



Wargaming for Professionals

King's College London

September 4th – 6th 2018

Day 1: Tuesday 4 September 2018

Time	Event	Chair/Speakers		Remarks
0900 - 0930	Arrival, drinks and snacks – Somerset House then KCL Great Hall Entrance			Reception at Somerset House; drinks at KCL
0930 - 0940	Welcome and introduction – Great Hall	Maj Tom Mouat, SO2 Modelling and Simulation UK Defence Academy		
0940 - 1300	Introduction to wargaming for newcomers – K0.18	Maj Tom Mouat Jerry Elsmore	The Course will feature a mixture of theory presentations and practical sessions, including a Battlegroup Kriegsspiel, a Commercial Off-The-Shelf (COTS) Game, and a Matrix Game. This is in order to provide beginners to Wargames a practical understanding of what wargames are, and their uses in training, education and analysis	
0940 - 1300	Megagame: <i>Green and Pleasant Land</i> – Great Hall Drinks 1100-1130 – Great Hall Entrance	Jim Wallman, Stone Paper Scissors Ltd Prof Rex Brynen Rob Cooper Jon Casey Nick Drage	Ben Moores Richard Hands John Bassett OBE	Ice breaker
1300 - 1400	Lunch – Terrace Cafe			Buffet. Staggered timings
1400 - 1700	Introduction to wargaming for newcomers – K0.18	Maj Tom Mouat Jerry Elsmore		
1400 - 1700	Megagame: <i>Green and Pleasant Land</i> – Great Hall Drinks 1600-1630 – Great Hall Entrance	Jim Wallman, Stone Paper Scissors Ltd Prof Rex Brynen Rob Cooper Jon Casey Nick Drage	Ben Moores Richard Hands John Bassett OBE	Ice breaker
1720 - 1750	Megagame After Action Review - Great Hall	Jim Wallman		
1800 - 1900	Buffet supper – Terrace Cafe			Staggered timings. Cash bar (until 2000)
1900 -	Component production – K0.18	Tom Mouat, Jim Wallman and Dstl		Informal evening session

Day 2: Wednesday 5 September 2018

Time	Event	Chair/Speakers	Remarks
0830 - 0900	Arrival, drinks and snacks – Somerset House then KCL Great Hall Entrance		Reception at Somerset House; drinks at KCL
0900 - 0925	Welcome and introduction – Great Hall Relating the conference structure to the MOD <i>Wargaming Handbook</i> 'Wargame Lifecycle'	Prof Wyn Bowen and Maj Tom Mouat Graham Longley-Brown	
0930 - 1050	Plenary 1: Wargame design – Great Hall Drinks 1050-1110 – Great Hall Entrance	Chair: Matt Caffrey Dilemmas and trade-offs in wargame design. Phil Sabin Game design as a form of journalism. Brian Train Challenges in wargame design. Anna Nettleship	20 minutes per speaker then 15 minutes Q&A Chair 5 minutes Games Fair set-up meeting 1050-1100 in K0.16
1110 - 1250	Plenary 2: Wargame development – Great Hall	Chair: Graham Longley-Brown Developing the KCL Crisis Simulation. Nick Reynolds Developing a High North nested games family. Dave Manley Model calibration. Volko Ruhnke Analysis in experimentation wargaming. Dr Nigel Paling and Col Richard Taylor	20 minutes per speaker then 15 minutes Q&A Chair 5 minutes Dr Paling and Col Taylor presenting first due to other commitments
1250 - 1300	Games Fair Introduction – Great Hall	Prof Phil Sabin	Games signed up to pre-conference
1300 - 1400	Lunch – Terrace Cafe		Set up games. Working lunch. Staggered timings
1400 - 1700	Games Fair Session 1 - Rooms K0.16, K0.17 K0.18, K0.19 and K0.20 and The Great Hall Drinks 1530-1600 – Great Hall Entrance		
1710 - 1810	Key note addresses – Great Hall	1. Wargames and systems thinking – Volko Ruhnke 2. Creativity in game design and mechanics – Brian Train	
1810 - 1900	Supper – Terrace Cafe		Buffet. Staggered timings. Cash bar (until 2000)
1900 - 2200	Games Fair Session 2 - Rooms K0.16, K0.17 K0.18, K0.19 and K0.20 and The Great Hall		

