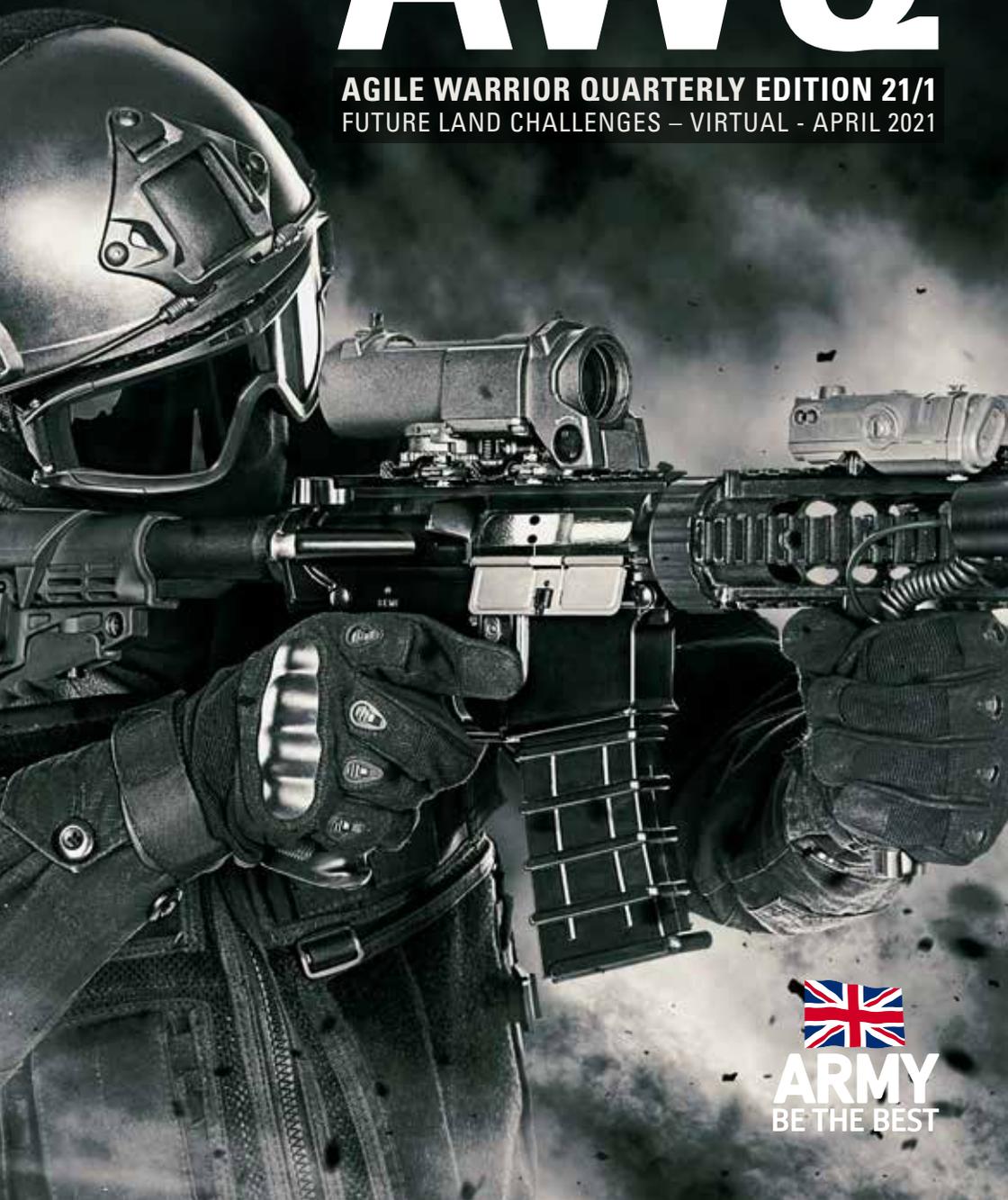


# AWQ

**AGILE WARRIOR QUARTERLY EDITION 21/1**  
FUTURE LAND CHALLENGES – VIRTUAL - APRIL 2021



**ARMY**  
BE THE BEST

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# ACKNOWLEDGEMENTS

The AGILE WARRIOR team would like to thank the following organisations and individuals who have made this event to a success:

