



Connections UK

Improving Methods, Models and Tools: Red Teaming Workshop

Output slides: comments raised during the workshop are bulleted in red in the Notes Pane. Original notes are in black

Overview

- Introductions
- Rationale for workshop
- Workshop purpose
- Workshop format

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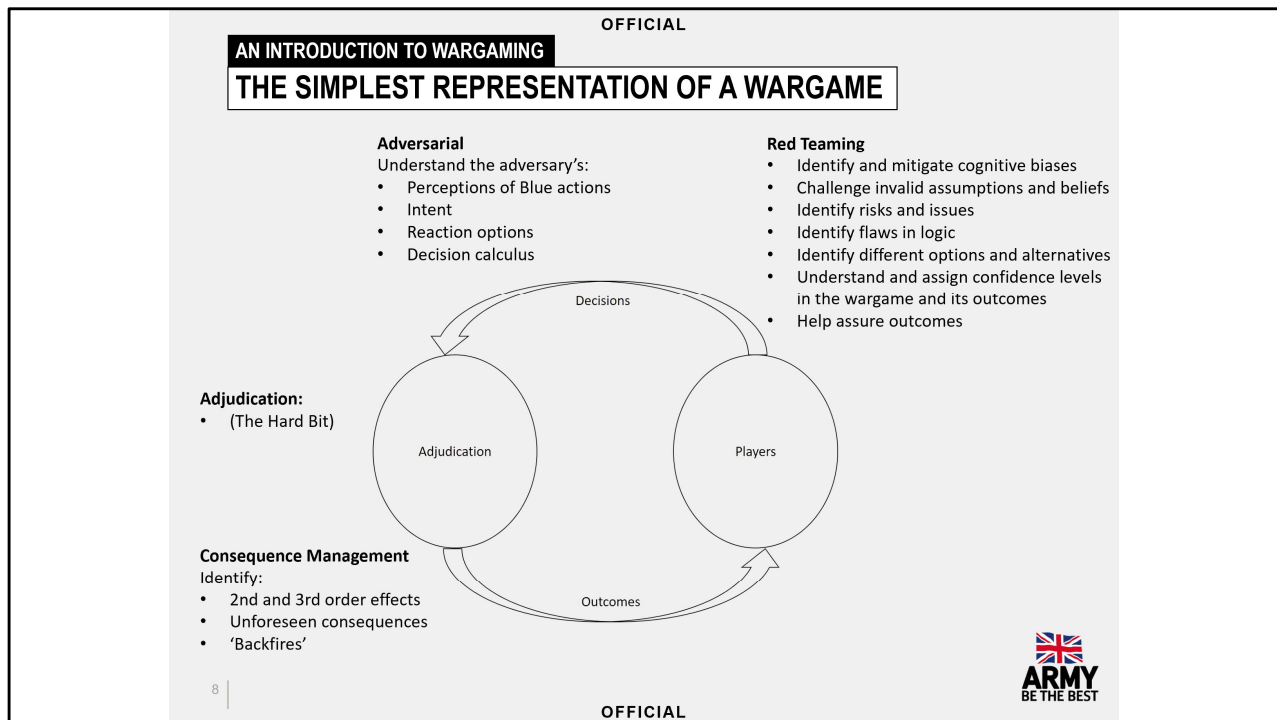
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Contention:

*Whereas wargaming **might** feature as part of a Red Teaming approach, Red Teaming **must** feature in all serious wargaming.*

1. Slides 2 – 8 simply establishes the rationale, context and approach taken to the workshop



1. The potential value added by Red Teaming is highlighted in the top right text box

'The most serious error made in planning by Ukraine appears to have been the basis on which it was determined that the main effort could succeed... Rather than using tempo and concentration... it was hoped that shock action would cause Russian troops to break, as had occurred around Kharkiv in 2022. **Insufficient planning was done to assess how the critical conditions for such a collapse in morale could be achieved, so that this proved an overly optimistic planning assumption**'.

