FR Aviation Group
Marc Bailey

FRA – A Maintainer's Perspective

- An alternative model of defence

FRA – A Maintainer's Perspective

- An alternative model
- Impact of initiative pressures

FRA – A Maintainer's Perspective

- An alternative model
- Impact of initiative pressures
- Culture shift

FRA – A Maintainer's Perspective

- An alternative model
- Impact of initiative pressures
- Culture shift
- A reckless act

FRA – A Maintainer's Perspective

- An alternative model
- Impact of initiative pressures
- Culture shift
- A reckless act
- Integration of MEMS

FRA – A Maintainer's Perspective

- An alternative model
- Impact of initiative pressures
- Culture shift
- A reckless act
- Integration of MEMS
- Maintaining momentum during introduction

FRA – A Maintainer's Perspective

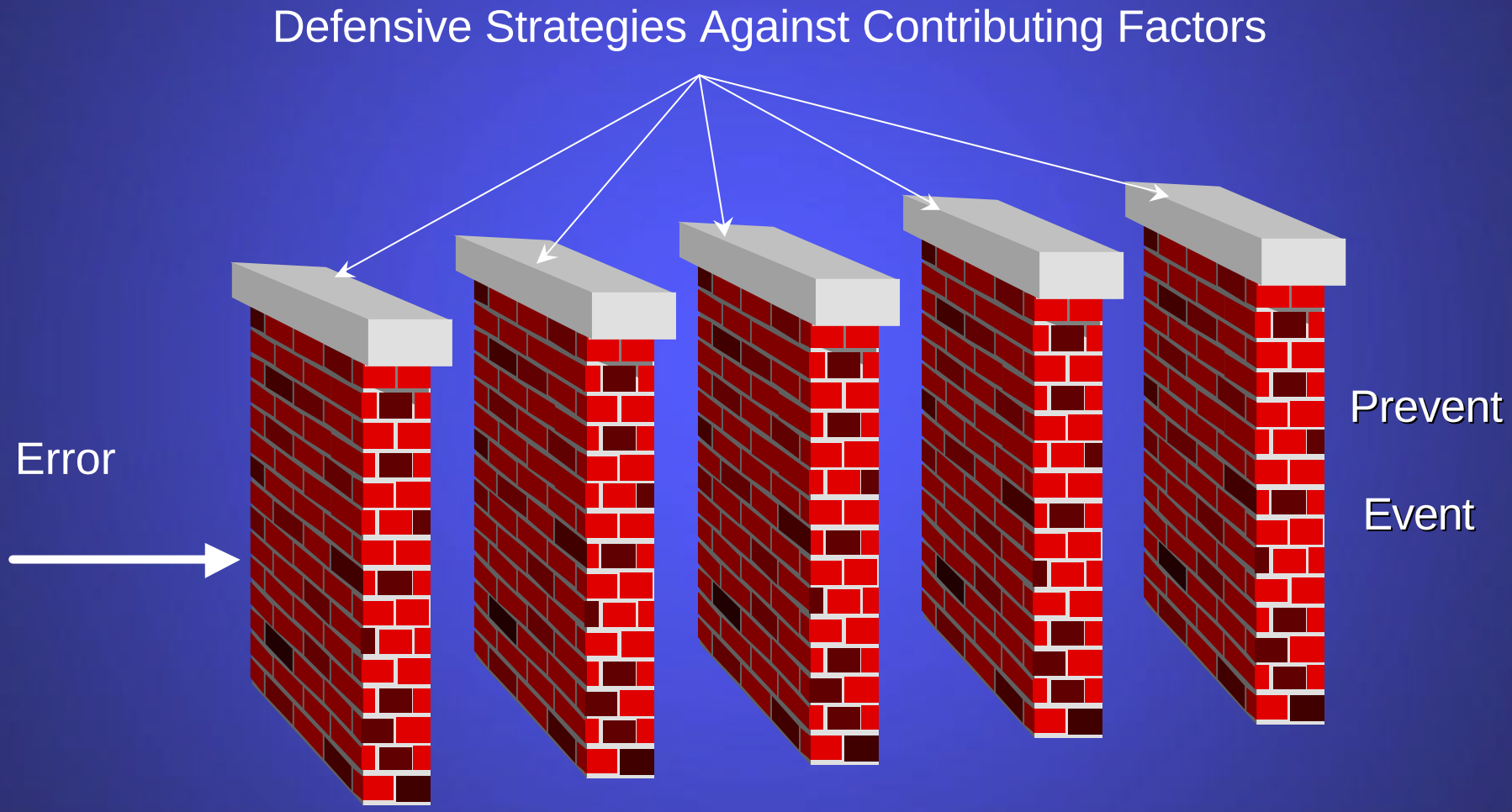
- An alternative model
- Impact of initiative pressures
- Culture shift
- A reckless act
- Integration of MEMS
- Maintaining momentum during introduction
- What can encourage participants?

