



**NTSB** National Transportation Safety Board

**Role of  
Economic Regulators  
In  
Improving Safety**

Presentation to:

NARUC Annual Meeting

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# NTSB 101

- Independent federal agency, investigate transportation accidents, all modes
- Determine probable cause(s) and make recommendations to prevent recurrences
- Single focus is *SAFETY*
- Primary product:  
Safety recommendations
- Recommendation acceptance rate: > 80%



# The Context: Increasing Complexity

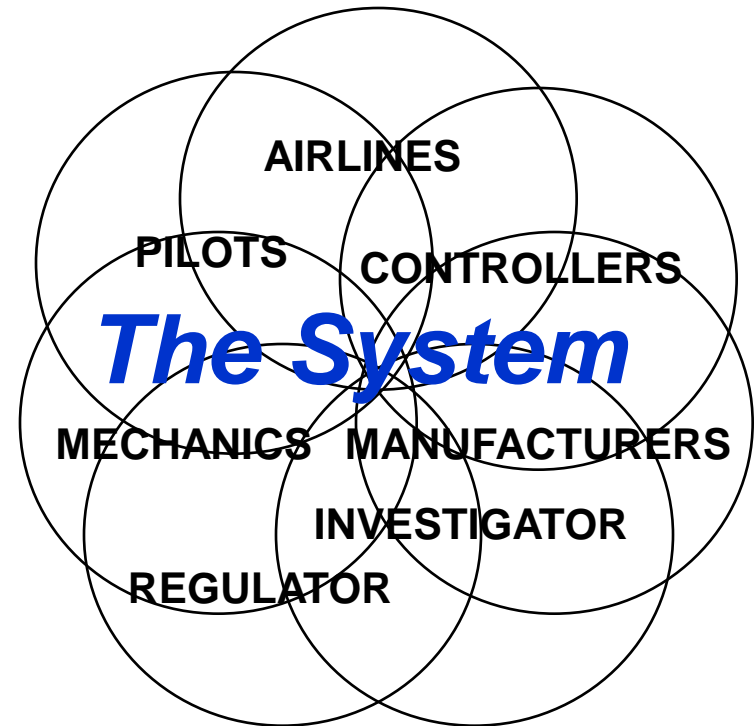
- **More System**

  - ***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***



# The Pleasant Surprise

## - Conventional Wisdom:

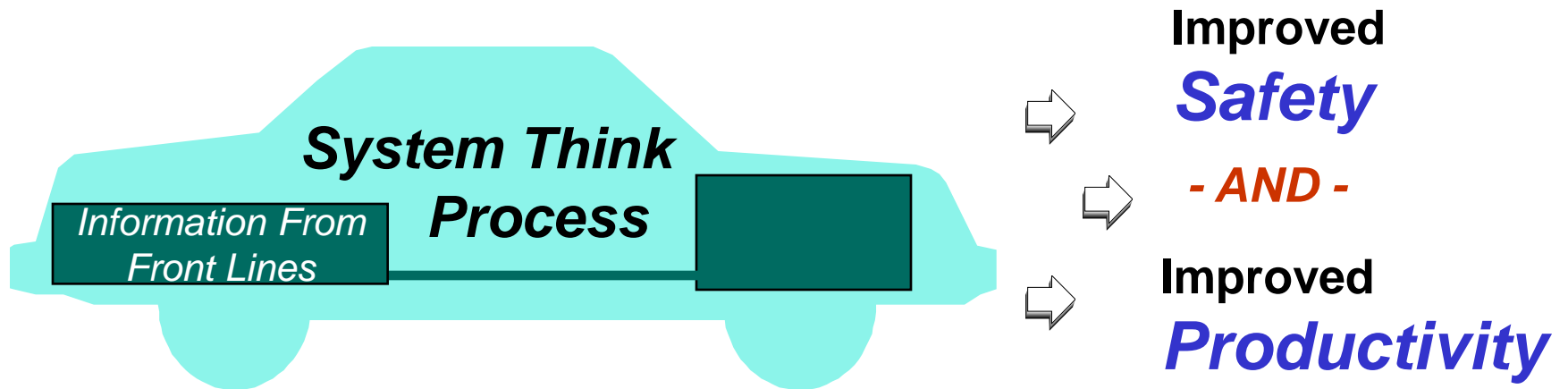
Improvements that reduce risk usually  
*also reduce productivity*

