

Evolution of Analytical & Experimental Wargaming Used by Dstl

Wargaming approaches used in Defence

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Operational Analysis – ‘OA’

- Application of scientific techniques to complex problems arising in the direction, development and management of multifaceted systems of people, machines, materials and money in order to support (evidence-based) decision making within the MOD.
- Multi-disciplinary numerate / scientific activities.

An experiment is not...

- An exercise
- A model (or simulation)
- A wargame
- A seminar or
- A workshop

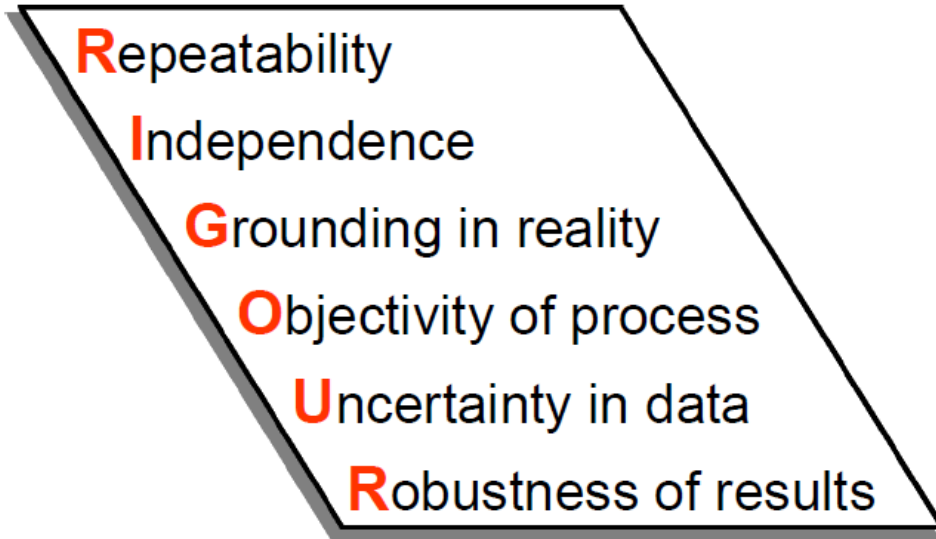
- However, they can be part of an experiment when conducted within a controlled process...

- More information:
 - ‘*LAND HANDBOOK Force Development Analysis and Experimentation*’



OA RIGOUR and Ethics

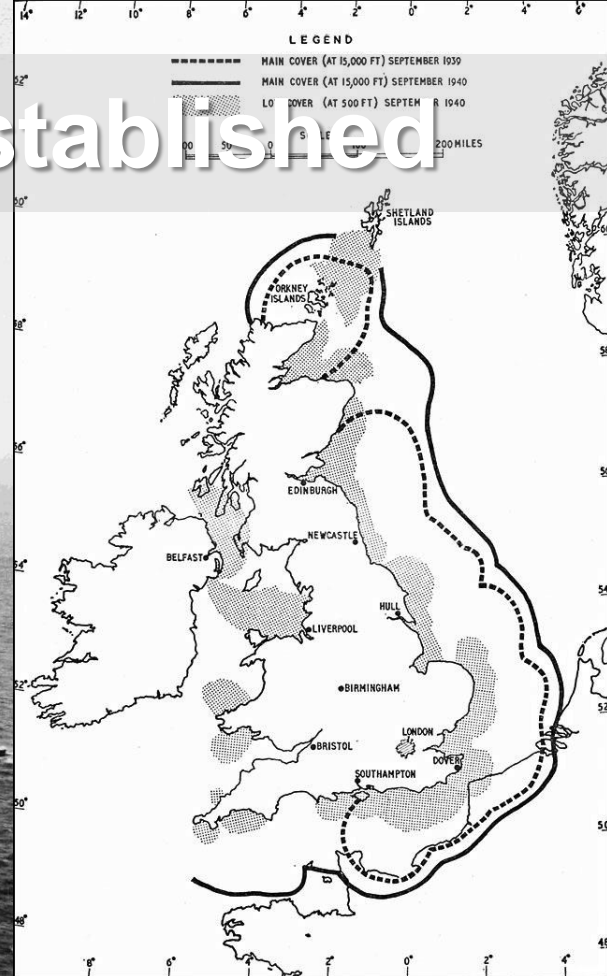
- All OA advice follows a scientific process that is RIGOURous*
- All OA advice adheres to the Universal Ethical Code⁺
 - RIGOUR (honesty & integrity);
 - RESPECT (for life, the law and the public good),
 - RESPONSIBLE (communication: listening and informing)



Questions we get asked ...