Day 3: Thursday 6 September 2018

Time	Event	Chair/Speakers	Remarks
0830 - 0900	Arrival, drinks and snacks – Somerset House then KCL Great Hall Entrance		Reception at Somerset House; drinks at KCL
0900 - 0905	Introduction to automation stands	Colin Marston	
0905 - 1005	Plenary 3: Wargame execution – Great Hall Drinks 1005 – 1030 – Great Hall Entrance Automation stands running during breaks, lunch and Facilitation clinic – K0.18, K0.19 and K0.20	Chair: Howard Body Play as pedagogy. Dr Aggie Hirst Wargaming case study: ‘Cheese, butter & milk powder’. Erik Elgersma Empowering Defense wargaming through automation. Dr Karl Selke (Facilitation to be covered separately; see below)	15 minutes per presentation then 10 minutes Q&A Chair 5 minutes
1030 - 1130	Plenary 4: Wargame validation – Great Hall	Chair: Brian Train Selecting, playing and assessing a COTS wargame (<i>A Distant Plain</i>). Lt Col Neil Stevens and Lt Col Ranald Shephard Wargaming and reality: a case study of the Ukraine conflict 2014 – present. John Curry	20 minutes then 15 minutes Q&A Chair 5 minutes
1135 - 1205	Plenary 5: Wargame refinement – Great Hall	No chair: introduction only by Graham Longley-Brown Refinement of wargames in the Wargaming Life Cycle. Phillip Pournelle	20 minutes presentation then 10 minutes Q&A
1205 - 1235	Plenary 6: Wargaming lessons identified; a senior officer’s perspective – Great Hall	No chair: introduction only by Tom Mouat Lessons identified from recent wargames. Lt Gen (retd) Sir David Capewell	20 minutes presentation then 10 minutes Q&A
1235 - 1330	Lunch – Terrace Café Automation stands running – K0.18, K0.19 and K0.20		Buffet. Staggered timings
1330 - 1450	Plenary 7: Analysis – Great Hall Drinks 1450-1510 – Great Hall Entrance	Chair: Colin Marston US/DoD analysis best and worst practice. Lt Col Rob Burks Designing analytical wargames with a view to successful data capture, management and analysis. Peter Williams In the eye of the beholder? Cognitive challenges in wargame analysis. Rex Brynen (Analysis in experimentation wargaming – held on Day 2)	20 minutes per presentation then 15 minutes Q&A Chair 5 minutes
1510 - 1630	Facilitation clinic (from the Execution Plenary 3) – Great Hall Automation stands running – K0.18, K0.19 and K0.20	Chair: Graham Longley-Brown Rex Brynen, Jim Wallman, Tom Mouat and Paul Strong	Facilitation clinic questions and topics to be submitted throughout Day 2
1630 - 1645	Closing remarks	Prof Phil Sabin and Colin Marston	

Automation stands

The automation stands provide an opportunity to focus on a different aspect of the wargaming process and look at how technology might be used to better support the development, running and analysis of a wargame. This is a trial feature for Connections 2018 and we are very thankful to this year's suppliers for their support and provision of a wide selection of products. We welcome your feedback via the Connections UK 2018 survey. This year's stands are:

Group W and 'SWIFT'. SWIFT is a US DoD tool that provides a software environment to build, test, play and analyse ANY turn-based wargame. It facilitates efficient and consistent game RECORDING and management and solves the game VISUALISATION problem, enabling more efficient use of limited development resources.

UK MOD Defence Science and Technology Laboratory (Dstl). Dstl will be showcasing a concept demonstrator of HoloLens AR for wargaming, and VR data visualisation.

NSC and iNET tool. Technology-enabled wargaming offers the opportunity to bring together both manual and computer-assisted wargaming to support wargaming in complex and dynamic environments. The iNET tool takes feeds from simulations and manual wargames to deliver a flexible, multi-lingual wargaming environment.

Slitherine and Matrix Games. This company will be presenting a brief overview of some of their 300 games. The main focus will be on Command PE and other games (such as Operational Art of War IV, Flashpoint Campaigns, Armoured Brigade and Close Combat) that have been converted to support various Defence organisations.

