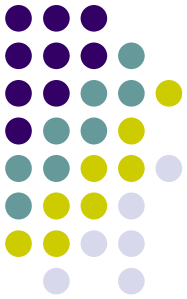
Learning from a Tragic Organizational Failure:
Coordination, Complexity & Drift

Friendly Fire: The Accidental Shootdown of U.S. Black Hawks over Northern Iraq

April 14, 1994



Backdrop

- For over 1,000 days, pilots and crews assigned to Operation Provide Comfort flew mission after mission, totaling over 50,000 hours of flight operations, without a single accident…till… (Shalikashvilli, 1994)

The Incident

- April 14, 1994: In clear skies over the mountains in northern Iraq, two U.S. Air Force F-15 Eagle fighters shot down two U.S. Army UH-60 Black Hawk helicopters—killing all 26 peace-keepers on board
- …as a crew of 19 AWACS Air Traffic Controllers in charge of those four aircraft looked on
- Worst case of “friendly fire” in the U.S. military since World War II

The Question

- How in the world could this happen?

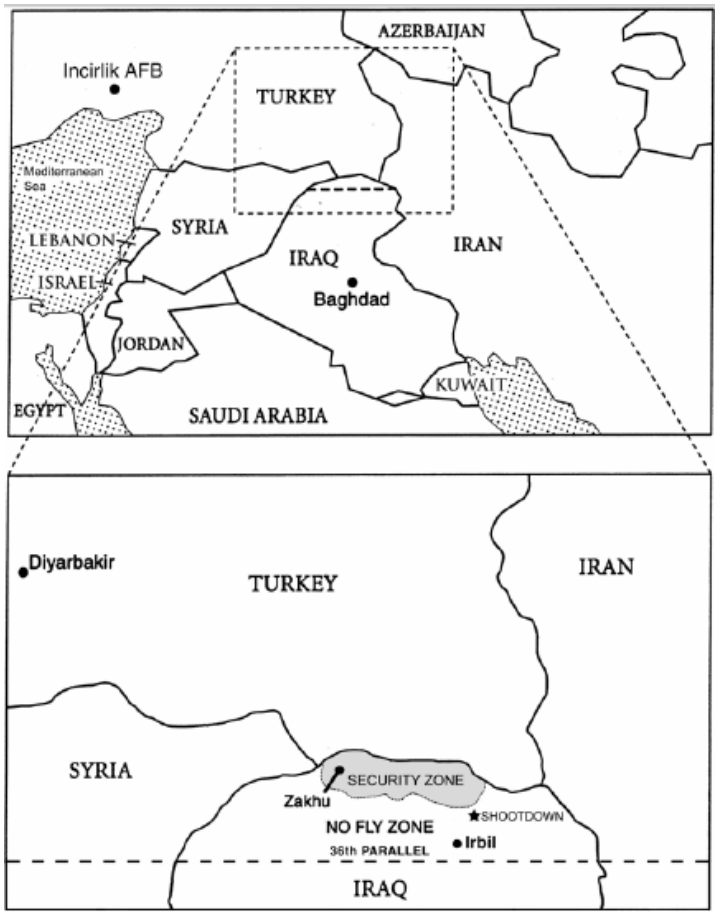
Study of Organizational Failures

- Background to studies of Organizational failures
  - Perrow, C. ***Normal accidents****: Living with high risk technologies*. New York: Basic Books, **1984**.
  - Rochlin, G.I., La Porte, T.R. & Roberts, K.H. **The self-designing high-reliability organization**: Aircraft carrier operations at sea. *Naval War College Review*, **1987**, 40, 76–90.
  - Vaughan, D. ***The Challenger launch decision***. Chicago, IL: University of Chicago Press, **1996**.
  - Weick, K.E., Sutcliffe, K. & Obstfeld, D. **Organizing for high reliability**. *Research in Organizational Behavior*, **1999**, *21*, 81–123.

