

Waging a Global War on Error

Attacking the Centers of Gravity

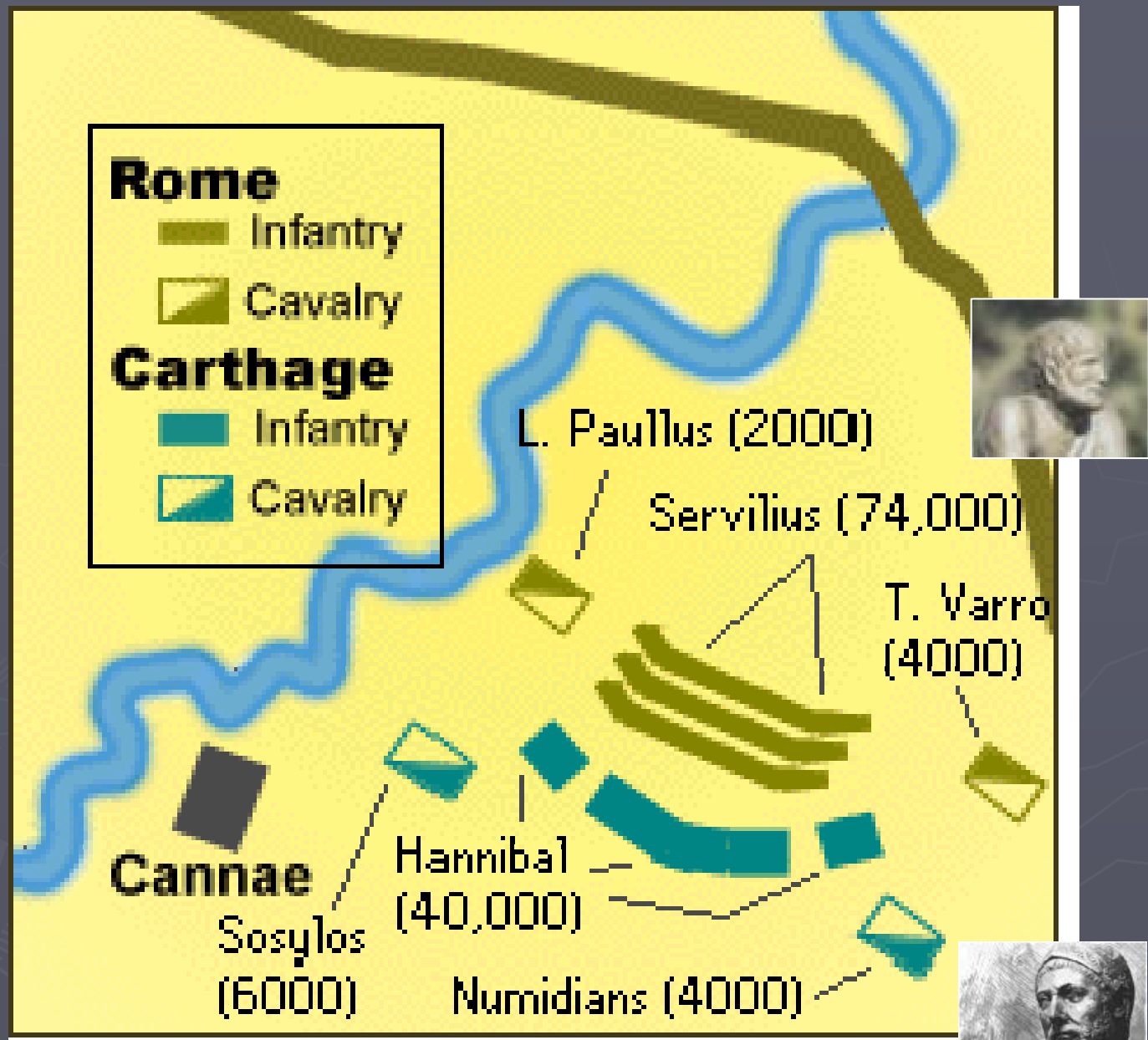
**GLOBAL WAR
ON ERROR**



Flight Test Workshop (Version 5.1)

Pat Daily (M)

Rogers Smith (F)



August 2, 216 B.C.