Preliminary Lessons from Ukraine's Offensive Operations 2022–23, Royal United Services Institute

'Ukrainian, US and British military officers held eight major tabletop wargames to build a campaign plan. **But Washington miscalculated the extent to which Ukraine's forces could be transformed into a Western-style fighting force in a short period** - especially without giving Kyiv air power integral to modern militaries... US military officials were confident that a mechanised frontal attack on Russian lines was feasible with the troops and weapons that Ukraine had.'

Stalemate: Ukraine's failed counteroffensive. Miscalculations, divisions marked offensive planning between US, Ukraine, Washington Post, 4 December 2023

1. From open-source reporting, the absence of Red Teaming seems to have been a contributory factor to the poor wargaming of the 2023 counter-offensive. Arguably, this was one reason why it failed

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Workshop purpose:

- Develop understanding of Red Teaming good practice to improve its application within wargames
- Identify gaps/barriers to the use of Red Teaming within the wargaming process
- Capture an understanding of what can/has gone wrong with approaches to Red Teaming and how this can be mitigated

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Interactive and dynamic, covering:

- Definitions
- Benefits
- Applications
- Pathologies (what can go wrong) and mitigations
- Best practice/Quick Wins

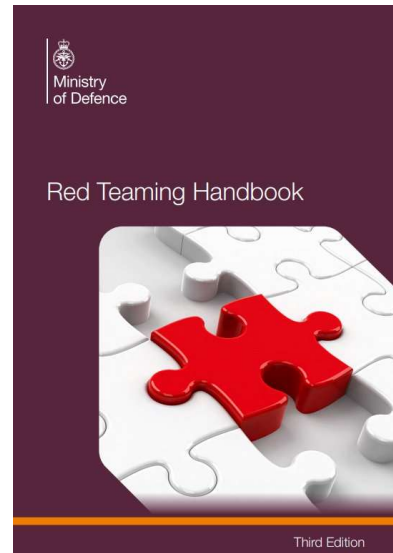
Definitions

- ✗ Red Cell
- ✗ Security Penetration Testing
- ✗ Formal Standing Red Team

Red team: “A team that is formed with the objective of **subjecting an organisation’s plans, programmes, ideas and assumptions to rigorous analysis and challenge**”

Red Team mindset: “A philosophy or state of mind where problem solvers and decision-makers **apply red teaming techniques** and approaches **to everyday challenges and problems routinely**. It is a habitual mode of thinking and working that involves fast and efficient approaches in time-pressured scenarios across a range of situations and levels within an organisation. The concept of a red team mindset is very similar to **critical thinking**.”

(Red Teaming Handbook Third Edition)



Definitions

Red Teaming can be a frustrating term as it often gets thrown around – when someone says this has been or needs red teamed, ask them what they mean by this. The term Red Team can be used to mean:

- a Red Cell tasked with thinking like an adversary (wargame)
- a Security Penetration Testing Team that identifies/tests vulnerabilities.
- a formal standing red team of permanent individuals trained to critique anything/everything

Outline what red teaming is:

- Application of red teaming techniques to challenges and problems.
- It is a structured process (might mean the employment of simulations, vulnerability probes or alternative analysis)
- It that enables one to better approach complex problems; to develop fresh and alternative perspectives; to critically evaluate plans; to identify strategic vulnerabilities and weaknesses; to improve performance; to understand the interests, intentions and capabilities of another (whether this be a policy, strategy or the sense I use red teaming, or that of an ally or adversary in a wargaming sense)
- (Similar to critical thinking)

It can be

- a) a team/cell formed for a specific purpose (e.g. Vatican’s devil’s advocate)
- b) Habitual - having developed a red team mindset

1. A whole-of-group *mindset* is particularly useful, whereby everyone is part of the Red Teaming

process

2. It can be useful to incentivise Red Teaming e.g. offer a prize for the most interesting alternative idea
3. Establishing a safe-to-fail environment is important. Leadership is often required to do this, with a senior explaining that the event is a safe-to-fail - and then setting an example to substantiate this
4. Red Teaming is useful throughout the wargame lifecycle, from initiation (project inception) through to producing the final report

Benefits



[Red Teaming Handbook - DCDC](#)

Benefits of challenge

Why challenge? There's the practical answer and the bigger picture psychological answer(s).

