



Assessment of Naval Aviation Maintenance Safety Climate

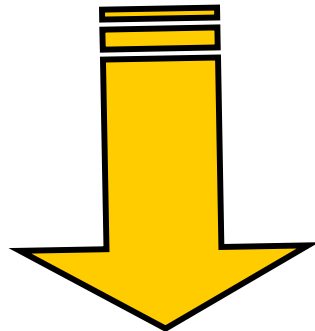
2003 DoD Maintenance Symposium

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Trends in Naval Aviation

- Aircraft Procurement: Quantity & Rate
- Aircraft Aging, Postponed Maintenance
- Increased Maintenance Requirements
- Greater Demands on Maintenance Personnel



**Expanded Focus on Maintenance
Operations**

Human Factors Quality Management Board Aviation Maintenance Working Group

Three-Prong Approach:



Human Error Analysis

Adopted a Maintenance Extension of the Human Factors Analysis & Classification System for Investigating, Reporting, & Analyzing Mishaps

Best Practices Benchmarking

Adapted Crew Resource Management Training to form Maintenance Resource Management (MRM) to Enhance Teamwork & Hazard Awareness

Safety Climate Assessment

Developed On-Line Maintenance Climate Assessment Survey (MCAS) to Proactively Assess Maintenance Operations

Maintenance Climate Assessment Survey (MCAS)

MCAS Purpose:

Provide for the proactive measurement of an organization's ability to safely conduct aviation maintenance in terms of unit leadership, culture, policies, standards, procedures, and practices.



High Reliability Organizations

HROs -- Organizations have less than their “fair share” of failures despite:

- **managing complex & demanding technologies**
- **meeting peak requirements & time pressures**
- **routinely handling significant risks & hazards**
- **executing dynamic/intensely interactive tasks**

(Roberts,1990)

HRO Model Components:

- | | |
|----------------------|-----------------------------|
| -- Process Auditing | -- Risk Management |
| -- Reward System | -- Command & Control |
| -- Quality Assurance | -- Functional Relationships |



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SURVEY OVERVIEW

SAMPLE SURVEY

TAKE A SURVEY

SURVEY ADMIN

C.O. ACCESS

SAMPLE C.O. ACCESS

SITE MAP

HELP/FAQ

CONTACT US

SUGGESTIONS

Command Safety Climate Assessment Surveys



-- On-line Diagnostic Tool

-- Based on HRO Theory

-- Designed for Maintenance Personnel

-- Focuses on Key Maintenance Issues

-- Results are Confidential (Password Protected)

-- Data Available in Aggregate Database

-- Can Compare Your Data with Other Data

PART I. DEMOGRAPHIC INFORMATION

The following survey is a **SAMPLE**. No actual responses will be recorded. For the actual survey, no individual's demographic data will be made available to any CO.

Your Grade/Rank:

Total years aviation maintenance experience:

Total years Naval Aviation Depot experience:

Your current job/trade:

Total years in your current job/trade:

Your primary shift:

Your primary program:
(Select all that apply)
 A-4
 AH-1
 AV-8
 C-130

Your status:

Your Service:

Your parent command:

Your unit's location:

Demographic Data

The following survey is a **SAMPLE**. No actual responses will be recorded.

1. The NADEP adequately reviews and updates safety procedures.
 Strongly Disagree Disagree Neutral Agree Strongly Agree N/A
 Don't Know
2. The chain of command monitors artisan qualifications and has a program that targets training deficiencies.
 Strongly Disagree Disagree Neutral Agree Strongly Agree N/A
 Don't Know
3. Supervisors use safety and medical staff to identify/manage personnel at risk.
 Strongly Disagree Disagree Neutral Agree Strongly Agree N/A
 Don't Know
4. Quality Assurance routinely monitors rework/repair/maintenance tasks.
 Strongly Disagree Disagree Neutral Agree Strongly Agree N/A
 Don't Know
5. Tool Control and support equipment licensing are closely monitored.

