



NTSB National Transportation Safety Board

Reduce Risk –
The Power of
Collaboration:
The Airline
Industry Success Story

Presentation to: International
Association of Claims Professionals

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Outline

- **Complex Systems of Subsystems**
- **Using Collaborative “System Think” to Reduce Risk While Improving Productivity in Complex Systems**
- **Roles of Leadership and Regulator**
- **Applicability of Collaboration to**
 - **Other Industries in Hazardous Endeavors**
 - **Workplace Safety**

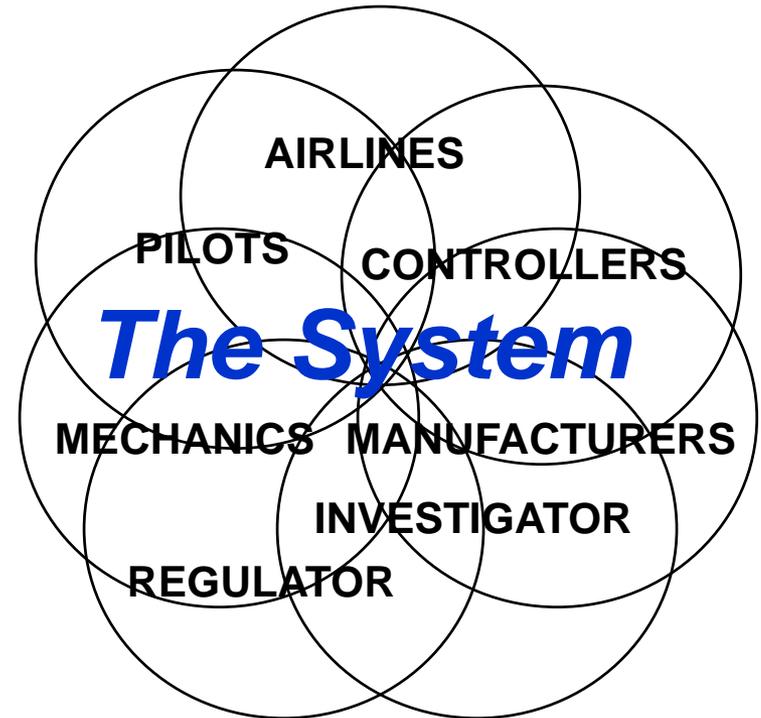
NTSB 101

- Independent federal agency, investigate transportation mishaps, all modes
- Determine probable cause(s) and make recommendations to prevent recurrences
- Primary product: Safety recommendations
 - Favorable response > 80%
- ***SINGLE FOCUS IS SAFETY***
- Independence
 - Political: Findings and recommendations based upon evidence rather than politics
 - Functional: No “dog in the fight”



Complex System of Subsystems

- **More System**
Interdependencies
 - Large, complex, interactive system
 - Often tightly coupled
 - Hi-tech components
 - Continuous innovation
 - Ongoing evolution
- **Safety Issues Are More Likely to Involve**
Interactions Between Parts of the System



Effects of Increasing Complexity:

More “human error” because

- **System more likely to be error prone**
- **Operators more likely to encounter unanticipated situations**
- **Operators more likely to encounter situations in which “By the Book” may not be optimal (“workarounds”)**

The Result:

Front-line staff who are

- Highly trained
- Competent
- Experienced,
- Trying to do the right thing, and
- Proud of doing it well

. . . yet they still commit

**Inadvertent
human errors**

The Solution: System Think

Understanding how a change in one subsystem of a complex system may affect other subsystems within that system



“System Think” via Collaboration

Bringing all parts of a complex system together to collaboratively

- **Identify potential issues**
- ***PRIORITIZE* the issues**
- **Develop solutions for the prioritized issues**
- **Evaluate whether the solutions are**
 - **Accomplishing the desired result, and**
 - **Not creating unintended consequences**



Fix the Person or the System?

Is the **person**
clumsy?

Or is the
problem . . .

The *step*???



Enhance Understanding of Person/System Interactions By:

- Collecting,
 - Analyzing, and
 - Sharing
- ## Information

Objectives:

Make the System

***(a) Less
error prone***

and

***(b) More
error tolerant***

The Health Care Industry

To Err Is Human:

Building a Safer Health System

“The focus must shift from blaming individuals for past errors to a focus on preventing future errors by designing safety into the system.”

Institute of Medicine, Committee on Quality of Health Care in America, 1999

New and Improved Paradigm

How It Is Now . . .

You are highly trained

and

If you did as trained, you
would not make mistakes

so

You weren't careful
enough

so

You should be **PUNISHED!**

How It Should Be . . .