Practical...

Diagram on the left from the Development Concepts Doctrine Centre (Defence Futures) Red Team handbook. This is practically useful for you in identifying

1. (Some of) The benefits of challenge (connect to slide 4)

- i. Challenge assertions/assumptions/beliefs
- ii. Identify and mitigate against biases
- iii. Testing plans/systems from a different perspective
- iv. Understand various options available
- v. Understand the perspective of another/identify different opinions
- vi. Assess the evidence base/widen scope of information searches
- vii. Gauging the potential for surprise/shock

Justifying your challenge if people push back, it shows how you are adding value or decision support:
"I'm challenging in order to"

Bigger picture.

"A great many people think they are thinking when they are merely rearranging their prejudices"
(William James, US Psychologist).

There are a many cognitive biases (*systematic errors in thinking that occurs when individuals/teams are searching for, processing and interpreting information, affecting the decisions and judgements that are made based on this information*), and heuristics (mental shortcuts) that can lead individuals or teams to commit errors of judgement and decision-making. It is beyond the scope of this presentation to discuss them all.

The concept of a challenge/red team mindset is to instill habitual ways of thinking and working that can help individuals and teams avoid these biases and thus make more effective decisions.

Note the use of the words mitigate and avoid, not eliminate bias!

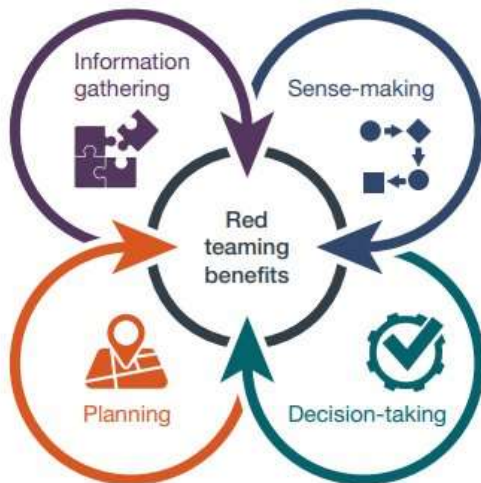
1. Distinguish between Red Teaming that supports wargaming and wargaming that supports Red Teaming

Further Detail

- Anchoring bias – first piece of data being baseline for rest of discussion, setting range of expectations or indeed distorting
- Confirmation bias – we are more aware of and give more credibility to info that validates our views and skip over that which does not
- Optimism bias – we underestimate our shortcomings, overestimate our abilities, exaggerate our chances, take risks
- Group think - A psychological process that refers to the internal social pressures that can lead a closely knit (and generally high functioning group) to commit errors of judgement. Symptoms include;

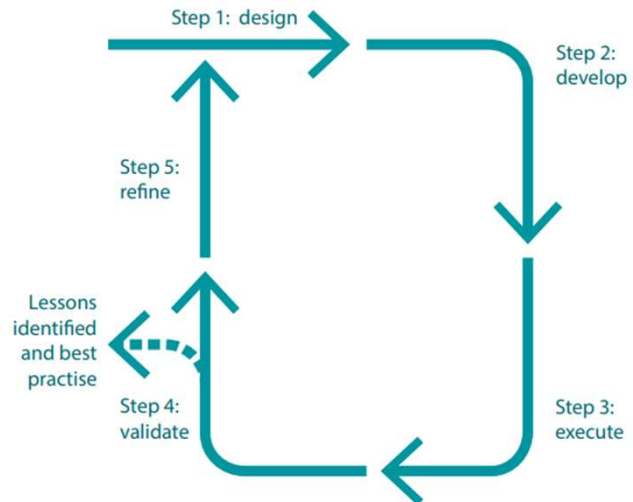
- 1.Illusion of vulnerability – the group cannot fail.
- 2.Morality – the group's motives are inherently good.
- 3.Rationalising – tendency to explain away contradictory info.
- 4.Stereotyping – tendency to portray others who are opposed as evil or stupid.
- 5.Self-censorship – tendency of group members to keep doubts to themselves.
- 6.Illusion of unanimity – belief that silence is the same as agreement.
- 7.Mindguards – emergence of self appointed thought police who actively shield the group from information that might challenge its assumptions.
- 8.Conformity – tendency to view dissent as disloyalty .

