**NTSB** National Transportation Safety Board

# Collaboration:

# *Safety Culture*

# *at the*

# *Industry Level*

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Name: Christopher A. Hart

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# Outline

- **Industry Collaboration to Reduce Risk**

- **Also Improves Productivity**
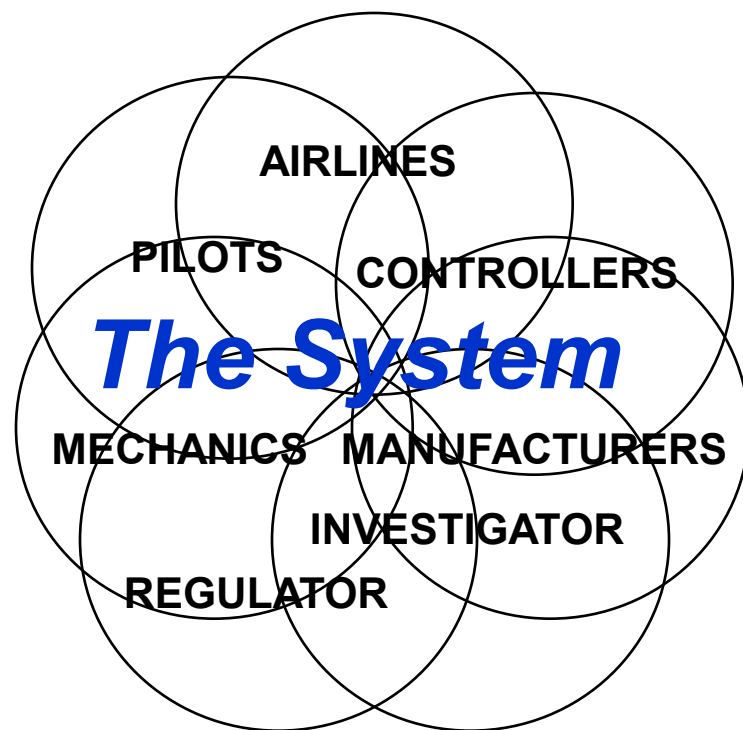
- **Role of Leaders and Regulators**

# NTSB 101

- **Independent federal agency, investigate transportation accidents, all modes**
  - **Political "independence"**
  - **Functional independence**

- **Findings, recommendations based upon evidence rather than self-interest or politics**

- **Determine probable cause(s) and make recommendations to prevent recurrences**

- ***SINGLE FOCUS IS SAFETY***

- **Primary product:  Safety recommendations**
  - **Favorable response > 80%**

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# The Context: Increasing Complexity

- **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***

**AIRLINES**

**PILOTS**    **CONTROLLERS**

*The System*

**MECHANICS**    **MANUFACTURERS**

**INVESTIGATOR**

**REGULATOR**

# 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 Solution – System Think

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

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# "System Think" via Collaboration

**Bring representatives from all parts of a complex system together to**

- **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**

# Collaboration:  A Major Paradigm Shift

- **Old:  Regulator identifies a problem and proposes solutions**
  - Industry skeptical of regulator's identification or understanding of the problem
  - Industry resists regulator's solutions and/or implements them begrudgingly

- **New:  Collaborative "System Think"**
  - Industry involved in identifying problem
  - Industry has "ownership interest" re solution because everyone has input, outcome reflects everyone's interests
  - Understanding of other perspectives is enhanced
  - Prompt and willing implementation (and tweaking)
  - Solution probably more effective and efficient
  - Unintended consequences much less likely

# Challenges of Collaboration

- Human nature: "I'm doing great . . . *the problem is everyone else"*

- Differing and sometimes competing interests
  - Labor-management issues between participants
  - Participants are potential adversaries

- 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

# Objectives:

**Make the System**

*(a) Less Error Prone*

**and**

*(b) More Error Tolerant*

# Aviation Success Story

**65% Decrease** in Fatal Accident Rate,
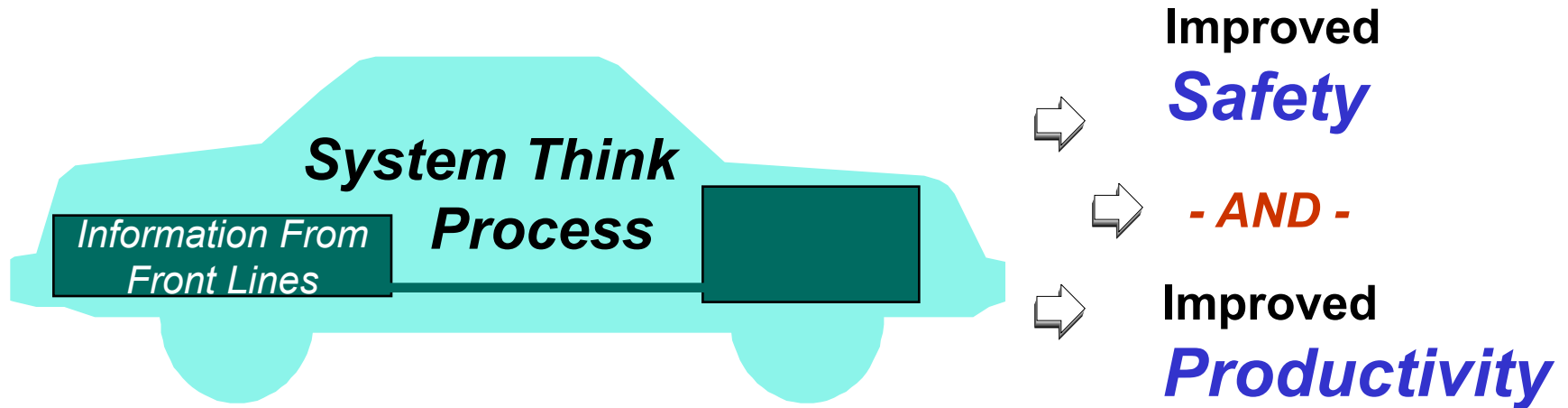
**1997 - 2007**

largely because of

*System Think*

fueled by

*Proactive Safety Information Programs*

P.S.  Aviation was already considered *VERY SAFE* in 1997!!

# Process Plus Fuel:  A Win-Win

**System Think Process**

**Information From Front Lines**

Improved
**Safety**

*- AND -*

Improved
**Productivity**

**So . . . Is Safety Good Business*?***

– *Safety implemented poorly can be very costly (and ineffective)*

– *Safety implemented well, in addition to improving safety more effectively, can also create benefits greater than the costs*

# 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 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 *objective is reducing systemic risk*

# Thank You!!!



*Questions?*