



Safety Culture in HEMS Operations Initial Survey Results



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Research supported in part by a grant from the
Federal Aviation Administration, William J. Hughes Technical Center,
under Award No. DTFA 01-G-015, jennelle Derrickson, Technical Monitor

What is a Safety Culture?

The enduring value and priority placed on worker and public safety by everyone in every group at every level of an organization.

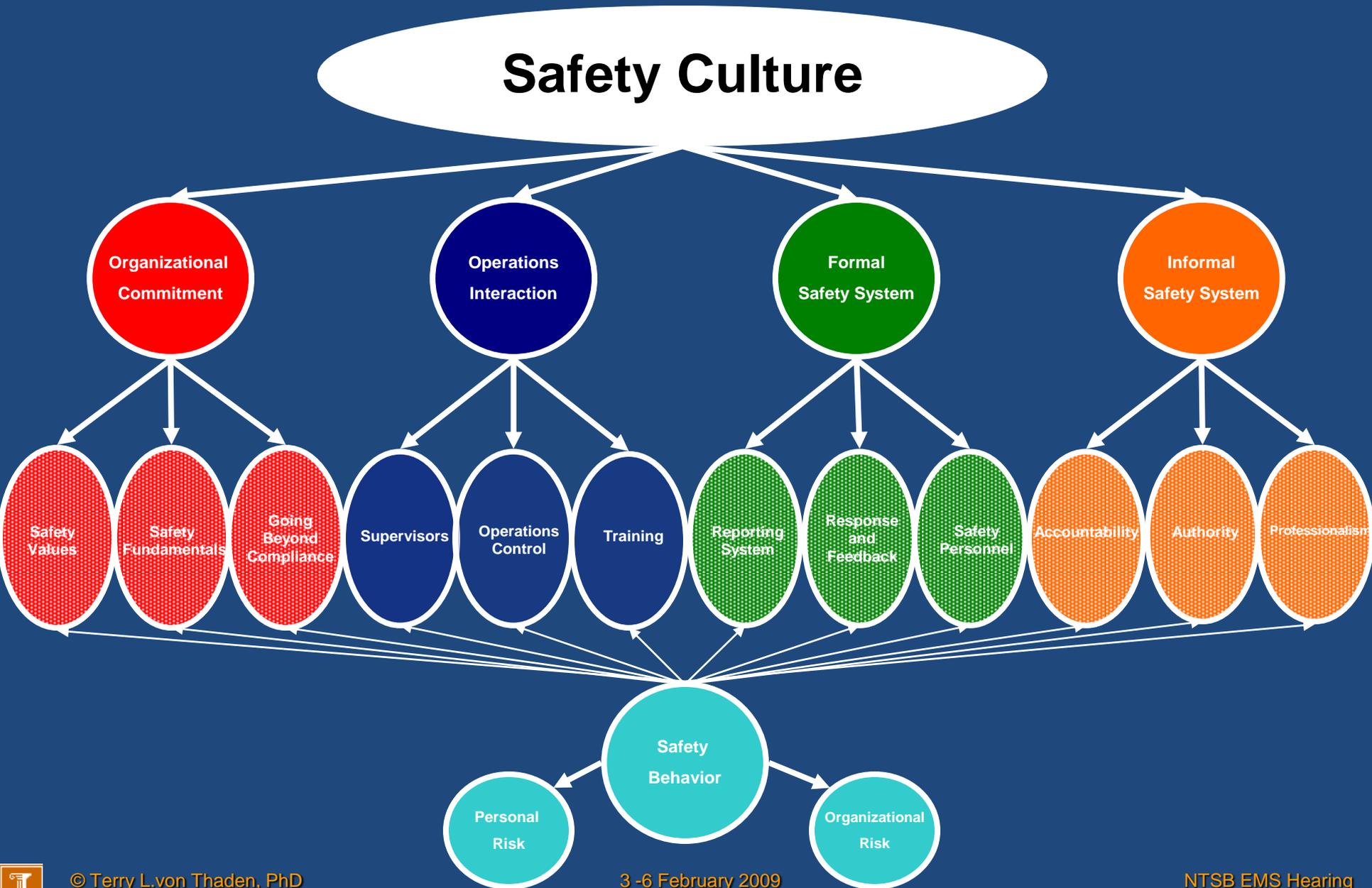
It refers to the extent to which individuals and groups will:

1. Commit to personal responsibility for safety;
2. Act to preserve, enhance and communicate safety concerns;
3. Strive to actively learn, adapt and modify (both individual and organizational) behavior based on lessons learned from mistakes; and
4. Be rewarded (or held accountable) in a manner consistent with these values.

