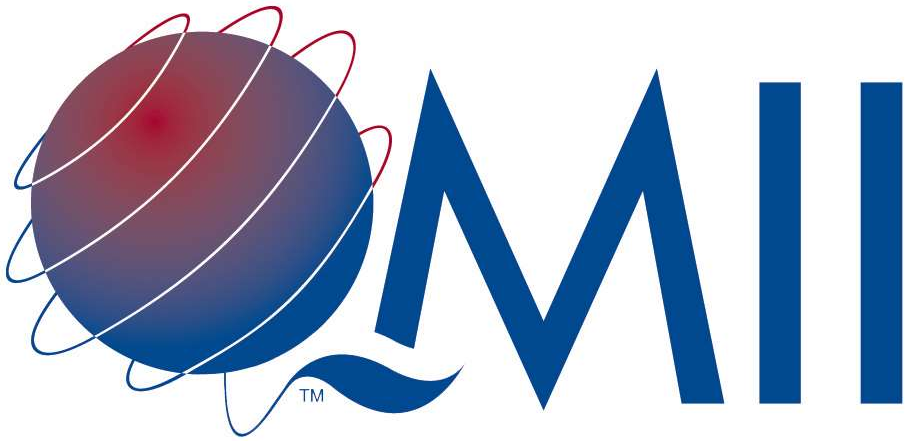


Three Steps to Reducing Human Error in your System

About QMII

- QMII has provided best in industry process improvement services since 1986.
- Headquartered in Ashburn VA.
- Global Reach.
- ISO 9001:2015 Certified.
- SBA 8(a) & DBE certified.
- Minority owned business.
- GSA PSS and Schedule 70 Holder.

About QMII

US Coast Guard	DOT
FHWA	US Air Force
US Navy	US Marines
NJ Transit	GPO
US Army	DOC
Amtrak	Commerial

Why Are We Here?

Understand how to reduce human error

Understand how to increase buy-in to the system

The importance of creating a culture where nonconformities are not hidden

What is Human Error

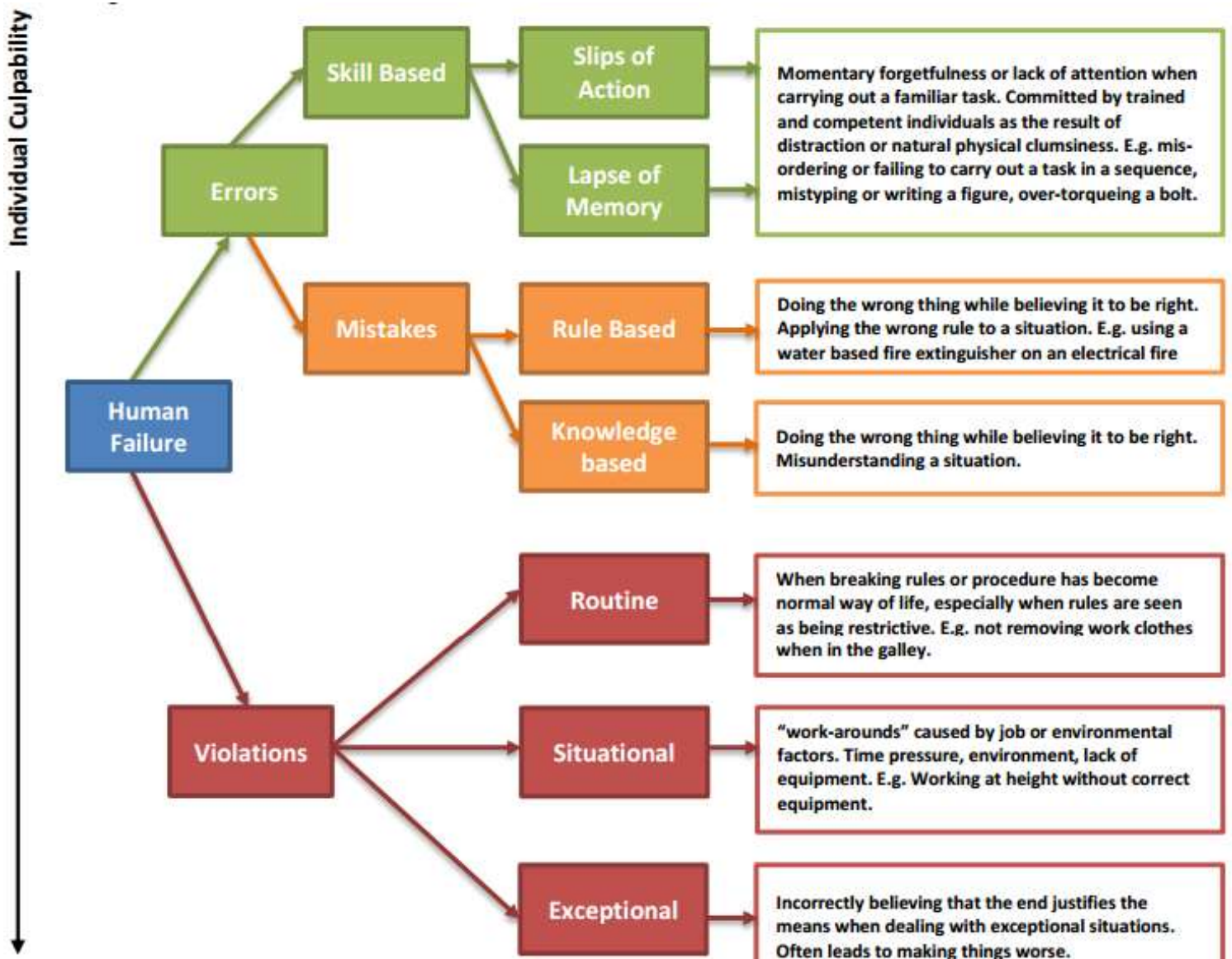
An erroneous action can be defined as an action which fails to produce the expected result and/or which produces an unwanted consequence.