Four Questions

1. Who are these knuckleheads?
2. What qualifies them to tell me anything?
3. How long do I have to sit here and listen?
4. Is any of this testable or can I doze off?

CFIT is a Humbling Epitaph

- ✓ Bobby Henry
- ✓ Rick Husband
- ✓ Willy McCool
- ✓ Zen Goc*
- ✓ Paul Ziemba*
- ✓ Pete Brown
- ✓ Jim Duricy
- ✓ Don Wiley
- ✓ Rick Gillenwaters
- ✓ Shifty Puls
- ✓ Danny McCarty



Why them . . . and not me?

Our Mission



is to teach mission-oriented human performance with clarity and relevance.

Outcomes

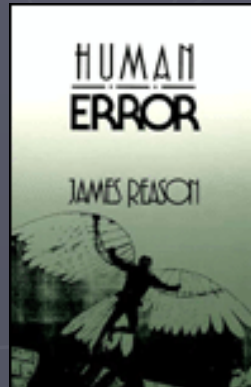
- ✓ More missions accomplished
- ✓ Resources maximized
- ✓ Injuries avoided
- ✓ Lives saved

Objectives

- ✓ Comprehend the concept of “Total Mission Threat”
- ✓ Understand the goals and timeline of the Global War on Error project
- ✓ Define, comprehend and apply the concept of flight test discipline to your environment
- ✓ Identify and counter personal and organizational risks to flight test discipline

We're trusted by the current and future operators of the system. The tools of our trade can be lethal and we engage in operations that involve risk to human life and high-value assets. Our standards simply must be higher . . .

Acknowledgements



Historical Perspective

- ▶ What bad things have happened before?
- ▶ Let's not do that again.



Prognostication

- ▶ What might go wrong?
- ▶ Can we avoid those areas?
- ▶ Can we sneak up on them?