Wartime OR Groups Established



Operational Analysis/Research

30s/40s

50s

60s

70s

80s

90s

00s

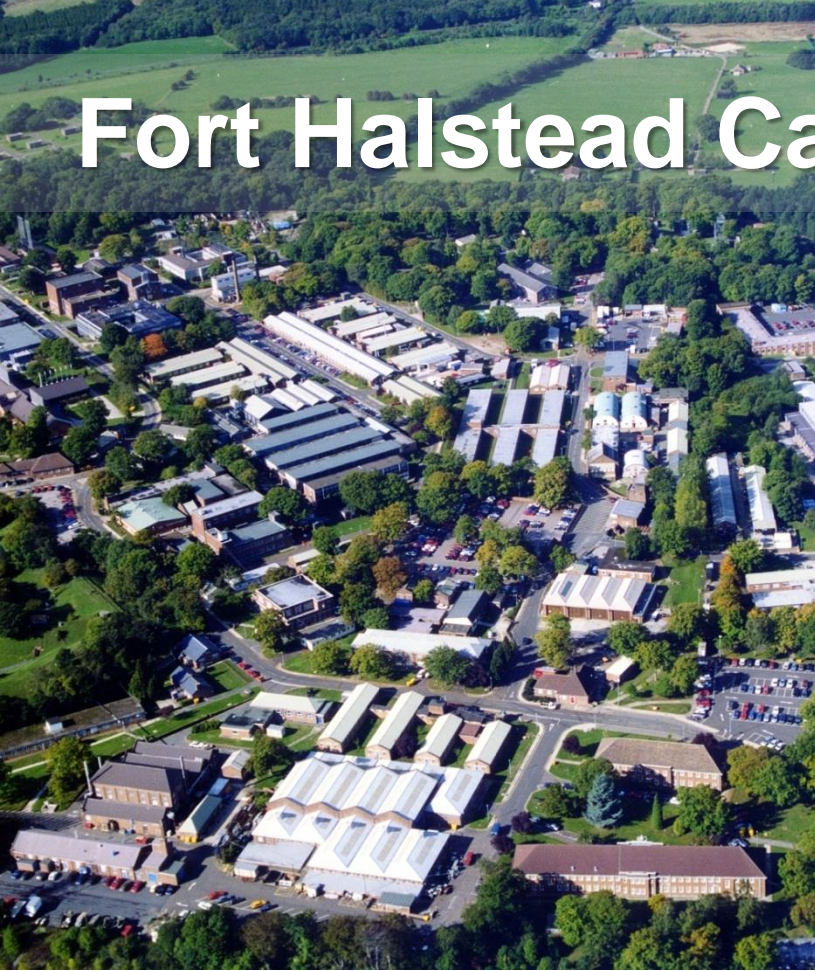
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WW2