(Hollnagel, 1993)

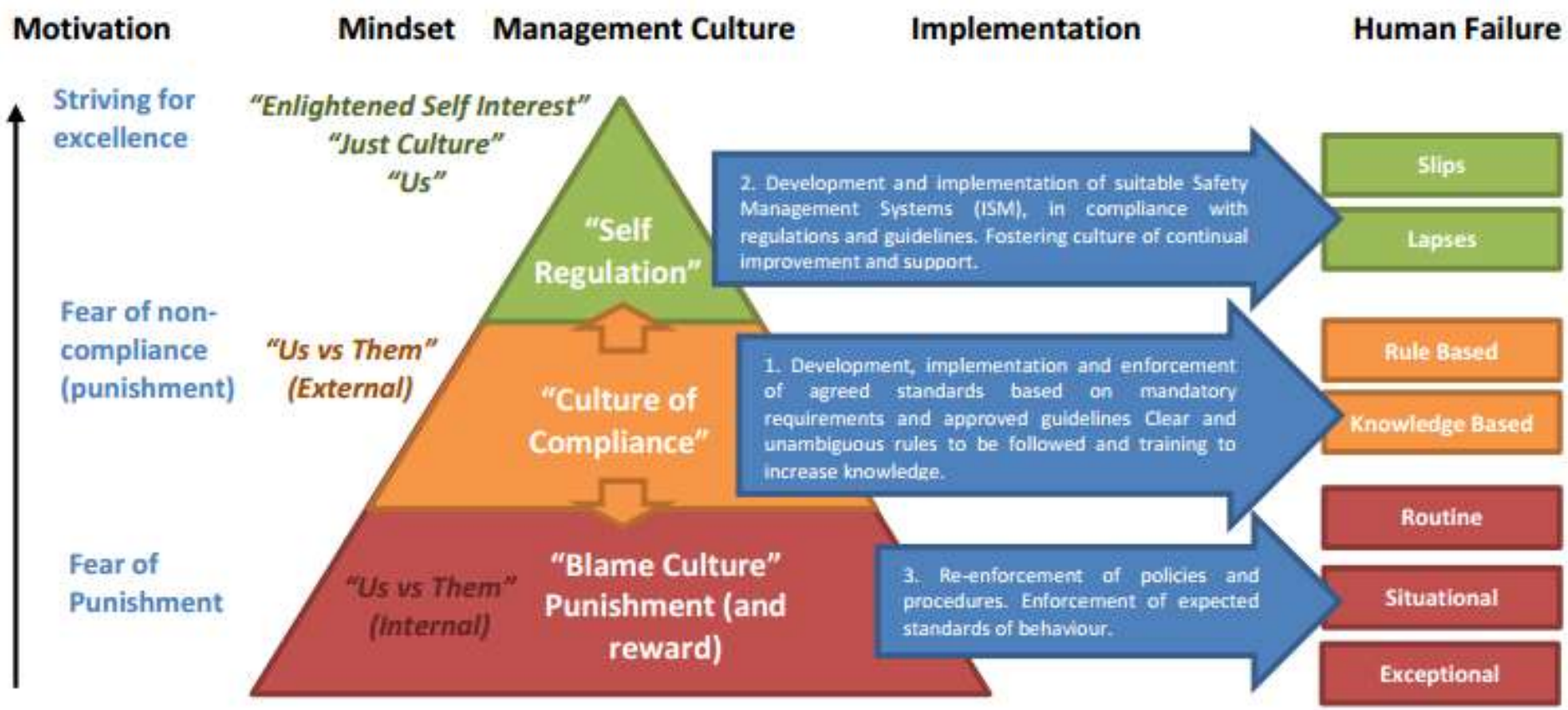
Either an action that is not intended or desired by the human or a failure on the part of the human to perform a prescribed action within specified limits of accuracy, sequence, or time that fails to produce the expected result and has led or has the potential to lead to an unwanted Consequence.