(Wiegmann, von Thaden, Mitchell & Sharma, 2001)



Organizational Indicators of Safety Culture



Organizational Commitment

The degree to which an organization's leadership prioritizes safety in decision-making, and allocates adequate resources to safety.



Safety Values – Attitudes and values expressed (in words and actions) by upper management regarding safety.

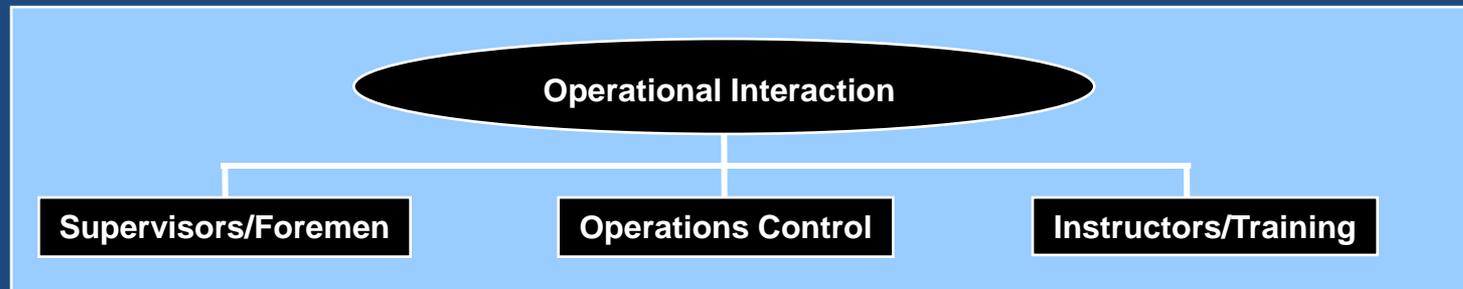
Safety Fundamentals – Compliance with regulated aspects of safety (e.g., training requirements, manuals and procedures, and equipment maintenance), and the coordination of activity within and between teams/units.

Going Beyond Compliance – Priority given to safety in allocation of company resources (e.g., equipment, personnel time) even though not required by regulations.



Operations Interaction

The degree to which those directly involved in the supervision of employees' safety behavior are actually committed to safety and reinforce the safety values espoused by upper management (when these values are positive).



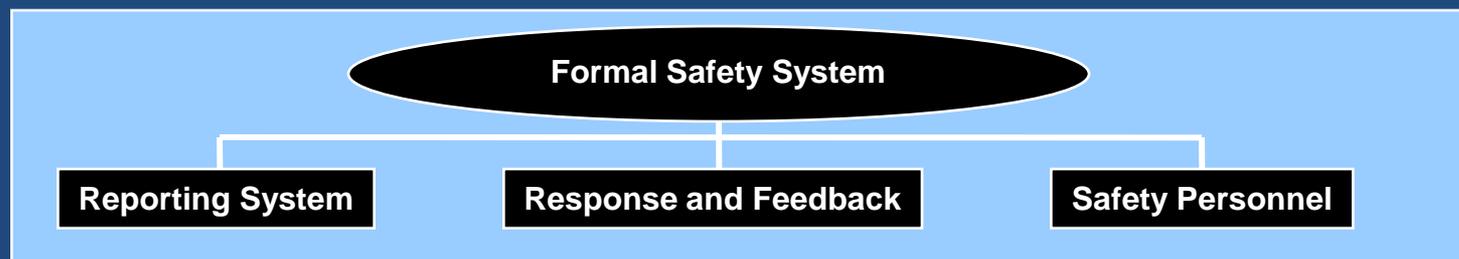
Supervisors/Foremen– Their involvement in and concern for safety on the part of supervisory and “middle” management at an organization (e.g. Chief Fleet Pilot).

Operations Control– Effectively managing, maintaining, and inspecting the safety integrity of the equipment, tools, procedures, etc. (e.g. Dispatch, Maintenance Control, Ground Operations, etc.).

Instructors/Training–Extent to which those who provide safety training are in touch with actual risks and issues.

Formal Safety System

Processes for reporting and addressing both occupational and process safety hazards.



Reporting System– Accessibility, familiarity, and actual use of the organization’s formal safety reporting program.

