Introduction

Feedback from Connections UK 2018 requested that we run multiple simultaneous 'deep dives' examining various aspects of wargaming in detail. As well as an expanded selection of games and the Introduction to Wargaming (ITW) course, these sessions feature in Connections UK 2019. The purpose of this brochure is to allow you to sign up to games, deep dives and the ITW before the event. Those who do this pre-conference will take precedence over those signing up on the day. To allow you to make your choice, please find below: links to Google Forms, where you sign up; and a description of all games, deep dives and the ITW.

Day 1: Diverse Game Formats and Adjudication Methods and introduction to Wargaming Course

Attendees may pick between the following sessions for the morning and afternoon sessions, except for the **megagame and Introduction to Wargaming course, which will run all day**.

Introduction to Wargaming – Major Tom Mouat and Jerry Elsmore. **All day**

This is an all-day course, serving as an introduction to wargaming for beginners by Tom Mouat, the Head of Simulation and Modelling, from the Defence Academy of the UK. The course consists mainly of presentations, with some example games that will be played to demonstrate some of the points made. This is an all-day event with an optional presentation in the evening. Topics covered will be:

- Why Wargame?
- Types of Wargame.
- Wargaming "Effects".
- Wargame Design, Dice and Adjudication.
- Wargame Pitfalls and Dangers.
- Wargame Component Production and Map Generation (Optional evening session)

Super Soldiers and Killer Robots 2035 – Jim Wallman. **All day**

This is a map-based megagame using unclassified sources to explore a way in which novel technologies can be examined and observations, insight and lessons gained using a simple multi-player double-blind manual wargame structure. The game looks at a number of near-future technologies and their potential impacts. In this case the context will be kinetic land operations between peer opponents, and the focus is on how new technologies are represented as capabilities and how those capabilities might become integrated into new tactics or doctrine. The game will look at how novel capabilities mesh with operational planning at the brigade and battlegroup level.

The game is played in two stages – stage one: force structure planning and technology adoption, followed by stage two: wargaming combat operations to test out the structures, assumptions and plans. This is an abstracted game and is suitable for all levels of wargame experience from the complete novice through to the hardened veteran, and a deep knowledge of military operations, the Staff Officers Handbook and present-day doctrine is **absolutely not** necessary.

There is on-going interest in the ways in which the military community can be prepared for the impact of new technology over the next 20 years or so, and in particular how wargames assist that process. This was explored in a practical way in recent years in the UK (in EX EAGLE WARRIOR and EX AGILE WARRIOR). This megagame represents just one, easily accessible, way of exploring those issues for a general audience.

Afghan Provincial Reconstruction Team – Roger Mason, LECMgt

The Afghan PRT game simulates provincial reconstruction operations in Afghanistan. The game is designed for 12 players. It simulates reconstruction operations from the local village level through the national level decision makers in Afghanistan. The game has three province maps where teams of NGOS, Afghan government officials, and International Security Assistance Forces develop reconstruction projects. Each team member has strengths and weaknesses which they can leverage to meet their individual goals. (ex: The ISAF players have more resources, but the NGO players have better access to intelligence). A fourth map tracks decision making at the national level. Players must balance resources, influence, and intelligence to make reconstruction progress. The national level players have a limited number of national assets and resources they can provide to assist the province players. Players must deal with a dynamic mix of warlords, the Taliban, political/social challenges, and environmental issues. During the game a national level stability index tracks the stability of the country. If the index drops to a critical level reconstruction fails. Players have individual goals but must cooperate by sharing influence, resources, and intelligence to survive.

The Afghan PRT game was produced by LECMgt for Georgetown University and the US National Defense University. The objective of the game was to train US war college students in cooperative operations in Afghanistan with non-governmental agencies. The original concept request was to design "a wargame on peace operations." The game was originally designed as a future scenario where reconstruction success remains tenuous, the United States and ISAF are interested in drawing down their participation, and internal problems in Afghanistan are constant. The game is designed for 12 players which is the size of US war college seminar classes. The game includes individual and cooperative decision making. An aspect of gameplay is the necessity for teams to negotiate for limited national level resources. The game includes the gathering and manipulation of intelligence from provincial to the national level. The game has been used by a variety of US military and educational institutions as a topical active learning tool.

AFTERSHOCK: A Humanitarian Crisis Game – Rex Brynen

AFTERSHOCK: A Humanitarian Crisis Game is an educational game that explores the interagency cooperation needed to address the emergency and early recovery phases of a complex humanitarian crisis. Developed by PAXsims, AFTERSHOCK has been used by the US, UK, and other militaries, universities, non-governmental organizations, and UN agencies.

Camberley Kriegsspiel Briefing Only – Ivor Gardiner. **Afternoon only**

This session is a briefing for interested participants ahead of the Day 2 Games Fair when the actual Kriegsspiel will be run.

The Camberley Kriegsspiel is a low complexity adversarial wargame designed as a training tool for planning and executing operations from battlegroup (BG) up to brigade (Bde) level. Participants plan and conduct operations against live opposition over standard maps to allow for force-on-force free play. It requires an Excon (umpire/s) to coordinate and control activities.

Focus is on command, intelligence, manoeuvre and combat, with fog of war (FoW) and chance (luck) being essential elements. The sequence of play generates realistic, active and continual overlapping decision-making cycles. Both sides plan from a Scenario Briefing and play over their own map without being sighted to their opponents' maps. Once the planning phase is complete and Excon has updated the Master Map, the Execution Phase commences in a sequence of overlapping player turns with each side running an Action-Reaction-Counteraction sequence during their Execution. Excon updates players on Spotted enemy. It requires a minimum of two players and an umpire but can also be played as teams with a primary umpire and Red and Blue Team umpires. It is a flexible and adaptable toolkit allowing users to set up battles between forces of their choice anywhere in the world.

In summary, it is a double blind, umpired game designed by an infantry commanding officer for use as a training and development tool for unit and formation HQs.

Cyber Resilience Card Game – LTC Thorsten Kodalle

This will be a wargaming workshop to examine how Gamification can be used to incentivise player behaviour that is officially recommended (essential cyber hygiene measure like 2FA) but usually not shown in real life (to inconvenient) and how cyber awareness can be enhanced in a card driven game. You will actually leave this game more resilient than you entered it – promise!

Hybrid Campaign Game

Red versus Blue hybrid conflict. Playing out a 2 years period with a number of events that may be used by RED to polarise or undermine a western society and the alliances it is part of. This western society (Blue) will create a defensive campaign to increase resilience and to mitigate attacks. Red will try to outsmart it, using a selection of about 50 hybrid activities that have been applied in recent history.

Integrity: Conflict Sensitivity and Corruption – Paul Howarth

Integrity was originally developed within 77 Brigade as a training aid, utilising experience of working with Transparency International on an anti-corruption toolkit.

The game has been broadened to look at other conflict sensitivity issues around the deployment of a UK force in a range of scenarios. Players make their preparations based on briefings and then carry out activities whilst bearing in mind force reputation and regional stability.

Time and resources are managed each turn to provide oversight and hopefully mitigate risk. The game finishes with a discussion of the approaches taken and the individual's understanding of the issues.

Ukraine Crisis – Rik Stolk

Developed as a recruitment tool to attract and select officer cadets suitable for the Defensity College programme of the Dutch Armed Forces. The wargame is designed specifically for a target audience (10 - 30 people) who do not have any prior knowledge of wargaming or decision-making within the Armed Forces.