An alternative model

An alternative model

- Classic defence barriers

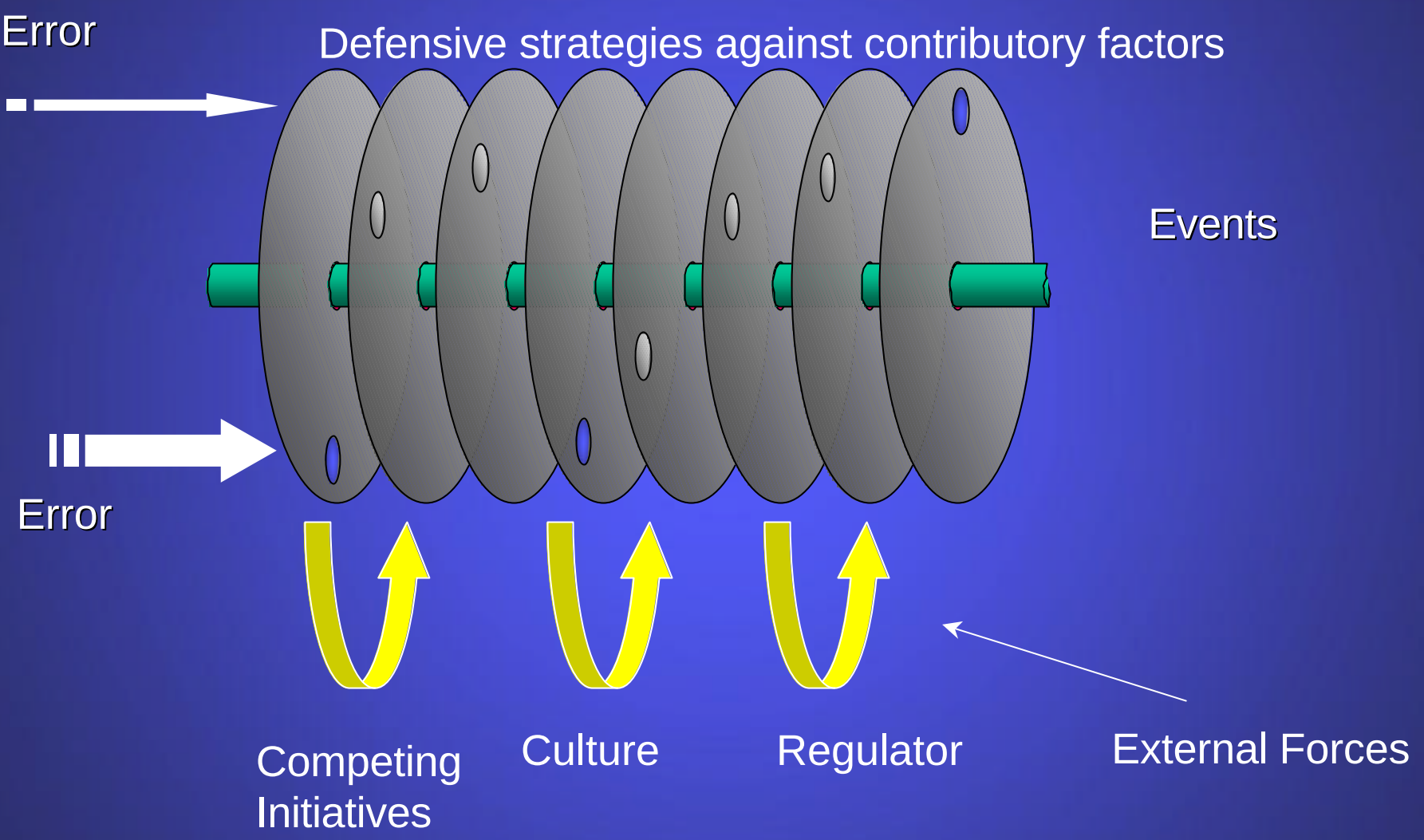
Classic Model of Defences



An alternative model

- Classic defence barriers
- Is the model more dynamic in reality

Dynamic Environment



External Forces

External Forces

- A programme snapshot
  - Health & Safety 5-star award
  - New integrated IT development
  - Environmental accreditation

External Forces

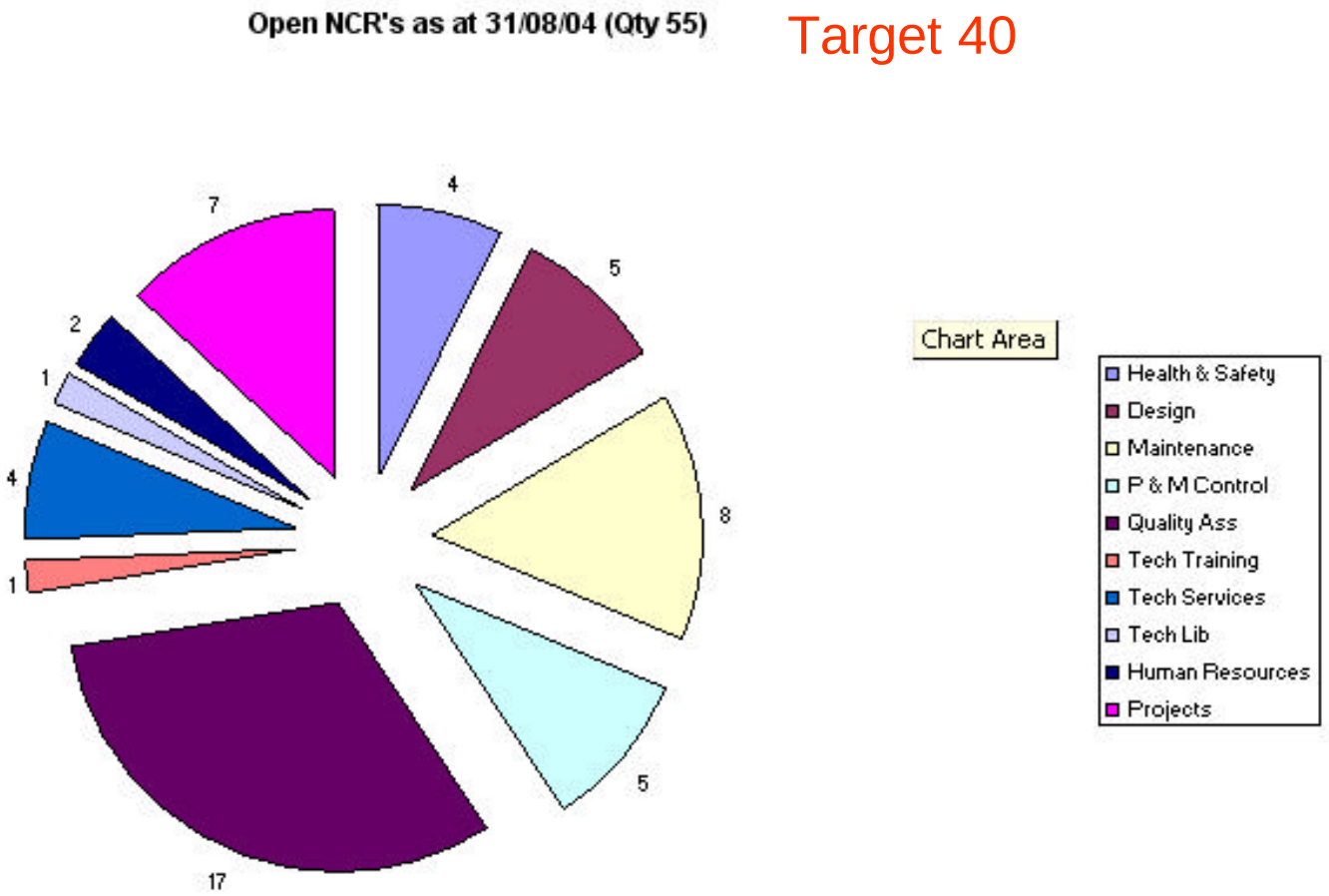
- A programme snapshot
  - Health & Safety 5-star award
  - New integrated IT development
  - Environmental accreditation
  - Part 21 subpart G & J
  - Part 147
  - Part 145