Response and Feedback– Timeliness and appropriateness of management responses to reported safety information and dissemination of safety information.

Safety Personnel– Perceived effectiveness of and respect for persons in formal safety roles (e.g., Safety Officer, Vice President of Safety).



Informal Safety System

Includes unwritten rules pertaining to safety, such as rewards and punishments for safe and unsafe actions. Also includes how rewards and punishments are instituted in a just and fair manner.



Specifically, the informal safety systems include such factors as:

Accountability– The consistency and appropriateness with which employees are held accountable for unsafe behavior.

Employee Authority– Authorization and employee involvement in safety decision making.

Employee Professionalism– Peer culture employee group norms pertaining to safe and unsafe behavior.



Safety Behavior

Reflects personal and organizational perception of safety; attitudes and beliefs.



Specifically, safety behavior involves:

Personal Risk– The personal level of acceptable risk on behalf of each employee. Reflected in the employees’ actual safety practice and the their perception of how others in the organization practice safety.

Perceived Organizational Risk– The perception of the likelihood that the organization will be involved in an accident or incident.

von Thaden T. L., and Gibbons, A. M. (2008). The Safety Culture Indicator Scale Measurement System (SCISMS). *University of Illinois Human Factors Division Technical Report HFD-08-03/FAA-08-02*. Prepared for the Federal Aviation Administration, contract DTFA 01-G-015.



Research Process

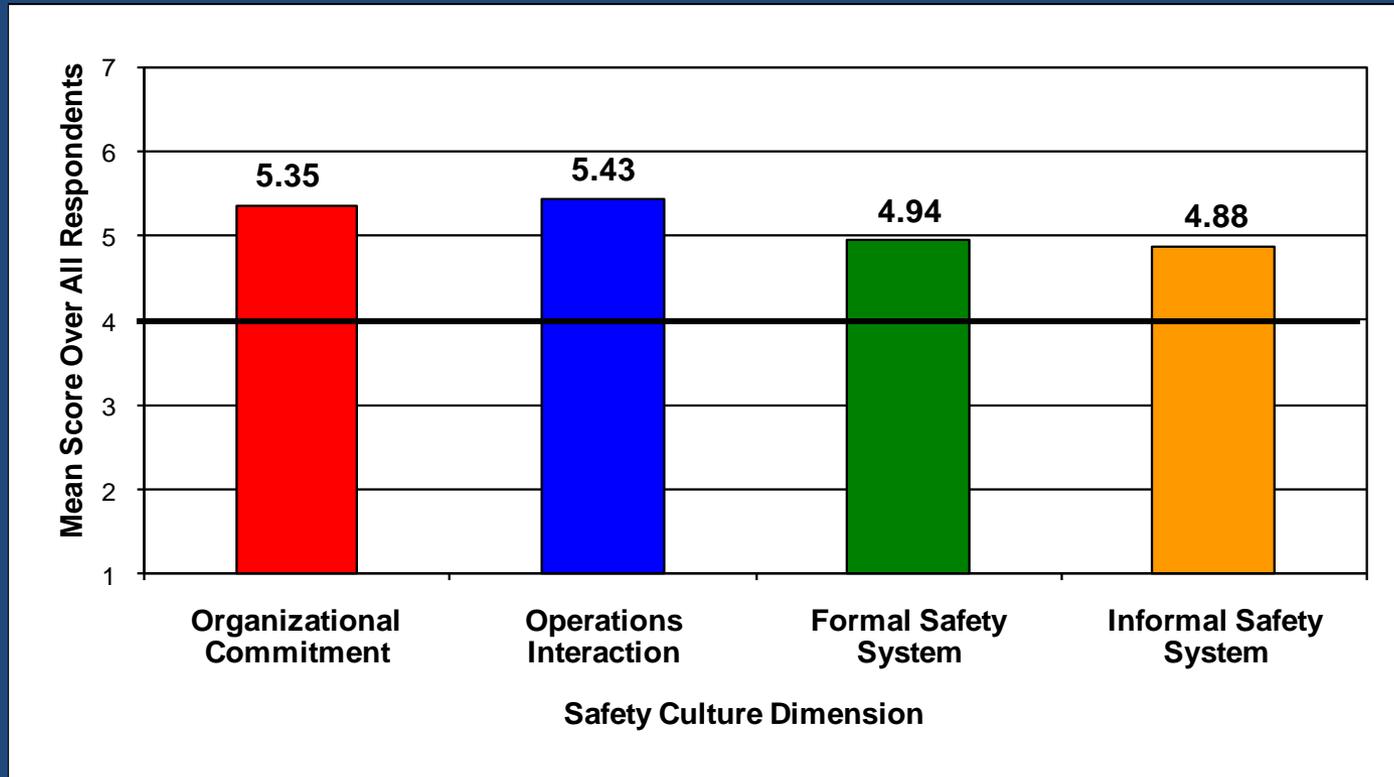
- Third Party Research – volunteer organizations
- 9 Operations represented in this data
 - Large and small operations included
 - Did not include State/Public EMS responders
- Survey put on secure web link housed at UIUC

