



Leading Safety Indicators

Leading Indicators can be either objective or subjective in nature. Objective leading indicators may include (but are not limited to):

- Percentage of incident reports on which root cause analysis was undertaken
- Number of safety management meetings
- Percentage increase in annual safety budgets from previous year
- Number of safety inspections
- Procedures in the native language of the crew members (as well as English)
- Percentage of closure for corrective action reports, over 3 months old
- % of jobs for which risk assessments are carried out
- % of work site inspections carried out against planned requirement

Subjective leading indicators typically stem from completion of a safety culture assessment and may include shipboard and shore side safety culture perceptions of, but are not limited to:

- Promotion of safety
- Rewarding safety
- Hiring quality people
- Communication
- Multi-cultural operations
- Responsibility
- Feedback

The safety performance data can include vessel operations data, such as operational incidents, conditions of class, port state deficiencies, and even near miss data. The safety performance data can also include personnel safety data such as lost work day injury rates (and severity), restricted work injury rates (and severity), total recordable injury rates, etc. and again near miss data.

Organizational Requirements

The Leading Indicators approach to improving safety performance is most effective when the technical aspects of safety are performing adequately and the majority of operational incidents and accidents appear to be due to human error or organizational factors. The Leading Indicators approach is therefore only open to organizations that fulfill a number of specific criteria:

- The organization is compliant with all regulations.
- An adequate Safety Management System (SMS) is in place.
- Human error or organizational factors are causing the majority of operational incidents or personal injuries.
- The organization has a genuine desire to prevent operational incidents and personal injuries and is not solely driven by the avoidance of prosecution.
- The organization is relatively stable, not in the middle of mergers, acquisitions or significant reorganizations.
- An objective leading indicators assessment of the organization requires that safety culture metrics must have been collected for some time: five years for an organizational level analysis, and one year for the business unit level, or across the fleet.
- A subjective leading indicators assessment or an organization uses the responses on a safety culture survey.

Performing a leading indicators assessment will have costs and benefits. Costs may include resources to retrieve the objective and subjective metrics and safety performance data, knowledge of Spearman's Rho statistics test, and experience of using statistics packages or spreadsheets. Benefits may include assistance in identifying what actions have been, or could be, successful in improving safety, potential improvement of the understanding of whether or not goals are being met, providing a tool for prioritization and a basis for improving effectiveness of safety-related expenditure,