RCAT Full Spectrum Adjudication – Graham Longley-Brown, Jeremy Smith, NSC and Slitherine

This will be a wargaming workshop to examine how outcomes might be determined using various adjudication methods, models and tools (MMT). The scenario will feature a fictionalised crisis in the Baltics during a period of heightened escalation, and then warfighting. Outcomes requiring adjudication will range from kinetic through to soft, encompassing cyber and electromagnetic activity and humanitarian consequences. Adjudication MMT will range from role-play through to computer-assisted. The scenario is in development: it provides enough detail to enable the workshop, but is not a finished product.

Second Punic War – Professor Phillip Sabin

This is a multiplayer politico-military simulation in which each player represents one of the many factions or peoples whose interactions shaped this classic ancient conflict. Players strive to maximise their individual victory score by minimising damage to their faction from ravaging or excessive military mobilisation while redeploying forces and negotiating with and coercing others to further their preferred outcome in the overall conflict. The game has been played successfully for many years in my ancient warfare class, and it has also been run with senior military groups in several countries due to the contemporary resonance of its focus on coalition-building among factions with disparate interests. It is one of the games detailed in my book Simulating War.

Day Two Deep Dives

This is an opportunity for attendees to pick from several deep dives presented by experts in these areas.

Quantitative vs. Qualitative Gaming - Professor Phil Sabin

Arguably the most basic divide in wargaming is between games using a fundamentally mathematical model of reality and those where player decisions are shaped instead by informal assumptions and experience about the workings of phenomena ranging from platoon attacks to international crises. Hobbyists and gaming professionals tend to prefer formal models while non-gamers are more comfortable with informal discussion exercises. This Deep Dive will explore the quantitative vs qualitative divide by splitting attendees into 4 roughly equal groups, each with a mix of quantitative and qualitative gaming experience, and each discussing one of these 4 sub-questions:

- What are the strengths and weaknesses of quantitative and qualitative approaches respectively?
- Are particular topics and game objectives more suited to quantitative or qualitative approaches?
- Do games which try to blend quantitative and qualitative approaches offer the best or the worst of both worlds?
- Should we try to move users out of their comfort zones of quantitative or qualitative gaming, and if so how?

Each group will produce one side of bullet points documenting its ideas and conclusions, and these summaries will be consolidated into an overall report posted to the Connections UK website.

Answering 'so what?' questions – Jim Wallman

It has been said "…just because you can doesn't mean you should". A wargame, any wargame, has to be relevant to the question or questions being asked, and to be genuinely useful the game designer has to answer some critical 'so what' type questions for themselves as well as for the end user or client at an early stage in the design process.

This deep dive looks at the critical thought process of applying the 'so what test' to game design and will involve extensive audience participation.

Successful Playtesting – Graham Longley-Brown and Dr James Bennet

The session will feature two 15-minute presentations, then Q&A and comments. The intention is to convey playtesting best practice and then invite comments and suggested enhancements to this.

The presentations will explain best practice from two different perspectives:

- Dr James Bennett: Dstl/MOD playtesting procedures.
- Graham Longley-Brown: a professional practitioner's view.

As well as publishing the presentations, the output from the deep dive will include a short summary of attendees comments and suggestions. The session will be very informal, and active participation is encouraged!

Data Capture and Analysis Part 1 (Part 2 is in Deep Dive 2 on Day 3) – Colin Marston

At the start of the wargame process, the design team has to consider: (1) what data is needed, (2) how to go about collecting that data and (3) how to analyse that data. The data could be textual or numeric (or imagery), and could be either structured or unstructured. It is likely to come from a range of sources (e.g. players, player cells, the control team, supporting models & simulations etc.).

This deep dive will feature a number of speakers who will explore the topic of wargame-related data capture and analysis using real world examples. Some of the wargames they will be talking about will feature in the Games Fair. The deep dive will be split across two days and will include Q&A sessions.

Good data capture and analysis is a fundamental component of successful wargaming.

Session	Title	Speakers	Remarks
Part 1 (Day 2)	A practical approach for judging if a wargame is fit for purpose	Paul Pearce (Dstl) Tom Halliday (Dstl)	25 minutes in total, split 60/40 per speaker.
Part 1 (Day 2)	Experimental wargaming and quantitative analysis	Kiran Lakkaraju (Sandia National Laboratories)	20 minutes
Part 2 (Day 3 PM only)	Modelling of the human terrain in support of C2 exercises	David Robson (NSC)	20 minutes
Part 2 (Day 3 PM only)	Hosting a Matrix Wargame in a Slack Workspace	LTC Thorsten Kodalle (German MOD)	20 minutes

Presentation 1: A practical approach for judging if a wargame is fit for purpose - Paul Pearce & Tom Halliday, Dstl.

Dstl has produced an Evidence Framework that provides a practical approach to assessing the quality of evidence in support of an assertion. This presentation will introduce the Evidence Framework and will show how it has been applied to support assessment of output from a number of Dstl wargames and to support a technical evaluation of Combat

Mission, a commercial off the shelf wargame developed by Battlefront and published by Slitherine, to judge its fitness for purpose in support of analysis. The Evidence Framework comprises three tables, an Evidence Profile Table (EPT), a Validation Profile Table (VPT) and a Confidence Assessment Table (CAT). All three are used to make an informed judgement on the quality of the evidence supporting an assertion, e.g. observations or insights from wargaming. The Evidence Framework is used widely across Dstl and has been shown to be a useful and practical means of evaluating and assessing evidence to inform decision making. It is believed that adoption of the Evidence Framework as part of a business as usual analytical approach in support of analytical wargaming will improve the quality of the analysis. In this session we will demonstrate its utility by using the Combat Mission evaluation as a case study.

Presentation 2: Experimental wargaming and quantitative analysis - Kiran Lakkaraju, Sandia National Laboratories & University of California – Berkeley.

The ubiquity of the Internet and the proliferation of new tools to build and deploy complex games has created opportunities for new, experimental methods to study complex, strategic problems using scalable, quantitative data collection. Online deployment allows for large-n data collection and quantitative analysis, however there are significant challenges.

In this talk, we discuss the data collections methods we developed for SIGNAL Online and SIGNAL Board. We note the challenges in data collection and analysis and how we are addressing them. Some specific challenges: How do you create a controlled experimental environment in an online environment in order to collect data? How do you capture data from within both analog and digital gaming environments for social science inquiry? How do you integrate and analyze data from players with varying experience and backgrounds?

Games Fair Sessions 1 and 2

THE AL ASQA INTIFADA – Stella Guesnet, Kings College London

GAME DESCRIPTION

The Al-Aqsa Intifada is a two-player simulation of the strategic decisions faced by the Israelis and the Palestinians during the Al-Aqsa Intifada with a focus on the importance of the respective international and domestic audiences and the role of symbolic acts of violence.

In 10 turns the players are asked to decide on their strategy, which will affect the decisions of the opposing player as well as their reputation with domestic and international audiences. Both players face dilemmas over what choices will improve their overall points relative to those of their opponents in an intricate web of interactions.

PROFESSIONAL UTILITY

The game is a relatable simulation of the Second Intifada, with all actions available mirroring historical events and decision-making dilemmas. It shows how conflicts can become intractable, and how violence in conflicts has a performative as well as tactical or strategic aspect. The simulation can help players understand cycles of violence, and how conflicts can become 'tit-for-tat' situations.