Application



Decision-making cycle

[Red Teaming Handbook - DCDC](#)



Decisions are made at each step of the wargaming cycle

Challenge in the decision-making cycle

Red teaming can be applied to, and provide benefits for, a range of information processing and decision-making tasks. It can support effective thinking at *different stages* of the decision-making cycle – and, thus, applicable throughout the wargaming cycle at each stage.

Sister technique to wargaming that could, and should, add value.

The application of red teaming/challenge within the decision-making cycle:

- **Information gathering** – ensuring that an information search or information environment scan is unbiased, as wide and encompassing as possible, and is not brought to a premature close. (Research for scenario design; Negotiating withing a game)
- **Sense-making** – guarding against preconceptions or closely held mental models that unduly influence the way an individual or team evaluates and interprets the available information and assesses risk. (Making sense of an ally/adversary action; considering potential vulnerabilities, strengths and weaknesses – strategic advantage)
- **Decision-taking** – developing the best solution to deal with the problem, one that is fit for purpose and not affected by the misapplication of inappropriate past-experience or external pressures. (Cell evaluating possible courses of action and testing these)

- Planning – ensuring that solutions are planned and implemented in an effective manner by guarding against over-optimism and a failure to consider contingencies, potential problems or pathways to failure (Planning various injects for a wargame)

Consider the steps involved in designing a wargame. All stages involve decision-making and open the possibility for the application of challenge/red teaming techniques:

- Design (Aim/Scenario/Metrics/Mode of Analysis). Example of challenge: alternative analysis when designing scenario; dot voting
- Develop (simulation/playtesting/adjudication methods) Example of challenge: curating participants; pre-mortem analysis
- Deliver/Execute (most important): Course of Action development/evaluation/refinement within the game). Example of challenge: Four ways of seeing/Key assumptions check
- Validate (report; reflections) Example of challenge: ensuring diverse perspective represented; consideration of alternative outcomes/key turning points – could consider alternative outcomes
- Refine/Review (application of lessons identified so they become lessons learned)

1. This slide was used as a basis for breakout discussions. Teams considered where Red Team challenge could be injected during the wargaming lifecycle. Answers offered were:

- Before (design and develop):
 - Ask whether wargaming the correct tool
 - Have the correct sources of information (including previous similar wargames) been examined?
 - Is the data complete and correct to the necessary degree?
 - Will the actions taken in the wargame produce the correct effects?
 - During (execution):
 - Build Red Teaming explicitly into the wargame process and/or agenda
 - Include time for people to reflect on ‘So what?’ questions
 - Does Red Teaming break or disrupt the wargame flow? If so, consider applying it outside the narrative-forming part of the wargame
 - Red Teaming should pervade the entire process
 - After (AAR, reporting and refining):
 - Hold whole-group sessions to examine lessons identified (which are different from lessons *learned*). These can be during the AAR or post-event.
 - Bring in external SMEs to Red Team lessons identified
 - Ensure wargame outputs are not skewed by a sponsor to reinforce their assumptions
2. Red Teaming is not easy: you must work to establish it within your culture so that it is accepted
 3. Time pressures often preclude, or squeeze out, Red Teaming. Develop a formalised feedback process with Red Teaming incorporated
 4. But applying Red Teaming needs time, both in the activity itself and to allow people to assimilate the insights
 5. It also needs to be applied incrementally and iteratively
 6. Record and assess how Red Teaming changed a plan
 7. Ensure challenges are constructive. How might we improve? Where might the plan fail, and how can we mitigate this?