- Major General Jez Bennett CBE, Director Capability, British Army Headquarter
- Dr Rob Johnson, Pembroke College, Oxford - Indicators of the Changing Character of War
- Col Jimmy Blejski, US Army Futures Command - FOE 35
- Dr. Oscar Jonsson, PhD, Academic Director for the Center for the Governance of Change - Russian understanding of Warfare: Blurring the Boundaries of War and Peace
- NORWAY, AUSTRALIA, International perspectives on FOE 35
- Ana Yang, Executive Director, Sustainability Accelerator, Chatham House - Climate Change and Land Use
- LtGen (R) Charles T. Cleveland, former Com USASOC - Building a Western Way of Irregular Warfare
- Dr Sean McFate, National Defense University - Understanding Shadow Wars
- Dr David Ucko, National Defense University - The Irregular Warfare Dilemma: Defeating the State in the 21st Century
- Brig Gus Fair, Com SPIG and Col Thammy Evans, DCom 77th Bde - LSO: Role and Challenge
- Christopher Fisher MBE, Talisman consultancy- The Complexities of Partnering
- Prof Anthony King, Warwick University - Understanding the Contemporary Urban Battlespace
- Dr David J. Kilcullen, Cordillera Applications Group - Future Urban Trends
- Amelie Theussen, PhD, University of Southern Denmark - Military Ethics in Urban Warfare
- Lt Col Marko Bulmer, Reservist - Sub Terranean
- Stuart Lyle, Defence Science & Technology Laboratory – Urban Small Units
- LtCol Gavin Saunders, British Army's Land Warfare Centre - Urban Roadmap
- John W. Spencer, Modern War Institute - Preparing for our Urban Future
- Defence Science & Technology Laboratory (Dstl)



**“ It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change. ”**

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Charles Darwin

# PREFACE

**Agile Warrior (AW) is the Army's intellectual examination of current and emerging threats, challenges and opportunities for land capability. It generates an evidence base to inform the continual transformation of land forces and force structures across all lines of development.**

AW aims to be both reflective and progressive, challenging current assumptions where necessary. While many of us routinely focus on the near-term future, it is critical that we extend our gaze beyond the short-term horizon to inform our experimentation and modernisation agenda, so that our land forces can continuously adapt to successfully meet future challenges. AW has a horizon of approximately 20 years. As such, it is aware of current policy, budget and equipment – however, AW is not constrained by these factors and should encourage conceptual exploration and exploitation of trends and emerging technologies.

The annual British Army's AGILE WARRIOR Future Land Challenges Symposium 2021 (FLC21) was held on 20 – 22 April 2021 for the first time as a virtual event, with a significant increase in participants compared to the years before.

More than 1000 registered participants from 27 nations received briefings on different aspects of the Future Operating Environment (FOE), Land Special Operations (LSO) and Operating in the Urban Environment. Representatives from the services of the UK, USA, Norway, Australia together with academics from United

Stated, Brazil, Sweden, Australia, Denmark, and the United Kingdom presented their views during three digital afternoon sessions, which were moderated by DSTL subject matter experts.

With the AGILE WARRIOR brand the British Army has a world-wide renowned and well established eco-system made up of a wide network of partners, including Allies, Partners, OGDs, NGOs, industry and academia to share information, provide early warning and shared understanding, and make maximum use of understanding.

The intention of this digital and unclassified edition of the Agile Warrior Quarterly (AWQ) is to encourage a wide audience debate, based on articles written by presenters and panellists from FLC21. One can easily subscribe to AWQ by emailing to the address below. AWQ welcomes submissions of scholarly, independent research from members of the Ministry of Defence, security policymakers and shapers, defence analysts, academic specialists, and civilians from the United Kingdom and abroad. Submit articles for consideration to:

**ArmyCap-FFD-Concepts-AW@mod.gov.uk**

Finally, we are confident that the articles in this edition of AWQ will provide food for thought. We hope you enjoy reading it and are looking forward to your contribution to future (hybrid) editions.



