Science, Technology, Engineering & Maths (STEM)

Mr Bateson

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Brief Introduction

- Electronic Engineering, University of York, 2001-05
- RAF Engineering Officer, 2006-11
- Cybersecurity Consultant, PwC and NCC Group, 2011-16
- Head of Cybersecurity, McLaren, 2016-20
- Information Security Manager, Slaughter and May, 2020-now









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Previous STEM Sessions

1. Bridge and crane building.
2. Emerging technologies.
   - Artificial Intelligence.
   - Self-driving cars.
   - Augmented Reality.
3. Introduction to programming.
4. Codes and codebreaking.
5. Space.
6. Radar and Stealth.



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This Session



Disaster Relief

- The RAF's Role
- Examples
- Exercise

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Before We Start

- These STEM sessions aren't on any exam.
- The slides can be downloaded from www.timbateson.co.uk/rafac/ after the presentation.
- No need to write everything down – please focus on taking part.

- If you have a question, then just ask as we're going along (or type it in the chat if you haven't got a mic).
- Staff – please shout if there are questions in the chat or anyone's hand is up (I can't see this while sharing my screen).

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The RAF's Role



Respond to Threats



Deliver Aid



Prevent Conflict



Work in Partnership



Watch the Skies



Combat Cyber Threats

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Source: https://www.raf.mod.uk/what-we-do/

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Video 1

RAF Airlift Capability

Disaster Relief Examples

- The Berlin Airlift – Operation PLAINFARE, 1948-49



RAF Short Sunderland on Lake Havel, Berlin, Sep 1948

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Disaster Relief Examples

- The Berlin Airlift – Operation PLAINFARE, 1948-49
- Famine relief – e.g. Op BUSHEL, Ethiopia, 1983-85







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Disaster Relief Examples

- The Berlin Airlift – Operation PLAINFARE, 1948-49
- Famine relief – e.g. Op BUSHEL, Ethiopia, 1983-85
- UK flood relief (times many) – e.g. Cockermouth, Wainfleet, Whaley Bridge







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Disaster Relief Examples

- The Berlin Airlift – Operation PLAINFARE, 1948-49
- Famine relief – e.g. Op BUSHEL, Ethiopia, 1983-85
- UK flood relief (times many) – e.g. Cockermouth, Wainfleet, Whaley Bridge
- Hurricane relief – e.g. Op RUMAN, Caribbean, 2017



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Exercise





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Video 2
BBC News Report from St. Martin
BBC NEWS

Exercise

- What did we just see/hear in the news report?
- What do people need help to recover from?

Winds up to 225mph (strongest storm in a decade)	4 people confirmed dead on St Martin	95% of buildings destroyed or seriously damaged	Airport destroyed
Trees uprooted and roofs ripped off houses	Seaport blocked	Flooding	Another hurricane (*Jose*) on the way

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Exercise

- The British government is responsible for the people living in the nearby British Virgin Islands, Anguilla and Monserrat.
- The government has put us in charge of the relief operation.

- What are we going to do?
  - What are people likely need the most urgently?
  - How will we get it to them?
  - What else might we need to do?
  - Try thinking about what is needed in *hours* vs. *1-2 days* vs. a *week*

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Exercise

- What needs to arrive/happen within hours?

Transport (e.g. helicopters)	Medics and first aid equipment
Search & Rescue (teams and equipment)	Torches / lanterns
Comms (radios / satellite phones)	Batteries for the above



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Exercise

- What needs to arrive/happen within 1-2 days?

Evacuate the isolated / most critical	Drinking water / purification tablets
Ready to eat food	Other urgent medical supplies
Basic hygiene facilities (soap, hand sanitiser)	Blankets and warm clothing



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Exercise

- What's the next priority (3-4 days)?

Re-open roads	Re-open airports / seaports	Tents / shelters
Stretchers / camp-cots	Non-perishable food	Things to store, cook and prepare food
Emergency vehicles	Maintain / restore law and order	Prepare for the next hurricane



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Exercise

- What's the next priority (5+ days)?

Restore power	Restore water supplies
Restore sanitation	Basic building materials
Repair hospitals	Repair homes (potentially)



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Break

- End of Part 1
  - The RAF's role
  - Disaster relief examples
  - Began our exercise
- Quick 5 minute leg-stretch.
- Part 2:
  - Finish the exercise

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Exercise

- Interactive exercise: link

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Video 3

BBC News Report, British Virgin Islands



Video 4

Chinook Force Op RUMAN Video

Summary

- The RAF's role
  - *Deliver Aid* is one of the RAF's 6 high level missions
- Examples of disaster relief operations, in the UK and abroad
  - Blockades, famines, natural disasters, pandemics…
- Planning exercise
  - Based on Op RUMAN (hurricane relief in the Caribbean, 2017)
- Further information at:
  - https://www.raf.mod.uk/what-we-do/
  - https://www.raf.mod.uk/what-we-do/overview/hurricane-irma-relief/

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Any Questions?

(Feel free to ask in private if you prefer)

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