



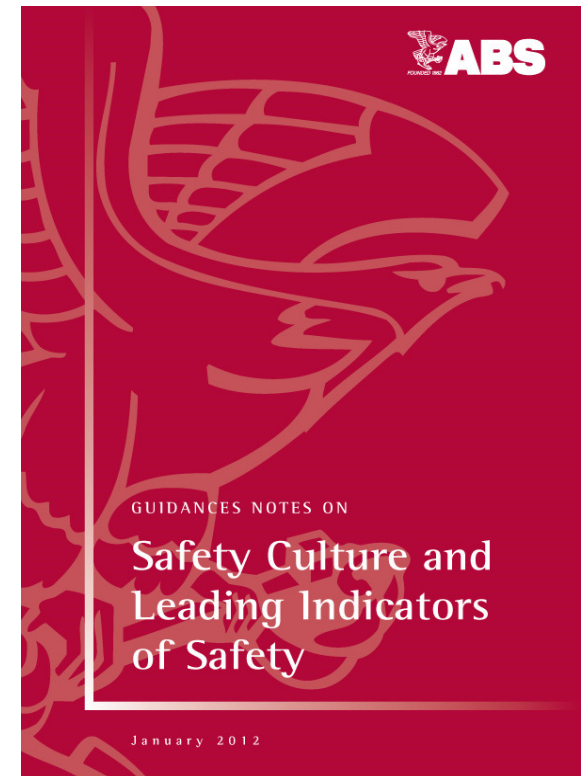
ABS Project on Safety Culture and Leading Indicators of Safety – Part of ABS' Mariner Safety Research Initiative



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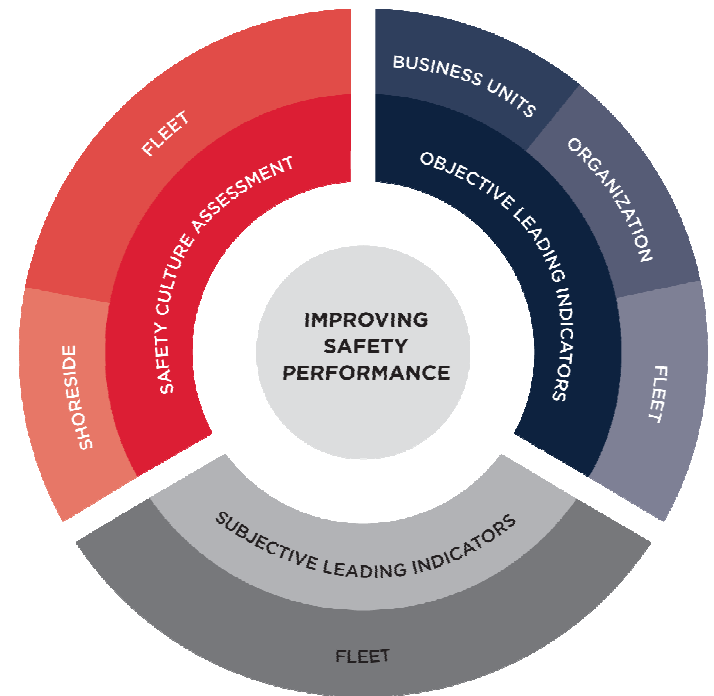
Safety Culture & Leading Indicators of Safety

- Purpose: to enable organizations with cargo-carrying vessels to self-assess their safety culture and leading indicators of safety
- Contents:
 - How to administer the survey
 - Actual safety culture questionnaire
 - Definition of safety factors
 - How to perform data analyses
 - Lists of potential objective and subjective leading indicators
 - How to interpret the results
 - How to develop an action plan