ANTI-SUBMARINE WARFARE: A GAME FOR UNDERSTANDING THE BASICS – Lt Cdr Ed Oates RNR

GAME DESCRIPTION

Anti-Submarine Warfare: a game for understanding the basics of contemporary opposed transit of ships vs submarines

The game is a turn based, closed wargame that requires the players to plan, then execute their plan given uncertain knowledge of the situation. One player commands a small group of ships and anti-submarine helicopters, while another player commands two submarines. Neither side has full situational awareness with the presence of non-subs and anti-submarine helicopter scheduling and serviceability being some of the factors to contend with. Is deterrence enough to achieve your objectives or will kinetic action be required?

Feedback from players is most welcome.

PROFESSIONAL UTILITY

ASW system operators need to have an awareness of the other units involved in the hunt and understand the environment from the submariners' and the surface/air perspective.

This entry level board game allows two players to role play the opposing sides for a short period and then swap roles to apply lessons learned.

Learning objectives are in the 'attitude to ASW' through experiential learning, so minimal knowledge or skill required.

BEGGARS IN RED – THE BATTLE OF WATERLOO 1815 – James Bridgman, Kings College London

GAME DESCRIPTION

Beggars in Red is a strategic level game where opposing players re-fight the Battle of Waterloo 1815. Napoleon, attempting to prevent the Seventh Coalition forces from combining, attacked Anglo-Allied forces near the town of Waterloo. Delays in initial battlefield preparations, resulting from a storm, poor management, lakes of mud and the superiority of the Anglo-Allied position, caused Napoleon's gambit to fail, hastened by Prussian reinforcement of his opposition halfway through the battle. The last-ditch effort of the *Guarde Imperiale* fell short and French morale was broken, bringing the 100 Days Campaign to an end.

Team 1 plays as the forces of the Seventh Coalition: the Anglo-Allied Forces and reinforcing Prussian Army. Team 2 plays as the French *Grande Armée du Nord*.

Players will fight for control of strategic battlefield locations using the units that historically participated in the Battle of Waterloo in an attempt to overturn or preserve history. You can decide Europe's fate!

PROFESSIONAL UTILITY

Beggars in Red aims to afford participants the opportunity to decide for themselves what the Battle of Waterloo was. The battle has been the subject of heated debate ever since Arthur Wellesley, Duke of Wellington and Commander of the Anglo-Allied army and Carl von Clausewitz, the renowned writer of *On War* disagreed on whether the battle was a "near run thing", favouring France, or a grinding stalemate which favoured the Coalition from the start. Playing Beggars in Red also offers participants the opportunity to: understand the position of each army; and the chance to observe how the battle would have played out if different manoeuvres were taken by the commanders.

THE CAMBERLEY KRIEGSSPIEL – Lt Col (ret'd) Ivor Gardiner, late of the Royal Irish Regiment, now Director at Berwicks

GAME DESCRIPTION

The Camberley Kriegsspiel is a low complexity adversarial wargame designed as a training tool for planning and executing operations from battlegroup (BG) up to brigade (Bde) level. Participants plan and conduct operations against live opposition over standard maps to allow for force-on-force free play. It requires an Excon (umpire/s) to coordinate and control activities.

Focus is on command, intelligence, manoeuvre and combat, with fog of war (FoW) and chance (luck) being essential elements. The sequence of play generates realistic, active and continual overlapping decision-making cycles. Both sides plan from a Scenario Briefing and play over their own map without being sighted to their opponents' maps. Once the planning phase is complete and Excon has updated the Master Map, the Execution Phase commences in a sequence of overlapping player turns with each side running an Action-Reaction-Counteraction sequence during their Execution. Excon updates players on Spotted enemy. It requires a minimum of two players and an umpire but can also be played as teams with a

primary umpire and Red and Blue Team umpires. It is a flexible and adaptable toolkit allowing users to set up battles between forces of their choice anywhere in the world.

In summary, it is a double blind, umpired game designed by an infantry commanding officer for use as a training and development tool for unit and formation HQs.

PROFESSIONAL UTILITY

The following is taken from an article I wrote for the British Army Review; a professional publication. It gave a summary of why I believe the Camberley Kriegsspiel is truly a utilitarian tool for professional use in the British Army:

So, is the game worth the effort? It is worth considering what benefits the Camberley Kriegsspiel brings.

• Cost! It is cost neutral in a financially constrained era

• Simplicity. There are 7 pages of rules plus an explanation of how to umpire effectively. It uses maps and paper – no IT necessary. It is logical and intuitive

• Flexibility. You can take maps and counters anywhere, anytime.

• Utility. Its usefulness is unquestionable. It requires minimal space to run a wargame, comes with everything needed to use it (less maps), requires no DII/IT software or even electricity, can cover all aspect from combat through CSS, has minimal reproduction requirements, is time efficient, is not bound to civilian sub-contractor timings or DLODs, should ultimately build a library of scenarios for harassed Bn 2IC to draw and SSIs allow for any training objectives to be captured

• Training & development. It offers ideal prep for JOTAC & CWC, develops understanding of our doctrine and familiarity with planning processes, aids in developing staff officers (pre-staff subalterns & staff offrs), introduces simplified approaches to OSW, enables capability and force development and enables units to prepare for CAST, TESEX, OTXs & deployments

• EXECUTION! We train to plan but get very little execution out of it

• Directed. VCDS has openly directed that he wants to see the services developing and using wargaming

Users should not be daunted. If we are able to plan and deploy on operations; we are capable of running a contested wargame at sub-unit, unit and formation level. Everything necessary is available on the AKX. A good wargame system is a tool to develop better staff officers. Will the Camberley Kriegsspiel produce better commanders in the field? Nobody could claim that. Will it produce officers who better understand their trade, various capabilities and our doctrine and planning processes? Undoubtedly! Therefore – can we really afford not to use it?

CANVAS ACES – Professor Phil Sabin, Kings College London
Session One Only

GAME DESCRIPTION

Canvas Aces is a simple grand tactical simulation of WW1 air combat on the Western Front in 1916-18. Each turn represents 15 seconds, and each counter represents a flight of 3-9 fighters or a single 'Ace' pilot. The game highlights especially the importance of energy (in the form of speed or altitude) and the utility of covering tactics to protect other flights. *Canvas Aces* uses the beautiful counters and the side-scrolling perspective from Carlo Ammadeo's *Winged Victory* hobby game published by WBS Games, but through innovative use of a new board it returns to a more 3D perspective. The game differentiates fully between the performance of different aircraft types, as discussed below.

Canvas Aces models the escort and interception of bomber or recon flights at medium altitude, but it also includes various low altitude scenarios. At Connections we will play one of the latter, involving an attack on observation balloons defended by flak and patrolling fighters. **The game plays quickly, so we will break for 15 minutes in the middle to allow participants to browse swiftly around the other games being demonstrated in this session.**

The latest edition of the fully illustrated rules of *Canvas Aces* is available on the Boardgame Geek *Winged Victory* pages, together with three complete sample games. Just Google 'Winged Victory BGG'.

PROFESSIONAL UTILITY

Canvas Aces is a WW1 conversion of Professor Sabin's *Dogfight* design which will be demonstrated in the second Games Fair session. The system evolved originally from *Angels One Five*, which was used for many years in Professor Sabin's final year BA module on Fighting in the Air to familiarise students with the grand tactical dynamics of WW2 air battles (as explained in his book *Simulating War*).

Canvas Aces shows how manual game systems may be modified and adapted to fit other periods and scenarios (including attacks on ground targets, which are not modelled in *Dogfight*). Like *Dogfight*, it illustrates how teachers can use components from published hobby games to improve the appearance of their games, but *Canvas Aces* also shows how data as well as rules may be researched and developed independently to create a fully customised and tailored design.

