BAR

BRITISH ARMY REVIEW

NUMBER 180 SPRING/SUMMER 2021

The Journal of British Military Thought

ARMY
BE THE BEST

Contents

BRITISH ARMY REVIEW
This is an official Army publication, prepared under the direction of the Centre for Historical Analysis and Conflict Research (CHACR). The information it contains is for official use only and may not be reproduced for publication in any form without the express permission of the Ministry of Defence. Individuals or agencies wishing to reproduce material should contact the Editor. **The views expressed herein (including editorial content) are those of the author concerned and do not necessarily conform to official policy.** Crown Copyright applies to all material published in this Review except where acknowledgement is made to another copyright holder; this does not affect the intellectual property rights of non-MoD authors. No article, illustration or image may be reproduced without the permission of the Editor.

Clearance: All military contributors are responsible for clearing their material at CO or equivalent level. Beyond this, responsibility for clearance with the MOD lies with the editor. Contributions from overseas commands must be cleared by the relevant Command Headquarters before submission. BAR assumes such clearance has taken place.

Submissions: Articles should not normally exceed 3,000 words with the optimum length around 2,500 words. Shorter articles are encouraged and welcomed. The ideal format is Word via email but please note Powerpoint does not reproduce well in commercial printing. **Also all Acronyms and Abbreviations should be spelt out in full and Plain English Should Be Used At All Times. Material for the next issue of BAR should be sent to the Editor at the address below:**

Address: The Editor, British Army Review, Building 97, Land Warfare Centre, Warminster BA12 0DJ

Phones: Military: 94381 3050
Civilian: 01985 223050
Editor: Graham Thomas
Email: armyreview@armymail.mod.uk

BAR is interested in sparking professional debate and, consequently, we are looking for articles on any aspect of current or past military experience that has contemporary relevance, so long as they are well-researched, clearly written and suitably engaging. Subjects of particular current interest are: contemporary operations; Integrated Action; 21st Century manoeuvre; Information Manoeuvre; Strike; urban operations; innovation, adaptability, defence engagement, cyber, and leadership. For further guidance please contact BAR at: **armyreview@armymail.mod.uk**

CHACR

Link to BAR homepage via the Defence Gateway

BAR 180
SPRING/ SUMMER 2021

EDITORIAL 2

THEME

Corps Utility and the Case for Change 4
Major General John Mead

Future Soldier - Seizing the Opportunities of the Integrated Review 12
Brigadier John Clark

Future Soldier - Learning the Lessons of the Past 18
Colonel Alistair McCluskey

ARTICLES

Resourcing Manoeuvre: Lessons of 'Blitzkrieg' for Strike 26
Major James Taylor

Covid 19: Are We at War? 38
OCdt James Thorp, RMAS

Innovation and RAS: A Mix of Technology and Determination 46
Major Alexander Bayliss

Remember the 'B' in NBC? 52
Major Sergio Miller

Corporal Paul Watson, Crown Copyright

Implications of The Terrorist Use of The Cyber Domain 60
Captain Tomas Fletcher MBA MA BSc

Two Armies In Transition: Lessons from Germany's Response to Dieppe 68
James Shelley

Is There A Post 1945 'British Way in Counter-Insurgency'? 76
Lieutenant Ben Tomlinson

Operation Market Garden: Urquhart and The DCM 84
Dr Gary Buck

EDUCATION

Training to Fight Unarmed? 90
Major (Ret'd) Ollie Braithwaite

Mens Agitat Molem: The ACST With The Bundeswehr 98
Major James Young

HISTORY

Cunningham 'On Leadership' 104
Lieutenant Colonel (Ret'd) Dennis Vincent MBE

Soldiers in Greenland: 1930 - 1990 112
Major (Ret'd) Sir Crispin Agnew

BOOKS

Vietnam: An Epic History Of A Tragic War 122
Colonel (Ret'd) David Benest OBE

The Soldier Who Came Back 124
Ian Palmer

Dragons and Snakes: How the Rest Learned to Fight the West 126
Lieutenant Colonel James Chandler

The Battle of The Peaks and Longstop Hill 128
Major Chris Buckham, RCAF

Major General Oliver Nugent: The Irishman who Led the Ulster Division in The Great War 130
Major General Colin Weir

Editorial

Welcome to British Army Review (BAR) 180 Summer 2021. The publication of this edition has been delayed, partly due to the ongoing constraints of Covid-19 remote working and partly due to the announcement on the Integrated Review (IR) in March. Given the importance of this work, we wished to publish a selection of IR-related articles to kickstart what we are sure will be an ongoing and lively debate in the coming editions.

In addition to the IR, several other important events have occurred on both the national and international stages. In April, the country joined in mourning the death of HRH Prince Phillip, The Duke of Edinburgh. In addition to his front-line experience as a Naval officer during the Second World War, as Colonel and Colonel-in-Chief of several of our oldest Regiments, he will be remembered as a true friend of our soldiers with their best interests always closest to his heart. Always encouraging those who attempted reach beyond their comfort zone and always demanding the best leadership to be provided for them, we will miss him.

Pictured is HRH Prince Phillip, the Duke of Edinburgh during a visit to 1 Assault Group Royal Marines in the new Tandy building HMNB Devonport in 2015. ***Photo: LA(Phot) Ben Shread, Crown Copyright***

Meanwhile, as we begin to adapt Army structures and capabilities following the announcement of the IR, our sister Services have also begun to field new capabilities. Perhaps the most eye-catching act has been the deployment of the UK's first Carrier Strike Group (CSG) in a generation, with HMS Queen Elizabeth leading a task group containing UK, US and NL units on a seven-month mission to the Western Pacific. Embarking FAA, RAF and USMC aircraft, and training with numerous allied navies enroute, the CSG marks a milestone in the UK's transition to a more globally responsive force posture.

This large-scale naval deployment coincides with the publication of Max Hasting's latest book on Op PEDESTAL, the mission to resupply the beleaguered island of Malta in August 1942. The heroism displayed by the sailors and airmen of the RN and RAF helped ensure that the island maintained its vice-like grip on the Axis supply lines across the Mediterranean and set the scene for the 8th Army's subsequent victory at El Alamein two months later. In Hasting's opinion operations such as this justify his claim that the RN was the most successful of the UK's armed forces in the Second World War. This is a strong claim and one which we here at the BAR wish to challenge on behalf of the Army.

Attacks on the Army's combat performance during the Second World War have a long heritage, with the defeats in Norway, France and Flanders, North Africa and the Far East between 1939-42 feeding this narrative. But this hides a much more complex context. The Army was never the priority for resources as the UK scrambled to rearm as the growing threat of revanchist totalitarian regimes became evident around the globe during the 1930s. From 1934 onwards, as Britain regenerated its forces, the Army remained in third place for re-investment, behind both the RAF and RN as the nation prepared for the coming conflict. Moreover, the high pace

of technological change and the plethora of concurrent 'small-wars' around the Empire militated against the Army developing any proficiency in large scale combined arms operations. This risk matured in February 1939 when the Government abruptly reversed its strategic posture of the previous two decades, and ordered the Army to prepare for a Continental deployment. Six months later it was ordered to France and in May 1940 it was pitched into the maelstrom of modern land warfare.

And yet while its tactical and operational battlefield performance has frequently come under question, it's pivotal role as a key enabler within a strategic alliance has rarely received the same scrutiny. As Gary Sheffield has pointed out, this has been one of our national Unique Selling Points (USPs). Between 1688 and 1945, Britain fought twelve Great Power Wars, ten in a coalition, two independently. Results: won eleven, lost one (against the combined power of France, Spain and some rebellious colonies in 1783)! During the Second World War, the British Army played a similar role alongside its Imperial and Commonwealth partners, keeping the flame of resistance alive until the larger and more powerful resources of the USA and the USSR could be brought into play. This constant ability to remain in the fight, however battered, however fractious the relationships, is a priceless quality. Strategically, it not only buys the time to build resilience and reverse negative momentum, putting skin in the game demonstrates commitment to our global partners. That the British Army did so in such trying circumstances during the Second World War is an achievement long overdue recognition.

This ability to engage overseas and operate as a partner within a coalition is a key attribute of the Army to be delivered by the IR, as highlighted by the articles in this edition by Head of Strategy at Army HQ, Brigadier John Clark and COS ARRC, Major General John Mead. Alongside them we have the usual mix of wide-ranging debates and book reviews for your consideration and response if necessary. We hope you enjoy it.

Corps Utility and the Case for Change

Major General John Mead, discusses the utility of the Corps in modern deterrence and how the ARRC is changing, concluding with some thoughts on opportunities for British land power within NATO.

US and UK troops from the multi-national Allied Rapid Reaction Corps (ARRC) Headquarters deploy on Exercise Loyal Leda in South Cerney, Gloucestershire. The exercise is designed to test the ARRC's ability to rapidly deploy and command up to 120,000 soldiers from across NATO if necessary. The exercise will test the HQ staff in a number of virtual scenarios calling on the skills and expertise from all 21 nations represented within the ARRC. ***Photographer: WO2 Jamie Peters / MoD Crown Copyright***

'Despite the ubiquitous perception of 'deterrence' as the object and output of defence activity, and an articulated aspiration for 'leadership' in NATO's deterrence posture, public discourse of the subject in the UK remains underdeveloped.'[1]

Deterrence; not a terribly interesting word, certainly not a well understood one; feels a bit reactive and surely that's all about nuclear weapons, right? Not totally wrong, but with adversaries boldly seeking to gain advantage below the threshold of conflict, the rules of the game have changed. Greater nuance is required in our thoughts, deeds and capability choices in relation to modern deterrence. The Russian occupation of Crimea and incursion into the Donbass in 2014 was a shot across the bows for NATO and the response has been impressive. The Wales Summit in September 2014 resulted in the NATO Response Force and 2% pledge; Warsaw in 2016 with Enhanced Forward Presence; and Brussels in 2018 with the NATO Readiness Initiative, reactivation of the US second fleet, and the creation of JSEC[2] and the Cyberspace Operations Centre.

When NATO heads of state met in London in December 2019 to mark 70 years of the Alliance, leaders confirmed solidarity and unity.[3] Momentum was maintained into 2020 with agreement on NATO's Deterrence and Defence of the Euro-Atlantic Area (DDA) as the north star for our posture and plans during competition, crisis and conflict. ARRC's certification as NATO's first Warfighting Corps in November 2020 needs to be seen in this context. It's a first since the fall of the Berlin Wall, a section of which stands opposite to the entrance of the HQ in Imjin Barracks (we were gifted it, I checked!) and in this article I will highlight how we are using 'readiness' to enhance competitiveness today and agility tomorrow through 'mobilise, transform and modernise'. Investments in the 'I' of MDI (Multi Domain Integration) are critical to keep up, while changes to ARRC's fires and engineering C2 nodes could offer disproportionate benefit in generating land effects and provide tested solutions as NATO contemplates the scope and resourcing of 'Corps Troops'. 'DDA alignment' will accelerate thinking throughout 2021 and plans for implementation will be considered by Defence Ministers in the Autumn.

MODERN DETERRENCE

> *Deterrence by land forces is uniquely complex because of the confusion and ambiguity that pervades land warfare. On land, there are many more rungs on the escalation ladder, and a great deal more scope for miscalculation, confusion and subterfuge.*[4]

Deterrence is psychological and about cognitive effect. It's about persuading a competitor or adversary not to pursue a particular Course of Action (CoA) and is built on foundations of clear intent underpinned by credible capability. Land grabs have been a recent phenomenon where deterrence has failed and the geopolitical winds do not look favourable. NATO's focus is Russia as the Alliance's stated most significant long-term challenge. While NATO does not seek confrontation and poses no threat to Russia, recent Russian action has confirmed NATO's dual-track approach to Russia - strengthening deterrence and defence backed up by hard-headed dialogue - is justified. DDA's alignment over the coming year and the development of SACEUR'S AOR-wide Strategic Plan (SASP) has UK leadership baked in given the implications are profound for C2, partnering, exercises, enablement and Stratcom. DDA will affect the way NATO plans, views battlespace geometry and delivers effects across domains. On the other side of the coin, NATO's Warfighting Capstone Concept (NWCC) provides an articulate view on capability risks and priorities for the 'fight tomorrow'. Restless experimentation links the two. There are significant choices ahead and also an opportunity to broaden the public conversation about the benefits of credible deterrence.[5] Europe's relative peace for over 70 years is a useful start point. The costs of a failure of deterrence - Ukraine, Salisbury even - and the growing risks of

1 *Watling, Jack, By Parity and Presence, Deterring Russia with Conventional Land Forces, RUSI Paper, July 20.*
2 *Joint Support and Enabling Command established in Ulm, Germany – it's a big deal for NATO's notice to effect.*
3 *Also reaffirming the outcomes of the previous three summits. For a tour de force on NATO's journey and future, see John Andreas Olsen (2020): Understanding NATO, The RUSI Journal, https://doi.org/10.1080/03071847.2020.1777772*
4 *Ibid.*
5 *An idea for a UK based NATO Deterrence Centre of Excellence in one ARRC is currently exploring.*

British Army Challenger 2 tanks are parked next to French Leclerc tanks during Exercise Furious Hawk in Ādaži, Latvia. The tanks are deployed to NATO's enhanced Forward Presence Battlegroup in Estonia. ***Photo: NATOChannel, NATO Copyright***

miscalculation similarly need clearer articulation beyond NATO forums to include a wider public discourse on the value we derive from being at the heart of an Alliance and expenditure required to avoid conflict.

SHIFTING TECTONIC PLATES

Russia's modernised force and proficiency in 'Recce-Strike' and Anti-Access and Aerial Denial (A2AD is also a sinister sub-threshold menace) is our pacing threat. It's also a threat which is proliferating through aggressive export sales. While there are subtly differing national views as to the extent of the Russian threat, the direction is clear - credible, scalable, cross-domain deterrence is the direction of travel. Alignment is the word of the moment with NATO's DDA, the US European Deterrence Initiative (EDI) and Britain's Integrated Review (IR) coinciding in their implementation. The US continues its remarkable investment and commitment in Europe; most recently EDI has manifested itself in the Ex DEFENDER EUROPE annual series, in the reforming and redeployment of V Corps and the establishment of CG USAREUR as a 4* Command amongst many, many others. In HQ ARRC, very much a NATO HQ before it is anything else, we constantly seek the win-wins with NATO, the UK and US - targeted tactical activity with operational, sometimes strategic effect. ARRC has used readiness to rebalance our role and utility in support of modern deterrence - see Figure 1. This means using 'training as an engine for change' and 'treating all training as a deployment'.

IMPROVING COMPETITIVENESS

Mobilise: ARRC has had a unique period to concentrate on being a Corps Warfighting HQ, recognised by NATO as the most demanding mission set. We intend to keep Corps as core - it's easier to then transition to be a Land Component Command (LCC) than vice versa owing to the demands on tempo and synchronisation. Operating as a Corps for several years has also afforded us a proper look at the risks and those formations we must operate with in competition, crisis and conflict. We have found ourselves to be well-served at the Divisional level; ARRC regularly trains with the 1st Canadian, 12th Polish Mech, Italian Aqui, 1st US Cavalry and all three UK divisions at differing scales. Next year will see a stronger link with the 1st German Panzer Division. The profound challenge is the lack of Corps Troops; a theme I'll return to.

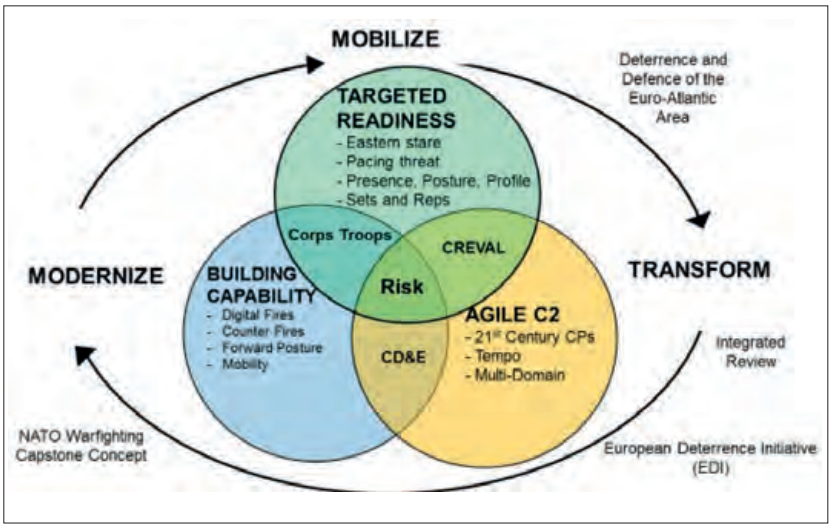


Figure 1 - ARRC's Change Model to Improve Competitiveness

Mobilisation has sharpened ARRC's focus on utility in competition. A utility which can in turn help to sharpen to both NATO and the US in their major deployments on the LEDA/JUPITER and DEFENDER series of exercises respectively. A rebalanced posture will also see ARRC constantly engaged across the Alliance in Mutual Training Support (MTS) and capacity building. Our routine tempo is increasing with three international partners - Ukraine, Romania and Estonia. Romania is our training support priority to enable Multinational Corps Southeast reach interim operational capability by July 2021. Ukraine and Estonia have evolved more from support to (UK) Operations ORBITAL and CABRIT. These are also win-wins for NATO, which is coming neatly into alignment through our '1-ups' - LANDCOM HQ in Izmir, Turkey and the UK Land Operational Command (LOC).

Training which is solely focused on warfighting training objectives alone is no longer sufficient, such training must firstly be part of our deterrent posture. Corps need to be more agile in their Profile, Posture and [forward] Presence (PPP). We risk training for scenarios with timelines for escalation occurring when adversaries would have de-escalated after, say, a land grab and where the stratcom initiative has been ceded. Although DDA and the view of what constitutes modern deterrence remains a work in progress, we are on safe ground with regard to more agile PPP, which ARRC encapsulates through three key effects to, 'build readiness and interoperability, deter adversaries and strengthen the Alliance'. Our rebalanced posture will also include a pilot project to more regularly surge into the British Army's Forward Mounting Base in Germany. Sennelager has significant appeal in reducing 'notice to effect', but also for training (and what that signals) and as a hub for multinational engagement. MN Corps North East in Szecin Poland, HQ USAREUR, 1st Panzer Division, AIRCOM, 12 Polish Mech Division, the JSEC, JFC Brunnsum et al, are all but a drive away - a long drive for some I'll grant!

The Necessity to Transform: A recognised prowess at the Corps level buys influence and a demand signal for capacity building and training support. This demand is predicated on credibility, something ARRC has built over 27 years through rigorous training, experimentation and many operational deployments, but can no longer take for granted if we are to keep up with adversaries and indeed allies - hence our Agile C2 transformation programme. ARRC's participation on Ex DEFENDER 20, set in a 2028 context, highlighted just how quickly the US is modernising in the coming years. We should be concerned about our ability to keep up. Fortunately, the imperative is not lost on Defence or the Army. Resourced from UK Defence Transformation funding, the ARRC and its Signals Brigade have partnered with a highly credible and industry leading consortium to design, test, refine and provide technical prototypes over a two-year programme. Every historical paradigm is being challenged ruthlessly. These include the all-too familiar business of fielding non-survivable 'expeditionary' CPs, a profound over-reliance on SATCOM, a circumstantial approach to data, cursory approaches to digital deception and the stubborn orthodoxy of applying networks to platforms – rather than platforms to the network.

British and French troops arrive safely onto Salisbury Plain, after being delivered to battle by RAF Chinooks, during multinational Exercise Wessex Storm, which saw the 2 PARA Battlegroup training on Salisbury Plain to confirm its skills and readiness to serve as the lead infantry unit within 16 Air Assault Brigade, the British Army's global response force. ***Photo: Corporal Rob Kane, Crown Copyright***

ARRC has achieved an early exemplar - a small tactical protected mobility Command Post (CP) with the lightest (yet) of signatures - visual, thermal, acoustic and EMS. A good start, but not yet scalable. Against this uncomfortable backdrop and working closely with Joint Force and Divisional counterparts (UK and Alliance), 1 Signal Brigade have designed and initiated Project LELANTOS. Funding was secured following the gathering of a catalogue of detailed data capture, testing, wargaming and analysis. The constituent parts are shown within a programme which is:

> *To deliver a rapidly deployable, highly secure, technologically advanced, scalable and evolutionary CP capability to Land formations to enhance battlefield C2, decision-superiority, cross-domain integration and survivability in a peer/peer+ context.*

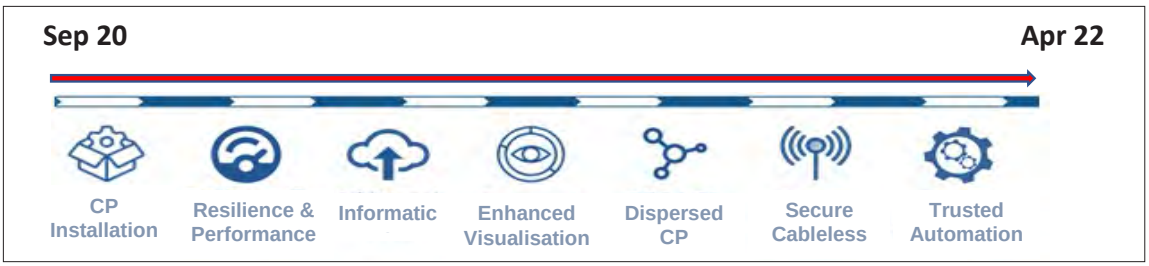


Figure 2 - Project LELANTOS Workstrands

A further area for transformation is our fires network. Our first step is the development of a Corps JAGIC (Joint Air Land Integration Centre) which has served the US and 3 UK Division so well as the hub of fighting the deep battle. A 25 strong agile team aligned to highly responsive J2, including 5-Eyes above secret, is the jewel in the crown in our Forward HQ and was delivered for the first time on LOYAL LEDA in November 20. However, the UK and NATO, must continue to develop digital fires networks which cross multinational, joint, tactical and operational divides. The US Fires applications[6] show what good looks like - we are accustomed to utilising them on WARFIGHTER exercises. We do not have equivalents, although our move to ELBIT's Battle Management System at the end of 2021 offers a marked opportunity. The necessity in the short term is an ASCA[7] compliant fires network which integrates fires from Company to Corps, as well as Link 16 connectivity to better enable Air Land Integration. We must use MDI to refocus on joint integration and effects, as well as improve proficiency integrating Space and cyber.

Finally, I do think it's worth mentioning ARRC is seeking to leverage Army transformation of career structures and functional KSE under Programme CASTLE. This initiative also aligns to a wider UK Defence initiative to enhance our network across NATO. ARRC has 118 SO2s, 95 of them are British. Getting NATO and formation level competency ticks as part of a NATO career stream should be an important part of our offer. We also intend to work with the MOD to get a clearer NATO Army Common Operating Picture as to where positions are and are not (i.e. JSEC). We are filling plenty of Plans roles, targeting seems to be a strong theme, and the UK's IR presents an opportunity to look afresh at opportunities in other functional areas.

MODERNISATION - YOU HAVE TO PUT SOMETHING IN TO GET SOMETHING OUT

Command and Information Systems (CIS): The ARRC and 1 Signals Brigade are accelerating into the second phase of an operationally critical modernisation pathway, and the stakes could not be higher. An agile, resilient and ubiquitous digital backbone will be an increasingly essential pre-condition – both home and away. As we 'fight the deep, sync the close and enable the rear', the Corps must harness big data to assure the delivery of precision effects across domains. This modernisation is both essential and achievable; and will pay an increasing proportion of our deterrence mortgage while giving credibility to ARRC's ability to fight to win. In addition to two regular signals regiments facing the ARRC, the brigade also has two excellent reserve units - the utility of which was proven recently on Exercise LOYAL LEDA. Elsewhere,101 Regiment Royal Artillery provides

US Army trucks wait at a checkpoint on the Polish-German border before moving onward to their exercise area. The trucks are on the move as part of DEFENDER-Europe 20, a US-led multinational exercise which is the largest deployment of US forces to Europe in 25 years. Photo: NATO Official Channel

6 *We need to get serious about applications. Very few Divisions, for example, have LogFAS (Logistic Functional Application System) – which is a superb logistic, sustainment and movement application.*

7 *Artillery Systems Cooperation Activities – the protocols driving digital fires interoperability in NATO and ABCANZ.*

the skeleton of ARRC's Counter Fires node. In certain functional areas, other parts of the Army Reserve would find a very happy and useful home in ARRC.

Fires: 'Win the firefight!' A phrase any graduate of British Army initial training will recall being yelled at them by directing staff when contact is made with the enemy. Well, that sage advice is true of both divisional and corps Surface-to-Surface (S2S) fires, as any US Warfighter exercise report will attest to. Threatening at range, winning the counter-fires fight and breaking up momentum before force can be brought to bear offers decisive advantage. Russia knows this and its Defence modernisation has retained artillery as the centrepiece of its Army and communicated it as such. Its formations can unleash punishing firepower against targets found through a network of organic UAS, radars and EW. There is minimum of delay in this Recce-Strike complex, targets are struck in near real-time and Russian artillery redeployment thereafter is rapid. It may be the case that specific tactical actions observed in the Donbass (which have gained folklore status) cannot be replicated by Russia across the breadth and depth of a modern battlefield, but it would be unwise to assume this, nor to underestimate the force protection risks of proliferation wherever we operate.

To have any chance of success against a credible adversary the NATO warfighting corps must be able to win the S2S firefight. SACEUR's 'Strategic Thoughts' of 2018 recognised Russia's aspiration to dominate the Land domain through its S2S fires and spoke to the need for NATO to be able to rapidly reinforce a theatre of operations with its own fires. These thoughts are echoed loudly in DDA and NWCC. The ARRC sponsored Multi-National Field Artillery Brigade (MN FAB) concept offers NATO a realistic corps fires solution by pooling capability together under a framework nation C2 node. The core of the Field Artillery HQ (FAHQ) is ably provided by 101 RA (the UK's Reserve Deep Fires Regiment) and augmented by staff officers from across the NATO fires community. At only 83 strong, it is a low signature CP when deployed forward to exercise C2 of corps fires. Exercise DEFENDER 20 offered the first opportunity to force generate this capability. The results were impressive with over 100 rocket platforms and 88 large calibre cannons assembled under a FAHQ comprising of staff from 13 NATO nations.

MN FAHQ STAFF WARGAME FIRES SCENARIOS PRIOR TO EX DEFENDER 20

Exercise DYNAMIC FRONT (DF) 22 provides the next opportunity to deploy the MN FAB and prove the concept at IOC as a genuine corps fires solution. The MN FAB and the annual DF series of exercises are also essential elements in driving increased NATO fires interoperability, notably through ASCA protocols. A digital fires backbone, across and between tactical and operational levels, with sensors automatically linked to shooters, is essential to generating the tempo required to win.

ASCA currently has 9 member nations. A further 7 are ASCA Sponsored nations and the programme has 11 Observer/Interested nations.

While the MN FAB offers a 'fight-tonight' solution to deter, we also have to keep pace with the changes taking place in S2S fires technology. Soon, the staple rocket artillery system will range out to 150km + and cannon artillery to 40-50km (70km+ with assisted ammunition). In support of its Multi-Domain Operations concept, the US Army is developing a Strategic Strike Cannon (1500km range) and a hypersonic missile (1000km+) to offer range beyond its planned Precision Strike Missile (499km). These platforms and munitions will be a reality by the middle of this decade, and we must now range with S2S fires where aircraft and aviation cannot always venture. Yet NATO cannot rely on US firepower alone to win the firefight. We must all modernise and improve interoperability if we are to add value. By doing so we will change the stark conclusions reached by Jack Watling in his 2019 'Future of Fires' paper[8] and give Russia something to think about. For now, it has cornered the market and remains undeterred in this discipline.

8 *The Future of Fires – Maximising the UK's Tactical and Operational Firepower. RUSI Paper, Nov 19.*

Engineers: To mitigate a paucity of Engineer C2, especially in the Rear area, ARRC has experimented with the development of a Multinational Engineer Brigade (MNEB). The nucleus of the Brigade HQ is formed within ARRC and augmented by the Field Army, with units then drawn from across our NATO partners to meet the demands of the specific operation, be it peacekeeping, warfighting or stabilisation. Tasks could range from construction and maintenance of Lines of Communications, through provision of essential utilities (power, water and fuel), to the restoration of the Rear area as the fighting divisions move forward at pace. This capability deficit is well known and is being addressed throughout 2021 through the NATO Engineer Centre of Excellence in Germany, drawing on the experience of the ARRC throughout 2020. However, the UK cannot avoid the necessity for the framework nation of the Corps Warfighting HQ to provide a spine of capabilities to the MNEB into which our partner nations are able to dock. We have to put something in to get something out.

CONCLUSION

Russia is on the wrong side of the Churchill quote that, 'The only thing worse than having allies is not having them.' Alliances can be slow to change, but NATO is now adapting at unaccustomed pace through a new military strategy, underpinned by DDA and NWCC. In ARRC, we're not waiting for orders – we have the intent, which we regularly confirm, and are pressing on in terms of rebalanced posture, in using training as an engine for change and in our engagement across the NATO force structure. We must transform our command and control, the ability to integrate rapidly across domains requires more revolution than evolution. Our C2 agility is proportionate to our utility above and below the threshold of conflict. There is also a great deal we could achieve with Corps Troops at various levels of readiness. Land power matters - it's where the people are and there is now a unique opportunity to reset what modern deterrence looks like and the utility of the Corps echelon while, concurrently, reinforcing the British Army's leadership role within the Alliance.

Warrior armoured vehicles from 3rd (United Kingdom) Division make an impression at the British Army Combat Power demonstration on Salisbury Plain. The UK's war fighting division is affiliated to NATO's Allied Rapid Reaction Corps. ***Photo:*** ***Warrant Officer Class 2 Mark Nesbit RLC, Crown Copyright***

Future Soldier - Seizing the Opportunities of the Integrated Review

Brigadier John Clark, Army Strat, looks at the implications of the Defence Command Paper and the Integrated Review for the British Army over the coming years.

The 3rd Battalion the Rifles (3 RIFLES) are deployed on the US Army Europe-led Exercise Saber Guardian in Romania. The Support and Headquarters Companies of 3 RIFLES are at Cincu Training Area, Romania, to partner with the UK's NATO Allies.
Photo Corporal Paul Watson, Crown Copyright

As the dust settles on the Integrated Review (IR) and the Defence Command Paper (DCP) this is a moment to take stock and to review the implications for the Army over the next decade. This feels like a watershed moment for Defence and for the Army which will become more agile, integrated, lethal and expeditionary. We can be confident that the process has taken significant steps to address the challenge of balancing Ends, Ways and Means that has seemed elusive in many past reviews. Indeed, we can argue that this is the first time in recent memory we haven't just tried to preserve as much of the existing force structure as we could but genuinely thought differently about emerging threats and how we deal with them. Through the IR and the DCP there is a clearly defined vision for Defence to contribute to a more prosperous, secure and stronger United Kingdom in an increasingly competitive world. The significant financial settlement, an increase of £24Bn over the next four years, has ensured that the Department can invest in a programme of modernisation that will underwrite our ability to sustain strategic advantage and relevance. The Integrated Operating Concept (IOpC) provides clarity on how this will be delivered with forces that are designed to operate across a continuum of conflict, persistently engaged across the globe and able to move rapidly from operating to war fighting. But the requirement to invest in the future has inevitably forced hard choices and will present risk as the necessary changes are implemented.

British Army Joint Terminal Attack Controllers (JTAC) practice low-level skills by day and night, pictured here in Kenya. Joint Terminal Attack Controllers facilitate Close Air Support in direct support of ground units. ***Photo: Corporal Wakefield, Crown Copyright***

The imperative for the Army to change is clear. We must adapt to play our role across the IOpC model of Protect, Engage, Constrain and Fight in a volatile strategic environment that is characterised by great power competition, the proliferation of technology, the impacts of globalisation and the information age. On the traditional battlefield, we no longer enjoy technical superiority; in the future it will become increasingly hard to move and hide as sensors and surveillance systems become more powerful and weapons will kill with greater range and accuracy. Adversaries will also continue to attempt to bypass our strengths through increasingly sophisticated and diverse methods beneath the threshold of conventional armed conflict. And so, for the Army to succeed we know that we need to enhance our ability to compete - all of the time. This will be enabled by more persistent presence and engagement overseas, capitalising on Defence's global network and our Land Regional Hubs. We will increase our ability to anticipate and tackle threats at source; to use a medical analogy, there will be a shift in emphasis from cure to prevention. When we are required to fight, our readiness and ability to respond rapidly and decisively will replace traditional notions of mass and mobilisation as the primary currency.

Although we hold many of the necessary skills and capabilities to deliver these effects, we urgently need to overhaul our structures, develop our people, and update our equipment to meet these challenges. We will bring into service a modernised fleet of fighting platforms with greater protection and lethality, digitised and networked. We will redress the imbalance that currently exists between combat, combat support and combat service support to develop forces that can operate as self-sustaining combat teams with capabilities integrated at the lowest practical, efficient, and effective levels. Crucially, we must invest in the Deep battle with the necessary sensors and offensive support capabilities without which we can not succeed

in close combat. At the same time, the Army must also invest in transformational technologies, fuelled by collaborative experimentation with industry partners and allies, to enable the early adoption of next generation capabilities. The scale of the change required is substantial but presents an opportunity to re-shape and re-equip the Army to be the most modern and technologically advanced of its size in the world. This vision is encapsulated in the Future Land Combat System (FLCS).

Troops from 5th Battalion The Rifles NATO's eFP Battlegroup in Estonia, take part in Ex Winter Camp which tests each Rifle Company's ability to live, fight and operate in a winter environment. It is the culmination of the winter training to maximise their winter readiness while on Op CABRIT 07. ***Photo: Lance Bombardier Musto, Crown Copyright***

So, the IR offers a significant opportunity to the Army. Warfighting will remain the cornerstone of deterrence and at the core of the Army's DNA but, if we are to get ahead of the competition, we must be prepared to embrace some profound changes and fight differently.

Centred on the 3rd UK Division, the new Brigade Combat Team construct will create more deployable and sustainable force packages, built around the digitally connected nucleus of Ajax, Challenger 3, Boxer, AH64E, and long-range precision weapons and surveillance. New Security Force Assistance and Army Special Operations Brigades including the new Ranger Regiment will be at the vanguard of the Army's increased capability to compete globally on a persistent basis. The Army's Global Response Force comprising 16 Air Assault Brigade Combat Team and 1st Aviation Brigade Combat Team will enhance our ability to respond rapidly and effectively to emerging crises. The establishment of a prototype warfighting and experimentation unit will lead in trialling cutting-edge technology and its integration into the way we fight; testing the force to its limits, driving innovation and ensuring that the Army's structures, equipment and way of fighting evolve in line with the threats. A new Land Industrial Strategy will strengthen our partnerships with industry to unlock and rapidly exploit the potential of innovation and spiral development, delivering the kit we need when we need it, as well as contributing to UK prosperity.

Against this baseline, the detailed work to develop the new *Future Soldier* structure and transformation programme continues to be taken forward under EMBANKMENT. This work, though necessarily compartmentalised, has now been expanded to include the necessary stakeholders to ensure the blueprint is coherent and deliverable. Throughout it has been subject to rigorous analysis, stress-testing and red-teaming with the support of DSTL. A key waypoint in the process will be CGS's orders to the Army later in the summer which will direct delivery and generate the tempo needed for the whole Army to drive forward. At the same time, the Strategic Estimate is refreshing the Army's strategy. This will be done in lock step with ABC 22 and used as an opportunity to support the development of the new Army Operating Model. Combined, this work is enabling the Army to begin the implementation of the IR at pace while lifting its horizon to IR25 and setting a path to 2030 with the FLCS as its north star.

The process has involved some tough choices, perhaps most significantly, the deletion of Warrior CSP and the reduction in size of the Army's Regular workforce. Given the realities of resource constraints, reducing the overall size of the Army is the right thing to do. An optimal balance of personnel to capability will result in an Army that is better fit for purpose. Put simply, a smaller, well-equipped, and properly resourced Army will be more effective than a larger Army that lacks the necessary

resources to modernise, train and operate. Although the Regular component will reduce to 72,500 by 2025, we should not lose sight of the fact that the Army will still be over 100,000 strong.

Throughout this process we remain clear-eyed on the challenges and risks inherent in delivering the Army's strategy. Reducing the size of the workforce rapidly as we transform will present challenges and the transition from obsolete capabilities to new ones will require very careful management over the next decade. The demand for better integration which lies at the heart of the proposition is much simpler to say than to deliver. Reserves, Civil Servants, and contractors are intrinsically important to the new Army's structure and outputs. The ambition for the Army Reserve to lead on the protection of the homeland, support operations around the world and provide resilience for our warfighting structures marks a step-change in mindset and policy. Furthermore, the Army must be better able to work seamlessly with maritime, air, space and cyber as part of Defence's Integrated Force, delivering multi-domain effect. Crucially the Army must be designed to operate routinely with other government departments, Allies (particularly NATO) and partners.

Finally, throughout this the Army must maintain resilience against strategic shocks. The Covid pandemic has illustrated just how fragile assumptions can be. Economic downtown in the coming years, either in the aftermath of the pandemic or otherwise would force us to reassess our priorities and adjust programmes accordingly. Other threats include the impact of climate change, the future of the Union and the unanticipated event of major armed conflict. All of these must be factored into our thinking so that the Army is able to retain sufficient flexibility to generate strategic choice, adapt and win.

A member of 3 PARA fast ropes from a Puma helicopter during a training day at RAF Brize Norton. Across the week (8-12 March), some 300 soldiers from Colchester-based 3rd Battalion The Parachute Regiment have trained in fast roping and abseiling. Fast roping sees troops slide down a thick rope from a hovering helicopter, while abseiling is slower but safer with troops harnessed to the rope. Both techniques are used to deliver soldiers into locations where the helicopter itself cannot touch down. ***Photo: Corporal Danny Houghton, Crown Copyright***

Future Soldier - Learning the Lessons of the Past

Colonel Alistair McCluskey AH CHACR, looks at the challenges of the contemporary world through the lens of historical lessons and in the Context of the Integrated Review to find a clear way forward for the British Army of today.