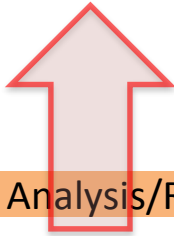
Cold War

Expeditionary & Peacekeeping

Fort Halstead Capability Established



Battle Group War Game
The Founding Team Jan 1959



Operational Analysis/Research

30s/40s

50s

60s

70s

80s

90s

00s

10s

WW2

Cold War

Expeditionary & Peacekeeping

Manual with 3D Terrain for LOS



Manual with 3D Terrain for LOS

Operational Analysis/Research

30s/40s

50s

60s

70s

80s

90s

00s

10s

WW2

Cold War

Expeditionary & Peacekeeping

2D Manual with Computer Assistance



2D Manual with Computer Assistance

Manual with 3D Terrain for LOS

Operational Analysis/Research

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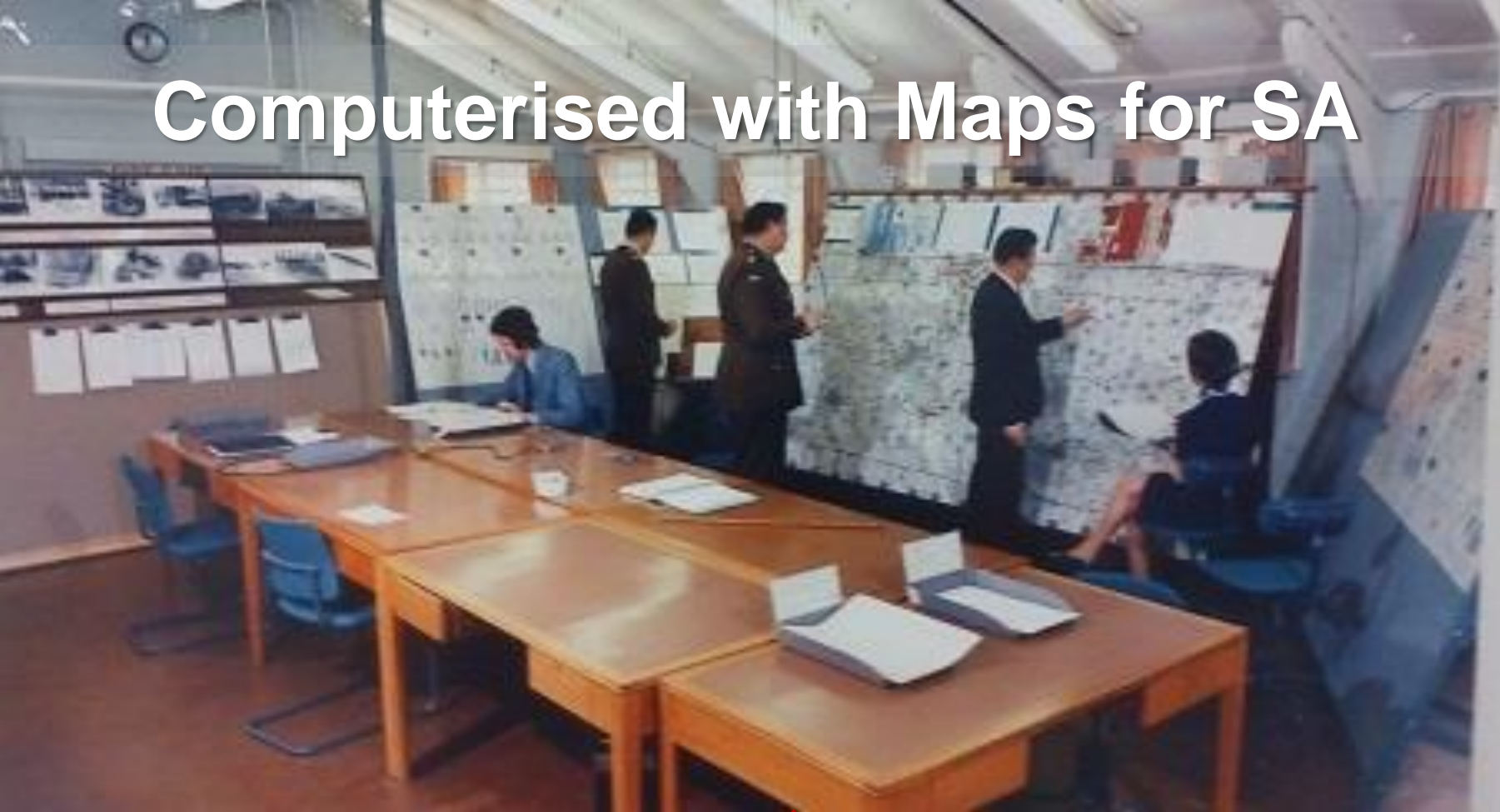
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WW2