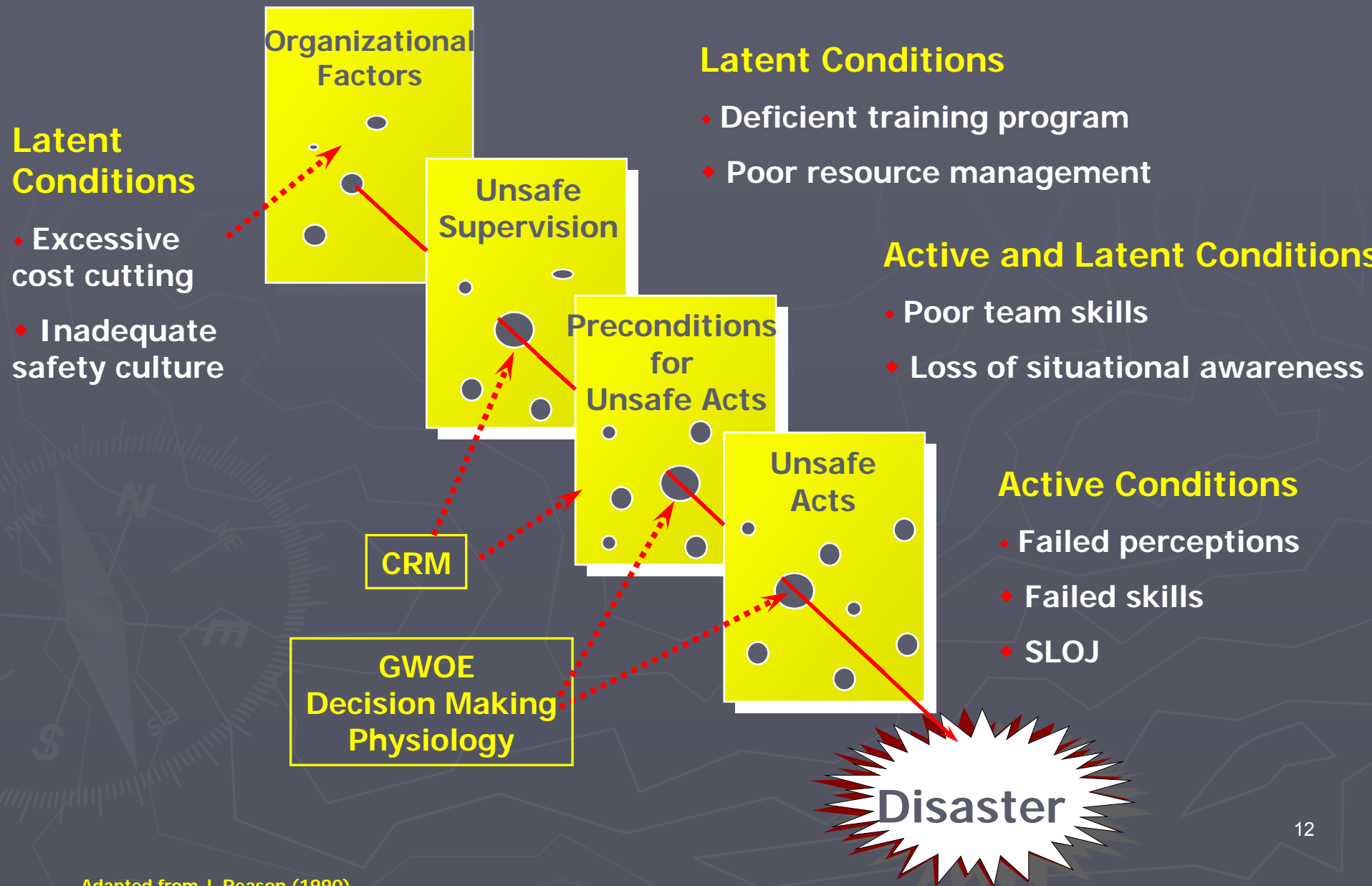
"Try to think of everything, because you won't."

- Col Mart Bushnell

Traditional Safety Program

- ▶ Reason's model
- ▶ Construction of defenses
- ▶ Prevention of last mishap
 - Technology
 - Procedures
 - Avoidance

Reason's Model



Flight Test and Related Mishaps

- ▶ Most recent (20 year) losses not specifically test point related
- ▶ Low-threat, routine or transition phases
- ▶ Slow, but effective, transition to CCCRRM

Flight Test Failures

- ▶ Continuity
- ▶ Discipline
- ▶ Cognitive drop out
 - Fatigue
 - Stress/Fear
 - Exuberance



Continuity Lost

- ▶ Feast or famine
 - Test asset driven
 - Test \$\$ driven
- ▶ Multiple contractor teams
- ▶ Attempting to spread around the good flights

Discipline and Deviance

- ▶ Cords road
- ▶ An element of risk
- ▶ Disney's rule (fear minus death equals fun)
- ▶ Competition – self-induced and imposed

I don't mind dying.
I just don't want to do it
today. And I'd hate
like hell for my
headstone to read:
"Here lies a moron."

- Lawrence Gonzales, "Deep Survival"