A combined force of British Challenger 2 main battle tanks, operated by the Queen's Royal Hussars, and Estonian CV90 infantry fighting vehicles, operated by the Scouts Battalion, as part of NATO enhanced Forward Presence (eFP) Battlegroup deployed on Operation CABRIT in Estonia moves forward while scanning for the 'enemy'. ***Photo: Captain Shane Charles, Crown Copyright***

'[The aim is] to evolve a much harder hitting, quicker moving and, above all, quicker deploying division than we ever had before. If we don't, we shall be beaten by those who do.'

Gen Sir Philip Chetwode,
GOC Aldershot Command Jan 1921

In March, the Integrated Review (IR) announced how the UK will develop its military capabilities to meet the challenges of the contemporary world. In the face of a global context which sees increasingly dynamic great power competition, complex transnational challenges and an explosion of technological change, the Army is to become, leaner, lighter, faster to respond and more effectively matched against our nation's threats. Among other things we will develop more lethal and survivable systems; we will use information and data more effectively; we will become more integrated with our sister Services and other levers of national power; and we will become more experimental in our approach to innovation and adaptation.

However, the challenges of the contemporary world are not new. We have seen them in different guises previously in our history and made similar adaptations to those announced in the IR, sometimes to great effect, sometimes less so. General Sir Philip Chetwode's quote was made in 1921 at a time when the Army was facing a period of extreme financial retrenchment at home, while facing a multitude of threats to the Empire overseas and in a context of profound technological change.

Capacity building missions had been established in Southern Russia; small wars were bubbling away in Ireland, Afghanistan, Iraq, Egypt and Somaliland, while at the same time an experimental force had been set up in Aldershot to explore how the latest technology could be used to offset limitations to the national resources allocated to the Army. However, despite Chetwode's astute insight, its inconsistent battlefield performance between 1939 and 1942 in the early stages of the Second World War, suggests that development of Land Power during the interwar period could have gone better for Britain. This article will highlight some of the observations that could be drawn from this period. They are presented in a standalone fashion rather than a linked narrative, but there are many overlaps between them and are worth a moment of reflection as we begin the process to deliver and operate the IR Army.

British artillery officers training gunners of the III Don Corps (White Russian) on British-made 18 pounders field artillery guns in Novocherkassk, June 1919. ***Copyright IWM Q 75898***

THE DIFFERENT CHARACTER OF CONFLICT

The changing character and enduring nature of conflict are familiar concepts to military studies. What is less well understood, and less frequently analysed, is the idea that while the character of a single conflict can evolve, the character of separate concurrent conflicts can be simultaneously different. This was a particular conundrum for the British in the inter-war period which saw demands for its units to deploy on internal security and counter insurgency missions every year between 1919 and 1939. In Egypt, Palestine, Iraq, Ireland, India and Afghanistan, British troops deployed to reimpose or maintain order. At the same time however, the Army at home was desperately trying to develop its combined arms competence and modernize its warfighting capability by training a conventional warfighting force. The tension caused between these conflicting requirements was never resolved. For example, by 1938 eleven infantry battalions and a cavalry regiment - the equivalent combat-arm manpower of four brigades - had been sent to Palestine to manage the growing civil unrest. The time taken for the character of conflict to change could be a short as the time needed to travel from one operational theatre to another. This was a significant challenge for forces recently trained and equipped for different tasks in the past. It will require equal agility in thought to offset the potential gap in training and ensure appropriate operational and tactical methods are applied in the future.

PACE OF TECHNOLOGICAL CHANGE

The rapid pace of technological change in this era placed unprecedented demands on the Army's procurement, organizational structures, doctrine and training. For example, in 1928 it was experimenting with half-tracks and lorries that had an average road speed of 15 mph and a range of less than 70 miles. By 1939 it was equipped with a variety of vehicles, all based on commercial designs, which had an average speed of 45 mph and ranges of between 160-250 miles.

Likewise, the A11 'Matilda I' tanks brought into service in 1938 with an average speed of 5 mph and a range of 80 miles, were made obsolete within a year by the introduction of A12 'Matilda II' with an average speed of 9 mph but a range of 160 miles. These rapid improvements in mobility placed huge demands on the Army's C3I capabilities as communications technologies were in a process of transition from landline to radio. In 1937 the No.9 set, with a range of 10 miles was issued for the first time, but in very limited numbers. Usually, units were only allocated one each, used for rear-links to the commanding formation. Only after 1940, with the introduction of the No 18 and 19 radio sets did they become common for front line use. This rapid rate of technological development made it extremely difficult to judge when to step from experimentation to production, as the wait for optimum performance may delay too long, while purchasing

A No 18 wireless set on field trials with troops of 1st Battalion, Loyal Regiment, 1st Division, at Bourghelles, 12 March 1940. ***© IWM F 3080***

too early may result in rapid obsolescence of major equipment types. Funding limitations meant this was a persistent concern for the General Staff. Perceived differentials in mobility, protection and communication also undermined faith in all-arms tactical groupings. Brigadier Hobart, one of the most influential personalities in armoured warfare development, certainly favoured tank-only organizations when in command of 1st Tank Brigade, mainly due to the inability of his tanks to communicate with other arms. Doctrine was also challenged to keep up. Notwithstanding the fact that *Field Service Regulations (FSR)* were updated four times between 1918 and 1939, the last iteration before the war, *FSR 35*, was published before the major rearmament programmes had delivered new equipment. From a training perspective, this created the twin risks that military thought was increasingly misaligned with capability, and that both individual and collective training was invalidated as rapidly as the new equipment came into service.

Officers of the British Military Mission to South Russia pose for a photograph with White Russian officers, one of them wounded. Copyright IWM Q 75856

CAPACITY BUILDING

In an attempt to counter the threat of Bolshevik expansion to the west between 1918 and 1920, Britain attempted to support the White Russian forces during the Russian Civil War. As part of a wider strategy, a training mission was deployed to southern Ukraine to train and equip the White Forces (Armed Forces of Southern Russia – AFSR) under General Denikin. This mission was controversial due to a strong sense in Government that a victorious and resurgent White power in Russia was not necessarily in Britain's Imperial interests. It also chafed against Ukrainian and Polish hopes of independence, which in themselves promised further conflict once the Bolsheviks were beaten. Nevertheless, in December 1918, the Mission was established in Novorossiisk on the Black Sea with a view to equipping 250,000 AFSR men with the most modern military technology including artillery, tanks and aircraft.

The difficulties inherent within the deployment were exacerbated by poor and arbitrary selection of personnel. The first two commanders, Major General FC Poole and Lieutenant General Sir Charles Briggs had limited experience of Russia and abrasive attitudes that did not meet the diplomatic or technical challenges of the role. They were speedily replaced by Major General HC Holman, a former QMG of the Fourth Army on the Western Front who had previously served as a Military Attaché in Russia and spoke the language. The 500 officers and NCOs at Novorossiisk were equally ill-suited for their task, being randomly selected from a heterogeneous set of units around the Middle East. Holman swiftly removed those unfit for duty and had them replaced by men with more suitable skills. This force was soon expanded to a strength of 2000, greatly improving the logistic efficiency of the AFSR and establishing schools to train them on the new kit.

Having the right people, however, was only part of the problems as the character of the AFSR was to prove a far greater challenge and one which Britain would ultimately fail to overcome. The mission soon began to find that the cultural attitudes of the AFSR were not well tuned to receive the training. The Russian officers had a lackadaisical approach to the training programme, while the soldiers lacked the educational background to assimilate the technical skills demanded by state-of-the-art equipment. Consequently, although officially limited solely to instructional duties and forbidden from engaging in combat, the British troops often found themselves leading parts of the AFSR units to which they were attached. Cultural tension was also generated by the more meritocratic relationships that existed between the British officers and men of the wartime Army and those of the more autocratic AFSR.

Perhaps most damaging however, was the behaviour of Denikin's troops. The brutal character of the conflict saw the AFSR act with ferocity against both their Bolshevik adversaries and the civilian populations of the regions they passed through. These actions frequently had an anti-Semitic tone and were difficult for the British troops to reconcile, who increasingly commented that they were fighting on the wrong side. The anti-Semitic

actions of the AFSR also undermined the legitimacy of the White Russian cause with the British public and Government. Consequently, following the AFSR defeat at Orel in October 1919, orders were given to deliver one more shipment of military aid before the Mission was to be withdrawn. The attempt to apply Land Power by proxy in Southern Russia in 1919-20, clearly suggests that capacity building in complex contexts offers as many potential pitfalls as benefits. We would do well to understand these lessons to ensure we avoid similar mistakes in future.

INFORMATION (AND DISINFORMATION) EXPLOITATION

Information exploitation was well understood as both a threat and an opportunity by the British Army in this period. In addition to its benefits to battlefield C3I, new wireless technology was also used to as part of elaborate deception plans at Amiens in 1918 and again during the build up to Op COMPASS in North Africa in October 1940. On both occasions false messages were deliberately sent to mislead the enemy. Conversely, SIGNINT was gathered by interception and decryption of enemy radio traffic, often giving British commanders critical insights into enemy force deployment and future intentions. These electronic measures were supplemented by use of improved camouflage and concealment of physical forces and the use of dummy positions and pieces of equipment to hide our own forces and complete the false picture in the mind of the enemy. These force multiplying measures became a widespread practice used by the British Army throughout the Second World War and were critical to success in North Africa, North-West Europe and Burma.

TASK-ORGANIZATION

The British Army's approach to task organization through this period was highly inconsistent. Despite *FSR 09* promulgating the necessity for all-arms co-operation, particularly with respect to the use of advanced guard detachments, this had been difficult to achieve during the First World War. However, as techniques to break trench-deadlock were honed, the agility and rapidity of

British troops move into Belgium, May 1940: British tanks cross the frontier into Belgium. ***© IWM F 4337***

action needed to maintain contact with the retreating German armies could only be achieved by delegating command authority for combat capabilities to the lowest levels - often unit or sub-unit - during periods of more fluid operations. When more formal assaults were required for better defended locations, delegation would be revoked with the artillery and armour being commanded at a much higher level to concentrate force. The Corps HQ played a critical role in this process, but all command nodes needed the flexibility to adapt to make the process as frictionless as possible. This intent was articulated throughout the inter-war editions of *FSR*, but it proved increasingly difficult to deliver as a tangible capability. In addition to the reasons already discussed in the previous points, the difficulty in converting mobile units to wireless communications; an imbalance between supporting and supported capabilities; and a sense of self-preservation for individual arms in the face of financial retrenchment, all had a polarizing effect on the force when a more combined approach was most needed. This was partly rectified during the Second World War, particularly after 1942, but even then, it took the reverses at Villers Bocage and on Op GOODWOOD in 1944 before the Guards (Armoured) and 11th Divisions began to reorganize into four regimental groups. Nevertheless, examples of rapid adaptation in this period do exist. When faced with the flooded terrain along the Rhine in the winter of 1944-45, the personnel from armoured and infantry units were amalgamated to provide the crews and dismounts for the amphibious LVPs with 10 days' notice. These provided an essential manoeuvre capability in this difficult terrain.

The lessons throughout this period suggest that rapid re-grouping is a fundamental skill for modern Armies. Those that can do it well will prosper, but it needs practice and training to achieve proficiency. How frequently do we do this?

EMERGING CAPABILITIES

If task-organization was difficult for established arms, it was doubly so for those capabilities that were emerging onto the battlefield. In addition to the challenge of integrating aircraft and armour into the Army's offensive capability, anti-aircraft and anti-tank capabilities were not given the same prominence. Often viewed solely in a supporting role, they took a correspondingly low priority in competition for resources. In 1923, anti-tank defence was a double-hatted task given to the divisional light artillery, which was also required to silence enemy machine guns. It was 1934 before a specialized anti-tank gun requirement was agreed to equip anti-tank regiments in the Royal Artillery and it didn't enter service until 1938. Production was further hampered by the need to rapidly upgrade the capability with more powerful weapons. Consequently, it was mid-1943 before every infantry battalion had their own anti-tank platoon, or a credible infantry anti-armour weapon in the PIAT. Likewise, anti-aircraft capability was prioritized for UK air defence in 1st Anti-Aircraft Division. Little coherent thought was given to how an Expeditionary Force would manoeuvre under an air threat with the limited supply of light anti-aircraft weapons being initially grouped at Corps level as the priority. 1st Armoured Division deployed to France in 1940 with a combined Anti-Tank and Anti-Aircraft Regiment. However, this unit did not have any of its anti-aircraft weapons and the Divisional combat units never fought with this protection. Similarly, during the Arras counter-attack of 21 May 1940, the *ad-hoc* British force deployed without any anti-aircraft defence and was savaged by the Luftwaffe. It was only by the middle of the war that sufficient anti-aircraft guns were available for grouping in all the Army's deployed divisions. Despite the lessons from Spain and Poland, Britain failed to develop or deploy an operational capability that could compete against the most modern elements of its German adversary.

TRANSITION

Effective management of transition is a capability in its own right. Whether it is between differing aspects of the Land Operating Concept, adjusting task organizations or even synchronizing operational and strategic effects, it often needs capability provided by specialist organizations or training. For example, turning a break-in into a breakthrough was a persistent problem for the BEF throughout the First World War. However, in mid-September 1918 the Cavalry Corps was reorganized, swapping out one of its three cavalry divisions in exchange for a lorry-mounted infantry brigade and an armoured car unit. This provided the BEF with an all-arms formation to secure deeper objectives and was deployed in early October 1918, in the drive beyond the Hindenburg Line. It failed, in large part due to the absence of an integral air-defence capability once countered by German ground attack aircraft.

Whether it's a battle handover as in the example above, or a rapid re-grouping, or a movement between mission types in an operating concept, transitional capability is likely to require both physical and conceptual components to enable the necessary fighting power. That will require the investment needed to provide the time, equipment, people and training to master the skill.

Bren gun carriers and Light Tank Mk VIs of 4/7th Royal Dragoon Guards during an exercise at Bucquoy, 12 January 1940 ***© IWM F 2126***

FINAL THOUGHTS

The points above provide just a selection of the challenges that faced the British Army between the latter years of the First World War and the Second World War twenty-five years later. Although space constraints mean that they are not an exhaustive list and have only been described in the briefest of terms, the historical context has several common themes with the contemporary world. Rapid technological change, diverse and novel missions, revanchist powers, financial constraints and increasing global instability were issues then as they are now. That our forebears learnt on the job and eventually prevailed should give us confidence to take forward the IR Army in the coming years. But they paid a high price in blood and treasure to re-learn old lessons in so doing. As such, we would be well advised to study their journey (and those of other armies) should we wish to arrive at the same destination by a more efficient, effective and less sanguinary route.

FURTHER READING

- *Raising Churchill's Army: The British Army and the War against Germany 1919-1945,* David French. 2000, OUP.
- *Men, ideas and tanks: British military thought and armoured forces, 1903-1939,* J.P. Harris, 1995, Manchester University Press.
- *Winning and Losing on the Western Front: The British Third Army and the Defeat of Germany in 1918, 2012,* Jonathan Boff, CUP.
- *Learning to Fight: Military Innovation and Change in the British Army, 1914-1918, 2018,* Aimée Fox, CUP.
- *The Road to War,* Richard Overy and Andrew Wheatcroft, 1999, Penguin.
- *Cry Havoc: How the Arms Race drove the World to War 1931-1941,* Joseph Maiolo, 2010, Basic Books.
- *The British Intervention in South Russia 1918-1920,* Lauri Kopisto, 2011, Unigrafia, Helsinki.

Resourcing Manoeuvre: Lessons of ‘Blitzkrieg’ for Strike

Major James Taylor, Grenadier Guards, draws lessons from the success and failure of the German doctrine of 'Blitzkrieg' in the context of the development of the British Army's Strike Concept.

The 2019 Army Combat Power Demonstration (ACPD) took place on Salisbury Plain from 28 – 30 Oct 2019. It was set in and around Copehill Down Village - the Army’s primary urban combat training facility - and showcased a variety of the Army’s most modern capabilities. Pictured is the Boxer part of the next generation of armoured vehicles that will make up the Army’s Strike capability will look like.
Photo: Jack Eckersley, Crown Copyright

> *'We consider it beneath our dignity to notice the clamor of those whose vague emotions and even vaguer minds impel them to expect everything from attack and movement, and whose idea of war is summed up by a galloping hussar waving his sword.'*
>
> Carl von Clausewitz

Operation Barbarossa, the German Wehrmacht's invasion of the Soviet Union was planned according to the assumption that 'Blitzkrieg', a shorthand for the German proto-doctrine of manoeuvre warfare, could be used in lieu of strategy. Many factors contributed to Barbarossa's eventual failure, but significant among them was the Wehrmacht's overreliance on 'Blitzkrieg' and its simultaneous failure to understand or resource the capabilities that made it possible.

Eighty years later, with the British Army once again seeking to use rapid manoeuvre to overcome hostile nations' anti-access and area denial (A2AD) systems, we must ask ourselves whether we have learned the lessons of history and ensured that our manoeuvre is supported by strategy and resourced sufficiently to succeed. The Strike concept, a force of two brigades based on the Ajax and Boxer armoured vehicles, is being designed to overcome A2AD capabilities that deny theatre entry to traditional light maritime and airborne forces and heavy armoured brigades. Strike aims to be able to self-deploy up to 2000km into theatre, penetrating an adversary's deep fires areas and reaching the battlespace in advance of the enemy main body. It seeks to enable UK vanguard forces to join a NATO coalition and prepare the battlespace for the deployment of 3 (UK) Division assets.[1]

How Strike will achieve this ambitious end remains under debate. Strike's doctrine will be developed through rigorous testing and trialling. Yet, as Professor Sir Michael Howard MC states, in the absence of actual combat experience, historical analysis of similar concepts in combat situations can produce relevant lessons for modern military application.[2] The use of tactical 'Blitzkrieg' during Operation Barbarossa offers such an opportunity due to the similarity between the purpose, capability and doctrine of both the 'Blitzkrieg' and Strike Concepts.

Although 'Blitzkrieg' had no codified doctrine, and was a term rarely used by the Wehrmacht, it will be employed throughout this article as a shorthand for the combination of tactical, technological and command principles which Colonel Dr Karl-Heinz Frieser argued made up the 'Blitzkrieg' legend.[3]

Strike is envisaged as a capability to be employed defensively in response to threatened or actual incursions into NATO territory by hostile nations. Although Strike will not be used offensively in the same way as 'Blitzkrieg', it will have to penetrate deeply through enemy-influenced territory and carry out offensive action as part of a defensive strategy.[4] Likewise, 'Blitzkrieg' originated as a defensive concept as the Prussian doctrine of *'Bewergungskrieg'* or manoeuvre warfare adopted by the German Reichswehr in the 1920s. The Reichswehr, debilitated by the Treaty of Versailles, sought a means of warfare that could overcome the seemingly impenetrable static defences of the Western allies, and enable Germany's small army to defend its territory through manoeuvre rather than mass.[5] It was the application of new technology to the doctrine of *Bewergungskrieg* in the 1930s that triggered the development of the phenomenon later known by the Allies as 'Blitzkrieg'. The concept of 'Blitzkrieg' was then built around the increased manoeuvre offered by the all-arms capability of the panzer division in the same way that Strike concept is centred on Ajax and Boxer's manoeuvrability and technology, and thus the wider capability of the Strike Brigade.[6]

Crucially, lessons from the application of 'Blitzkrieg' remain relevant today as the capstone and fundamental

1 *Watling, Jack and Bronk, Justin,'Strike: From Concept to Force,' RUSI Occasional Paper (RUSI: London, 2019): 9.*
2 *Howard, Michael, 'The Use and Abuse of Military History,' RUSI Journal 107 (1962): 8.*
3 *Frieser, Karl-Heinz, The Blitzkrieg Legend (Annapolis: Naval Institute Press, 2005).*
4 *NATO AJP-3 Allied Joint Doctrine for the Conduct of Operations (Brussels: NATO Standardization Office, 2019), 1-11.*
5 *Frieser, The Blitzkrieg Legend, 331.*
6 *Ibid., 339.*

German troops smashing their way into a Russian house during Operation Barbarossa, summer 1941 ***© IWM HU 111383***

doctrine upon which Strike's tactics will be based shares an intellectual lineage with 'Blitzkrieg'.[7] The British doctrines of the Manoeuvrist Approach, Mission Command and Integrated Action arose as the result of a study of German operational concepts used during the Second World War. The basis of British doctrine is German in origin, therefore before committing Strike to combat it is key to understand how these concepts performed in different environments during 'Blitzkrieg'.

Operation Barbarossa is the ideal case study in which to do this. It was the first campaign to have taken the principles drawn from the lessons of earlier campaigns to be intentionally planned and conducted as 'Blitzkrieg', in accordance with the operational concepts upon which British doctrine is based.[8] 'Blitzkrieg's inconsistent effectiveness between Barbarossa's successful early phase and ultimate collapse offers an insight into how the concept was influenced by external factors. This article does not seek to examine all the parallels between the two concepts, nor to suggest that the two concepts or technologies are identical, but rather to draw lessons from their tactical operation and the limitation 'Blitzkrieg' suffered as a result of factors now within the control of British tacticians.

Barbarossa was primarily a land battle, and both 'Blitzkrieg' and Strike operate at the tactical level in the land environment. Therefore, although the technology, domains and character of warfare have changed since Barbarossa, some relevant lessons can be identified if they are limited to the tactical level in the land environment.

The Manoeuvrist Approach upon which Strike's tactical doctrine will be based, seeks to defeat the enemy by directing force against his Centre of Gravity (CoG), what Clausewitz described as the hub of an enemy's power.[9] It targets an enemy's will and cohesion through manoeuvre rather than attrition, employing tempo, surprise, momentum and exploitation to maintain the initiative and prevent an enemy from having time to react.[10] Similarly, 'Blitzkrieg' employed speed and surprise and deep penetration and encirclement to focus fighting power at a *'Schwerpunkt'*, a point of main effort where a commander masses strength to achieve a decisive breakthrough that will lead to the enemy's destruction.[11] The tactics of 'Blitzkrieg', refined during the Polish and French campaigns formed the basis of the Wehrmacht's planned invasion of the Soviet Union.

During Barbarossa, 'Blitzkrieg' tactics proved initially successful, catching the mass of the Red Army completely unprepared. Barbarossa's operational plan identified the Soviet CoG as the Red Army's front-line divisions, and it was thought that their destruction would bring about a Soviet collapse.[12] The Wehrmacht massed its armour in four panzer groups divided between

7 *Kiszely, John, 'The British Army and Approaches to Warfare Since 1945,' Journal of Strategic Studies 19, no.4 (1996): 199.*
8 *Halder, Franz, The Halder War Diary 1939-1942, Charles Burdick and Hans-Adolf Jacobsen eds. (London: Greenhill Books, 1988), 433.*
9 *Von Clausewitz, Carl, On War, (Princeton: Princeton University Press, 1989), 597.*
10 *British Army, Land Operations (Warminster: MoD, 2015), 5-1.*
11 *Frieser, The Blitzkrieg Legend, 332.*
12 *International Military Tribunal, Nazi Conspiracy and Aggression Volume III, 675.*

Figure 1 - Map showing Operation Barbarossa 22 June - 05 December 1941. ***Image: Author's Collection***

Army Groups North, Centre and South, that would penetrate and encircle Soviet units, sever their lines of communication and destroy them in a *'Kesselschlacht'* or cauldron battles.[13]

Soviets defences were 380km deep comprising three echelons. However, the speed with which the panzers advanced ensured surprise was maintained and they quickly drove armoured wedges through the first two echelons beginning to encircle their 185 divisions.[14] So successful were these tactics, that in five days Army Group Centre had penetrated over 450km, destroyed forty Soviet divisions, and encircled Minsk capturing 323,898 Soviet troops.[15] As many German commanders emphasised, speed, momentum and the bypassing of enemy strength had been key to the panzers ability to achieve and maintain surprise, ensuring their survival as the Red Army were unable to mount an effective defence.[16]

Key to the success of 'Blitzkrieg's tactics was first the timing of the German attack, which caught the Soviets in transition to defence, and secondly, the ability of German follow-on forces to protect the rear and flanks of the Panzer spearhead. Stalin's insistence that the entire territory captured in 1939 be defended saw the Red Army abandon their doctrine of *'Glubokii Boi'* or deep mobile defense, in favour of a static defence of the entire border. The occupation of most new positions began only ten days before Barbarossa was launched, meaning the defences were unfinished when the invasion began. The significance of this transition can be seen in the example of Army Group South's initial actions where despite general ill-preparedness, the Soviets had anticipated a German attack against the Caucasus oil fields. Soviet defences here were well-prepared, making best use of the challenging terrain and multiple water obstacles along Army Group South's initial axis of advance. The Soviet Front commander increased his armies' readiness in response to German activity and the Red Army achieved an 8:1 advantage in armour over the panzer spearhead of Army Group South, much of which had only recently been involved in the campaigns in Greece and Yugoslavia.[17]

As a result, Army Group South's initial attack did not achieve the surprise, penetration or grand encirclements

13 *Hooker, Richard, 'The world will hold its breath': Reinterpreting operation Barbarossa,' Parameters 29 no.1 (1999): 162.*
14 *Kirchubel, Robert, Operation Barbarossa 1941 (2) (Oxford: Osprey Publishing, 2005), 17*
15 *Bergström, Christer, Operation Barbarossa 1941 (Oxford: Casemate, 2016), 299; Hooker, 'The World Will Hold Its Breath: Reinterpreting Operation Barbarossa,' 153.*
16 *Manstein, Lost Victories, 185; Liddell Hart, The Other Side of The Hill, 272.*
17 *Hooker, 'The World Will Hold Its Breath: Reinterpreting Operation Barbarossa,' 153; David Glantz, Operation Barbarossa Hitler's Invasion of Russia 1941 (Stroud, The History Press, 2011), 40.*

seen in the north. Instead, First Panzer Group faced fierce fighting, heavy casualties and constant counterattacks into its flanks, causing it's rate of advance during the campaign's first two weeks to be 62km per-day slower than Army Group Centre.[18] Clearly, even where an adversary chooses to hold terrain rather than prosecute a mobile defence, the ability to achieve surprise and advance before defences are established delivers a significant advantage.

The vital importance of close follow-on-forces became apparent as the Wehrmacht's advance caused its forces to separate and their flanks to become vulnerable.

Waffen-SS motorcyclists lead a column of German troops during the advance into the Soviet Union, 1941 **© IWM HU 111387**

The destruction of the Red Army's front-line divisions did not cause a Soviet collapse as expected, as German intelligence had drastically underestimated Soviet strength. With their campaign plan in tatters, the Wehrmacht high command chose simply to continue the 'Blitzkrieg' rather than change their strategy. As a result, the panzers were forced to continue a contested advance beyond the support of the slower moving support divisions.

The failure to mechanise 90% of the Wehrmacht had created a two-speed army, with panzer corps made up of a mix of mechanised, wheeled and horse-drawn divisions.[19] Rapid deep penetration had taken the panzers beyond the support of follow-on forces that could only advance at 30km per day.[20] Even with the improvisation of mobile infantry teams to close these gaps, this separation meant the panzers were forced to stop every time they completed an encirclement to wait for the infantry to move up and establish an inner cordon.[21] Further halts were caused by the unwillingness of senior commanders to accept the risks of deep penetration preferring to regularly consolidate forces. Once static, speed and surprise were lost, and penetration became increasingly difficult, as the panzers' position and axis of advance became clear, allowing the Soviets the opportunity to establish defences and counterattack.[22] Rapid advances of this type, though tactically effective, can leave a spearhead force exposed and vulnerable unless the following forces have the mobility to match the advance of the vanguard.

Key to Strike's success will be its ability to quickly penetrate an adversary's deep fires area to achieve surprise and infiltrate defences before they are set. Like the Wehrmacht, Strike has the opportunity to seize the advantage of an adversary's transition to defence, but only if it can deploy with sufficient speed and surprise to reach the battlefield before defences can be established. According to General Gerasimov, a future Russian incursion would aim to seize a limited amount of NATO territory and consolidate it within thirty days. Like the Soviet defence in Barbarossa, the Russian's will seek to hold terrain and rely on deep fires to prevent NATO manoeuvre. This period offers Strike its best opportunity to infiltrate and disrupt Russian defences as they transition from offence to defence, before they can reinforce their lighter vanguard assets and establish

18 *Halder, The Halder War Diary 1939-1942, 424; Hooker, 'The World Will Hold Its Breath: Reinterpreting Operation Barbarossa,' 153.*
19 *Manstein, Lost Victories, 178.*
20 *Heinrici, A German General on the Eastern Front, 69.*
21 *Halder, The Halder War Diary 1939-1942, 449.*
22 *Carruthers, Bob, ed. Wehrmacht Combat Reports The Russian Front (Barnsley: Pen and Sword, 2012), 151.*

Ajax is the British Army's new multi-role, fully-digitised armoured fighting vehicle delivering a step-change in versatility and agility, being delivered by DE&S through the biggest single order of armoured vehicles in a generation. ***Photo: Jack Eckersley, Crown Copyright***

a comprehensive A2AD screen.[23] However, Strike's envisaged thirty-day readiness and nine-day deployment time are likely to see it arrive only after a Russian incursion has been consolidated.[24]

Achieving speed and surprise is also limited by the Ajax platform's own mobility. Although envisaged as being able to self-deploy 2000km by road, the Ajax vehicle's 500km range and mechanical failure rate mean it must rely on equipment transporters if it is to deploy to theatre quickly. However, the UK lacks the necessary number of transporters to be able to move the Strike brigades en masse.[25] Nor are there any European rail lines capable of transporting Strike to eastern Europe, and the Baltic nations, where NATO and Russia share a border, operate a nonstandard railway gauge and lack the north-south rail lines needed to move armour between countries across Russia's frontage.[26] For Strike to conduct the rapid deployment into theatre necessary to achieve and maintain surprise, it must be pre-positioned close enough to respond immediately to Russian aggression, and be resourced with sufficient dedicated transporters to quickly deploy the brigade into battle.

Strike also risks the consequences of overextending beyond its follow-on units and being forced to either continue an unsupported advance or stop to await reinforcement. Most vehicles within the UK's expeditionary division are over twenty-five years old, and although they have undergone some systems upgrades, they lack Strike's strategic mobility.[27] Even if British heavy forces could enter theatre their advance

23 *Kaushal, and Watling, 'Requirements for the UK's Amphibious Forces in the Future Operating Environment,' 10.*

24 *Brooke-Holland, Louisa, Modernising the British Army's Armoured Fighting Vehicles (House of Commons Library Briefing Paper, Number 08186, 26 April 2019), 8.*

25 *Crawford, 'Strike Brigades - Back to the Future?,'*

26 *Maisel, Adam and Keturakis, Laurynas, 'Baltic Trainspotting: Railways and NATO's Logistics Problem in Northeastern Europe'. Modern War Institute (2 Apr 2018), https://mwi.usma.edu/baltic-trainspotting-railways-natos-logistics-problem-northeastern-europe/*

27 *Brooke-Holland, Modernising the British Army's Armoured Fighting Vehicles, 6.*

German troops with a 7.5 cm leichtes Infanteriegeschütz 18 cannon crossing the Soviet border during Operation Barbarossa.
Photo: Johannes Hähle, Wikimedia, Released

would be far slower than that of Strike, allowing a gap to open between the division's vanguard and its main body. The panzers found themselves to be vulnerable when extended only 120km ahead of their supporting divisions,[28] yet Strike envisages moving up to 2000km ahead of 3 (UK) Division. The UK could use the two Strike brigades in echelon, as the Wehrmacht attempted with their mobile infantry teams. But a better solution would likely be for Strike to be optimised to work with a NATO partner armoured division based in eastern Europe, rather than with UK forces. With less distance to cover, a partner division would not have the problem of physical separation and could quickly exploit Strike's breakthroughs.

Strike will also need to be better resourced if it is to operate as an independent all-arms formation. 'Blitzkrieg' was only possible through the synthesis of tactics and new technology. Generals such as Guderian and Lutz promoted the integration of all arms in the independent Panzer Division, supported by telecommunications technology and close air support.[29] This achieved a qualitative advantage that was highly successful in short 'Blitzkriegs', although resources constraints prevented this advantage being maintained throughout the Barbarossa campaign. Integrated Action similarly emphasises the combination of capabilities and technologies. At the tactical level, British capabilities are integrated into all-arms manoeuvre units, and for this reason, Strike brigades are being designed to combine combat, combat support and combat service support capabilities to enable the brigade to operate independently.[30]

During Barbarossa, 'Blitzkrieg's' technological principles initially proved highly effective, enabling the Wehrmacht to overcome a numerically superior enemy. The Germans possessed a qualitative advantage, with most German tanks able to overmatch Soviet tanks in terms of armour penetration and weapons range. Furthermore, only 26% of Soviet tanks were operational at the outbreak of war, and the Red Army had only 1,500 tanks such as the KV2 and T-34 that were capable of overmatching German models.[31] Even where the Soviets possessed a localised numerical or qualitative advantage, they employed armour individually and could be easily overwhelmed by massed panzers conducting coordinated attacks. German qualitative advantage contributed to the loss of over seven thousand Soviet tanks in the first two weeks of the campaign.[32] Close air support proved equally crucial to the success of the panzer divisions' deep penetration as the Luftwaffe became the airborne artillery for the fast-moving panzers that had quickly outpaced their horse-drawn heavy artillery guns.[33]

However, as the campaign endured it became clear that the panzer divisions were not resourced to maintain 'Blitzkrieg' beyond Barbarossa's initial phase. Guderian had intended all the panzer division's vehicles to possess the same level of mobility. Yet, only three hundred of the division's three thousand vehicles were tracked, and

28 *Kirchubel. Operation Barbarossa 1941 (2): 46.*
29 *Citino, Robert, 'Beyond Fire and Movement: Command, Control and Information in the German Blitzkrieg,' Journal of Strategic Studies 27, no. 2 (2004): 331.*
30 *British Army, Land Operations (Warminster: MoD, 2015), 4-1.*
31 *Hooker, 'The World Will Hold Its Breath: Reinterpreting Operation Barbarossa,' 158.*
32 *Glantz, and House, When Titans Clashed, 293.*
33 *Guderian, Heinz, Panzer Leader, (London: Michael Joseph 1952), 212.*

Soviet Union-North: Motorized unit of the Waffen-SS-Totenkopf-Division advancing, motorcade during a rest. ***Photo: German Federal Archives, Creative Commons Attribution-Share Alike 4.0 International license, Wikimedia Commons***

its wide variety of vehicles had differing speeds, ranges and off-road performance.[34] An increase in the number of panzer divisions prior to Barbarossa worsened the problem. Tank strength could only be increased by 35%, roughly half what was needed, so panzer regiments were divided between the divisions and shortfalls were made up with mechanised infantry.[35] Key capabilities including towed artillery and wheeled support vehicles lacked the speed and performance of the panzers, and German aircraft lacked the range to support the panzer advance beyond Barbarossa's first phase. This resulted in a division that lacked lethality and whose lead elements were limited by the lack of mobility of the supporting arms. Forced to follow the few available roads to retain cohesion, the panzer divisions' axes of advance quickly became obvious, allowing the Soviets to concentrate their mass to block the German 'Blitzkrieg'.

Facing likely resource constraints, the Strike Brigade will encounter similar challenges to those that led to the failure of the panzer division. Strike is a mixed mobility force made up of the tracked Ajax and wheeled Boxer and support vehicles. Although the brigades' vehicles have similar tactical mobility, their operational and strategic mobility relies on roads which is likely to make them vulnerable to being channelled and counterattacked.

34 *Kavalerchik, The Tanks of Operation Barbarossa, Appendix II-III; Chris Bishop, Panzergrenadier Divisions (London: Amber Books, 2017): 15-109.*

35 *Ibid., 50-54.*

Table 1: Mobility of Strike Brigade Key Equipment Types				
Model	Drive Type	Maximum speed (km/hr)	Maximum Range (km)	Role
Ajax Platforms (Ajax, Ares, Argus, Athena, Atlas, Apollo)	Tracked	70	500	Strike, Reconnaisance, Engineer, Command, Recovery, Repair
Boxer Platforms (TCV, Command, Ambulance)	8x8 wheeled	103	1050	Armoured Personnel Carier
Land Rover TUM	4x4 wheeled	160	510	Light utility vehicle
MAN HX58 Service Vehicle	6x6 wheeled	88	800	Medium Logistics vehicle 9,000kg capacity
MAN HX60 Service Vehicle	4x4 wheeled	88	800	Light Logistics vehicle 6,000kg capacity
Mobility of Equipment Types that could augment the Strike Bde				
Challenger 2 MBT	Tracked	56 road 40 x-country	450 road 250 x-country	Main Battle Tank
Titan	Tracked	55	500	Armoured modular bridging system layer
AS90 155mm Self Propelled Howitzer	Tracked	55	350	Self propelled Howitzer
Pinzgauer towed FH70 105mm LI Gun	4x4 wheeled	50	440	Tractor module for 105 Light Gun

Table 1: Mobility of Strike Brigade's Key Equipment Types: Image: Author's Collection[36]

More important is Strike's lack of a qualitative advantage over potential adversaries, which proved so crucial in Barbarossa. It has been assumed that Strike will not encounter main battle tanks.[37] However, tanks were deployed as part of Russian vanguard forces in both Georgia and Crimea, and Russian future force laydown will equip vanguard forces with tanks down to sub-unit level.[38] Russia's retain-and-adapt equipment programme means the majority of their front-line tanks have been upgraded to almost the same level of lethality and survivability as the latest generation of armour.[39] Yet, Strike's weapons can only overmatch armoured personnel carriers and it possesses only highly vulnerable dismounted anti-tank missiles which may not defeat modern Russian defensive-aid and armour systems. If employed as envisaged, Strike will encounter tanks, and must possess the necessary lethality to contest this threat.