You are human

and

Humans make mistakes

so

Let's *also* explore why the
system allowed, or failed to
accommodate, your mistake

and

Let's **IMPROVE THE SYSTEM!**

Sustainable Risk Reduction

- **Conventional Wisdom:**

Improvements that reduce risk usually
also reduce productivity

- **Lesson Learned from
Proactive Aviation Safety Programs:**

Risk can be reduced in a way that also results in
immediate productivity improvements

Major Source of Information: Hands-On “Front-Line” Employees

**“We knew about
that problem”**

***(and we knew it might hurt
someone sooner or later)***

Next Challenge



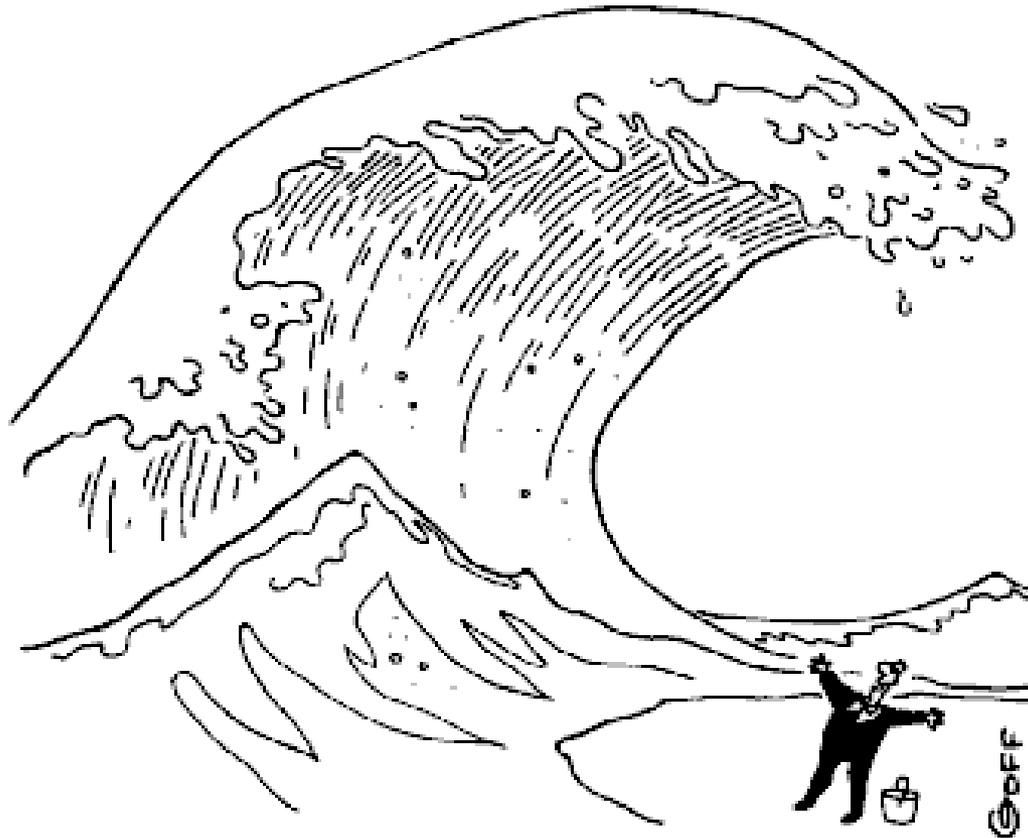
Legal/Cultural Issues

Improved Analytical Tools

As we begin to get over the first hurdle, we must start working on the next one . . .

Information Overload

© 1996 Ted Goff



"EUREKA! MORE INFORMATION!"

From Data to Information

Tools and processes to convert large quantities of data into useful information

Data Sources

Info from front line staff and other sources

DATA



Analysts

USEFUL

INFORMATION

Smart Decisions

- Identify issues
- **PRIORITIZE!!!**
- Develop solutions
- Evaluate interventions