(NASA, 2008)

Understanding Human Failures (Errors)



How systems influence outcomes



Common Causes

- Activity Influencers
  - Inadequate guidance
  - Inadequate communication
  - Complexity of task
  - Time constraints
- Personal Influencers
  - Fatigue / Stress
  - Competence / Motivation
  - Workload
- Organizational Influencers
  - Safety Culture
  - Leadership / Supervision

Step 1 – Blame the System

- Mature organizations, when things go wrong ask
  - How did the system fail the individual
  - Why did the system fail the individual
- They do not blame the person but blame the system
- Operator error may be the cause in some situations, but repetitive occurrences should lead to systemic corrective action

Step 2 – Improve Buy-in

- Gain workforce inputs:
  - In the system/process development
  - During safety meetings
- Promulgate effectiveness of meeting objectives and success stories
- Leadership commitment evident through:
  - Provision of resources to meet objectives
  - Walking the talk
- Identify and remove obstacles to participation:
  - Failure to respond to worker suggestions
  - Language or literacy difficulties

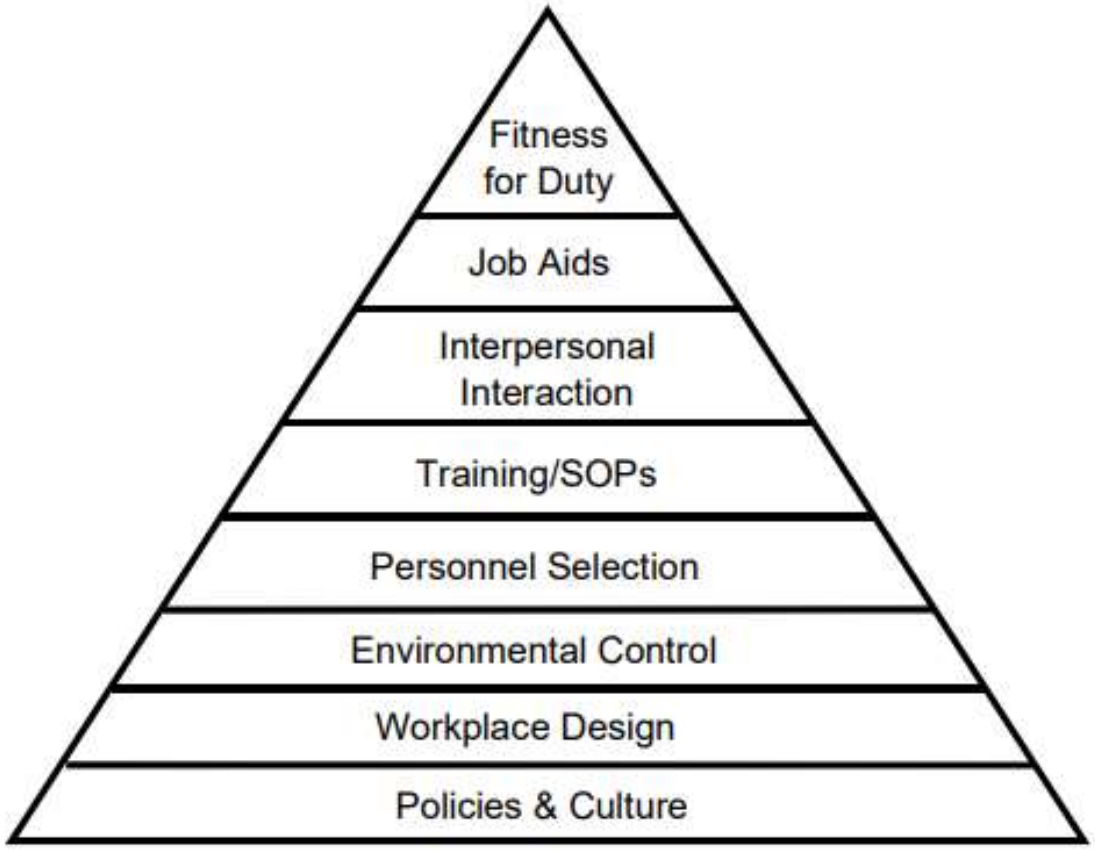
Step 3 – Instill a Pro-active Culture

- Be mindful of objectives being set – Do they encourage reporting of non-conformities
- Policies should encourage worker participation
- Minimize barriers where they cannot be removed
- Create an atmosphere of trust, encouraging and rewarding people for providing essential safety-related information

Look for risks not fault!

The Smoking Volcano

Triangle of Effectiveness



Source: Gerry Miller et al, 2000

Barriers that can be used to prevent or mitigate errors

Building an Error Tolerant System

- Consider FMEA
- Consider Mistake proofing where possible
- Build oversight and reminders in the process
- Everyone is on the lookout for errors
- Everyone empowered to question perceptions and actions

Remember ....

1. Blame the system
2. Look for risks not fault
3. Error Proof where possible
4. Love thy non-conformity

"*The only bad non-conformity is the one you do not know about" – Dr. IJ*

Procurement Options

GSA Contract Holder
Contract GS-10F-0075N

SBA
U.S. Small Business Administration
8(a) Certified

GSA MAS (Schedule 70): 47QTCA20D0050
DUNS: 82-5610108
CAGE: 1GFC9

SDVOSB Partners
WOSB Partners
HUBZONE Partners
Other Vehicles

8(a) STARS III

Thank You!!!

Inderjit Arora
iarora@qmii.com
(888) 357-9001