Traditional Responses

- ▶ Kill El Jefe
- ▶ Seek new technology
- ▶ Prevent the last accident



New Technology



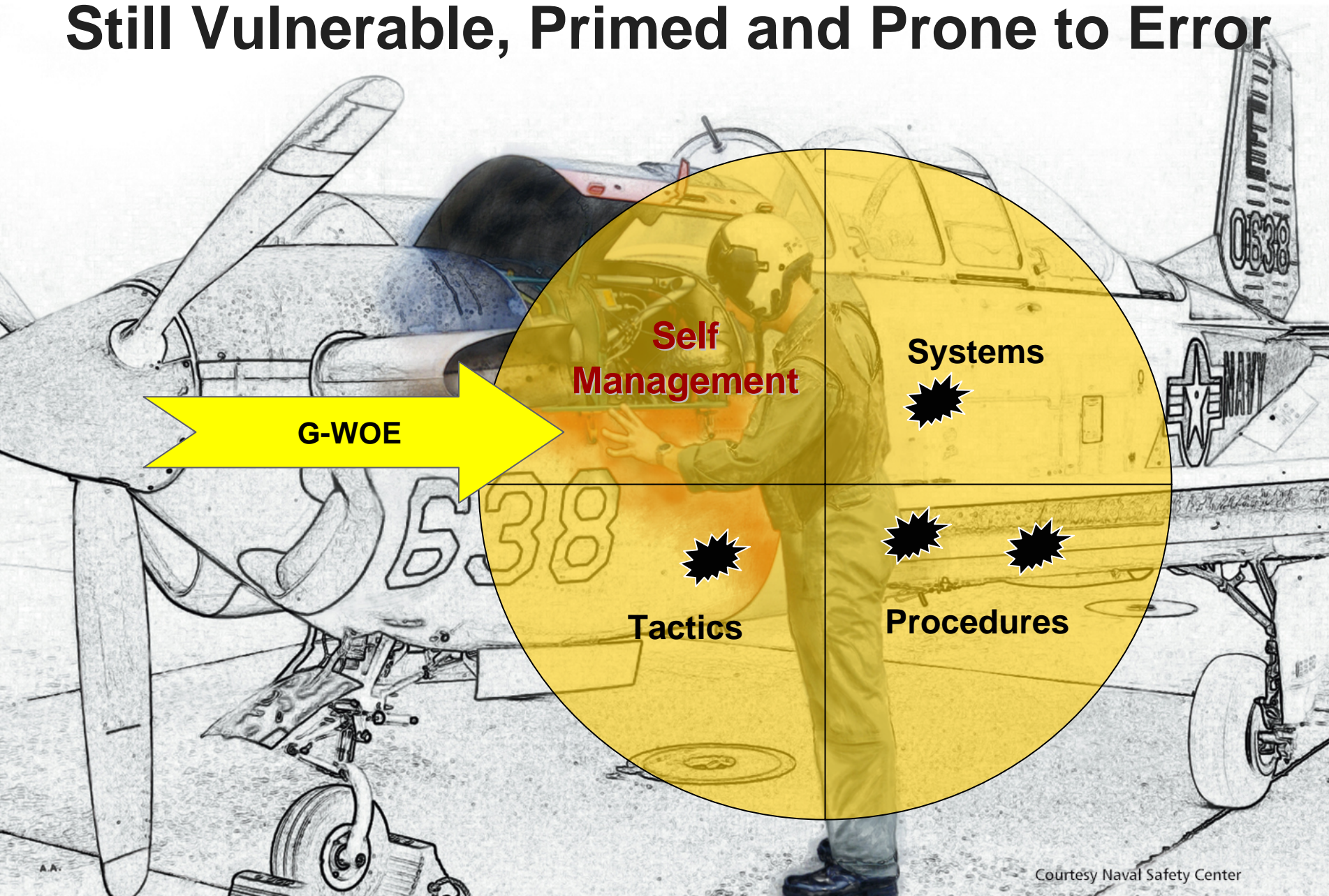
Trying to cut risk or the mishap rate with technology alone is like trying to cut a piece of paper with half a pair of scissors.

Surrender Flags

- ✓ "People will always make mistakes, that's a given."
- ✓ "It's easier to change situations than people."
- ✓ "To err is human . . . it is easier to manage error than to prevent it."
- ✓ "Human error caused mishaps are just the cost of doing business."
- ✓ "We are forced to work with the crooked timber of human fallibility."
- ✓ "The weakest link in the cockpit is wearing a headset."

