



RCAM Training

Engineering Safety
Instruction for High
Reliability Operations.

John Gadzinski
Four Winds Aerospace Safety

The Motivation

Paul Sichko – Part 139 Group

Jerry Ostronic – FAA Lead



John Gadzinski – Part 121 Group

Agenda

- Defining the problem
- Designing the learning objectives
- Additional elements
 - Safety Theory
 - TALPA ARC Corp Knowledge



Collaborating Partners

- Minneapolis Airport
- Global Aviation Services LLC
- Four Winds Aerospace Safety Corp
- Zodiac Arresting Systems America
- Avatar Partners Inc.
- Ssi Safety and Security Instruction
- Pro Media Productions
- Sun Country Airlines



AVATAR
PARTNERS

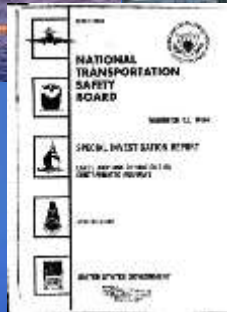




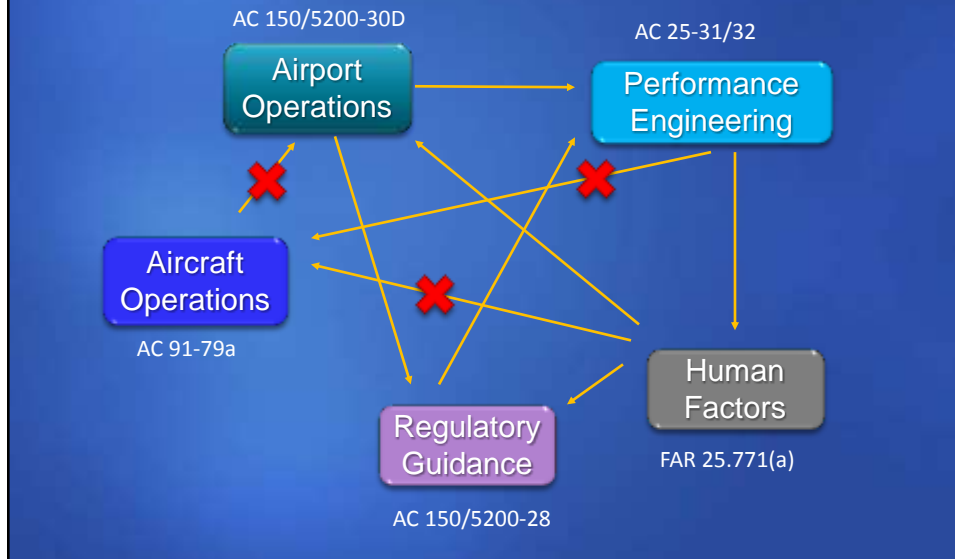
Defining the Challenge

What needed to be changed and why

The Catalyst



The Relationships – Tightly Coupled



The Problem of Complexity

- Opposing Goals
- Multiple Constraints
- Unpredictable Interactions
- Can't regulate good judgement!!

Successful systems are always making compromises that their very nature create vulnerabilities.

Complex systems naturally create unexpected risks.



“The cost of successful business may be borne in other parts of the system through a series of interdependencies and interactions they don’t know about.” Dekker

Seeing Safety

The procedures should make it better, right?

Accidents are **NORMAL** in complex operations.

Your ability to see subtle cues within the RCAM process is essential to making the system work!



Creating excellence



Designing a world class training program

Engineering Learning Objectives

Modelled after US Navy study on comparing flight training to simulator training for carrier landings.



Training Questions

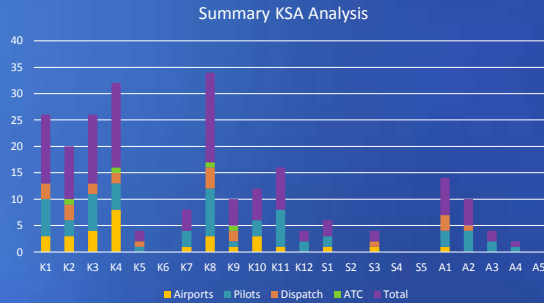
- Who is required to do something with the RCAM?
- What are the types of operations involved?
- What are the tasks associated with each?
- What cues are necessary to identify a task?
- What do they need to complete each task?
- How much risk is involved if the task fails?

Operators



Knowledge – Skills - Attitudes

- Knowledge
 - Declarative (knowing that)
 - Procedural
 - Rational
 - Problem Solving (knowing solutions)
- Skills
 - Motor Skills
 - Complex Functions
- Attitudes
 - Teamwork
 - Leadership
 - Trust
 - Motivation



Knowledge Tree



Generic Learning Objectives

Type Specific Learning Objectives

- ❖ Airports
- ❖ Dispatch/Perf Engineering
- ❖ Pilots

Other stakeholders can use elements or all

- FAA Safety Inspectors
- ATC
- Investigators (NTSB, TSB, Etc.)
- Industry

Leading Edge Safety



Leading Edge Safety Concepts

Safety Evolution



Reactive



Proactive



Predictive

Modern Safety Concepts

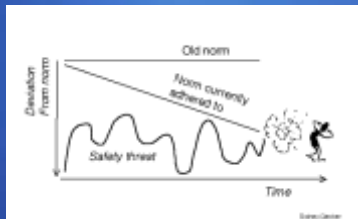
Resilience Engineering

Pre-occupation with failure
Mindfulness



Drift

Normal operations that slowly change

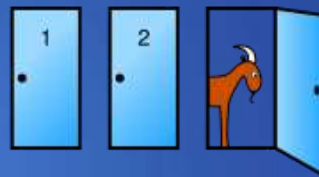


Black Swans

High consequence surprises



Conditional Probability





Providing Insight

Going beyond the written guidance

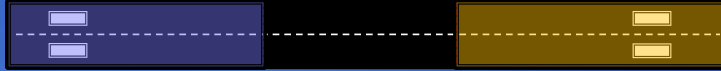
Unanimous Consensus

Making Safety Sausage



RCAM Background

- Why are we reporting in 3rds?



- Do safety margins change between takeoff and landing?



RCAM Background

- What was all the fuss about MU?



- Is there a special meaning behind the word "assessment" in the RCAM acronym?

Excellence in Learning



Immersive, engaging, and effective learning

Integrated Multi Media Instruction



Questions?

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