The Next Generation of (Safety) Regulation for HRO's

Federal Aviation Administration

Presentation to: HSS Visiting Speakers Program

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Aviation Safety Experience

- Conventional Wisdom:

More vigorous regulation and enforcement
will result in improved safety

- Lesson Learned from Experience:

There is a mishap rate plateau beyond which
further improvement necessitates
a more collaborative approach
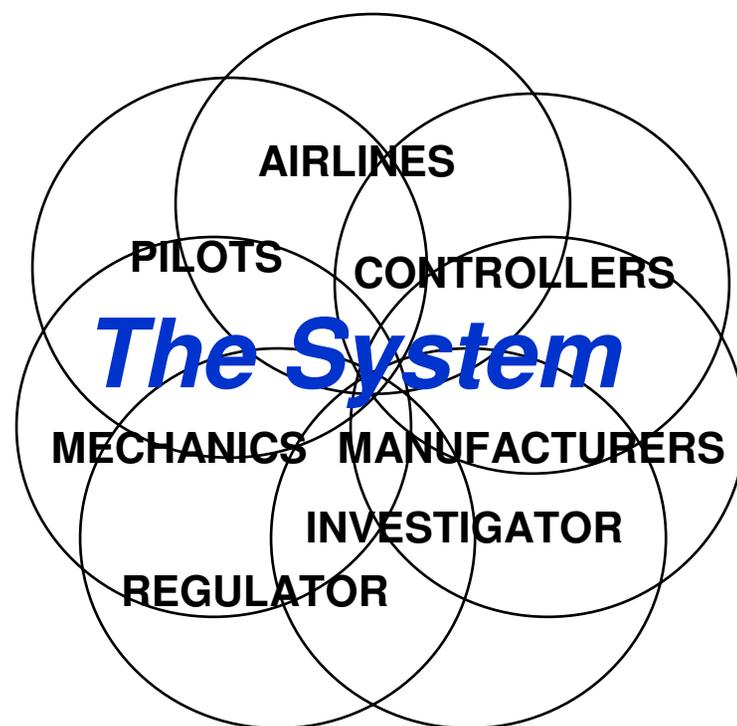
The Context: Increasing Complexity

- **More System** *Interdependencies*
  - Large, complex, interactive system
  - Often tightly coupled
  - Hi-tech components
  - Continuous innovation
  - Ongoing evolution

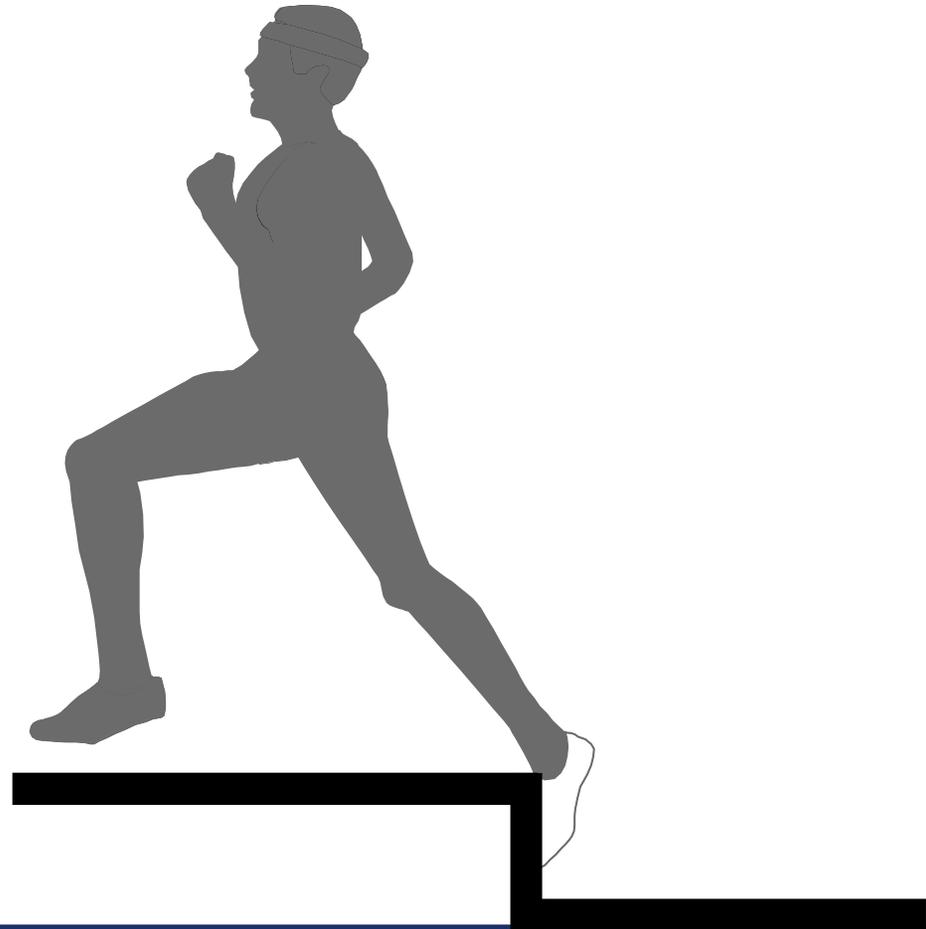- **Safety Issues Are More Likely to Involve** *Interactions Between Parts of the System*

AIRLINES

PILOTS   CONTROLLERS

The System

MECHANICS   MANUFACTURERS

INVESTIGATOR

REGULATOR

When Things Go Wrong . . .