# FUTURE LAND CHALLENGES 2021 THEMES

## AIM

**The aim of the FLC21 is to scan the horizon together with military and civilian SMEs, academia, industry, Other Governmental Departments (OGDs), and thinktanks to contribute to the continual development of the AGILE WARRIOR programme, which examines the current and emerging threats, trends and opportunities in order to identify innovative capabilities and creative solutions to the challenges facing land forces in the future.**

We must acknowledge that the post-Cold War 'rules based international system' which has greatly benefited the UK and other nations, is fragmented, and characterised by intensifying competition between states over interests, norms, and values.

We can already see the future of high intensity conflict, fought at longer range, on lower density battlefields, with many fewer soldiers, but with more unmanned, autonomous platforms. The battlefield will be more complex, in the urban and suburban clutter.

The Future Operating Environment will not be limited by physical characteristics. We face threats from resurgent and developing powers, state and non-state actors and a continuing threat from violent extremism; a dynamic and fluid security context that will most certainly be affected by climatic changes. The notion of war and peace as binary states has given way to a continuum of conflict, both in the real world as in the virtual dimension, which require our forces to prepare for more persistent global engagement and constant campaigning.

The Army will no longer be held as the last resort. It will become more present and active, operating below the threshold of open conflict to uphold our values and secure our interests. This requires us to think and act differently!

The Army of the future must be leaner more lethal, nimbler, and more effectively matched to current and future threats. At the same time, it must be able to establish and sustain networks to enhance understanding, influence and access to the physical, virtual and /or cognitive terrain.

Underpinned by information advantage, land forces will operate with agility over greater distance, amongst people and most likely in an urban environment.

During this virtual edition of the FLC symposium we gained insights from well-known experts and Allies and their views on the Future Operating Environment, Land Special Operations and the Urban battlespace. Land Forces, with at the heart its people, must strive to think and operate in a novel and cunning way, together with Allies, Partners Across Government, industry and academia, thereby forcing multiple dilemmas on the adversary.

As Darwin quoted many years ago, one can only survive when one is the most adaptable for change. Therefore, we need an Army that when it fights is more agile and lethal – it's an asymmetric Army for the Digital Age, which is the right solution for the right time.

# FUTURE OPERATING ENVIRONMENT

The FOE is a continual theme of each FLC drawing upon wide range of participants and nations to allow sustained horizon scanning and increased understanding of emerging security trends. The following insights articulated by briefers and participants should be seen in the context of further research and experimentation to enable detection and extrapolation of possible drivers which could affect the future security environment.

## **SPEED OF EFFECT.**

Timing (synchronisation of effect) and precision will be critical in future land warfare, especially regarding the land domain's increasing reliance within the context of multi-domain integration on space, cyberspace and the electro-magnetic spectrum.



**RESILIENCE.**

Technology will become more increasingly sophisticated in its application across all functions of land warfare. The rate of technology advancement, access to technology, global network development, dominance of the commercial sector in technological development and dependence on certain technologies will increase the vulnerability of land forces to technological failure. Without redundant systems operational effectiveness will become overly reliant on advanced technology and civilian infrastructure. This will become increasingly apparent as we rely more heavily on our C2 systems to manoeuvre dispersed and concentrate for decisive action.

**PREPAREDNESS.**

Tactical warning cannot be expected, and strategic warning can be painfully short – peace and war is blurring. The questions that need to be addressed conceptually are: How will we know when we are in the next war? How can we predict where and when we will be challenged? How do we prepare for that? The answers to these questions will not be just black and white but will require more nuanced examinations involving a wide range of political, social, technological, economic, and environmental aspects. Historically it could be said that we see the conflicts coming but fail to act early because we hope it won't continue to escalate. War may no longer be relevant as a legally well-defined condition and could be a 'red herring'. In future, war will become an increasingly obsolete condition, with the new norm being differing intense levels of competition requiring new approaches to respond to potential risks and take advantage of opportunities that arise from this new normal.

**DEMOCRATISATION OF TECHNOLOGY.**

Technology will continue to shape the social, cultural, and economic fabrics of our society at all levels. New and emerging technologies will offer opportunities, but also present new vulnerabilities and challenges as the world pivots towards digitisation. The question we should be able to answer is: How do we make sure technological developments are manageable from a security perspective, and don't come back to bit us?