External Forces

- A programme snapshot
  - Health & Safety 5-star award
  - New integrated IT development
  - Environmental accreditation
  - Part 21 subpart G & J
  - Part 147
  - Part 145
  - Life Cycle Management
  - Shift to E-Documents
  - Proline 4 modification Programme

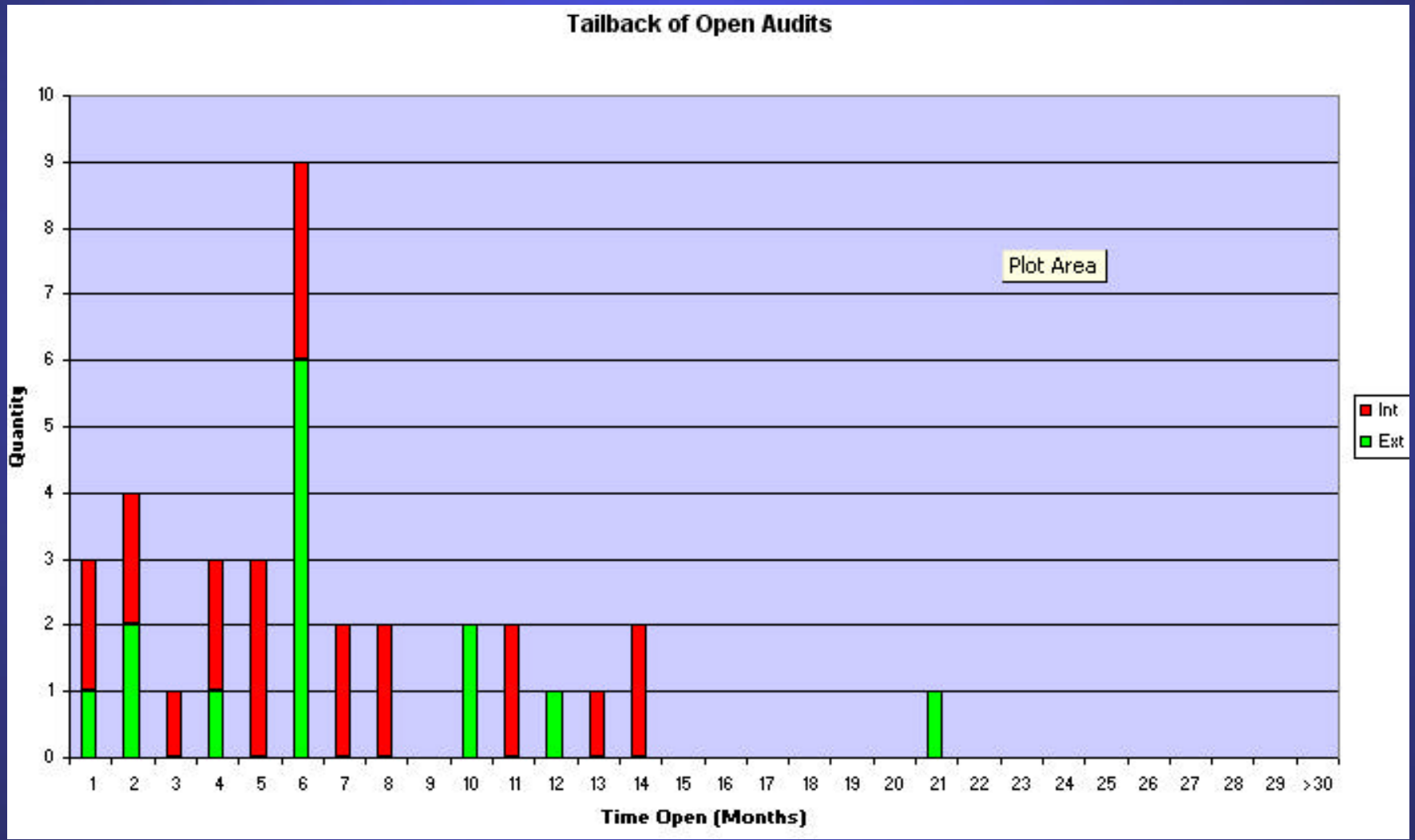
External Forces

- Evidence of pressure, key metrics in QMSR (NCR- volume)



