



Measuring Safety Culture and Developing Action Plans

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Agenda

Part I: Safety Culture Background

Part II: FAA's Survey Tool Development and Implementation

Break

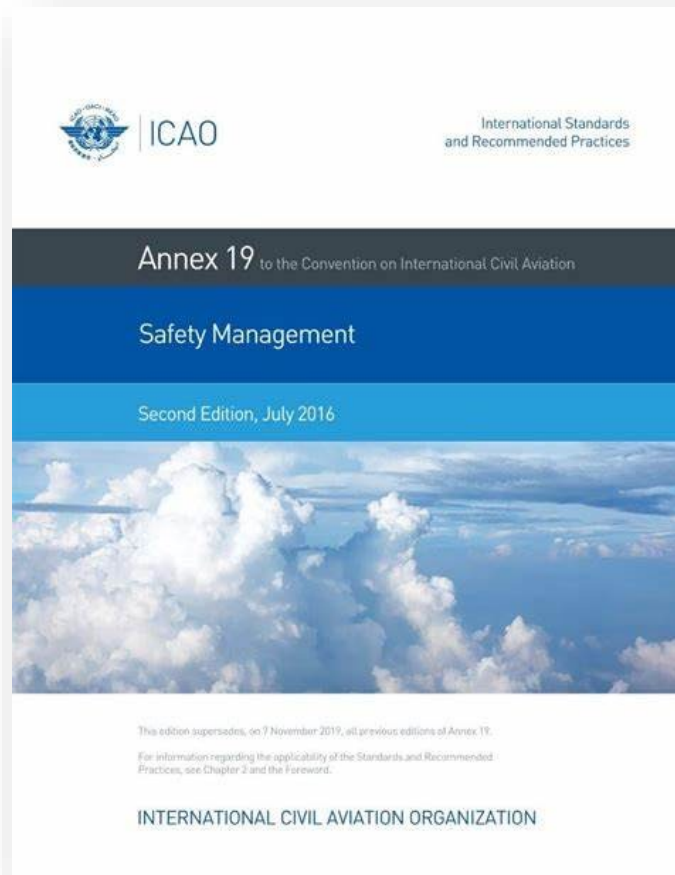
Part III: Interpreting and Prioritizing Results

Break

Part IV: Developing an Action Plan



Why Safety Culture?



A positive safety culture empowers effective safety management.