**DETERRENCE.**

The West is to become increasingly predictable in its response to crisis and conflict, as existing global governance institutions are continually being side-lined. This will impact on the way deterrence is valued as a guarantor for security, and ultimately lead to the erosion of hard military power. A credible deterrence is only possible if we are willing to act accordingly and understand its value in conjunction with the other instruments of national power: Diplomacy, Information, Military, and Economy.

Adversaries. We don't often look at how we are perceived by potential adversaries. There is continued criticism in the public domain that Russia for example is disrupting the International Rules Based System, yet Russia points out all the time we've invaded places or broken treaties. For example, Russia's perspective on the colour revolutions, which are seen as destabilising geo-political realities and encroachment of western values and influence.

## CLIMATE CHANGE.

Climate change will cause significant security; it's a risk multiplier. There will be first order impacts to climate change, but it can then exacerbate other issues in a non-linear way (e.g. yield decline effecting land use leads to biodiversity loss, etc.). The use of Land is central to climate, food, and resource security.

The Future Drivers for Land use will change:

- Demographic Shifts: the 2060s population will peak, and a majority will be in Africa and South-East Asia.
- Development Pathway: As countries become wealthier, there is a higher need for meat and dairy consumption.
- Decarbonisation Pathways: There needs to be an increase in meat production to the consumption and the population rise. The driver for consumption is moving from the West to East. If the East follow the Western diet, then there will be a global struggle.

How can military operations exacerbate the climate crisis? How can the military interact with the local population and how they can support the minimal footprint?

# LAND SPECIAL OPERATIONS

*“Conflict is becoming more sneaker”.*

**The blurring between war and peace and the increase in activities below the threshold of armed conflict put an onus on covert actions to manage crisis. Weapons which give us plausible deniability give us more power than raw fire assets. This is the idea of Shadow War. It seeks to fight wars in secret (from the public media) until the victory is achieved. This highlights the need to create a better understanding of why we should develop unorthodox military solutions to support other instruments of national power. The following insights from the second day of the symposium support the need for a better understanding of the increased demand in unorthodox military solutions.**

## RESILIENCE.

Conceptual component of fighting power.

There was a red line in the briefings and discussions around LSO whether there is a predominance evolving around unconventional warfare driven firstly by irregular warfare in Afghanistan now being nurtured by grey zone conflict, which poses the question: How does the West evolve from Clausewitz (force) to Sun Tzu (deception) paradigm? The term ‘irregular warfare’ was questioned as to its relevancy. Indeed ‘warfare’ is potentially becoming an unhelpful term when constant competition needs to be a pan-govt, pan-society activity, and naming something warfare allows it to be delegated



to the MoD (who aren't properly equipped to win it) and ignored by everyone else (who are needed to win it).

### **MORAL COMPONENT OF FIGHTING POWER.**

Partnering with forces/people that may not hold themselves to the same moral standards as we would like, may be the lesser evil than adopting a conventional approach that expends more lives, more resource and has a worse outcome. Legalities, policies, LOAC are significant issues, but if we lower ourselves to the standards of our adversaries, we will be indistinguishable from them.

### **PRINCIPLES.**

Lt Gen (r) Cleveland offered the following five principles for LSO future development:

- Study irregular warfare (build centre of competence)
- Build a strong interagency cadre who are educated in the above-mentioned studies.
- Understand centrality of the local environment. Currently we lack the understanding of what we are going into and the local context.

- An Irregular Warfare concept might not be needed – MDI and understanding the Human Domain should provide the right approach.
- Exploit and leverage the Achilles heel of authoritarian regime's fear - its people.

### **CONVENTIONAL VS UNCONVENTIONAL.**

We still need conventional forces – the answer is not to turn everything into Special Operations. But this will be a huge challenge when resources are tight. Buying high-end exquisite platforms that are too expensive to risk and have limited utility in the new normal is a waste of precious resource. Massive cultural challenge in the military (and government) to overcome this tendency to default to the easier answer – military overmatch. Failing to overcome the latter will merely exacerbate the tendency of our foes to embrace “shadow war”.