Strike also lacks key capabilities such as artillery, bridging and air defence, all of which were cut from the Strike or FRES programmes, and unlike the panzer division, these gaps can't be filled by close air support which will be severely limited by A2AD in the initial phase of any campaign.[40] In-service equipment cannot fill these gaps without compromising the mobility of the Strike Brigade even further, and systems being considered to fill these gaps, such as truck-based artillery systems, lack Strike's tactical mobility and will further channel the brigade onto roads and prevent its dispersion.[41]

These gaps could, however, be addressed through the modular nature of Strike's vehicle platforms. Using Boxer's existing mission modules, artillery could be delivered through the 155mm L52 howitzer module, and other capabilities through the Boxer 22m bridge layer and 35mm air-defence system.[42] Ajax could likewise be upgraded to combat main battle tanks through the addition of the 120mm gun turret or turret-mounted anti-tank guided missile launchers which have both been produced in prototype by Lockheed Martin.[43] By augmenting Strike's existing platforms, the capability and lethality gaps could be addressed without affecting the brigade's mobility.

36 *Military Periscope, 'Ground Combat Vehicles,' accessed April 16, 2020, https://www.militaryperiscope.com/weapons/ground-combat-vehicles/.*
37 *Owen, 'Explaining the British Army's Strike Concept,' 4.*
38 *Sutyagin, Igor and Bronk, Justin, 'II. Equipment, Organisational and Doctrinal Reforms of Land Forces,' Whitehall Papers 89, no.1, (London, RUSI (2017): 51.*
39 *Radin, Andrew, et al, The Future of the Russian Military (Santa Monica: Rand Corporation, 2019), xii.*
40 *House of Commons, SDSR and the Army, 16.*
41 *Cranny-Evans, Samuel, 'DSEI: Strong response evident for British Army's MFP requirement,' Jane's Defence Weekly, (12 September 2019): 2.*
42 *Cranny-Evans, Samuel, 'Boxer: modular, multirole armour rolls out,' Jane's International Defence Review, (25 February 2019): 6-9.*
43 *Jane's, 'Ajax uncovered: Detailing the British Army's latest combat vehicle family,' Jane's International Defence Review, (11 Nov 2016): 16.*

Table 2: *Strike Offensive Capabilities Against Common Russian Armour Models*								
Russian Armour Model	*Armour*						*Penetration by Strike weapon systems*	
	Turret			*Hull*				
	Thickness		*Applique*	*Thickness*		*Applique*	*40mm AFSDS*	*12.7mm AP*
	Front	*Side*		*Front*	*Side*		*140mm RHA*	*22mm RHA*
T-14 Armata	Unknown*		Malachit ERA & Afghanit Hard Kill systems	Unknown*		Malachit ERA & Afghanit Hard Kill systems	No	No
T-90M	280mm		1220mm NII Stali	200mm		4S24 Relikt ERA	No	No
T-80BVM	450mm	120mm	Kontakt-5 ERA	200mm	80mm	4S24 Relikt ERA	No	No
T-72B3M	280mm		Kontakt-5 ERA	200mm		4S24 Relikt ERA	No	No
BMP-3M	35mm		Arena-E APS	35mm			Yes	No
BDM-4M	Light Aluminium**		N/A	Light Aluminium**		N/A	Yes	Yes

* Believed to be STANAG L5 equivilant (25 mm APDS-T at 500m)

** Light aluminium armour protection against 30mm / small arms rounds

Table 2 shows Strike Offensive Capabilities against common Russian Armour. Author's Collection[44]

German troops occupy a burning Russian village during Operation Barbarossa, summer 1941 © IWM HU 111384

44 *FHN UK, 'Ammunition 12.7x99mm' accessed April 08, 2020, https://www.fnhuk.com/en/product/127x99mm; BAE Systems, 'Cased Telescoped Ammunition,' accessed March 10, 2020, https://www.baesystems.com/en-uk/product/cased-telescoped-ammunition; Military Periscope, 'Ground Combat Vehicles'.*

The lessons of 'Blitzkrieg' demonstrate that Strike will have to overcome several challenges if its tactical doctrine is to address the risks it will face and achieve the purpose for which it is designed. Strike could overcome the threat posed by A2AD as its mobility, and the cutting-edge capabilities which its platforms possess could enable it to have a disproportionate effect on an adversary. However, positioned as the spearhead of the UK's expeditionary division, Strike is limited by the under-resourcing of both the Strike Brigade and the wider British Army.

Lloyd Clarke described the Wehrmacht as *'a lance whose point consisted of hardened steel; but [whose] wooden shaft looked longer and even more brittle'*. The same could be said of the two-speed nature of the Strike Concept. If Strike can increase its responsiveness, then it could take advantage of the Russian transition to defence and disrupt an incursion. However, to do this successfully, Strike must be resourced with the all-arms capabilities that it currently lacks in order to match a peer enemy. Crucially, Strike must be optimised to work as part of a multinational NATO division as a default, allowing it to operate at reach from the UK, with sufficient support to survive. These measures require physical and conceptual investment if they are to succeed, but it was the Wehrmacht's failure to fully invest in the concept of 'Blitzkrieg' that caused the collapse of the Barbarossa offensive and the final defeat of the panzer divisions.

Pictured are British Soldiers from Legion Troop, C Squadron, Light Dragoons in a US Stryker Infantry fighting vehicle. They are shown conducting a reconnaissance exercise during NATO's enhanced Forward Presence Battle Group-Poland mission in Bemowo Piskie, Poland, on the 6th May 2020. NATO's enhanced Forward Presence consists of four battalion-sized battle groups deploying on a rotational basis to Estonia, Latvia, Lithuania and Poland to demonstrate the alliance's determination and ability to act as one in response to any aggression against its members.
Photo: Staff Sergeant Timothy Hamlin, U.S. Army

Covid-19: Are We at War?

OCdt James M R Thorp, RMAS, provides an analysis of the use of the language of 'war', Western loss of strategy, post-heroism and risk aversion in the context of the Covid-19 pandemic. Words have power - precision matters.

A Trooper from the Household Cavalry Regiment carries out Covid 19 testing at Manston Airfield. Army Reservists spent two weeks on Op ROSE, the military's code word for the operational deployment of troops in support of the Department of Transport in the testing of all lorry drivers and hauliers bound for continental Europe. To help in this mammoth undertaking the troops on the ground have been supplemented with Army Reservists drawn from several regiments and battalions nationwide. ***Photo: Corporal Rob Kane, Crown Copyright***

Global leaders declared a war against Covid-19 and are using the terminology of war to describe our current struggle against the virus. 'Nous sommes en guerre' (we are at war), announced French President Emmanuel Macron six times in the same speech.[1] American President Donald Trump declared himself a 'wartime president'.[2] British Prime Minister Boris Johnson called his a 'wartime government'.[3] What is more, this declaration is not just an occurrence in the West; in China, President Xi Jinping is also guilty of it, proclaiming a 'people's war' against the virus.[4]

Unusual rhetorical use of the term 'war' goes as far back as American President Lyndon B Johnson's 'War on Poverty' or President Richard Nixon's 'War on Drugs' and 'War on Cancer' in the 1960s and 1970s. Using the language of war does have its (short-term) practicalities; as Tabitha Moses notes, such rhetoric is uniting and implicitly conveys a collective sense of danger and urgency.[5] Moses ultimately argues, however, that the language of war can do 'more harm than good', both morally and psychologically.[6] Cynthia Enloe recommends we 'de-militarize [sic]' the language of confronting Covid-19 because of the inherent gender inequalities, requirements for human targets and sacrificing of democratic processes.[7] Additionally, Constanza Musu shares Enloe's concerns that democratic processes could be threatened, adding her own argument that the language of war detrimentally exacerbates nationalism.[8]

Others have already found many reasons why the language of war is not appropriate; and this article aims to add to this discourse. However, despite its utility, the use of the term 'war' is more than mis-appropriation, it is an abuse of its meaning. To be frank, we are not at war against Covid-19, and it is misleading and counter-productive to say so. The language we use is entirely important, because it influences (and can muddle) our perceptions.[9] Furthermore, analysis of why the word war is inappropriately used can be a tool by which we can understand how we - the UK, but also the West as a whole - have responded to Covid-19, ineffectually or not.

So beyond understanding what war is, why the term is abused and therefore why a lot of policy is astrategic, we will also examine the other negative connotations that use of the word war brings. This examination will be carried out firstly through a consideration of how strategy is misunderstood and therefore misapplied regarding Covid-19. Secondly, an exploration of the idea of 'post-heroic war' and the inherent risk aversion in society and government will be made. Finally, a look forward to pressing foreign policy and geopolitical issues beyond Covid-19 reveals why a fixation on an all-out 'war' with a virus is a blinkered approach.

THE ABUSE OF 'WAR'

Whilst the contemporary Western debate starts with Sir Hew Strachan, it is critical to note that Russia also has an established academic debate over the abuse of the word 'war'.[10] The author agrees with Strachan and the school of thought that he established, that there is currently a general failure, or even loss of strategy in the West. Strachan's argument posits, convincingly, that there is an established misconception that war is an easily applied instrument of policy. A misconception brought on artificially by successful and quick military campaigns that lacked casualties, like Kosovo 1999 or the Gulf War 1990-91.[11] The most palpable example, however, is manifested from the Global War on Terror (GWoT).

1 *Macron, Emmanuel (2020), Address to the French of the President of the Republic Emmanuel Macron, Elysée*
2 *Remarks by President Trump, Vice President Pence, and Members of the Coronavirus Task Force in Press Briefing, (2020), United States Government: White House Briefing Statements.*
3 *This enemy can be deadly': Boris Johnson invokes wartime language, (2020), The Guardian.*
4 *Freedman, Lawrence (2020), Coronavirus and the language of war, New Statesman; see also, Sehran, Yasmeen (2020), The Case Against Waging 'War' on the Coronavirus, The Atlantic.*
5 *Moses, Tabitha (2020), How talking about the coronavirus as an enemy combatant can backfire, The Conversation; for uniting, see: Flusberg, Stephen. J. (2018), War metaphors in public discourse, Metaphor and Symbol, 33:1, pp. 1-18; for urgency, see: Flusberg, Stephen. J. (2016), Metaphors for the War (or Race) against Climate Change, Environmental Communication, 11:6, pp. 769-783.*
6 *Moses, Tabitha (2020), 'How talking about the coronavirus as an enemy combatant can backfire', The Conversation.*
7 *Enloe, Cynthia (2020), 'Pulling my COVID-19 language out of the trenches', in The Quarantine Files: Thinkers in Self-Isolation, Los Angeles Review of Books.*
8 *Musu, Constanzu (2020), 'War metaphors used for COVID-19 are compelling but also dangerous', The Conversation.*
9 *February 2021: Thorp, James (2021), 'Size does not matter: the UK's continuing great power status', The Wavell Room.*
10 *Fridman, Ofer (2018), Russian 'Hybrid Warfare': Resurgence and Politicization, Oxford: Oxford University Press, p. 158.*
11 *Strachan, Hew (2007), Annual Defence Lecture: War and strategy, Chatham House, p. 5.*

A member of The 3rd Battalion, The Parachute Regiment, disembarks a Puma helicopter. Balancing the need to maintain readiness for global operations and the risk of coronavirus has led to a more focused and disciplined approach to training for Colchester's paratroopers. The battalion has formed itself into bubbles, with companies conducting training separately to reduce mixing between soldiers and to provide the space for socially distanced training. ***Photo: Corporal Danny Houghton, Crown Copyright***

As Strachan critically pointed out in 2007, the GWoT is 'astrategic' because it 'cannot use the battle for the purposes of war'.[12] To explain, one must start with Clausewitz's best-known dictum, that war is 'the continuation of policy with other means'.[13] It is important to note that policy in the original German is *'politik'* and can be translated as both 'policy' and 'politics'.[14] Within *politik* then, strategy is the 'use that is made of force and the threat of force for the ends of' *politik*, with 'force' including war and therefore battle.[15]

However, what the GWoT is attempting to eliminate is a method of fighting. The GWoT also lacks a clear geographical focus and is unclear about the space involved. Therefore, that 'war' is too far-reaching operationally and conceptually for even the world's unipolar power to possibly tackle.[16] 'Ending terror' may be a logical policy aim, but we have no statement of what the world will look like when terrorism is ended, or how we will get there. The same problematic lack of statement arises when one considers Covid-19: what the world may look like when Covid-19 is gone or dealt with, and how we get there. Just as the use or threat of force (i.e. battle), cannot be used against terror to bring about decisive

12 *Strachan, op cit, p. 4.*
13 *Clausewitz, Carl von (1976), On War, Trans. by Michael Howard and Peter Paret. Oxford: University of Oxford Press. p. 7*
14 *Strachan, op cit, p. 4.*
15 *Gray, Colin (1999), Modern Strategy, Oxford: Oxford University Press, p. 17.*
16 *Strachan, op cit, pp. 2-3.*

A soldier from 5th Royal Artillery Regiment prepares a covid 19 vaccine for administering to a patient at The Event Campus Aberdeen, in Scotland. Armed Forces personnel administered vaccines in Scotland for the first time, as the number of military personnel increases to over 200 supporting the rollout. The medics and management staff will make up a Vaccine Quick Reaction Force, which will see 5 teams of 10 able to deploy across Scotland at short notice, in order to assist NHS staff in delivering the vaccine. ***Photo: Corporal Nathan Tanuku, Crown Copyright***

victory, the same is true for Covid-19; hence why both are astrategic. In Clausewitzian terms, force (war) cannot effectively be used as an instrument of overall policy in either of these cases. 'Terror' and 'Covid-19' are nouns, they are not tangible things - one cannot go to war with a noun.

Nevertheless, 'wars' are now declared on, amongst others, drugs, crime, poverty, disease, even Christmas.[17] However, it would be short-sighted to completely blame our latest batch of global leaders for such applications. Part of the confusion stems from a genuine growing grey area. Traditional understanding of war as industrial interstate war, has changed - rightly or wrongly. This change in understanding is shown by those who argue that interstate war is dead such as Martin van Creveld and the end of Clausewitzian trinitarian war; Mary Kaldor's 'post-Clausewitzian' 'new wars'; and Rupert Smith's 'war amongst the people'.[18] It can be said that the modern conflicts that this group discuss are so-called 'grey areas' conflict. Notions of 'Hybrid War' or its Russian equivalent, *gribridnaya voyna*, muddy the water further because *gribridnaya* voyna (mostly) lacks a 'violent clash of military forces' in the traditional sense. *Gribridnaya voyna* is, therefore, technically 'political conflict' or 'competition', but not war.[19] Going back to the Clausewitzian breakdown of war's place within **politik** (policy and politics), one can now understand that a wider understanding of the spectrum of strategic tools available to a policymaker is needed; hence why hybrid war should really be termed hybrid strategy.

17 *Olsen, Richard K. and Morgan, Julie W., (2009), Happy Holidays: Creating Common Ground in the 'War on Christmas', Journal of Religion and Popular Culture.*

18 *Creveld, Martin van (1991) The Transformation of War, New York: Simon & Schuster, pp. 41-42 & 49-50; Kaldor, Mary (2013), 'In Defence of New Wars', Stability, 2(1): 4, p. 1; Smith, Rupert (2007), The Utility of Force, London: Penguin Books, p. 3.*

19 *Fridman, op cit.*

But this confusion over what war and strategy is, added to a misplaced belief that war is a 'malleable instrument of policy', has some serious implications for how we approach crises such as Covid-19.[20] 'War' implies there could be decisive victory against Covid-19 - when this may or may not happen. Even with multiple vaccines, this problem is not going to go away quickly. Instead, it is far more likely that states, societies and economies will have to learn how to adapt to, and mitigate against, Covid-19.

'POST-HEROIC WAR'

An examination of the concept of 'post-heroic war' is a tool by which one can understand our (risk-averse) approach to Covid-19. Whilst the concept of 'post-heroic war' originated from Edward Luttwark in 1995, in his essay *Towards Post-Heroic Warfare*,[21] the concept was expanded by Christopher Coker in his 2005 essay *The Unhappy Warrior*. Coker argued that in the West warriors are no longer venerated, especially for their lethal abilities. However, Coker's greater argument is that, in war, death was once seen as an intrinsic sacrifice, but is now a side effect to be avoided or mitigated. What began in the Vietnam War - soldiers glorified not because of their actions, but for the situations they were caught up in - culminated in the 2003 Iraq War. From Iraq, Coker uses the well-known story of Private Jessica Lynch, someone who did not choose her fate yet was still widely lauded as a hero.[22]

As discussed, strategy is regularly neither understood nor, in the correct sense of the word, used properly; western appreciation and use of war has become 'astrategic'.[23] Major-General (retired) Jonathan Shaw's letter to the *Financial Times, 'Covid-19 is a chance to put Rommel's ideas to the test'*, encapsulates further strategic issues at hand. Shaw's letter lays out Rommel's appreciation of the difference between risks and gambles.[24] Rommel defined 'risk' (or 'boldness') as something that can be mitigated, often with contingency plans; in other words, there is a plausible exit strategy. In a 'gamble' however, there is no exit strategy; you either win totally, or not.[25] Shaw used this analysis to argue that, at the time, herd immunity was a valid option. However, the real worth of Shaw's contribution is to understand that there is no gamble against Covid-19, there are just a multitude of risks that should be mitigated against and, from that, the formation of exit strategies.

So, applying Coker's insights to Covid-19, despite a 'war' being declared, it is still unlikely that death would be accepted as an intrinsic sacrifice, but rather a side effect or risk that must be avoided at all costs. As Coker goes on to say, 'we live at a time when death can be postponed', to die aged 50 in the West is to die young and so immortality is now in a sense transformed 'from an idea into an experience'.[26] The Government is constrained by societal aversion to risk. We now see risk-taking as the 'measure of irresponsibility', whilst death is rarely seen as an intrinsic sacrifice and, instead, we are accustomed to it being postponed.[27] Whereas, as Rommel teaches us, only gambles should be avoided; risks can be mitigated and strategised against. The Government is, in theory, expected to save every life at almost any cost. But one cannot realistically run a country under these expectations; what price do you put on each life; what collective price do we now pay in the knowledge that the cost must be borne by future generations?

Declaring a war against Covid-19 also does injustice to those who have been involved in genuine war. This does not mean that there have not been both extraordinary and every-day acts of sacrifice, or even heroism, from both the public and those in public-services during the Covid-19 pandemic. But 'if an employment of any non-military means is a war, then the whole of human history is war'.[28] The 'over-free employment of such a word as 'war' devalues the severe [nature of this] concept and dulls its adequate perception in society'.[29] This should not be the case. Instead, just like in contemporary war, a 'theatre of operations' - theatre ironically in the military and dramatic sense - has been created amidst this global pandemic, with the national spectacle often being dictated by the narrative that the media pursue.[30] The sensationalism of a 'war-effort' against Covid-19 has arguably been applied.

20 *Strachan, op cit, p. 5.*
21 *Luttwark, Edward, (1995), Towards Post-Heroic Warfare, Foreign Affairs.*
22 *Coker, Christopher, (2005), The Unhappy Warrior, The RUSI Journal, 150:6, pp. 10-13.*
23 *Strachan, op cit, p. 2.*
24 *Shaw, Jonathan, (2020), Covid-19 is a chance to put Rommel's ideas to the test, Financial Times.*
25 *Rommel, Erwin, (1982), edited by B. H. Liddell Hart, The Rommel Papers, New York: De Capo Press, p. 201.*
26 *Coker, op cit, p. 13.*
27 *Coker, op cit, p. 12.*
28 *Fridman, op cit, p. 158.*
29 *Fridman, ibid.*
30 *Smith, op cit, p. 284.*

Members of the 1st Battalion Welsh Guards, on parade in Windsor, celebrating St David's Day today (01/03/2021) albeit in a much more restricted fashion, with smaller scale, socially distanced ceremonies due to the pandemic. ***Photo: Sergeant Chris Morgan, Crown Copyright***

LOOKING FORWARD

We are clearly not at war with Covid-19 and we must not get distracted by the sensationalism that we are. Distracted from the myriad of threats, problems, and opportunities the UK faces, of which Covid-19 is but one and - going forward long-term - is unlikely to be the most pressing. The author wrote about these simultaneous issues for *The Wavell Room* in November 2020.[31]

In summary, there are three main problems - as highlighted from that article - that require our ardent attention. First, the impending economic crash as a result of the pandemic: the figures are certainly horrifying and will certainly exact a significant toll in human suffering.[32] Furthermore, we know that the last crash (2008-9) helped radicalise politics on the Left and Right significantly, of which we have felt the ramifications ever since.[33] Second, using Lawrence Freedman's argument as a basis, the author argues that Britain is at a generation-defining foreign policy crossroads with the European Union and the United States; regardless of achieving a Brexit deal and Joe Biden becoming President.[34] Third and finally, the great power competition with China is expanding. It has been clear that China has attempted to use this crisis to further its interests and narrative campaign.[35] No one should forget that after the last crash China was able to use it as a 'springboard for [its] global ambition'.[36] We also know that the UK and its key allies are too strategically dependent on China for resources.[37] Thankfully, the UK made several powerful foreign policy moves in 2020.[38] A string of strong moves that are added to by the recent step to legislate against allowing imports connected to human rights abuses in China; abuses made mainly against Uighur Muslims in Xinjiang province.[39]

Whilst the road the UK takes going forward is one inevitably fraught with uncertainties and dangers, there are opportunities to be exploited. The UK has much to offer. Aside from leading cyber capabilities, counter-terrorism expertise and technological, economic, and financial know-how, the UK can offer something oft forgotten; a still substantial and adaptable military.[40] Of course, it would be amiss to not acknowledge the UK has an army that is adaptable and utilitarian; even in unexpected ways, as shown by the army's response to Covid-19.[41] Indeed, the author has previously argued that the UK is, by definition, still a great power '[g]reat power status does not require one-dimensional requirements for hard power assets… - size does matter, but just not as much as is often thought.'[42]

31 *Thorp, James (2020), 'Global Britain in a post-Covid-19 World', The Wavell Room.*
32 *Thomas, Philip (2020), 'J-value assessment of how best to combat Covid-19', Nanotechnology Perceptions, p. 1.*
33 *On the Left: Ramiro, Luis and Raul Gomez (2017), 'Radical-Left Populism during the Great Recession: Podemos and Its Competition with the Established Radical Left', Political Studies, 65, pp. 108-109; on the Right: Funke, Manuel, Moritz Schularick and Christoph Tresbech (2015), 'Politics in the Slump: Polarization and Extremism after Financial Crises, 1870-2014', European Commission, p. i & pp. 35-36.*
34 *Freedman, Lawrence, (2020), 'Britain Adrift', Foreign Affairs.*
35 *For strategic interests, see: Macaes, Bruno (2020), 'China Wants to Use the Coronavirus to Take Over the World', National Review; for narrative campaign, see: 'EEAS Special Report Update: Short Assessment of Narratives and Disinformation around the Covid-19 Pandemic (Update 23 April – 18 May) (2020), EU vs Disinformation.*
36 *Ghiretti, Francesca (2020), 'COVID-19 and China's Future Investments in European Economies', Centre for Historical Analysis and Conflict Research.*
37 *Rogers, James et al. (2020), 'Breaking the China Supply Chain: How the 'Five Eyes' can Decouple from Strategic Dependency', Henry Jackson Society.*
38 *Wright, Thomas (2020), 'What a shift in the UK's foreign policy means for the US', Brookings.*
39 *Fisher, Lucy (2021), 'Britain tightening laws on imports linked to Chinese human rights abuses', The Telegraph.*
40 *Ibid.*
41 *Ben Wallace interview: UK defence isn't fit for purpose – our Armed Forces must adapt to 21st Century threats, (2020), PoliticsHome.*
42 *Thorp, James (2021), op cit.*

A soldier of The 3rd Battalion, The Parachute Regiment, looks out from a Puma helicopter. The risk of coronavirus has led to a more focused and disciplined approach to training for Colchester's paratroopers who are currently serving as the Air Manoeuvre Battlegroup, held ready to respond at short notice to international crises. The demands of the role have meant the unit has continued training throughout the coronavirus restrictions to maintain its soldiers' skills and readiness. Photo: Corporal Danny Houghton, Crown Copyright.

Similarly, the rhetorical use of the language of war when confronting Covid-19 negatively affects our concepts on how we deal with this challenge. As highlighted at the beginning, Enloe, Moses and Musu all elucidate this negative affect on our conceptions and perspectives, but mostly from a moral and psychological standpoint. Using Strachan's example of the GWoT, 'war' against Covid-19 is shown to be inherently astrategic, just like 'wars' against drugs, cancer, and poverty. On top of that, Coker's development of Luttwark's concept of post-heroic war is a useful tool by which we can understand Western society's lack of tolerance for death, sacrifice and risk. Of course, there is no war against Covid-19, and so the tolerance is even less. The 'over-free employment of such a word as 'war' devalues the severe [nature of this] concept and dulls its… perception in society'.[43] Words have power - which is why their precise application matters.

43 *Fridman, op cit, p. 158.*

Innovation and RAS: A Mix of Technology and Determination

Major Alexander Bayliss, Grenadier Guards, argues that while the enthusiasm for Robotics and Autonomous Systems (RAS) Innovation is clear, there are some procedural problems to overcome to ensure the Army does not equip itself to win the last war, but prepares correctly for the next one. He claims that Innovation sits at the heart of this, but it takes determination to make it happen.

Pictured is a Russian Uran-9 combat unmanned ground vehicle during the scientific and technical forum of The Day of Advanced Technologies of Law Enforcement Authorities of the Russian Federation. It was held at the testing range of the Federal State Enterprise «Geodesia» in the town of Krasnoarmeysk from 25 to 27 May 2017. ***Photo: Vitaly V. Kuzman, Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, https://www.vitalykuzmin.net/, Wikimedia.***

Recent experimentation by Army HQ proved the potential for RAS was almost unlimited. Manned Unmanned Teaming and further developments have the potential to revolutionise the way we contest and win conflicts. The Army Warfighting Experiment is a perfect way to test new theories and ideas quickly. Our enemies around the world are developing too; we need to experiment and learn quickly as the rate of change is rapid. Interest and support for this new way of warfare is high, but so are the barriers to success.

In recognition of the pace of change, which feels exponential, the Army must offer a solution that offers continuous innovation and evolution to stay relevant.[1]

In recent years the use of Robotics and Autonomous Systems (RAS) has proliferated at an unprecedented rate. The British Army understands this rapid growth and wants to lead NATO in the use of these systems.[2] The opportunities RAS offer in logistics, ISTAR, close combat and integrated Situational Awareness (SA) are clear. NATO states are not the only nations involved in the development of RAS; state and non-state actors are beginning to use RAS for a variety of missions across the mosaic of conflict. The Conceptual, Doctrinal, Procedural and Standardisation challenges will be explored as key areas that need to develop to ensure the Army is ready for the future.

FIRST STEPS

In 2018 the Army Headquarters Future Force Development team, with the Infantry Trials and Development Unit (ITDU) and DE&S, delivered the Army Warfighting Experiment (AWE) 2018, titled Exercise Autonomous Warrior. This tested RAS to the limit on Salisbury Plain. The experiment took months of painstaking planning and hours of procedural checks before it could take place but taught the Army some invaluable lessons about the use and misuse of RAS.[3] The experiment showed us that RAS technology can do almost anything we require a person to do in the battlespace. The experiment also gave us some useful limitations for RAS, for example: if we lack specific user requirements, we might develop systems that include impressive technology but are of little value in the modern battlefield, thus wasting money. While financial restrictions remain in place, the development of RAS is limited to small scale purchases.[4] This makes mass deployments to multiple theatres difficult and has a direct impact on the 'expeditionary nature' of these systems. Maintaining independent expeditionary warfighting capability is something the British Army rightly continues to champion.

The most exciting area of development we discovered in 2018 was system sensors, the on-system cameras or terrain scanning radar that the new equipment used to 'see and feel' the battlefield. While the RAS we selected were using electro optic real time video, they were able to assess the footage they gathered as they scanned the battlefield; this is a unique opportunity and one that we seek to exploit as part of Manned Unmanned Teaming, the next step in the use of RAS.

MANNED UNMANNED TEAMING

Manned Unmanned Teaming (MUMT) is a collaborative operation between manned assets and unmanned systems to achieve a mission.[5] MUMT enables the direct control of unmanned systems from manned platforms rather than tasking via the UAS operator. To realise MUMT in practice requires certain critical technological enablers over and above current (UK) capabilities; these include additional datalink integration and messaging, and higher levels of automation and autonomy with respect to UAS platform and sensor control/tasking.

To perform MUMT effectively requires shared situational awareness of context (geospatial, mission/tactical, airspace), which in turn can drive technological requirements to pass and display/communicate information. The British Army view is that MUMT eases the cognitive burden on the soldiers operating on the ground, the US Army view is that the two systems are used to enhance each other's systems' strength: these are two very different views.

1 *An Asymmetric Army for the Digital Age, CGS lecture to 77 Brigade, Hermitage, 29 September 2020*
2 *Ibid, Described by CGS as 'Boots and Bots' the use of Humans and Machines teamed in the battlefield.*
3 *The author was involved with Defence Innovation and experimentation as an SO2 in the Future Force Development team in Directorate Capability (DCap); delivering Warfighting Experiments and generating the conceptual framework to support Army Innovation. The British Army Innovation and experimentation framework has the potential to revolutionise how we contest future conflict.*
4 *Brose, C., 2020, The Kill Chain: Defending America in the Future of High-Tech Warfare*
For a better explanation of the state of Western technological development, read the opening three chapters of this excellent book.
5 *Keirl, H, Hennessy, DKR, Thorpe, A, Taylor, R, Halpin, D., 31 Mar 17, DSTL Post Experiment report: Wildcat ISTAR Teaming for Strike – Phase 1 Experimentation, p3*

A selection of equipment on display at the Army Warfare Experiment 2020. Left to Right: A soldier from 5 Rifles holding a Bug Nano UAV, an X2 unmanned ground vehicle, Mission Master unmanned ground vehicle, Viking unmanned ground vehicle, MUTT unmanned ground vehicle, Athena Armoured Vehicle. ***Photo: Sergeant Tom Evans, Crown Copyright***

While the MUMT concept was being explored in more detail by the Army; an updated concept called Human/ Machine Teaming (HMT) was developed. This looks to exploit a machine's ability to compute vast quantities of data, but allowing a Human, with a superior level of understanding to make decisions.[6] HMT is the next logical step in the evolution of the use of RAS. The US Army has even started to branch out toward 'Advanced Teaming' where multiple systems feedback to one manned system. Development with our allies must be monitored carefully as each nation seeks to exploit MUMT/HMT to fit their own models of fighting. While MUMT was being explored HMT was developed, before we had explored HMT, Advanced Teaming was developed. It feels like the rate of our conceptual development can outpace our ability to experiment, at this rate we will always lag behind our theoretical ambition. This makes success difficult to quantify.

THE AWE CAMPAIGN

The AWE programme provides the Army with an opportunity to engage and collaborate with industry partners to explore emerging technologies and identify specific capabilities suitable for rapid exploitation. Through research and experimentation, the Army explores what innovative approaches can be leveraged to give it the competitive edge.[7]

AWE is an Army experimentation programme that has been established for approximately ten years and has constantly delivered high quality evidence for the Army. It creates military scenarios for testing equipment and

6 *Human Machine Teaming, JDN 18/01. 2018. p42 para 4.6.*

7 *The author was part of the team that delivered the 'Transformation Fund' for the Army. Approximately £200 million was allocated to the Army in 2019 to purchase battle-winning prototype systems. 5 of the 9 Army technologies selected came from evidence gathered on AWE18. They were deemed 'viable' and ran to a commercial competition. The Puma2 UAS, Flir Black Hornet 3 and the new Unmanned Ground Vehicle (UGV) were just some of the systems selected. Proving that Army acquisition can run at months not years, when a team are determined to make it happen.*

generates innovative ways to engage with a large variety of industry partners and top government Scientists from groups like Defence Science and Technology Laboratories (DSTL). It pushes the boundaries of technology and military capability, testing a range of prototype systems by putting them in the hands of the user while giving invaluable military feedback to suppliers. AWE 19 demonstrated the successful use of unmanned systems acting autonomously and, in some cases, using onboard sensors they were able to support human decision-making, this is a vital step in the successful 'Boots and Bots' doctrine of the future. AWE 20 showcased the advances in communications technology. Vital lessons on the state of modern communications equipment were captured.[8]

IT'S NOT JUST US... THE ENEMY IS AT IT TOO

Across the world lessons are being collated and shared on the use of RAS for nefarious ends. Yemeni Deputy Chief of Defence Staff, Major General Saleh al-Zindan was assassinated using a drone in February 2019: the drone was flown over the General's dais as he was giving a speech in the al Anad Airbase. An explosive device was attached to the drone and it detonated in the air, killing the General and wounding many others.[9] In Venezuela a presidential parade was attacked by two drones as the President addressed a vast crowd in Caracas. The chaos and confusion was captured live on television.[10] Closer to home, criminals are exploiting drones, being used to fly contraband into prisons. This is experience that could easily translate to violent actions if required. The Russians have used their URAN9 Unmanned Ground System (UGV) in Syria and while it is unclear how it was used, some reports suggest they were used as a static fires platform providing base defence. The deployment and use of a UGV in Syria should alert decision-makers to the development of these systems by state actors and the willingness to test them on operations.[11]

The growth of sensors on and off the battlefield causes some unintended consequences for the use of RAS; the electromagnetic spectrum quickly gets clogged with multiple systems competing for limited bandwidth. In developed nations this demand for bandwidth is high, regardless of the use of RAS for military purposes. This is a matter that demands immediate attention. To be clear, this is not enemy action but a limiting factor that impacts the use of drones on the modern battlefield. Some State-based threats maintain a suite of technologically sophisticated Electro Magnetic Spectrometric (EMS) equipment designed to enable detection and jamming. This could be used on operations against our nascent systems. Russian assets deployed to Syria demonstrated their suite of EMS capabilities in

Pictured is the Uran-14 Firefighting Unmanned Ground Vehicle during the scientific and technical forum of The Day of Advanced Technologies of Law Enforcement Authorities of the Russian Federation. ***Photo: Vitaly V. Kuzman, Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, https://www.vitalykuzmin.net/***

8 *The Army Research Report Repository (ARRR) and FD Nexus have more detailed reports on the results of AWE18, 19 & 20.*

9 *Yemen soldiers killed in Houthi drone attack on base. 10 Jan 2019. https://www.bbc.co.uk/news/world-middle-east-46822429*

10 *Venezuelan President targeted in attack attempt. Ana Vanessa Herrero and Nicholas Casey. 04 Aug 2018. Some sources claim the parade was protected by drone jammers, but at the time of the attack the jammers were switched off. https://www.nytimes.com/2018/08/04/world/americas/venezuelan-president-targeted-in-attack-attempt-minister-says.html*

11 *Chow, Eugene, The National Interest, 14 May 2018, Russia Just Showed Off Its New Robot Tank – And confirmed it was on the ground in Syria*

January 2018, where they managed to detect and defeat a drone attack on one of their airfields. This was a clear statement of intent: they have the ability to spoof and jam drone attacks to protect their forces abroad.[12]

In the Autumn of 2020, the world watched as Azerbaijan and Armenia engaged in a vicious conflict over the Nagorno-Karabakh region. Initial readout of the conflict shows the prolific use of RAS-based sensors on both sides. Early analysis of the conflict by RUSI highlights the use of RAS to enable the 'find' and in many cases the 'Strike' functions. The use of RAS and Electronic Warfare (EW) assets should force decision-makers to take note, the modern battlefield has evolved and we can now expect our peer enemies to 'sweep' the battlefield with sensors and radar and in some cases the RAS conducting the 'sweep' may be equipped to also strike targets. UAS-based sensors and EW assets make conventional forces more vulnerable on the modern battlefield.[13]

CHALLENGES TO RAS INNOVATION

The process of experimenting and fielding these systems should be simple, but for the following reasons it is not. Making progress is hard going when everyone sees the potential of these systems, but RAS is just one of many new ideas to fund. Determination at the lower levels of staff is required to keep moving forward and meet the ambition of our senior officers, absorbing changes in direction and keeping projects on track. We are now at the stage where RAS technology is not the limiting factor: it is the human process that is often what stops RAS innovation.

Conceptual: RAS offers a host of new and exciting opportunities for Combat, Combat Support and Service Support. The avenue of development is less clear; are we using technology to replace a human function or are we using technology to change the way we operate? This is the route challenge of RAS Innovation. The conceptual use of soldiers in modern operations and the use of autonomy in lieu of soldiers require refinement. Does our current ORBAT need to include fewer dismounted soldiers and more system technicians? Are systems expected to think for themselves? If so, what decisions can a robot make without human direction? If we make a manpower reduction for robots what happens when we need trained and equipped mass quickly? A clear idea of the size and scale of the soldiers needed for fighting is required.

Doctrinal: It is wonderful to have new technology and new systems but what is it we are looking to do with them? Make faster decisions? Find the enemy quicker? Do we look to buy one exquisite system or a host of disposable, cheap systems?[14] Doctrine underpinning the use of new systems to enhance development will support, not undermine, new systems' use and aid spending priorities. Much like the differing US/UK perspectives on MUMT/HMT, clear doctrine will

Pictured is a Turkish Bayraktar TB2 UAV on the runway ready to take off. These drones were used extensively by Azerbijan in the 2020 Nagomo-Karabakh war to great success. ***Photo: Bayjaluk, Creative Commons Attribution-Share Alike 4.0 International license, Wikipedia***

12 *Smith, Patrick, April 20, Russian Electronic Warfare, A Growing Threat to U.S. Battlefield Supremacy. American Security Project, p4.*

13 *Watling, Dr Jack, 6 October 2020, The Key to Armenia's Tank Losses: The Sensors, Not the Shooters, RUSI Defence Systems*

14 *Hammes, T.X., 16 July 14, The Future of Warfare: Small, Many, Smart vs. Few & Exquisite? War on the Rocks. While the argument regarding cheap vs exquisite has moved on in the last six years, this is a perfect starting point to understand the varying perspectives on the type of systems western militaries should invest in.*

Conceptual and Doctrinal clarity will aid commanders' decision-making in exploiting successful Unit Innovation. In Oct 2020, Land Warfare produced the first doctrine for the use of UAS.[15] As technology develops, more can be expected in the coming years.