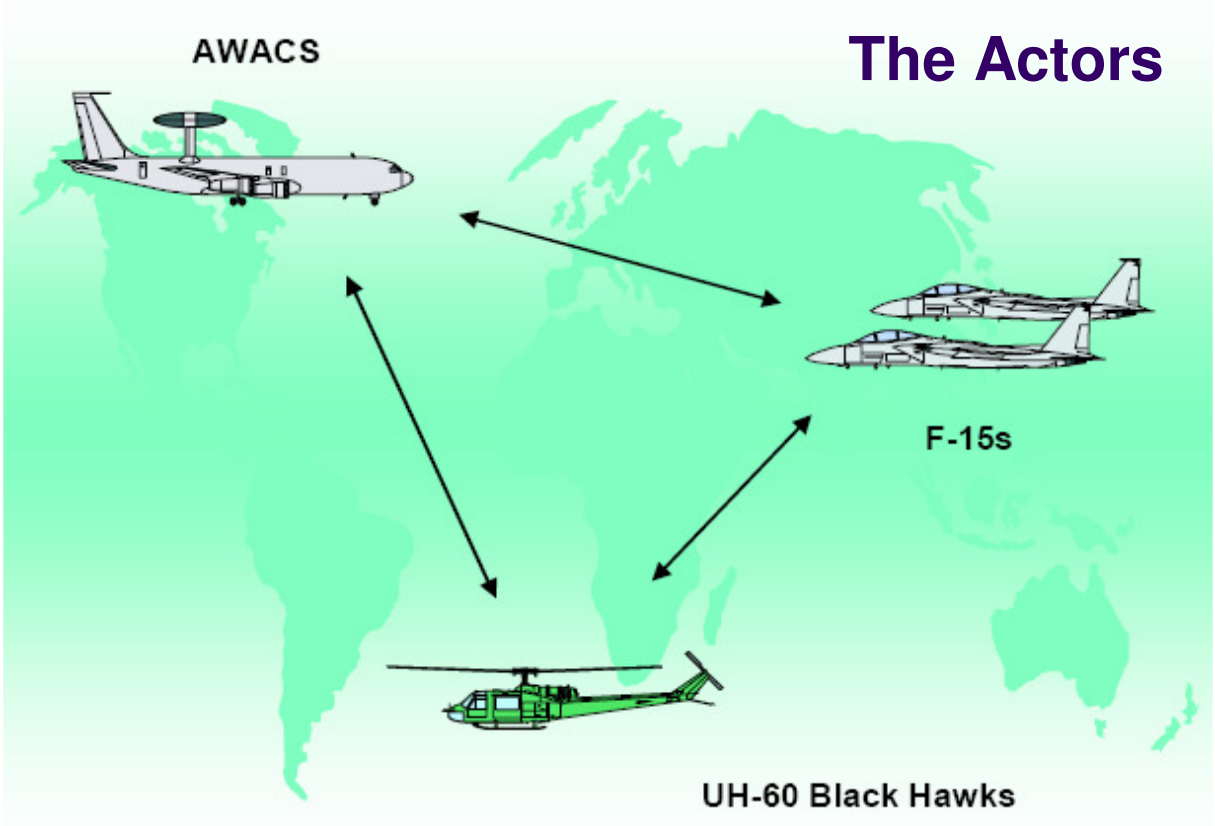
Study of Organizational Failures

- Contribution of this study
  - Scott Snook (2000) introduces new perspectives on organizational failure
    - Idea of “Practical drift”
  - George R. Terry Book Award (AOM), 2002

The Site



The Actors



Purpose

- Understand the challenges of leading in large complex organizations
- See how “decisions” and “non-decisions” play out in these organizations

Context

- Raw facts and the amount of information available (which is NOT generally the case in most other instances/contexts) make it a compelling story
- Participants freed from product, industry and market details that often distract them from recognizing deeper lessons

Framing the Basic Puzzle

- After the shootdown:
- If you were leaders accountable to stakeholders and the public, what would you be doing?
- What would the media and public clamour be?

SECDEF Perry's Bullets

- F-15 pilots misidentified the Black Hawks
- AWACS crew failed to intervene
- Helicopters not integrated into Task Force
- Identification Friend or Foe (IFF) failed

Reframing the Basic Puzzle

- Some classic analyses from the past:
  - Graham Allison's classic analysis of the Cuban Missile Crisis titled ***Essence of Decision*** (1971)
  - Diane Vaughan's examination of the Space Shuttle Challenger disaster titled ***The Challenger Launch Decision*** (1996)
- Any analysis emphasizing ultimate human proximate cause reinforces our natural inclination to ***blame the individual***.
- Reframing the basic puzzle as one of "***making sense***" radically shifts the focus of inquiry.

