

Danger, Bears Ahead....

Integrating Matrix Games, Operational and Tactical games in the "High North"

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Gjelder hele
Svalbard

Britain must beef up its defences in the Arctic to stave off the growing threat of Vladimir Putin's military in the region, MPs warn

- Russia is leading the scramble for Arctic's oil reserves and strategic routes
- Defence sub committee warned this military build up poses risk to UK interests
- It urged Theresa May to urgently face up to the threat and invest in the region

By KATE FERGUSON, POLITICAL CORRESPONDENT FOR MAILONLINE
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Aug. 30 2018 - 10:08

Russia Plans New Anti-Aircraft Base in the Arctic



Russian Defence Ministry / TASS

Recent Headlines

(which could have come from our Matrix game...)

Arctic's strongest sea ice breaks up for first time on record

Usually frozen waters open up twice this year in phenomenon scientists described as scary



Experts say thinning of the sea ice has reached even the coldest parts of the Arctic. Photograph: Nick ... / Greenpeace

Maersk launches first container ship through Arctic route in alarming sign of global warming

42,000 ton vessel carrying cargo of frozen fish will leave Vladivostok for St Petersburg this week

Henry Robinson | Tuesday 21 August 2018 13:50 | 0 comments

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One of Maersk's container ships near Copenhagen. The company is carrying out a 'year off' exploratory Arctic passage (Getty)

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China Eyes Arctic For Polar Silk Road

An analysis by Michael Lelyveld
2018-02-12

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Members of a Chinese Arctic expedition raise China's national flag at the site of a Chinese research station in Longyearbyen, the administrative center of Svalbard, Norway, in a file photo.

Associated Press

Genesis of the High North Project

Development, Concepts and Doctrine Centre (DCDC) Connections UK presentation 2017

From the DCDC Global Strategic Trends programme:

- *Complex and uncertain strategic context*
- *Overcoming our adversaries*
- *The conceptual component*



The multi-level family of wargames approach was inspired by US inter-war wargaming and their very effective ‘cycle of research’, which fed wargame insights into live trials and exercises. Not currently aware of any serious approach being attempted in the UK from a wargaming perspective**.

** Dstl's "MISSION" maritime survivability assessment code uses a similar approach for maritime OA

US Naval War College Interwar Wargaming

‘War College classes played out scenarios of the interwar period in two broad categories on maneuver: chart and board. Strategic and Operational maneuvers exercised student ability to move fleet units towards an objective... Once the opposing fleets came into contact, the chart maneuver transitioned to a board maneuver or Tactical game conducted with model ships on room-sized gaming boards in Luce Hall.’

‘The class maneuvered nine STRAT, OP and TAC problems, two RED [versus the UK] and the rest ORANGE [versus Japan]. As in classes before them, some STRAT or OP maneuvers flowed into TAC games.’

*John M. Lillard, Playing War;
Wargaming and US Navy
Preparations for World War II,
Potomac Books, 2016, p. 47 and 113*



Project Aim

To identify the risks and difficulties of linking multi-level wargames, and suggest mitigations.

- *What works?*
- *What doesn't?*
- *What opportunities arise from such an approach?*

NB: we were not given a Research Question; and were not specifically seeking real-world Observations, Insights and Lessons identified (OILs).

The Games

- These had to be pre-existing due to: no funding (the project is entirely voluntary); and rapidity (there is unlikely to be time to significantly develop new gaming systems given a real use of the approach).
- Subject game systems selected were:
 - Strategic / Political – **Matrix Game** (Tim Price, Tom Mouat)
 - Operational – **RCAT** (Jeremy Smith, Graham Longley Brown)
 - Tactical – **ASUW** (Dr. Nick Bradbeer, Matt Whorwood)

A Caveat – The Wargame Lifecycle

- Following the structure of the MOD *Wargaming Handbook*, the team has completed the project design phase, and are now moving to the development phase; it **is still work in progress**.
- ‘Execution’ would be for and with a real sponsor and players such as MWC or DCDC.
- The design phase has included pre and post event design meetings following the structure in the *Wargaming Handbook*. Key outcomes were:
 - A three-level approach was required to fully examine any given scenario: geo-political/strategic (Matrix Game); operational (RCAT); and tactical (ASuW).
 - Insights from each game would flow down into the next.
 - Any real-world insights would be, at best, tentative observations that require further examination using more gaming and/or other analytical methods.

Matrix

- Conducted at Shrivenham, May 2018. Maj. Tom Mouat presiding
- Teams playing Russia (political and military), China, The USA, the UK and Canada, Norway and “enlightened Capitalism”
- Expectation that the “action” would to some extent centre on Svalbard
- In the event the focus moved to “hearts and minds” / “fake news” and media ops centred on native populations and an independence campaign in Greenland (backed by Russia)
- Conclusion from this game – little opportunity or reason for nations to go to war specifically as a result of activity in the Arctic
- “Contagion” arising from a crisis elsewhere far more likely to be a cause of conflict in the region



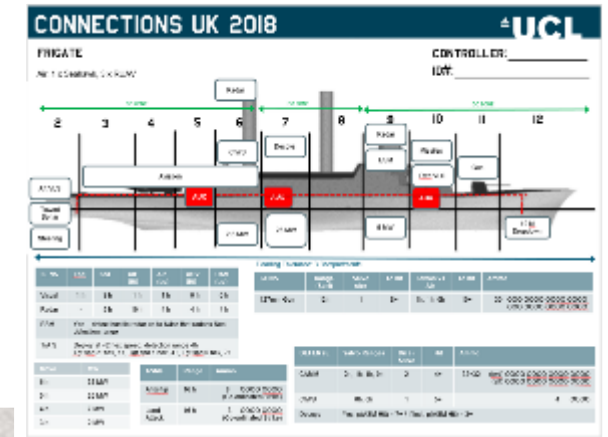
RCAT

- Based on an amended (injected) outcome from the Matrix game, assuming a crisis in the Baltic, a slow NATO response and a Russian coup de main seeking to occupy Svalbard to control the Norway-Greenland exists to both polar shipping routes
- Impact of high latitudes on naval operations
 - e.g. limit on RAS and consequential limit on CV positioning
 - Poor weather , zero visibility
 - Cold weather effects on upper deck systems / personnel
- Critical role of submarines and special forces
 - Both for ISTAR and “kinetic” effects
 - “Creative” use of SSBNs in a tripwire role (not advised)
- Emphasising the “one shot” and “use it or lose it” element of missile-centric modern naval warfare