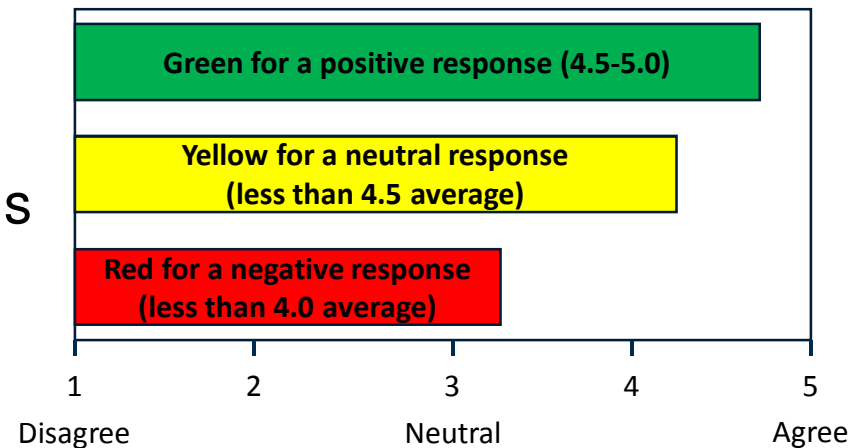
Safety Culture Survey (Shipboard & Shore-Side)

- 40 Statements/Questions
(in 3 Sections)
 - Ship Safety
 - Health & Safety
 - Survey Respondent's Own Job
- 8 Safety Factors
(5 Statements per Safety Factor)
 - Communication (COM)
 - Promotion of Safety/Leadership (POS)
 - Empowerment (EMP)
 - Feedback (FDB)
 - Mutual Trust (MTR)
 - Problem Identification (PID)
 - Responsiveness (RSP)
 - Safety Awareness (SAW)
- Demographics, Free-Text & Optional Questions



Safety Culture Survey: Scoring

- Survey responses receive a score Disagree = 1 to Agree = 5
- The ABS SC questionnaire contains forty (40) 5-scale questions



Question	Average Response	Safety Factor
• Shore-side managers never put schedule or costs above safety	3.66	POS
• Language differences in multi-cultural crews are not a threat to safety	3.88	COM
• There are no differences in the performance of crew members from different cultures	4.11	MTR

MTR = Mutual Trust COM = Communication POS = Promotion of Safety/Leadership

Traffic Light Snapshot of Results

What is your position aboard ship?

Values	A/B	D/CDT	MSTR	CHF/ OFF	CHF/ ENG	2/OFF	E/CDT	ORD/ SEA
Responses	474	236	232	214	201	197	197	191
2. Shore-side managers never put schedule or costs above safety	3.90 ↓	3.81 ↓	3.77 ↓	3.64 ↓	3.83 ↓	3.65 ↓	3.75 ↓	3.86 ↓
6. This company has excellent maintenance standards	4.62 ↑	4.59 ↑	4.24 →	4.14 →	4.39 →	4.34 →	4.58 ↑	4.63 ↑
8. People are hired for their ability and willingness to work safely	4.81 ↑	4.70 ↑	4.29 →	4.40 →	4.43 →	4.55 ↑	4.71 ↑	4.82 ↑
9. Language differences in multi-cultural crews are not a threat to	4.19 →	4.03 →	3.90 ↓	3.81 ↓	4.00 ↓	3.74 ↓	4.29 →	4.20 →
10. There are no differences in the performance of crew members from different cultures	4.36 →	4.30 →	3.75 ↓	3.90 ↓	4.06 →	3.94 ↓	4.37 →	4.31 →
Overall Response Average	4.37 →	4.28 →	3.99 ↓	3.98 ↓	4.14 →	4.04 →	4.34 →	4.36 →

- Experience (in maritime, with company, in position)
- Age/Gender
- Nationality

Areas of Excellence: Benchmarking

- XXXXX results vs. ABS' Combined Safety Culture Dataset (CSCD)

Question	XXXXX Average Response	CSCD Average Response	Safety Factor
• I fully understand my responsibilities for health and safety	4.96	4.96	MTR
• Crew members are actively encouraged to improve safety	4.94	4.87	EMP
• I always ask questions if I don't understand the instructions given to me, or I am unsure of the relevant safety precautions	4.94	4.95	COM
• Safety is the top priority for crew onboard this ship	4.94	4.91	SAW
• The crew has access to all necessary personal protective equipment (PPE)	4.92	4.81	RSP