Participation voluntary, responses anonymous, anonymity assured (*protection of human subjects*).

- 1-7 Lickert scale (Disagree Strongly...Agree Strongly)
- Higher score represents positive indication of safety culture



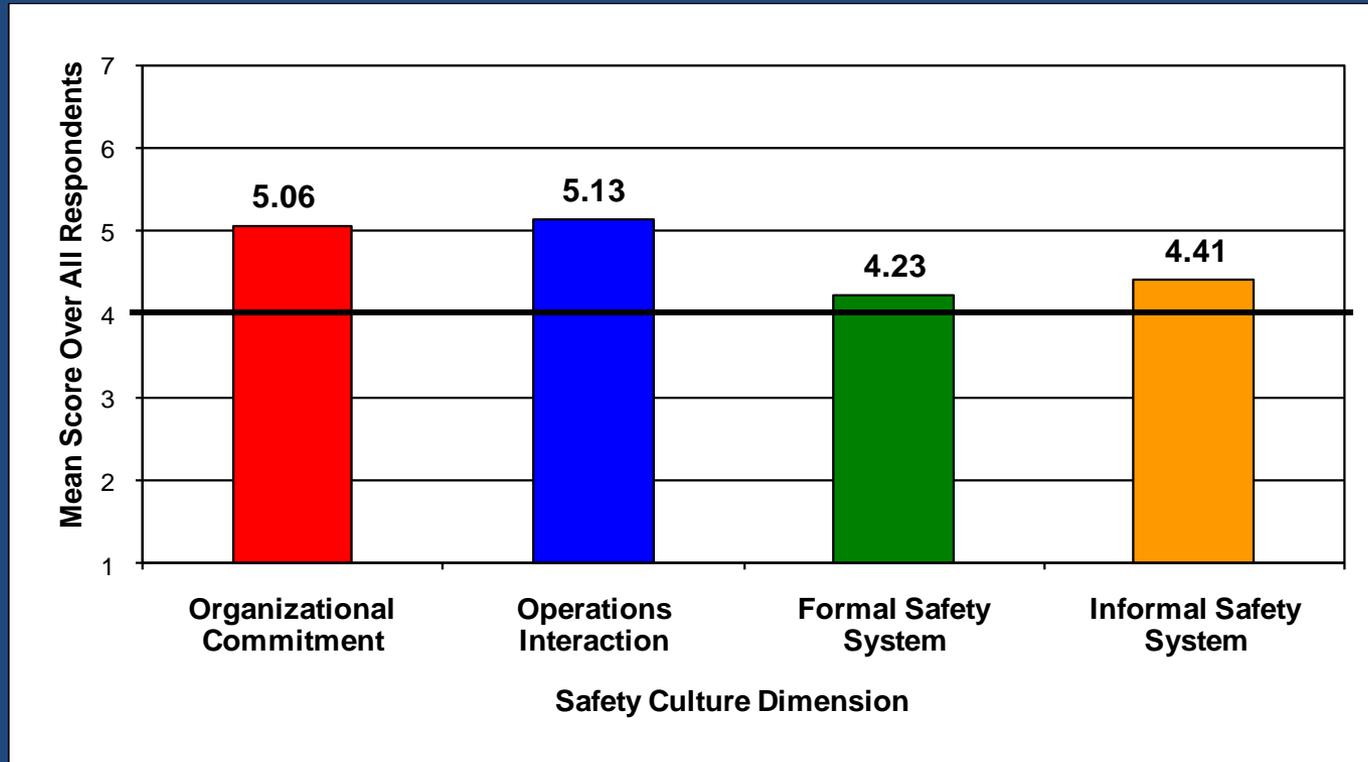
Overall Safety Culture Scores 9 HEMS Operations