External Forces

- Evidence of pressure, key metrics in QMSR (Audit- Tailback)



Culture Shift

Culture Shift

- Time to change culture 5 – 7 years

Culture Shift

- Time to change culture 5 – 7 years
- Clarity of purpose and maintaining that clarity in small to medium organisations

Culture Shift

- Time to change culture 5 – 7 years
- Clarity of purpose and maintaining that clarity in small to medium organisations
- Where are we starting from?
  - OLD EXPECTATIONS
    - Apprenticed engineers
    - Clear trade understanding
    - Company loyalty
    - Airmanship and professional pride

Culture Shift

- Time to change culture 5 – 7 years
- Clarity of purpose and maintaining that clarity in small to medium organisations
- Where are we starting from?
  - OLD EXPECTATIONS
    - Apprenticed engineers
    - Clear trade understanding
    - Company loyalty
    - Airmanship and professional pride
  - NEW EXPECTATIONS
    - Significant reduction in full apprenticeships
    - Full licence – difficult to phase in
    - Expectation of several employers through life
    - Open learning, less structure, and reduced discipline
    - Shift in Society's values

A Reckless Act

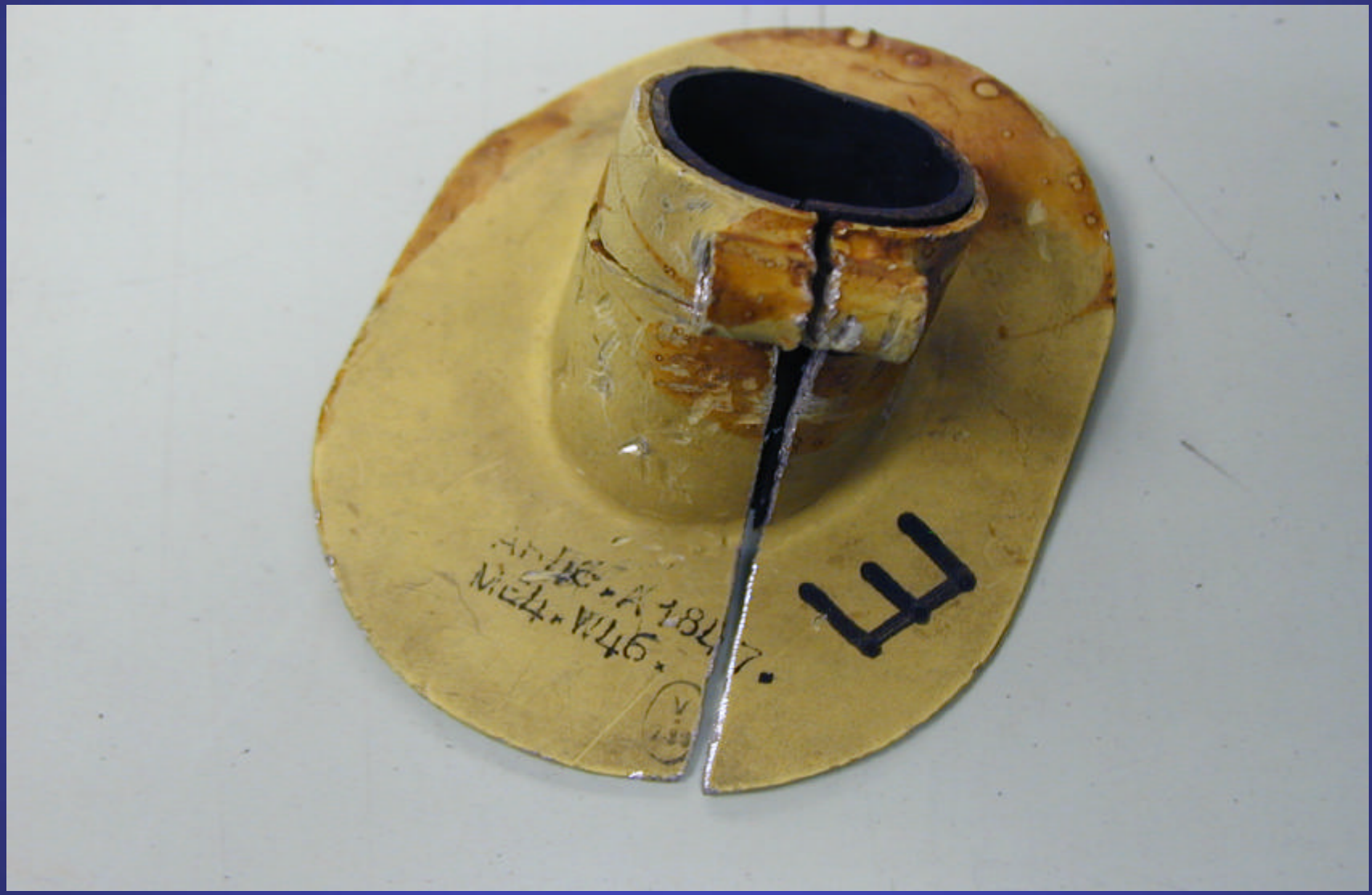
A Reckless Act

- What everyone needs in a human factors programme

A Reckless Act

- During re-build phase of LH wing tank inboard area, Tank Devils Supervisor noted a hacksaw cut in clamp.
- It is understood a Tank Devils mechanic installed a structural stanchion without passing the clamp over the stanchion first, subsequently the clamp was cut to install it. A check on the RH wing revealed the stanchion to be in place without either upper or lower clamp.