- Operational Art of War IV: A turn-based, hex-based board game design, implemented on computer, to facilitate a range of historical periods up to the Cold War. It includes hundreds of pre-built scenarios. A custom version is in development to bring the simulation up to modern day, to allow scenarios for training and other uses by the USMC.
- Flashpoint Campaigns: An impulse-based, hex-based board game design at a tactical scale. Currently covers the Cold War but is being converted for the USMC to support modern day amphibious operations.
- Armoured Brigade: Real-time, tactical Cold War simulation currently in development. Lots of professional interest in expanding it to modern day once the commercial version is available.
- Close Combat: Small-scale, primarily infantry tactics set in WW2. RAF and USMC versions have previously been created. Development is ongoing.
- Command PE: Our primary military simulation tool for modern air and naval combat. Used by the USAF, USN, RAAF, Luftwaffe, Raytheon, BAE, Boeing etc.

Conducttr and TeamXp. TeamXp is a versatile software platform that allows the user to deliver immersive, interactive experiences for individuals and teams. The platform's USP is how easy it is to write and deliver crisis simulations and wargames in a secure web application that allows a mix of scripted automation and live role-players.

King's Wargaming activities display

In order to showcase the wargaming research and education at King's, a table display will be set up along with the automation stands with information on current and future KCL wargaming activities. Anyone interested in receiving information on these activities and opportunities to participate in the development of wargaming as a field of inquiry will be able to sign up to a mailing list there.

Speaker and Chair biographies

Howard Body was born and raised in Christchurch, New Zealand. After a short experience with the New Zealand Army he ran away to sea and joined BRNC Dartmouth in May 1979 to begin what would be 21 years service with the Royal Navy. A varied career path saw him undertake an in-service degree (History, KCL), a postgraduate year in International Security Policy (Geneva), serve in conventional submarines, an exchange post with the RAF, a training role with the Royal Marines and finally as MA to the (German) Chief of Staff at SHAPE. Retiring mid-career in 2000 Howard returned home to NZ for 18 months before taking up a role as an analyst with the UK MODs Defence Science and Technology Laboratory in 2002, where he was responsible, amongst other things for the Joint Campaign Development (now Strategic Force design) and Stabilisation (COIN) studies. Accepting a secondment to MOD, he leads the strategic analysis area, his core area for the Security Policy and Operations Directorate. This includes the introduction of wargaming and strategic Net Assessment across the Department as part of an initiative to enhance the MODs approach to strategic planning. Howard is married with four boys and lives in Haslemere, Surrey.

Rex Brynen is Professor of Political Science at McGill University and nonresident Senior Fellow at the Atlantic Council, specializing in Middle East politics and regional security; peace, stabilization, and humanitarian operations; and political-military wargaming. He is author or editor of some eleven books on the Middle East, including *Beyond the Arab Spring* (2012). He is senior editor of the conflict simulation website PAXsims (<http://www.paxsims.org>), designer of the humanitarian crisis simulation AFTERSHOCK and MaGCK: Matrix Game Construction Kit, and a past winner of the International Studies Association's Deborah Gerner Innovative Teaching Award for his work on classroom simulations. In addition to his academic work, Professor Brynen has served as an intelligence analyst, and as a consultant to various governments, United Nations agencies, and the World Bank.

Colonel (R) Robert E. Burks, Jr. is an Associate Professor in the Defense Analysis Department of the Naval Postgraduate School (NPS). He holds a Ph.D. in Operations Research from the Air Force Institute of Technology, a M.S. in Operations Research from the Florida Institute of Technology and a bachelor's degree in Aerospace Engineering from the United States Military Academy. He is a retired logistics Army Colonel with more than thirty years of military experience in leadership, advanced analytics management and logistics operations who served as an Army Operations Research analyst at the Naval Postgraduate School, TRADOC Analysis Center, United States Military Academy, and the United States Army Recruiting Command. He has led multiple analytical study teams responsible for Army Transformation (organizational change) issues and his work includes applying analytical methods to develop solutions for complex problems in support of the Combined Arms Support Command, the Army's sustainment think tank and premier sustainment learning institution. In addition, he has served as the technical expert on studies involving deployment, equipping, manning, training, and logistics operations of military forces in multiple theaters of operation. He currently teaches the Modeling for Decision Making and Statistics Courses at NPS. His research interests include Irregular Warfare and Stability Operations modeling, Information Operations modeling, Wargaming and Agent Based Modeling and Simulation. His recent major awards include the Military Leadership Award (2013), Joint Service Warfare Award (2013), Military Operations Research Journal Award (2011) for developing analytical methods for solving the Theater Distribution Problem, and the Omar Bradley Fellowship for the Study of Mathematical Sciences (2011).