Our Questions

1. Why did this tragedy occur? What are the root causes of the shootdown?

a) Why did the F-15 pilots see what they saw?

b) Why did no one in the AWACS intervene?

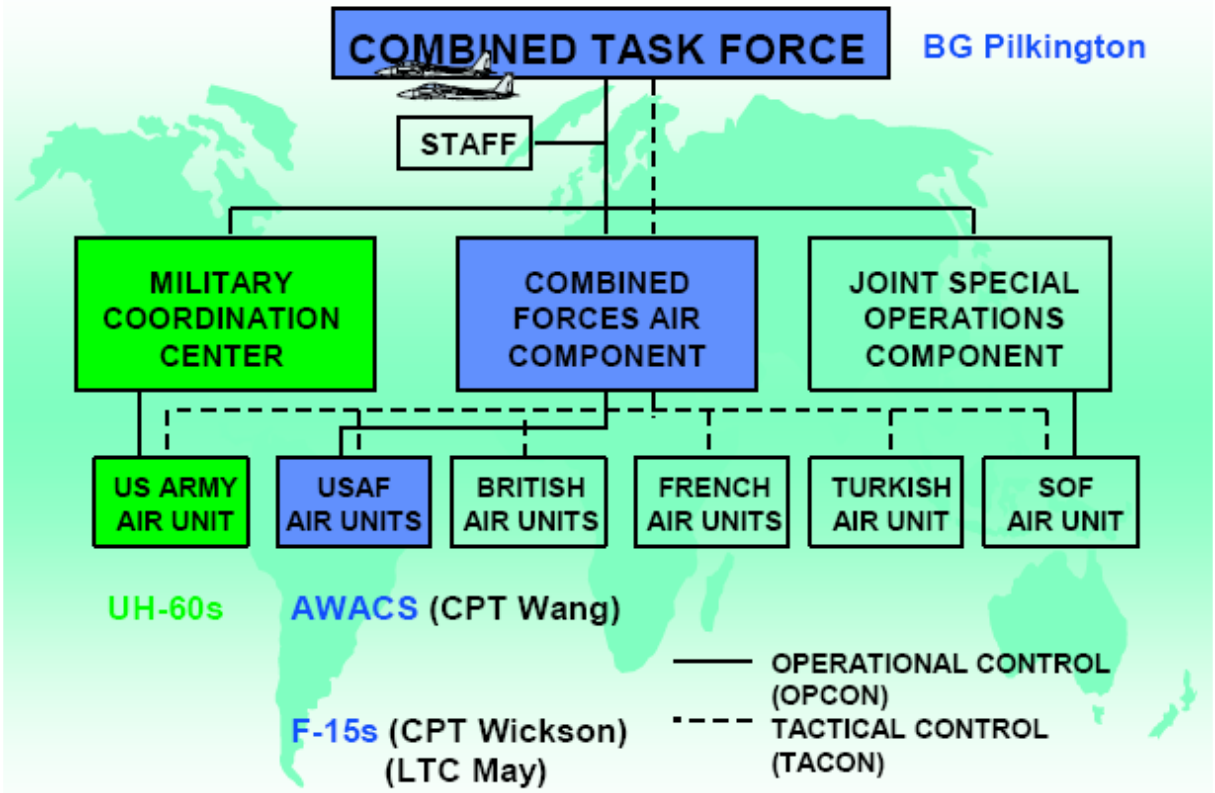
c) Why were Army helicopters not very well integrated into Task Force operations?

d) What went wrong with the Identify Friend of Foe (IFF) system?

Our Questions

2. **So, whom would you hold accountable? Why?**
3. **What changes would you recommend as a result of this tragedy?**
4. **What are the implications for leading in complex organizations?**

- Okay, now all of you to adopt the role of an “Air Force Investigating Officer” given the task to find out:
  - How in the world could this happen?
  - Whom would you hold accountable?



Inside an AWAC

Hard Crews?