Opportunities for Improvement: Benchmarking

- XXXXX results vs. ABS' Combined Safety Culture Dataset (CSCD)

Question	XXXXX Average Response	CSCD Average Response	Safety Factor
• Shore-side managers never put schedule or costs above safety	3.66	3.89	POS
• Language differences in multi-cultural crews are not a threat to safety	3.88	4.16	COM
• There are no differences in the performance of crew members from different cultures	4.11	4.27	MTR
• Mistakes are corrected without punishment and treated as a learning opportunity	4.67	4.59	MTR
• People are hired for their ability and willingness to work safely	4.69	4.69	MTR

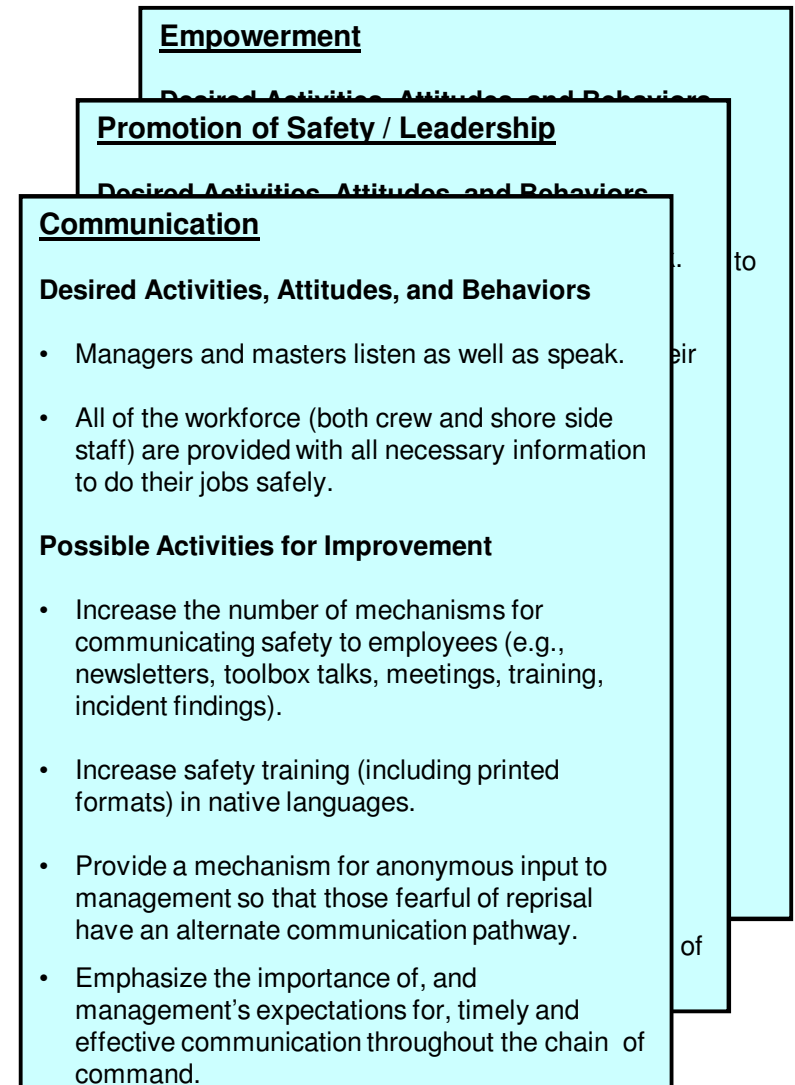
Shipboard & Shore-side: Shared Themes

- Training/instruction (for new crew, before changing jobs, hands-on/drills, hand-over, and general refresher training)
 - Safety training while on shore leave also mentioned
- Increased safety meetings and communication
 - Onboard, ship to shore, shore to ship
- Implement a no blame culture
- Improve safety culture
- “Close the loop” ships/shore safety issues
- Keep crews up to date on company and regulatory issues



Utilizing the Results

- Study the findings, and note the safety factors (SFs) that need to be addressed
- Study the desired activities, attitudes, and behaviors, and activities for improvement for those safety factors
- Consider if the findings could relate to a different SF as there may be overlap
- Communicate the results to the workforce and let them know how weak areas will be addressed and monitored...

