

F-35 as a Catalyst for Change



The UK Perspective

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Royal Air Force

Aim

- Provide a UK perspective on the opportunities for transformation with the entry into service of F-35

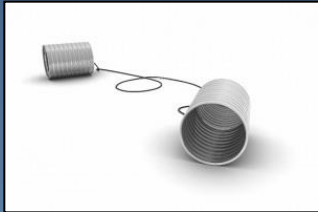
Scope

- UK Strategic Context
- Transition to 'Future Force 2020'
- Typhoon Entry into Service
- Transformation & the role of F-35

Background



Background



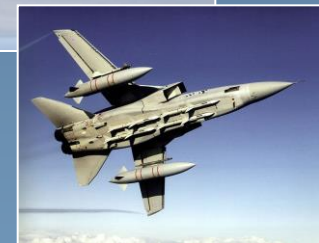
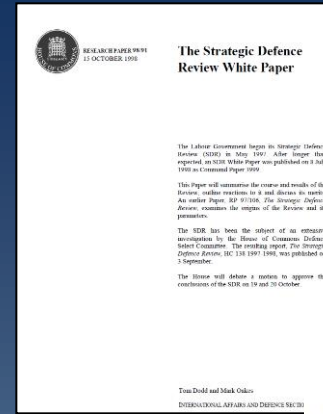
UK Context (RAF)

- 1990 - Options for Change
 - 6 Sqns withdrawn from Germany
 - F4 Retired from Service
 - Nimrod reductions (in line with RN reductions)
 - Cut from 89,000 to 75,000
- 1994 – Front Line First
 - Closure of RAF Laarbruch (Harrier/Helo)
 - Cut by 7,500
 - Upgrade of Tornado GR1-GR4
 - Continued introduction of 'Eurofighter 2000'
 - Enhanced Wpns



UK Context (RAF)

- 1998 – Strategic Defence Review
 - Reduction of 2 Sqns
 - Formation of Joint Harrier Force
 - Commitment to:
 - Harrier Replacement
 - Eurofighter
 - Brimstone/Stormshadow/Meteor
- 2002 – SDR ‘A New Chapter’
 - Homeland Defence
 - Expeditionary & Coalition Operations
- 2003 – Defence White Paper
 - Network Centric Capability (Sensors/Network/Strike Assets)
 - Flexibility & Capability – ‘Manoeuvrist approach’
 - Cut by 7,000
 - Jaguar Force (4 Sqns) to be disbanded early
 - F-3 reduced (1 Sqn)
 - Increase in Hawk T2 numbers
 - C-17 buy



UK Context (RAF)

- Strategic Defence & Security Review 2010
 - 5,000 reduction
 - Nimrod MRA4 cancelled and MR2 retired
 - Harrier Force retired
 - Future fighter force – Typhoon & F-35C(!)
 - Atlas A400M replacing C-130J
 - Voyager replacing Tristar and VC10)
 - Commitment to Rivet Joint



Conflicts (RAF) 1990-2015

- A Quarter of a Century of Operations
 - Iraq 1991
 - Iraq No Fly Zones 1991-2003
 - Balkans 1993-1999
 - Afghanistan 2002-2014
 - Iraq 2003-2011?
 - Libya 2012?
 - Iraq/Syria 2014-
- 3rd/4th Gen Wars (opponents?)
 - Need to Transform?
- A Quarter of a Century of Change



Transition to RAF Future Force 2020



**COMBAT
AIR**



ISTAR



Transition to RAF Future Force 2020



MOBILITY



So What...

- Cuts/Wars/Budget issues
 - ‘Transformation in Contact’
 - The Force was Transformed...what about the thinking?
- Over 2 decades of *managing* change not *driving*?
- Did we get it right?
- Evolution or Revolution?

Typhoon – A Case Study

- Introduction of Typhoon
 - 1st RAF '4th Gen' into a 3rd Gen Environment
 - 'Just another equipment buy' ...
 - Initial Cadre background
 - Worldwide 'F-jet' experience
 - Which TTPs do you follow?
 - No visionary approach to Typhoon Entry into Service
 - Evolution vice Revolution
- Only now are we utilising the true potential of the capability (5th Gen thinking?)
 - Connectivity/Interoperability
 - Fusion
 - Sensors
 - Weapon Transformation (Paveway IV/Meteor/Brimstone)
- Has the revolution started?