Cold War

Expeditionary & Peacekeeping

Computerised with Maps for SA



Computerised wargames

2D Manual with Computer Assistance

Manual with 3D Terrain for LOS

Operational Analysis/Research

30s/40s

50s

60s

70s

80s

90s

00s

10s

WW2

Cold War

Expeditionary & Peacekeeping

Fully Computerised



Computerised wargames

2D Manual with Computer Assistance

Manual with 3D Terrain for LOS

Operational Analysis/Research

30s/40s

50s

60s

70s

80s

90s

00s

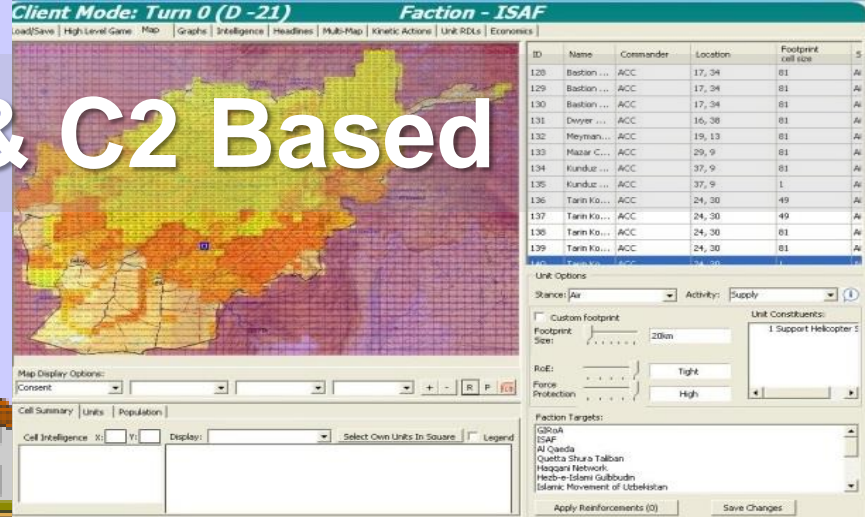
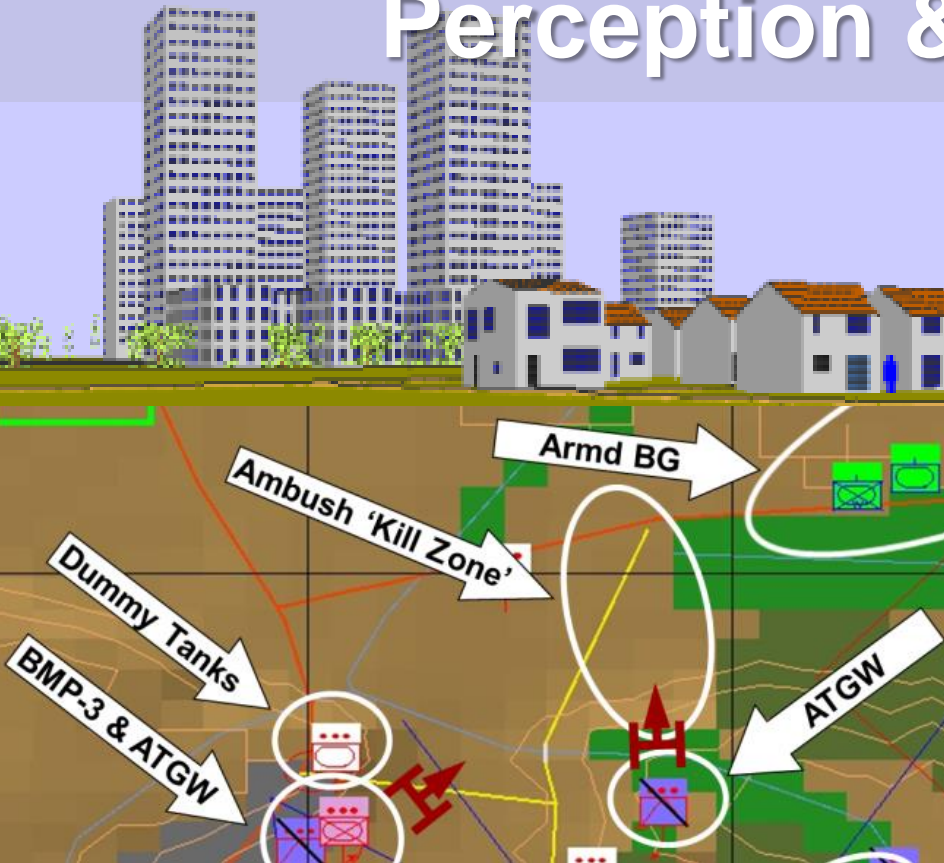
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WW2