Procedures: During the development of multiple RAS systems, the UK Military Aviation Authority (MAA) and the Civil Aviation Authority (CAA) worked long hours to make bespoke rules to keep us safe while training, but this was not conducted quickly. The MAA and CAA needed a clear idea of the training being conducted with new systems before they can allow training to take place; this all takes time and is rarely simple. Our state and non-state enemies do not suffer from this problem. We could soon be outpaced by these enemies as we look to follow procedures and policies our enemies do not need to adhere to as they develop their systems. The AWE campaign is a brilliant way to ensure that we have a clear idea of what we are looking to achieve and trained staff to execute this safely, but we only have the resources to run one AWE a year. The AWE programme may adopt a faster pace of delivery in the near future, with more than one experiment happening in a year.

Standardisation: With multiple units looking to innovate in their area of expertise duplication of effort is a clear risk. 3 UK Division has worked tirelessly to ensure that the spending by units is being tracked but the lessons learnt, and subsequent development, might slip the net. Multiple systems being purchased for the same task can lead to a divergence in unit Tactics Training & Procedures (TTP) and a host of different systems of varying cost and quality being deployed on the battlefield. Noting the complexity in the EMS we already face, adding a host of systems makes standard TTPs almost impossible. Centralised control, from a Head of Capability in Army HQ, would solve this problem.

THE FUTURE

The conceptual, doctrinal, procedural and standardising processes that support RAS Innovation need refinement in order to support higher commanders' intent and develop battle-winning capabilities. As we develop new and exciting systems to give us the edge in the battlefield of tomorrow, hurdles exist today that stifle development. Our state and non-state adversaries do not face similar challenges. The coming months are critical to RAS Innovation. The Integrated Review has set conditions for tangible success in 2021; with billions of pounds promised, there is cash free to allow developments in the innovation sphere.[16] Ideally, success will be measured by the rapid fielding of equipment and not the unquantifiable level of determination injected by small bands of officers and scientists keen to keep pace with a world that refuses to stand still. Perhaps in the future, RAS Innovation will not require quite so much determination.

Pictured is the QinetiQ Titan Strike, a large tracked UGV with a laser rangefinder system during Army Warfighting Experiment, Autonomous Warrior 18. It is fitted with a machine gun –the weapon is under 100% human control remote operated. ***Photo: Corporal Rebecca Brown, Crown Copyright***

15 *Doctrine Note 20/09 Class 1 and 2 Unmanned Aircraft Systems, Warfare Development, Headquarters Land Warfare Centre, October 2020.*
16 *Prime Minister Speech to the House of Commons, PM statement to the House on the Integrated Review, 19 Nov 20*

Remember the ‘B’ in NBC?

Major Sergio Miller SGMI looks at the value of NBC troops, especially those of Russia, in times of a pandemic.

Russian specialists of NBC protection disinfected the premises and the adjacent territory of the Tskhinvali garment factory in South Ossetia.
Photo: Press Service of the Southern Military District, Ministry of Defence of the Russian Federation.

At the end of the Cold War, the Soviet Army maintained around 60,000 RKhBZ *(radiatsionnoy, khimicheskoy i biologicheskoy zashchity)* (NBC) Troops.[1] Post the dissolution of the Soviet Union the Russian Army shrank. Today, there are roughly 22,000 RKhBZ Troops fielding over 2,000 specialist vehicles - still a considerable force.[2]

Until the present-day outbreak of the Covid-19 pandemic they may have been viewed as an anachronism. Are so many NBC troops really needed today? In the last year that question has been answered emphatically. In a tour de force of organisation the Russian MOD mobilised the entire ORBAT of RKhBZ Troops and set it to work to combat the pandemic.

This article examines the organisation, training and capabilities of the Russian Army's RKhBZ Troops - specifically the 'B' of the 'Biological' capabilities - and how they have been used in the wider federal government campaign to tackle the Covid-19 pandemic.

Russian NBC troops of the Western Military District disinfect about 50 objects of the education system of the Moscow and Nizhny Novgorod regions. Press Service of the Western Military District, Copyright Ministry of Defence of the Russian Federation, https://eng.mil.ru/en/news_page/country/more.htm?id=12293455@egNews

RKHBZ TROOPS: ORGANISATION AND TRAINING

RKhBZ Troops are currently organised as five brigades, 11 regiments, and one flamethrower battalion.[3] They are deployed across the four Military Districts as well as supporting major commands such as the Northern Fleet.

At the time of writing, Chief of RKhBZ Troops is Lieutenant General Igor Kirillov. However, the campaign to tackle the pandemic was delegated to Deputy Chief of RKhBZ Troops, Major General Sergei Kikot.

Training is lengthy and extensive. Officers attend a 5 year course at the Timoshenko NBC Protection Military Academy in Kostroma, graduating as lieutenants. Originally, this was the Military Chemical Academy of the Workers' and Peasants' Red Army, formed by order of the Revolutionary Military Council of the USSR, over 80 years ago on 13 May 1932. The Academy has, in fact, just been celebrating the anniversary of its founding.[4]

Timoshenko Academy is a significant enterprise. As a federal military-public educational institution it implements a range of programmes of higher and secondary vocational education, as well as postgraduate and other professional courses. There are currently five specialities of higher education and one of secondary vocational education, as well as 34 additional professional programmes. Since September 2019, the Academy has been organised as three faculties and 18 departments.

It is also a large scientific and research centre in its own right specialising in the technology, development and production of special materials and biological defence equipment for the armed forces. It has produced many award-winning academicians and boasts doctors of science on its staffs. Roughly 80 percent of the staffs are scientists of which 7 percent are doctors of science.

In the spring of 2020, around 200 RKhBZ lieutenants graduated, including a small number of servicewomen[5] - they stepped into a world of work where they are suddenly much in demand due to the pandemic.

The Timoshenko Academy also sponsors the so-called 'scientific companies'. The Russian MOD recognises that making a high-flying academic kid endure a year of military conscription in a motor rifle battalion is a waste of resources. Instead, such conscripts are despatched to 'scientific companies' and tasked with defence-related

1 *TOP SECRET, CIA, Soviet Chemical and Biological Warfare Program, NIE 11-17-86, page 4*
2 *https://strategynord.com/discover/insight/how-is-covid-19-affecting-the-russian-military/*
3 *https://en.wikipedia.org/wiki/Russian_NBC_Protection_Troops, The Wikipedia entry may be inaccurate on numbers of flamethrower troops which have expended in the recent period.*
4 *Krasnaya Zvezda http://redstar.ru/v-kostrome-uchat-protivostoyat-sovremennym-ugrozam/*
5 *Krasnaya Zvezda: May 9 graduates will be awarded diplomas of higher military educational institutions*

Pictured is a Russian ARS-14KM decontamination vehicle at the NBC Training Centre. Photo: Vitaly V. Kuzmin, http://vitalykuzmin.net, Creative Commons Attribution-Share Alike 4.0 International License, Wikimedia

research. To date, 120 conscripts have served in the Timoshenko Academy scientific company, of which 15 have elected to extend their service.[6] They have been a busy lot. Over the last five years, the Academy's scientific company has filed seven patents and published 180 articles in various scientific magazines.

Conscript training is somewhat more rudimentary. RKhBZ conscripts are trained at the 282nd RKhBZ Troops Training Centre (282-go uchebnogo tsentra voysk RKHB zashchity). The centre is located a few kilometres from Bolshoy Bunkovo, in the Moscow Region. Basic training lasts three months.[7] Conscripts then receive continuation and on-the-job training for the remainder of their one year term of service.

There are three training companies: two for conscripts despatched to NBC protection companies, and one for flamethrower troops. Like their superior officers, these conscripts may have looked forward to a cushy undemanding service, but instead found themselves working flat out in a national disinfection campaign.

RKHBZ TROOPS: CAPABILITIES

Russian Army RKhBZ Troops field a wide variety of equipment.[8] A lengthy study could be devoted just to this topic. Instead, this article will only highlight equipment used in the coronavirus disinfection campaign, and biological detection, testing and disinfection kit.

From press reports in the weekly Military District newspapers, the principal vehicle used in the disinfection campaign has been the ARS-14, and more commonly the newer ARS-14KM. This is a vehicle designed for chemical decontamination and capable of dispensing 2.5 tonnes of decontaminant. In this case the vehicles have been used to dispense a 1-1.5% solution of 'salt of hypochlorite calcium', also termed 'DTS GK', and also simply referred to as 'bleach'.

The other common equipment mentioned in press reports has been the DKV-1K. This is basically a truck carrying disinfectant/decontaminant dispensers. Until recently, biological capability was a highly classified secret. However, we have some insight into Soviet bio-

6 *Ibid*
7 *https://iuzhno-sakhalinsk.ucpkussur.ru/iuzhno-sakhalinsk-voiskovaia-chast-19889-282-i-uts-rkhbz-197*
8 *See https://commons.wikimedia.org/wiki/Category:NBC_protection_vehicles_of_Russia and https://commons.wikimedia.org/wiki/Category:NBC_protection_equipment_of_Russia*

Mobile crews of the NBC protection of the Central Military District continue to work on disinfection of social objects in the village of Yeruda of the Krasnoyarsk territory. ***Photo: Directorate of Media Services and Information, Copyright Ministry of Defence of the Russian Federation, https://eng.mil.ru/en/news_page/country/more.htm?id=12293455@egNews***

warfare experimentation, thanks to now-declassified CIA reporting from the post-war period to the dissolution of the USSR. At the time, the Soviet Union already boasted an advanced epidemiological scientific base rooted in veterinary science (which remains true today). Combating cholera, typhus, the plague and venereal diseases were also priorities, as they were worldwide.

By the end of the Cold War, the CIA had developed a relatively good understanding of Soviet bio-warfare capabilities (see declassified example). Research was led by the 7th Main Directorate with research institutes in Sverdlosk and Zagorsk. Storage sites were scattered across the territory of the Soviet Union in remote locations. Two other important sites were the All Union Scientific Research Institute of Molecular Biology in Koltsovo, and the All Union Scientific Research Institute for Applied Microbiology in Serphukov, each employing as many as 5,000 biologists, epidemiologists and technicians.

In 1979 the secret research centre in Sverdlosk (today Yekaterinburg), accidentally released anthrax into the surrounding area killing dozens of civilians. At the time, the incident was denied by the authorities, but has subsequently been admitted.[9] Today, research is conducted at the long-windedly titled Scientific Research Centre for Special Purpose Biological Protection of the 48th Central Research Institute, currently headed by a Colonel Igor Bogolomov.[10]

Other MOD locations with biological expertise include the S.M. Military Medical Academy Kirov in St. Petersburg (where doctors and nurses have been receiving training to deal with the coronavirus pandemic); and the 9th Treatment and Diagnostic Centre (location not clear).

The modern Russian Army fields a range of biological detection, testing and disinfection equipment. This includes:[11]

- *KDA kits: The KDA kit is intended for aerosol disinfection of vehicles, buildings, structures and personal protective equipment with an environmentally-friendly peroxide disinfectant formulation. KDA kits provide effective disinfection of up to 24 hours. These have been widely used in the current disinfection campaign.*

9 *https://www.webcitation.org/6YE4f1fgB?url=http://www.anthrax.osd.mil/documents/library/Sverdlovsk.pdf*
10 *https://dlib.eastview.com/browse/doc/49380175*
11 *https://dlib.eastview.com/browse/doc/49380175*

- *ASP-13: this is an automatic signalling device for non-specific indication of aerosols of biological agents and toxins.*
- *KSAP-U kits: these are another kit for the generic detection of biological agents.*
- *UIHE-1: this is a sampling equipment for identifying microbial cells of pathogens of various infectious diseases (plague, anthrax, tularemia, glanders), as well as bacterial toxins.*[12]
- *KPO-1M: this is another sampling equipment designed to sample food products and other materials contaminated with radioactive, toxic substances and bacterial (biological) agents.*[13]
- *KPBK-1U: This is a commercial PCR (polymerase chain reaction) analysis equipment.*
- *ANK-32M nucleic acid analyser: this is a more sophisticated 'real-time PCR' nucleic acid analyser.*

THE MILITARY DISINFECTION CAMPAIGN

The Russian MOD stood up a Coronavirus Operational HQ on 14 March 2020 and presented its campaign plan on 17 March. The two significant elements of the plan were medical support (sixteen 200-bed hospitals known as 'multifunctional medical emergency centres' were built in two months flat, along with a range of other measures); and the nationwide disinfection campaign. Today there are 30 of these new hospitals and RkhBZ Troops continue to provide disinfection support but at a reduced level. In a measure Stalin would have approved if the technology had existed then, video cameras were set up at the hospital construction sites, transmitting the imagery to Defence Minister Sergei Shoigu's office so that he could keep his beady eye on progress. Deadlines were unsurprisingly met.

By 20 April, Defence Minister Shoigu was, in fact, able to report that 5 regiments and 12 battalions had been committed to the campaign (the entire RKhBZ ORBAT), and 'The troops have more than 3,500 units of special equipment and 10,120 personnel for solving the tasks [the military disinfection campaign].'[14]

Disinfection tasks were focused on:

- ***Garrisons and Military Training Areas:*** *accommodation blocks, canteens, gyms, kindergartens, schools, churches, social facilities, as well as training areas, were all processed. In Western Military District (ZVO), opposite the British Army deployment in neighbouring Estonia, 11,000 buildings alone were treated by the end of April.*
  Not a single exercise was cancelled in any Military District. To offer example numbers: Western Military District conducted 29 battalion-level exercises (batal'onno-takticheskikh ucheniy) and 172 company level exercises (rotnom ucheniy) over the winter training season; at the opposite end of the Russian territory, Eastern Military District (VVO) ran five and 110.[15] *From 1 June to 1 October (the summer training season), 3,500 combat training events were run, including, of course, the climax of the training year Kavkaz-2020.*[16]

- ***The Commissariats:*** *These are where the 135,000 conscripts called up in the spring draft presented themselves. As a consequence of the pandemic the draft was delayed until 20 May. A range of other measures were implemented for the safety of conscripts, a sensitive subject in Russia due to an unfortunate history of hazing and bullying. These included the distribution of 230,000 test kits, 2 million masks, and the imposition of two week quarantine for all conscripts.*[17] *Similar measures were undertaken for the autumn draft.*

- ***Defence and Other Key Industrial Sites:*** *A major effort was made to keep defence enterprises (and wider Russian industry) working. The results of this campaign were summarised in a 26 May teleconference between Defence Minister Shoigu and President Putin.*[18] *From 15 April, Shoigu reported, RKhBZ Troops had disinfected 200 defence facilities and plants: in total, 95,243 buildings with a total area of 22 million square meters, 157 aircraft, and 18,000 vehicles. Out of 1,013 defence industry enterprises, 990 were operating. And out of these 990, 896 enterprises were operating with over 90 percent of the workforce at work. Most impressively, no jobs were lost.*

  Output offers another measure. In the first quarter of 2020, Russian defence industry delivered 500 wheeled vehicles of various types; 40 heavy armoured vehicles (including T-72B3 delivered to Western Military District); 75 UAV systems; and 58 new and upgraded aircraft (the current Su-35, Mi-28 and Ka-52 programmes among others).

12 *https://cbrn.kz/pribory-biologicheskoj-razvedki/*
13 *https://cbrn.kz/komplekt-otbora-prob-kpo-1m/*
14 *http://redstar.ru/batalon-rhbz-vyshel-na-peredovuyu/*
15 *The numbers are from articles published in MOD daily Krasnaya Zvezda*
16 *http://redstar.ru/zadachi-budut-vypolneny-kachestvenno-i-v-srok/*
17 *http://redstar.ru/armiya-usilila-antivirusnyj-potentsial/*
18 *http://redstar.ru/zadachi-opredelyonnye-na-2020-god-budut-bezuslovno-vypolneny/*

Russian specialists of the NBCP troops carried out preventive disinfection measures in the gerontological boarding house of Zvezdara district in Belgrade. ***Photo: Directorate of Media Services and Information, Copyright Ministry of Defence of the Russian Federation https://eng.mil.ru/en/news_page***

Russian paratroopers were a particular beneficiary. Airborne units received over 160 vehicles including the latest BMD-4M airborne infantry fighting vehicles; BTR-MDM 'Rakushka' armoured personnel carriers; upgraded BMD-2KA-U airborne infantry fighting vehicles; BTR-D, BTR-82AM armoured personnel carriers, and MTO-UB2 maintenance workshops vehicles.[19]

- ***Public Transport Infrastructure*** *(to facilitate workers getting to work): 100s of public infrastructure locations, such as bus stops and railway stations were disinfected by RKhBZ Troops, supported by Ministry of Emergency (GU MCHS) personnel.*

- ***Medical and Social Infrastructure:*** *this included premises such as shopping centres.*

The scale of this endeavour should not be underestimated. It was thanks to this effort that Russian defence industry and many other industries - the so-called 'backbone enterprises in the Russian system' - kept working.

ASSISTANCE TO ITALY, SERBIA AND BOSNIA-HERZEGOVINA

Following negotiations between President Putin and Italian Prime Minister Giuseppe Conte a Russian Army Medical Troops and RKhBZ Troops contingent deployed to Lombardy on 22 March.

The detachment was drawn from 7th Regiment of the Russian Chechen Republic and commanded by Deputy Head of RKhBZ Troops Major General Sergei Kikot. Day-to-day operations were vested in Colonel Igor Bogomolov (the head of 48th Central Research Institute mentioned earlier). The senior medical officer was medical Lieutenant Colonel Alexander Yumanov.

19 *https://tass.com/defense/1161783*

In total, the detachment comprised 104 specialists (32 doctors and nurses, 51 disinfection specialists, support staff and translators). The tasking was focused in Lombardy and Brescia. By the time the mission concluded on 14 May, the Russian contingent, with Italian counterparts, had completed the disinfection of residential homes for the elderly and other locations in more than 100 settlements across the region.[20]

The mission in Serbia was headed by Major General Mikhail Chernyshov, Commander RKhBZ Troops in Western Military District (ZVO). He was supported by his Chief of Staff Colonel Alexander Urazov. In total, 87 personnel deployed. The mission deployed on 4 April and ended on 16 May. Several hundred buildings were disinfected in 40 towns and cities.[21]

A small platoon-sized contingent also deployed to Bosnia-Herzegovina (Republika Srpska) under a Colonel Maxim Sologubov. This detachment remained in-country for three weeks carrying out disinfection tasks in 11 cities in the republic.

CONCLUSIONS

NBC has somewhat fallen out of fashion in Western armies in the recent period, perhaps a legacy of the fiasco over purported weapons of mass destruction and subsequent 2003 invasion of Iraq.

The Russian Army by contrast has marched on, unwilling to lose a capability viewed as existential to the survival of the Motherland.

In a quite unexpected way, the relevance of maintaining credible NBC capabilities has been manifestly demonstrated by the RKhBZ Troops of the Russian Army. In his 8 April address to the nation President Putin stated: 'The economy cannot be stopped…We must understand what damage, what devastating consequences this can lead to'. As a consequence, Russia mostly kept working in March-April. The economic damage to the country has not been significant. According to end-of-year Russian Federal Statistics Service ROSSTAT data, 2020 recorded a 2.9% decline in industrial output, a dip many Western countries would envy.[22] This has been in no part thanks to the humble conscript armed with his DVK-1K dispenser and hose.

20 http://redstar.ru/polsotni-dnej-effektivnoj-raboty/
21 http://redstar.ru/zadacha-po-borbe-s-koronavirusom-v-serbii-vypolnena-na-otlichno/
22 https://rosstat.gov.ru/folder/313/document/112098

Pictured is a soldier of the Russian NBC troops decontaminating a vehicle with a ARS-14KM decontamination and degassing station.
Photo: Vitaly V. Kuzmin, http://www.vitalykuzmin.net, Creative Commons Attribution-Share Alike 4.0 International license, Wikimedia

Implications of Terrorist Use of the Cyber Domain

Captain Tom Fletcher MBA MA BSc explores the use of the cyber domain by Islamic State of Iraq and the Levant (Daesh), the first terrorist group to achieve significant political outcomes through cyber operations, and what this means for the British Army.

A soldier from the Royal Signals takes part in the Army Cyber Spartan competition at Blandford Camp, Dorset. Exercise ARMY CYBER SPARTAN presented teams with complex real-world cyber challenges that escalated over a five-day period. 24 teams of cyber specialists and novices took part in Exercise Cyber Spartan which was designed to help grow and develop cyber defence capabilities. ***Photo: Corporal Cameron Whatmore RLC***

In 2016 NATO declared that the cyber 'domain' was now equal with the domains of air, land, and sea.[1] While the concept of the cyber domain remains undefined by NATO and is subject to debate, the US Department for Defence has usefully defined 'cyberspace' as the: 'global sphere of knowledge, influence, and activity, within the information environment consisting of the interdependent network of information technology infrastructures and resident data, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers'.[2]

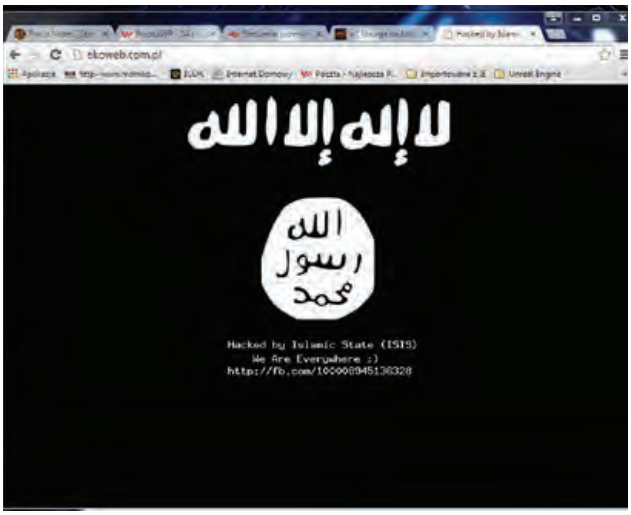
It is therefore arguable that any activity by a military organisation utilising 'cyberspace' as a medium could be considered to be conducting operations within the cyber domain. This includes actions intended to cause effect in the real world, such as online propaganda. While some terrorist groups were early adopters of cyberspace tools, such as blogs, bulletin forums, video streaming and Facebook, it was not until 2013 that a terrorist group [Daesh] was able to achieve significant political outcomes through operations in the cyber domain.[3] [4] The study of Daesh's success will not only help us predict how terrorist groups in the future will seek to utilise the cyber domain, but will help us develop our own cyber domain warfighting doctrines.

In 2019 Daesh's territorial control disintegrated, and its strategy transitioned from the maintenance of a pseudo-state to waging a global insurgency on several fronts.[5] [6] [7] However, Daesh is far from defeated; its territorial remnants have organised small cells in rural areas of Iraq and Syria, and it is estimated to have retained $400m in cash and several revenue streams from criminal and legitimate businesses.[8]

However, Daesh remains globally relevant because of its cyber domain capabilities. These capabilities have prevented the group being fixed in Iraq/Syria and have allowed it to create decentralised networks in numerous countries including Libya, Egypt, Nigeria, Afghanistan, Pakistan, and the Philippines.[9] [10] In 2020 these networks undertook various operations in the cyber domain which inspired and enabled terrorist attacks in the UK[11] and overseas.[12]

Daesh, like most terrorist groups, is rational and strategic. Terrorists utilise terror to signal to an enemy that they will impose a cost until the enemy changes policy, and to provoke their targets into disproportionate responses.[13] As Daesh is a rational and strategic actor it is useful to analyse its behaviour in the cyber domain through the Operational Framework model, consisting of actions decisive to the achievement of its goals, shaping actions to create or preserve conditions for decisive actions, and sustaining actions to enable the organisation to survive, move and fight.[14]

1 *NATO (2021) Cyber Defence, https://www.nato.int/cps/en/natohq/topics_78170.htm.*
2 *Crowther, Dr Glen Alexander, The Cyber Domain, The Cyber Defense Review, Vol. 2, No. 3 (FALL 2017), pp. 63-78.*
3 *Conway, Maura, Scrivens, Ryan and Macnair, Logan Right-Wing Extremists' Persistent Online Presence: History and Contemporary Trends, International Centre for Counter-Terrorism (2019).*
4 *Prucha, Nico, IS and the Jihadist Information Highway – Projecting Influence and Religious Identity via Telegram, Perspectives on Terrorism , December 2016, Vol. 10, No. 6 (December 2016), pp. 48-58.*
5 *Cafarella, Jennifer, Wallace, Brandon and Zhou, Jason, Report Title: ISIS'S SECOND COMEBACK, Institute for the Study of War (2019).*
6 *Soliev,Nodirbek, CENTRAL ASIA: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Counter Terrorist Trends and Analyses , Vol. 12, No. 1 (January 2020), pp. 70-76.*
7 *Bunzel, Cole, From Paper State to Caliphate: The Ideology of the Islamic State, The Brookings Project on U.S. Relations with the Islamic World (2015)*
8 *Azman, Nur Aziemah, Islamic State's Narratives of Resilience and Endurance, Counter Terrorist Trends and Analyses , Vol. 12, No. 1 (January 2020), pp. 82-86.*
9 *Pektas, Serafettin and Leman, Johan, Cyber Jihadism: Today and Tomorrow, Leuven University Press (2019).*
10 *Yasin, Nur Azlin Mohd and Azman, Nur Aziemah binte, Islamic State's Online Social Movement Lifecycle, Counter Terrorist Trends and Analyses , Vol. 11, No. 1, Annual Threat Assessment (January 2019), pp. 80-85.*
11 *Independent, Streatham terror attack: ISIS claims responsibility for stabbing by supporter Sudesh Amman, (3 February 2020), https://www.independent.co.uk/news/uk/crime/streatham-terror-attack-isis-london-sudesh-amman-latest-a9314481.html*
12 *The Times, Maldives stabbings raise fears of Islamic State-inspired terror campaign against tourists, (6 February 2020), https://www.thetimes.co.uk/article/maldives-stabbings-raise-fears-of-islamic-state-inspired-terror-campaign-against-tourists-v2tb9v2hf*
13 *Rosenblatt, Nate, Winter, Charlie and Basra, Rajan, Islamic State Propaganda and Attacks: How Are They Connected? Perspectives on Terrorism , October 2019, Vol. 13, No. 5 (October 2019), pp. 39- 60*
14 *Land Warfare Development Centre, Land Operations: Army Doctrine Publication AC 71940.*



A screenshot under the domain Polish ekoweb.com is a page that reads: Hacked by Islamic state (ISIS). ***Photo: Alians PL, Creative Commons CC0 1.0 Universal Public Domain Dedication, Wikimedia, Released***

DECISIVE ACTIONS

In comparison to physical world operations, offensive cyberspace operations tend to be low cost, low risk and high impact. For groups like Daesh these operations are accessible and rewarding.[15] The offensive skillset of Daesh cyber actors remains insignificant when compared to the capabilities of nation states; there are no known instances of Daesh penetrating highly classified data systems[16] and their operatives lack the coding skills to develop encryption software and malware.[17] However, Daesh supporters have successfully hacked government social media accounts, government websites, and business servers, and utilised low sophistication methods to use open-source data in creative ways to attack their adversaries.

In 2015 a Malaysia-based Daesh hacker named Ardit Ferizi hacked into the servers of a retail company and stole a database containing personally identifiable information of US soldiers. He forwarded these details to a British Daesh member in Syria named Junaid Hussain who published the data as a 'hit list'.[18] Similar Daesh operations have harvested biographical data from social media and public databases and published other 'hit lists'. These cyber-attacks have forced governments to notify listed individuals, exhausting counter-terrorism resources, and impacted the wellbeing of citizens.[19] Junaid Hussain was also responsible for the hack of the US Central Command Twitter account in 2015, elevating the perceived capability of the Daesh organisation and disrupting US military information operations.[20]

Eventually, Ardit Ferizi was captured by US authorities and Junaid Hussain was killed by a drone strike in Syria.[21] Hussain was the first hacker considered enough of a threat to be killed by a drone strike.[22] In April 2016, a collection of Daesh hacker groups merged to form the United Cyber Caliphate, representing an aspiration to increase cyber-attack capability.[23] While Daesh is still very far from possessing a sophisticated cyber offensive capability, it is making progress through experimentation and the purchase of software from black hat (criminal) hackers. For example, a Daesh supporter on a password-protected and vetted jihadist messaging board released multiple proprietary software packages including an encrypted communication tool and distributed denial of service attack tool, which he named 'Caliphate Canon'. The trend is therefore towards increasing cyberattack sophistication.[24]

SHAPING ACTIONS

Daesh social media prowess has been an enormous success in shaping decisive actions in the real world. Online propaganda contributed to over 30,000 foreign fighters emigrating to its pseudo-state and has been critical to the recruitment and enablement of attackers across the world. Daesh members have been responsible for numerous deadly attacks in the West, including a 2015 attack in Paris which resulted in 130 fatalities, and the Manchester bombing in May 2017 which killed 22 people. Daesh-inspired attacks have also occurred in

15 *Missiroli, Antonio, From hybrid warfare to 'cybrid' campaigns: the new normal?, NATO Defense College (2019).*
16 *Pektas, Serafettin and Leman, Johan, (n 7).*
17 *Teiss, ISIS hackers handicapped by poor coding skills and hopeless encryption tools, (27 September 2017), https://www.teiss.co.uk/ISIS-hackers-poor-coding-skills.*
18 *ICT Cyber Desk, Case Study - 'Killing Lists' – The Evolution of Cyber Terrorism?, Cyber-Terrorism Activities Report No. 16, International Institute for Counter-Terrorism (ICT) (2016).*
19 *See Pektas and Leman, (n 9).*
20 *ICT Cyber Desk, Report Title: Cyber-Terrorism Activities Report No. 18, International Institute for Counter-Terrorism (ICT) (2016).*
21 *Politico, Inside the hunt for the world's most dangerous terrorist (19 April 2019), https://www.politico.eu/article/junaid-hussain-ISIS-islamic-state-hacker-inside-the-hunt-for-the-worlds-most-dangerous-terrorist/*
22 *CTC Sentinel, The British Hacker Who Became the Islamic State's Chief Terror Cybercoach: A Profile of Junaid Hussain, April 2018, vol 11, issue 4.*
23 *ICT Cyber Desk, Trends in the Offensive Arena, Analysis of Cyber Trends 2016, International Institute for Counter-Terrorism (ICT) (2016).*
24 *See Pektas and Leman (n 9).*

The third Atlantic Future Forum was hosted on board aircraft carrier HMS Queen Elizabeth over two days (20-21 October 2020) in HMNB Portsmouth, UK. Leaders from the UK and US military, technology and industry came together to discuss the future of the Transatlantic Alliance and the next generation of defence. From defeating Covid-19 through to investing in our ability to tackle cyber threats, the delegates discussed how to face down an uncertain future with confidence. ***Photo: LPhot Belinda Alker, Crown Copyright***

many other places, including the United States, Canada, Australia, Tunisia, Turkey, and Egypt.[25] [26]

While 'lone-wolf' attackers are often perceived to be individuals acting alone, several studies have highlighted the connection between attackers and larger networks.[27] For example, an analysis of 38 Daesh-linked plots and attacks in Europe between 2014 and October 2016 found that 50 percent involved online instruction from members of Daesh' networks. In one case, Daesh member Rachid Kassim is thought to have orchestrated over half of the 17 plots foiled by French authorities in 2016. Most of the planning was done through the encrypted app Telegram.[28]

Inspiration and training also play an important role in shaping and enabling lone wolf attacks. Daesh propaganda encourages individuals to conduct 'do it yourself jihad', providing ideas including easy to obtain weapons and methods for individuals to perpetrate terror attacks. For example, prior to the 2016 Olympics Daesh-related Telegram channels using the 'RioLW' hashtag (LW refers to lone wolves) encouraged individuals to adopt Munich Olympics-style attacks targeting Western athletes; these threats were taken so seriously by Brazilian authorities that they mobilised an extra 200,000 military personnel to secure the games.[29]

25 *Bodine-Baron, Elizabeth, Helmus, Todd C., Magnuson, Madeline, Winkelman, Zev, Examining ISIS Support and Opposition Networks on Twitter, RAND Corporation, 2016.*

26 *New York Times, Terror Alert in Britain Is Raised to Maximum as ISIS Claims Manchester Attack, 23 May 2017 https://www.nytimes.com/2017/05/23/world/europe/manchester-arena-attack-ariana-grande.html.*

27 *Miller, Gregory D., The New 'Domestic' Terrorism, Perspectives on Terrorism, June 2019, Vol. 13, No. 3 (June 2019), pp. 63-75.*

28 *Shehabat, Ahmad, Mitew, Teodor and Alzoubi, Yahia, Encrypted Jihad: Investigating the Role of Telegram App in Lone Wolf Attacks in the West, Journal of Strategic Security, Vol. 10, No. 3 (Fall 2017), pp. 27-53.*

29 *Ibid, (n 28).*

Daesh has also pioneered information manoeuvre warfare through the co-ordinated and mass re-opening of suspended social media accounts, enabling Daesh to achieve pulse-like broadcasting of messages. While public-facing platforms such as Twitter quickly identify and delete accounts, encrypted platforms such as Telegram allow supporters to co-ordinate account re-opening and messaging on public platforms. These operations can enhance the political signalling of real-world attacks. In the aftermath of an attack, Daesh supporters flood encrypted messenger channels with propaganda, which is then distributed on public media platforms by hijacking popular hashtags such as 'Pray for Nice'.[30] [31] [32]

The massive Covid-19 related expansion of online activity may accelerate the trend towards online radicalisation and recruitment, with vulnerable individuals becoming more isolated and embroiled in extremist ideologies.[33] While Western governments have sought to turn potential extremists away from Daesh ideology through counter-narrative campaigns, some of these efforts have been criticized by researchers. These critics note that Western governments have usually based their information operations on logical arguments aimed at the rational mind, however these approaches have usually fallen flat when faced with Daesh' creative and emotionally evocative use of video and superior social media feedback mechanisms.[34] However, the near total destruction of the physical caliphate places a cap on what the group can claim to represent through any propaganda. Additionally, Covid-19 global travel restrictions will prevent most potential recruits from joining the group in person, and therefore reduce the threat from Daesh turning it's shaping operations into real-world decisive actions.[35]

SUSTAINING ACTIONS

Daesh has a critical need to stay online to keep its followers engaged, while avoiding interception and interference from Western governments. The group has therefore embraced encrypted communications platforms to disseminate its messages. Daesh was particularly drawn to the Telegram application for end-to-end encrypted communication. The app allows easy consumption of multimedia, operates on most smart devices, and facilitates group and individual chat sessions. Online search engines do not index Telegram's channels, making it impossible to scrutinise its content without authorised access. Though many Telegram channels were regularly suspended, it required a concerted effort by Europol in 2019 to clear most of the group from the platform.[36] [37] However, having gained expertise on Telegram, Daesh supporters were quickly able to move their activities onto various smaller encrypted apps.[38] Some of these alternatives, like RocketChat, are decentralised and therefore offers the group more secrecy and resilience to de-platforming.[39]

Two online methods for Daesh funding have emerged in recent years - digital currency and crowdfunding.[40] Since 2012 Daesh supporters have promoted the use of Bitcoin virtual currency. It is anonymous and untraceable, it is not subject to legislation, and it has global distribution.[41] Online crowdfunding often involves the creation of fake Islamic charities with a prominent social media presence that directs donors towards crowdfunding sites which allow anonymous donations for both donor and recipient.[42] While Daesh possesses considerable legacy financial resources and can still rely on more traditional means of funding-cash, prepaid cards, unlicensed money transmitters

30 *Ibid, (n 28).*
31 *Independent, Nice attacks: ISIS supporters flood Twitter hashtags used by people mourning massacre , 15 July 2016, https://www.independent.co.uk/news/world/europe/nice-attacks-ISIS-lorry-attack-twitter-terrorism-pray-for-nice-france-massacre-a7138136.html*
32 *See Pektas and Leman (n 9).*
33 *Pantucci, Raffaello, Key Questions for Counter-Terrorism Post-COVID-19, Counter Terrorist Trends and Analyses, Vol. 12, No. 3 (April 2020), pp. 1-6.*
34 *Speckhard, Anne, Shajkovci, Ardian and Ahmed, Mohamed, Intervening in and Preventing Somali-American Radicalization with Counter Narratives, Journal of Strategic Security , Vol. 11, No. 4 (2018), pp. 32-71.*
35 *Tova C. Norlen, The Impact of COVID-19 on Salafi-Jihadi Terrorism, Connections , Spring 2020, Vol. 19, No. 2, The Security Impacts of the COVID-19 Pandemic (Spring 2020), pp. 11-24.*
36 *See Pektas and Leman (n 9).*
37 *BBC News (2019) https://www.bbc.com/news/world-middle-east-50545816, 25 November 2019, https://www.bbc.com/news/world-middle-east-50545816.*
38 *Nur Aziemah Azman (2021) THE ISLAMIC STATE (IS): MAINTAINING RESILIENCE IN A POST-CALIPHATE, PANDEMIC ENVIRONMENT, Counter Terrorist Trends and Analyses , January 2021, Vol. 13, No. 1, ANNUAL THREAT ASSESSMENT (January 2021), pp. 106-111.*
39 *Baris Kirdemir (2020) EVOLUTION OF VIOLENT EXTREMIST AND TERRORIST THREATS ON SOCIAL WEB, Centre for Economics and Foreign Policy Studies, URL: https://www.jstor.org/stable/resrep26085.*
40 *International Institute for Counter-Terrorism (ICT), Operational Uses, International Institute for Counter-Terrorism (ICT) (2018).*
41 *Azani, Eitan and Liv, Nadine, Jihadists' Use of Virtual Currency, International Institute for Counter-Terrorism (ICT) (2018).*
42 *International Institute for Counter-Terrorism (ICT) (n 40).*

and remittance networks (hawalas), the increasing use of cryptocurrency and online crowdfunding by Daesh represent a shift towards online financing methods.[43] [44]

Daesh has also exploited the Dark Web for procurement of weapons. The Dark Web represents sections of the internet that are intentionally hidden and require specific software to navigate. The Dark Web is designed to provide anonymity to its users through encryption, and products can be bought and sold anonymously with cryptocurrency. In July 2016, a Daesh attacker killed several people in Germany using a gun purchased on the Dark Web.[45] Daesh has encouraged supporters to procure weapons through this method, publishing step-by-step guides on their Telegram channels.[46] Whilst the Dark Web removes the geographical barriers in purchasing weapons, the weapons must still be physically shipped, which places some constraint on their proliferation.[47] However, the advances in 3D printing technology and the proliferation of weapon and drone printing schematics through the Dark Web represents a more severe but not yet realised threat.[48]

IMPLICATIONS

It is evident that terrorist organisations like Daesh can conduct successful operations in the cyber domain. Like the hybrid threats facing the British Army on land, threats in the cyber domain cannot always be countered in the same way conventional forces can through over-matching an adversary's capabilities. This is because some actions, such as online propaganda, are much less effective when directed towards authoritarian regimes or hardened ideological groups than they are against open democratic societies. Likewise, Western armed forces are subjected to political and legal restraints that do not limit our adversaries' freedom of action. This challenge is recognised in the recent Integrated Operating Concept 2025, which describes how many of our adversaries have studied the Western way of war and modernised their capabilities accordingly. These new approaches, collectively described as 'political warfare', are designed to undermine our societies' cohesion and break our willpower, without necessarily triggering a full warfighting response.