Closed-ended Items

44. The next quality defect will be caused by... (200 words max.)

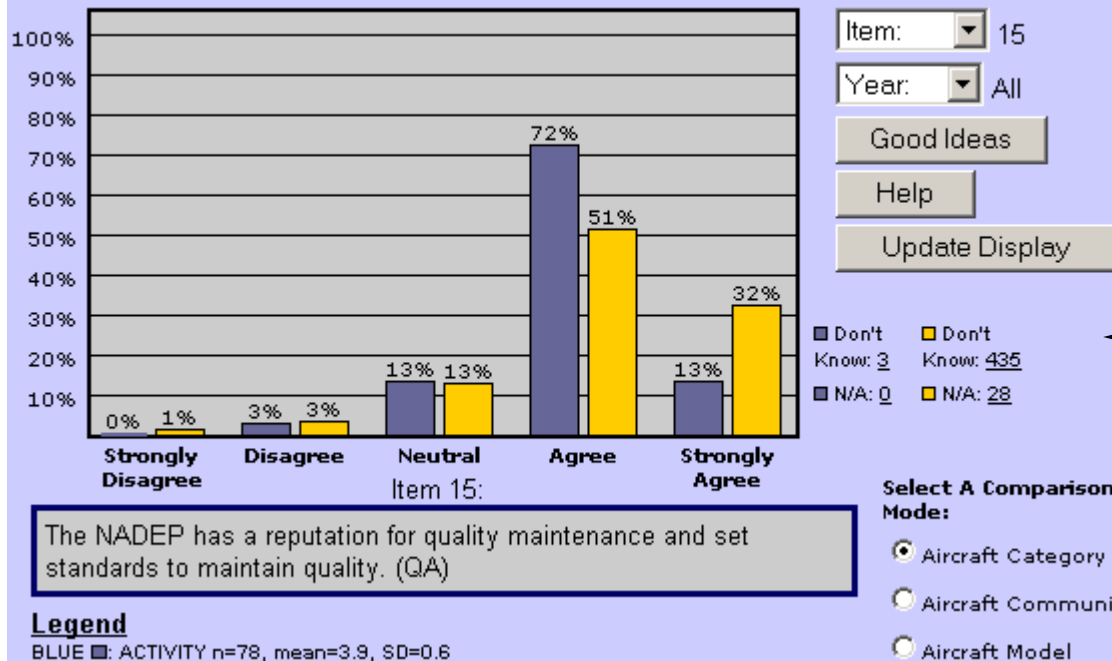
No comment My response is:

45. The next quality defect can be prevented by (200 words max.)

No comment My response is:

Open-ended Items

NADEP 796 Commander's Access



Closed-ended Survey Item Responses

Open-ended Survey Item Responses

Item 44:
The next quality defect will be caused by.... (200 words max.) (QA)

7. INADEQUATELY TRAINED PERSONNEL WHO HAVE MADE SOME TYPE OF STUPID MISTAKE. THEY'RE EXPLANATION WILL BE, "NOBODY TOLD ME ABOUT THAT."

8. marginal quality parts and marginal quality workshop. Also, extended our of overtime adversely affects quality.

9. [No comment]