### **UNDERSTANDING THE HUMAN DOMAIN.**

Use of the term ‘human domain’ in a similar manner as ‘air domain’. Apply the same vigour in addressing the human domain as was invested in creating the RAF, USAAF, etc to address the domain.

# OPERATING IN THE URBAN ENVIRONMENT

## **GENERAL.**

Increased attention is being focused on the urban as a future operating environment. Global urbanisation will increase which might lead to resource competition, contested ownership and control of critical infrastructure, governance challenged by uncontrolled urban growth, and dependence of littoral urban areas on sea lines of communication. The future urban battlespace will be more will be more congested, more cluttered, more contested, more connected, and more constrained (5C). The following are insights from day three of the symposium based on the question: Why the British Army should be able to OPERATE and (WAR)FIGHT in an Urban environment?

## **URBAN CHALLENGE.**

Urban warfare is highly likely in the future; avoiding it is not an option. Land forces should prepare more specifically for Urban warfare as cities will most likely be the decisive terrain in the future. This includes managing expectations of high precision warfare and zero casualties and risk aversion, as both are particularly problematic in urban warfare. There needs to be a clear understanding that urban terrain is more advantageous for conventionally weaker, irregular forces.

## **SUB TERRANEAN.**

Subterranean is becoming more prominent to mitigate western firepower and ISTAR supremacy. In addition, cities creating more Subterranean space, therefore locations, equipment to create, and expertise to create, will become more common. An area in which automation is likely to pay dividends to avoid human casualties. See article Lt Col Bulmer.

## **TRAINING.**

T training is assessed as the primary focus for meeting the challenge of urbanisation and providing the 'biggest bang for the buck'. Realistic training facilities, both physical and virtual, are required; just focussing on going through the door "is just stupid!". It is assessed that technology will not be able to replicate dismounted close combat to human levels of effectiveness by 2040, therefore it is expected that humans – possibly augmented with technological enhancements – remain an integral part of urban operations

## **FIRE POWER.**

In the urban environment, manoeuvre is subordinate to fire, and conducted only to move to a position of relative advantage to bring fire to bear to achieve desired effects. Firepower – direct and indirect, mobile, and protected – is critical: in 'the deep' (by higher echelons), indirect precision fires, direct fires (including cheap and distributed reinforced concrete penetrating precision fires).

**COMBAT SUPPORT.**

Armoured engineers grouped at the lowest tactical level with bulldozers and counter-tunnelling capabilities as well as capable to conduct sub-terrestrial warfare will be in high demand.

**LAW OF ARMED CONFLICT.**

Law defines the space within which one can act but doesn't tell you how you should act. Law serves as a language for war and its morality. Do we have enough understanding of the possibilities within the LOAC to operate and fight in the urban environment? In her article, Dr. Amelie Theussen puts forward an argument about conflicting ethical principles within the current Western approach to war, which will need to be resolved if the West is to succeed at urban warfare in the future.

**NEXT STEPS:**

The insights from this FLC21 symposium has already influenced this year's AGILE WARRIOR programme. The concepts team will work closely together with Dstl and QinetiQ to develop a more thorough and detailed understanding of what is needed to operate and fight successfully below the threshold of armed conflict and in the urban environment.





# FOR THE DEFENCE: URBAN WARFARE IN THE 21ST CENTURY

## ANTHONY KING

**In the last two decades, the largest and most intense battles have taken place in urban areas, not the field, as Mosul, Marawi and Aleppo show. Most scholars and practitioners attribute this migration of conflict and war into cities to two factors: demography and asymmetry. Because half of the world's population – 3.5 billion people - now live in urban areas often in desperate conditions, it is inevitable that conflict has become more urbanised.**

**At the same time, urban areas especially sprawling megacities offer would-be insurgents almost infinite opportunities to hide and to ambush state forces.**