Accepting that terrorist groups like Daesh will chose to operate within the cyber domain for the foreseeable future and we will not always be able to overmatch their capabilities, it is incumbent on us to develop our own asymmetric capabilities. Lessons can be identified through the study of others' experiences in fighting similar campaigns. Between 2015-17 the hacktivist group Anonymous waged an online war against Daesh. Anonymous followed an asymmetric approach to the campaign. The group had virtually no meaningful budget compared to an estimated $2 billion earned by Daesh in 2014. Instead, it relied on a decentralised crowdsourcing of volunteers who provided hacking capabilities matching those fielded by Daesh. These networks focused on different elements of Daesh's online operations, with their roles converging and diverging at random. Anonymous deployed unconventional tactics from online mockery to website denial of service attacks; the group demonstrated that offensive cyber skills are simple and inexpensive to acquire, and some of the most effective operators were self-taught. The cyberwar between Anonymous and Daesh was low intensity; it knew it could not destroy Daesh through cyberspace, and instead aimed to wear down its willpower by restricting its online operations and eroding its capabilities. While it is not clear how far this affected Daesh's will or motivation, it did succeed in taking down 149 websites, over 100,000 Twitter accounts and 5,900 videos and exposing the real identities of several United Cyber Caliphate hackers.

The Anonymous war against Daesh indicates that our capabilities should be asymmetric, and those capabilities should be built and deployed with an aim to degrade enemy capabilities and willpower over time. This is not to argue that our forces should totally abandon kinetic effects or other Western advantages to tackle threats in the cyber domain. The drone strikes and arrests of Daesh hackers in 2015 deprived the group of a sophisticated hacking capability, and online propaganda encouraging migration to join Daesh in Syria/Iraq cannot withstand the crushing reality of its territorial destruction. Likewise, Western governments are much better able to capitalise on international alliances and public/private sector relationships

43 *See Pektas and Leman (n 9).*

44 *Goldman, Zachary K. et al, TERRORIST USE OF VIRTUAL CURRENCIES, Center for a New American Security (2017).*

45 *Jones, Seth G., et al, The Evolution of the Salafi-Jihadist Threat, Center for Strategic and International Studies (CSIS) (2018).*

46 *Fox News, Pro-ISIS channel issues guide to buying weapons on dark web, using them against Westerners, 17 April 2019, https://www.foxnews.com/world/pro-ISIS-channel-issues-guide-to-buying-weapons-on-dark-web-using-them-against-westerners.*

47 *DIRECTORATE GENERAL FOR INTERNAL POLICIES, Virtual currencies and terrorist financing: assessing the risks and evaluating responses, EU POLICY DEPARTMENT FOR CITIZENS' RIGHTS AND CONSTITUTIONAL AFFAIRS, (2018), https://www.europarl.europa.eu/RegData/etudes/STUD/2018/604970/IPOL_STU(2018)604970_EN.pdf.*

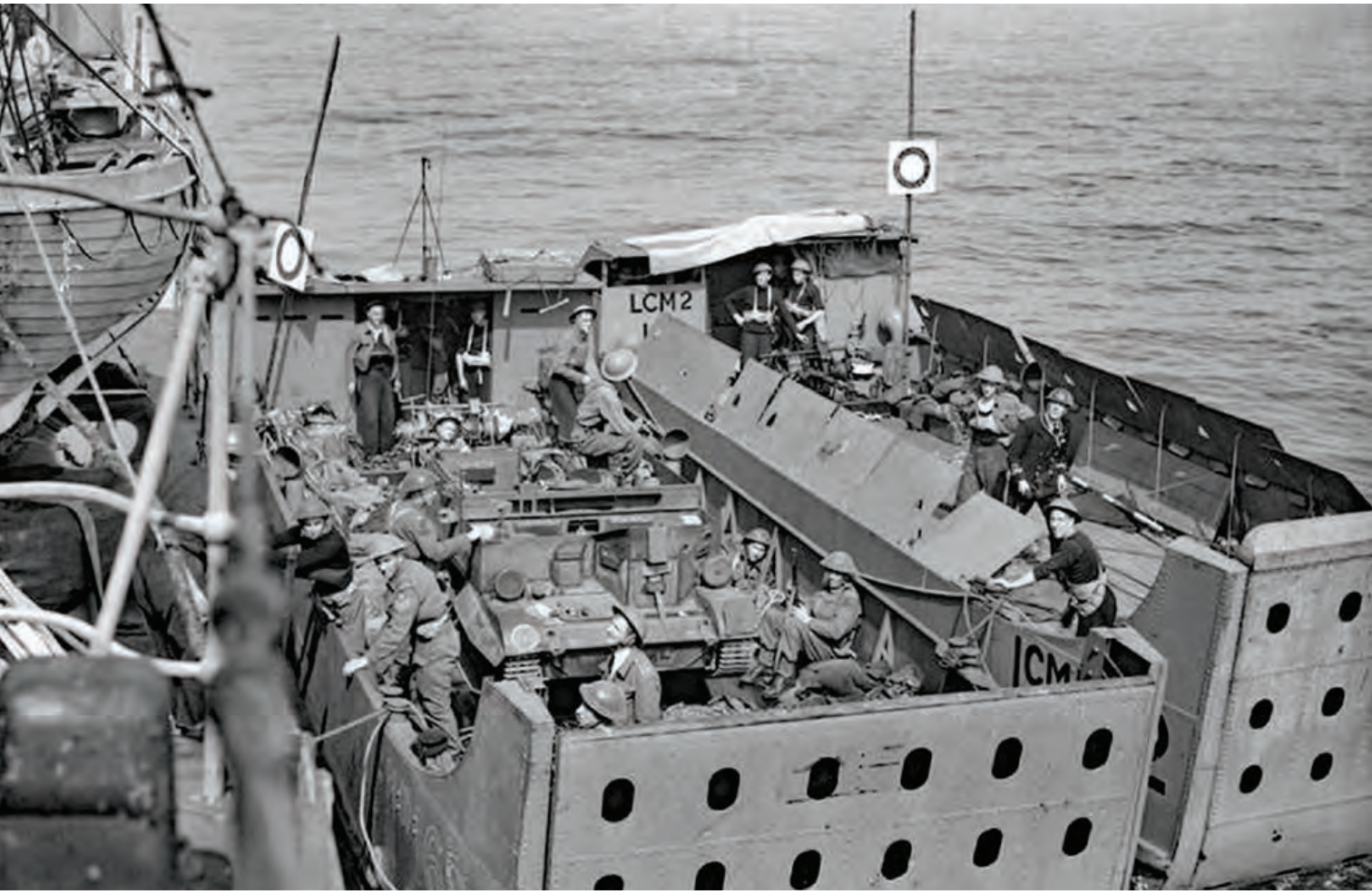
48 *Jones, Seth G., et al (n 45).*

A soldier takes part in Exercise Army Cyber Spartan 4 at Blandford Camp Dorset. The Army hosted the UK's biggest cyber defence exercise this week when 24 teams of cyber specialists and novices took part in Exercise Cyber Spartan designed to help develop cyber defensive capabilities.
Photo: Corporal Cameron Whatmore RLC, Crown Copyright

than groups like Daesh. These relationships can allow governments to wield disproportionate power in the cyber domain, for example the clearing of Daesh propaganda networks from Telegram through cooperation between Europol and Telegram. It is therefore evident that asymmetric cyber capabilities should be incorporated into our developing warfare doctrines alongside our powerful kinetic capabilities and alliances.

Two Armies in Transition: Lessons from Germany's Response to the Dieppe Raid[1]

Lecturer James Shelley, RMAS, looks at how the Germans responded to the Allied raid on Dieppe, 19 August 1942 and provides some lessons for the British Army of the 21st Century.



Two of the landing craft, one containing a Bren-carrier, alongside a destroyer after returning from the beaches during the Combined Operations daylight raid on Dieppe. The landing craft mechanised are (left to right) LCM (1) 169 and LCM (1) 2. ***Copyright: © IWM (A 11228)***

1 *This article's historical case study is a development of some of the themes covered in a lecture by the author to staff and students at the Joint Services Command and Staff College, Shrivenham in September 2019. The talk is available online at https://media.kcl.ac.uk/media/DieppeA+a+German+Learning+Experience+-+James+Shelley/0_5xy8x0xo [accessed 6 August 2020]. The first section looks at research methods and sources, but the rest focusses on the raid itself.*

The British Army of 2021 is currently undergoing a period of radical transition with an eye on future challenges. The organisational changes of Army 2020 Refine within the broader Joint Force 2025 strategy underline the significant evolution of British land power.[2] It is all too comfortable to think that the issues we face now are new and unique, but if we keep our other eye on military history, we discover quite the opposite. This article compares the circumstances and obstacles faced by two radically different land forces - today's British Army and the German Army of 1942 in the aftermath of the Dieppe raid. This comparison is not a mere academic exercise. The German simultaneous failure and success in responding to Dieppe offers both a warning and message from history, if only we took the time to look for it.

Launched under the codename JUBILEE, the Dieppe operation involved a joint land-sea-air force performing a divisional-scale landing against a contested coastline. This style of undertaking, for which the Canadian 2nd Division with supporting British Commandos was chosen, was a first in military history. But what followed was a catastrophe that has become part of Canadian national memory. The infantry remained on land for fewer than nine hours; of 5000 officers and men, 3367 Canadians became casualties. More Canadian prisoners of war were taken on 19 August 1942 than during the entire 1944-45 France and Germany campaign.[3] However, it is from the under-studied German side of the story from which this article draws its lessons.

ARMIES AND CHANGE: ASSESSING 1942 AND 2020

The principal new risks that the British Army will be presented with in the next decade or so are on the whole known. For instance, capabilities offered by man-portable drones promise a revolution in land warfare. How they will actually be employed in years to come, however, is a relative unknown. We have only just begun to see for the first time the widespread use of small and cheap ISR

Pictured is an aerial photograph of Dieppe during the landings showing a substantial fire burning on the front. ***This is photograph C 3078 from the collections of the Imperial War Museums (collection no. 4700-11), Released, Wikimedia***

(Intelligence, Surveillance and Reconnaissance) drones in Syria and the East of Ukraine.[4] This is surely only the 'tip of the iceberg' in the use of MUAS (Mini Unmanned Air Systems) in this manner. In other words, the threat's nature is known, but its exact character is not. If the British Army is ultimately to be operating in an environment that includes such dangers, it would be useful to keep Dieppe in mind. The Germans' first experience of combatting tanks delivered to the coastline by landing craft is a useful case study.

Operation JUBILEE revealed to the Germans their enemies' capability to land armour during an amphibious landing for the first time. Though German commanders prior to August 1942 knew their enemies probably possessed this capability, the Dieppe raid confirmed their suspicions and provoked a rapid response. The Anglo-Canadian raiding force included 58 Calgary Regiment Churchill tanks but only 27 were actually landed and few of these ever got past the beach defences.[5] Because many of the Churchills' tracks got stuck on the fine shingle on Dieppe's beaches, Gerd von Rundstedt - Supreme Commander in the West - signalled after the battle that fine debris such as small stones should be deliberately placed on vulnerable beaches to enhance

2 *Hansard, Strategic Defence and Security Review: Army, House of Commons Written Statement, HCWS367 (15 December 2016, vol 618 cols 50WS-52WS); Ministry of Defence, SDSR 2015: Defence Key Facts, 2015, pp. 3-6.*

3 *Figures drawn from C. P. Stacey, Official History of the Canadian Army in the Second World War Volume I: Six Years of War (Ottawa: Queen's Printer, 1955), pp. 387-88.*

4 *Driebergen, Michiel, 'Game of Drones: The Warriors Using High-Street UAVs to Fight the War in Ukraine', WIRED, 26 February 2017, https://www.wired.co.uk/article/high-street-uavs-are-being-used-to-fight-the-war-in-ukraine [accessed 4 October 2020]; John V. Parachini and Peter A. Wilson, 'Drone-Era Warfare Shows the Operational Limits of Air Defense Systems', The RAND Blog, 2 July 2020, https://www.rand.org/blog/2020/07/drone-era-warfare-shows-the-operational-limits-of-air.html [accessed 4 October 2020].*

5 *Stacey, Official History, pp. 379-80.*

A Warrior infantry fighting vehicle of 5 RIFLES, storms over a river crossing on Salisbury Plain during Ex TALLINN DAWN. The exercise tested troops ahead of their deployment to Estonia as part of NATO's enhanced forward presence in the region. This image was the runner up in the Amateur Soldiering Category Army Film and Photographic Competition 2020. ***Photo: Lance Sergeant Steve Duncombe, Crown Copyright***

this effect and make tanks immobile. German tests using their own armoured vehicles confirmed the benefits of this measure.[6] The German commanders tasked with defending the coasts of occupied France readily recognised that armour could be incredibly beneficial to an amphibious landing if employed properly. They sensibly concluded that the Allies would surely make improvements for whenever an operation in JUBILEE's mould was next attempted. Commonplace through their reports are requests for increased anti-tank capability not just with anti-tank guns but also man-portable weapons.[7] From August 1942 onwards, the threat of armour to a coastline was a constant in German minds, even if tanks had failed at Dieppe.

The relevance to today's world of this facet of the Dieppe raid requires some explanation. In both cases - the German Army in 1942 and the British Army in 2021 - a threat was known but not yet directly experienced. In the former case this was the exploitation of amphibious armour during a divisional-scale joint-services landing against a contested coast. In the latter, the threat is mass use of cheap UAVs in an ISR role. The Germans were able to respond, but immense material constraints on their western land forces from 1942-44 greatly hampered their exploitation of Dieppe's lessons before OVERLORD. The British Army today must go one further. Not only must it identify the danger, but it must also implement a solution with appropriate resources.

Overseas, the United States has made excellent strides in 'dronespace' and serves as a pertinent example. The US Department of Defense recently approved a joint-services office charged with managing all counter-UAV project development.[8] With Russia in particular pinning hopes on AI-enhanced drones, the incentive for

6 *Bundesarchiv (Federal Archives of Germany, hereafter BArch), RL 20/167, Oberbefehlshaber West, 'Grundlegende Bemerkungen des Oberbefehlshabers West Nr. 11: Erbeutete Panzer bei Dieppe', 12 September 1942 No. 337/42, p. 4. All translations from German source material have been made by the author.*

7 *See for example: 'Additions made by the LXXXIV Corps to the Combat Report and the Experiences Gained by the LXXXI Corps during the British Attack on Dieppe', 2 September 1942 No. 1841/42, as translated in Appendix B to C. P. Stacey, Canadian Military Headquarters Report 116, 10 May 1944, p. 34.*

8 *Hoehn, John R. and Sayler, Kelley M., 'Department of Defense Counter-Unmanned Aircraft Systems', Congressional Research Service Report IF11426, 29 June 2020, p. 2.*

Challenger 2 Main Battle tanks and Warriors from Badger Squadron, The Royal Tank Regiment emerge from the treeline at Sennelager Training Area, Germany. The Tidworth-based Regiment is conducted a series of exercises to fine-tune their skills as a Battlegroup before deploying to Estonia as part of NATO's Enhanced Forward Protection force, known as Operation CABRIT. ***Photo: Corporal Julian Packer, Crown Copyright***

action in this area is clear.[9] Moreover, the US Marine Corps is trialling 'assistant squad leaders', who would be responsible for operating all drones in a unit and managing their information output.[10] In Britain, the retention of 32nd Regiment Royal Artillery's MUAS capabilities is reassuring, after having been threatened with disbandment under 2015's Strategic Defence and Security Review.[11] The importance of both employing friendly and then countering hostile MUAS cannot be overstated. Failure here would risk seeing British land forces uncompetitive, much like the German Army ultimately was on 'D-Day'.

THE IMPACT OF MATERIEL ON MILITARY ADAPTATION

The Army is well aware of the current necessity to change, just as the risks it faces also morph with time. However, we cannot expect British land forces to readily adapt if they do not enjoy the means to do so. This is our second lesson from history.

The Germans defending France's coastline in 1942 also had a clear idea of the threat they faced, and the adaptions needed to guard against it. Only a couple of days after the Anglo-Canadian force had been beaten back, von Rundstedt ordered a 'Winter Construction Programme'. As per Hitler's wishes, this monumental plan called for a raft of 15,000 coastal fortifications all along the Atlantic coast of occupied Europe.[12] Not only would these defences make an initial Allied landing more challenging, but they would also provide hard 'shoulders' to guard the flanks of defensive operations. But the reality was, fortunately for the Allies, much different.

Fighting on so many different fronts in the Second World War, on land, at sea and in the air, the industrial and financial resources to implement von Rundstedt's grand concept for coastal defence simply did not exist. Fewer than half of his planned fortifications were built by the end of winter.[13] Nor did matters improve before Operation

9 *Thornton, Rod and Miron, Marina, '"Towards the 'Third Revolution in Military Affairs': The Russian Military's Use of AI-Enabled Cyber Warfare', The RUSI Journal, 165:3 (2020), 12-21 (pp. 13-14).*

10 *Cancian, Mark F., 'U.S. Military Forces in FY 2020: Marine Corps', Center for Strategic and International Studies Report, 10 October 2019, p. 6.*

11 *Coupe, Georgina, 'Flying High: Gunners Soar to New Heights with Cutting-Edge Aerial Assets', Soldier, October 2020, pp. 29-30, 32.*

12 *'O.B. West Basic Order No. 14: Development of the Channel and Atlantic Coasts', 25 August 1942 No. 2519/42, as translated in Appendix B to A. G. Steiger, Army Headquarters Report 036, 31 March 1950, p. 1.*

13 *Boog, Horst, and others, Germany and the Second World War Volume 7: The Strategic Air War in Europe and the War in the West and East Asia 1943-1944/5, trans. by Derry Cook-Radmore and others (Oxford: Oxford University Press, 2006), p. 471.*

OVERLORD later on. At one point in 1944, supplies became so critical that the German Army resorted to pilfering cement destined for other units.[14] This was characteristic of consistent and chronic German failures to properly equip and supply its defence in the West. When Operation OVERLORD eventually came in June 1944, von Rundstedt's command was simply overwhelmed by Allied industrial might.

The German experience here demonstrates the imperative to maintain a strong resource and finance base while implementing any medium or long-term strategy. The British Army is currently facing the need to upgrade several of its combat platforms. At 2019's Land Warfare Conference, then Defence Secretary Penny Mordaunt focussed on two examples:

> *Challenger 2 has been in service without a major upgrade since 1998. During this time the United States, Germany and Denmark have completed two major upgrades, whilst Russia has fielded five new variants with a sixth pending. Warrior is even more obsolete, and is twenty years older than those operated by our key allies. Since Warrior's introduction in 1988 the United States and Germany have conducted four major upgrades and Russia has invested in three new variants.*[15]

With these concerns in mind, the current and planned life extension programmes for both these platforms is a positive step. However, the investment challenge is far broader. At the end of September 2020, CGS laid out a bold and sweeping vision for the Army, which could well have been considered science fiction just a few decades ago. Armoured Fighting Vehicles as 'motherships commanding teams of robots' and artillery 'firing on targets identified by swarms of drones' - this was how he imagined the British Army conducting operations in future.[16] In what manner these radical and progressive

Pictured are Light Dragoon Guards deployed on UN operation in Mali forming a small convoy of Jackal armoured vehicles. This was a demonstration set up for the visit of Min AF and the UK Ambassador to Mali. Established in 2013, the mission was asked to support the transitional authorities of Mali in the stabilisation of the country. Op Newcombe is the UK commitment to that mission. ***Photo: Flight Lieutenant Andy Donovan, Crown Copyright***

14 *'Critical Thoughts on the Defense of the Invasion', Foreign Military Study MS # A-895, 21 October 1945, p. 3.*

15 *Mourdant, Penny, Speech at the Land Warfare Conference 2019, 4 June 2019, https://www.gov.uk/government/speeches/defence-secretary-keynote-speech-at-the-land-warfare-conference-2019 [accessed 3 October 2020].*

16 *'Asymmetric Army - UK CGS Visits 77th Brigade', Joint Forces, 30 September 2020, https://www.joint-forces.com/uk-news/36203-asymmetric-army-uk-cgs-visits-77th-brigade [accessed 6 October 2020]*

Pictured is a German officer and soldiers with injured Allied soldiers and a destroyed Churchill Tank on the beaches of Dieppe.
Photo: Tomkinsr, Creative Commons Attribution-Share Alike 4.0 International license, Wikimedia.

ambitions are realised within budget constraints will be just another question for the Army's upper echelons.

But what does our Second World War case study mean for the British Army and its capabilities nearly 80 years later? At its core, it shows that all current debate over the British Army's modernisation must be grounded in financial reality.[17] To use an academic buzz-word, recapitalisation (in essence 're-investment') in the right places is key here. Von Rundstedt strove towards a path of massive construction he could not possibly afford neither in concrete nor cash. Likewise, in modern times, we must not envision solutions that cannot be properly implemented.

RESPECTING THE ENEMY'S VOTE AFTER THE BATTLE

While the British Army is in a state of transition, Britain's strategic adversaries are not standing still either. All armed forces have the power to adapt. This is especially true for those combat forces which are actively engaged in operations - necessity is, after all, the mother of invention. The 'enemy's vote' in one's own plans at tactical and operational levels is a founding tenet of all military planning, but we must also recognise that this is true off the battlefield as well as on it. As we learn and develop, so does everybody else.

In Dieppe's historical example, we see an Allied ignorance of German agency. Almost as soon as the raiding force's survivors had retreated to Britain, JUBILEE began to be described merely as a 'dress rehearsal'. Canadian radio journalist Robert Bowman put on a brave face for his listeners, assuring them: 'Our losses haven't been sustained without reason. We've learned a most valuable lesson which may enable us to free the continent of Europe and end the war'.[18] At the Chiefs of Staff Committee, Vice-Admiral Lord Mountbatten - who as Chief of Combined Operations was ultimately responsible for JUBILEE - was ever-persistent that the 'lessons learned' represented the primary benefit from this uniquely Canadian tragedy.[19] Likewise, Prime Minister Churchill reported to Parliament three weeks later that 'we had to get all the information necessary before launching operations on a much larger scale'.[20] Though the Allies did subsequently develop new

17 *I would suggest two pieces of reading here: Jack Watling, 'The Future of Fires: Maximising the UK's Tactical and Operational Firepower', RUSI Occasional Paper, November 2019, especially Chapter 4, as well as a much shorter piece: Nick Reynolds, 'The British Army Should Seek to Retain an Armoured Capability', RUSI Europe Commentary, September 2020, https://rusieurope.eu/commentary/british-army-should-seek-retain-armoured-capability [accessed 3 October 2020].*

18 *Bowman, Robert, Reports, CBC, 20 August 1942, https://www.cbc.ca/archives/entry/1942-carnage-on-the-beaches-of-dieppe [accessed 25 July 2020].*

19 *National Archives of the UK (TNA), CAB 79/22/42, C.O.S (42) 242nd Meeting, 20 August 1942, p. 4; TNA, CAB 79/22/48, C.O.S (42) 248th Meeting, 26 August 1942, p. 4.*

20 *Hansard, House of Commons Debate (8 September 1942, vol 383 col 84).*

Canadian prisoners of war being led through Dieppe by German soldiers, Library and Archives Canada/C-014171, Released, Wikimedia

technologies like truly amphibious tanks and rocket-armed landing craft, little thought was given to how their adversaries would use the same experience. That is not a mistake that the modern British Army can afford to make.

We have already seen how the Germans responded to tanks delivered amphibiously by landing craft. However, this was far from the limit of their innovation. Constant throughout their reports on JUBILEE is the effectiveness of Allied artificial smoke, which was employed in large amounts to visually shield forces at sea. Consequently, German coastal artillery reported great difficulty in sighting targets and observing the fall of shot, which naturally hindered their effectiveness in battle. From then on, coastal artillery emplacements were encouraged to use directed rather than independent fire in times of poor visibility, i.e. one observation post would guide multiple guns' fire. Furthermore, plans were drawn up which allocated specific sections of the coastline to each gun, so that it was clear where each shot originated from. Codenames were given to each of these sections in order that fire from multiple gun sites could be directed into one segment.[21] Furthermore, von Rundstedt was anxious to see his men perform even in uncertainty created by artificial smoke.[22] Subsequently, he suggested that some kind of chemical could be released into the air to disperse smoke during future landings.[23]

In addition, the Germans appreciated that the Allies would likewise learn from experience. Of all German commanders, von Rundstedt was most concerned by the raid's potential use as an Allied 'learning experience'. Reports from his command - the West's highest - often contained references to the Allied learning process:

> *Just as we have gained the most valuable experience from the day of Dieppe, the enemy has learned as well. Just as we evaluate the experience for the future, so will the enemy. Perhaps he will do this to an even greater extent because has paid so dearly for it.*[24]

When confronted with new threats, we should take exactly this stance. While we control what we can by modernising, retraining and reorganising our own forces - we should also be paying attention to our potential adversaries. The ability of other land forces to act as 'learning organisations' and adapt their ways and means of operating must be respected. As von Rundstedt readily accepted, his enemies were willing and able to learn as much as he was. We cannot simply assume that any adversary will be ignorant of the value of experience. Tim Saunders, a former British Army Major and prolific military historian since retirement, regrettably failed to see this in his book on Dieppe. He boldly concluded

21 *BArch, RH 24-81/79, Artilleriekommandeur 117, Untitled, 20 September 1942 No. 831/42.*

22 *One questionnaire sent down at least to the divisional level enquired specifically about the performance of the men in mist or smoke: BArch, RH 2/471b, Chef des Generalstabes Heeresgruppe D, Untitled, 9 March 1943 No. 1051/43, p. 2.*

23 *'Basic Observations of the Commander-in-Chief West No. 8', 23 August 1942, as translated in Appendix A to C. P. Stacey and E. Skutezky, Army Headquarters Report No. 10, 5 December 1946, p. 21.*

24 *BArch, RL 20/167, Oberbefehlshaber West, 'Grundlegende Bemerkungen des Oberbefehlshabers West Nr. 10: Abschluss-Erfahrungen über das Zerschlagen des fdl. Landungsversuches bei Dieppe', 13 September 1942 No. 2676/42, p. 10.*

that 'while the Allies critically studied the results of the Dieppe raid in detail, the German victor accepted his success far less critically'.[25] As we have seen, this was not true in 1942, nor will it be in future. The enemy can always be relied on to better himself, now as then.

CONCLUSIONS: DIEPPE AS A GUIDE FROM HISTORY

The pressures on military organisations are timeless, and the issues they face enduring. This is why military history is not just useful but essential. The concerns discussed in this article have always made an impression, be they material ones like funding, or more abstract ones like a 'need to change'. As the late Sir Michael Howard wisely noted, *'after all allowances have been made for historical differences, wars still resemble each other more than they resemble any other human activity'*.[26] This is why whole wars or individual actions fought decades ago are still relevant. Though this article may have compared Churchill tanks with drones, and complex Challenger IIs with simple concrete bunkers, some underlying problems for the German Army of 1942 and the British Army of 2021 are essentially the same. Firstly, we cannot envisage or pin our hopes on material solutions that we cannot manufacture or pay for. Hitler and von Rundstedt's plan to defend France with a mass construction effort was doomed to failure from the start. The British Army cannot afford such short-sightedness in its various modernisation programmes.

Secondly, the British Army must be flexible and willing to upend conventional procedures. German measures to deal with landed armour and artificial smoke shows what can be achieved if we simply rethink how things are done. New challenges require new approaches. Naturally, this applies to today's land forces right down to the individual private soldier. For example, with one possible exception of the Falklands conflict, since 1944 the skies over a British soldier deployed on operations have invariably been friendly. This will not always be the case. They may now have to 'look up'. Finally, the enemy always has a vote, not just during an engagement but afterwards too - he is not suddenly 'disenfranchised' when the shooting stops.

The Allies might have learned much from Dieppe which helped in Italy and Normandy, though that point is still a matter of historical debate; but we must nevertheless acknowledge that the Germans learned a great deal too, even if they were ultimately defeated in the Italian and French landings of 1943 and '44. We are therefore bound to conclude more generally that as we gain from experience, so does the enemy. If today's British Army can learn, adapt and live within its means, it will succeed where the Germans failed. This is the challenge set for the new decade and beyond.

Anti-tank platoons from the Support Company 1st Battalion Coldstream Guards fire their NLAW fire-and-forget anti-missile system during a mass fire exercise to show off their skills on Salisbury Plain Training Area in Wiltshire. This part of the exercise is the culmination of multiple promotion cadres within the Company and, after several days of range-specific training, it has all culminated in a mass fires exercise. ***Photo: Corporal Rob Kane, Crown Copyright***

25 *See Tim Saunders, The Dieppe Raid: 2nd Canadian Division (Barnsley: Pen & Sword, 2005), chapter 9.*

26 *Howard, Michael, 'The Use and Abuse of Military History', The RUSI Journal, 138:1 (1993), 26-30 (p. 29).*

Is there a Post 1945 'British Way in Counter-Insurgency'?

Lieutenant Ben Tomlinson, 1 Rifles, argues that while British counter-insurgency operations have been guided by the principles of minimum force, civil-military cooperation and tactical flexibility the reality is somewhat different.

A soldier from the Royal Anglian regiment sits on 'Stag' (a.k.a. Sentry Duty) on the top seat of their Jackal armoured vehicle as the sun rises. The 300-strong UK Task Group destined for Mali have completed their Mission Rehearsal Exercise ahead of their upcoming deployment to support the UN. There they will help to promote peace and counter instability in the region. ***Photo: Ed Low, Crown Copyright***

For a considerable period of time, the British Army's primary task was the acquisition and retention of territory from 'organised, violent subversion used to effect or prevent political control; otherwise known as an insurgency.[1] As Charles Gwynn explained in his 1934 *Imperial Policing*, 'when the Empire was in process of expansion, small wars were of frequent occurrence, and at that time might well have been considered the Army's principal task.'[2] Today, many still believe that 'the British Army is a counter-insurgency army,' and in 2001, the British Army itself claimed that 'the experience of numerous small wars has provided [it] with a unique insight into this demanding form of conflict.'[3]

As a result of its busy counter-insurgency history, a number of unofficial and impromptu guides emerged from the British Army's ranks concerning this form of warfare. Charles Callwell's 1896 *Small Wars*, Sir Charles Gwynn's 1934 *Imperial Policing*, Sir Robert Thompson's 1966 *The Conduct of Anti Terrorism Operations in Malaya*, General Sir Frank Kitson's 1971 *Low Intensity Operations*, and the British Army's very own *British Army Field Manual, Volume 1 Part 10, Countering Insurgency*, have been just a few of such guides that offer advice on counter-insurgency conduct to their respective audiences. One of the most notable features of all the aforementioned doctrine however, is the key principles of counter-insurgency each of them proposes. As Gwynn explains, 'although the character of the outbreaks with which the Army may have to deal in carrying out its police functions vary to such a great degree, there are certain general principles which must be adhered to that are common to them all.'[4] For Callwell, for example, 'vigour and decision' lay 'at the root of effective conduct,' whereas for Gwynn, it was essential that 'questions of policy remain vested in the civil government.'[5] However, despite these differences, it is apparent that, since 1945, a number of key recurring practices have emerged in British counter-insurgency operations. As Thomas Mockaitis proposes in his *The Origins of British Counter-Insurgency*, 'the three broad principles that shaped Britain's response to insurgency were minimum force, civil-military cooperation and tactical flexibility.'[6] An assertion supported by the *British Army's British Army Field Manual, Volume 1, Part 10, Countering Insurgencies*, which states 'minimum force, civil-military cooperation and tactical flexibility, continue to provide an essential backdrop for newer and more recent forms of peace support operations.'[7]

More recently, however, the adherence to such principles has been increasingly scrutinised. Since the beginning of British operations in Iraq and Afghanistan, revisionist literature concerning the British Army's counter-insurgency past has grown. What has emerged from authors such as Hew Strachan, David French and Thomas Mockaitis, however, does not proclaim that the British Army of the interwar era broke the counter-insurgency code, but instead, that 'British counter-insurgency operations suffered the same problems of brutality, adaptation and patterns of chequered success as those of the French and Americans.'[8]

Therefore, whilst British counter-insurgency since 1945 has been guided by the principles of minimum force, civil-military cooperation and tactical flexibility, in reality, British counter-insurgency may be better characterised by its ambiguity, use of coercion and ability to adapt. In order to accurately assess the extent to which this assertion represents British counter-insurgency since 1945, a number of counter-insurgency operations, such as those conducted in Palestine (1945-8), Malaya (1948-60), Kenya (1952-6), Cyprus (1954-8), Aden (1955, 56-8, 65-7), Northern Ireland (1969-98), Iraq (2003-09) and Afghanistan (2001-14) will be examined for any instances where minimum force, civil-military cooperation and tactical flexibility might be present or, perhaps more significantly, absent.

---

1 *British Army Field Manual, Vol. 1 Part. 10 Countering Insurgency, (Warminster, 2009). pg 1-5*

2 *Gwynn. C.W., Imperial Policing, (Edinburgh, 1934). pg 14*

3 *Thornton. Dr. R., 'Historical origin of the British Army's counter insurgency and Counter Terror techniques', Geneva Centre for the Democratic Control of Armed Forces (DCAF): Conference Paper, (2009), pg 1 and Porch D., Counter Insurgency: Exposing the Myths of the New Way of War, (Cambridge, 2013). pg 248*

4 *Gwynn. C.W., Imperial Policing, (Edinburgh, 1934). pg 13*

5 *Potter. A.B., Callwell, C.E., Small Wars: Their Principles and Practice (1896), Classics of Strategy and Diplomacy, http://www.classicsofstrategy.com/2016/04/ce-callwell-small-wars-their-principles-and-practice-1896.html, (accessed 03/04/2017) and Gwynn. C.W., Imperial Policing, (Edinburgh, 1934). pg 13*

6 *Mockaitis. T., 'The origins of British counter-insurgency', Small Wars & Insurgencies, 1:3, pg 211*

7 *British Army Field Manual, (Warminster, 2009).pg CS1-6*

8 *Porch D., Counter Insurgency: Exposing the Myths of the New Way of War, (Cambridge, 2013). pg 267 and Tomlinson. B., From Laurels to Tripe: Considering Britain's Successes in Past Counter-Insurgency Operations, Why Did Those in Afghanistan (2001-14) end So Unsuccessfully?, Unpublished Manuscript, (University of Birmingham, 2016). pg 7*

National servicemen of 1st Battalion, The Royal Ulster Rifles search a bus at a road block during the EOKA Emergency in Cyrpus.

The first guiding principle of Post 1945 British counter-insurgency to be examined is that of minimum force. Minimum force was long considered to be at the heart of British imperial policing, and integral to maintaining order in an Empire where the population greatly outnumbered the security forces. As the 1923 *Duties In Aid of Civil Power,* states, the aim *is 'not the annihilation of the enemy, but the suppression of a temporary disorder, therefore, in the pursuit of an amicable resumption of affairs, the degree of force to be employed must be directed to that which is necessary to restore order and must never exceed it.'*[9]

Whilst seen as a way to appease indigenous populations, minimum force was also integral to limiting Britain's oppressive portrayal in a, largely, post imperial era. As a result, the post 1945 British soldier was regarded as capable of restraining themselves in scenarios 'that would have tried the patience of a saint, let alone a soldier.'[10] As General Evelyn Baker, Commander in Chief Palestine described, *'[The British soldier] was frequently assaulted and beaten by women with sticks and fists or stoned; he was insulted by such remarks as 'Gestapo' and 'Hitler's bastards', there was one reported case of a British officer being bitten by a Jewess; in one settlement, the British soldiers were greeted with organised spitting by the children.'*[11] Nonetheless, according to Mockaitis, 'British counter-insurgency operations... have generally been conspicuous for the lack of... excesses.'[12]

What makes such a policy of minimum force most notable however, was the stern belief that its practice was unique to the British way in counter-insurgency. As Mockaitis asserts, *'the British have usually avoided the French policy of brutality employed during the Battle of Algiers and the American reliance on indiscriminate firepower applied In Vietnam.'*[13] As Field Marshal Sir Bernard Montgomery wrote to the Chief of the Imperial General Staff whilst serving in Northern Palestine, *'the French of course think we are quite mad as regards our conduct of the war in Palestine. They are expecting trouble themselves in Syria and have everything ready to stamp it*

9 *Ucko D. H. & Egnell R., (Foreword by Gray C.), Counter Insurgency in Crisis, (New York, 2015). pg 9*
10 *Mockaitis. T.R., British Counter Insurgency, 1919-60, (London, 1990), pg 40*
11 *Ibid, pg 41*
12 *Mockaitis. T., 'The origins of British counter-insurgency', Small Wars & Insurgencies, 1:3, pg 214*
13 *Ibid, pg 214*

out in one day; they will be quite ruthless.'[14] The supposed difference between British and American methods is similarly illustrated by the interruption of a lecture from Major General R.B. Mans by a laughing US Marine Corps Major in 1962. Mans, lecturing on the application of a Malayan long-haul approach to the US mission in Vietnam, was reputedly reassured by the Major that 'we will work them over with so much steel, that six months will see the end of it.'[15]

Such a high regard of the sanctity of the British Army has, however, come under closer examination in recent years. Whilst the concept of utilising the minimum force necessary to achieve the relevant military and political objectives may appear to be quite simple, it has been argued that the ambiguity of what is 'necessary' creates a lot of room for interpretation. As the covering note of the Rules of Engagement for operations in Kenya stated, *'the principle is not really restrictive, in fact the minimum force necessary might be the maximum force a soldier... could muster.'*[16] In 1958, the Secretary of State for war, Christopher Soames, expressed a similar sentiment in the House of Commons, explaining that *'there will be many incidents when the minimum force necessary will be quite a lot of force.'*[17]

With confusion surrounding the limits of the minimum force principle stretching as high as government, policies of restraint were invariably disregarded on the ground. As General Sir John Hackett, OC 4th Para Brigade, is reputed to have stated during his time in Palestine, when confronted *'with a thoroughly non-cooperative, unscrupulous, dishonest and utterly immoral civilian population, such as the Jewish community in Palestine... reprisals are the only effective weapon.'*[18] Similarly in Kenya, whilst Commander-in-Chief East Africa, General Sir John Erskine, emphasised restraint by stating that *'I have no intention of tying the hands of the security forces... but must strongly disapprove of beating up the inhabitants of this country just because they are the inhabitants'*; he also privately noted that 'there was a great deal of indiscriminate shooting', and that 'torture was a feature of many police stations.'[19] It may therefore be unsurprising that the killing of twenty four unarmed

British 25 pounder field guns of the Royal Artillery in position outside a Malayan village during the Malayan Emergency. They are ready to give fire support if called for by the infantry. **Copyright: IWM (BF 48)**

14 *Mockaitis. T.R., British Counter Insurgency, 1919-60, (London, 1990), pg", pg 56*
15 *Mockaitis. T.R., British Counter Insurgency, 1919-60, (London, 1990), pg", pg 56*
16 *French D., The British Way in Counter Insurgency: 1945-1967, (Oxford, 2011), pg 84*
17 *Ibid, pg 84*
18 *Ibid, pg 67*
19 *Tying hands from Mockaitis. T.R., British Counter Insurgency, 1919-60, (London, 1990), pg 49, torture from Newsinger J., 'The British Counter Insurgency Myth', Review of David French, 'The British Way in Counter-insurgency, 1945-1967' and Andrew Mumford, 'The Counter Insurgency Myth: The British Experience of Irregular Warfare', Institute of Race Relations, Vol. 55 (1), (2013), pg 95*

villagers in December 1948 at Batang Kali, Malaya, and the massacre of twenty unarmed civilians in June 1953 at Chuka, Kenya, serve to illustrate that British counter-insurgency was not unfamiliar with the sort of atrocities that tarnished the French and American reputations in Algeria and Vietnam.