- Nice in theory, but “hard” to do in practice
- USAF policy states that “all crews should be – as hard as possible”
- “Spin-Up” training required AWACS crews to have two complete sessions in the Simulator
- They didn’t…
- And, the shootdown happened in the first hours of the first day this AWACS crew was operating together in the NFZ.

Weak AWACS Crew

- Why such a weak crew?
  - not a real team
  - constantly deployed
  - poor command climate
- The entire AWACS command was experiencing a great deal of stress
  - being asked to “do more and more with “less and less”
- As leaders, how do you know when you can’t do any more with any less? How do you know when you’ve reached the edge? Do you have to fall off—like our AWACS example—before you know that your organization has reached its limit?

AWACS Crew

- *Maj Tracy defends his crew's inaction by claiming they didn't do anything (wrong)! "We didn't pull the trigger; we didn't order; we didn't direct; we didn't detect."*
- AWACS is an Airborne *Warning* and *Control* System
- "Why didn't they warn? Why didn't they control? Why didn't they do something, anything?"

Crew Failure

- Everyone was responsible; no one was
- The fallacy of social redundancy
- High performance teams characterized by inter-dependence
  - "Optimal Undermanning"
- Status hierarchy
- Aircraft Commander (Cdr) (pilot)
- Airborne Command Element (ACE or DUKE)
- Mission Crew Cdr (Maj. Tracey)
- Staff Mission Crew Cdr
- Senior Director (Capt. Wang)
- Air Surveillance Officer
- Controllers (Enroute, NFZ, Tanker)

Why weren't the helicopters integrated into TF operations?

- not on the flow sheet
- in NFZ prior to fighter sweep
- talking to the wrong controllers
- incompatible radios
- squawking the wrong IFF code
- long history of inter-service rivalry
- different cultures
- Army and Air Force pilots didn't:
  - live together
  - work together
  - play together

Why did the F-15 pilots misidentify the helicopters?

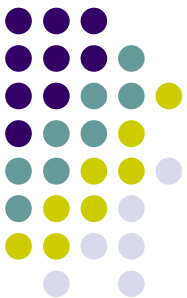
- **Strong set of expectations**:
  - Intelligence brief
  - Sweep mission
  - First on flow sheet
  - AWACS clear
  - No radio contact
  - IFF sour
  - Wing – squadron commander calls "tally two"
- **Ambiguous Stimulus**:
  - 1,000 feet to one side
  - 500 feet above
  - Imagine a mini-van 5 football fields away
  - @ 450 knots…
  - approaching a mountain
  - Boss behind U
  - You tell me: **What would you see?**

Who done it?

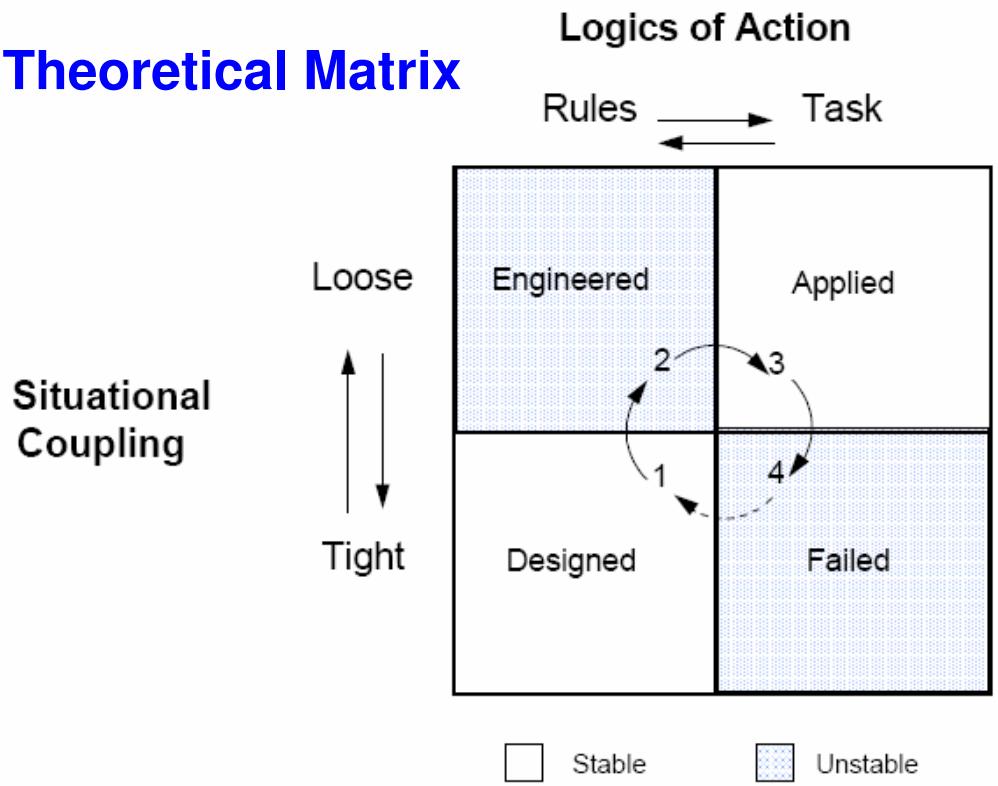
- Whom do you hold accountable?