Pathologies (what can go wrong)

- DCDC Red Team Handbook:
 - Uncover hidden biases
 - Challenge assumptions and beliefs
 - Identify flaws in logic
 - Widen the scope of information searches
 - Identify different options
 - Stress-test the plan



- Things that have gone wrong
 - Challenge introduced into the system or process too late
 - Heavily caveated outputs, almost to the point of being unusable
 - Unrecognised Bias
 - In the design phase:
 - *Wrong methodology used because taking advantage of some efficiencies undermined the value of the specific wargame*
 - In the execution:
 - *Too much credibility given to an authority figure by some players led to conflict among the players and undermined the game*
 - *Some players couldn't match the wargame rules and scenario to their personal experiences*
 - *Wargame experts too invested in winning (the game becoming more important than the thing being represented)*
 - In the analysis and exploitation
 - *The outputs didn't match the stakeholders' desired output*

1. The *staff* don't accept the challenges. This can be as detrimental as the commander / decision-maker not accepting challenges

Mitigations (*While Wargaming*)

1. Is a wargame the right methodology for this problem? Is this the right wargame for this problem? Why do I/we think that *this* wargame is the right one?
 - a. This is the approach I think is the right one
2. Design:
 - a. Is this the right question?
 - b. How do we shape the wargame to answer the question but without adversely affecting the insights and outputs?
 - c. Is the logic flow sound?
 - d. Would more information change anything? (This is a balance!)
3. Execution:
 - a. Players base their actions on their experience (its why they are there!) but this can be a two edged sword
 - b. Do players match our expectations of what they will do and how they will do it? Is this right? How do we identify and challenge bias that appears as SME judgement?
4. Analysis and Exploitation:
 - a. Have we pitched the output at the right level and will it accurately and objectively record the findings?

1. Use this slide as the basis of a question set that you ask yourself at various stages of the wargame lifecycle
2. Key assumptions checks are essential throughout the lifecycle. Assumptions must be briefed
3. Playtesting is essential, both as a form of Red Teaming and to ensure Red Teaming is built into the wargame
4. However, a counterview was that Red Teaming might be separated from playtesting [Graham - I didn't follow this line of thought]
5. While time is always short, Red Teaming must be built into the process
6. Use external SMEs

Best Practice/Quick Wins

1. Liberating Structures (e.g. everyone speaks once, before anyone speaks twice – seniors speak last)
2. “Can I just offer some challenge?” – be explicit, and clear
3. Include challenge as a standing agenda item
4. Portray “challenge” as critical thinking: it can be done within the project by the team delivering it as part of the process, as well as by outsiders brought in for the purpose: and it’s a useful skill!
5. Don’t leave it until the end of the process

1. Liberating Structures: Simple, but effective. Techniques used to stimulate divergent thinking and ensure diverse opinions/diversity of perspective is captured (that would not have occurred otherwise). Benefits: these structures generate innovation and break conventional thought processes; they are simply/quick to employ.
2. Can I just offer some challenge - identifies that you are considering alternatives; refines chosen course of action; diversifies perspectives; adds confidence to decision; mitigates anchoring bias/group think
3. Build in challenge as a standing agenda item – e.g. in cells when determining strategies/by facilitators

Questions?

Further Resources

Red Teaming

- [DCDC Red Team Handbook](#) (Oct 2021)
- [US Army Red Team Handbook](#)
- [Bryce Hoffman – Red Teaming Book](#)
- [Micah Zenko – Red Teaming Book](#)

Challenge

- [The good operation: a handbook for those involved in operational policy and its implementation, including the Defence Reasonable Challenge Guide](#) (Jan 2018)
- [Ideas for Leaders: Changing the Way we think: Speaking Truth to Power](#)
- [Podcast: Meet the Defence Expert Whose Job is to Play Devil's Advocate to the British Army](#)

Decision-making culture

- [War on the Rocks - A GUIDE TO BETTER NATIONAL SECURITY DECISION-MAKING](#) (Dec 2017)
- [Civil Service Blog -Diversity leads to better decision-making](#) (Mar 2022)
- [Mission Critical Improving National Security Culture, Diversity & Inclusion Toolkit](#) (2021)
- [Defence Intelligence Futures Analytical Methods Team - Quick Wins for Busy Analysts](#) (Nov 2016)
- [Royal College of Defence Studies - Making Strategy Better: A guide for more effective strategy-making and its application](#) (2022)
- [2023 Modern Civil Service Blog - Skills: Wargaming and Red Teaming - How the MoD is challenging defence thinking](#)

1. Bryce Hoffman was offered as the pick of the bunch