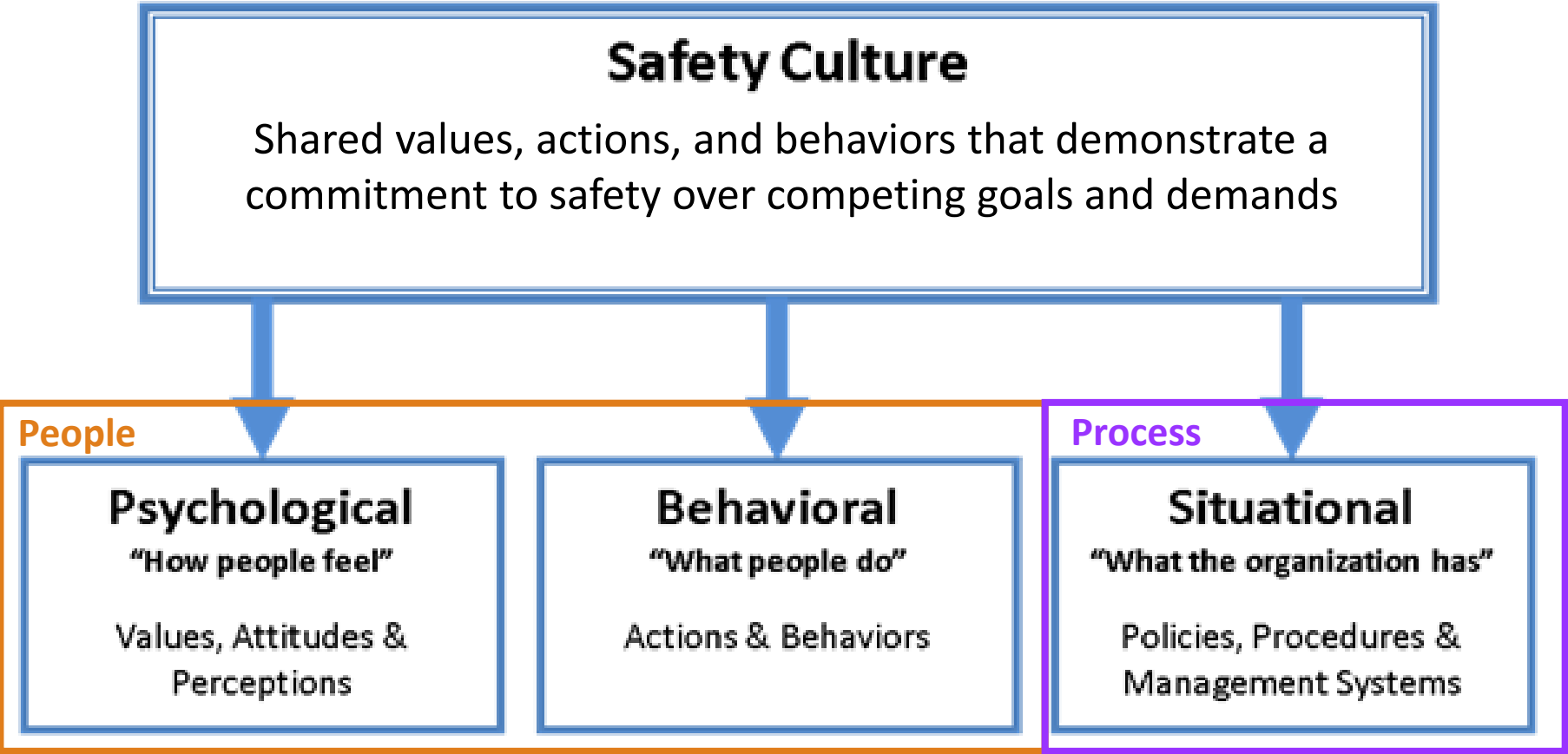
“Safety culture is arguably the **single most important influence on the management of safety. If an organization has instituted all the safety management requirements but does not have a positive safety culture, it is likely to underperform.”**

- International Civil Aviation Organization (ICAO), 2018





Key Determininers of a Safety Culture



Safety culture includes organizational values, people behaviors, and safety management processes, e.g., SMS

Figure 1. Three-Part Model of Safety Culture (adapted from Cooper, 2000)





Safety Culture to Safety Incident Pipeline

- Safety culture is often a factor in aviation near misses, incidents, and deadly accidents.
- What is an example of when you have seen this happen in your career (on news or at work)?



Increasing Demand for Safety Culture Assessment



Drivers of safety culture assessment:

- Leadership commitment
- Safety incidents, reports, or other challenges
- Media reporting, public perception
- Congressional or regulatory influence



FAA Safety Culture Foundations

James Reason Model

JUST

Our employees trust that they can admit honest mistakes without fear of punishment or blame, and clear lines are drawn between acceptable and unacceptable behavior.

REPORTING

Employees are encouraged to report safety information, and they trust that what they report will be acted on and their confidentiality maintained.

LEARNING

Employees trust that we will treat safety events as opportunities to learn and changes will be made based on lessons learned from safety data.

FLEXIBLE

Trusting conditions exist that allow the organization to adapt effectively and quickly to changing demands.