Is the **Person** *clumsy?*

Or is the problem . . .

The *Step???*

Response to Human Error

The Good Ol' Days . . .

You are highly trained

and

If you did as trained, you wouldn't make mistakes

so

You weren't careful enough

so

You should be PUNISHED!

(Swat Mosquitoes)☐

Where It's Going . . .

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!

(Drain the Swamp)☐

Enhance Understanding of Person/System Interactions By:

- Collecting,

- Analyzing, and

- Sharing

Information

Major Source of Information: "Front-Line" Employees

"We Knew About That Problem"

(and we also knew it might hurt someone sooner or later)
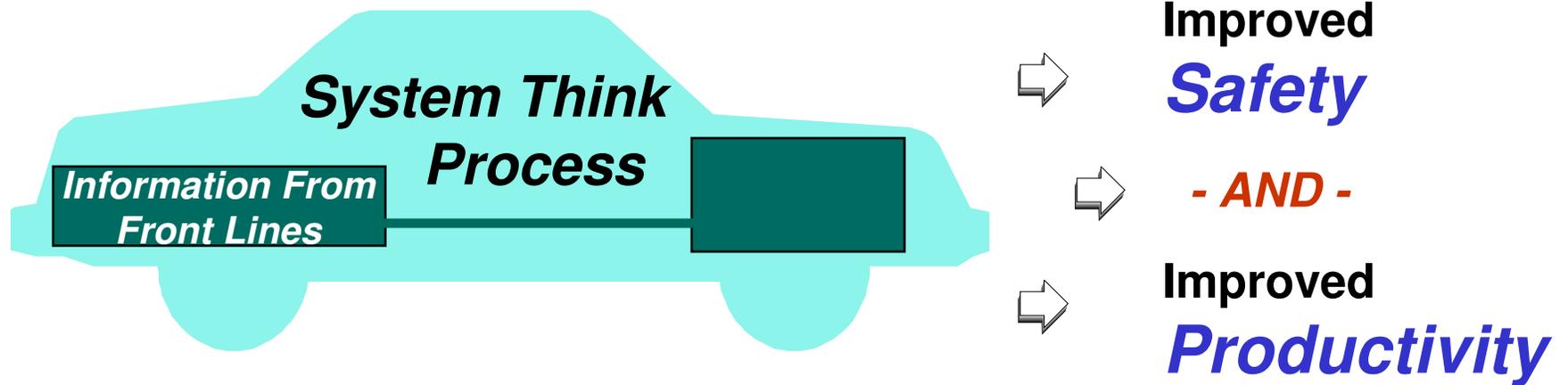
Two Objectives:

Make the System
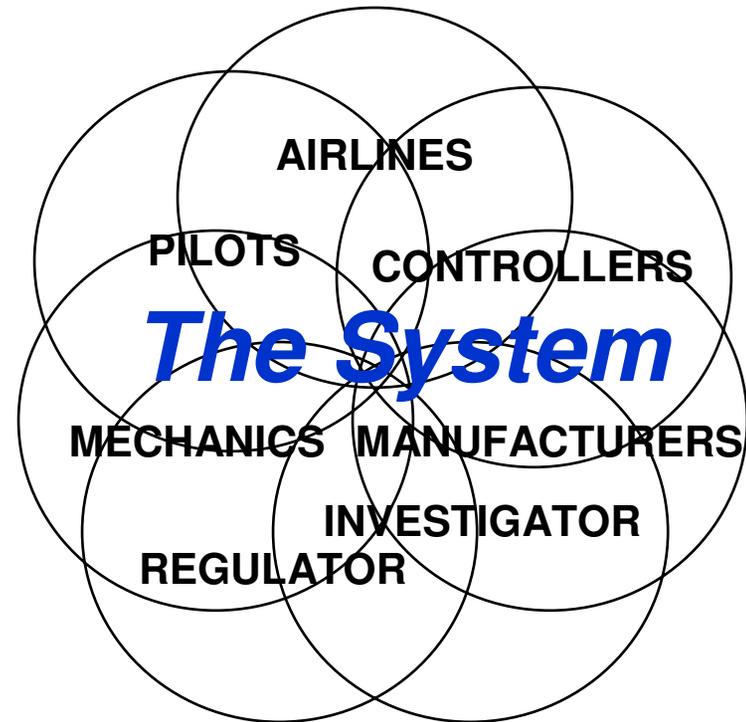
(a) Less Error Prone

and

(b) More Error Tolerant

Collaboration Can Facilitate:

System Think Process

Information From Front Lines

Improved **Safety**

- AND -

Improved **Productivity**

Aviation "System Think"

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)?]**

AIRLINES
PILOTS   CONTROLLERS
The System
MECHANICS   MANUFACTURERS
INVESTIGATOR
REGULATOR

How The Regulator Can Help

- **Emphasize Importance of System Issues In Addition to Operator 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*

Aviation Success Story

65% Decrease in Fatal Accident Rate,
1997 - 2007

largely because of
Proactive
Safety Information Programs

plus

System Think

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