It is therefore clear that the widely-held belief that British forces avoided utilising excessive levels of force due to the minimum force principle 'cannot be accepted at its face value.'[20] Whilst enshrined as a guiding principle of post Second World War British counter-insurgency, the principle of minimum force was flexible in, both, its interpretation and practice. As such, it must be noted that the post war principle of minimum force is not personified by exemplary restraint, but the application of force made justifiable by ambiguous limitations.

The second guiding principle of post 1945 British counter-insurgency to be examined is that of civil-military cooperation, namely the coordination of civil and military efforts against an insurgency. In order to understand why the cooperation of civil and military sectors is necessary, we must first understand that insurgencies are an inherently political phenomenon, which arise from 'inequities, repression or corruption.'[21] Indeed, so intrinsically linked are insurgencies and political grievances, that *'the more widespread and intense deprivation is among members of a population, the greater is the magnitude of strife in one or another form.'*[22]

As a result of its inherently political conception, a considerable proportion of existing counter-insurgency literature agrees that 'military units alone cannot defeat an insurgency.'[23] Instead, *'most of the work involves discovering and solving the population's underlying issues, that is, the root causes of their dissatisfaction with the current arrangement of political power.'*[24] According to Geraint Hughes, such an approach to reform is characteristic of the British way in counter-insurgency. As he asserts:

> *The British approach recognises that insurgencies capitalise on genuine grievances among the civilian population, and that these need to be addressed through civil development programmes and socio-political reforms.*[25]

In much the same way Mao Tse-Tong had ensured the symbiosis of his communist forces and the population through political education and 'increased identification with popular causes'; the British Army since 1945 has sought to 'rally the populace behind the government' through its policy of 'hearts and minds'.[26] Famously coined by Sir Gerald Templer in 1952, 'hearts and minds' is entirely focused on winning over the population, and *'consists of soberly assessing what motivates people to rebel and devising a strategy to address the underlying causes of unrest.'*[27]

Perhaps one of the best examples of a successful 'hearts and minds' campaign mounted by the British Army since 1945, was that conducted in Oman during the Dhofar Rebellion (1965-75). The rebellion had initially started as a popular movement of tribes against the repressive Sultan Said ibn Taimu, and British forces found themselves advising the Sultan as he faced down the communist Popular Front for the Liberation of the Occupied Arabian Gulf (PFLOAG). Reluctant to reform his administration or reassess his failing counter-insurgency strategy however, Sultan Said lost favour with his British advisors and was replaced in a 1970 coup by his son; Sultan Qaboos bin Said al Said. Sultan Qaboos had been educated at RMAS and immediately set about implementing *'a five-point program of social and military reform that addressed many of the inadequacies of his father's regime.'*[28] His nationwide development program was devised to tackle a number of popular grievances directly, and civil action teams 'drilled wells, built schools, repaired mosques and provided medical and veterinary services.'[29]

20 *French D., The British Way in Counter Insurgency: 1945-1967, (Oxford, 2011), pg 82*
21 *Metz. S., Rethinking Insurgency, (Raleigh, 2014)., pg 5*
22 *Gurr. T., 'A Causal Model of Civil Strife: A Comparative Analysis Using New Indices', The American Political Science Review, Vol. 62, No. 4, (Dec, 1968), pg 1104*
23 *US Army Training and Doctrine Command, Field Manual 3-24.2: Tactics in Counter-Insurgency, (Fort Benning, 2009), pg. ix*
24 *Ibid, Pg. ix*
25 *Hughes. G., 'A 'Model Campaign' Reappraised: The counter-insurgency War in Dhofar, Oman, 1965-1975, Journal of Strategic Studies, 32:2, pg 274*
26 *Mao from Beckett "Modern Insurgencies and counter-insurgencies", pg 74/5, rally quote from Hughes. G., 'A 'Model Campaign' Reappraised, Journal of Strategic Studies, 32:2, pg 274*
27 *Mockaitis. T., Iraq and the Challenge of Counter-insurgency, Praeger Security International, (2008), pg 23-4*
28 *Paul. C., Clarke. C. P., Grill. B., Dunigan. M., Paths to Victory: Detailed Insurgency Case Studies, (RAND, 2013), pg 279/80*
29 *Ibid, pg 281*

Soldiers from the Royal Anglians attend a 'local village' while on patrol in Mali amidst reports of a disturbance. The soldiers of the UK Task Group donned the famous blue UN beret on Thetford and Salisbury Plain training areas in October as they underwent final assessment by the Mission Training and Mobilisation Centre where they were put through a range of realistic scenarios from engaging with locals in a complex social landscape to conducting patrols. UN troops are impartial and are trained to respond to local incidents to protect all life and implement stability and peace. ***Photo: Dan Harrison, Crown Copyright***

Much like the principle of minimum force, however, the British principle of civil-military cooperation, as exercised through 'hearts and minds', is widely contested with regards to its actual meaning. As Paul Dixon explains:

> *Describing British counter-insurgency theory as hearts and minds may be useful in terms of public relations, but it undermines the theory as a guide to operations because it can be interpreted in such divergent ways.*[30]

The British campaign in Malaya for example, although widely regarded as the birthplace of British 'hearts and minds' policy, forcibly resettled approximately 500,000 people; causing some to argue that 'the key to the campaign [lay] more in 'screwing down the people' than in winning their 'hearts and minds'.'[31]

Others, however, have asserted that it is in fact such coercion that is characteristic of civil-military cooperation in British counter-insurgency. As Hew Strachan contests, hearts and minds is not *'about being nice to the natives, but about giving them a firm smack of government.'*[32] Indeed, whilst British counter-insurgency practice incentivises the population to rally behind the government, it also makes the cost of not doing so abundantly clear.

> *Subject populations were rational beings who would calculate that any benefits they might gain in the future by supporting the insurgents would be outweighed by the immediate costs of doing so.*[33]

In the same way that

> *Military force is useful only in conjunction with a policy of economic and political development', 'counter-insurgents cannot curry favour through civil development programmes and political reforms unsupported by a*

30 *Dixon P., 'Hearts and Minds? British Counter-Insurgency from Malaya to Iraq', Journal of Strategic Studies, 32 (3) (2009), pg 356*
31 *Ibid, pg 369*
32 *Strachan. H., 'British counter-insurgency from Malaya to Iraq', RUSI Journal, 152/6, (Dec 2007), pg 8.*
33 *Newsinger J., 'The British Counter Insurgency Myth', Review of David French and Andrew Mumford, Institute of Race Relations, Vol. 55 (1), (2013), pg 94*

strong and well-trained military and constabulary.[34]

The heavy-handed nature of this principle is not, however, something which the British Army shies away from. As the 2009 *British Army Field Manual, Volume 1, Part 10, Countering Insurgencies* states, 'granting that you cannot keep everybody happy at all times and still win a war, you may have to begin by impressing on the people, quickly and perhaps rather brutally, the fact that you are on the strong side.'[35]

Therefore, whilst British counter-insurgency since 1945 can be characterised by its emphasis on competent civil-military coordination in order to drive effective reform and win over the native population, such an approach is 'not about giving candy to children.'[36] Indeed, as a result of its political beginnings, genuine socio-economic reform must take priority in order to quell an insurgency; however, the carrot of political primacy must be supported by the stick of military force.

The Radfan Campaign: A section of infantry from the 2nd Battalion, Federal Regular Army taking up a hasty position on an escarpment during an exercise to test rapid movement in mountainous terrain near the garrison town of Mukeiras, situated high on an 8000ft plateau in the State of Audhali, some 120 miles east of Aden.

The third guiding principle of British counter-insurgency since 1945 is the principle of tactical flexibility. Tactical flexibility emphasises the need *'for soldiers, irrespective of rank, to innovate continuously in line with the unique and evolving challenges of each campaign.'*[37] Tactical flexibility's first incarnation as a guiding principle arose in the 1957, *Keeping the Peace: Duties in Support of Civil Power*, which stated, in counter-insurgency *'there is no place for a rigid mind... although the principles of war generally remain the same, the ability to adapt and improvise is essential.'*[38]

Some, such as John Nagl, have argued that the British Army has enjoyed considerable counter-insurgency success in the past, as 'it was an effective learning organisation,' with the ability to 'correct quickly the things that are wrong.'[39] Indeed, the British Army has developed a unique learning style in order to meet such demands. Whilst the majority of Western armed forces feature a top down learning style, whereby changes in tactics, techniques and procedures are influenced and effected by 'inspired leaders or elites', the British Army has developed a bottom up learning style, whereby changes on the ground are institutionalised by changes in 'training, doctrine, education and force structure.'[40]

Such belief in the adaptability of the British Army does however, have its limitations. The first issue with bottom up learning is that it takes time. The Malayan Emergency had been underway for a year before any notable changes were made; in Oman, the Dhofar Rebellion had endured for five years before Sultan Said was replaced; and in Northern Ireland, the British Army suffered an increasing number of casualties for eight years before police primacy was introduced in the 1977 *Way Ahead* Policy.[41] Therefore, in counter-insurgency terms, *'the British have consistently been slow to instigate an effective strategy to achieve operational success.'*[42]

The second issue is that the British Army's proficiency in counter-insurgency has been entirely dependent on the informal diffusion of practices through the ranks. As Andrew Mumford explains,

34 *Civ mil from Mockaitis. T., 'The origins of British counter-insurgency', Small Wars & Insurgencies, 1:3, pg 215/6 and curry favour from Hughes. G., 'A 'Model Campaign' Reappraised, Journal of Strategic Studies, 32:2, pg 276*
35 *British Army Field Manual, (Warminster, 2009), pg CS5-2*
36 *Ibid, pg CS5-1*
37 *Ucko D. H. & Egnell R., (Foreword by Gray C.), Counter Insurgency in Crisis, (New York, 2015). pg 10*
38 *Ucko D. H. & Egnell R., (Foreword by Gray C.), Counter Insurgency in Crisis, (New York, 2015). pg 10*
39 *Porch D., Counter Insurgency: Exposing the Myths of the New Way of War, (Cambridge, 2013). pg 248/9*
40 *Ucko D. H. & Egnell R., (Foreword by Gray C.), Counter Insurgency in Crisis, (New York, 2015). pg 14*
41 *Beckett. I., Modern Insurgencies and Counter Insurgencies: Guerrillas and their Opponents Since 1750, (Abingdon, 2001), ch 9, Forward to the Past*
42 *Mumford A., The Counter Insurgency Myth: The British Experience of Irregular Warfare, (Abingdon, 2012), pg 148*

A mortar team from Ghurkha Reinforcement Company attached to 1st Battalion, The Mercian Regiment (Cheshire) fires on insurgents outside Forward Operating Base Khar Nikar in Afghanistan. ***Photo: Corporal Gary Kendall RLC, Crown Copyright.***

> *The transferral of lessons, particularly during the late colonial era, occurred in large part due to the deployment of personnel who brought with them preconditioned notions of operational practice honed from counter-insurgency experience in other theatres.*[43]

Naturally, over the course of two hundred years of imperial policing, there were many in the British Army who had experience from several separate counter-insurgency campaigns. However, following the Second World War, and a period of decolonisation, the number of counter-insurgency practitioners dwindled. When, in 2003, the British Army was forced to re-examine its counter-insurgency legacy in preparation for operations in Iraq, it therefore failed to grasp that 'past exploits confer no enhanced ability to counter insurgences across time and space.'[44]

A principle of tactical flexibility may therefore be recognised as characteristic of British counter-insurgency since 1945. A number of operations have seen effective adaptation to alien operating environments and the subsequent institutionalisation of these changes. However, it must be noted that a lack of institutionalised thought on counter-insurgency prior to 2009, and a gap in its application, has meant that:

> *Lessons of the various campaigns... were not consistently taught. Consequently, a considerable amount of time and money and many lives were wasted in rediscovering effective methods.*[45]

It is therefore possible to conclude that there is indeed, a distinct Post 1945 'British way in counter-insurgency.' This form of counter-insurgency is not, however, characterised by its adherence to the principles of minimum force, civil-military cooperation and tactical flexibility. In fact:

> *The theoretical adherence to the traditional principles of counter-insurgency contrasted with their application, which deviated widely from the plan and from the methods that British doctrine champions.*[46]

Revision of the minimum force policy, for example, throws up a number of questions regarding the limits of 'necessary' force. As discussed, confusion regarding the policy permeated the British Army's ranks and resulted in acts of violence that would otherwise be deemed unacceptable. In contrast however, the level of coercion utilised through civil-military cooperation in the pursuit of 'hearts and minds', has only been revalidated in recent times. The use of coercion was an effective tool in garnering government support and we must not allow modern sensibilities to cloud objective study of the practice.[47] The principle of tactical flexibility is therefore perhaps the only guiding principle of British counter-insurgency since 1945 that may be taken at face value. Although slow on the uptake and reluctant to publish what they had learnt, the British Army saw a great deal of adaptation in its counter-insurgency operations; a practice only made necessary by its impalpable doctrine. It is therefore clear that, whilst guided by principles of minimum force, civil-military cooperation and tactical flexibility, the post 1945 British way in counter-insurgency may in fact be most aptly characterised by its ambiguity, use of coercion and ability to adapt.

43 *Ibid, pg 148*
44 *Ucko D. H. & Egnell R., (Foreword by Gray C.), Counter Insurgency in Crisis, (New York, 2015). pg 146*
45 *Mockaitis. T., 'The origins of British counter-insurgency', Small Wars & Insurgencies, 1:3, pg 221*
46 *Ucko D. H. & Egnell R., (Foreword by Gray C.), Counter Insurgency in Crisis, (New York, 2015). pg 96*
47 *Mockaitis. T., 'The Minimum Force Debate: Contemporary Sensibilities Meet Imperial Practice', Small War and Insurgencies, 23:4-5, pg 765*

Operation Market Garden - Urquhart and the Decisional Conflict Model (DCM)

Dr Gary Buck looks at planning of Operation Market Garden in the context of the Decisional Conflict Model (DCM)[1] and why Major General Roy Urquhart did not approach the planning stages with as much focus on the risks as there should have been.

Operation 'market Garden' (the Battle For Arnhem)- 17 - 25 September 1944 75mm howitzer of 'D' Troop, 2nd Battery, 1st Airlanding Light Regiment, 1st Airborne Division in the Oosterbeek perimeter, 20 September 1944. ***Photo: No5 Army Film and Photographic Unit, Sergeant Smith, IWM, Wikimedia, Released***

1 *Janis, Irving & Mann, Leon, Decision Making: A Psychological Analysis of Conflict, Choice and Commitment (New York: Free Press, 1977), p. 78.*

Operation MARKET GARDEN was the Allied attempt in September 1944 to set the conditions for a thrust into northern Germany and bring the Second World War to a close. The plan involved dropping three airborne divisions to seize vital bridges in Holland in order to create a corridor through which a ground assault could turn the Siegfried Line and open a path into Germany. It was a bold and imaginative plan that almost succeeded, it did not.

The British 1st Airborne Division, commanded by Major-General 'Roy' Urquhart, dropped on the last bridge at Arnhem; after nine days of bitter fighting it was finally withdrawn with only a quarter of its fighting strength. The overall operational concept for MARKET GARDEN was fatally flawed, but a number of criticisms have been aimed at Urquhart and his staff, in particular, that they were too blasé in their approach to the problem; as Urquhart himself admits: *'We had approached the state of mind when we weren't thinking as hard about the risks as we possibly had done earlier'*.[2] He was a dedicated, professional soldier with experience of both staff duties and combat operations; a key question arises therefore: how could he (and his staff) have reached this state of mind when planning the operation?

Using the DCM model, we will examine why or how Urquhart thought the way he did about his and his staff's state of mind prior to the operation. The DCM model was originally developed to explain individual responses to warnings of natural disasters; it has also been successfully used to examine the handling of different international crises that led to conflict. The model describes how individuals manage risks and handle time pressures to process information and make decisions in an effective manner. In particular, the DCM postulates five basic coping patterns that a person can adopt for dealing with difficult situations; each coping pattern is characterised by differing levels of problem-solving activity. Ineffective decisions are associated with the first four coping patterns as they involve either minimal or rushed information-processing activity. In any given situation, the same person will adopt a specific coping pattern depending on his or her appraisal of the situation he or she faces. This appraisal is based on an assessment of the state of three antecedent conditions. The first condition is the individual's perception of the level of risk in the situation.

Operation 'MARKET GARDEN', The Battle For Arnhem: 17 - 25 September 1944. Major-General Roy Urquhart DSO and Bar (leader of the 1st British Airborne Division during the Arnhem Operation) plants the Airborne flag outside his headquarters (Hotel Hartenstein), the last British stronghold in the Arnhem area before the evacuation. ***Photo: Sergeant D.M. Smith Army Film and Photographic Unit, Wikimedia, Released***

Market Garden Map by Duncan Jackson. ***Creative Commons Attribution-Share Alike 4.0 International license, Wikimedia***

2 *Baynes, John, Urquhart of Arnhem (London: Brassey's, 1993), p. 100.*

RISK

According to the DCM, an assessment that a situation presents little or no risk leads an individual to adopt one of the first two coping strategies: *Unconflicted Adherence* (to the status quo or a standard approach); or, if this is not possible, *Unconflicted Change* (a rapid adoption of the next most obvious solution). In either of these two cases, the perception of no or little risk means there is minimal stress (decisional conflict), little engagement with the problem and therefore minimal or no problem-solving activity.

The air plan for the insertion of the division into Arnhem imposed restrictions on Urquhart's scope of action and introduced elements of risk into the operation. These restrictions included: inserting his division over three days; drop zones that were eight miles from his objectives and no *coup de main* operation to seize the bridges.[3] This meant his division ran the risk of being blocked from seizing the bridges if there were effective German forces in the area.[4] Urquhart was aware that elements of the 9th and 10th SS Panzer Divisions were in the Arnhem-Nijmegen area, but crucially, their level of combat effectiveness was downplayed to him;[5] he does, however, seem to have been aware that he was not being told the full story. He states in his memoirs that *'[I]n the division there was a certain reserve about the optimistic reports coming through from 21st Army Group concerning the opposition we were likely to meet'*.[6] This and other comments suggest that as his planning progressed, Urquhart was aware that the operation carried significant risk.

Cromwell tanks of 2nd Welsh Guards crossing the bridge at Nijmegen in Holland during Operation 'Market Garden', 21 September 1944.
Photo: Sergeant Midgley, No 5 Army Film & Photographic Unit, IWM, Wikimedia, Released

3 TNA, AIR 37/1214, 1st British Airborne Corps – Allied Airborne Operations in Holland Sept-Oct 1944.
4 This is what happened.
5 WO 171/393, 1 Airborne Division Report on Operation MARKET, Part V, HQ 1st Airborne Division War Diary, 1st-30th September 1944.
6 Urquhart, Roy, Arnhem, (London: Pen & Sword, 1958), pp. 7-9.

CAPABILITY

Having accepted that the situation involved risk, Urquhart would then have had to assess the next antecedent condition (in the DCM model), the possibility of generating a viable solution. A negative appraisal here leads an individual into (dysfunctional) Defensive Avoidance behaviour as he or she accepts that the situation holds risk but cannot see that a workable solution is possible.

Although constrained in his planning by the restrictions imposed upon him by the air plan, Urquhart did have considerable resources and attractive options to deal with the problems he faced. Firstly, although the landing and drop zones were a long way from his division's objectives, they were easily defended and ideal for his purposes; the selected zones were situated in open country to the west-north-west of Arnhem and were comprised of large areas of flat ground, screened by belts of woodland. Urquhart was also assured that as part of the overall MARKET GARDEN plan, XXX Corps (the ground forces) would reach his division within two days.[7] Thus, regardless of concerns about concentrating sufficient combat power and the locations of the drop/landing zones, the operation would be over within forty-eight hours.

Urquhart would have been encouraged by a number of other factors. His own personal motivational drivers (he appears to have been primarily driven by the Achievement Motive) would have meant he was motivated to overcome the challenge he was set and look for a viable solution. This would have been reinforced by the (mis)application of his previous experience of successful command of an infantry brigade, which meant he did not fully comprehend the unique problems faced by an airborne formation. A number of external influences would have also pressured him to look for a solution: he had been given a direct order; no one in 1st Airborne division (or at Corps level) was seriously challenging the plan; and the window of opportunity to use the division in the airborne role was rapidly closing. The general sense of victory euphoria that existed at the time and the optimistic intelligence being fed to him by higher authorities would also have added extra support to him for adopting a positive appraisal of the viability of his plan.

TIMEFRAME

Having established that a viable solution is possible, the third antecedent condition considers whether there is sufficient time available to develop a plan and deal with the situation. An assessment that there is sufficient time, leads the individual to adopt the fifth and most functional coping pattern – Vigilance. This state involves a high degree of effective information-processing and problem-solving activity. Urquhart had tight timescales to work within; essentially, he had forty-eight hours to formulate his approach (albeit one based on the previous COMET plan).[8] His perception of this third condition was, therefore, negative; he did not have enough time.

COPING STRATEGY

Urquhart's assessment of the three antecedent factors would, therefore, have led him to adopt the fourth coping strategy as defined by the DCM model - Hypervigilance. In the Hypervigilant coping pattern, whilst he actively engaged in the planning for the operation, his information-processing and decision-making activities were rushed, unsystematic and incomplete. In this cognitive state, he was prone to making various errors in judgement and mistakes (cognitive biases and judgement heuristics). There is not enough space here to discuss all of the errors but examining one particular cognitive bias is illustrative of a broader picture.

The planning fallacy refers to the tendency for individuals to address only internal considerations when planning, to the exclusion of external influences, especially chance factors. The clearest manifestation of this bias is Urquhart's and the other planners' lack of consideration for the enemy's (what turned out to be vigorous) response to the landings. Urquhart also failed to consider other factors that would impinge on his plan; these included: an adherence to the use of the main roads in the town of Arnhem (which caused delays); a disregard of the locals' and Dutch liaison officers' knowledge of the area to identify alternative routes; and the urban nature of the fighting. As Urquhart states: *'[M]ost of us had not taken this problem specifically into account when the plan was made or even during the move into the town […] not enough thought had been given to the obstacles produced in a built-up area where free movement was so hampered'*.[9] Ultimately, the division was held up getting into Arnhem due to these factors and was unable to reach its objectives in any strength.

There are two other key issues that were either not identified or a lack of consideration meant that the full implications were not appreciated. Both factors would have a clear impact of the success of the division's mission. The first of these issues is the Heveadorp-

7 *TNA, WO 205/313 21st Army Group Operation 'Market Garden' Plans and Instructions.*
8 *TNA, WO 171/366 1st Airborne Corps War Diary: Operation Market Instruction #1, 13 September 1944.*
9 *Urquhart, Arnhem, p. 200.*

Driel Ferry. Capturing the ferry would have allowed the division access to the south bank of the Rhine and thus possibly gain quick control of the rail bridge. The ferry was not identified as an important feature during the planning of the operation.[10] The other oversight was the division's failure to recognise the significance of, and to prioritise, the capture of the Westerbouwing Heights. This feature was the only high ground in the area and dominated that stretch of the Rhine. German control of the heights during the battle essentially prevented British movement in the area. This oversight, and all of the problems highlighted above are clear indications of Urquhart's failure to look more broadly and think more flexibly about the issues he faced.

As an interesting postscript, later in the planning process, as his attempts to solve the problems he faced failed: he requested a *coup de main* attack but was refused, the drop and landing zones remained a long way from the bridges and the division was inserted across three days despite his requests. Urquhart appears to have re-appraised the second question in the DCM model and concluded that a viable solution was not possible. This can clearly be seen in an incident reported by Browning's ADC, Captain Edward Newbury who states that on 15th September, as the planning was essentially complete, Urquhart marched into his superior's office at Moor Park and stated that he had planned the operation as ordered but that it was a 'suicide mission'.[11] This incident suggests that his re-appraisal had led Urquhart to adopt a Defensive Avoidant coping pattern; this can take one of three different forms. The first is Procrastination; where the person vacillates so much that he or she fails to make decisions. The second form is Scapegoating; where the person takes the decision out of his or her hands by passing responsibility to someone else. The third form is Bolstering; the person settles on the least objectionable alternative and boosts its attractiveness by wishful thinking.

Urquhart appears to have accepted the constraints and came up with the best plan he could: trusting that the armoured jeeps of the Reconnaissance Squadron would race ahead of the division and seize the road bridge and putting his faith in his battalions' ability to reinforce them in the face of weak German opposition. This suggests that having essentially completed the planning process (in a Hypervigilant manner), Urquhart shifted towards Bolstering as a coping mechanism.

CONCLUSION

Urquhart's (and his planners') approach to planning the operation was rushed and rigid in nature, this created problems for the division. His thinking and planning lacked both breadth and flexibility and his (division's) approach lacked agility. Urquhart committed the errors because he tackled the planning tasks facing him in a rushed, rigid and simplistic manner. This approach was caused by the interaction between his psychological characteristics and the task and situational pressures placed upon him. The key question that remains, is could these errors have been avoided?

LOOKING FORWARD

The main aim here was not just to describe the errors Urquhart made, but to use different psychological models to explore why he made them in the first place. The models, because they define thinking and behaviour patterns, can be incorporated into a Red Teaming approach to support command decision-making in future operations. A pre-assessment can be conducted to establish a commander's habitual motives and cognitive capacity to determine the challenges that he or she might face in terms of dealing with a particular operational problem. A process checklist can be used to: monitor which external pressures are impacting on the situation; which motivational drivers are actually being energised; and which components of the Decisional Conflict Model are salient. Checklists of the more common biases and judgement errors can also be used to quality assure plans. In this way, the psychological models discussed in this study can be used to structure a comprehensive Red Teaming capability to support commanders in the future.[12] It is interesting to speculate, whether the application of this Red Teaming process would have mitigated against the errors committed by Urquhart in 1944.

10 TNA, WO171/393, Appendix A, 1st Airborne Division Intelligence Summary, No. 1, 5 Sep 1944.
11 CRCP 108/5, Cornelius Ryan Collection of World War II Papers, Mahn Center for Archives and Special Collections, Ohio University, Athens, Ohio.
12 These are interventions that I currently use in my Reservist and civilian roles.

A Dutch school damaged by mortar fire, being searched for German snipers by Sergeant J Whawell and Sergeant J Turrell of the Glider Pilot Regiment. An empty weapons supply cannister lies open on the ground in the doorway of the school. 20 September 1944. ***Photo: IWM, Wikimedia, Released***

Pictured are two British Airborne troops dug in, holding the Brigade Headquarters, 18 September 1944, during Operation Market Garden, the Battle for Arnhem. ***Photo: IWM BU 1143, Wikipedia, Released***

Training to Fight Unarmed?

Major (Ret'd) Ollie Braithwaite explains the benefits of comprehensive unarmed combat training and asks if the British Army is equipping its soldiers to fight in all likely scenarios?

US Marines with Special Marine Ground Task Force demonstrated the Marine Corps Martial Arts Program as well as displayed weaponry in support of Fleet Week New York City 2010. More than 3,000 Marines, Sailors and Coast Guardsmen participated in community outreach events and equipment demonstrations. ***Photo: Corporal Patrick P Evenson, USMC, Wikipedia, Released***

Darkness in Afghanistan, a sentry is posted on top of a building with the rest of his patrol inside. The building is engaged by several Taliban Fighters which isolate the sentry from his patrol. Unable to be reinforced he courageously returns fire until he has expended all ammunition bar the 7.62mm link on the GPMG. Disaster… stoppage, on pulling the working parts to the rear he strikes something behind him with his elbow. On turning to see what it was, he sees a Taliban Fighter. There was no time to fix a bayonet and there then ensued a tooth and nail fight that the sentry had not been trained for, which he only narrowly won.

This is not an extract from a war film but one of a number of real operational close shaves, but it has not led to the instigation of a pan-Army, or at least pan-Dismounted Close Combat, Unarmed Combat Course. Why? The answer often given is that 'people are not crying out for one' but this is a little like a patient not prescribed medication by the doctor because he didn't ask for it. The simple fact is that 'people', meaning those that write Post-Operational Reports, traditionally don't know about the benefits of unarmed combat training, other than perhaps studying a martial art for a short while in their teens or watching Steven Seagal films. In short, they don't know what unarmed combat training can 'cure'. These officers can be absolutely forgiven for this knowledge gap as there are many self-professed 'experts' in both civilian industry and the world's militaries who have been studying various fighting systems for quite some time that, in my opinion, still get it wrong, and I will explain how. Much of the information in this article is from my own experience in learning and coaching martial arts, unarmed combat and self-protection over nearly three decades, an in-depth study of many of the world's militaries' close quarter combat systems coupled with my military experience of twenty years.

Traditionally, when I have questioned numerous soldiers and officers, people's recollections of the self-defence that they have completed in the military range from 'I couldn't really make it work when I tried it' to 'I can't remember much at all'. These are often a result of over-complication making teaching and retention more difficult.

The most vivid memory many have of British Military personal safety training is of an unsuspecting victim being chosen to grab hold of the PTI's combat jacket with a relatively straight arm. Titters erupt from the assembled group that have seen the demonstration before. Then the famous 'Goose Neck' technique is applied resulting in the victim apparently throwing himself to the ground in pain whilst the PTI stands over him with the victim's wrist in a contorted position. All very well until the technique is attempted in a more realistic situation when, of course, the attacker's arm is bent and tends to be too wrapped up in the combat jacket to achieve this technique. Unarmed Combat training has developed rapidly over the last decade across the world and outdated techniques like this have left the British Army way behind.

In my experience, reflecting the three Components of Fighting Power[1], the three areas that should be part of any Unarmed Combat Course, but are often lacking, are psychological training (Conceptual Component), a simple Physical Component and training in the legal application of force in an unarmed context (Moral Component), all of which must interact.

The term 'Unarmed Combat' for the purposes of this article refers to the application of force without the use of a blade or projectile weapon in the firing role. However, it does cover the use of the rifle and other hand-held weapons as blunt instruments.

THE THREAT

Unarmed Combat training is the foundation of any combative system. Hand-to-hand fighting is at the origin of conflict and, as the opening example shows, still relevant in modern combat. To continue the medical metaphor, the 'symptoms' are abundant; if perhaps not so acute that they are making front page news. For example, soldiers are not always armed even on operations. On one of my operational tours to Kabul during combat operations in Afghanistan I spent all of my time in Camp Bastion either unarmed or without any ammunition due to my J4 support, and therefore ammunition issue, being based in Kabul. This was the same for all those operating in Kabul. Even when soldiers are armed and conducting combat operations,

1 *Army Doctrine Publication: Operations (Updated 31 March 2017) p. 3-1.*

This image demonstrates how the enemy getting inside the rifle's minimum range results in the use of unarmed combat. ***Photo: Absolute Defence, reprinted by permission of the author***

stoppages can occur or, in this cluttered and congested environment, an enemy can spring out of cover within the minimum range of the rifle, nullifying the use of both the rifle and the bayonet.

The series of pictures with this article show how an enemy may be able to get inside the minimum range of the rifle. For clarity additional cover has been removed and the environment has been well lit but in reality, the customary quick 'peek around the corner' that would identify the threat, in this case, may not work given a more realistic setting. Additional cover could also protect the attacker from a pre-assault grenade. There is also an increased chance that the soldier will obscure the target to his partner and therefore will not receive third party support in the timeframe required as he will only have in the area of a single second to react to save his life. In a different scenario the enemy may pose as a non-combatant to achieve this close proximity.

With many physical situations arising from verbal misunderstanding, an essential element of the education must be effective confrontation management training to prevent the need for the application of force in the first instance. Finally, lethal force is not always appropriate and our current less-than-lethal force options are extremely limited and are unlikely to be instantaneously deployable in every situation; for example, during a meeting that has become inflammatory. With a shift in emphasis to mentoring in many operational theatres we are seeing lower force density and the insider threat becomes more of a risk; as yet, the answer to this is an increased use of Guardian Angels[2] which, although provide a strong deterrent, are a lethal force option against an enemy that often isn't afraid of dying.

PSYCHOLOGICAL TRAINING

The ability to control one's mind in high stress situations is an obvious advantage; unfortunately, we currently don't teach our soldiers *how* to do it. This control is one of the two safety catches to a properly constructed Unarmed Combat capability and without it we create soldiers with the ability to do greater damage but who are potentially unable to restrain themselves. We see this frequently in soldiers lashing out against the civilian population and each other when socialising.

Mental Control is split into two parts. Firstly, getting into and remaining in the correct mental state for the task; and secondly, when physical force is the only option, controlling the application of that force such that it remains in the realms of what is legal.

The enemy is too close to use the rifle which results in the use of unarmed combat. ***Photo: Absolute Defence, reprinted by permission of the author***

2 Guardian Angels are armed soldiers, wearing body armour and helmets, who would guard those in meetings and other gatherings in high threat environments who would not be wearing armour as this is rightly seen as a barrier to communication.

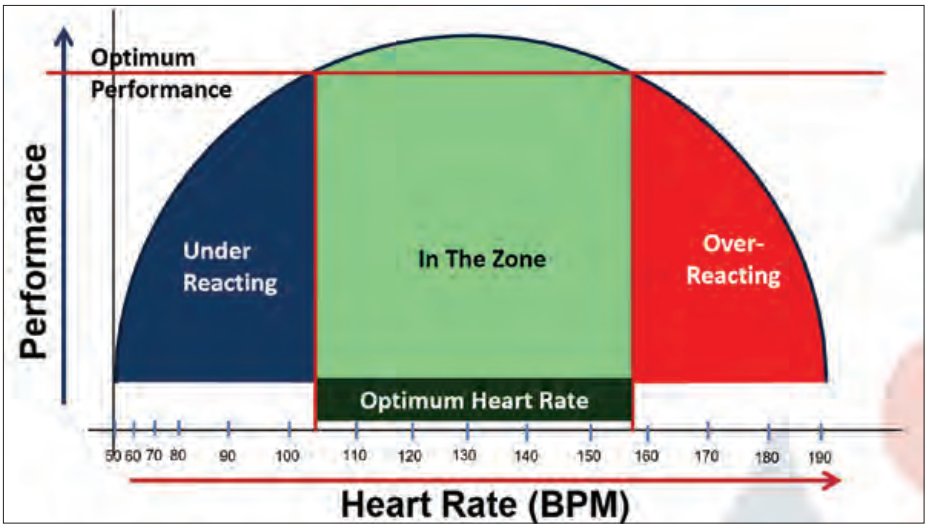


Fig 4: Pictured is a diagram of the Yerkes-Dodson Law. ***Image: Absolute Defence, reprinted by permission of the author***

There is no question that we are more physically capable when we are mentally focussed and ready, however, there comes a point when that state of arousal becomes too high and performance starts to drop off. The Yerkes-Dodson law[3] provides a graphical representation of this. The figure below shows this law with additional extrapolations that highlight the optimum heart rate or arousal that is required to achieve optimum performance or what professional athletes refer to as being 'in the zone.' Too little arousal results in sluggishness and a lack of spark, the effects of too much arousal range from simply being mentally over-whelmed to physical paralysis, either of which can be fatal.

It is clear that in most cases the optimum performance is in the central region within these boundaries the left-hand end maybe used for preparing for a crucial meeting, presentation, examination or a task requiring complex motor skills. The right-hand end would be for high-end combat operations, so you see the application of this ability to control oneself is extensive.