Transformation - CASST

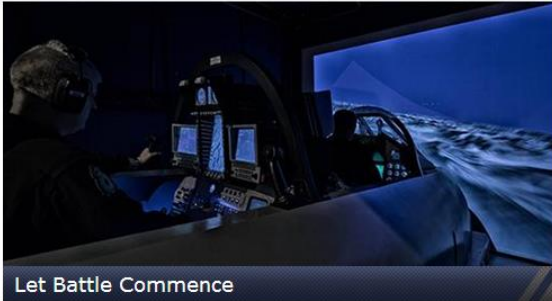
- Combat Air Sustainment Training & Transformation
 - A review of Typhoon training & maintenance 2012
 - ‘If you started again...would you do it differently?’
- Defence Policy
 - ‘What am I *required* to do?’ (vice do everything)
 - Provides boundaries the scope of training
 - We couldn’t/shouldn’t do everything
 - ‘golden thread’ from policy to fuel burn
- Training
 - Benefits of Hawk T2



Transformation - CASTT

- **Combat Air Sustainment & Training Transformation**
 - A review of Typhoon training & maintenance 2012
 - ‘If you started again...would you do it differently?’
- **Defence Policy**
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 - ‘golden thread’ from policy to fuel burn
- **Training**
 - Benefits of Hawk T2
 - ‘Training Download’ – reduction in Typhoon Conversion Hours
- **Synthetics**
 - Mission Rehearsal vice Emergency Training
 - Major change in philosophy
 - Use of Air Battle Training Centre

- News by Date
- Roll of Honour
- Honours Lists
- Forces Pension Society
- RAF News Archive
- Strategic Defence and Security Review
- RSS
- Royal Air Forces Social Media



Let Battle Commence

02 December 2014

News articles by date

A highly experienced team at the Air Battlespace Training Centre, RAF Waddington has reproduced Exercise Red Flag, one of the most complex and demanding air exercises, to give the RAF a head start in the largest air warfighting exercise in the world.



In January next year RAF aircrew from the Typhoon and E-3D forces and Air Battlespace Managers from 1 ACC, will join units from across the US and Australian military at Nellis Air Force Base, Nevada for three weeks of what is widely regarded as the most challenging training available.

The exercise rehearsal is being conducted in the ABTC which contains a number of simulators linked together to enable aircrews to fly missions, from taxiing out on the runway to dog fighting with enemy aircraft. During the course of the three hour missions the ABTC staff, known as the White Force, have control of the air battle,

<< April

<< 2015

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Transformation - CASTT

- Live Synthetic Blend
 - Hours or events based?
 - Optimum blend for capability?
 - Typhoon OCU 30:70
- Experience
 - What does 3,000 hours pilot experience mean?
 - Can you reduce live further...do you need to?
- Surrogacy
 - Cost of Typhoon v Hawk per hour?
 - Can you supplement live flying with Hawk & Simulated hours (events)?



- Live Virtual Construct
- Embedded Training
 - Hawk T2 leading the field



UK F-35

- Typhoon lessons and studies have allowed a 'different way of thinking' with F-35...
- ...the Catalyst for Change within the UK
 - Pilot training
 - Typhoon or F-35 specific?
 - 4th/5th Gen Fighter Integration Training
 - Airspace
 - Meteor/Typhoon/F-35
 - Weapons/EW Ranges
 - Paveway IV



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 - Paveway IV
 - LO Aspects & Security – Restrictions?
 - 'Red Air'
 - F-35/Typhoon/Hawk?

UK F-35

- Synthetics & LVC
 - Networking essential
 - Bandwidth?
- End to end testing
 - Crucial
 - Where can it be done?
- Embarked Operations
 - How to maximise 5th Gen aspects?