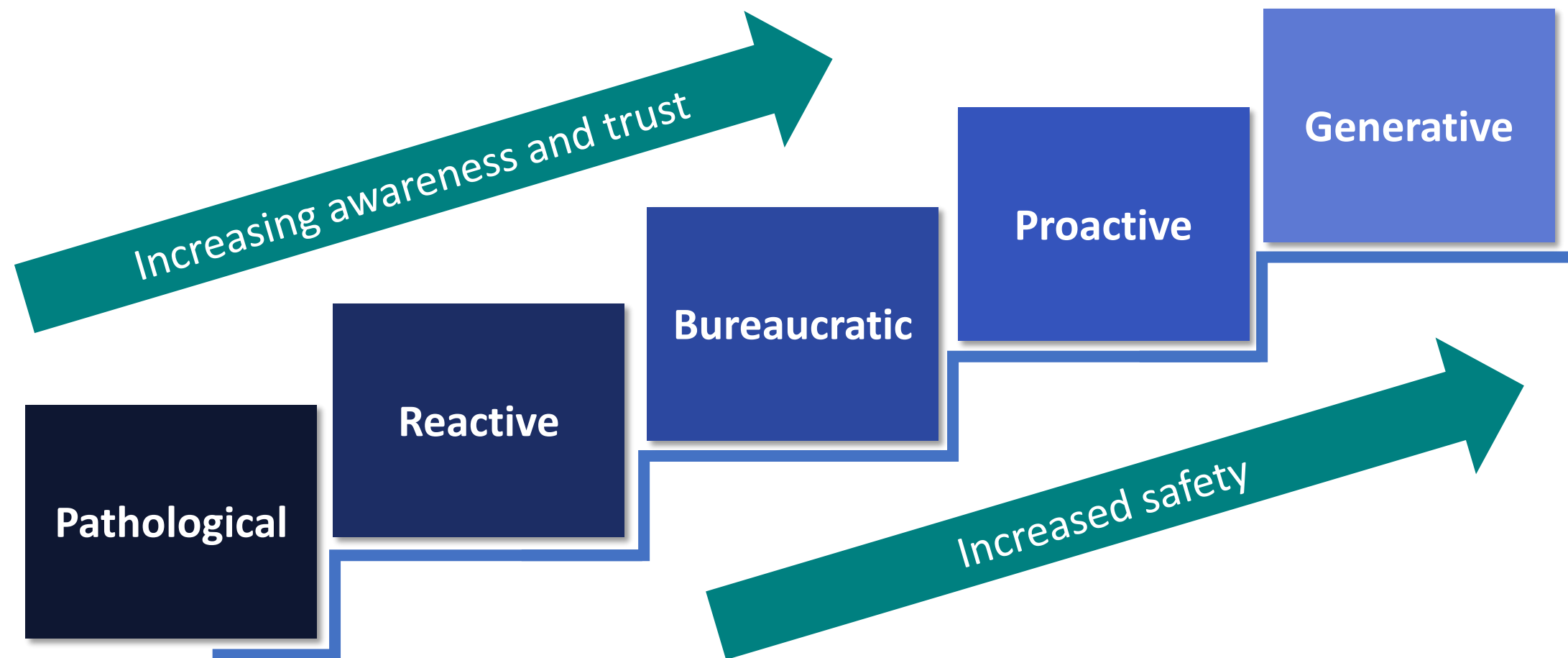
INFORMED

The organization collects & analyzes data, making decisions after healthy, inclusive dialogue, employees trust that dissenting opinions will be met with curiosity and listening to understand.





Where is Your Organization?



Safety culture maturity ladder -.SOURCES: Parker, Lawrie, Hudson, 2006; SMICG, 2019.; TRB Emerging Hazards in Commercial Aviation—Report 2, 2024



Activity 1 – Personal Reflection

Take 5 minutes to write down your thoughts on the worksheet about the following four questions.

- What do people in my organization currently feel about our safety culture?
- How do we measure our safety culture now in my organization?
- What do I assume we are good at now? Would others agree?
- What do I think we need to improve in our safety culture now? Would others agree?





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What method(s) has your organization used to measure safety culture? Select all options that apply.

① Start presenting to display the poll results on this slide.



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Have you hired someone to support measurement or improvement efforts? Share who!

① Start presenting to display the poll results on this slide.



FAA Safety Culture Survey Tool Development and Implementation



Takeaway 1: We CAN Assess Safety Culture

Why should we assess?

Celebrate wins



ID opportunities



Target Improvement



How do we assess?