Although it is rarely acknowledged, there is, in fact, a third fact which has also ensured the conflict increasingly takes place inside urban areas; the reduction of military forces. Although the trend goes back to the 1970s, since the end of the Cold War, there has

been a radical contraction of state military forces. The reduction is particularly obvious in western countries where the armed forces are now about a half or a third of their Cold War size. Yet, Russia and China have also reduced their armies. As a result of this contraction, in inter-state wars, armies are no longer big enough to form the fronts which characterised mass twentieth century warfare. Consequently, they converge on the decisive strategic and operational locations which are overwhelmingly located in cities. Numbers have played an equally important part in civil conflicts and counter-insurgency campaigns. In the twentieth century, insurgencies often involved an important urban element; Palestine, Cyprus Malaya, Kenya, Algeria, Vietnam, Aden and Northern Ireland all involved significant urban operations. However, because state forces were so massive in the post-war era, they were normally able to drive insurgents out of town and cities and into the countryside.

Warfare has urbanised in the last two decades because of demography, asymmetry and a contraction of state forces. It seems certain that urban warfare will predominate in the next two decades too. State forces will fight each other or non-state militias in cities. How should the British Army prepare for this urban future?

There is growing view that the urban problem can best be solved by swarming. For instance, in his work on the IDF, Eyal Weizman discussed the now notorious Israeli military thinker Shimon Naveh's concept of 'fractal' manoeuvre. Influenced by postmodern theory, Naveh believed that the IDF could

revolutionise its doctrine. Instead of engaging in conventional lineal military operations, Naveh believed that the IDF should engage in mercurial, non-contiguous, 'fractal' swarming in urban areas. The clearing of Nablus in 2002 seemed to demonstrate the potential of swarming. There have been other successful urban operations which might similarly be described as swarming: the US Army's Thunder Runs into Baghdad in April 2003, or the actions of JSOC against Al Qaeda in Baghdad between 2004 and 2007. The British Army has itself become very interested in the concept of urban swarming and, in 2018-19, Strike Brigade experimented with the possibility of this kind of manoeuvre.

The attractions of swarming in the urban environment are obvious. Swarming promises to liberate the British Army from the intense difficulties and dangers of urban warfare; it avoids attrition, exploits the traditional strengths of the army and reflects its manoeuvrist ethos. So, it is understandable why the British Army has found swarming attractive.

Yet, the claim that the urban problem can be solved by swarming is an illusion. It is possible to manoeuvre freely through urban areas against weak opponents who have not fortified their positions and do not intend to hold territory. Yet, once an opponent approaches even local tactical parity and is determined to hold terrain, as ISIS were in Mosul or Al Qaeda were in Fallujah, swarming becomes impractical; it only increases the chances of friendly casualties. Consequently, when the armed forces have been confronted



with a determined, well-equipped opponent in the last twenty years, they have very reasonably reverted to slow, deliberate clearance operations. They have resorted to positional warfare. As a result, the inner urban siege has become the norm: not lightning rapier thrusts, but the slow, hard boring of proper urban operations.

If it is become a reference army for urban operations, as it aspires to be, the British army should relinquish the delusion of manoeuvre in the urban environment. It is also a mistake to think that the urban problem might be avoided by being 'manoeuvrist': i.e. by manoeuvring in cognitive and virtual space to undermine the will of opponents through clever information operations or precision raids. Against, an enemy determined

to hold its ground, leveraging of this type will not work alone, as the Americans found in Fallujah, Ramadi, Sadr City and Mosul. Sometimes cities might just have to be taken.

Consequently, to prepare itself for the future, the Army should embrace a doctrine of deliberate positional operations in the urban environment. If recent battles are indicative, firepower and armour will be absolutely critical. Yet, these operations will also be necessarily multi-dimensional in form. Even as infantry and tanks clear buildings and structures at street level, urban operations will involve the orchestration of the airspace above the city, in which a range of fixed and rotary, piloted and unpiloted aircraft operate. They will simultaneously involve partnerships with local forces and information operations.



However, one of the most obvious lessons of recent urban battles is that it is best not to attack cities, but to defend them. If cities are so difficult to attack, the logical corollary must be that the Army should look to defend them. It should invert its current doctrine and prioritise the urban defence. British Army doctrine states that in urban operations 'recent studies show advantage lies with an assault force in the ratios of 10:1 or greater'.<sup>1</sup> This is a sobering figure. It means that the largest force which the British Army could feasibly deploy (a division of about 15,000 soldiers) could only take on a peer enemy of 1500 troops – a battlegroup - in an urban area. The British Army could not get close to doing Mosul. However, if the British Army committed itself to urban defence in Estonia, for instance, then a mechanized brigade of 5000 might hold off a Russian force of 50,000 soldiers: a corps.