**GLOBAL WAR
ON ERROR®**

The Aviation Training System: Still Vulnerable, Primed and Prone to Error



Total Mission Threat

Red Threat



MANPAD
Small Arms
AAA
IEDs

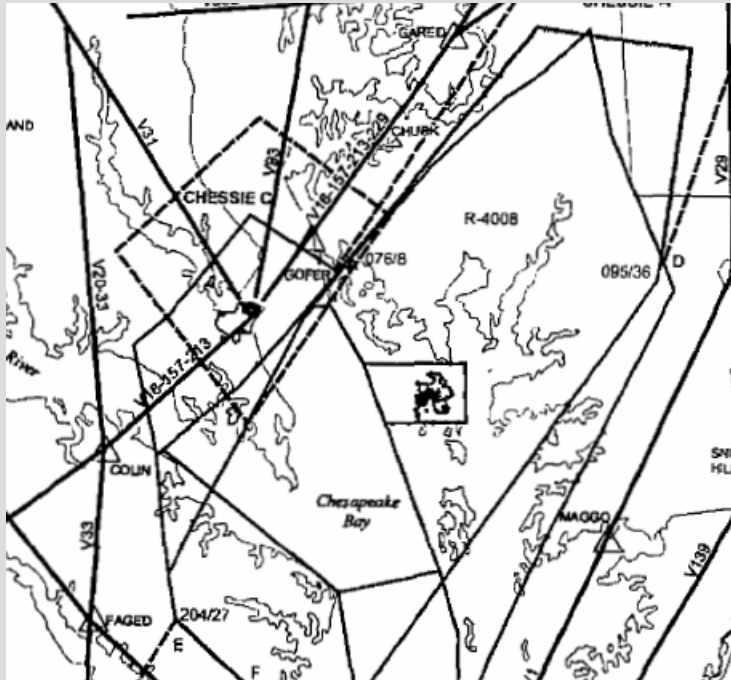
Blue Threat



Human Error
Complacency
Physiological Degrade
Poor Self Management

Total Mission Threat

Red Threat



Envelope Expansion
Range/Chase Limitations
Urgent Operational Need
Airspace

Blue Threat



Human Error
Complacency
Physiological Degrade
Poor Self Management

Red Threat/Blue Threat

(USMC Aviation: OIF II '03 through March 06)