A key objective of *Canvas Aces* is to familiarise users with the multiple trade-offs and offsetting asymmetries within early warplane design, such as between rotary and inline engines, speed and agility, single and twin forward guns, and one and two crew. The game also shows the incredible pace of improvement between successive designs (for example between the Fokker E.III and the Fokker D.VII), and the consequent major swings of technical advantage as new aircraft types were introduced.

COMBAT MISSION DEMONSTRATION – Tom Halliday and Andrew Elliott, DSTL and Slitherine
Session One Only

GAME DESCRIPTION

Combat Mission is a commercially available wargame of combined-arms section level tactical combat. It is a simultaneous turn-based game which utilises a number of innovative systems to represent command and control, morale and fog of war. It is fully 3D and features a robust scenario editor, including scripting for computer controlled forces.

In this game session we will be demonstrating how Combat Mission is used at Dstl where it has recently been acquired. Players will be presented with a scenario and a mission briefing and asked to plan out an operation. We will then work our way through the plan as we would in a "live" wargame in order to give our players a sense of how it can be employed in a professional space.

PROFESSIONAL UTILITY

Combat Mission is currently in use at Dstl in an analytical capability. We use it in order to assess new concepts, as well as to test schemes of manoeuvre and plans against a thinking opponent. Its main strengths lie in its ease of use and its speed, both of which are superior to current in-house Dstl models.

We see Combat Mission as fitting in part-way between a computer wargame and a manual wargame. It has fixed rules and plays relatively quickly, like a computer game, but is best suited to insight development and generating discussion in the manner of a manual game.

CONFRONTATION ANALYSIS: WARGAMING THE US/CHINA TRADE WAR – Michael J Young, DSTL
Session One Only

GAME DESCRIPTION

In this session the participants will use the method of Confrontation Analysis to support a wargame where they take the roles of the USA and China in the ongoing trade dispute. Players will be able to examine different aspects of the trade negotiations and look not only at the effects of putting tariffs on goods but also other measures that could be taken. Examples include banning exports of Rare Earth metals, Intellectual property, banning certain electronic products, and the buying and selling of US Bonds. The players will be free to devise other sanctions as they see fit.

PROFESSIONAL UTILITY

Confrontation Analysis is a great way to prepare for negotiations. It helps you to UNDERSTAND what is happening in negotiations, FOCUS on the areas of importance and PLAN and rehearse a strategy to use. It does this by structuring the negotiations into a single clear table and then examining this table to see which of the five different DILEMMAS occur. All negotiations and actions taken can be looked on as attempts to eliminate these dilemmas, and change the tables. Confrontation Analysis has been encapsulated in a single easy to use Excel sheet that will be demonstrated during the session. Once you have grasped this method, you can use it to wargame through both professional and personal negotiation strategies. See the book "The Confrontation Analysis Handbook" at https://www.amazon.co.uk/Confrontation-Analysis-Handbook-Confrontations-Eliminating/dp/0244913870

CRISIS IN ZEFRA: AN ANALYTICAL MATRIX *GAME* – COL (R) Robert Burks and COL(R) Jeff Appleget, Naval Postgraduate School
Session One Only

GAME DESCRIPTION

The troubled nation of Zefra needs your help! Crisis in Zefra is a fictional game designed to explore complex, multi-sided political and military issues of stability operations in a complex environment. It is intended to introduce players to the concept of using "Matrix Games", developed with the Matrix Game Construction Kit, in an analytical setting. This wargame was developed to gain analytical insight into the force protection issues that a CJTF commander faces in conducting stability operations. The compact nature of this example, with a small number of players and scenario, is intended to demonstrate a Matrix Game and how it supports analytical analysis.

PROFESSIONAL UTILITY

Crisis in Zefra is designed to demonstrate the utility of matrix games as an analytical tool in exploring, developing a broader understanding of and gaining critical insights into complex issues and problems.

DECISIONS AND DISRUPTIONS – Dr Ben Shreeve – University of Bristol

GAME DESCRIPTION

Decisions & Disruptions is a tabletop exercise which challenges teams to help a fictional hydro-electric company improve their cyber security. Teams are presented with a physical representation of the organisation in Lego and asked to help invest in new technology, upgrades and audits to help defend the company. The company suffers attacks as a result of these choices. A variation of this game has been developed with the Metropolitan Police Service and is now being used by the MPS and a range of other Police forces across the UK to raise awareness of cyber security in organisations.

PROFESSIONAL UTILITY

Decisions & Disruptions is a tabletop exercise which challenges teams to help a fictional hydro-electric company improve their cyber security. Teams are presented with a physical representation of the organisation in Lego and asked to help invest in new technology, upgrades and audits to help defend the company. The company suffers attacks as a result of these choices. A variation of this game has been developed with the Metropolitan Police Service and is now being used by the MPS and a range of other Police forces across the UK to raise awareness of cyber security in organisations.

DOGFIGHT – Professor Phil Sabin, Kings College London
Session Two Only

GAME DESCRIPTION

Dogfight is a simple grand tactical simulation of WW2 air combat. Each turn represents 15 seconds, and each counter represents a flight of 3-6 fighters. The game highlights especially the importance of energy (in the form of speed or altitude) and the utility of covering tactics to protect other fighter or bomber formations. *Dogfight* uses the aircraft data cards, the

beautiful counters and the side-scrolling perspective from Lee Brimmicombe-Wood's *Wing Leader* hobby games published by GMT, but through innovative use of a new board it returns to a more 3D perspective. The game has evolved very significantly over the past year, and the latest edition offers a much more accurate simulation which differentiates fully between the performance of different aircraft types.

Dogfight focuses mainly on the escort and interception of bomber formations, but at this year's Connections we will replay the special research scenario discussed below. **The game plays quickly, so we will break for 15 minutes in the middle to allow participants to browse swiftly around the other games being demonstrated in this session.**

The latest edition of the fully illustrated rules of *Dogfight* is available on the Boardgame Geek *Wing Leader* pages, together with seven complete sample games. Just Google 'Wing Leader BGG'.

PROFESSIONAL UTILITY

Dogfight is a spin-off of *Angels One Five*, which was used for many years in Professor Sabin's final year BA module on Fighting in the Air to familiarise students with the grand tactical dynamics of WW2 air battles (as explained in his book *Simulating War*). This experience shows how 'old fashioned' board game techniques can complement real time first person computer simulations even within a fast-moving field such as air combat, by providing greater design accessibility and a clearer overview of formation manoeuvres.

Dogfight illustrates several advances in educational game design over *Angels One Five*. It shows how innovative use of representational perspective can capture even such a complex 3D phenomenon as aerial fighter combat on a 2D board without any need for the usual counter swapping or off-board record keeping. It also illustrates how teachers can use components and data from published hobby games such as *Wing Leader* without needing to use the rules of those games, which are often too complex and time-consuming for use in class by non-gamer students.

In May 2019, Professor Sabin used *Dogfight* together with his more tactical design *Fighter Duel* to provide experimental research insights for a presentation at the Royal Aeronautical Society about the strengths and weaknesses of the Me 262 jet. We will replay the associated *Dogfight* scenario, which studies the dynamics of Allied fighter ambush of Me 262s as they returned to base, and the potential for German airfield defence fighters to cover the jets until they reached the sanctuary of the airfield flak defences. This use of manual games as a vehicle for tactical experimentation and insight based on the physical capabilities of contending craft echoes the famous refinement of convoy defence tactics by the Western Approaches Tactical Unit during the war itself.