Lieutenant General (retd) Sir David Capewell. David Capewell was commissioned into the Royal Marines in 1979, holding a special short-service commission. He was confirmed in the rank of Lieutenant on 1 September 1983 and was transferred to a full career commission on 29 October 1985. As a junior officer he served in Northern Ireland, Zimbabwe and South Africa. He was

promoted to Major on 31 December 1994. He became Chief of Staff of 3 Commando Brigade in 1998. He was promoted to Colonel on 31 December 1999 and appointed Commanding Officer of 40 Commando in March 2000. In January 2002, he was appointed Chief of Staff, UK Joint Force Headquarters, in which role he served as Chief of Operations and Intelligence to the British Commander for the invasion of Iraq. He was appointed OBE in the 2002 Birthday Honours for service in Northern Ireland and Afghanistan. He went on to be British Liaison Officer to the Joint Chiefs of Staff in the United States in 2004 and was promoted to Brigadier on 18 October 2004. He became Assistant Chief of Staff (Operations) at Permanent Joint Headquarters in May 2005 and Commander of 3 Commando Brigade in June 2007. Promoted to Major-General on 6 May 2008 on his appointment as Deputy Commander NATO Rapid Deployable Italian Corps, he became Assistant Chief of the Defence Staff (Operations) at the Ministry of Defence in August 2010 and Chief of Joint Operations at Permanent Joint Headquarters in December 2011, with the rank of Lieutenant-General from 13 December. He was appointed Knight Commander of the Order of the Bath (KCB) in the 2014 New Year Honours for commanding UK Global Operations during a period of unprecedented volatility

Mr. Matthew B. Caffrey Jr. is the Air Force Material Command (AFMC) Lead for the Air Force Chief of Staff's Title 10 far term wargame, and AFMC's integrator for Air Force Research Laboratory (AFRL) Wargaming. Previous positions include the AFRL Liaison to AFMC for Wargaming and Lead, Future Warfare Analysis Team, Directorate of Plans and Programs, HQ AFRL. He has previously served as the Professor of Wargaming and Campaign Planning at the Air Command and Staff College (ACSC), Research Associate at the School of Advanced Airpower Studies, and Senior Analyst for the SYSCON Corporation, serving at the Air Force Wargaming Institute, all at Air University, Maxwell AFB, Alabama. A retired Colonel in the Air Force Reserve, his final assignment was as Senior Reservist, Information Directorate, AFRL. His previous military assignments include; Chief, Wargaming Strategy Development, with the Air Staff's Checkmate Division, the Pentagon, Washington DC and assignments at the major air command, wing, group and squadron levels. He is the developer of the 3rd Generation Wargame concept, the Strategy/Innovation Cycle (sometimes called the Caffrey Loop) and the Caffrey Triangle. In 1993 he helped found the Connections interdisciplinary wargame conference. He also helped found Connections UK in 2013, Connections Australia in 2014 and Connections Netherlands in 2015. He created the ACSC Wargame Elective, the AFRL Wargame Course and the AFMC Wargame Course. Matt is the designer of AFMC's Agile Combat Support – Science and Technology Wargame, the AFMC/Royal Air Force Agile Combat Support – Science and Technology wargame, the Air Force Research Laboratory (AFRL) Wargame, the Engineer/Strategist Exercise, Joint Resource Allocation Exercise (JRAX), the Joint Deployment Employment Exercise (JDEX), and several other wargames. He co-authored the Gulf War Fact Book, and has written several chapters and many articles on wargaming, airpower, and defense issues. He has addressed international audiences on wargaming; including German War College, the United Kingdom's Defense Research Establishment. His US audiences extend from The Pentagon to Silicon Valley. A former member of the Air University and the Armed Forces Staff College Red Teams, he has served on Blue, Red or White teams for Air Force, Navy and Army Title 10 Wargames. His latest book, *On Wargaming, how wargames have shaped the past and may shape the future*, is on track to be published by the Naval War College Press in 2017.