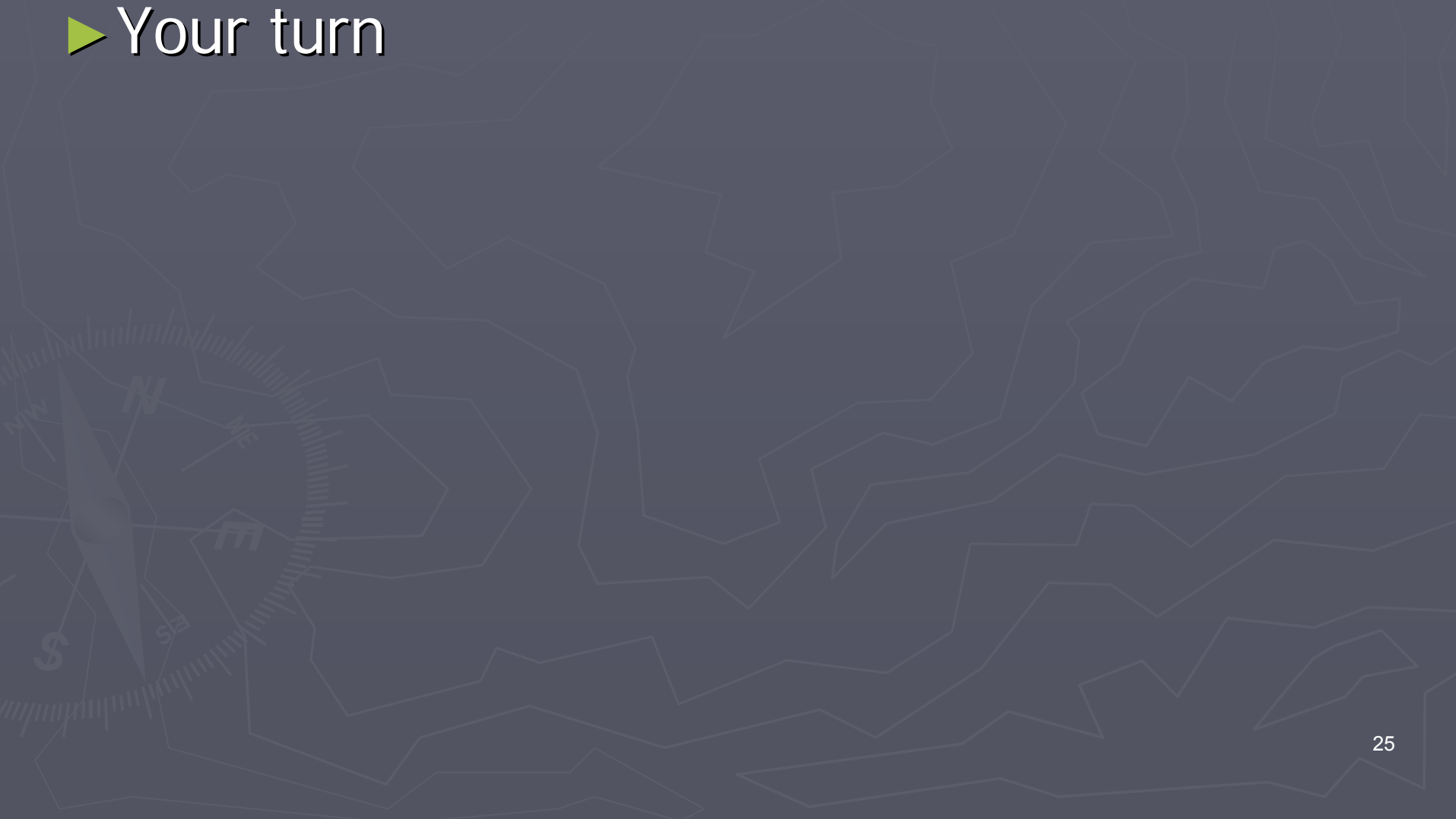
23 Aircraft
38 Fatalities

8 Aircraft
3 Fatalities

► Caveats...

So what do the flight test numbers look like?

► Your turn



Rules or Habits?

Habits are safer than rules; you don't have to watch them. And you don't have to keep them either. They keep you.

- Frank Crane

Our target today is **human error** and our goal is self generated operational habits to address the blue threat.

T
e
s
t
M
i
s
s
i
o
n
C
o
m
p
r
o
m
i
s
e

Engineering, Technology, Tools
and Equipment

Safety Systems, Processes
and Procedures

**GLOBAL WAR
ON ERROR**

Close Fight

Personal
Behaviors

Time

Assumptions

- ▶ People don't intentionally make errors
- ▶ Little understanding of how or why they happen
- ▶ Safe so far = safe forever

First Tough Question

Why should you care about something that has never caused you to compromise a mission or to have an accident?

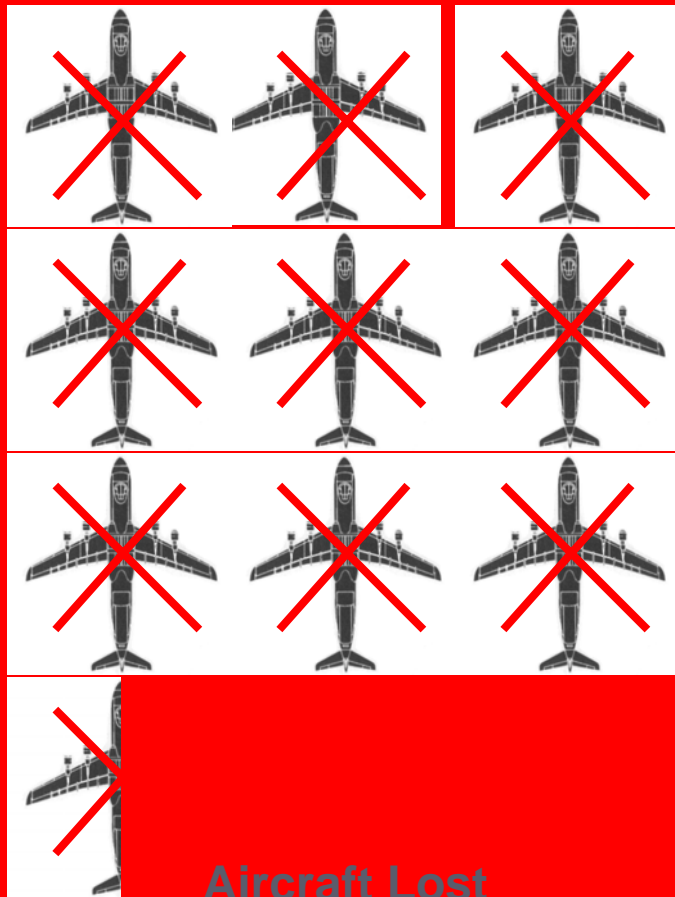
**Things that have never
happened before,
happen all the time.**