## - Lesson Learned from Proactive Aviation Safety Programs:

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



# Process Plus Fuel Creates A Win-Win



# Aviation Success Story

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

largely because of

***System Think***

fueled by

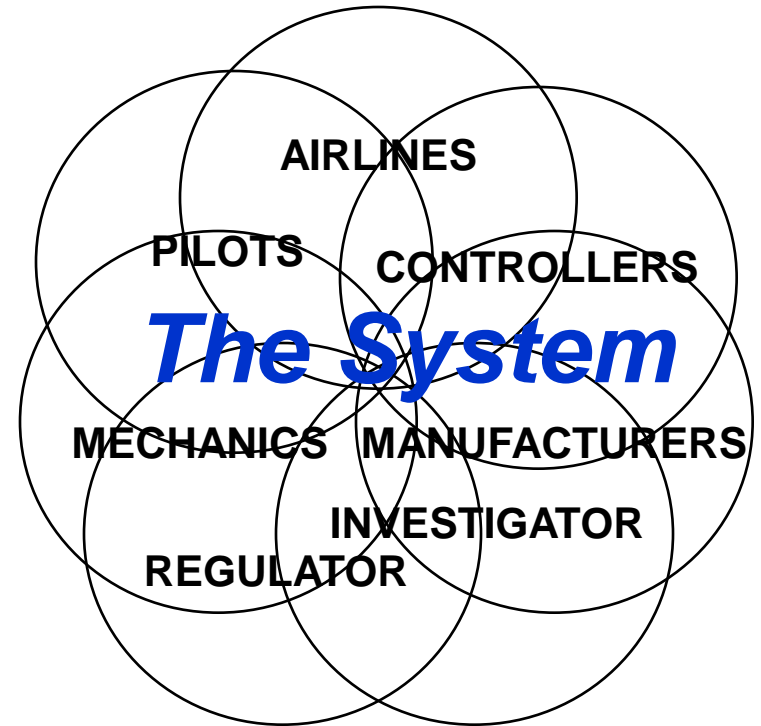
***Proactive Safety  
Information Programs***

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



# Aviation “System Think” Success

- 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) [Query: Investigator(s)?]



# Major Paradigm Shift

- **Old: The safety regulator identifies a problem, develops solutions**
  - Industry skeptical of regulator’s understanding of the problem
  - Industry also skeptical of regulator’s proposed solution; fights it and/or implements it begrudgingly
  
- **New: Collaborative “System Think”**
  - Industry involved in indentifying problem
  - Industry “buy-in” re solution because everyone had input, everyone’s interests considered
  - Prompt and willing implementation
  - Solution probably more effective and efficient
  - Unintended consequences much less likely