DSTL CYBER CARD GAME - Richard Browning and Joe Payne, DSTL

GAME DESCRIPTION

Dstl's Cyber Card Game gives a team of players the opportunity to become mischievous cyber warriors with a tactical mission to disrupt an adversary's military port through the use of cyber-attack. Aimed at players with little or no knowledge of cyber security, teams work together to learn about the real world capabilities they have been given in order gather intelligence, plan and deliver their attack. Aided by a facilitator, players decide how to spend their resources and respond to the role of the die, in order to achieve their devious attack.

This game won the Cyber category in the 2018 IET Innovation Award.
https://www.gov.uk/government/news/dstl-wins-against-commercial-teams-in-institution-of-engineering-and-technology-awards

PROFESSIONAL UTILITY

The Dstl Cyber Card Game was developed as an education tool to help facilitate discussions on the threats posed from cyber-attack. It is aimed at individuals with little or no knowledge of cyber security, and providing an introduction to key cyber security principals and open source tools used by real world attacks today.
It has been used with a wide range of stakeholders and is now used by UK Defence Academy as part of their introduction to cyber courses.

DSTL STRATEGIC WARGAME – Thomas Russell, DSTL

GAME DESCRIPTION

The players, acting as a Crisis Team of Her Majesty's Government, will be presented with a humanitarian crisis in the territory of a fictional UK ally. Tensions with the ally's neighbour escalate quickly. Players will have to make decisions in a time pressured environment with limited information. They will be given a number of options, considerations and principles to guide their thinking but ultimately they can come up with a plan of their choosing. Their actions will directly influence the course of the crisis. The needs and fears of the ally, domestic British public opinion as well the opinion of the international community will also need to be considered.

At the end of each round the players will have to agree a course of action to the National Security Advisor, who will take the plan to the NSC. Through a card based Success/Failure mechanic, influenced by the players' intentions and actions, the adjudicators will create an intelligence brief which reflects the new situation the players have created as it appears to them. While adjudication is in progress the facilitators will offer scenario injects for consideration, and the players will debate how they could respond to these hypothetical developments.

The adjudicators will give the players an intelligence brief at the start of each turn, allowing them to respond to the activities of the adversary, their allies and the international community.

PROFESSIONAL UTILITY

The original game was designed for a training event run for the Missile Defence and Strategic Systems (MDSS) Programme Strategic Systems School. The two primary aims were to give the players an awareness of the theory and concepts of deterrence and an understanding of the uses of Wargaming for strategic scenarios.
The game has since been run internally to Dstl to train new starters in the utility of Wargaming and in basic concepts of deterrence. The game was also run for a visiting delegation from the Japanese National Institute of Defence Studies (NIDS) to showcase how Dstl had used a pathways based design in a Strategic Wargame.
Focusing on Diplomatic, Information, Military and Economic levers of power to achieve effects in a crisis situation, the game is recommended for those looking for an introduction to Strategic Wargaming, the theory and concepts of deterrence and strategic communication.

FIRE AND MOVEMENT: WWII BRITISH INFANTRY BATTALION ATTACK – Dr Mark Flanagan

GAME DESCRIPTION

This is a simulation of a late-WWII British Infantry Battalion (circa 1943-45) attack against the Germans in Western Europe played over a hexagonal grid, with 3D terrain and playing pieces represented with miniatures. The terrain is randomly generated but uses an automated tool for speed.

The British Battalion is attacking at full strength. In addition to its integral 3" mortar platoon is reinforced with a Vickers HMG platoon from its brigade and has a pre-planned artillery bombardment in support. However, it is lacking in armoured support assets, which was not uncommon given the 'hasty advance' nature of the advance. The German defenders are two dug-in, under-strength German infantry companies possessing an integral 81mm mortar platoon. Thus a 'hasty defence" meets a "hasty attack".

The British players are asked to complete the British Army seven step tactical appraisal prior to starting which should help plan the attack, whereas the German player will be asked to commit to a pre-positioned defensive front line and reserve. The game proceeds in a "I Go You Go" (IGYO) format for up to a possible twelve moves, a Victory Point (VP) count determining the winner.

Key features of the Fire and Movement system are: the dispersed (two hex) spread of fire which makes the attacker avoid bunching troops; appreciation of supporting indirect fire and HMGs; importance of localised concentration of fire; the effect of ammunition depletion in attacking forces and close assault being required to wrinkle out infantry in prepared positions. These features make a unique game. The session ends with a discussion with respect to the Fire and Movement system, comparison to other official British Army rules and other alternative rulesets from the recreational arena.

PROFESSIONAL UTILITY

Fire and Movement is an adversarial wargame based on the researched combat experience of WWII British Army Infantry Battalion actions in the later war (1943-45) period (see Professor Sabin's Simulating War book, Chapter 11, pp 203-220). It is a stylised generic infantry action with randomised terrain (no two games therefore being quite the same proposition) that requires the attacking force to carefully husband its resources, understand and exploit beneficial terrain to attain a local superiority in the attack against a determined enemy. It provides the player with the dilemma of troop concentration versus dispersion, the challenge of planning a suppressive fire regime to allow safe movement forwards and the necessity to achieve Victory Conditions within a tight historical time frame.

To this end the game's presentation refers to the British Army's seven step evaluation process which has been discussed in previous Connection UK Conferences. Please see the existing references to this in Connections UK 2014 (and others):

http://www.professionalwargaming.co.uk/20140722-Connections_UK_Presentation-COAWargaming-LSCC.pdf

It is particularly appropriate for those interested in simulating and understanding the complexities of reproducing WWII infantry combat at the company and battalion level, including the often-neglected aspect of the restricted attacker's ammunition logistics. The

game provides an active learning experience that translates a historical scenario into lessons that are still valid for today's armed forces.

FITNA: THE GLOBAL WAR IN THE MIDDLE EAST – Pierre Razoux, Research Director and Head of the Wargaming Programme at the French Institute for Strategic Research (IRSEM)
Session Two Only
GAME DESCRIPTION

"FITNA (Schism in Arabic), The global war in the Middle East" is a two to six-player grand strategic level card driven wargame depicting the military confrontations in the Middle East since 2012, up to the near future. Among 10 historical and hypothetical scenarios, players can simulate the war against the Islamic State in Iraq and Syria (ISIS), the Civil Wars in Syria and Iraq, a direct Israel-Iran war in Syria and Lebanon, an eventual Kurdish Rebellion, the Sunni versus Shia confrontation in Iraq as well as Russian, Turkish, Israeli and Western intervention in the region. ISIS troops are activated through Event cards.

Each turn represents two months of real time and is divided into several phases allowing players to play events, to take reinforcements, to check supply, to spend operational points, to move units (mostly brigades and divisions) and to launch offensives. Each player gets 4 cards in hand allowing him or her to use them carefully either for creating events, spending operational points or supporting battles.

The A1 map represents the Fertile Crescent (Kuwait, Iraq, Syria & Lebanon) and parts of Iran, Israel, Turkey, Jordan and Saudi Arabia. It is a point to point map containing 113 boxes depicting clear, mountainous, swamp and urban terrains, as well as oilfields and objectives.

The 3 countersheets include a complete OB for all the potential belligerents, from tenacious Iranian "Al Qods" to the redoutable Israeli Armored divisions, alongside Saudi, Turkish, Iraqi, Syrian, Lebanese, US, French, British, Jordan and Gulf Monarchies units, including Kurdish and jihadist troops as well as all local militias (Sunni, Shia, Al Shams, Hezbollah...).

PROFESSIONAL UTILITY

This wargame allows you to have a clearer view of the local protagonists' goals and a real understanding of what is going on in this chaotic area. This is why it is used by experts and analysts to test prospective scenarios, as the iconic "Gulf Strike" used to be by US experts to plan the Gulf War.