John Curry is a senior lecturer in games development at Bath Spa University in the UK. He specialises in gaming conflict situations in higher education and defence related projects including for the Pentagon and other organisations. He is the editor of the History of Wargaming Project, www.wargaming.co, which aims to capture and make available key material in the development of the hobby and professional wargaming. This wargaming archaeology has included a number of wargames that have never been in the public domain. He has authored, co-authored/ edited over eighty books including new works that aim to capture current applications of wargaming type methods as used for training, analysis and decision support.

Erik Elgersma is Director of Strategic Analysis at FrieslandCampina, one of the world's largest dairy companies. He speaks and lectures frequently at universities and business seminars on the topics of strategic analysis, market intelligence, competitive strategy and data science. He holds a Ph.D. from Delft University of Technology and is an alumnus of the International Institute for Applied Systems Analysis in Vienna, Austria. He received executive education at Jane's Military Intelligence.

Dr Aggie Hirst is Lecturer in International Relations Theory and Methods at King's College London. She is the Principle Investigator on a Leverhulme and British Academy-funded research project titled 'The Politics of Play: Wargaming with the US Military'. Her research focuses on the US military's use of wargames and simulations as pedagogical tools, and the implications of this for service members and the changing character of military doctrine and warfare. She is author of *Leo Strauss and the Invasion of Iraq: Encountering the Abyss* (Routledge: 2013, 2016), and has published in high-profile scholarly journals including *Millennium: Journal of International Studies*, *Globalizations*, and *International Politics*. She completed her ESRC-funded PhD at the University of Manchester in 2010, and has ten years of research and teaching experience in the HE sector.

Graham Longley-Brown has wargamed since aged eight. He always preferred umpiring and creating scenarios to playing (and generally losing). He delights in wargame rules and has been known to laugh out loud at particularly clever mechanisms. A British Army Officer since 1986 (and still in the Reserves), he has used wargaming for professional purposes throughout his career, often as a lone champion for the technique. He was the UK Joint Services Command and Staff College Directing Staff Subject Matter Expert for wargaming from 2000-2002. Since leaving the Regular Army in 2003, Graham has consulted on all-matters professional wargaming. He has designed and delivered wargames at UK, European and Gulf State Staff Colleges, for the UK Army (at all levels), RAF, Royal Navy and Royal Marines, the NATO Joint Warfare Centre, UK Force Development and experimentation, Dstl, the American, British, Canadian and Australian Armies Programme, the Royal Brunei Armed Forces, the Pakistan National Defence University, the US Army in Europe and others. He is the leading developer of the Dstl/Cranfield Rapid Campaign Analysis Toolset (RCAT) manual simulation. He is a published author on professional wargaming: he was the lead author for the MOD *Wargaming Handbook*; wrote the current Course of Action Wargaming section for the UK Army's *Staff Officer's Handbook* (which he also teaches); and is about to publish *Successful Professional Wargames: A Practitioner's Guide*. He is a co-founder of Connections UK.

David Manley is a naval architect heading up the Naval Authority Group Ship Division and Integrated Survivability Team in the MOD's Submarine Delivery Agency. He has worked in the MOD for 28 years, 17 of which have been in maritime survivability where he served as the Dstl Technical Adviser for survivability and submarine R&D. David has been a wargamer for over 40 years, and a published author of over 20 commercial sets of rules and numerous articles since 1990, focussing mainly on naval and air wargaming. He has worked with the RN's Maritime Warfare Centre and Dstl on a number of wargaming and OA projects covering recent operational scenarios and concept development of future warships and submarines. He is currently sponsoring UCL's development of wargaming as an educational tool for trainee naval architects, marine engineers and combat systems engineers, and is driving the development of these tools as an aid to young engineers within DE&S and the Submarine Delivery Agency.