There are several ways of psyching up to get into the correct frame of mind. Only one of these methods is formally imparted to our soldiers, generally during bayonet training and involves becoming energised by getting extremely angry. This method is known as Anger Transformation.[4] While it is effective for summoning the all-out aggression required for survival situations or bringing about the total destruction of the enemy, it has distinct drawbacks when the situation is more complicated and may involve other non-combatant entities. Dr Nancy Sherman in her book *Stoic Warriors* describes anger as 'a 'runaway emotion', easy to turn on but hard to turn off.'[5] She goes on to say veterans can 'bring home a rage that has lost its targets and finds new ones that are far less appropriate.'[6] She also sites that this is not a new phenomenon, Roman Stoic philosopher Seneca warned that 'unlike weapons and armour, anger, is not easily thrown off after the battle.'[7]

Anger Transformation is also inappropriate mental preparation for complicated tasks. This is why techniques such as Visualisation or Tactical Performance Imagery and Positive Self-Talk[8] amongst others should be taught.

The ability to mentally control oneself can also be used to manage the Human Stress or 'Fight or Flight' Response, calming individuals down from the over-reacting area to the correct area within the zone; again, another skill that is over-looked in our training. Psychological preparation has also been linked to a reduction in the effects of PTSD. *'The mere suggestion*

3 *Yerkes RM, Dodson JD (1908), The relation of strength of stimulus to rapidity of habit-formation, Journal of Comparative Neurology and Psychology. pp. 459–482.*
4 *Asken, M, Grossman, D, et al. Warrior Mindset: Mental Toughness Skills for a Nation's Peacekeepers. Warrior Science Publications United States of America. P. 47.*
5 *Sherman, N. Stoic Warriors. Oxford University Press New York 2007. P. 65.*
6 *Ibid.*
7 *Ibid.*
8 *Asken, M, Grossman, D, et al. Warrior Mindset: Mental Toughness Skills for a Nation's Peacekeepers. Warrior Science Publications United States of America.*

that an individual will be strong enough to cope with future stressors and will be able to continue to fulfil their role increases the likelihood that they will overcome their difficulties and return to fighting duties.'[9]

One of the most problematic issues surrounding the conduct of soldiers is over-reaction, causing numerous disciplinary problems every year. In addition to getting into the correct mental state, psychological training provides the ability to limit aggressive responses. This also provides a more moral opportunity to instruct soldiers in a true warrior ethos; less bombastic competition fighter, rather a more capable, measured and professional soldier.

THE PHYSICAL COMPONENT

Simplicity is a critical tenet of any realistic, functional Unarmed Combat system. The simpler the mental and physical techniques the easier they are to learn, remember and recall in acute stress situations. Hand in glove with mental control are the physical techniques of a system. This too works in several different dimensions.

De-escalation, Confidence and Physical Competence

Unarmed Combat training must be defensively orientated and focussed on de-escalation throughout the conflict by the inclusion of easy-to-understand confrontation management training. The Conflict Resolution Model included in the *Personal Safety and Public Order (PSPO)* Manual[10] is so complicated that it is largely ignored by Unit PSPO Instructors, despite being a simple and effective system. Testament to this is that it is rarely taught beyond the PSPO instructors' course[11] suggesting that these instructors either feel it isn't relevant or they don't understand it sufficiently to teach it. The result is that our soldiers have limited options when finding themselves in a verbal confrontation and therefore often revert to the default setting of physical violence. 'I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail.'[12]

Confrontation management training, however, is not sufficient by itself. Students get enormous self-confidence from physical competence. As their confidence increases their anxiety levels will drop allowing them to maintain cognitive function in high stress situations. This maintenance of cognitive function allows individuals to access the confrontation management training they have received when they need it. Physical ability has another useful aspect, as competence increases the individual has the ability to deal with more complicated situations and therefore does not need to act as early as a less competent exponent. This allows greater time for non-violent methods to take effect.

When discussing the idea of an Unarmed Combat Course with senior officers I found that a widely held concern is that, soldiers will become more violent as their physical capability increases. If we feel that our soldiers are not already capable of significant violence, then we are much mistaken. Moreover, we teach our soldiers to box; the difference is, in teaching boxing the safety catch isn't included. In 27 years of gathering empirical data on the changes in young people's attitudes when training in martial arts and some boxing fraternities, the vastly overwhelming results I have found are that individuals become calmer and more measured given the right method of instruction rather than becoming desperate to try their new skills on the nearest unsuspecting passer-by.

Pictured is an attack by the enemy at height which increases the likelihood of overwhelming the aggressor. ***Photo: Absolute Defence, reprinted by permission of the author***

9 Harrison, J, Sharpley, J, Greenberg, N. The Management of Post-Traumatic Stress Reactions in the Military.
10 PSPO Manual. Headquarters Army School of Physical Training. Undated.
11 In 20 years of service I was never taught the Conflict Resolution Model nor heard of anyone being taught it.
12 Maslow, A.H., Toward A Psychology of Being. New York And London: D. Van Nostrand Co. Ltd., 1962.

MINIMUM NUMBER OF TECHNIQUES TO COVER THE THREAT

Significant intellectual and logical rigour must be applied to the selection and refinement of these techniques to maximise their effectiveness but minimise their complexity. In 1952, a British Psychologist, William Hick, identified the increase in the amount of time it took to choose between a single option and several options in reaction to a single stimulus. Hick's Law or the Hick-Hyman Law[13], is often over-stated by martial arts and combative instructors as increasing exponentially the more response options you have but, without going into the science, it is only necessary to understand that there is science behind your intuition that with more possible responses it takes more time to react. Hick's Law has a place in limiting the number of techniques taught to an absolute minimum, but this idea can be taken too far. The exceptional combative coach, Tony Blauer, developed the SPEAR System (Spontaneous Protection Enabling Accelerated Response).[14] This grand, although slightly contrived, name is that given to one physical technique. I would suggest that this over-simplification leaves significant gaps in the physical component of the SPEAR System while taking nothing away from Mr Blauer's extensive research and wider theories.

Time is always at a premium, and another advantage of a system with few techniques is that it is quicker to learn meaning, of course, that less time is required for delivery but, more importantly, more time can be spent perfecting the techniques to increase physical competence. However, it must be emphasised that skill fade is high in this field so short refresher periods, ideally one PT session per week, are important. It has been found in testing that the suggested techniques can be safely practiced by trained individuals without instructor supervision which does free up individuals to practice in their own time if they wish.

RELEVANT TECHNIQUES

Techniques should be relevant to the threat. There are examples of soldiers being threatened by pistols, knives and, in civilian life, by punches, yet they are not taught effective defences against them. A study of real attacks both armed and unarmed must precede the development of physical techniques otherwise there is real danger of falling into common Pooh Traps. The first and most common trap is wrist locks, the start point for

Pictured is the aggressor continuing to attack at height.
Photo: Absolute Defence, reprinted by permission of the author

these defenses are fundamentally unrealistic and the techniques take many hours of practice to perfect for use in real situations where the attacker is non-compliant and pumped full of adrenaline.

Another common mistake is to look to the world of competition Mixed Martial Arts (MMA)[15] as having all the answers. For example, while ground fighting is a critical component of any complete system, focussing on taking an aggressor to the ground in the first instance to finish the fight is extremely unwise, particularly when the aggressor is armed or has other supporters with him. It is important to include some ground fighting techniques as our soldiers may well find themselves on the ground, as a cluttered environment is likely to result in slipping, tripping or falling. It follows that someone who has some skill in ground fighting may aim to take them to the ground, so they need to know how to strike from the ground, manoeuvre an attacker on the ground, and get up safely, but to ignore striking in favour of ground combat is a mistake. Ground fighting must be balanced against the realism of a (or many) free-thinking and unconstrained aggressor(s) rather than against the rules of one-on-one, competition MMA. This trap has been fallen into by some military systems; a simple

13 *Hyman, R (March 1953). "Stimulus information as a determinant of reaction time". Journal of Experimental Psychology. 188–196.*
14 *https://blauerspear.com/*
15 *MMA is term given to the study of several Martial Arts simultaneously often for use in competition such as the Ultimate Fighting Championship (UFC) or the One Championship.*

review of the US Combative system[16] and the Royal Marines Close Combat Course[17] shows an emphasis on ground fighting as a first response after the fundamentals have been covered. Many students of these systems only get to the first level and therefore miss fundamental standing defensive and striking skills. While many physical struggles do end up on the ground, almost all start standing up. This is also where we must start.

To finish the series of action from the 'inside minimum range' series we see how a more complete system can be taught to deal with this situation.

Pictured is the soldier continuing the unarmed combat and overwhelming his aggressor. ***Photo: Absolute Defence, reprinted by permission of the author***

The series culminates in the B-K Restraint©[18] which is the first restraint that both effectively restrains the aggressor and allows the soldier to maintain the use of both hands in an upright body position which facilitates the maintenance of situational awareness. The aggressor can also relieve any pressure on his chest to prevent positional asphyxia without risking release.

In addition, the knees on the back and back of the neck increase the likelihood of positional asphyxia and choking as seen in the George Floyd killing.[19]

LEGAL APPLICATION OF FORCE

The importance of the legal application of force has already been mentioned within the other critical areas. This element is the second safety catch of the system but is very easy to over complicate with legal jargon. Instruction must be scenario-based, as it is in MATTs 7 and 10. It must also be delivered in easily understood language to identify the freedoms and constraints involved in each situation, so that individuals don't feel unsure of the defensive measures they can take and they don't think that once the situation becomes physical that all bets are off and they are already in trouble so they might as well make it count! More importantly, their mates will also understand the law and can step in to stop the situation descending into illegality if the red mist descends.

COMBAT PT

One element of the current programme that is conspicuous by its absence so far in this article is Combat PT. The reason is that by its own admission on page one of the manual the techniques held within 'should not be confused with unarmed combat techniques'. One cautionary word that should be noted is that it is human nature to use whatever tools that are at your disposal to defend yourself. Simply telling soldiers not to use these techniques is insufficient. Combat PT is excellent at fulfilling its aim of combat conditioning, but any adoption of a comprehensive UC Course may require a slight tweak in these techniques so that they fall in line with the rigorously developed Unarmed Combat techniques to save confusion.

Pictured is the result of the unarmed combat with the soldier having neutralised his opponent. ***Photo: Absolute Defence, reprinted by permission of the author***

16 *Combatives, Headquarters Department of the Army Washington, DC, 31 March 2017*
17 *Royal Marines Close Combat Manual Version 2:2013.*
18 *Restraint developed by the author and SSgt King of the US Army. Afghanistan, 2013.*
19 *Forensic Pathologist Breaks Down George Floyd's Death by Judy Melinek MD. https://www.medpagetoday.com/blogs/working-stiff/86913 (accessed: 17 Dec 2020)*

In summary, there is so much more that can be done to prepare our soldiers better for the mosaic of situations they may find themselves in. It is low cost and great fun, this in turn acts as an excellent retention tool. Comprehensive Unarmed Combat training is a fundamental building block at the very foundation of combat effectiveness and cannot be ignored any longer. We have stayed a leading international entity through innovation. This is an area where we have been left standing: So much for not drinking, fighting or gambling with British soldiers for fear of losing. Will we really have to stick to gambling and drinking to stay ahead?

Ollie Braithwaite is a former Major and ICSC Graduate who served in The Royal Green Jackets and Rifles in addition to postings within the Land Warfare School, Infantry Battle School and Army Headquarters Combat Capability Development over 20 years. His service also included four operational tours in various theatres. He has studied several martial arts including Tae Kwon-Do, Krav Maga, Aikido, Brazilian Jiu-Jitsu, Ninjutsu, Wing Chun, Hapkido and Western Boxing among others over the past 28 years. He has developed an unarmed combat course over the last 14 years from studies of the world's military close quarter fighting systems and modern Combatives which has been delivered to several British Army units. He is now CEO of Absolute Defence which delivers Intelligent Self-Protection Courses to civilians and Advanced Courses to Close Protection Officers and the Military.

US Marines practice the Marine Corps Martial Arts Program groundfighting section in the rain. ***Photo: Corporal Kamran Sadaghiani, USMC, Wikipedia, Released.***

Mens Agitat Molem: The ACST with The Bundeswehr

Major James Young, Welsh Guards, provides a flavour for the Advanced Command and Staff Training with the Bundeswehr to increase awareness of a hugely beneficial alternative, but equally valuable, command and staff training pathway for members of the British Army looking to expand their horizons.

Pictured is a demonstration showing how the Logistics and Medical chains work from the home base to the soldier on the ground.
Photo: Copyright GAFSC, LGAN 2018, published by permission

The *Clausewitz* Barracks, located in the leafy and affluent Blankenese suburb in the west of Hamburg, Germany, is the home to the German Armed Forces Staff College (GASFC) (*Die Führungsakademie der Bundeswehr* or FüAk). The college runs a number of courses, but it's headlining course, and the one for which it is best known, is the *Lehrgang Generalstabs-/ Admiralstabsdienst National* (LGAN). This two-year course is the highest-level command and staff training conducted in the German Armed Forces (*Bundeswehr*) and the British Armed Forces sends three students[1] per year to complete the two-year staff course. For the Army, the course is voluntary and the opportunity arises on promotion to Major. The LGAN is taken in lieu of both the British Army's own key command and staff training courses, namely the Intermediate Command and Staff Course (Land) and Advanced Command and Staff Course.

THE COURSE

The GAFSC runs in the region of 80 separate courses and seminars on an annual basis, some of which are conducted several times during any given calendar year. Some 2500 German personnel attend these courses, most of whom are regular servicemen and women, but approximately 500 come from the Reserves, 60 are Federal MOD civil servants and a further 60 are from other Government departments or civilian companies/organizations. Some 250 international students from approximately 60 countries also attend training at the GAFSC.[2] Courses range from 2-day seminars to the 2-year LGAN.

The LGAN is the highest and most prestigious command and staff training available to the Bundeswehr (all services, not just Land Forces) until promotion to Brigadier (though this latter course is not attended by all generals). All single-service chiefs of staff as well as the General Inspector of the Armed Forces (CDS equivalent) will have attended this course, as will the vast (and ever-increasing) majority of German Generals[3] and Admirals. Selection for German students is extremely competitive and is made following continuous assessment during a series of other courses which sit roughly in-line, in terms of content, with JCSC(L) and some parts of ICSC(L) or other single service equivalents. The decision for a student to attend is made whilst they are senior captains, roughly in line with when the British Army boards its captains for promotion to major. Only around 8% of German officers are offered a place on the LGAN, effectively singling them out for future 'General Staff' level jobs. At this juncture it is worth explaining that 'where talent endures' (WTE) posts in the German Armed Forces are annotated im *Generalstabsdienst*[4] and are reserved for those who have attended the LGAN.

The course takes up to 120 students a year with around 20 of those coming from other NATO or 'Partnership for Peace' militaries (non-NATO countries). LGAN 18 (2018-2020, the author's course) had international officers from 15 countries: Austria, Canada, Finland, France, Greece, Italy, Lithuania, the Netherlands, Poland, Romania, Spain, Sweden, Switzerland, UK and the USA. Around a third of the internationals had already completed the equivalent staff training in their own countries and ranged in rank from Captain to Colonel, with most being Majors. Overall experience levels are generally significantly higher than German students and, on average, they are older. German language ability however, was extremely varied at the start of the course, with some international students being quasi-native speakers, others with 12+ months of formal training and some with very little training at all. The vast majority have some previous link with Germany - parentage, work in/with the Bundeswehr or formal education. For some, though by no means all international students, English is the fall-back language, meaning native speakers are certainly well placed here!

Prior to the course starting there are a variety of pre-courses run by single services. These are only attended by the German students. International students attend a five week introduction course. A week of the course was allocated to various administrative activities such as assistance with banking, mobile phones, housing etc as well as some sightseeing with families, issues of military IT, feeding accounts for in-camp etc. The remainder covered vital topics ranging from low to top level; badges of rank, terminology, German military structures and organisation to history, doctrine and German foreign and defence policy. The Second World War still plays, both subconsciously and consciously, a critical role in the way

1 *From 2019 two Army students annually and one RN or RAF on a rotational basis.*
2 *The national/international attendance figures are from 2017.*
3 *The rank structure and nomenclature for officers is the same in the air force as the army, hence the Luftwaffe also has Generals.*
4 *To avoid confusion, the nomenclature for the navy will not be used further throughout the article. For reasons of tradition and history, the German Navy has other names for most things, though in practice the systems and procedures described are the same.*

Pictured are half of the course on the Frigate Mecklenburg-Vorpommern in the Kieler Bight. ***Photo: Copyright GASFC, LGAN 2018, published by permission***

that the German students see themselves and the outside world. Topics such as tradition, military engagement or the role of the military in society are both more sensitive and far more intensively discussed than in the UK.

This preparatory course would serve as an indication of what the course itself would be like in terms of breadth of subjects.

LGAN CONTENT

The start of the actual course is always 1st October, or the week where that falls. In German parlance this is 'calendar week 40'. The use of calendar weeks was an early example of cultural differences and practices which one becomes accustomed to over time. The order of modules on the course does vary but the content remains stable. Over the two years, students will attend a single-service phase which is similar to ICSC(L). The phase starts with learning to use the German combat estimate, which is not supposed to be used above the tactical level and it has remained largely unchanged since the Second World War. Suitable for simpler conventional actions it lacks a systematic approach and the systems' weaknesses are exposed when attempting to plan for more complex modern scenarios. Contrary to expectations, the process is quite loose, depends a great deal on a small number of people (one to three within an exercise staff of 20) and at no point are 'effects' discussed.

The key command appointments during this early phase tend to go to German students, though internationals are in key supporting roles throughout. Although internationals will not use this estimate process in the future once they leave the academy, it highlighted the German mindset and assisted in understanding where our differences lie, ensuring that we can be more productive in latter phases. The other estimate used on the course is (and the only one used by air and land forces throughout) the Comprehensive Operational Planning Directive (NATO's COPD), which has similarities to our own estimate process as it is effects based. Anyone who has experience in a battle group headquarters or above will find COPD easy to apply and the current iteration of JCSC(L) will prepare students well for this too.

Communication and Media training features regularly, including during staff exercises where those in appointments will be pulled out and interviewed in German and English (depending on the exercise).

Pictured is the author (looking at the map) with a Dutch Student conducting an Urban Operations encirclement and break in TEWT.
Photo: Copyright GASFC, LGAN 2018, published by permission

During NATO or Joint exercise scenarios, all briefings (to staff branches, the commander or the media) are only allowed to be conducted in English.

Early in the course, time is set aside for learning about German staff process and project management, ethics and spiritual development.

Generally, weekly throughout the course, 'general-lectures' alternating between German Law, History of the Bundeswehr (generally avoiding mention of anything prior to 1955!) and foreign languages permeate the timetable.

A comprehensive deep dive into international relations theory underpins subsequent large blocks of lectures and teaching dedicated to wider strategic studies, alliance security (UN, EU, PfP etc) and political level security policy.

Additionally, virtual and practical teaching about all major German military commands and TLBs is taken in detail. This included a week with the German Navy, the highlight being two days at sea, being 'bombed' by Tornados, conducting anti-submarine warfare and firing naval guns. Some lucky students conducted this exercise from aboard a submarine whilst the remainder were on two frigates. Air Force week saw visits to German and NATO air command centres from where air policing across Europe is monitored, flights in various airframes, whilst being 'intercepted' by duty air policing units, and an impressive live demonstration showing the Joint Personal Recovery process. Not to be left out, Land Forces week included plenty of time on damp training areas with all vehicles and weapons systems being paraded in a synchronised field demonstration, watching NATO's only amphibious bridging unit conduct a wide wet-gap crossing (which happens to be a joint German-British Unit) among the highlights. The Informations-Lehr- Übung (similar to the now defunct (Firepower and Capability Demonstration) showed the combined arms assets of a battle-group plus in the attack and delay, with main battle tanks, armoured and mechanised infantry, overhead support, close air support, aviation support and more. A week in Berlin visiting the MOD, German Parliament and other ministries demonstrated the unrivalled access afforded to the course.

The specialist commands are also visited with equally in-depth demonstrations from the Medical Command, Cyber Command, Strategic Command and others.

Overseas visits are a particular highlight on the course. Though for LGANs 18 and 19, COVID has impacted on these. Some of the visits undertaken and planned were: Staff-rides in the Czech Republic that looked at the battle of Königgrätz; two weeks in New York, Washington DC and Norfolk (UN Headquarters, German Embassy, site of the World Trade Centers, Pentagon,

think-tanks, NATO Allied Command Transformation, Arlington Cemetery to name a few); Brussels (NATO); Mons (SHAPE); a NATO JFC (Brunsum or Naples); and a trip to another country's capital city, ranging from London to Bucharest, Oslo to Rome.

Besides internally conducted exercises many are undertaken with other academies, including the Combined Joint Exercise staff. For LGAN 18 the USA, UK, Italy and Spain took part and each academy exchanged students; meaning a further opportunity to travel, experience other countries, their culture and militaries and to establish new working relationships

ADVANTAGES FOR BRITISH OFFICERS

Beyond the course content itself, there exist a multitude of benefits to the assignment. Though a long course, with an additional 12 month language training requirement prior to the start, there are a number of clear short and long term advantages to be gained. Firstly, the course qualifies British attendees to psc(j) which is the same qualification as gained on ACSC. Attendance on the course negates (but does not preclude) future attendance on ACSC. It also nullifies the requirement to attend ICSC(L) and is effectively an initial grade 2 post. This offers more flexibility to career managers and also opens the door earlier to assignments not otherwise on offer.

The opportunity to mix professionally and socially with the future senior officers of the German Armed Forces and the internationals on the course enables a massive and useful network to grow over the two years and, surely, some friends for life. Syndicate DS are all past students and their post there is a stepping stone to future higher posts.

Concurrently, with the course, one of the two German Armed Forces universities offers a Masters in Military Leadership and International Security. Much of the content of the degree is covered on the course, meaning a large proportion of the credits are gained without additional study. There are some problems with UK student attendance due to differing degree systems, but these can be overcome. The Masters is free to study and is a good opportunity to demonstrate continuous professional development.

Having the opportunity to think about your own career, leadership skills, experience and knowledge is hugely refreshing and is effectively a 'condor' moment before getting into the details at sub unit command. It is also a great opportunity to spend time with family or plan travel in advance as the course dates (including leave) are published up to three years in advance. The course itself only requires around four weekends in two years on duty - significantly less than most of us experience in six months in a British institution or posting.

Pictured is the Army Capability and Firepower Demonstration Munster. ***Photo: Copyright GASFC, LGAN 2018, published by permission***

Pictured are all the members of the course during a visit to Washington DC. Photo: Copyright GASFC, LGAN 2018, published by permission

DISADVANTAGES FOR BRITISH OFFICERS

Mess life within the German Army is almost non-existent, indeed meals are taken in cross-rank facilities and 75% of German students weekly commute. The British officers showcased our traditions through the running of formal mess functions, an invite to which was highly treasured by our hosts.

British Army life in Germany is not like it was in previous decades. British students are isolated from the Army to a large extent with a small footprint of British officers working in Germany outside of those based in Paderborn. Spending significant time away from the UK without being part of a formed British military unit can instil a feeling of dislocation.

This means however, you have a more genuine German experience, living in an internationally renowned port city with all the cultural and social opportunities for which Hamburg is well known.

SELECTION

The board sits at the same time as selection for the Battlefield Technology Course (BTC) and other foreign staff college posts, not all of which qualify students for ICSC(L) and certainly not ACSC. This makes the German course equal in standing to only the US staff college. Very few officers are aware of the unique opportunity, though the post is published on the No 5 Boards (via MS Web) and career managers should highlight such posts to all those on promotion.

Officers from the whole Army may apply. During the author's tenure officers (students and LOs) came from all three arms. Language proficiency is not required, but skills in any foreign language will demonstrate some competency to the board in this area.

SUMMARY

Those selected to attend the course are privileged in that the opportunity is very limited with only two posts per year on offer and competition has historically been high. Those fortunate enough to be selected must, however, acknowledge their responsibility, which is far more encompassing than their own achievement on the course. For many students at the academy, the first professional and social interaction with the British Army may be during this course and the need to understand the finer points of appropriate conduct should not be underestimated. The Germans are direct and challenging and as an officer one is expected to be able to explain the UK's policy and reasoning on everything from the best planning process, the acquisition of new vehicle platforms (including ships and airframes – not just land vehicles) to the UK's position on key European issues such as migration and international development aid. The relatively recent commitment to manufacture and buy BOXER (a German design and one they have fielded) combined with our high prioritisation of Germany as an international defence partner, resulting in DEU-GBR partnered units (amphibious bridging), divisions (1st Panzer Division and 3 (UK) Division) means that the two years abroad will have a positive long term impact for all parties and thus it is an opportunity to be valued.

Cunningham 'On Leadership'

Lieutenant Colonel (Ret'd) Dennis Vincent MBE examines three speeches by General Cunningham on leadership using the Army Leadership Model with its four constituent parts of individual, team, task and understanding the context. It will also use Professor John Adair's Action Centred Leadership model.

French and British troops move to their line of departure, ready for Company live fire attack. The French unit trained alongside the 2 PARA Battlegroup so that British and French airborne forces are ready to deploy together on short notice missions. The UK will continue to cooperate with our European partners in the future following the UK's departure from the EU. We will continue to be a key player in Euro-Atlantic security and defence through our leadership in NATO, which will always be central to the UK's security, our values and our place in the world.
Photo: Corporal Rob Kane, Crown Copyright

General Sir Alan Gordon Cunningham GCMG, KCB, DSO, MC was a well-known leader to the British people in the early stages of the Second World War. He was recognised as a man of dash and vigour, an outstanding commander and the driving force behind Britain's first victory of the War in East Africa. He was also the first Commander of the Eighth Army. After leaving the Eighth Army Cunningham delivered his personal thoughts on leadership in four speeches which he delivered between 1942 and 1944. The first two speeches are from Cunningham's Closing Remarks to the Senior Officer Wing of the Staff College. The third speech was given when Cunningham was General Officer Commanding Northern Ireland and the final speech as General Officer Commanding Eastern Command.

In October 1942 Cunningham was appointed to the role of Commandant Staff College, taking over in November. Here he delivered two closing addresses to the Senior Officer Wing, which had been formed in 1938 and was based at Minley Manor, Hampshire. These were given on the 26 November 1942 and on the 6 May 1943. Although they were principally concerned with the management of a large headquarters, they also offered advice on leading junior staff officers and an insight into operational command. In July 1943 he was promoted to Lieutenant General and given the appointment of General Officer Commanding Northern Ireland. Here he made a speech in December entitled the *Final Speech to a Battle School*. The Battle School consisted of junior leaders from both the British and American Armies. In this speech Cunningham covered a wide range of low-level leadership issues offered practical advice and gave some recollections of his campaigns. He soon moved from Northern Ireland to an enlarged Eastern Command in December 1944. Here, he gave a speech called simply *Leadership*. The audience of this speech is not confirmed but it does cross between the military and civilian spheres and covers a wide range of leadership issues. Unlike the other speeches, the surviving document is not his speaking notes but a summary of the speech.

The four speeches have been analysed in an attempt to understand Cunningham's cognitive processes around the subject of leadership. Initially, his key leadership points, which are common to all of his speeches, will be explored. These will be followed by an analysis of

General Sir Alan Cunningham (1887 - 1983): Portrait of Lieutenant General Sir Alan Cunningham when commanding the 8th Army in the Western Desert. ***Photo: No 1 Army Film & Photographic Unit, IWM, Wikimedia, Released***

his opinions on each of the Army Leadership Model's areas of individual, team, task and understanding the context. Cunningham's leadership took place when the Trait Theory of leadership was the norm. From this theory he understood that leaders required a set of traits or qualities in order to command their teams. In his writing, he consistently states that these qualities must be both constant and consistent regardless of the situation or level at which a leader is commanding. Whilst these qualities will be explored later it is clear that Cunningham believed that the real essence of leadership was confidence, which he saw as a continuum: self-confidence led to the organisation having confidence in the leader, which in turn developed into mutual trust and this heightened a units' morale. Figure 1 shows this concept in diagrammatical form.

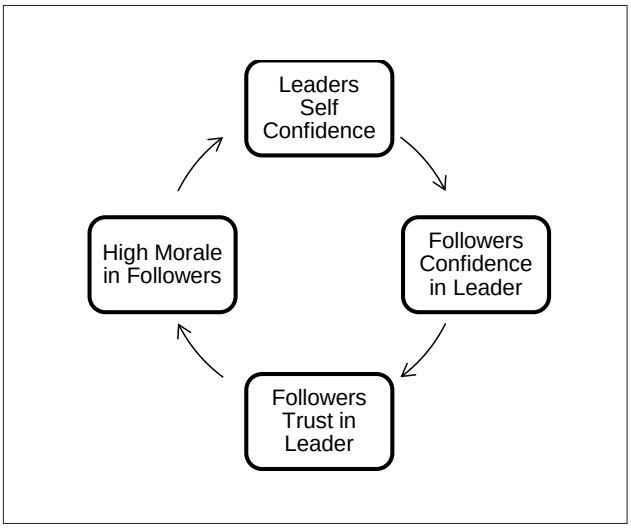


Figure 1: Cunningham's Leadership Confidence Continuum. Author.

Although Cunningham believed that leadership qualities were consistent, he, like Professor John Adair, considered that the functions of leadership were different depending on the level of command that was being exercised.

Cunningham had no set format such as Adair's team, organisation and strategic levels and at that period the Army did not divide its operations into tactical, operational and strategic. Nevertheless, there was a realisation that as he progressed through his career the functions of leadership had to be adapted to meet new challenges. Dealing with the subject of different functions at different levels of leadership in his speeches, he concluded that 'the basic qualities of leadership remain the same throughout the scale: it was merely in the functioning of leadership that variation appeared'.[1] Cunningham's final major point was the fact that leaders needed to remember the human dimension. A quote from his 1944 *Leadership* speech summarises his view as 'the art of leadership was the art of the study of human nature'.[2] This quote has an exceptionally modern feel to it and is more in line with the current Transformational leadership styles than with the Transactional styles of the 1940s.

Cunningham believed that the individual required some fundamental qualities to be an effective leader. The first of these was confidence, which is also one of Adair's

Hobok Fort in Abyssinia captured by South African 1st Infantry Division, 1941. ***Photo: Government Photographer, South African War Museum, Wikimedia, Released***

1 Cunningham, Leadership, 1944, 0803/104-25, 1, NAM.
2 Ibid, 2.

Cunningham's Leadership Qualities	Adair's Leadership Qualities
Confidence	Confidence
Integrity	Integrity
Humility	Humility
Courage	Moral Courage
Discipline	Toughness/Fairness
Sympathy	Humanity
Encouragement	Enthusiasm

Figure 2: Comparison of Adair's and Cunningham's Leadership Qualities. Author.

seven qualities. Cunningham considered that self-confidence was important as was building trust. He believed that trust was gained from followers by developing four areas: a stable character, personal example, efficiency in the job and good health and physical fitness. In addition to confidence, he believed that the other vital leadership quality was loyalty. In this he referred not only to the loyalty of his various commands, but also to followers not criticising and undermining their leaders. He summarised this point to the Staff College students when he said, *'in this Army of ours, one of our weaknesses is a proneness to criticise our leaders … the whole basis of success in war is laid on the foundation of loyalty and confidence in the commander'*.[3] This relates closely to Cunningham's important quality of confidence and the need for trust. Adair confirms that *'it is all to do with trust. The body of evidence is too great that those who don't have it fail as leaders. We discovered that trust was generic to the role of leaders, it is in their DNA'*.[4]

Cunningham adds some other traits to his list of necessary leadership qualities. These include encouragement, drive and determination, which are similar to Adair's requirement for enthusiasm. He also considered that leaders needed to have sympathy, which is more in line with today's empathy. This is the same as Adair's quality of humanity. Cunningham's final main quality is that of personal courage, which again is in line with Adair's moral courage. In his speeches, Cunningham would often relate the story of Sergeant Nigel Leakey, who won the VC in May 1941 during the East African campaign. This Mortar Platoon sergeant came forward at a critical time when a bridgehead was threatened by an attack by forty Italian tanks, Cunningham continued that:

> *Without any hesitation he ran forward mounted the leading tank, opened the top and shot all four of the men in it. This completely disorganised the attack and the tanks sheered off … This is a very good example of how the courage of one man changed the whole face of a battle.*[5]

Cunningham substantiated his view of Sergeant Leakey's action when he confirmed to the junior leaders that he was *'convinced that on the battlefield personal courage is the main attribute in a leader'*.[6] Therefore, it can be established that Cunningham shared with Adair many of the views on the individual qualities that a leader required. Cunningham considered that leaders need to display encouragement, humility, sympathy, courage, integrity, discipline and most importantly, confidence. It is worthy of note that four of these seven qualities are the same as Adair's leadership qualities with another three very similar in character. A comparison of leadership qualities is at Figure 2.

Some of Adair's other qualities can be identified in an exploration of Cunningham's view of the individual's role in team leadership.

In his views on leadership and the team, Cunningham came back to his assurance that confidence was the fundamental requirement. He believed that it was essential that followers have trust in their leaders. Leaders, therefore, must develop *'qualities which engender confidence, the main requirement being knowledge of their jobs, knowledge of their men and their capabilities'*.[7] In knowing your men, he encouraged the Senior Officers Course to get out and meet their commands with the challenge *'for goodness sake, never allow yourself or your staff to be office bound'*.[8]

3 *Cunningham, Closing Remarks to Senior Officer Wing, 6 May 1943, 8303/104-23, 8, NAM.*
4 *Adair, Professor John, Interview with author, 20 July 2017.*
5 *Cunningham, Leadership, 1944, 0803/104-25, 3, NAM.*
6 *Cunningham, Final Speech to Battle School, 21 December 1943, 0803/104-25, 3, NAM.*
7 *Cunningham, Leadership, 1944, 0803/104-25, 3, NAM.*
8 *Cunningham, Closing Remarks to Senior Officers Wing, 26 November 1942, 8303/104-23, 4, NAM.*

Cunningham encouraged junior officers to build confidence with their commanders by developing loyalty, which he considered was vitally important. He encouraged frankness in their dealings with each other which although normal in today's Army, once again would not necessarily have been the norm in the more rigid structures of the Second World War. He considered that officers should present their plans and advice to a 'commander without fear, favour or affection'.[9] Finally he believed that junior officers should be efficient in their roles, but this carried with it two warnings. The first urged *'quiet efficiency, efficiency which ensures the smooth, willing and level running of the whole machine'*.[10] Secondly, he cautioned about letting *'efficiency cloud the fact that you are dealing with human beings … encourage original thinking'*.[11] This attitude returns to one of his key points on leadership, that it was the study of human behaviour. As far as soldiers' confidence was concerned, Cunningham believed that this was founded on the trust that they held in their leaders. The leader's job was to *'inculcate into the men confidence in their cause, confidence in their commanders, confidence in you, yourself and confidence in themselves'*.[12] He explained this with the example of how *'the men in the Desert had stood up to it; their tanks had been thin and their guns had had insufficient range, but they had won a soldiers battle'*.[13] The soldiers must also be properly prepared by their commanders, so they could have confidence in themselves and this was improved when they had *'proficiency in the use of their weapons and physical fitness'*.[14] Once the leader, officer and men had confidence in each other and themselves Cunningham expected that they would operate as an effective team, which he considered important as only this could deal with the complexity of military operations.

Achieving the task, as in military operations, is the primary aim of a team. Cunningham believed that a military leader must understand and master the Principles of War; this was possibly a reflection from an essay which he wrote when he was a student at the Naval War College. There were four principles that he considered a good leader had to fully understand. The first of these was the need to maintain the object i.e. keep focused on the main effort. Cunningham gave the advice that *'it must become instinctive to you to make up your mind at once … your object must be obtained casualties or no casualties'*.[15] It is easy to witness in his two campaigns how this requirement would have come to the forefront of his thinking. On the second principle of seizing and holding the initiative, he believed that the key was the ability for mobility. In his1943 Battle School speech, Cunningham explained how the focus on sustaining the rapid advance in East Africa had led to the development of new tactics to retain the initiative. He explained these new tactics:

> *Which succeeded in every case, was either to motor or march a force round the road behind him and then attack him from the flank or rear. As I say it never failed, as soon we were established in the rear, he wavered and as often as not gave in.*[16]

As with the first principle, Cunningham would have had time to reflect on the loss of initiative in the later stages of Operation CRUSADER. Although this was not given as a case study he did advise them to think about *'the physiological side of attacks from the rear'*.[17] The third principle discussed was that of concentration of force, especially *'as applied to the Air, to the tanks and to the Artillery'*.[18] Cunningham does not give a further example, but implies the importance of durable relationships between all elements of a modern force. His final principle is the requirement for security. He advised on the need for this at the lowest level and the need for all those involved in operations to have their own *'personal cover story, and nothing else must be told to anyone else not in the know, especially not to wives'*.[19] This premise had come from his experiences in both Nairobi and Cairo where he had found that secret Army plans were being discussed by all sorts of people in the male expat community. At the other extreme, Cunningham put much trust in the need for operational security and believed in face-to-face briefings for those that had to have the required information. To the Senior Officers Course he confirmed this practice as follows:

9 *Ibid., 1.*
10 *Ibid.*
11 *Ibid., 4.*
12 *Cunningham, Final Speech to Battle School, 21 December 1943, 0803/104-25, 2, NAM.*
13 *Cunningham, Leadership, 1944, 0803/104-25, 2, NAM.*
14 *Cunningham, Final Speech to Battle School, 21 December 1943, 0803/104-25, 3, NAM.*
15 *Cunningham, Closing Remarks to Senior Officer Wing, 6 May 1943, 8303/104-23, 2, NAM.*
16 *Cunningham, Final Speech to Battle School, 21 December 1943, 0803/104-25, 7, NAM.*
17 *Ibid., 8.*
18 *Cunningham, Closing Remarks to Senior Officer Wing, 6 May 1943, 8303/104-23, 2, NAM.*
19 *Cunningham, Closing Remarks to Senior Officers Wing, 26 November 1942, 8303/104-23, 4, NAM*

A Matilda tank crew overhauling their vehicle in preparation for the next phase of battle near Tobruk, 1 December 1941.
Photo: Captain G. Keating, No 1 Army Film and Photographic Unit, IWM, Wikimedia, Released

> *In neither of the two campaigns which I was associated, did we issue one operation order from Army HQ. Orders were given personally to the Corps or Divisional Commanders; they were not confirmed in writing except in so far as they were contained in the minutes of conferences.*[20]

The need for security was closely associated with the requirement to surprise and deceive the enemy. Cunningham believed that a good leader always deceived his opponent and the vital skill in achieving this was a full understanding of the operating environment.