Tools

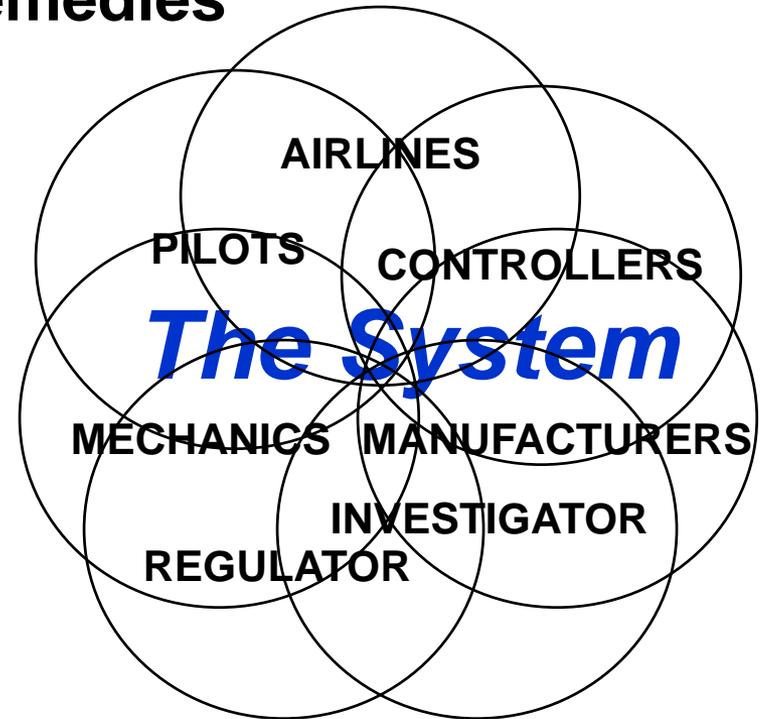


Processes

Aviation “System Think” Process

Engage all participants in identifying problems and developing and evaluating remedies

- Airlines
- Manufacturers
 - *With the systemwide effort*
 - *With their own end users*
- Air Traffic Organizations
- Labor
 - *Pilots*
 - *Mechanics*
 - *Air traffic controllers*
- Regulator(s)



Success Story

83% decrease in fatal accident rate,
1998 - 2007

largely because of
System Think

fueled by
***proactive safety
information programs***

P.S. Aviation was already considered **VERY SAFE** in 1998!!

Moral of the Story

Anyone who is
involved in the *problem*
should be
involved in the *solution*



Major Paradigm Shift

- **Old: The regulator identifies a problem, develops solutions**
 - Industry skeptical of regulator’s understanding of the problem
 - Industry fights regulator’s solution and/or implements it begrudgingly
- **New: Collaborative “System Think”**
 - Industry involved in identifying problem
 - Industry “buy-in” re interventions because everyone had input, everyone’s interests considered
 - Prompt and willing implementation
 - Interventions evaluated . . . *and tweaked as needed*
 - Solutions probably more effective and efficient
 - Unintended consequences much less likely

Challenges of Collaboration

- Human nature: “I’m doing great . . . *the problem is everyone else*”
- Participants may have competing interests, e.g.,
 - Labor/management issues
 - May be potential co-defendants
- Regulator probably not welcome
- Not a democracy
 - Regulator must regulate
- Requires all to be willing, *in their enlightened self-interest*, to leave their “comfort zone” and think of the System

The Role of Leadership

- Demonstrate safety commitment . . .
but acknowledge that mistakes will happen
- Include “Us” (e.g., System) issues,
Not just “You” (e.g., training) issues
- **Make safety a middle management metric**
 - Engage labor early
 - Include the **System** --
manufacturers, operators, regulator(s), and others
- Encourage and facilitate reporting
 - Provide **feedback**
 - Provide adequate **resources**
 - **Follow through** with action

How The Regulator Can Help

- Emphasize the importance of System issues *in addition to* (not instead of) worker issues
 - Encourage and participate in industry-wide “System Think”
- Facilitate collection and analysis of information
 - Clarify and announce *policies for protecting information and those who provide it*
 - Encourage other industry participants to do the same
- Recognize that *compliance* is very important, but the *mission is reducing systemic risk*

Applicability of Collaborative Approach:

- Other Industries in Potentially Hazardous Endeavors**
 - Other Modes of Transportation**
 - Nuclear Power**
 - Petroleum Exploration, Refining**
 - Chemical Manufacturing**
 - Healthcare**
 - Financial Industries**
 - Other**
- Workplace Safety, All Industries**

Note Workplace Safety Differences

- **Workplace safety focuses on compliance rather than safety**
 - **Focus on compliance stops upon achieving compliance; focus on safety does not stop and produces much higher level of safety**
- **CAST success story results from collaboration**
 - **Workplace safety rarely includes all interested parties, e.g., manufacturers, regulator**

Collaborative Beta Test

- **Select most troublesome area**
 - **Nagging problem for many years**
 - **Many interventions have been tried, not successful**
 - **Likelihood that problems are systemic, not just people**
 - **Collaboration as effort to address the systemic problems**
 - **Employees eager to engage in process that is focused on improvement rather than punishment**

- **Select “Collaborative Corrective Action Group” that includes all who have a “dog in the fight”**
 - **Management**
 - **Labor**
 - **Manufacturers**
 - **Regulators**
 - **Others?**

Conclusions

- ***Safety issues in complex systems usually involve human/system interface issues***
- ***Collaboration can help address not only the human performance issues but also the system issues***
- ***Collaboration can also help ensure that safety improvement programs also improve productivity, which makes the safety improvements more sustainable***
- ***Aviation industry collaboration success is transferable to other industries and to workplace safety***



Thank You!!!



Questions?