Cold War

Expeditionary & Peacekeeping

Perception & C2 Based



Computerised wargames

2D Manual with Computer Assistance

Manual with 3D Terrain for LOS

Operational Analysis/Research

30s/40s

50s

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WW2

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2D Manual with Computer Assistance

Rapid Campaign Assessment Toolset

Cranfield
UNIVERSITY



Wartime Planning Tool

Excel Implementation - Version 2.5

This is an implementation of the algorithms of the WPT model of ground battle between Red and Blue.

WARNING: Consult the User Guide worksheet or the WPT User and Technical Guide for information about the functions of buttons and other controls.

Times in Hours Timestep Length: <input type="text" value="1"/> Battle Duration: <input type="text" value="24"/>		Tempo Use Duration: <input type="text" value="1"/> Input: <input type="text" value="1"/>		Attacker Posture BLUE: <input type="text" value="Hasty"/> RED: <input type="text" value="Hasty"/>		Conditions Terrain: <input type="text" value="Rough (PP8 Base)"/> Barrier: <input type="text" value="None"/>																																	
BLUE Force Characteristics: <table border="1"> <thead> <tr> <th>Name</th> <th>Defeat Level</th> <th>Time of Entry</th> <th>Time of Exit</th> <th>Effect Factor</th> <th>Use Force</th> <th>Use OSG</th> <th>Include for Defeat</th> </tr> </thead> <tbody> <tr> <td colspan="8">[Empty table rows]</td> </tr> </tbody> </table>				Name	Defeat Level	Time of Entry	Time of Exit	Effect Factor	Use Force	Use OSG	Include for Defeat	[Empty table rows]								RED Force Characteristics: <table border="1"> <thead> <tr> <th>Name</th> <th>Defeat Level</th> <th>Time of Entry</th> <th>Time of Exit</th> <th>Effect Factor</th> <th>Use Force</th> <th>Use OSG</th> <th>Include for Defeat</th> </tr> </thead> <tbody> <tr> <td colspan="8">[Empty table rows]</td> </tr> </tbody> </table>				Name	Defeat Level	Time of Entry	Time of Exit	Effect Factor	Use Force	Use OSG	Include for Defeat	[Empty table rows]							
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OSG Before Battle: <input type="text" value="Simple"/> Simple: <input type="text" value="Complex"/>		<input type="button" value="View OSG Tool"/> <input type="button" value="FIGHT BATTLE"/> <input type="button" value="View Archive"/> <input type="button" value="View ORBAT"/>		<input type="button" value="Remove OSG Kills"/> <input type="button" value="View Summary"/> <input type="button" value="Clear Archive"/> <input type="button" value="Clear ORBAT"/>		Support during Battle: MLRS Pods: <input type="text" value="BLUE"/> CAS Sorties: <input type="text" value="RED"/> AH Sorties: <input type="text" value="RED"/>																																	
<input type="button" value="Reset ORBAT"/> <input type="button" value="View Results"/> <input type="button" value="View Model History"/>																																							