A Reckless Act



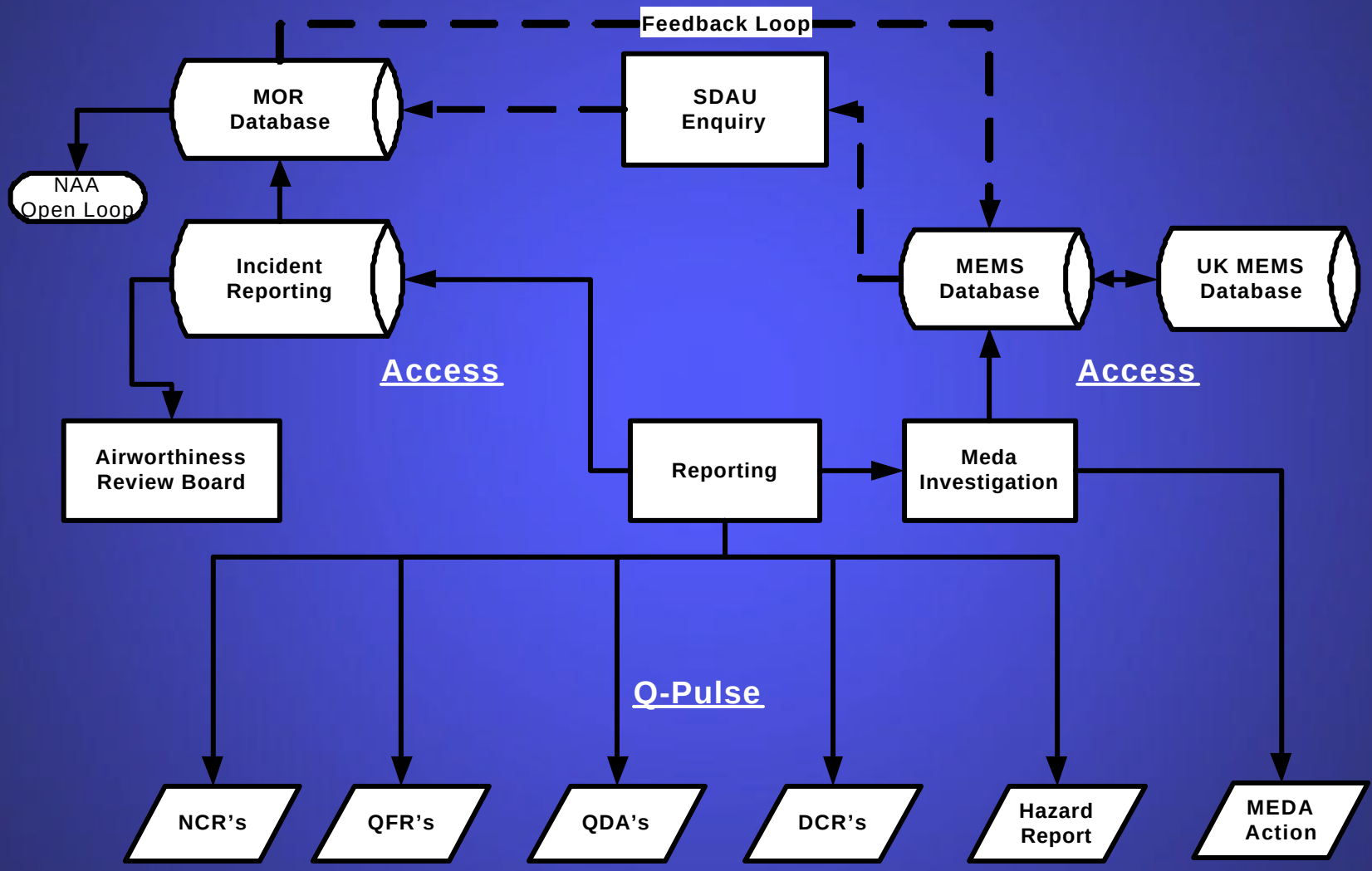
A Reckless Act

- What everyone needs in a human factors programme
- Interesting on many levels
  - Why do it , no real pressure on the task , not AOG
  - Running away!
  - Response from executives
  - NAA response

