



DASE

Defence Aviation Safety Centre

FROM ZERO TO HERO

**The Application of What Can
Be Learnt From a NAFPI
Conference**

Flt Lt John Franklin

UK Defence Aviation Safety Centre

- Royal Air Force – 15 years service
- Aircraft Technician – Nimrod Maritime Aircraft
- Degree in Aeromech Systems Engineering
- JEngO Tornado Aircraft – 617 Sqn
- Tornado Scheduled Maintenance Manager
- UK MoD FOD Programme Manager
- Now in DASC within Engineering Department

Scope

- The UK Defence Aviation Safety Centre
- What We Used To Do
- Learning Topics at a NAFPI Conference
- What We Took Away
- What We Are Doing Now
- The Effect of the Changes
- The Challenges Ahead

DASC Mission

- To enhance the effectiveness of the Defence Aviation SMS through the development, regulation and independent audit of Defence Aviation Safety (AS) policy on behalf of the Defence Aviation Safety Board

DASC Vision

“To enhance operational capability through Aviation Safety”

Beware – The Gremlins



**FLIGHT
SAFETY**

+

AIRWORTHINESS

=

AVIATION SAFETY

Roles

- **Formulate, regulate & validate Defence AS policy**
- **Give AS Advice:**
 - ↑ **DASB, COS, Procurement & Logistics**
 - ↓ **Commands, Operating Authorities, RTSAs and IPTLs**
- **Strategic-level liaison & advice to:**
 - Govt Depts, Civ & Mil agencies, NATO, F&C, PfP, Industry**
- **MOD working focus for AS matters**
- **AS education & publicity**

Current Tasks

- Safety Management System development and implementation
- N E Airspace
- Portable Electronic Devices
- Flight Data Recording
- Human Factors policy
- Air display monitoring
- Definition of PCM Policy
- Joint Review of Airworthiness
- Flight Safety Management Information System (FSIMS)

FOD – What We Used To Do

- Think FOD was only an Engineers problem
- Have no formal link between FOD and Aviation Safety
- No formal FOD organisation
- Only formal procedures were for Aero-Engine FOD Reporting
- Relied on the trusted military methods of discipline to ensure compliance



The Result

- At Unit Level a few keen people worked really hard with little or no help
- No one checked that all FOD was being reported
- The picture seemed a lot better than reality
- Because there was no big problem
- No one did anything about it

UNTIL.....NAFPI

NAFPI Conference

- My 1st Conference – Los Angeles 2002
- Also joined NAFPI Board of Directors
- First opportunity to see what other people were doing
- Get new ideas and best practice
- Then meet up in subsequent to help evolve the new processes

BUT HOW DO YOU DO THAT?

NAFPI Conference Topics

- Management Buy-In / Leadership
- FOD Investigations and Reporting
- Subsequent Data Mining of FOD Information
- Airfield Management
- Tool Control
- Engineering Husbandry – Clean As You Go!
- Quality Assurance and Auditing
- Operational Factors

What We Knew We Did Well

- Tool Control
 - Chits and accountability
 - Shadow boards
 - Service owned and supplied tools
- Engineering Husbandry
 - Military Ethos breeds good husbandry
 - Lean implementation improved hardware control
- Good Aero-Engine FOD Reporting Format

What We Took Away – Brits Following the US???



What We Took Away

- FOD needed to be an integral part of Aviation Safety
- Pan-MoD Policy required with devolved responsibility to Front Line
- Implement reporting of all FOD events
- Set performance goals for individual aircraft types
- Monitor and implement future best practice

What Are We Doing Now

Most importantly – How did we get there ?

- Management Buy-In
- FOD Organisation
- Best Practice
- FOD Investigations and Reporting
- Data Mining and Corrective Action
- Airfield Management
- Operational Factors