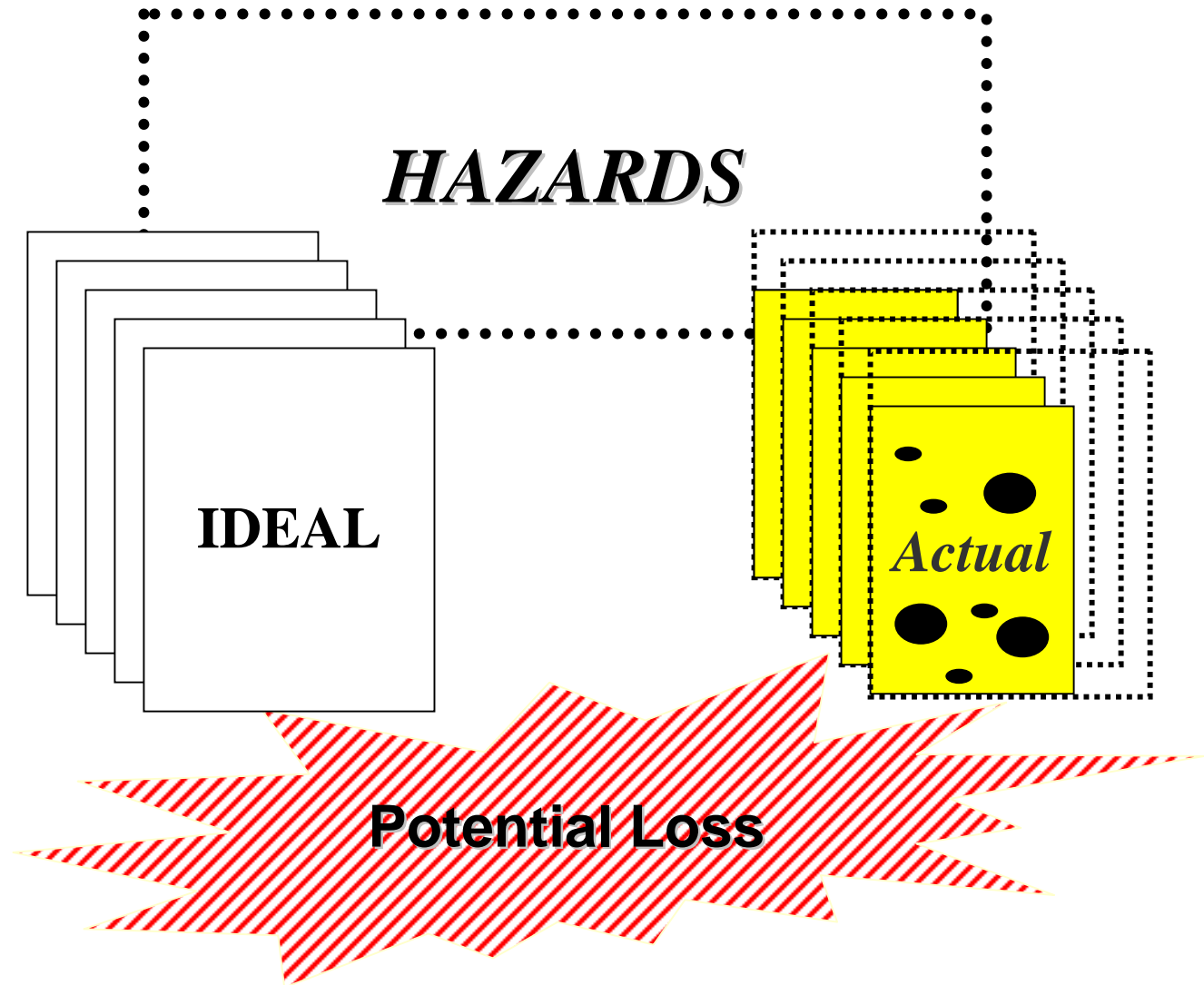
10. excessive paperwork oversight or a tracking error in hours remaining on a component/mra that has a poor method of serialization-present balance problem is the current exception

11. [No comment]