- Multiple data sources for a more reliable picture – survey is a good, familiar starting point

Takeaway 2: Ready for Large-Scale Use

- Measures aspects of any safety-critical workplace
- Successful initial tests
- Contributes one metric toward the overall picture of an organization's safety culture health



[The Development and Implementation of a Safety Culture Survey for High-Performing Aviation Organizations](#)



Measuring Safety Culture

- An accurate picture of safety culture requires **multiple methods of measurement**
 - Examples: Surveys, focus groups, interviews, records reviews, event reviews, site environmental assessments
- Should be ongoing – culture isn't static
- Today: focused on the development and implementation of a **Safety Culture Survey** as a good place to start



Tool Development Background

- **Research Team:**

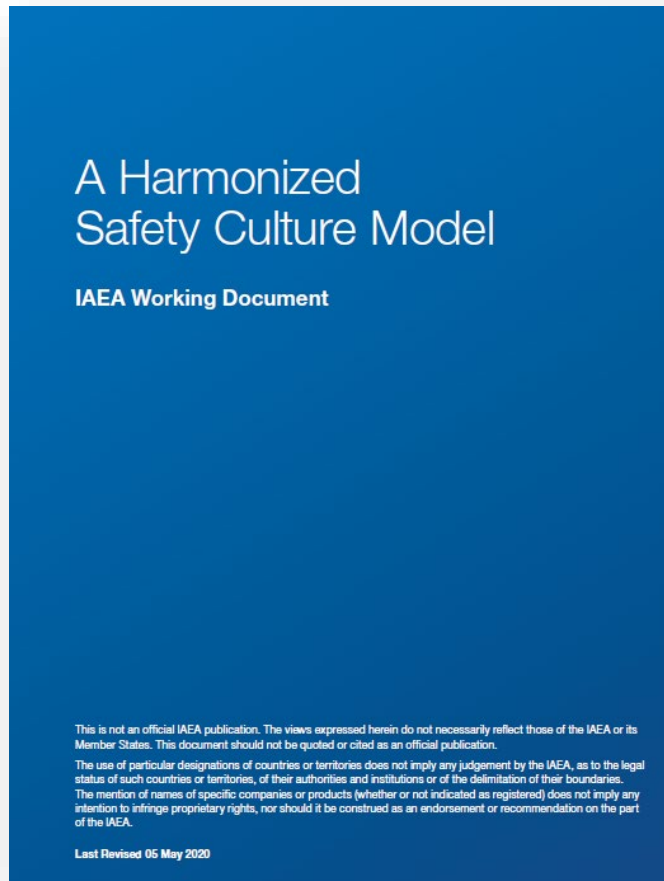
- In Civil Aerospace Medical Institute (FAA)
- Specializes in human factors research
- 30+ years in surveys and data analytics

- **Key Accomplishments:**

- Developed and validated assessment tools for use by:
 - Maintenance industry self-assessment
 - FAA aviation safety inspectors to document concerns during surveillance
 - **High-performing aviation organizations to pulse staff sentiments on safety culture**



Survey Measure Development



- IAEA's 10 traits of a positive safety culture
 - Internationally recognized
 - Iterative, evolutionary framework
 - Successful track record
 - Recommended by TRB
- Supplemental modules also included to measure employee and organizational outcomes