Has it Worked? The War on Error So Far

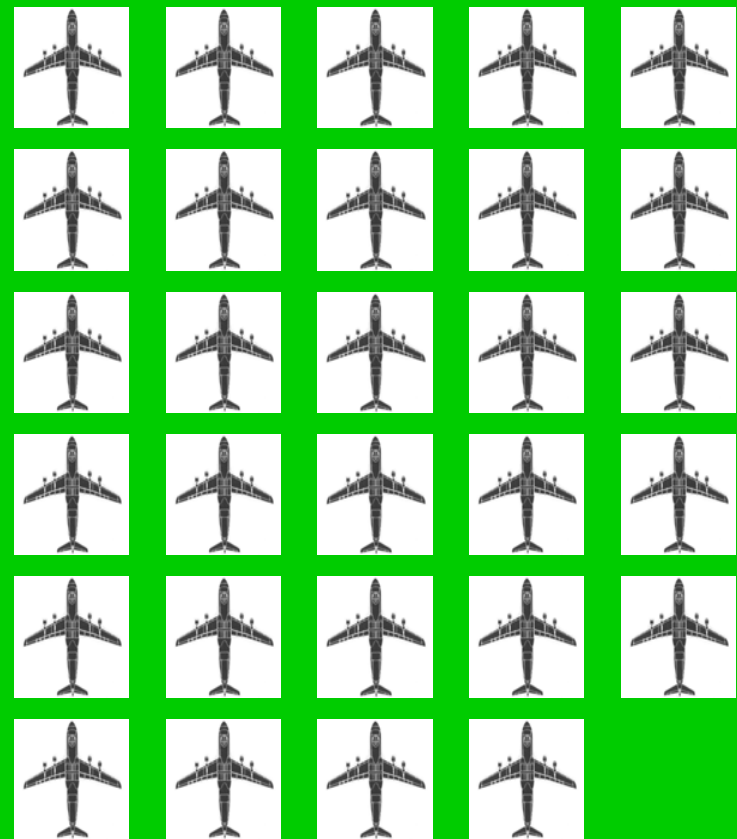
- ▶ USMC GWOE kickoff (Sept 04)
- ▶ 4th Marine Aircraft Wing (Pathfinders 2004-2006): Personal Error Reduction Modules delivered to over 2,300 Marine aviators over two years
 - Class A mishap rate dropped from 9.48 to 0 and has **remained there for over 29 months**
 - Class B mishap rate dropped 44% to 3.38
- ▶ USMC-wide mishap rate dropped for second straight year to 1.86, second lowest rate in history
- ▶ Bottom line: *The Marines are doing something different, and it is working. GWOE is a part of this success*
- ▶ PRC launch 1 Jan 2007
 - Land Management
 - Law Enforcement
 - Civil Aviation

USMC GWOE ROI (Class A mishap rate)



Aircraft Lost

4th MAW Pre-GWOE Training
(2004) 9.48 per 100,000



Aircraft Saved?

Last 29 Months
0.00 per 100,000 hours



Break