KURSK TO KAMENETS: THE BATTLE FOR THE UKRAINE, JULY 1943-APRIL 1944 – James Halstead
GAME DESCRIPTION

The period from July 1943 until April 1944 saw the Wehrmacht driven from the Ukraine in a series of Red Army offensives. These offensives utilized the Soviet Union's superior logistical capabilities and concentrated on driving the Wehrmacht back by sheer weight of consecutive blows across a wide front. Tempo was therefore a vital concept since German armour was regularly able to seal up breaches in the line and cut off exploiting Soviet mechanized units they were never able to stop the Red Army offensive in its tracks:

For the Red Army to employ this kind of concurrent offensive, broad front approach they needed to utilize concepts of operational tempo were vital to maintaining the initiative and keep Wehrmacht forces on the back foot.

The period covered in this simulation covers from the Battle of Kursk: a German attempt to disrupt the upcoming Red Army offensive; until the encirclement and escape of Fourth Panzer Army at Kamenets Podolsky in April 1944.

The author is using this game as an opportunity to develop mechanics that reflect momentum, tempo and the cohesion of command systems in order to apply these in his historical research on Information Management systems.

The game system uses a number of trackers to track Command Cohesion, Political Pressure and regeneration of command capacity. The basic system works around a card activation system and alternating impulses over the course of a game turn – each of which represent a month of real time. Most of the basic concepts are reflected in COTS Hobby Games.

This game is currently in development and Connections UK is an ideal opportunity to test the mechanics.

The designer would also appreciate input and a conversation with conference attendees on the ethical consequences of using the example of two totalitarian states at war to model a study of tempo.

PROFESSIONAL UTILITY

The Game's goal is to look at the concept of temp and the role of command systems in employing this effectively. Most importantly it does so in the oppositional setting of a game where there is a back and forth interaction with an opponent's tempo rather than viewing tempo in a theoretical environment.

Subsidiary aspects of the game track what the game defines as Command Cohesion; the ability of both command and logistic systems to cope with battlefield situations and react quickly. Both sides saw logistical issues with sudden retreats or spectacular advances that stretched logistics to their maximum.

Lastly, handling political pressure from both sides political masters is a theme in the game and has been included to reflect the wider context of a multi-front war and the decisions this imposes upon both nations at war.

This simulation is an attempt to create mechanics that simulate command cohesion, breakdown and the tempo of conventional military operations. It has been developed by a historian to reflect a historical standpoint and the model is intended for use in developing further research models based upon the mechanics developed here.

NEXT WAR: POLAND – Callum Nicholson
GAME DESCRIPTION

Next War Poland is a Commercial Off the Shelf Game published by GMT games. The game covers a Russian invasion of Poland and focusses mainly upon the operational level of fighting between Polish troops and Russia and her allies.

The game is a good example of the sort of Commercial Off the Shelf Games that can be utilised with very little adaptation of the original rules set. The full campaign game will not

be being ran in this demonstration. Instead one of the scenarios included within the game rules will be being played to allow for a more complete demonstration.

This stand is intended to demonstrate how easy it is to buy a commercially available wargame and quickly get it out and play it with a professional audience. The game demonstrates cutting edge mechanics that might be adapted to model modern, high intensity conflict and the problems associated with this.

A RECKONING OF VULTURES – Professor Rex Brynen
Session Two Only

GAME DESCRIPTION

A Reckoning of Vultures is a fictional game of coup plotting, designed to highlight the use of matrix game techniques to explore complex, multi-sided political and military issues. It is included in the Matrix Game Construction Kit, produced by PAXsims (Rex Brynen, Tom Fisher, and Tom Mouat) with support from the UK Defence Science and Technology Laboratory.

PROFESSIONAL UTILITY

Vultures is an excellent example of the utility and speed of gaming provided by matric games

ROSENSTRASSE. A WAR BIRDS STORY OF LOVE & SURVIVAL: BERLIN 1933 – 1943 – Graham LB

Session One Only, Two Female and Two Male Participants

GAME DESCRIPTION

Rosenstrasse is a serious game that explores emotional territory that some might find troubling. All players must acknowledge this and commit to the safety and security of participants being the first priority of the game. Safety mechanisms will feature, and compliance with these is mandatory.

1933 Berlin. As the Nazi party rises to power, lines are drawn in the sand to separate who is German and who is not. This line runs straight through marriages between Jewish and 'Aryan' Germans. Over an in-game decade, players explore how the Reich's racial policies, restrictions, and violence strip away liberty, security, and dignity for these families. Though their marriages initially shelter them, the Jewish men in these partnerships will not escape. When they are finally seized for deportation, the women in their lives have one last chance to keep them alive. To do so, they must stand up and defy the Third Reich. In the very heart of darkness, is such resistance even possible?

Rosenstrasse is an elegiac, immersive historical role-playing game for four players and one facilitator. It explores marriages between Jewish and 'Aryan' Germans in Berlin between 1933 and 1943, and culminates in the historical women-led protests on Rosenstrasse in February – March 1943. Each player takes the role of two characters, at least one of whom is Jewish and at least one of whom is female. As a result, players experience this story of persecution and resistance from multiple perspectives. No prior knowledge of history is needed to play Rosenstrasse, nor does prior knowledge prevent enjoyment of the game.

Rosenstrasse is an example of an entirely role-play game approach. Role-play can also be used for adjudication purposes in other games as a complementary approach to other adjudication methods, models and tools.

From a purely historical perspective, games can broaden our perspectives, for example by revealing the lost and forgotten histories of women, by centring marginalised historical experiences, and by providing a multiplicity of perspectives rather than a single dominant narrative.

SIGNAL – Kiran Lakkaraju, .Ph.D. Sandia National Laboratories, Bethany Goldblum, Ph.D. University of California – Berkeley, Laura Epifanovskaya, Ph.D. Sandia National Laboratories, Andrew Reddie, University of California – Berkeley

GAME DESCRIPTION

SIGNAL is a turn-based, three-player game to study conflict escalation and strategic stability of nations in an artificial world. Players choose courses of action that a hypothetical nation might follow, using economic, military, and diplomatic means. Players may choose to cooperate with or compete against the other players in the virtual world to grow their infrastructure and gain resources while avoiding loss of home territory to conventional militarized invasions or nuclear war. The game proceeds in rounds, with players maneuvering their forces within a map-based environment.

Players work simultaneously, often negotiating agreements such as trade deals or military alliances, and "signal" to others by placing tokens on hexes (units of land or water). The signaling token is accompanied by the staging of cards (face down) that reflect actions like building cities, sending troops to neutral territories, or engaging in military operations, including the use of conventional or nuclear arms. Players may then exercise their staged actions, but only at locations where signaling tokens were previously placed.

During this action phase, players take a series of turns, After a predetermined set of rounds, players are ranked on a relative scale based on their infrastructure, resources, and territorial integrity to determine the winner—with a player's cumulative performance captured on a leaderboard.

PROFESSIONAL UTILITY

We are interested in developing "experimental wargames" that allow for systematic and quantitative study of national security relevant scenarios. SIGNAL is our first experimental wargame designed to complement the qualitative information derived from traditional wargaming methods through the creation of a virtual environment that will generate data to support academic scholarship and guide inquiry.

Experimental wargames offer several benefits when compared with existing approaches. Unlike traditional wargames, these new methods allow for increased reproducibility in wargaming in a systematically varied environment. This can help to bridge the "complexity-scarcity" gap, where scenarios are too complex to model from first principles and data from actual events are too sparse to draw conclusions. With repeatable games and enhanced

control over the experimental conditions, researchers can isolate the variables that they hypothesize may be causal and examine the effects empirically.