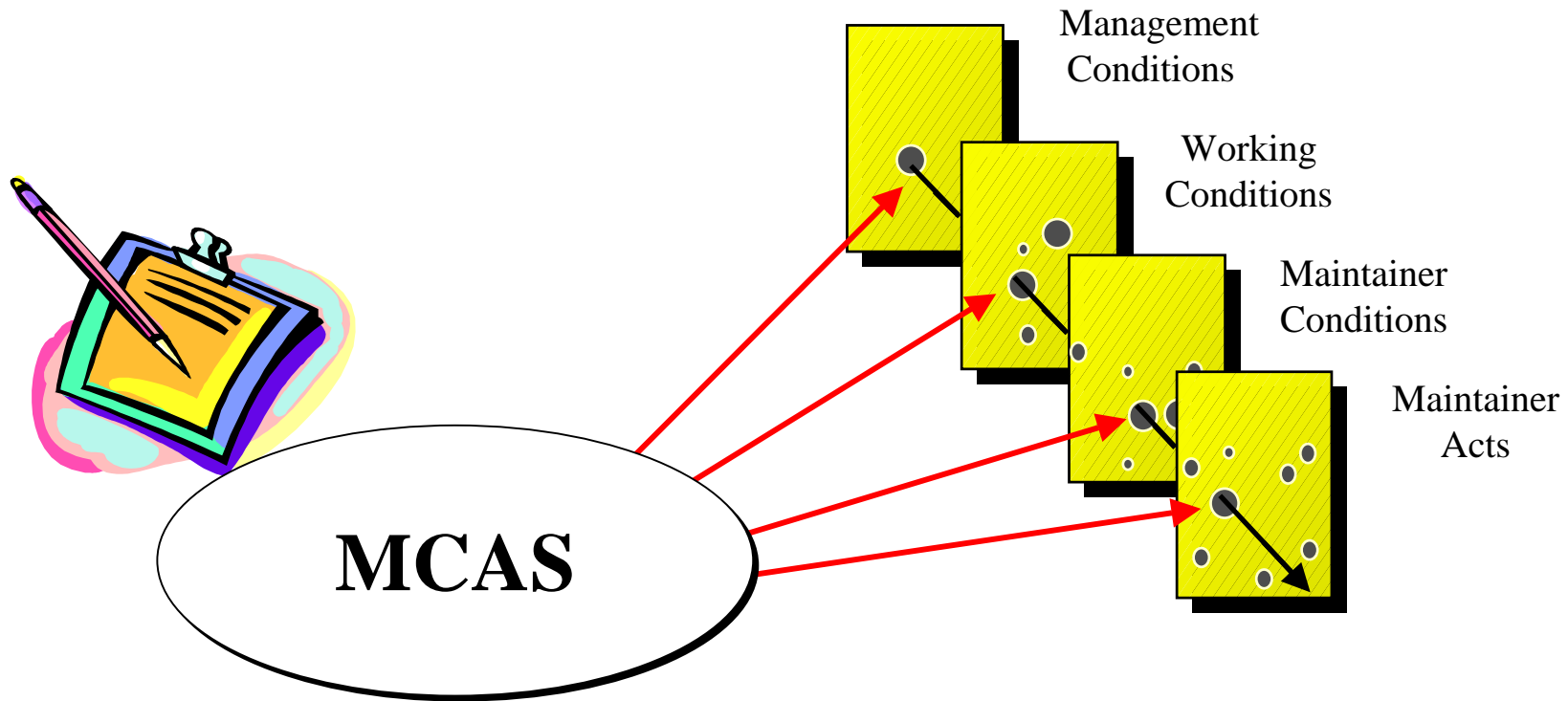
Item: 44
Year: All
Good Ideas
Help
Update Display

Select A Comparison Mode:
 Aircraft Category
 Aircraft Community
 Aircraft Model

HRO and Risk Management



A Management Tool to ID & Fill “the Holes”



- ID Potential Issues (Hazards)
- Risk Assessment/Prioritization
- Target Potential Risk Areas
- Safety Performance Metric

-How close are we to an HRO?

MCAS

So . . . where are we ?

Over 47,000 MCAS survey responses in the data base!

Over 500 Aviation Units Surveyed!

. . . that equates to over 2.4 million data points !

As of 20 Oct 03

MCAS Observations

(n = 45,000)

- ✓ 61% of survey participants responded favorably to:
“Peer influence discourages SOP, NAMP, or other violations and individuals feel free to report them.”
- ✓ 48% of survey participants responded favorably to:
“The command recognizes individual safety achievement through rewards and incentives.”

Note: “responded favorably” indicates an “Agree” or “Strongly Agree” response.

MCAS Observations

(n = 45,000)

- ✓ 50 % of survey participants responded favorably to:
“Good communication exists up/down the chain of command.”
- ✓ 68% of survey participants responded favorably to:
“My command has effective pass-down between shifts.”

Note: “responded favorably” indicates an “Agree” or “Strongly Agree” response.

MCAS Highlights

Areas of Interest:

- ✓ *Cutting corners*
- ✓ *Recognizing safety achievement*
- ✓ *Communications*
- ✓ *Pass-down between shifts*

Command Safety Assessment (CSA):

A complementary safety climate survey process designed for aircrew that measures an organization's ability to safely conduct flight operations in terms of leadership, culture, policies, standards, procedures, and practices.



Relationships to Other Proactive Human Factors Tools



Data Triangulation

Questions?



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