of losses needing a Causal Analysis. Losses not targeted for further analysis are set aside and may be used later as priorities change.

Causal Analysis

Losses are generally due to needed improvements in management policies and procedures (e.g., maintenance, housekeeping, inspection, purchasing). Causal Analysis requires a deeper investigation into the circumstances of the losses to accurately identify the factors contributing to the accident.

It is not uncommon for premature conclusions to be drawn, which often turn out to be incorrect due to lack of adequate information. In general, these are the rules of causes of loss:

1. Never assume it's the employee's fault. Always look for what could have been done by the company to prevent the accident.
2. Never settle on a single cause. In most cases, there is more than one reason that the loss occurred.
3. Think of Causal Analysis as an opportunity to seek out and institute improvements rather than finding fault and assigning blame.
4. Upon reaching a potential cause, ask how it was created. If you can trace it back further, you haven't yet reached the ultimate cause.

Causal Analysis Format

- Enter:
  - the dates of each loss
  - the name of the injured employee or vehicle driver
  - the department in which the employee works
  - a description of the loss and
  - either the cost of the loss or the number of lost workdays.

The description of the loss should be as brief but include all pertinent data.

- Necessary Management Controls: Indicate the management controls potentially deficient and contributed to the loss. Where a deficient management control is not apparent, additional investigation should be made.

Remember: Management policies and procedures are interrelated and that a loss is usually the result of deficiencies in more than one control.

Evaluating Results

The Causal Analysis is designed to identify the potentially major deficiencies in management controls, and this should be based on the number of times each control was identified as being deficient and the severity of the losses that were caused by each deficient control.
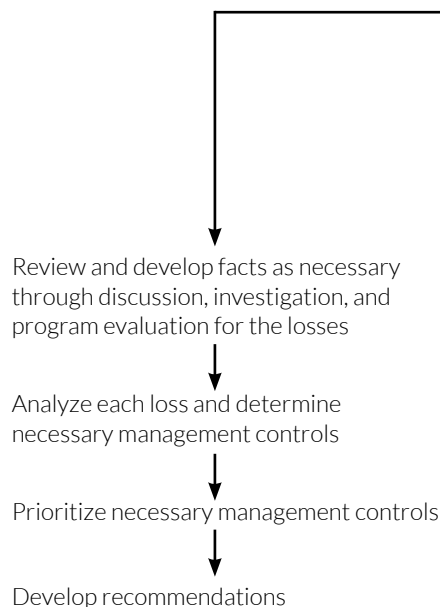
If one deficient control was identified 10 times, but none of the losses related to it resulted in lost workdays, this deficient control would be less serious than another control was identified only 8 times but resulted in 25 lost workdays.

The results should be discussed with management personnel and specific solutions developed for the identified problem(s). Remember, the reason for conducting loss analysis is to determine the corrective actions to take in order to prevent that loss from occurring again.
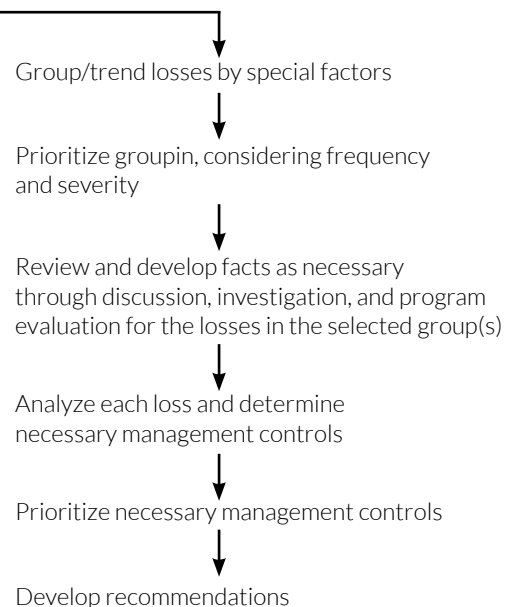
Identifying Necessary Management Controls

Loss Data

Manageable Number of Losses	Excessive Number of Losses
	Group/trend losses by special factors
	Prioritize groupin, considering frequency and severity
Review and develop facts as necessary through discussion, investigation, and program evaluation for the losses	Review and develop facts as necessary through discussion, investigation, and program evaluation for the losses in the selected group(s)
Analyze each loss and determine necessary management controls	Analyze each loss and determine necessary management controls
Prioritize necessary management controls	Prioritize necessary management controls
Develop recommendations	Develop recommendations