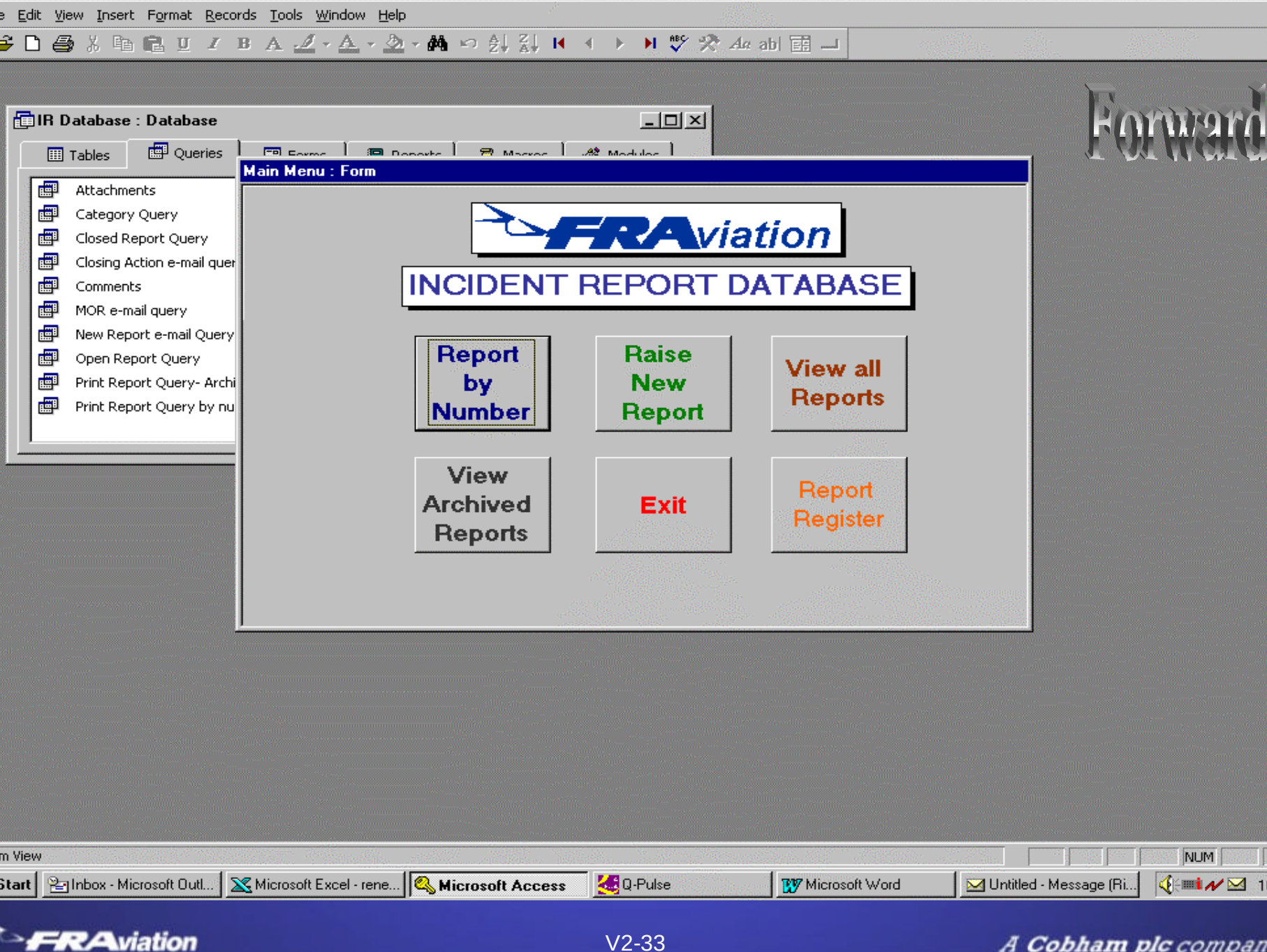
Integration of MEMS

- We are trying to emphasise today "Human Factors in maintenance" but MEMS is only part of an existing system

Integrated Reporting System




Exit
Help
Modules
Options...
About
Compliance and Improvement Management
Q-PULSE
Documents
Training
Equipment
Suppliers
Analysis & Improvement
Workload
Non Compliance Reports
Audits
Customers
Initiatives
Copyright © Gael Quality Ltd. 1996-2004
Version 4.2


Edit View Insert Format Records Tools Window Help
IR Database : Database
Tables
Queries
Attachments
Category Query
Closed Report Query
Closing Action e-mail quer
Comments
MOR e-mail query
New Report e-mail Query
Open Report Query
Print Report Query- Archi
Print Report Query by nu
Main Menu : Form
FRAviation
INCIDENT REPORT DATABASE
Report by Number
Raise New Report
View all Reports
View Archived Reports
Exit
Report Register
Forward
NUM
Start
Inbox - Microsoft Outl...
Microsoft Excel - rene...
Microsoft Access
Q-Pulse
Microsoft Word
Untitled - Message (Ri...

File Edit View Insert Format Records Tools Window Help

FRAviation

MAINTENANCE ERROR MANAGEMENT SYSTEM

MEMS : What is it about?

MEMS Database

MEMS report

TRENDS

EXIT

ord: 1 of 1

m View NUM

Start | Inbox... | Prese... | Micros... | FW: F... | Q-Pulse | FW: P... | Micros... | Micro...