In comparison to computer-based or game theoretic modeling, the data collected via these games includes human decision-making and can thus be analyzed to explore factors such as personality, cognition, and experience. Experimental wargames also offer an alternative to a number of challenges inherent in survey experiments. For example, the interactive and role-playing aspects of a game environment tend to engage and draw in subjects to the scenario, while a survey may not offer the same immersion. Further, as subjects learn the nuances of a game, their strategies and methods of play may change, enabling adaptive behavior that would be difficult to capture in a survey.

STRIKE: BATTLEGROUP TACTICAL WARGAME – Michael J Young, DSTL
Session Two Only

GAME DESCRIPTION

The British Army is being equipped with a new generation of armoured fighting vehicles which will be formed into its new Strike brigade. The vehicles are an 8 wheeled armoured personnel carrier known as the Mechanised Infantry Vehicle ("MIV") and a family of variants based around the new AJAX medium weight armoured fighting vehicle. The British army was keen to see how the Strike Brigade would perform on the battlefield so organised a series of manual wargames to examine their battlefield performance. I was involved in this and produced the STRIKE! wargame as a result.

The game has been almost embarrassingly well received and has been delivered to many customers in the UK and abroad (See for example the review on PAXSIMS at https://paxsims.wordpress.com/2018/08/24/the-strike-battlegroup-tactical-wargame/

STRIKE! is a detailed tactical level game, based around one inch square counters each representing a platoon of 3 or 4 vehicles. There were also helicopter and engineering assets provided along with an alternative Red ORBAT with less sophisticated equipment. The game is played on a hex map with each hex on the map representing an area 500 metres across, and each pair of turns representing an hour of real time.

The counters had a unit ID, movement, firepower and protection details written on them. During this session I will run through a tutorial scenario introducing the rules gradually as players gather confidence.

PROFESSIONAL UTILITY

The main professional utility will be in developing concepts for tactical manoeuvre.

STRIKE! is an example of a conventional tactical level board game, useful for people interested in examining the capabilities of particular ground vehicles, especially in direct fire tactical combat. It emphasises tactical manoeuvre but does not have specific rules for supply, C3, or hidden movement.

It will be useful as a means to experiment with different RED and BLUE ORBATS and to compare their effectiveness, and find strengths and weaknesses. The game also comes with three different maps representing terrain in Eastern Europe, Salisbury Plain and East Africa.

This enables players to examine the different tactics that would be appropriate in the different terrains.

SATELLITE INTELLIGENCE GATHERING SIMULATION: SWEEPING SATELLITES – Professor Mike Sheehan, Swansea University

GAME DESCRIPTION

This is a turn-based adversarial game played between two teams representing opposing superpowers. The players are presented with the role of being members of an information gathering analyst team with access to limited satellite reconnaissance resources but with the scope of determining the strategic intentions of the opposing superpower. The team know of their own side's long-term strategic intentions and what deployed resources are being hidden from their opponent, recommending an appropriate defensive strategy to hide these assets from hostile spying eyes. Thus, the game play is a form of a sophisticated hide and seek, with an element of player guided misinformation and deception.

The players will tactically choose from a variety of search patterns based from the ground tracks of common satellite characteristics appropriate to each side's (Red and Blue) real world capabilities and decide an appropriate sampling pattern. Detection is not necessarily guaranteed or immediate, so several passes may be required before the identity of hidden facilities are revealed. Players will be challenged to prioritise these planned searching operations alongside new tasks required from unexpected evolving world events that can generate new assets for both sides or third parties. ASAT operations may be conducted by both sides. The game end with a player led briefing back to the umpire team (representing their chain of command) as to the intentions of the opposite superpower and an evaluation of world events generated during the game. They also reflect on how compromised the or own sides assets could be. This would lead to an end of game discussion between the two sides, with additional umpire and subject matter expertise commentary in a breakout session.

PROFESSIONAL UTILITY

The game is designed to make the players aware of both the utility and the limitations of satellite remote surveillance for conflict and crisis management. The two teams seek both to uncover the hidden activities of actual or potential adversaries, while at the same time attempting to minimise the useful intelligence the opposition can gather. The mechanics of the game bring out the fact that satellite reconnaissance is subject to a variety of practical limitations and as a military asset, is a 'resource' that is not infinite, so that significant decisions have to be made as to where and how to commit these resources for the maximum benefit. The game also encourages players to be aware of the high risks associated with initiating anti-satellite operations against an adversary in peacetime. It is particularly appropriate for the armed forces. The gameplay is adversarial and thus is not a Course of Action (CoA) planning exercise but is an active learning experience that will challenge the players to understand their opponent's strategy. The final action of the game is a player led presentation briefing back to the umpire team as to what they think the opposing side is up to and how much of their own efforts has been compromised or remains a secret. Thus, the players will be asked to be self-reflective in their achievements, appraise their strategy and suggest improvements or lessons learned. The game will end with a

discussion of comparative real-world events that have occurred that mimic those represented by the in-game events the players have experienced.

WE ARE COMING, NINEVEH! – Professor Rex Brynen
Session One Only

GAME DESCRIPTION

We Are Coming, Nineveh! is a tactical wargame that examines the Iraqi liberation of West Mosul from Daesh (ISIS) control in February-July 2017. The game uses area movement and blocks to represent urban operations and fog of war, while a system of added capability cards and variable victory conditions allows players to explore the many ways the campaign might have been fought. The game was first developed by Juliette Le Ménahèze and Harrison Brewer in the conflict simulation course at McGill University , later joined by Brian Train and Rex Brynen. We Are Coming, Nineveh is scheduled for commercial publishing by Nuts! Publishing in 2020.

PROFESSIONAL UTILITY

This stand is intended to demonstrate how easy it is to buy a commercially available wargame and quickly get it out and play it with a professional audience. The game demonstrates cutting edge mechanics that can be used to model modern, high intensity conflict and the problems associated with this.

Day Three Deep Dive Options

This is an opportunity for attendees to pick from several deep dives presented by experts in these areas.

On Wargaming **(PM session only)** A presentation on the recently published book - Matt Caffrey

This block is a briefing version of the book, On Wargaming by its author Matt Caffrey. The book asserts wargames save lives – but they save friendly lives only if you wargame more effectively than your adversary. If you wanted your fighter aircraft to be more effective than your adversary's fighters you might explore different wing shapes in a wind tunnel. While aerodynamics is one of those sciences that can be advanced in a laboratory, the study of war, like the study of astronomy and meteorology cannot be conducted through laboratory experiments. The study of all three requires taking insights from observed data. In the case of war that data is called history. On Wargaming begins by providing a foundation of that data, the history of wargaming from BC to today, a global history of the global application of wargaming. On Wargaming then builds on that foundation to describe how individuals and nations can apply wargaming to increase their effectiveness – in war and other areas of competition. It concludes by asking, can we shape future wargames so the casualty count goes to zero by finding ways to avoid wars all together?

Wargaming the Future (all day) – Stephen Downes-Martin and Stephen Aguilar-Millan

Many of our most expensive weapon systems have service lives of about half a century, forcing us onto a high-inertia security trajectory that is transparent to our more agile adversaries who can then plan around that trajectory with cheaper systems based on our research and development expenditures. We must wargame out to service life to ensure our current weapons systems and concepts of operations are well designed for both the near term and the far future. Therefore, we must be able to wargame out that far to support acquisition and employment of these platforms. This Deep Dive will briefly introduce the problem and the possible application of futuring to wargaming followed by a workshop. During the workshop participants break into small groups and discuss and document their answers to three questions: (1) What do we want the battlespace faced by Europe to look like in 50 years? (2) What pathways from now to then are feasible and what are the barriers to getting there? (3) How might we use wargaming to overcome those barriers? The Chairs will analyse the documentation produced by the participants and write a report for posting to the Connections UK website.