Colin Marston is a Senior Principal Analyst within the Wargaming Team at the Defence Science and Technology Laboratory (Dstl). He has predominantly worked in the Support to Operations (S2O) environment, having been deployed as an Operational Analyst to Afghanistan and Iraq. At Dstl, he has project managed and provided technical leadership to a range of projects and has been involved

in numerous international research collaborations. He ran Dstl's Stabilisation Programme for five years, which involved delivering numerous wargames using PSOM (a Peace Support Operations Model) for a range of NATO and MOD customers. In 2011 he was the Field Team Leader responsible for two large deployments of analysts (Dstl and US) to deliver wargames to support the future planning of the International Security Assistance Force (ISAF) mission in Afghanistan. This work received a Chief Scientific Award. It was also awarded the OR Society's President's Medal in 2012. He is the Technical Partner, alongside Cranfield University, for the Rapid Campaign Analysis Toolset (RCAT), a manual simulation tool that is used to support /enable a wargame. More recently, he has sponsored the development of the Matrix Game Construction Kit (MaGCK). He is a Fellow of the OR Society (FORS), has a BSc (Hons) in Physics with Astrophysics and served in the Army Reserve (Infantry). He is also a co-founder and member of the organising committee for the Connections UK professional wargaming conference in addition to being a co-author on the recently published UK MOD Wargaming Handbook.

Tom Mouat is a serving officer currently working at the Defence Academy of the UK where he is the Directing Staff Officer for Simulation and Modelling. He has over 30 years of experience in training, military exercise planning, simulation systems and wargaming. He has an MSc in Defence Simulation and Modelling and holds a PGCE. He has experience in a wide range of military training systems from the lower tactical level to the higher strategic level, as well as spending 5 years in the procurement of these systems. In addition, he lectures on simulation, modelling and wargaming (most recently in China and Poland); has designed games for education, including the MaGCK: Matrix Game Construction Kit; and facilitated Wargame events for diverse audiences, worldwide.

Anna Nettleship spent five years active duty as a linguist of Modern Standard Arabic in the Military Intelligence branch of the United States Army. During her contract she worked as Non-Commissioned Officer in Charge of Taskings for S3 Operations for the 706th MI GRP managing unit and mission activity for upwards of 600 service members and as a Command Language Program Manager, securing training and testing for a cohort of upwards of 300 linguists and assisting in the management of language facilities for Army, Navy, Marine and Air Force linguists stationed at Fort Gordon, GA. She has worked as staff on several wargame simulations including gaming Ballistic Missile Defense and conventional and hybrid warfare and recently completed a manual historical wargame simulating the Battle of Stalingrad. She is currently completing a War Studies MA at King's College London with a focus on US military doctrinal development and warfare adaptation.

Dr Nigel Paling is a lapsed entomologist that participated in the oceanographic cruises at Knebworth (1979) and the London O2 (2007). He began his MOD career in 1990 at the Defence Operational Analysis Establishment where he wargamed Land/Air capabilities. He subsequently moved to Field Studies Division to participate in, and later lead, Force Development experiments such as Ex EAGLE'S EYE, Ex BIG PICTURE, FIST baseline trials, and Ex REACTION COMBINEE (a PJHQ exercise in Corsica to stand-up the French deployable Joint Force HQ). In 2001 Nigel deployed to London to support joint MAFF/MOD Foot and Mouth outbreak operations. He subsequently spent 6 years as MOD Head Office AD Experimentation, followed by 3 years as the first DE&S Land Equipment Science Gateway. He recently led the team that supported 1 Armd Inf Bde Ex SPECULAR STRIKE experimentation and is now the Army HQ Director Capability Future Force Development Science Gateway in the role of Deputy Head Analysis and Experimentation.

Phillip Pournelle served in the U.S. Navy for 26 years as a surface warfare officer before retiring as a Commander. He is an operations analyst with a Master's degree from the Naval Postgraduate School in Monterey, California. At sea he served on cruisers, destroyers, amphibious ships, and a high-speed vessel. Ashore he served on the Navy Staff where he was the founder of the Navy's World Class Modeling program. He served on the staff of the Secretary of Defense's Capabilities Analysis and Program Evaluation division. His last five years of service in uniform were as a Military advisor to

the Director of the Office of Net Assessment. He is currently senior director for wargaming and analysis at the Long Term Strategy Group (LTSG) in Washington, D.C.

Nick Reynolds is a security professional and the former Head of Operations for the KCL Department of War Studies' Crisis Team; during his tenure, he was responsible for building from scratch the wargaming and intelligence aspects of the fledgling annual Crisis Simulation. He holds a MA in Conflict, Security & Development, including Philip Sabin's conflict simulation module, and a BA in War Studies. Prior to studying at KCL, he served in the British Army. He favours mega-games with large numbers of participants for their ability to simulate internal politicking and strategic communications dynamics between multiple actors.