Computerised wargames

2D Manual with Computer Assistance

Manual with 3D Terrain for LOS

Operational Analysis/Research

30s/40s

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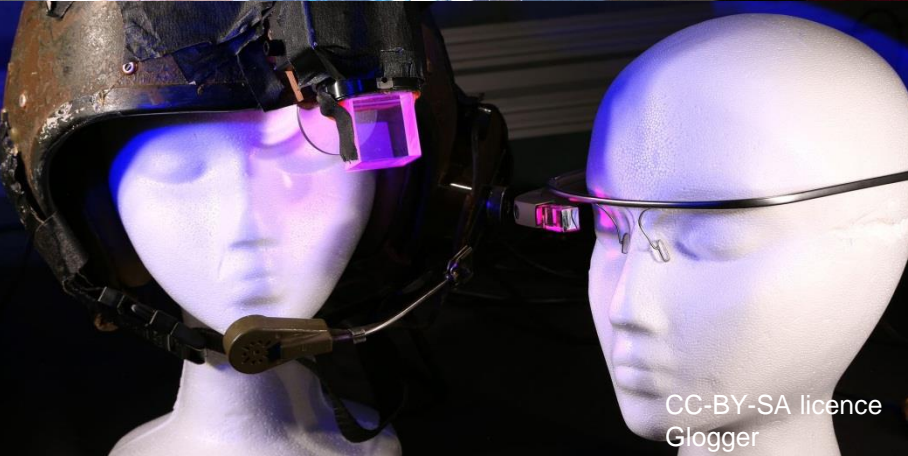
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WW2

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55 Years of Wargaming: Where Next?



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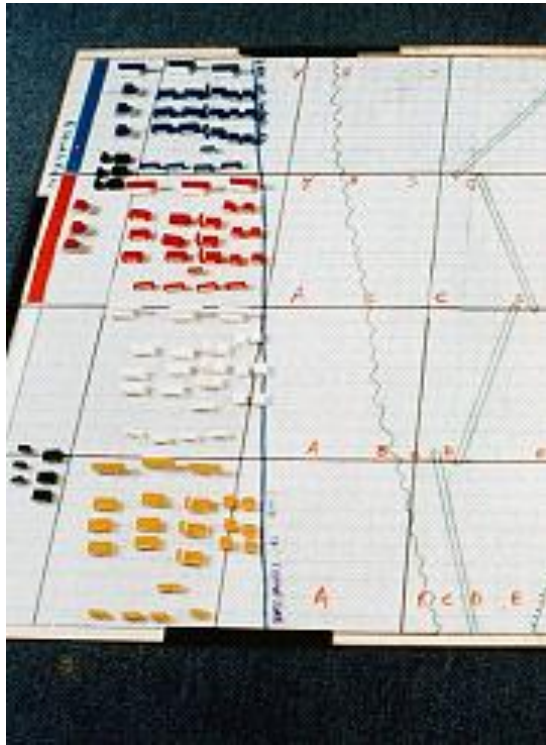
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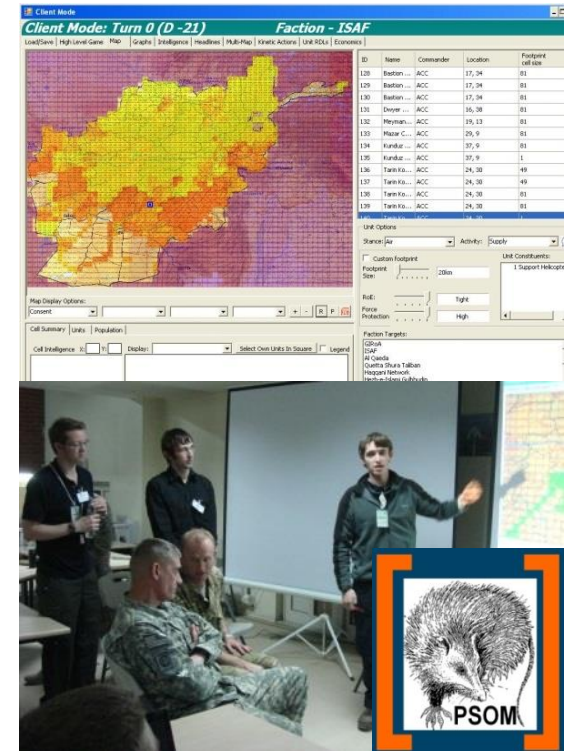
The Advice Matters



GRANBY
(1990)



UK/US Joint Fires
(00s)



ISAF
(2011)

And Finally, Not Forgetting....

Understanding
is as important as
‘results’



Maximising the impact of science and technology for the defence and security of the UK