The defence has long been disparaged by western militaries. Yet, Clausewitz himself defined it as the stronger form of warfare. In the next two decades, if the British Army is to be a credible force - even more a reference urban military - it should embrace the defence as its prime and preferred tactic. Defence should be at the heart of its doctrine, tactics, technique and procedures – not an after-thought as it has been since the First World War. Defence, of course, does not mean a craven Maginot mentality. On the contrary, it refers to an aggressive determination to hold urban terrain and to counter-attack from it in order to inflict devastating losses on the enemy.

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1

Headquarters Field Army, Operations in the Urban Environment, Doctrine Note 15/13, 106.



# FUTURE LAND CHALLENGES 2021 THE URBAN DAY

## LT COL GAVIN SAUNDERS

**The urban day of the Future Land Challenges conference drew a large audience of academics and practitioners from around the globe, including David Kilcullen, Ben Barry, Anthony King, Amelie Theussen and John Spencer. It also included in-house representation from DSTL, the Land Warfare Centre and 1 ISR Brigade.**

Based on history as well as future urban trends, all agreed that urban is the new normal, is unavoidable, not optional, and should be seen as an opportunity for the British Army to embrace, and hone itself for. This was identified for several reasons: firstly, because the decisive battles of most campaigns are, and will increasingly be, conducted in an urban environment; and secondly, because if you can succeed in the

severely contested, congested and cluttered urban environment, then we should be able to adapt to operations in less restricted and intense environments. The increased use of subterranean spaces by both state and non-state actors was also highlighted.

Another reason for embracing urban identified was that it will also work to our advantage and play to our strengths. This is because: the urban environment reduces our adversaries ability to employ long range ISR and Fires capabilities against us; the requirement to operate in multiple, small and independent but integrated combined arms teams suits our operating approach and culture of mission command; and the asymmetry available plays to our manoeuvrist approach philosophy. Our experience operating against non-state actors



further reinforces this, as well as our ability to integrate across multiple domains.

Based on the discussion, our doctrinal fundamentals are sound, particularly the need to initiate, and dynamically maintain, a thorough understanding of the environment, across all its physical, human and informational systems.

However, we should consider the impact of emerging technologies, driven by commercial requirements, including: connectivity, UAS for ISR as well as wider application, remote and autonomous weapon systems, and local manufacture, including 3D printing. We also need to improve our understanding of the law and the risk opportunities available, promote our ethically based principles more visibly and communicate better, particularly to be seen to be dealing with things proactively, even if they are our mistakes.

Our training needs to be more realistic and adversarial, including EW, the use of UAS and RAS against us, exposure to snipers, ambush and indirect fire. We should prioritise defensive operations, including the use of: fortifications and deception; dominating 'no man's land' through patrolling, OPs and the wider use of STAP driven ISR layers; all linked to fires and QRFs, because protection and security will be key to any operation or campaign, whether alone or in conjunction with partners and allies. As part of this, as well as for offensive operations, we must ensure a combined arms approach at all levels, particularly incorporating direct and indirect firepower, which may require reform at company, platoon and section level as well

as improved information activities and use of aviation at formation level.

Underpinning all of this, we must have an urban centre of excellence, but not just a land focussed one, more a defence, integrated and coalition one, which also works with network body of experts in academia and professional bodies. In addition, we need to invest in and expand our urban training environments now, both in terms of real estate – with the clutter and congestion of rubble, actors and information challenges - and in terms of synthetics, linked to a database of real global towns and cities.

In summary, honing the British Army for operations in an urban environment is an opportunity we should embrace now, embrace across the force and across all our lines of development. We now need to get on with it.

**Lt Col Gavin Saunders PWRR**

**SO1 Operating Context**

**Warfare Branch Headquarters**

**Land Warfare Centre (LWC)**



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