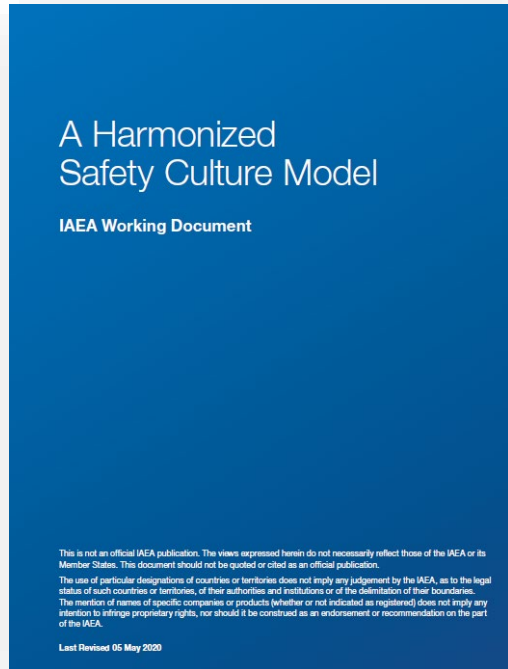


Methodology Development – Public Domain

- Civil Aviation Authority (CAA), *Safety Health of Aviation Maintenance Engineering (SHo-Me) Tool*
- EUROCONTROL, *Safety Culture Measurement Toolkit (SCMT) for European Air Navigation Service Providers*
- FAA, *Maintenance Safety Culture Assessment and Improvement Toolkit (M-SCAIT)*
- Office of Personnel Management (n.d.), *2022 Office of Personnel Management Federal Employee Viewpoint Survey results [FEVS]*.
- IAEA, *Safety Culture Perception Questionnaire for License Holders*
- National Aeronautics and Space Administration (NASA), *Safety Culture Survey*
- Nuclear Regulatory Commission (NRC), *Safety Culture and Climate Survey*
- National Institute for Occupational Safety and Health (NIOSH), *Worker Well-Being Questionnaire*
- *Nordic Occupational Safety Climate Questionnaire*
- Safety Management International Collaboration Group (SMICG), *Industry Safety Culture Evaluation Tool*
- Transport Canada, *Score Your Safety Culture*



10 Traits of a Positive Safety Culture



Individual Responsibility

Leader Responsibility

Questioning Attitude

Respectful Work Environment

Raising Concerns

Problem Identification and Resolution

Continuous Learning

Decision-Making

Communication

Work Planning



Activity 2 – Behaviors by Trait

1. Check the card on your table to discover which trait your table will discuss.
2. As a table, generate a list of behaviors you would see at work if that trait was present.
3. Select one representative to share your group's top 3 behaviors.

Trait
Behaviors if trait is present:



Sampling of Questions by Trait

Individual Responsibility	Communication	Questioning Attitude	Leader Responsibility	Continuous Learning
Commitment to safety is evident in the behaviors and work practices of individuals.	Information is effectively communicated across teams.	Individuals feel free to ask questions about any issue.	Leaders demonstrate they value safety by "walking the talk".	There is a genuine focus on continuous improvement.
Individuals adhere to established standards.	Leaders adequately communicate the reasons for decisions.	Individuals strive to avoid complacency.	Leaders' strategic plans reflect safety as the overriding priority.	The organization openly shares lessons learned.
Individuals work together effectively within and across work units to achieve goals.	The information individuals need to do the job is readily available.	It is acceptable to challenge the way things are done.	Roles and responsibilities are clearly defined by leaders.	Safety-related events or discussions are viewed as an opportunity to learn and make improvements.





Large FAA LOB Deployment

- **Successfully completed testing in FAA LOB**
- **Pulse survey method:**
 - Over 2500 respondents
 - Random subset of items per respondent
 - Median duration = 7.6 minutes
 - Results → leadership for action planning
- **Feedback on Usability:**
 - Right length for value of data collected
 - User-friendly
 - Contains important items
 - Recommend for future use



Documenting Lessons Learned Part 1



- **Analyze and share the results**
 - Consider demographic analyses to identify silos and target improvements
 - Develop, implement, and follow-through with an action plan
 - Periodically re-assess to track progress

Documenting Lessons Learned Part II

- **Bolster survey findings with other indicators for a more reliable picture**
 - Employee reported concerns
 - Audit findings
 - Observe normal operations and workplace behaviors (i.e., walk the talk)
- **FAA researchers are still determining how best to integrate the sources of information into one picture of culture and risks**



Tiredness can kill
Take a break





Interpreting and Prioritizing Safety Culture Survey Results



What do we consider when looking at results?



Questions for the room:

- What should we be aware of when reviewing and interpreting results?
- What pitfalls should we avoid?
- What do we need to consider about self-reported responses?

Considerations: Data Collection Process



- Time to complete (time open + response time)
- Environmental variables: time of year
- Confounding variables
- Who actually replied?
- Extreme outlier responses

Considerations: Data Collection Method



Consider: Data Collection and Analysis by Third Party

- What levels of demographic analysis you plan to conduct
 - Results by sub-organization?
 - Results by management level?
 - Results by job type?

Note: If you conduct your survey in-house, consider digital survey tool you might use and method for sending survey links, automating results, etc.