Integration of MEMS

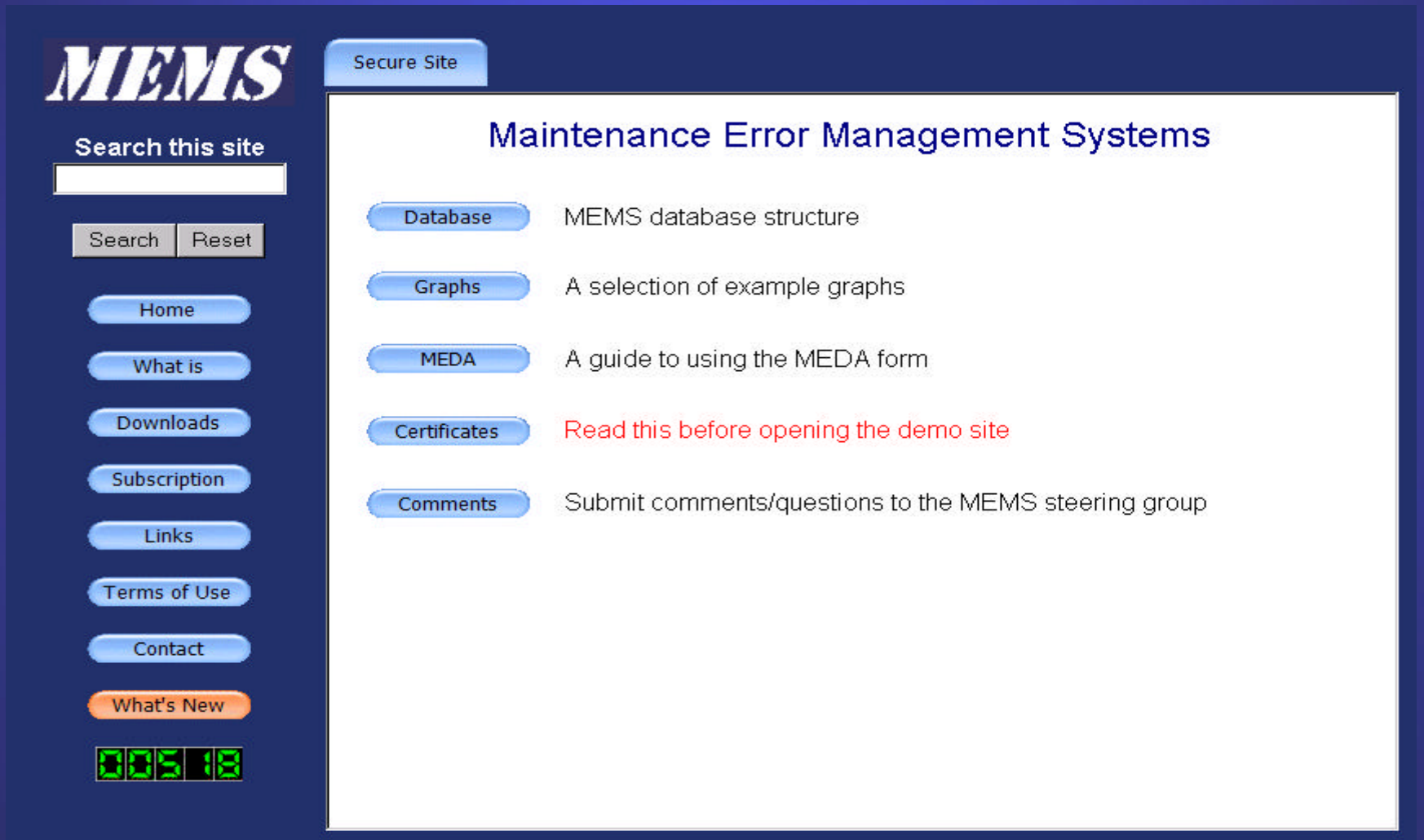
- We are trying to emphasise today "Human Factors in maintenance" but MEMS is only part of an existing system