Practical Drift

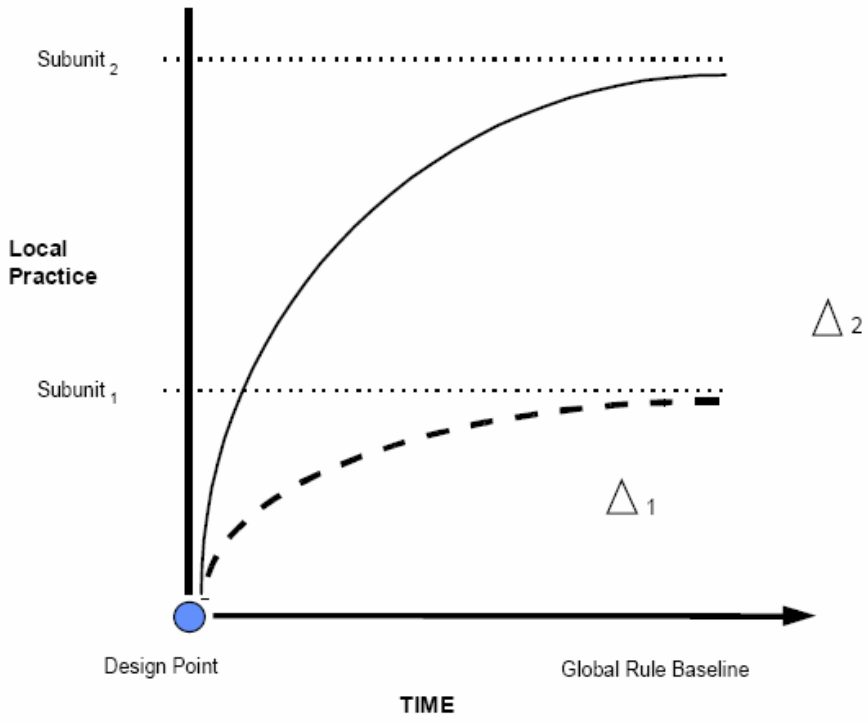
the slow, steady uncoupling of local practice from written procedure



Theoretical Matrix



Practical Drift



Purpose

- Understand the challenges of leading in large complex organizations:
  - *Hidden interdependencies* and impact on reliability and effectiveness
  - *Global alignment* in face of locally successful practice
  - *Managing different cultures* and *coordinating interdependent action* within organizations
  - Potential impact of *status differences* on organizational learning and performance
  - *Causality within and across-levels of analysis*
  - *Responsibility and accountability*

Summarizing

- This was "(a) Normal Accident in a Highly Reliable Organization" (Snook, 2000)
- Holistic system perspective across levels and time to understand the interrelatedness of "complex, ongoing processes"
- Local practical drift from global rules in organizational settings

Looking forward ….

- Understanding that the fundamental question for both theory and practice is: “What are the critical design features of a hyper-complex, multilevel, multi-task, organizational system that increase the likelihood of accomplishing the ‘total task’ consistently?” (Snook, 2000)

Thank you, all

Questions, comments, suggestions…

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