Volko Ruhnke is a retired US Central Intelligence Agency analyst, hobby board wargamer since childhood, and published designer of numerous titles for the California-based GMT Games LLC. At CIA he covered a wide range of accounts across three decades, including military and terrorist threats, senior policy support, and analytic tradecraft and instruction. His commercial tabletop simulations have won numerous industry awards and routinely sell out. His published game designs and co-designs on national security topics include: *Fire in the Lake—Insurgency in Vietnam*, 2014 (Boardgamegeek Best Wargame); *A Distant Plain—Insurgency in Afghanistan*, 2013; *Andean Abyss—Insurgency in Colombia*, 2012 (Charles S. Roberts Award) and *Labyrinth—The War on Terror*, 2010 (Charles S. Roberts Award).

Dr Karl Selke has spent over ten years as a defense analyst specializing in computer simulation and wargaming, incorporating analytic rigor and human ingenuity into decision support. He combines an experienced defense analyst's perspective with significant academic training in systems engineering and computational social science. Towards this purpose, he leads the conceptual and functional design for the Standard Wargame Integration and Facilitation Tool (SWIFT). In addition to SWIFT, he has pioneered the RealLand agent-based model exploring international conflict. As a program manager at Group W, Dr. Selke supports the application of computer-assisted wargaming for multiple clients to include the Office of the Secretary of Defense and the Marine Corps. He is the technical requirements lead for the United States' Defense Wargame Repository. Recently, he has been innovating an analytic wargaming capability to provide a more refined operational environment to enhance wargame insights.

Philip Sabin is Professor of Strategic Studies in the Department of War Studies at King's College London. He has worked closely with the UK military for many years, especially through the University of London Military Education Committee, the Chief of the Air Staff's Air Power Workshop, and KCL's academic links with the Defence Academy and the Royal College of Defence Studies. Professor Sabin's current research and teaching involves strategic and tactical analysis of conflict dynamics, with a particular focus on ancient warfare and modern air power. He makes extensive use of conflict simulation techniques to model the dynamics of various conflicts, and since 2003 he has taught a highly innovative MA option module in which students design their own simulations of past conflicts. He has written or edited 15 books and monographs and several dozen chapters and articles on a wide variety of military topics. His recent books *Lost Battles* (2007) and *Simulating War* (2012) both make major contributions to the scholarly application of conflict simulation techniques. Besides co-organising the annual Connections UK conference at KCL, he has taken part in several defence wargaming projects, and he recently worked with the British Army's Centre for Historical Analysis and Conflict Research to help to design a Camberley Kriegsspiel with which officers may practise battlegroup tactics. Professor Sabin has appeared frequently on radio and television, and has given many lectures and conference addresses around the world.

Lieutenant Colonel Ranald Shepherd was commissioned into the Royal Artillery in 1987. His operational experience includes; deployment with 7th Armoured Brigade as a FOO during the 1st

Gulf War and Military Assistant, to the Senior British Military Officer, at US Central Command. A qualified Instructor in Gunnery, he has been responsible for integrated artillery, air defence and combined arms training in Canada and the UK. After passing the UK's Advanced, Command and Staff Course in 2009; he has focused the later part of his career in the Army Personnel Centre. He has MAs from the University of Glasgow, Cranfield University and King's College London. A keen military historian he organises and leads Battlefield Studies to both UK and European battlefields. He has been wargaming since a teenager and is developing the use of COTS wargames for the professional development of military and civilian personnel.

Lieutenant Colonel Neil Stevens was commissioned into the Royal Signals in 1984. His tactical experience includes; service in an Armoured Division HQ and Signal Regiment in Germany during the Cold War, a short tour to Northern Ireland, a tour with the British Army's specialist Electronic Warfare Regiment, a tour providing military satellite communications to a variety of locations worldwide and a tour serving alongside the Army Reserve. He commanded a CIS infrastructure provision signal squadron in Edinburgh in 1999 working to both Commander HQ Scotland and the Director of the Edinburgh Military Tattoo, for whom his squadron provided the event sound system. After serving in the staff HQ of UK Special Forces he was promoted to Lt Col in 2006. A graduate of the UK's Joint Staff College he has served and deployed to Afghanistan with NATO's 1st German/Netherlands Corps as the Chief G6 planner in HQ ISAF before moving on to be the British Forces Falkland Islands' Chief J5. More recently he has served in the Army Personnel Centre in Glasgow as a Career Manager and Army career policy specialist. Neil is a hobby board wargaming enthusiast and collector. His favourite game is Multi-Man Publishing's Advanced Squad Leader for which he notably organised the UK's first ever tournament in 1995. 'Intensive Fire' was attended by over 60 gamers from across the World and was hosted at the Defence Academy in Shrivenham.