- We need for it to become integrated into the fabric of the system

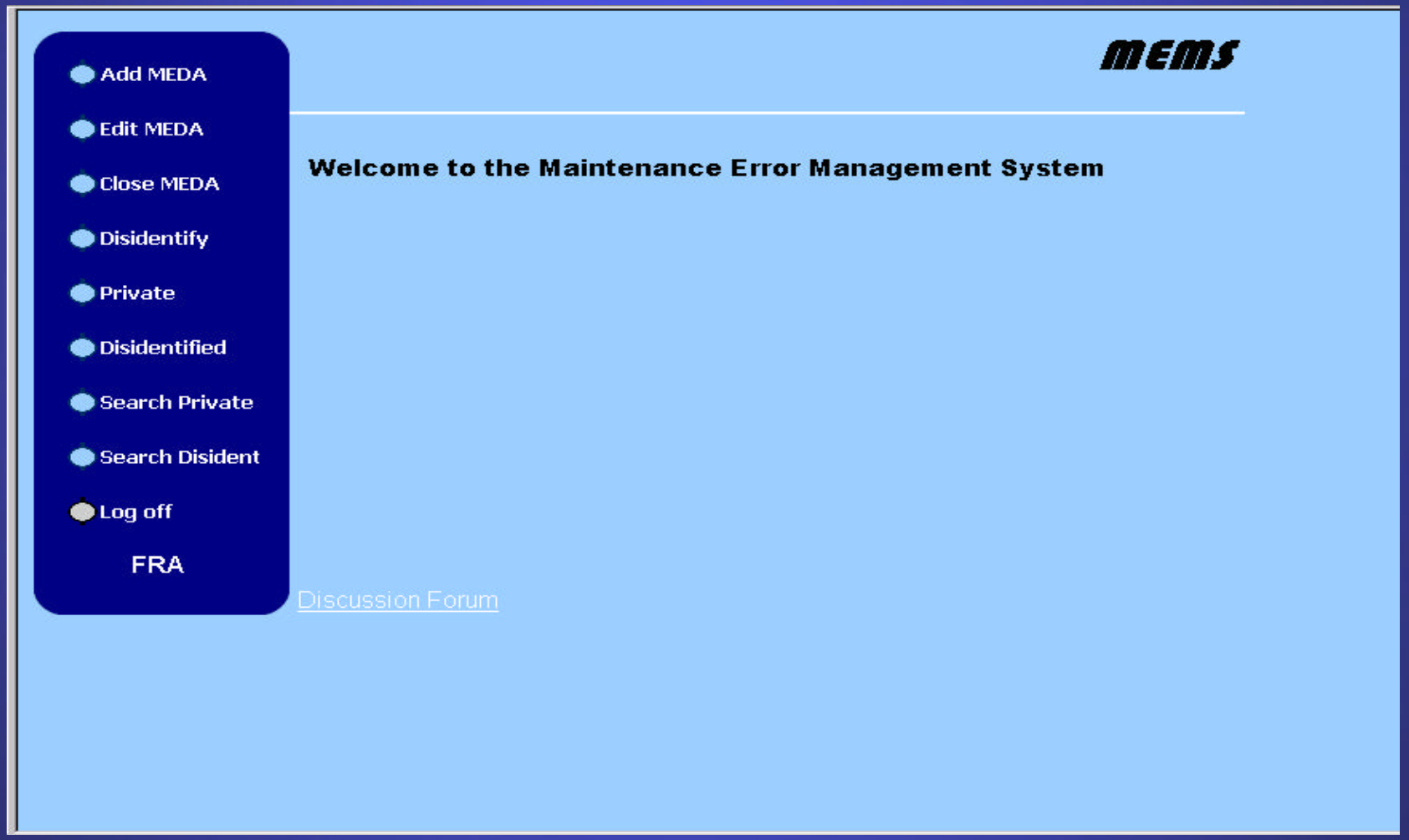
Integration of MEMS

- We are trying to emphasise today "Human Factors in maintenance" but MEMS is only part of an existing system
- We need for it to become integrated into the fabric of the system
- Accelerating our learning by sharing - UKMEMS

Integration of MEMS



Integration of MEMS



Integration of MEMS

Results for Search: MaintError LIKE 'Improper Fault Isolation/Inspection/Testing'

ID No.	Insertion Date	Incident Date	Title	
1	21/12/2000 14:23:00	20/09/1997	No 1 Thrust reverser failed to operate on landing at AAA	Open 1
7	03/01/2001 09:53:00	17/05/1997	Autopilot datum adjust panel fitted upside down	Open 7
21	11/04/2001 15:01:00	30/10/1998	Fuel leak on LH tank dry bay identified on turn round inspection	Open 21
23	11/04/2001 15:01:00	27/10/1998	During test of APU squib incorrect voltage (4 volts instead of 16 min) being applied when fire handle turned clockwise due to wire W2134-0008-20 incorrectly located in terminal block TB58 C6 instead of C5	Open 23
34	11/04/2001 15:01:00	16/04/1997	No 2 engine turbine extensive heat damage during motoring cycle accomplished by unsupervised apprentice	Open 34
51	11/04/2001 15:01:00	20/05/1999	During an unscheduled engine change down route in Brindisi the incorrect engine mounting bolts were sent out. The aircraft was permitted to fly to Manchester with the original bolts still fitted. At Manchester the engine was removed and the mount bolts replaced.	Open 51
57	11/04/2001 15:01:00	01/06/1999	During taxi out after the check on the 3rd July cabin crew noticed a red warning flag protruding from below the L1 door hinge cover.	Open 57
61	11/04/2001 15:01:00	22/08/1999	RAD ALT deferred defect MEL 3 day limit expired. Noticed by crew on departure checks whilst passengers boarding. Aircraft delayed waiting for defect to be rectified.	Open 61
82	11/04/2001 15:01:00	18/02/2000	Flap/Slat/Elec status msg on EICAS following hangar input. L/E slats/flaps would not function in alternate mode. BITE check showed 'slat arm chan 2' (Msg 213)	Open 82

Integration of MEMS

- We are trying to emphasise today "Human Factors in maintenance" but MEMS is only part of an existing system
- We need for it to become integrated into the fabric of the system
- Accelerating our learning by sharing - UK MEMS
- Integration of initiatives
  - Not competing with tools
  - Closer liaison between all initiatives

Momentum During Introduction

Momentum During Introduction

- Initiative resistance – prevent overload

Momentum During Introduction

- Initiative resistance – prevent overload
- TNA split and support staff buy in

Momentum During Introduction

- Initiative resistance – prevent overload
- TNA split and support staff buy in
- Feedback and quick wins (car park)

Momentum During Introduction

- Initiative resistance – prevent overload
- TNA split and support staff buy in
- Feedback and quick wins (car park)
- Dealing with Just Culture slips

Momentum During Introduction

- Initiative resistance – prevent overload
- TNA split and support staff buy in
- Feedback and quick wins (car park)
- Dealing with Just Culture slips
- Time versus operational limitations

Momentum During Introduction

- Initiative resistance – prevent overload
- TNA split and support staff buy in
- Feedback and quick wins (car park)
- Dealing with Just Culture slips
- Time versus operational limitations
- Quality of facilitation is key

Momentum During Introduction

- Initiative resistance – prevent overload
- TNA split and support staff buy in
- Feedback and quick wins (car park)
- Dealing with Just Culture slips
- Time versus operational limitations
- Quality of facilitation is key
- Overcome reporting reluctance

What Can Encourage Participants ?

- Undertake MEDA investigations at every opportunity

What Can Encourage Participants ?

- Undertake MEDA investigations at every opportunity
- Good examples needed to feed continuation training

What Can Encourage Participants ?

- Undertake MEDA investigations at every opportunity
- Good examples needed to feed continuation training
- PR at every opportunity

What Can Encourage Participants ?

- Undertake MEDA investigations at every opportunity
- Good examples needed to feed continuation training
- PR at every opportunity
- Rejuvenate suggestion scheme

SUMMARY

- Reflect on alternate model “HF Russian Roulette”
- Initiative pressures – Internal and External
- Culture shift
- Reckless acts
- Integration of MEMS
- Momentum and encouragement

Q&A