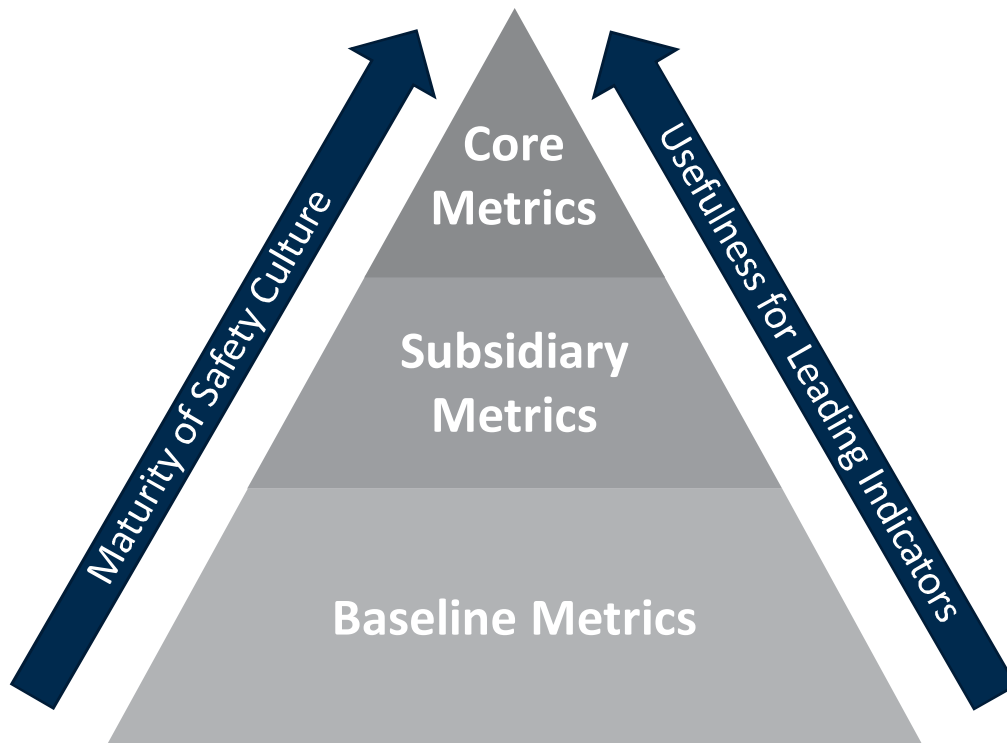


Identifying Leading Indicators

- Objective Leading Indicators are identified by correlating
 - Safety metrics with safety performance data
 - 5+ years of safety metrics and safety performance data required for organizational level analysis
 - 12+ months for business unit or vessel level analysis
- Subjective Leading Indicators are identified by correlating
 - Survey responses with safety performance data
- Example Safety Performance Data
 - Ship Safety (e.g., operational incidents frequency)
 - Individual H&S (e.g., total recordable case frequency)
 - Etc...



The Metrics Hierarchy



- **Baseline Metrics**
 - Typically expressed as absolutes (presence/absence of an activity)
- **Subsidiary Metrics**
 - Useful until they peak
- **Core Metrics**
 - Continue to vary in a mature safety culture

Sample Leading Indicators

- Subjective Leading Indicators
 - Employee perception about management support of safety improvements efforts
 - Employee empowerment to fulfill safety responsibilities
 - Management response to safety issues and concerns
- Objective Leading Indicators
 - Number of near miss reports
 - Percent closed-out
 - Time to implement corrective actions
 - Size of safety budgets (YoY)
 - Number of safety meetings involving senior management
 - Number of incidents/near misses followed by incident investigations





Thank You

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