Considerations: Human Interpreter Bias



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- Who is participating in data analysis?
- Who gets to make the final call on what data mean?
- How does individual question interpretation influence discussion and focus?
- How can group think show up?



10 Traits of a Positive Safety Culture

How your organization performs under these 10 traits, gives you insights into each of the 5 elements, but the two are not directly tied together.



Individual Responsibility	Problem Identification and Resolution
Leader Responsibility	Continuous Learning
Questioning Attitude	Decision-Making
Respectful Work Environment	Communication
Raising Concerns	Work Planning





Indicator Level and Question Level Analysis

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Individuals work together effectively within and across work units to achieve goals.	An effective communication flow exists up, down, and across the chain of command.	It is acceptable to challenge the way things are done.	Roles and responsibilities are clearly defined by leaders.	Safety-related events or discussions are viewed as an opportunity to learn and make improvements.



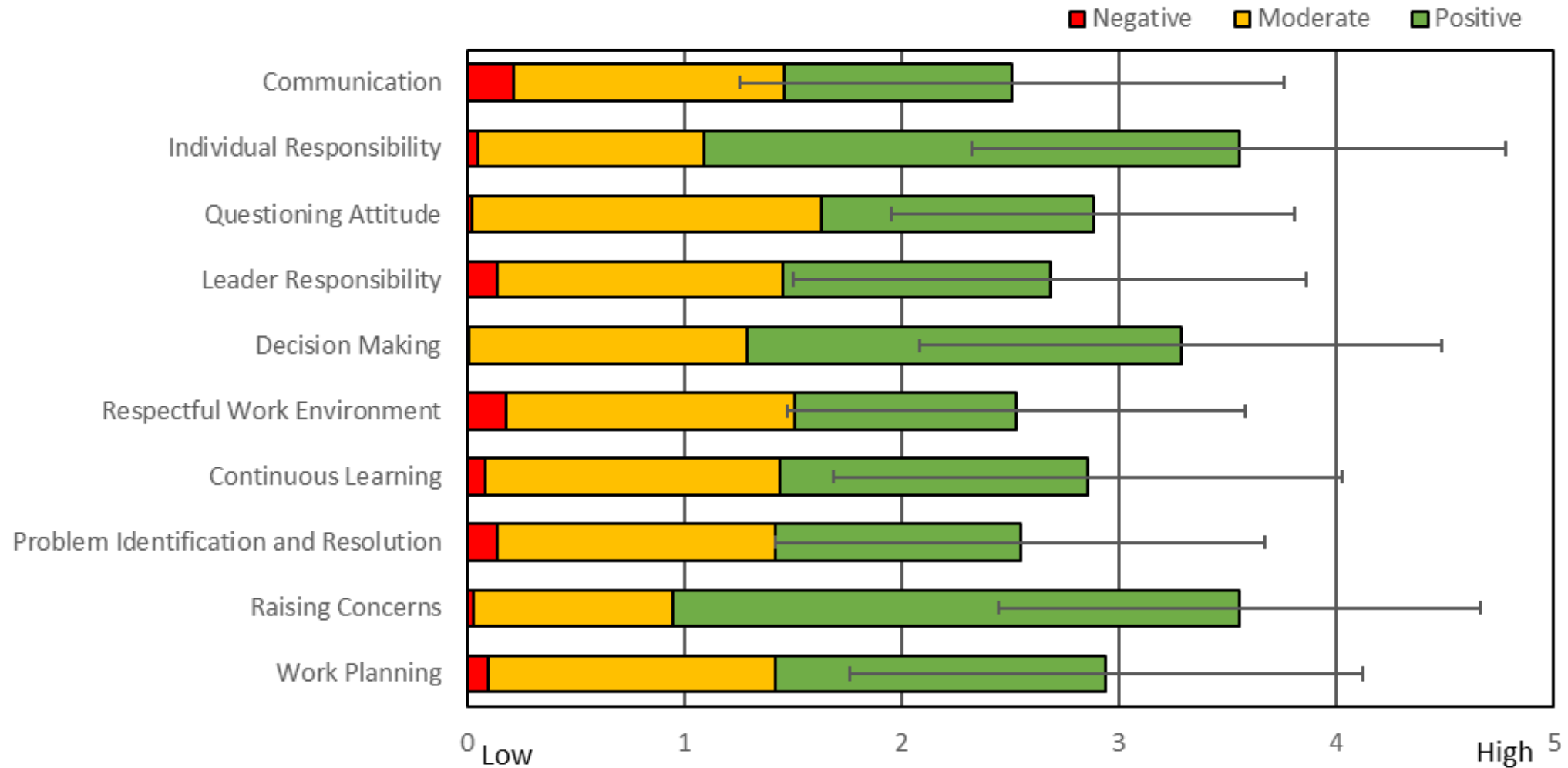
Case Study: Amelia Skyways Airline



- Amelia Skyways Airline just performed their first safety culture assessment using the FAA Safety Culture tool.
- Today, we'll examine some of their results and develop a starter action plan for the airline to change their safety culture.



Sample Results – Amelia Skyways Airline



Interpreting the Results

The questions to the right are from the “Leader Responsibility” trait.

Safety Culture Literature Grounding for Trait:

“Leaders demonstrate a commitment to safety in their decisions and behaviors. Leaders are role models for safety” (IAEA, 2020).

Question Items – Leader Responsibility

Leaders’ strategic plans reflect safety as the overriding priority.