UK F-35

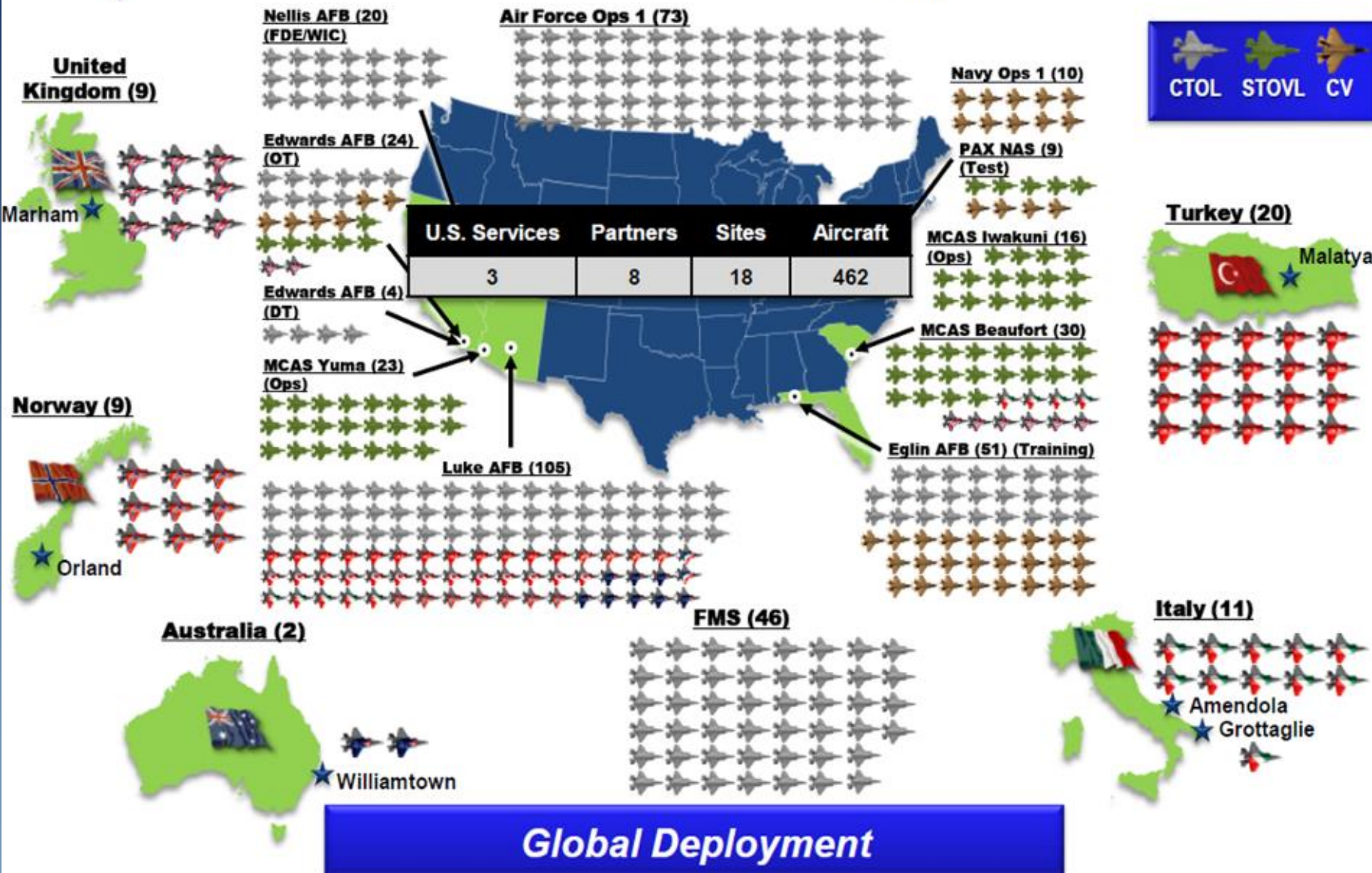
- Relationships
 - ‘Global F-35 Fleet’
 - Interoperability
 - Partnerships/Collaboration
 - Intra-service (RAF/RN)
 - International





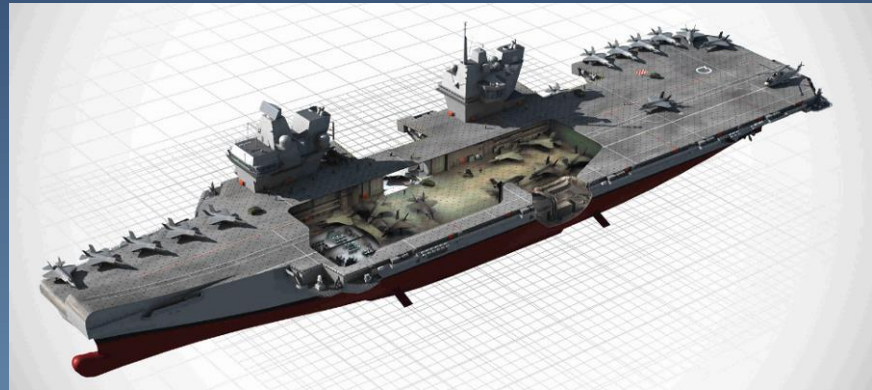
F-35 Bed Down Through 2018

Current as of as of
5 Jun 2013



UK F-35

- Relationships
 - ‘Global F-35 Fleet’
 - Interoperability
 - Partnerships/Collaboration
 - Intra-service (RAF/RN)
 - International
- UK Joint Approach
 - Flexibility of Carrier Ops
 - A ‘different way of thinking’
 - 5th Gen Aircraft and Next Gen Carrier



Conclusion

- Rate of change in strategic environment and military structures/capability
 - It has not been easy to ‘think differently’
 - Reactive vice Proactive
- Lessons from Typhoon introduction
 - Evolution is the easy path
 - Revolution needs careful thought...and time
 - F-35 introduction has given us time
- 5th Gen requires a different approach to realise benefit
 - F-35 has been the catalyst for change in UK



Questions



Group Captain Paul Godfrey