ASUW

- A tactical level set of naval rules
- Briefed at Connections 2017
- Intended as a teaching aid for MSc naval architecture and marine engineering students on the UCL Ship design course
- But capable of being use in other, more “real world” situations as well
- In this case, engagements from the RCAT game were taken as starting points for ASUW engagements
 - E.g. US vs Russian SAG missile exchange engagement
- Further engagements / testing to be conducted as part of the Games Fair later in the conference.....



Risks, Difficulties, Mitigations

- **“Stay on Target”**. The compelling nature of gameplay and the subconscious desire to elicit real-world insights distracts from the aim. Mitigations include reminding ourselves of the project aim and having a Game Controller and Critical Thinker to keep us true.
- **Unexpected flow-down factors**. ‘Game A’ throws up factors for investigation that ‘Game B’ does not model, which could lead to subsequent games being invalid. Mitigations include: re-designing the subsequent game(s), developing ‘special rule; taking the factors ‘offline’ by examining them using other means; and finding another gaming system.



Risks, Difficulties, Mitigations

- **Scenarios skew analysis.** Factors are over-emphasised in the scenario skew game-play and ensuing observations and insights.
 - Mitigations: objective Critical Thinking of the scenarios; and rigorous and exhaustive playtesting.
- **Game structures skew the aim.** The structure, or shape, of an existing game skews the project aim, e.g. focussing on factors that the game models well and ignoring others that it doesn't.
 - Mitigations : having a Game Controller and Critical Thinker to keep us true; and rigorously testing the game(s), which takes time and effort.



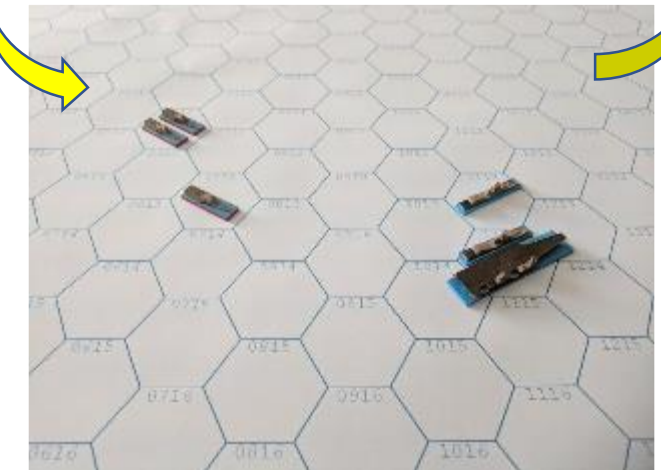
“if the tool you have is a hammer.....”

Observations

- **Game controllers and “critical thinkers” are essential**
 - **Game Controller.** steer each game to help achieve the overall aim.
 - **Critical Thinker.** objectively challenge assumptions. These can pertain to: the gaming systems; and in-game factors (e.g. movement speeds in ice).
- **Adjudication methods.** The most suitable combination seems to be:
 - **Geo-political game.** Free adjudication.
 - **Operational game.** Semi-free adjudication, using a ‘deliberative’ approach where outcomes are proposed for SME discussion and consensual determination.
 - **Tactical game.** Rigid adjudication.
- **Scenario plausibility.** Scenarios need only to be sufficiently plausible to prevent player disbelief. Hence, the High North ‘spill-over’ crisis arising from a Baltics situation is acceptable because a war with Russia in the Baltics is considered sufficiently plausible to have been the premise for many recent wargames. The more plausible the scenario, the more engaged will be the players.

Validation (Verification?) between game systems

- RCAT generates vignettes that can be resolved in detail using ASUW..
- But ASUW can also be used to generate operational level statistics for use in RCAT (and other tools) where detailed vignette assessment is not required / desired
 - For example, comparing factors and algorithms in the two systems
 - Computer based Monte Carlo simulation of particular events, e.g. ASCM attack on a ship or TG with varying degrees of threat weapon and defensive system effectiveness
 - AAR assessment - comparing vignette outcomes



Real-world questions and observations arising

- However, wargames primarily throw up questions, and the following seem to warrant further investigation:
 - How effective might ice stations be as part of an Anti Access and Area Denial (A2AD) strategy, for example by rapidly deploying AD and anti-shipping SSM?
 - Given Svalbard's strategic location, how vulnerable is it to a Russian coup de main?
 - How great is the impact of low temperature / high latitude on military operations?
 - How quickly could NATO forces react to Russian aggression in the High North?
 - How effective would be their response?
 - And the observation everyone has made:
 - *it seems that the risk of high-intensity warfighting in the Arctic is low (which accords with other assessments, such as Jane's Rex Brynen's, Tim Marshall's "Prisoners of Geography"), unless as a result of accident, miscalculation or a 'spill-over' from another crisis.*

Conclusions

- The project has demonstrated an initial nesting of strategic/political, operational and tactical level games
- Lessons have been identified and mitigations developed (or remembered)
- The project is moving from Project Design into Developmental stage
- This has been an interesting learning experience for all involved