Leaders place safety before production.

Leaders regularly demonstrate their commitment to safety.

Leaders demonstrate they value safety by “walking the talk”.

Leaders encourage employees to participate in resolving issues which affect safety.

Individuals are involved in contributing to the design, implementation, and measurement of safety related changes.

Individuals have sufficient resources (e.g., people, materials, budget) to get the job done safely.

Leaders are visibly present in work environments (including virtual environments) and maintain awareness of work progress.

Individuals are recognized for safety conscious behaviors.

Individuals are held to the same standards of ethical behavior.

Changes to the organization, systems, and procedures are properly assessed for safety risk.

Roles and responsibilities are clearly defined by leaders.



Interpreting the Results

Be specific in describing what the question level analysis shows.

OK: “Improve leader responsibility.”

BETTER: “Leaders could demonstrate that safety is a higher priority than production and share organizational risk assessments when changes to systems or procedures are initiated.”

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Activity 3 – Analyzing Data



As a group, select one of the three areas for improvement for Amelia Skyways Airline. Look at the question level data in your packets.

Discuss:

- What story is the data telling you?
- If you work for Amelia Skyways, what are your follow-up questions?



HAVE A

BREAK

Developing an Action Plan



Activity 4– Previous Actions and Results

Discuss the following questions as a table. Be prepared to share with the room.

- What one word comes to mind when you think about organizations trying to change their culture?
- Why have some actions succeeded while others failed? What made the successes different?