Paul Edward Strong is a historian and analyst in the UK's Defence Science and Technology Laboratory. He is a wargame practitioner at the Ministry of Defence - specialising in game design, scenario development, wargame adjudication and Red Teaming. He is the co-author of Artillery in the Great War (2011) and edited a volume on the changing role of women in warfare in the 20th Century (Women in War: From Home Front to the Front Line) in 2012. His most recent research has focused on the role of the Royal Navy's Western Approaches Tactical Unit during World War Two.

Col Dickie Taylor is a serving officer currently commanding the STRIKE Experimentation Group (SEG). The SEG was set up 18 months ago to coordinate and accelerate the force development of the British Army's new medium brigades using wargaming, virtual and live experimentation. He has over 26 years of strategic, operational and tactical planning and training with a broad range of military, multinational, OGD and NGO partners. He has an MA in Defence Studies from Kings College London, and an MA in Strategic Studies from the US School of Advanced Military Studies. Over the past year he has conducted a number of wargame to develop the STRIKE Bde's ability to conduct warfighting operations dispersed and at reach in order to dominate a larger battlespace with economy of effort. This has explored agile command, tempo, lethality, self-reliance, logistic efficiency, communications resilience, multinational interoperability and ethos.

Brian Train has been designing conflict simulation games for the civilian market for over 20 years, with 45 published designs to date. His articles and games have been published by a wide range of large and small firms. His special interests in game design are irregular warfare, "pol-mil" games, concepts of political influence in games, and asymmetry in games generally. In his spare time, he is an Education Officer in the Ministry of Advanced Education of British Columbia, Canada.

Jim Wallman is a professional game designer specialising in manual games for developing insights, strategy and team development and for education, with over twenty five years' experience in the field. These wargame game designs are informed by many years as senior civil servant in the

Ministry of Defence, as well as senior roles in the voluntary sector. He has designed and delivered map wargames at political, strategic and operational level for the UK Defence community; board games, map games and concept development games for the British Army; over 40 sets of wargaming rules; and command and decision games covering issues such as equipment development, political crises, strategic planning, and civil disorder. He has worked extensively with the corporate, public, educational, entertainment and voluntary sectors, in particular designing and implementing games for senior leadership development and analytical wargames for the UK MOD, corporate and the voluntary sector. Also a regular guest lecturer on wargame design and development at Wolverhampton University. His background and training is primarily in the social science, psychology and military history fields, with a particular interest in the practical application of positive psychology to game structures and the development of immersive gameplay. His game designs in the recreational arena have now been played world wide in the USA, Canada, Australia, the Netherlands, France, Italy, Germany, Austria and New Zealand as well across the UK.

Peter Williams is a Defence Operations Analyst from DST, Australia. He has worked on advising future capability acquisition and concept development for over 20 years, predominantly in the Land domain. He has a particular interest in designing wargames to support analysis; specifically finding the break-points of forces and then discovering the underlying causes of failure at those regions in the scenario space. Recently, his branch has created a new position, 'Research Specialist: Wargaming and Analytical Red Teaming' which was awarded to Peter. He is now in a position to undertake detailed research into the science and the craft behind wargame design and implementation. Every wargamer's dream job!

Facilitation clinic questions

The facilitation clinic is an opportunity for you to ask a panel of experienced and handsome facilitators all those questions you lie awake pondering over, but have never found anywhere to ask. You can ask anything. Examples might range from 'What is the difference between facilitation and adjudication?' to 'What is the most senior ranking officer you've ever asked to roll dice?' Please submit as many questions as you wish. There will be a posting box at the back of the Great Hall throughout Wednesday and Thursday morning. Use this page, or any other long, soft and durable paper you feel is appropriate. You can attribute your questions (if, for example, you want to interact with the panel) or remain anonymous.