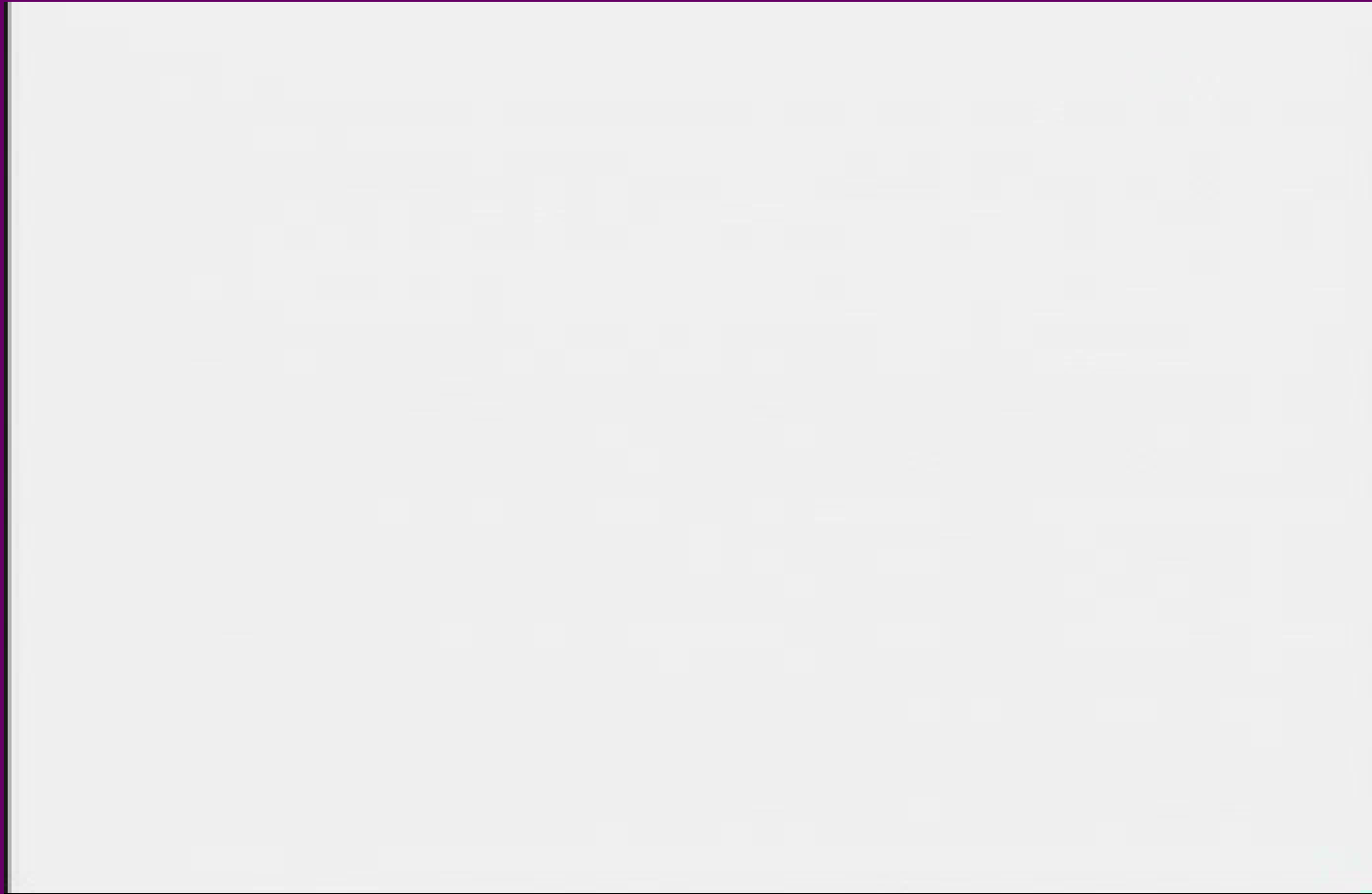
Management Buy-In

- Goal – To get FOD formally adopted as an Aviation Safety issue
- Bottom up approach failed
- Went direct to MoD Defence Aviation Safety Board
- Presented the problem and proposed solution
- DASC given direction to generate new FOD Policy

FOD Organisation

- MoD FOD Programme Manager - DASC
- Devolved responsibility to single services
- FOD Focals in 5 areas (Navy, Army, RAF, Defence Logistics and Defence Procurement)
- Defined which Units the FOD Focals were responsible for
- Provided MoD-level FOD policy document
- Enabled each service to set own policy

Best Practice – Good Ideas or Not



Best Practice

- Conduit required to promote and spread best practice
- 6-Monthly meeting established for MoD FOD Manager and 5 FOD Focals
- FOD Focals established meetings with Unit FOD managers
- Units set up FOD Working Groups
- Ensured two-flow of ideas and information

FOD Reporting

- Rolled out FOD Reporting pan-MoD
- 2 Forms
 - Aero-Engine FOD Form
 - Other FOD Form (Cut Tyres, Lost Articles and Found FOD)
- Stipulated summary reporting upwards through FOD organisation on a quarterly basis
- MoD summary collated by DASC

FOD Investigations

- Implemented FAST to determine causes of FOD Damage
- Provided guidance on information required to aid a FOD Investigation
- Requested Units to not only determine cause but also.....
- Decide on corrective action to prevent recurrence
- Publicise to other Units/Services

Airfield Management

- Appreciated the need for airfield cleanliness
- Implemented new airfield inspection regimes
- Improved airfield fault management
- Used FAST to appreciate where on airfields the FOD was coming from
- Implemented daily sweeping of all airfield operating surfaces

Operational Factors

- Educated aircrew on the need for Taxiing in Anti-FOD order
- Minimised pairs take offs
- Established better placed ground running points and associated taxi patterns
- Researched the link between FOD ingestion and the use of Thrust Reverse on Tornado
 - Changed Tornado Thrust Reverse Policy

Reduced FOD Allows Aircrew To Do What They Do Best



Effect of the Changes

- Initial trial of new initiatives carried out at one Tornado Unit – RAF Leuchars
- 6 Month trial from Mar – Sep 04
- FOD halved over trial period
- Total saving US\$ 3.5 MILLION

The Challenges Ahead

- Making the Policy work
- Understanding our problem areas
- The introduction of new aircraft types such as Eurofighter Typhoon and JSF
- Continually raising FOD awareness of personnel

Summary

- Develop policy at the highest level
- Secure buy-In from management
- Devolve responsibility right down to front line of operations
- Enable full reporting of all FOD in the opposite direction
- Act specifically where problems exist
- Provide guidance on best practice

The Benefits

- Everyone supports the FOD effort
- Everyone does the same things
- Everyone reports in the same way
- The organisation receives the correct information on where problems exist
- The system is in place to act appropriately

In Conclusion

- Don't just come to a NAFPI Conference on a boondoggle
- Listen to others
- Share ideas and best practice
- Go back and apply what you have learnt
- Then come back next and re-evaluate



DASE

Defence Aviation Safety Centre