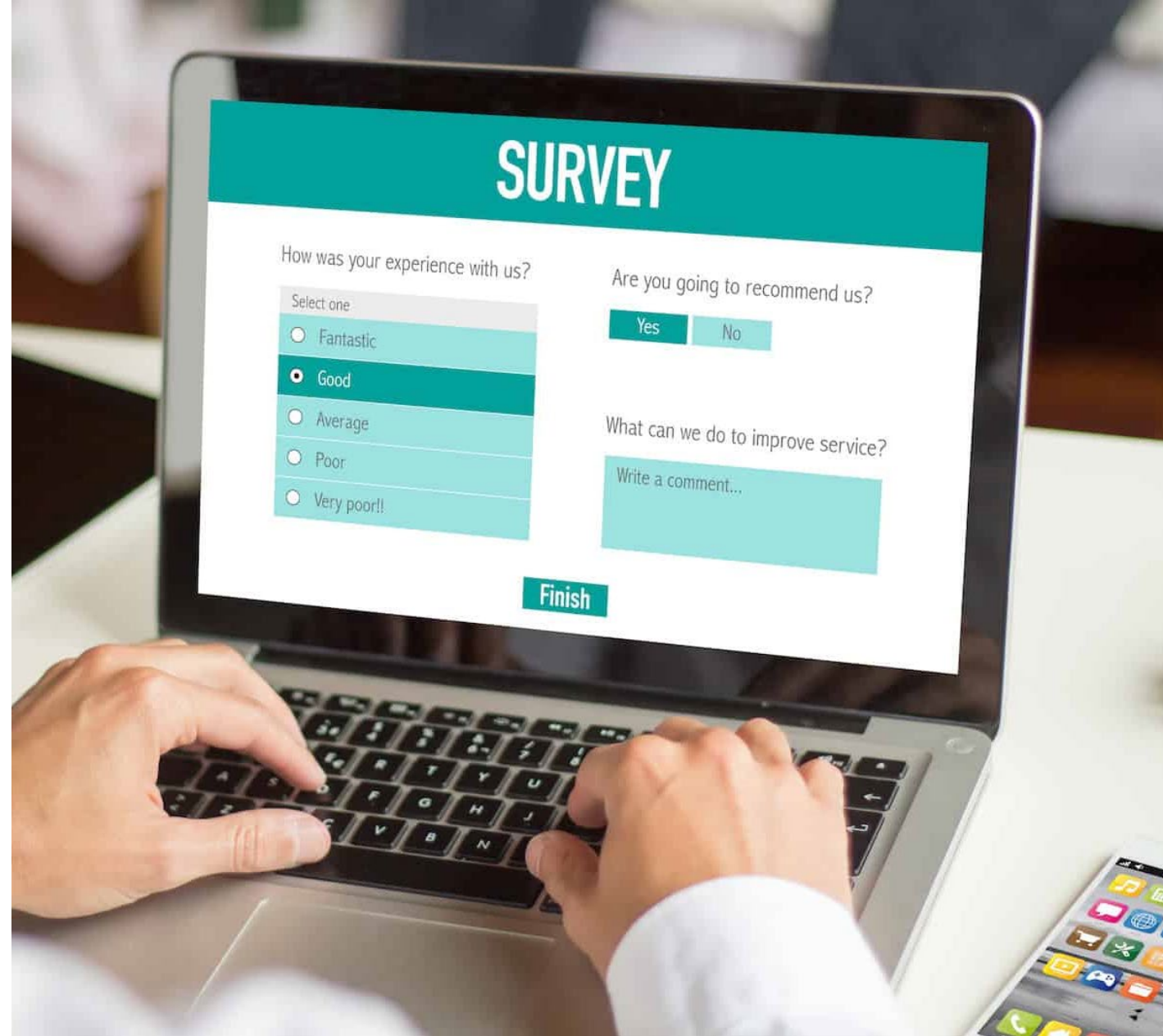
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Action Plan Development

Questions for the room:

- What does this process look like in an organization?
- What happens when organizations do **nothing** in response to survey results?



Results Into Action

Look again at the Leader Responsibility questions that indicate a need to take improvement action. But what action should Amelia Skyways take?

ACTIVITY: Conduct a listening session.

ASK:

- “Can you give examples of when changes were not properly assessed for risk?”
- “How do you think leadership should stay aware of work progress?”
- **What would YOU ask, given these results?**

Question Items – Leader Responsibility

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Activity 5 – Action Plan Development



As a table:

- **Use the area of improvement your table discussed in the last activity**
- **Create 2-4 actions Amelia Skyways could take to make progress in that area**
- **As you discuss, consider:**
 - Which actions are low-hanging fruit?
 - Which actions lend themselves to a larger long-term program?

Action Plan Development

Questions for the room:

- What is the “low hanging fruit” to act on?
- What work may require a more mature improvement plan?
- What happens if Amelia Skyways **only** takes on the “low hanging fruit” projects?





Considerations: Human Interpreter Bias



Questions for the room:

- What bias did you bring into the analysis or action planning? (bias for more data, bias for staff level action, bias for immediate action, etc.)
- How did personal preferences show up in what types of actions each person leaned toward?

Final Note on Culture Change



Culture change requires:

- Leadership commitment – walk the talk
- Alignment with decision making and strategies
- Grassroots commitment and champions
- Ongoing communications
- A long-term view – journey not a destination
- Consistent, varied measurement
- Resources



Questions and Contact Information

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