Safety Assurance and Safety Culture

Using Climate Assessments to Monitor Performance and Support the SMS

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Safety Experience

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Safety Management

The act of understanding and making decisions and taking actions to lower risk, inherent in all human activity, to acceptable levels.

~ FAA Order 8000.369: SMS Guidance
Components of a SMS

- Safety Policy & Objectives
- Safety Risk Management (SRM)
- Safety Assurance
- Safety Promotion

Safety Management
Safety Management

What is expected?

SRM
Safety Risk Management

Safety Policy & Objectives

SMS

Safety Promotion

Safety Assurance

How do we communicate it?

What is or could go wrong?

How do we monitor it?
Safety Management

Components | Relationships

- Safety Policy & Objectives
- Safety Promotion
- Safety Assurance
- Safety Risk Management

SMS
Safety Management

SMS

... a systematic approach to improving safety performance
Safety Management

Dilemma of the Two P’s

Production Goals

Protection Goals
The Safety System

What are the bounds of the system?

What is your function within the system?

What is the focus of the system?
“Hazard identification and safety risk management are the core processes involved in the management of safety.”

~ ICAO – SMM 4th Edition

So what is Safety Assurance and why should I care?
... processes and activities to determine whether the SMS is operating according to expectations and requirements, which involves continuously monitoring its processes as well as its operating environment to detect changes or deviations that may introduce safety risks or the degradation of existing safety risk controls.

~ ICAO – SMM 4th Edition
Safety Assurance

... goal is to watch what is going on and review what has happened to ensure that your objectives are being met.

... requires monitoring and measuring safety performance.

... will yield information used to maintain the integrity of risk controls.

... a means of assuring the safety performance of the organization, keeping it on track, correcting it where necessary and identifying needs for rethinking existing processes.

~ FAA - AC 120-92B
Linking Safety Assurance and Safety Culture

Culture

Climate
Safety Culture

“Shared values and beliefs that interact with an organization’s structures and control systems to produce behavioral norms.”

“The way we do things around here”

What is important

How things work

about safety
Elements of a Safety Culture

- FLEXIBLE CULTURE
- LEARNING CULTURE
- INFORMED CULTURE
- JUST CULTURE
- REPORTING CULTURE

SAFETY CULTURE
Safety Culture and SMS

SMS

SRM
Safety Risk Management

Safety Policy & Objectives

Safety Promotion

Safety Assurance

Safety Culture
Definitions

Culture

Climate
...the extent to which members of an organization share positive (or negative) views about their organization in terms of:

- effectiveness of leadership
- management of resources
- quality of work environment
- system of rewards
- treatment of personnel

and the influence these views have shaping patterns of “life” within the organization.
Shaping Safety Culture

Measure

Monitor

Analyze

Action
Shaping Safety Culture

Safety Climate Management

Analyze  Measure  Monitor  Analyze  Action
Purpose:

Measure an organization’s ability to safely conduct maintenance and flight operations in terms of leadership, culture, policies, standards, procedures, and practices.

The surveys examine the organizational climate using a human factors framework.
Safety Climate Assessments
Marine Corps Aviation Survey System
(MCASS)
Demographic Items

Likert-type Items

Open-ended Items

Add a write-in comment to any survey item
Safety Climate Assessments

- Individual respondent anonymity
- Organizational confidentiality
- Restricted access to the results
Post-Survey Results

Mining for Safety Data
Respondent write-in comment regarding crew rest:

“Since the last CSA survey this has been heavily watched and many changes have been put in place, all for the better of safety and well-being of aircrew.”
Safety Climate Assessments

Summary Graph

Getting the BIG Picture
Summary Graph

Compares unit data to comparison set data.
Summary Graph

- Yellow flag: Compares unit data to comparison set data
- Red Flag: More favorable
- No flag: Less favorable

Graph of 11 Respondents (13 Surveys Requested); Comparison (black dots) is 2,196 Respondents
(click a bar to see respondent details for that item)

Show results by: Mean Score • Percentiles ○

Legend

- OP: ORGANIZATIONAL PROCESSES
- OC: ORGANIZATIONAL CLIMATE
- RE: RESOURCES
- SU: SUPERVISION

Lines and Flags:
- Comparison’s standard deviation centered on its mean (black dot)
- Mean is less than comparison but within one-half standard deviation
- Mean is more than one-half standard deviation below the comparison

Summary Graph
Compares unit data to comparison set data
Safety Climate Assessments

Survey Results

(Compare to unit’s prior survey results)
Graph of 30 Respondents (60 Surveys Requested), 46 prior Responses (64 Surveys Requested); Comparison (black dots) is 9,239 Respondents
(click a bar to see respondent details for that item)

Current results

Prior results

(items 19, have been revised from an earlier version of the survey.)