# Challenges of Collaboration

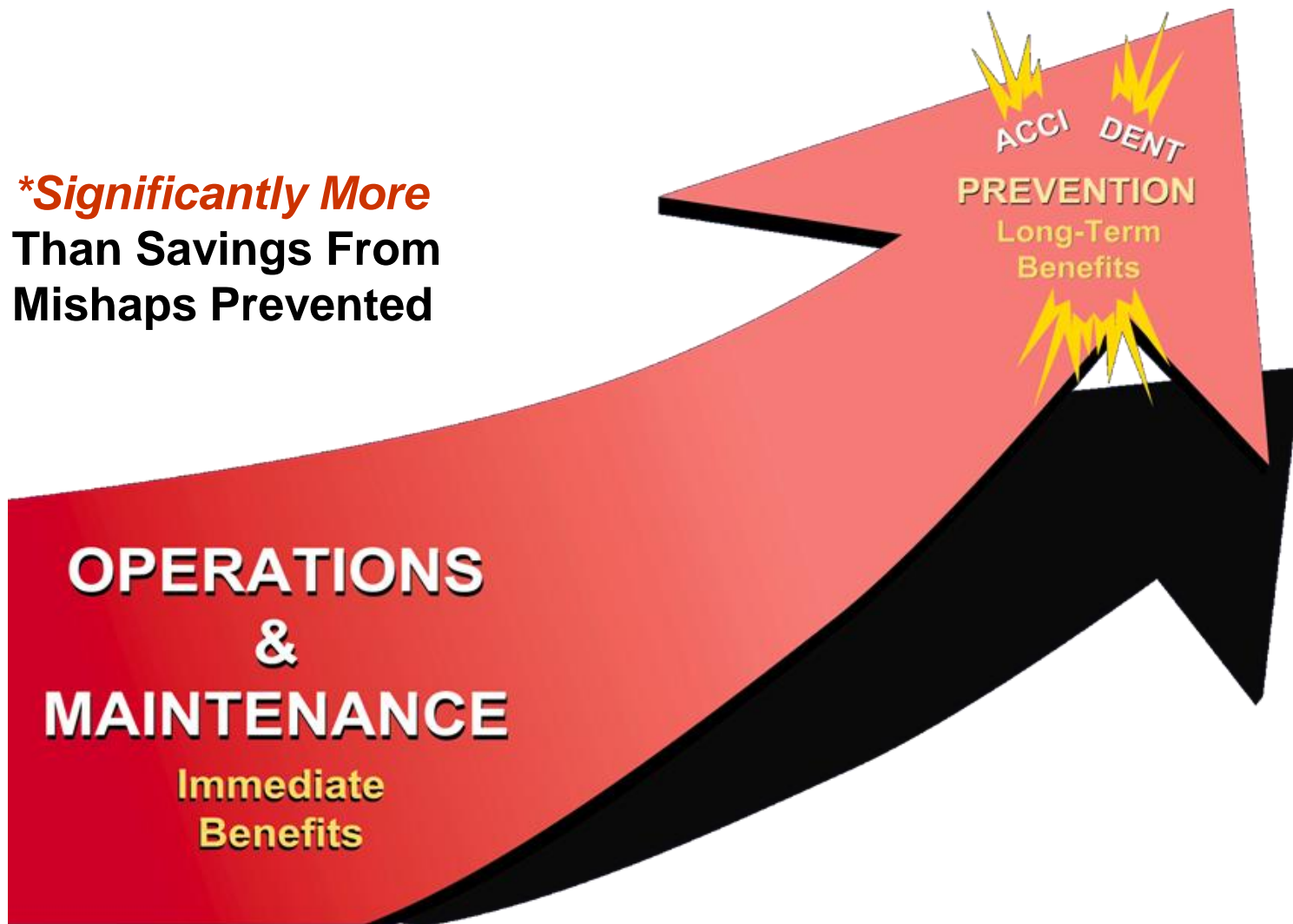
- Requires all to be willing, in their enlightened self-interest, to leave their “comfort zone” and think of the System
- Not a democracy
  - Regulator must regulate
- Regulator probably not welcome
- Labor/Management issues between some participants
- Participants are potential co-defendants

TRUST



**Major Benefit: Savings\***

***\*Significantly More***  
**Than Savings From**  
**Mishaps Prevented**



# Collaboration at Different Levels

- **Entire Industry**
- **Company (Some or All)**
- **Type of Activity**
- **Facility**
- **Team**



# Query

How does Collaboration enable

*Safety Improvements*

while also resulting in

*Improved Productivity???*



# **Costly Result\$ (at the Company Level) Of Safety Improvements Poorly Done**

## **Safety *Poorly* Done**

### **1. Punish/re-train operator**

*-Poor workforce morale*

*-Poor labor-management relations*

*-Labor reluctant to tell management what's wrong*

*- Retraining/learning curve of new employee if "perpetrator" moved/fired*

*- Adverse impacts of equipment design ignored, problem may recur because manufacturers are not involved in improvement process*

*- Adverse impacts of procedures ignored, problem may recur because procedure originators (management and/or regulator) are not involved in improvement process*

## **Safety *Well* Done**

**Look beyond operator  
also consider system  
issues**



# Costly Result\$

## Of Safety Poorly Done (con't)

### Safety *Poorly* Done

#### 2. Management decides remedies unilaterally

- *Problem may not be fixed*
- *Remedy may not be most effective, may generate other problems*
- *Remedy may not be most cost effective, may reduce productivity*
- *Reluctance to develop/implement remedies due to past remedy failures*
- *Remedies less likely to address multiple problems*

#### 3. Remedies based upon instinct, gut feeling

- *Same costly results as No. 2, above*

### Safety *Well* Done

#### Apply “System Think,” *with workers*, to identify and solve problems

#### Remedies based upon evidence (including info from front-line workers)

# Costly Result\$ Of Safety Poorly Done (con't)

## Safety *Poorly* Done

4. Implementation is last step

- *No measure of how well remedy worked (until next mishap)*
- *No measure of unintended consequences (until something else goes wrong)*

## Safety *Well* Done

Evaluation after implementation

## Conclusion: 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***



# Role of The Safety Regulator

- 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 *mission is reducing systemic risk*





# Question to Consider:

- **What role, if any, should economic regulators play in encouraging collaborative safety improvement processes**
  - **At the industry level?**
  - **At the company level?**
  - **At any level?**



Thank You!!!



*Questions?*