Preliminary Data 3 February 2009
HEMS Flight Operations only



Overall Safety Culture Scores 9 HEMS Operations



Preliminary Data 3 February 2009
HEMS Medical Operations only



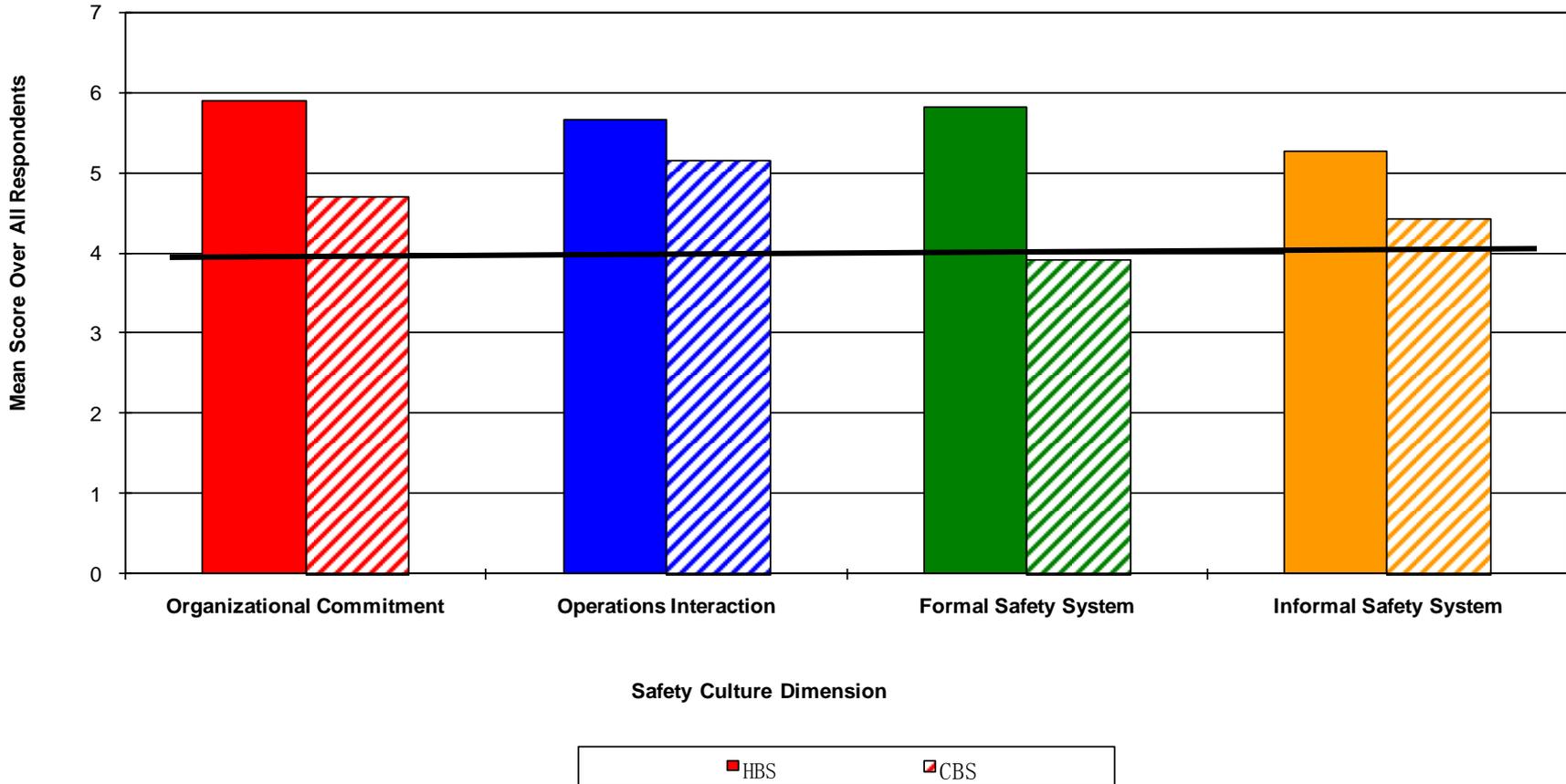
Mean Comparisons – Line Pilot v. Supervisor/Manager



Preliminary Data 3 February 2009
HEMS Flight Operations only



Mean Comparisons – Hospital-Based v. Community-Based Service



Preliminary Data 3 February 2009
HEMS Flight Operations only



What's the Initial Indication?