Show results by: Mean Score ○ Percentiles ○
Safety Climate Assessments

Survey Results

(Typical Unit)
Graph of 76 Respondents (135 Surveys Requested); Comparison (black dots) is 7,551 Respondents
(click a bar to see respondent details for that item)

(Items 27, have been revised from an earlier version of the survey.)

Show results by: Mean Score ☺ Percentiles ☐

Legend

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Debriefing Support  Graph → PowerPoint
Safety Climate Assessments

Survey Results

(Above Average Unit)
Graph of 17 Respondents (17 Surveys Requested); Comparison (black dots) is 2,196 Respondents
(click a bar to see respondent details for that item)

Show results by: Mean Score • Percentiles ○

Legend
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Debriefing Support  Graph ➔ PowerPoint
Safety Climate Assessments

Survey Results

(Below Average Unit)
Safety Climate Assessments

Survey Results

(Most favorable unit to date)
Graph of 25 Respondents (31 Surveys Requested); Comparison (black dots) is 8,886 Respondents (click a bar to see respondent details for that item).

(Items 19, have been revised from an earlier version of the survey.)

Show results by: Mean Score % Percentiles %

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Debriefing Support  Graph → PowerPoint
Safety Climate Assessments

Survey Results

(Biggest improvement by a single leader)
Graph of 30 Respondents (60 Surveys Requested), 46 prior Responses (64 Surveys Requested); Comparison (black dots) is 9,239 Respondents
(click a bar to see respondent details for that item)

Current results
Prior results

Show results by: Mean Score ▼ Percentiles ○

Legend
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Debriefing Support  Graph → PowerPoint
What can survey results look like after a tragic event?
Graph of 46 Respondents (64 Surveys Requested); Comparison (black dots) is 8,869 Respondents (click a bar to see respondent details for that item).

(Items 19, have been revised from an earlier version of the survey.)

Show results by: Mean Score ○ Percentiles ○

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Debriefing Support   Graph → PowerPoint
Why do I care about this stuff?

Note: This guy was a test pilot.
Respondent Average versus Mishap Frequency

Mishaps within 2 Years of MCAS Survey

Quartiles based on MCAS Survey Respondent Average

MCAS Scores

Poor Climate = More Mishaps
Best Climate = Fewer Mishaps

Class C's
Class B's
Class A's

Lowest - Mid - High - Highest

MCAS Scores

FUTRON AVIATION
Open-ended Items

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<td>Standards in my unit are clearly defined.</td>
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Likert-type Items

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Add a write-in comment to any survey item.
Hazard Identification

33. **Night crew has sufficient staffing for their workload.**
   
   # 1. (Strongly Disagree) Squadron is undermanned at almost every level.
   # 2. (Strongly Disagree) **Night check is where all the maintenance gets done, we have at least 20 people less than day check and our workload keeps growing.**
   # 3. (Disagree) I see shops on night check that have 1 person or 2 at the most, sometimes with heavy workloads, for months at a time. I know we’re working to fix the billet situations as a command, but the manning can sometimes be the biggest obstacle to the maintenance department.
   # 4. (Disagree) Some shops have the bare minimum which slows down maintenance and makes it very difficult to do the jobs needed in a timely manner.
   # 5. (Disagree) Some shops are very undermanned and have to utilize more people on day shift to work the flight schedule.
   # 6. (Disagree) Some shops have only 2 or 3 people on their shift, which then requires other shops to assist them instead of doing their own work.
   # 7. (Neutral) Again there is a sufficient amount of rated people in our command but not in our shop.

34. **Night crew has sufficient supervisors for their workload.**

   # 1. (Disagree) Squadron is undermanned at almost every level.
   # 2. (Disagree) Some shops are very undermanned and have to utilize more people on day shift to work the flight schedule.

37. **Leaders/Supervisors in my unit care about my quality of life.**

   # 1. (Neutral) Work first then we will see what we can do for you.

46. **The most hazardous activity I perform is...**

   # 1. Handling hydraulic fluids.
   # 2. Issuing and receiving HAZMAT.
   # 3. OPTEMPO as it correlates to the age and condition of our aircraft - our work is inherently dangerous and made more so by the lack of experienced personnel in the maintenance work centers.
Let’s Wrap It Up

It’s all about . . .

• Monitoring and capturing safety data
• Measuring to see if changes are needed
• Measuring to see if controls are working
• Digging to figure out why the “Check Engine” light is on
QUESTIONS ???

This is gonna hurt

USMC

Frightened Navy LSO