Benchmarking

Benchmarking is a way to compare how your company ranks against similar types of companies in your industry from a loss frequency and severity standpoint. The Bureau of Labor Statistics (BLS) compiles a database for industries in the U.S. The two most commonly used rates are the Incident Rate and Severity Rate which establish the number of Incidents or Lost Workdays per 100 full-time employees for a given year.
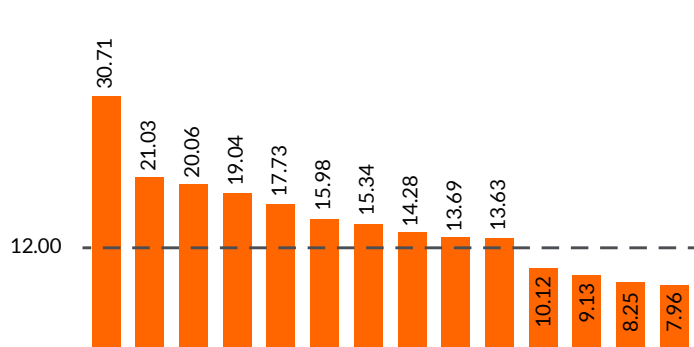
Below is an example of each formula using OSHA Recordable Incidents and Lost Workday cases.

Incident Rate

200,000 X Number of OSHA
Recordable Incidents
_____

Total Man Hours

Severity Rate

200,000 X Number of OSHA
Lost Workday Cases
_____

Total Man Hours

The 200,000 hours in the formula represents the equivalent of 100 employees working 40 hours per week, 50 weeks per year, and provides the standard base for the incident and severity rate.

Cost Per Man-Hour

It is important to determine the exposure base such as, the cost per man-hour. This is calculated by taking the total number of hours worked and dividing it by the total incurred.

For example, a Project Manager is trying to determine which of his two projects are costing him more from a workers' compensation standpoint. One of his projects has worked 500,000-man hours with a total incurred of $180,000. The second project has worked 350,000-man hours with a total incurred of $120,000.

- 500,000 divided by $180,000 = 2.777
- 350,000 divided by $120,000 = 2.916

So, while one project costs more in actual dollars, the other presents a higher risk since there is a higher cost per man hour worked than the first.

Contractor Incident Rate
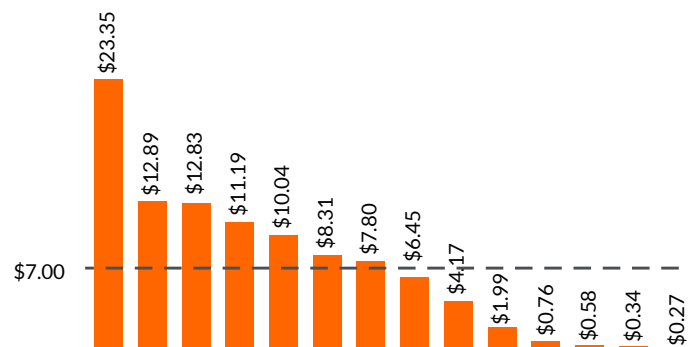
Contractor Cost per MHW

Leading Indicators

By nature, Loss Analysis is "Lagging" data — that is, data (losses) that have already occurred. This information allows you to identify and trend what types of losses are occurring, but in the end, it does not alone work to prevent them.

Proactive companies should also be routinely reviewing their "Leading" indicator data in an effort to identify correlations between what has already occurred "Lagging" and what is in place or should be in place to prevent or control those same losses ("Leading").

Leading Indicators are, for example, processes, policies, controls or PPE implemented within an organization intended to prevent losses from occurring such as but not limited to; Training programs, required project audits, lessons learned communications, purchase requirements for specific PPE, and equipment fitted with safety devices or designed to minimize worker exposures.

By reviewing both Leading and Lagging Indicators, a company can assess the types of losses occurring from the Loss Analysis and evaluate their Leading Indicators to identify enhancement opportunities that can better eliminate or control known or potential hazards in their organization.

Conclusion

Used properly, Loss Analysis and Trending is a powerful tool which can help you and your organization to proactively identify losses and near misses occurring within your organization and why. This allows you to determine which trends to prioritize along with the appropriate resources to address them.

Loss Analysis and Trending can be a simple, limited focused review, a comprehensive, detailed analysis of an entire organization or something in between depending on your needs.

This information can be used to enhance your Risk Management and Safety Departments in ways such as but not limited to:

- Identifying and addressing shortfalls in safety policy or programs and driving enhanced safety initiatives
- Forecasting potential losses in specific activities, departments, divisions etc.
- Assist in determining risks the organization wishes to retain or transfer
- Determine new PPE requirements, training, equipment and accessories or other proactive loss control measures

Loss analysis allows you to focus your efforts in specific areas where you can make the most impact while also planning for future Risk Management and Loss Control measures based on your organization's goals and objectives.