(No small group will be larger than 6 people. Each group will elect a leader who will facilitate the group, take notes, and provide those notes to the Leaders of the Deep Dive.)

Data Capture and Analysis (Part 2, PM session only) – Colin Marston

Presentation 3: Modelling of the human terrain in support of C2 exercises – David Robson, NSC.

This presentation discusses the design of a computer assisted modelling toolkit for a UK military training and education requirement, lessons learned during its construction and intended follow on activity.

The Influence and Infrastructure Combat Model allows a user to model the flow of information though a Human Terrain, informing decisions on the likely outcome of Influence activity and military activity for training exercises. It may be used in isolation or federated with a kinetic combat engine to model full spectrum military operations.

Key is the concept of Competitive Control which explains the rise and fall of dominant narratives within a local population group by treating a population as an unstable equilibrium destabilised by external actors. Drawing upon epidemiological compartment modelling techniques, information is modelled as mimetic packets which are passed between software agents representing population groups, changing the support for different factions. These act as a quantifiable 'target' for influence operations within an exercise (especially social and mass media activities). By using aggregated census and other open source data, this concept forgoes much of the complex data preparation required by other current tools and specifically avoids the requirement for Social Media derived datasets.

Presentation 4: Hosting a Matrix Wargame in a Slack Workspace – LTC Thorsten Kodalle, German MOD.

This article is a work in progress description of competence-based learning approaches at the Command and Staff College of the German Armed Forces (CSC) (specifically at the Faculty of Politics, Strategy and Social Science) and contains a best practice example for the successful implementation of a web 2.0 collaboration tool (slack) into a pen-and-paper tabletop exercise using a matrix wargame approach. It describes the terminological understanding of keywords like "Wargaming", "Serious Gaming" and "Gamification" at the CSC and their relation to "Matrix Wargaming". It shows how to use a free version of slack to create a holistic learning ecosystem that fosters self-driven learning that is not restricted in time and space and enables global, synchronous and asynchronous contributions from students and subject matter experts (SMEs).

Subject to connectivity within KCL, attendees might wish to join the following Slack Workspace before or during the presentation following this link if they wish
https://join.slack.com/t/mwgkaliningrad20xx/shared_invite/enQtNjA2MTcyNjczMzgzLTg0Y
WFjNmRmNmUwODQwY2M3ODNhYzI0ZGNlNmQ0OTU2NTE0NzUxZGViNzljNzU2ZDZlNTQ5
NDYyNDcyMTNiZTU
QR Codes for convenience – using a mobile device is part of the best practice experience:

Space Games (AM session only) – Jim Wallman, Professor Mike Sheehan and Stephen Etheridge

Taking wargaming into orbit.

Technically complex, expensive and often both over- and under-rated the space dimension in conflict deserves more than just hand-waving when it comes to developing mechanisms and game systems for professional wargames. Space games might not be a stand-alone game about ASATs and orbital management, but also might encompass the challenges faced by the growing commercial space industries as well as the limitations and opportunities inherent in national Space Situational Awareness (SSA). This deep dive will look at how the subject has been approached, is being approached, and will include a wider discussion on potential for the future.

Technology to Support Wargaming (Technology Stands – AM and PM sessions) – Andrew Elliott

Technology is advancing at a speed and scale not previously experienced. Commercial board game companies are considering how best to capitalise on these technological innovations, be it in the manufacturing of components, the enhancement of analogue games or the development of digital versions of games. Are professional wargamers doing the same?

The aim of the 'technology to support wargaming' deep dive is to develop our understanding of how technology could be better used to support professional wargamers with the design and development, execution and analysis of a wargame. The deep dive will comprise several stands that will cover a broad range of different technologies and approaches. The stands will be interactive and we encourage you to participate and get hands-on. Some technologies will be experimental or in development, providing you with an opportunity to engage at the embryonic stages, helping to steer future development. The UK MOD's Dstl Searchlight team will also be present and will be able to advise on how to go about getting a technology-related idea developed.

Examples of some of the stands being displayed this year are:

Dstl: Unity and COTS games in support of wargaming. A demonstration of the Unity games engine and COTS technology in support of wargaming and analysis.

Pegasus Bridge. This is a concept-demonstration wargame exploring the art-of-the-possible with touch input and existing Unity turn-based strategy game assets.

George. This is an award-winning analysis model, demonstrating the flexibility of Unity as a development environment. Initially built to analyse scripted many-on-many tank

engagements, George is a test-bed for heuristic and machine-learning AI, and has been reskinned for surface ship engagements and anti-submarine work.

Tabletop Simulator. This is a COTS physics sandbox, designed to replicate manual table-top gaming. Demonstration of Volko Ruhnke's A Distant Plain and/or Labyrinth: The War on Terror games in Virtual Reality.

NSC: Augmented Reality to support manual wargaming. This is a technology demonstrator will showcase the potential use of Augmented Reality to support manual wargaming activities and will be used as a mechanism for discussion on the practical application, functionality, limitations and future direction for such a tool. Developed as a way of investigating user centred collaborative planning, CARPE could have practical application in the manual wargaming world to support umpires, player decision making or recording moves and then offering playback of a manual game at a later date.

DIEM: Wargamers' Automatically Recorded Decision Engine. WARDEn is designed to capture the narratives of players in the wargaming environment before providing automated insights into the decisions that have been made. Research we have completed to date has shown that we can use AI and NLP techniques to extract information from the narratives such as the decision drivers, whom players have held conversations with, therefore what information their decisions are based on, and the wider context behind the decisions that were made.

Slitherine: COTS Modelling & Simulation. Slitherine will be showcasing a range of their professional wargames and simulations adapted from commercial games.

Command is a commercial wargame that simulates detailed modern air and naval engagements in a physics based battlespace. The professional edition includes data editing, import/export, logging, DIS, and a range of other features to support training and analysis. It also includes an enormous database of almost all air, sensor, ship, sub surface, weapon and mount data for all nations worldwide from 1946 to near future.

Flashpoint Campaigns is an operation scale cold war hex based wargame with an innovative C2 and OODA loop, being updated to a modern setting for the US army as part of the ATHENA project.

Combat Mission is a tactical modern wargame in full 3D space, using a WEGO model.

Slitherine has recently started work on bespoke modifications to all 3 simulations for Dstl under a multi-year contract and delivered the initial upgrades in July 2019. Slitherine supplies simulation software to all branches of the US DOD, the UK, Australia, Germany, Finland, Singapore and contractors such as Boeing, Raytheon, Lockheed Martin & BAE.

HQ ARRC & Red Scientific: Cirsium Wargame – Supporting OA. Cirsium is an analytical wargame that is under development. Once finished Cirsium will upgrade the UK Army Land Warfare Centre's in-house capability to support military planning at corps and divisional headquarters with analytical wargaming. The current capability is focused around a legacy system and is based on a computer-assisted manual wargame, THISTLE FASTHEX, developed in the mid 1990's. Following a review of the capability conducted it was agreed that the development of an enhanced capability, that would draw on the experience of using THISTLE FASTHEX but incorporate improved algorithms based on the best available understanding of land combat operations, in particular historical analysis.

Smithery: FUTREP. This is an emergent, recombinant futures card system that generates scenarios.