- In general, indicators of Safety Culture in HEMS flight operations are positive.
- Pattern of higher scores overall in
 - Organizational Commitment
 - Operations Interaction
- Pattern of lower scores overall in
 - Formal Safety System
 - Informal Safety System



What are Problem Areas?

- High variability (within organizations) – reflecting inconsistencies in culture.
 - e.g., Reporting Systems, Response and Feedback, Coordinated AMRM Training, Middle Management (e.g., base or site management)
- A few areas with negative indications of safety culture.
- The following slides are a brief overview of some of the problematic areas represented in the safety culture survey. This is not a comprehensive analysis.



Dispatch – Problematic Items

Dispatch consistently emphasizes up-to-date information or details (e.g., weather, fuel requirements, PIREPS, NOTAMs) that affect flight safety.

mean

4.82

High
variability

When making a go/no go decision, dispatch takes the time to adequately identify and evaluate risks associated with operations including: duty time of pilots, weather, weight, condition of aircraft, type of transport, flight distance, fuel, and ground operations.

3.84

Negative
Indication

Prior to flight, dispatch/pilots establish minimum flight altitudes and methods to determine those altitudes for all route segments to be flown which provide the required terrain clearance, taking into account all data that is available.

3.37

Negative
Indication



Training – Problematic Items

The organization's training includes flight simulation in the geographical area of operations and facility approaches.

mean

3.74

Negative
Indication

Team training (e.g., AMRM including pilots, medical crews, comms, mtc) is routinely scheduled.

5.21

High
variability

This item's mean is positive, but significant low loading variance, and comments suggest that AMRM training is redundant, is a checkbox, does not include everyone, and occurs in isolation of other groups.

Flight Operations – Problematic Items

All flight operations, including ferry flights back to base, are conducted under FAR Part 135 specifications.

mean

3.81

Negative
Indication

The organization has dedicated/published flight routes for inter-facility transports.

2.74

Negative
Indication

[Hospital] Helipad approaches are coordinated by a local controller so local traffic is aware of one another.

4.12

High
variability



Flight Operations – Problematic Items

* Reverse coded (high scores are good)

	mean	
Pilots routinely fly at or above published MSA/MSEA.	2.07	Negative Indication
*Pilots rarely walk the site prior to departing at the scene	2.49	Negative Indication
Even when equipped to do so, pilots prefer not to fly IFR.	4.51	High variability
Accepted a heavier load (e.g., patient) than advisable under weight and balance specifications, due to the urgency of EMS operations.	4.51	High variability



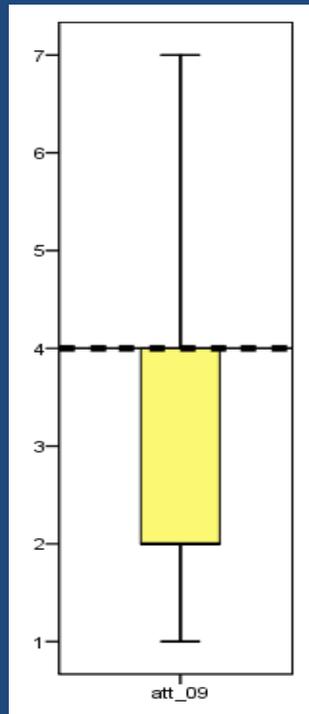
Negative Risk Perception Items

***Accidents will happen, no matter how careful we are.**

***As a HEMS pilot, I accept personal risk as part of the job.**

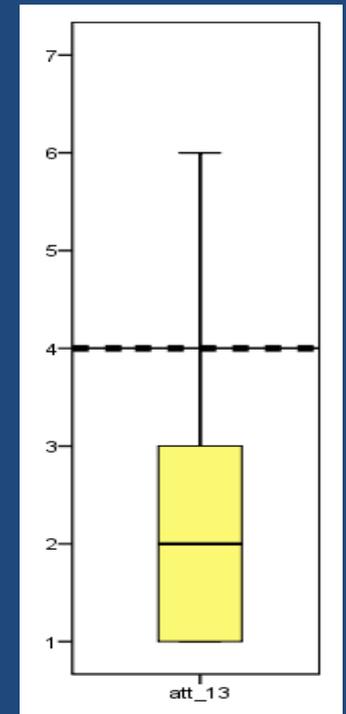
mean

3.09



mean

2.79



*** Reverse coded (high scores are good)**

Institute of Aviation



University of Illinois

Thank You

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