Cunningham believed that understanding the context was shaped by three factors, planning and preparation, morale and discipline. In planning, he placed great emphasis on the establishment of efficient plans in an environment of minimal bureaucracy and an atmosphere where the staff had an open and frank relationship with their commander. In a return to the Principles of War, he considered that a commander must choose the correct target for planning and then resource it correctly. He recalled that *'my orders in Libya were simply to destroy the enemy tanks as it was thought that with their destruction we could go where we liked. How wrong we all were.'*[21] He considered that planning was the leader's job supported by the staff, as opposed to the leader agreeing to implement the plans that the staff had generated. This idea has a contemporary feel and again is one that was at odds to the approach adopted by many of the senior commanders of the time who postulated the power of the staff. Cunningham believed that the correct preparation of troops was also a fundamental leadership role. He compared the lack of British preparation to that of the Germans commenting that *'it was not so long before the war that much of our equipment was represented by flags, e.g. green flag, white cross - A.T'*. He went on to discuss the German Army's preparation stating that *'they had trained under*

20 Cunningham, Closing Remarks to Senior Officer Wing, 6 May 1943, 8303/104-23, 1, NAM.
21 Cunningham, Final Speech to Battle School, 21 December 1943, 0803/104-25, 10, NAM.

war conditions for eight years before the war. With full establishments, full equipments and unlimited training areas'.[22] The requirement to prepare the men in knowledge, skills and attitude was one that he understood to be significant and he would no doubt have spent much time on these issues when he was forming and re-forming his four divisional commands in the early war years.

When discussing followers' morale, Cunningham firmly thought that *'the maintenance of morale was the real basis of leadership; all leaders were dependent on the morale of their men'*.[23] Going back to his primary theme, Cunningham held that morale could be measured *'by the extent of the confidence and trust of the led … trust and confidence was conditioned by a man's mental and physical state'*.[24] The fitness of the troops was important and to the junior leaders at the Battle School he discussed mental fitness, stating that *'fear in itself is not shameful, it only becomes shameful if allowed to impede the military object'*.[25] He also discussed physical fitness confirming that as a Divisional Commander 'everybody had to march 10 miles in two hours and 6 miles in one hour'.[26] He firmly believed that this amalgamation of confidence and trust in the leader combined with good mental and physical fitness were the essentials of high morale, unlike many at this time who believed that high morale in the British Army was built on history and tradition. Cunningham accepted that this was important but that *'it had been proved throughout the war that new units who were well led would provide an esprit de corps which was second to none. It would not do to be carried away by tradition'*.[27]

Although he felt that tradition was not as important as some, Cunningham believed that discipline was a vital part of the modern army. As a man that was raised in the Victorian era, humility, selflessness and discipline were second nature to him. He believed that the soldiers of the Second World War were selfish and lacked self-discipline and that officers had not done enough to explain to soldiers the reasons for military law. He suggested that the aim of military discipline was to 'make a soldier firm in battle' and that *'we must insist on all those aspects of discipline which go to the attainment of the object. On unquestioning obedience, on punctiliousness and on self-respect'*.[28] He also warned against officers being either too strict or too lax and said that discipline must be administered in a consistent way. This view he

7th Parachute Regiment Royal Horse Artillery (7 Para RHA) run a demanding leadership course designed to give junior soldiers from across the Royal Artillery the skills and experience to promote from Gunner to Lance Bombardier, and on from there. The four-week course (4 - 29 March) started with learning about command, leadership and management at Merville Barracks, Colchester, before moving to the STANTA ranges in Norfolk. ***Photo: Corporal Jamie Hart, Crown Copyright***

22 *Ibid., 6.*
23 *Cunningham, Leadership, 1944, 0803/104-25, 2, NAM.*
24 *Ibid., 1.*
25 *Ibid., 3.*
26 *Ibid.*
27 *Ibid., 4.*
28 *Cunningham, Final Speech to Battle School, 21 December 1943, 0803/104-25, 5, NAM.*

summarised by stating that *'justice was the only thing that mattered, if a leader was just, he could be as strict as he liked'*.[29] This approach to discipline relates directly to the last two of Adair's leadership qualities: humility and toughness and fairness.

Cunningham's thoughts on leadership, especially the need for leaders to understand human nature have a contemporary quality to them. It can be identified that he placed tremendous emphasis on the need for a leader to have self-confidence, he believed that this would lead to the followers developing confidence and trust in the leader; which in turn would boost their morale and fighting spirit. Cunningham's ideas about the qualities required in a leader have been identified to be similar to those of Adair.

These ideas are best summarised by his own words as written in the conclusion to his 1944 speech on leadership:

> *Let us take comfort from our experience in this war that we can still produce great leaders, men of will power, determination and drive, with the power of radiating confidence, and willing to take risks when the condition arises.*[30]

On return from Africa, Cunningham had an opportunity to reflect on his thoughts on leadership and deliver a series of speeches. In these he identified some key qualities required by an effective leader; these were confidence, encouragement, humility, sympathy, courage, integrity and discipline. The most important of these was confidence. He believed that self-confidence developed confidence and trust in the team. This he considered would in turn boost the teams' morale and fighting spirit, thus allowing them to successfully achieve the task. Therefore Cunningham's overarching ideas about leadership can be seen to be in line with the current Army Leadership Model in that the Individual, team, task and understanding the context were all interdependent. When Professor John Adair read this article, he commented that the content of Cunningham's speeches *'puts him up with Montgomery and Slim as a thinker about leadership in the military context. He was unique, however, in lecturing on the subject actually during the Second World War, whereas they saved their thoughts until the post war years'*.[31] Maybe it is time to recognise Cunningham's progressive thoughts *'on leadership'*.

REFERENCES

- *National Army Museum (NAM)*
- *Cunningham, Closing Remarks to Senior Officer Wing, 6 May 1943, NAM, 8303/104-23.*
- *Cunningham, Closing Remarks to Senior Officers Wing, 26 November 1942, NAM, 8303/104-23.*
- *Cunningham, Final Speech to Battle School, 21 December 1943, NAM, 0803/104-25.*
- *Cunningham, Leadership, 1944, NAM, 0803/104-25.*
- *Portrait of General Sir Alan Cunningham, 1943, NPGx166927, 1943, National Portrait Gallery.*
- *Professor John Adair, Interview with author, 20 July 2017 and 27 July 2020.*
- *Adair, John. How to Grow Leaders: The Seven Key Principles of Effective Leadership Development, London: Kegan Page, 2009.*

After some of the heaviest fighting of the North African campaign, infantry of the 2nd New Zealand Division link up with Matilda tanks of the Tobruk garrison. The New Zealanders had fought along the coast road to relieve Tobruk and end the eight month siege. ***Photo: Captain G Keating, No 1 Film & Photographic Unit, IWM, Wikimedia, Released.***

29 *Cunningham, Leadership, 1944, 0803/104-25, 5, NAM.*
30 *Ibid.*
31 *Professor John Adair, Interview with author, 27 July 2020.*

Soldiers in Greenland - 1930 to 1990

Major (retired) Sir Crispin Agnew, Royal Highland Fusiliers, FRGS, Queen's Counsel, Honorary Research Fellow, University of Dundee provides BAR Readers with a concise history of the Army's involvement in the exploration of Greenland.

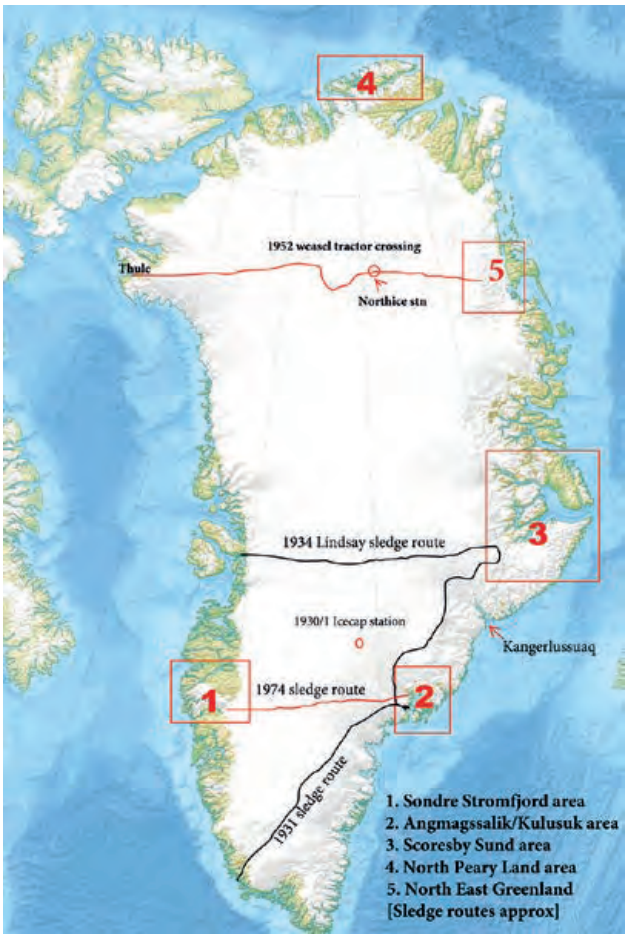
The wilderness and ruggedness of Greenland. ***Photo: Corporal Adrian Harlen ABIPP, Crown Copyright***

'To take an idea and make it happen; to lead others safely in dangerous places; to sustain them and to receive their support in return; to enjoy the comradeship of shared endeavour; to add a little more to the sum of global exploration; these are the real returns and for some of us they come very near to being sufficient.'

Major Tim King[1]

Greenland is now a recognised destination for army adventurous training[2] with numerous unit expeditions going climbing in Greenland each year.[3] However, it is not generally known that soldiers have been exploring in Greenland since the 1930s. The author was privileged to have explored and climbed in Greenland in the 1960s, when adventurous training was first introduced and Greenland could be accessed via airfields established during and after World War 2 (WW2).[4] This article aims to set out the history of soldiers exploring and climbing in Greenland from the 1930s to 1990 with references to relevant sources so that those who are interested in the history can follow it up.[5]

The first soldiers to explore in Greenland were Lieutenant Martin Lindsay[6], Royal Scots Fusiliers, the expedition surveyor, and Captain Percy Lemon[7], Royal Signals, the wireless operator, as members of the British Arctic Air Route Expedition 1930-1931[8] led by Henry (Gino) Watkins.[9] The expedition, with two tiger moth aircraft, surveyed part of the east coast, collected climate data, and looked for suitable landing sites for trans-Atlantic flights. The expedition struggled to set up the ice cap station, where they left Augustine Courtauld[10] to winter on his own while collecting weather data and then the expedition over-wintered in Angmagssalik. The following summer



Map of Greenland showing some of the historical expeditions.
Image: Author's Collection

Watkins, Courtauld and Lemon explored northwards to the head of the Kangerlussuaq fiord. Then they made an arduous boat trip southward round Kap Farvel reaching Nanortalik. Lemon fell seriously ill after this trip and died in 1932. Meanwhile ,Lindsay and two others dog-sledged 450 miles south from Angmagssalik to Ivigtut, taking 27

1 *King, Major Timothy, RAOC, Exercise Snow Dance, Liverpool Land Expedition 1989, p. 18 'Adventurous Training and Expeditions - A personal comment'.*
2 *Adventurous Training Group (Army) website which refer to Adventurous Training 'skiing first descents in Greenland'. https://www.army.mod.uk/who-we-are/corps-regiments-and-units/adventurous-training-group-army/ (accessed 4 August 2020).*
3 *e.g. Brigade of Gurkhas Greenland 2019 - https://www.gurkhabde.com/exercise-tiger-arrc-greenland/ (accessed 4 August 2020) and Royal Logistic Corp 2019 - https://www.royallogisticcorps.co.uk/high-risk-adventure-training-in-greenland/ (accessed 4 August 2020)*
4 *e.g., at Sondrestrom (Area 1), Angmagssalik (Tassiilaq)/Kulusuk (Area 2), with Mestersvig and later Constable Pynt airfields serving Scoresby Sund (Area 3) and Thule (Areas 4 & 5) - see Fig 1 for areas.*
5 *For map see: Government of Greenland, Greenland interactive map. https://tinyurl.com/ybfbafs6 (Accessed 2 July 2020).*
6 *Lindsay, Lieutenant Colonel Sir Martin, of Dowhill Bt CBE, DSO, MP. Oxford Dictionary of National Biography, Online Edition. https://doi.org/10.1093/ref:odnb/31363 (accessed 10 August 2020).*
7 *Scott, J.M. and Lemon, Captain P.M.H., Royal Signals, Obituary, The Geographical Journal Vol. 80, No. 6 (Dec. 1932), pp. 559-560.*
8 *Scott Polar Research Institute, Picture Library catalogue: British Arctic Air Route Expedition 1930-31. https://www.spri.cam.ac.uk/picturelibrary/catalogue/baare/ (accessed 7 August 2020)*
9 *Ridgeway, John and Watkins, Gino, (Oxford University Press, 1974).*
10 *Augustine Courtauld collection, Scott Polar Research Institute Archives, University of Cambridge. https://archiveshub.jisc.ac.uk/search/archives/5b0bcde6-5b3d-3c24-aa7f-6a22d05c9710 (accessed 29 July 2020).*

days, surveying the height of the mountains and ice-cap in the area. The expedition members were awarded the Polar Medal.[11]

Watkins returned to east Greenland in 1932[12] with three other team members, but drowned in a kayaking accident. He had no soldiers with him, but was accompanied by Freddie Spencer Chapman[13] also a member of the 1930/31 expedition, who climbed in the Himalayas, had a distinguished war record, best known for his guerilla exploits in the Malayan jungle.[14]

Lindsay returned in 1934, leading the three-man British Trans-Greenland Expedition[15] that included Lieutenant Arthur Godfrey, Royal Engineers[16], and Andrew Croft.[17] They dog-sledged across Greenland from the west, just north of Jakobshavn, along latitude 70o arriving at the Mountains of the Dead (Dødemandstoppene). They then sledged south surveying the peaks and glaciers from the icecap, fixing the position of Gunnbjørn Fjeld, the highest peak in Greenland. The party exited the icecap down the glacier used by the 1930 expedition having set a record with the sledge journey of 1,050 miles.

Lindsay left the army in 1936 standing unsuccessfully as conservative candidate for Brigg in Lincolnshire. He rejoined the army in 1939 eventually commanding the Gordon Highlanders.[18] In 1946 he was elected MP for Solihull and remained an MP until 1964 and was created a Baronet in 1962. After the 1934 expedition, Godfrey and Croft joined the Oxford University Arctic Expedition 1935-36[19] and were awarded the Polar Medal (Silver).[20] Croft went on to explore in the Antarctic before serving in the Special Operations Executive during WW2, obtaining a regular commission. He retired in 1959 as a Colonel Commandant of the Army Apprentices College, Harrogate.

Following these expeditions there was no further British army exploration of Greenland until the scientific British North East Greenland Expedition 1951-2[21] led by Commander C.J.W Simpson CBE, DSC, Polar Medal,[22] Royal Navy. The expedition consisted of seven principal scientists and supporting assistants, including service personnel. The army members included Staff Sergeant JW Oakley, Royal Electrical and Mechanical Engineers (REME), Vehicle mechanic (both years), Captain JS Agar, Royal Signals, Radio Officer (1st year), Captain RJM Fletcher, Royal Engineers, General duties (2nd year), Warrant Officer II D. Howard, REME, Vehicle mechanic (2nd year).[23]

The expedition explored in and around Dronning Louise Land in the north east (Area 5) with a base camp at Britannia Sø, a lake to which Coastal Command Sunderland flying boats airlifted the stores. From here the expedition gained access to the ice-cap up the Britannia glacier, establishing a base on the ice-cap named Northice. The expedition studied geology, glaciology, meteorology, and physiology and carried out gravimetric and seismological surveys as well as providing information to the services on operating in the arctic. The Seismic Team crossed the ice-cap from Britannia base to Thule on the west coast using Weasel snow tractors.

11 *London Gazette, 4 November 1932, Issue 33880 p. 6991. https://www.thegazette.co.uk/London/issue/33880/page/6991 (accessed 29 July 2020).*

12 *Rymill, J.R., Riley, Quintin and Spencer Chapman, F., The Tugtilik (Lake Fjord) Country, East Greenland, The Geographical Journal, Vol. 83, No. 5 (May, 1934), pp. 364-377.*

13 *Lieutenant Colonel Frederick Spencer Chapman, DSO & Bar, ED, Polar Medal. Oxford Dictionary of National Biography, Online Edition. https://doi.org/10.1093/ref:odnb/30919 (accessed 12 August 2020)*

14 *Chapman, Frederick Spencer, The Jungle is Neutral (Chatto and Windus, 1949).*

15 *Lindsay, Martin, Sledge, The British Trans-Greenland Expedition 1934, (Cassells 1934).*

16 *Arthur Godfrey Archive, Scott Polar Research Institute, Archives, University of Cambridge https://archiveshub.jisc.ac.uk/search/archives/36d7a5b4-a92c-332b-b70e-d5433ee7cba4 (accessed 24 July 2020).*

17 *Croft, Colonel Andrew, DSO, OBE, Polar Medal. https://acmf.org.uk/andrew-croft/ (accessed 22 July 2020); c.f. Andrew Croft, Polar Exploration, (A and C Black, 1940). Eric Pace, Andrew Croft, Artic Explorer and Winter Warfare Expert, 91, The New York Times, Obituary July 6, 1998. https://www.nytimes.com/1998/07/06/world/andrew-croft-arctic-explorer-and-winter-warfare-expert-91.html (accessed 22 July 2020).*

18 *Lindsay, Lieutenant Colonel Martin, DSO, So Few Got Through, (London: Collins, 1946).*

19 *Glen, A.R., and Keith, D.B., The Oxford University Artic Expedition 1935-36, Nature 135, 604 -606. https://www.nature.com/articles/135604a0.pdf (accessed 24 July 2020); Oxford University Arctic Expedition, 1935–136. (1936). Polar Record, 2(11), 19-23. https://www.cambridge.org/core/journals/polar-record/article/oxford-university-arctic-expedition-1935136/5CBA51361C48D129E227C1BB0D5E2E3F (accessed 26 July 2020).*

20 *London Gazette, 6 February 1942, Supplement: 35449, p. 654. https://www.thegazette.co.uk/London/issue/35449/supplement/654 (accessed 24 July 2020).*

21 *Simpson, C.J.W., The British North East Greenland Expedition, The Geographical Journal 1955, Vol 121, No. 3 (Sep. 1955), pp. 274-289. https://www.jstor.org/stable/pdf/1786023.pdf?seq=1 (accessed 20 July 2020). C.J.W. Simpson, North Ice. (Hodder & Stoughton, 1957).*

22 *Commander Jim Simpson, The Telegraph Obituary 17 May 2002. https://www.telegraph.co.uk/news/obituaries/1394433/Commander-Jim-Simpson.html (accessed 20 July 2020.*

23 *The Polar Medal was awarded to all members of the expedition – The London Gazette, 26 November 1954, Supplement: 40339, p. 6789. https://www.thegazette.co.uk/London/issue/40339/supplement/6789 (accessed 20 July 2020).*

Pictured are two TA soldiers taking part in Exercise MIDNIGHT SUN in Greenland to test their skills in sailing, mountaineering and sea-kayaking along with their arctic skills. As part of the expedition, satellite and radio specialists from the Royal Signals will be working alongside the BT Emergency Response Team (ERT), as part of Defence Career Partnering, to establish a robust wireless network that could be deployed quickly to keep essential lines of communication open during an emergency. ***Photo: Adrian Harlen ABIPP, Crown Copyright***

In the summer of 1960, Major Anthony Streather[24], Gloucestershire Regiment was on Brigadier Sir John Hunt's[25] expedition to the Stauning Alps (Area 3) for boys undertaking their Duke of Edinburgh Gold Award.[26] Streather, who had a significant record of Himalayan climbing, went on to lead the British & Nepalese Army Everest Expedition 1976 (Everest 1976).[27]

Expeditions to Greenland started from the mid 1960s, encouraged by the Army Mountaineering Association (AMA),[28] formed in 1957, and the new Adventurous Training policy,[29] which provided for *'controlled exposure to risk, to develop leadership, teamwork, physical fitness, moral and physical courage'*.[30] Field Marshal Templar is credited with stimulating AMA expeditions, when, in 1965, at a dull AMA meeting he burst out *'stop wittering on and go climb some f….g mountains'*.[31]

First off the block, in 1966, was Major John Peacock, REME. Peacock who had taken part in the 1964 Joint

24 *Streather, Colonel Tony, The Telegraph Obituary 2 November 2018. https://www.telegraph.co.uk/obituaries/2018/11/02/colonel-tony-streather-soldier-became-one-leading-figures-golden/ (accessed 22 July 2020).*

25 *Leader of the 1953 Everest Expedition and afterwards Lord Hunt of Llanfair Waterdine.*

26 *Danger, D.F.O., Alpine Notes, Alpine Journal 1960, p. 224 at 238. [All Alpine Journal references can be found through the Alpine Journal search engine https://www.alpinejournal.org.uk/].*

27 *Fleming, Jon and Faux, Ronald, Soldiers on Everest, (HMSO, London 1977).*

28 *https://www.armymountaineer.org.uk/History/ (accessed 20 July 2020).*

29 *The National Archives, Adventure Training Scheme: policy. Reference WO 32/19687 (1962-1966). https://discovery.nationalarchives.gov.uk/results/r?_q=adventure+training+scheme%3A+policy&_sd=&_ed=&_hb= (accessed 20 July 2020). Army General Administrative Instruction, Vol. 1, Chapter 11, Adventure Training https://discovermybenefits.mod.gov.uk/army/army-service-benefits/army-service-benefits-adventurous-training (MODNet access only).*

30 *From the current definition of Adventurous Training. Joint Services Adventurous Training (JSAT) Scheme, JSP 419, paragraph 6. https://discovermybenefits.mod.gov.uk/army/army-service-benefits/army-service-benefits-adventurous-training (MODNet access only)*

31 *Bronco Lane, Military Mountaineering, A history of Services Mountaineering 1945-2000, (Hayloft 2000) p. 55. ("Military Mountaineering").*

Services Expedition (JSE) to South Georgia,[32] took a party of three officer cadets from Royal Military Academy (RMA) Sandhurst to the Sukkertoppen ice-cap, flying into Sondrestrom.[33] The party climbed two virgin peaks and put up a new route on Mt Atter. Officer Cadet Charles Walshaw went on to join JSE Elephant Island 1970/71 and Nuptse 1975. Peacock returned to the Ikkamiut area near Sukkertoppen in 1967, with Major Jon Fleming, Parachute Regiment, as deputy leader.[34] They went by boat to the head of the Ikkamiut and then used canoes to get to base camp at the east end of lake Tasersuak, where they undertook some scientific work, got onto the local ice-cap via the Col St Andre and climbed 26 peaks (24 first assents).

In 1969, Peacock led the JSE North Peary Land (Area 4)[35] with Lieutenant A.M. Griffin, Light Infantry and Lieutenant C J Grant, Royal Signals as the army members. The Ministry of Defence established the Joint Services Expedition Trust *'to further the efficiency of the armed forces of the crown and to educate their personnel by undertaking or supporting expeditions and adventurous training activities'*.[36] The Trust sponsored joint services expeditions from the early 1960s and this expedition was part of the series. The 1969 expedition carried out exploratory and scientific work (geology, glaciology and ornithology), a closed telurometer and theodolite traverse of the peninsula and climbed 21 peaks. Peacock was awarded the Royal Geographical Society, Ness Award.

Pictured is Hurry Inlet and Scorsebysund circa 1989. ***Photo: Author's Collection***

32 *Combined Services Expeditions to South Georgia, 1964-65. (1966). Polar Record, 13(82), 70-71. https://www.cambridge.org/core/journals/polar-record/article/combined-services-expedition-to-south-georgia-196465/BB206D9F7DF78DA50CBB09099DEDA2F8 (accessed 29 July 2020).*

33 *Peacock, J.D.C., Sandhurst in Greenland, 1966, Alpine Journal 1967 pp. 45 – 56.*

34 *Peacock, John, Sukkertoppen Wedding Cake: The Army Mountaineering Expedition, 1967, Alpine Journal 1968 pp. 234 – 240.*

35 *Peacock, John, North Peary Land, British Expedition, 1969, Alpine Journal 1970 pp. 237 – 239. Peacock, J. (1970). Joint Services Expedition to North Peary Land, 1969. Polar Record, 15(94), 54-55. https://www.cambridge.org/core/journals/polar-record/article/joint-services- expedition-to-north-peary-land-1969/C2E3D2A9472AF5D935B35E780DD15B40 (accessed 29 July 2020). National Archives, Joint Services Expedition: North Peary Land 1969 Reference WO 32/21643 https://discovery.nationalarchives.gov.uk/details/r/C2554785 (accessed 29 July 2020).*

36 *Charity Commission, the Joint Services Expedition Trust. https://beta.charitycommission.gov.uk/charity-details/?regid=263682&subid=0 (accessed 21 July 2020).*

After Greenland, Peacock was involved in the training and planning for Everest 1976, which included training expeditions to Himachal Pradesh (1973)[37] and Nuptse (1975).[38] His final posting, was Colonel Commandant of the Princess Marina College for REME apprentices.[39]

In 1966, the author took part in the Royal Navy East Greenland Expedition (RNEGE) which planned to visit Schweizerland, inland from Angmagssalik.[40] During the spring, the leader, Lieutenant Commander Michael Thomas, laid a supplies depot by dog-sledge near Conniatsbjoerg at the head of the Häbet glacier. Thomas had a climbing injury weeks before the summer expedition, so Lieutenant Commander Chris Stocken, DSC[41] took over as leader. In July, the expedition sledge hauled to the Conniatsbjoerg depot to find a member of an Imperial College (IC) expedition[42] with a broken leg, eating the expedition rations. Surgeon Lieutenant Noel Dilly, Royal Navy Reserve, plastered the leg. A deal was done to exchange rations at the Conniatsbjoerg for some of the IC rations air dropped to the Femstjernen. However, the airdrop rations had been blown into crevasses and it took a long time for the IC party to find them. Eight of the RNEGE team going to collect the rations failed to rendezvous with the IC team as IC were behind schedule. So, they returned to a food dump 20 miles away and climbed in the area until the food ran out before returning to the Conniatsbjoerg. Here four team members had been climbing, but a fall by Flying Officer Roy Dearman, Royal Air Force (RAF), brought the team off the mountain. While Aircraft Artificer Peter Garden led Dearman back to camp, Garden stepped on a hidden crevasse and fell to his death. Stocken then decided that the author with two others, should return to the coast to report the death. The rest of the party, now having a location for the IC food dump, trekked back to the Schweizerland and climbed 16 peaks. On the last climb, as the party retreated in bad weather, Stocken was killed by a falling rock. The team evacuated to the coast, meeting the coastal team near the Tasissarssik ice-fall, and returned to the United Kingdom.[43] This expedition demonstrated the ethos of adventurous training, which was active service substitute, where the team had to cope, without outside help, with frustrations, changes of plan, the prospect of food running out, and casualties where the situations were 'real life' and not an exercise that could be abandoned.

The 1968 Team: from left to right, the author, Jon Flemming, Bruce James &Dr Noel Dilly. ***Photo: Author's Collection.***

In 1968, the author led the Army East Greenland Expedition to the Kristian glacier, with Fleming and Dilly and others.[44] The aim was to climb in the area and make an attempt on Mt Forel, Greenland's second highest peak, while collecting botanical specimens for Lancaster University. The author, Captain Timothy Taylor, Royal Green Jackets and Gunner Bruce James, Royal Artillery flew by RAF Andover to Kulusuk as the advance party. James injured himself and remained in Kulusuk before joining the main party. The author and Taylor then made their way, sledge hauling over 14 days, to the Kristian glacier to receive an airdrop. The route in followed that of the 1966 expedition to the Femstjernen and then into the Kristian glacier. Travel was mainly at night when the snow was frozen, but the complex crevasse and meltwater systems of the Femstjernen made route finding very difficult to get onto the Kristian glacier. While waiting for the airdrop and the main party to arrive,

37 *Fleming, Jon, The Army Mountaineering Association Himal Pradesh Expedition 1973, Alpine Journal 1974 pp. 21-27.*
38 *Fleming, Jon, Nuptse 1975, Alpine Journal 1975 pp. 107-116.*
39 *Peacock, Nigel and Cleare, John, In Memoriam; John Peacock (1931-2014), Alpine Journal 2015 pp. 427 – 431.*
40 *Thomas, M.B. and Wallis, R.H., The Royal Naval East Greenland Expedition. 1966, Alpine Journal 1967 Pt 1 pp. 29 – 35, Pt 2 pp. 212 – 224.*
41 *Christopher Maitland Stocken, Wikipedia. https://en.wikipedia.org/wiki/Christopher_Maitland_Stocken (accessed 26 July 2020).*
42 *American Alpine Club, North America, Greenland, Imperial College East Greenland Expedition, July 1967. http://publications.americanalpineclub.org/articles/12196737700/North-America-Greenland-Imperial-College-East-Greenland-Expedition (accessed 12 August 2020)*
43 *Halliworth, Rodney, The Last Flowers on Earth, (Angley Books, 1966).*
44 *Dilly, Noel, East Greenland: Kristians glacier area 1968, Alpine Journal pp. 276 – 281. National Records of Scotland, Author's expedition papers & files, Agnew of Lochnaw Muniments GD154, Nos. 1024 – 1026 & 1043-1055.*

they climbed 4 new peaks. The main party reached base 16 days later having left Chaplain Donald Beaton, who had broken an ankle skiing, with Sergeant Peter Cole, Royal Army Medical Corps to evacuate to the coast. Cole joined in with a London University group climbing in the Kangertitivatsiag at the snout of the Glacier de France. The expedition then made its way up the 'Col de Woppers' (expedition name) to the north as the way towards Mt Forel. After a heavy snowfall the attempt on Mt Forel was abandoned as sledge hauling was too difficult, but some of the nearby mountains were climbed. The expedition evacuated down the Glacier de France where a boat picked up the party for return home. For the author the 30 days trekking, with one companion, through Greenland's magnificent and daunting mountains to access a glacier that appeared to be unvisited and then to climb virgin peaks remains a most memorable and testing experience.

The author, thereafter, was a member of the JSE Elephant Island 1970/71[45]; leader of the JSE Northern Patagonian Ice-field 1972/3;[46] member of the expeditions to Nuptse 1975 and Everest 1976 and then led Api 1980.[47] Fleming, post Greenland, led Tirich Mir (1969),[48] before taking charge of the training for Everest 1976, which included leading the Himachal Pradesh and Nuptse expeditions and taking part in Everest 1976. Dilly,[49] 'a mildly eccentric Naval Reserve doctor with a wide mountaineering experience,[50] latterly Professor, St George's Hospital Medical School, went on to be the expedition doctor for Axel Heiberg 1972, Tirich Mir, Himachal Pradesh and Nuptse.

Next to explore in Greenland was Lieutenant Colonel John Muston, MBE,[51] Fellow of the Royal Geographical Society (FRGS), Royal Army Ordnance Corps (RAOC). In all, he led or was a member of, six expeditions to Greenland before retirement in 1989, having been the Commandant of the Joint Service Mountain Training Centre (JSMTC) (Wales). He was a member of Everest 1976 and the preceding training expeditions. After leaving service, he then led or took part in a further ten expeditions to Greenland.

Muston led the 1971 AMA expedition to Evighedsfjord north east of Sukkertoppen, including Lieutenant Meryon Bridges,[52] Royal Engineers and James, (a member of the 1968 expedition. The police boat *Malik* took them to a base at Kangiusaq.[53] They climbed 15 peaks (10 first ascents) and carried out glaciological, hydrology, botanical and ornithological research. The following year (1972) Muston led the AMA Axel Heiberg expedition,[54] Canadian Arctic, making 50 ascents. Sergeant Ken Scaife died in a crevasse accident from which Sapper David Lewis was rescued by Dilly, who was awarded the George Medal.[55] Captain Timothy King, RAOC,[56] who went on to lead or join a number of other Greenland expeditions, and Lance Corporal Bronco Lane, Special Air Service, who went on to summit Everest in 1976, were team members. Bridges went on to participate in eight Himalayan expeditions between 1973 and 1996, including Everest (1976), Api 1980, Everest (1992),[57] and then led the successful Gasherbrum I (1996) expedition.[58]

In 1974, Lieutenant Michael Cran, Royal Scots crossed Greenland west to east as a member of the RAF Trans Greenland Expedition led by Squadron Leader Dan Gleed. The team portered their food, equipment and

45 *Agnew, C.H., of Lochnaw yr, Elephant Island, Alpine Journal 1972, pp. 204-210.*
46 *Agnew, C.H., of Lochnaw yr and C S Gobey, The Joint Services Expedition to Chilean Patagonia 1972/73, The Geographical Journal Vol. 140, No. 2 (Jun., 1974, pp. 262-268. https://www.jstor.org/stable/1797083?seq=1 (accessed 28 July 2020).*
47 *Crispin Agnew of Lochnaw, Soldiers on Api, Alpine Journal 1981, pp. 167-171.*
48 *Day, Henry, Tirich Mir, 1969, Alpine Journal 1970 pp. 79-86.*
49 *https://prabook.com/web/peter_noel.dilly/642240 (accessed 22 July 2020).*
50 *Military Mountaineering p. 109.*
51 *London Gazette, 29 December 1989, Supplement: 51981 p. 6. https://www.thegazette.co.uk/London/issue/51981/supplement/1 (accessed 28 July 2020).*
52 *Muston, A.J., Mountain Moments, A Miscellany Celebrating 40 Years of the Army Mountaineering Association, Private Publication, Meryon Bridges pp. 18 and 26-29. (Mountain Moments). https://www.armymountaineer.org.uk/Members/Journal/ PDF at end of Journal PDFs (accessed 28 July 2020). Bridges, Meryon Grenville (Oral History), Imperial War Museum (not including climbing) - https://www.iwm.org.uk/collections/item/object/80020102 (accessed 27 July 2020).*
53 *Military Mountaineering, pp. 107/8.*
54 *Muston, A.J., (1973). British Army Expedition to Axel Heiberg Island, 1972. Polar Record, 16(104), 723-723 https://www.cambridge.org/core/journals/polar-record/article/british-army-expedition-to-axel-heiberg-island-1972/C1F0F581C743507D722D6A93D3D49C75 (accessed 29 July 2020). Richard Brooke, Triennial Report 1970-2 Polar Regions, Alpine Journal p. 216.*
55 *The London Gazette, 9 April 1973, Supplement: 45949 p. 4605. https://www.thegazette.co.uk/London/issue/45949/supplement/4605 (Accessed 22 July 2020)*
56 *Mountain Moments, Tim King pp. 19-20.*
57 *Military Mountaineering pp. 224-227.*
58 *Ruthven, Bill, Mount Everest Foundation Expedition Reports 1996, Alpine Journal 1997 pp. 289 – 297 at 294/5.*

The Police Boat Malik in Evigheds fjord. ***Photo Author's Collection***

sledges up the Russell glacier and then sledge hauled 350 miles over 37 days across the icecap, descending to the coast near Angmagssalik.[59] In the same year an RMA Sandhurst expedition led by Lieutenant Richard Anderson, Royal Artillery, went to the Stauning Alps in East Greenland, but their plans were restricted by bad weather.[60]

By the late 1970's, Greenland had opened up sufficiently for unit and minor adventurous training expeditions to take place using RAF arctic training flights to and from the various airstrips. In 1978, Captain Peter Breadmore, Army Physical Training Corps, who had been with the author in Patagonia, led a six-man team which circumnavigated Milne Land in inflatables, and climbed 16 peaks (14 first ascents) in the Stauning Alps, Renland and Paul Stern Land and explored the Aries and Mercury glaciers.[61] In 1979, Muston led an RAOC expedition, flying into Mestersvig, which was unsuccessful in climbing Petermann's Bjerg, 2943m (9656 ft) from a base at the west end of the Dickson Fjord.[62] In 1980 Muston and King were members of a civilian botanical expedition led by Dr Geoffrey Halliday,[63] to Hochstetter Forland near Scoresby Sund. They made the second ascent of Wildspitze and the Matterhorn both first climbed by Major Mike Banks, Royal Marines, while on the British North East Greenland expedition 1951/2. King, who was an accomplished artist and later Chair of the Armed Forces Art Society, had some of his paintings included in Dr Halliday's Flora of East Greenland.[64]

In 1983, Warrant Officer Stuart King, RAOC, who had been with Muston in Greenland in 1971, led an expedition to the Sukkertoppen area, which carried out some botanical, glaciological and ornithological research climbing 16 peaks (several first ascents).[65]

In 1984, Muston returned to the Sondrestrom with the mountaineering and canoe instructors from the JSMTC (Wales).[66] In marginal weather, the canoeists circumnavigated the (almost) island of Paarnaqussuit Quuvat and the mountaineers climbed nine peaks. At the end of the expedition the pickup boat failed to arrive, so half of the party canoed back and the other half walked the 70 miles to the airfield.

Major R A Churcher led a Royal Green Jacket Regiment expedition in 1987, which using inflatables, motored 270 miles to the inner reaches of Scoresby Sund camped on the shores of Vestfjord and climbed 8 peaks (5 first ascents) in Paul Stern Land. For the return, the party split in two with one group taking the inflatables back to Constable Pynt, a journey fraught by pack ice and a storm, while the other group trekked 60 miles across Jameson Land. The expedition collected botanical species for Lancaster University, noted 23 bird species and visited the Inuit sites at Rype Fjord.[67]

59 *Information from Mike Cran. Derek Fordham, Triennial Report 1973-5 Greenland, Alpine Journal 1976, p. 206 at p. 209; Military Mountaineering, p. 115.*
60 *Military Mountaineering, p. 120.*
61 *Military Mountaineering, pp. 136/7.*
62 *Information from Lieutenant Colonel John Muston. Military Mountaineering p. 137/8.*
63 *Peck, Edward, Mount Everest Foundation Notes 1980-81, Alpine Journal 1982 p. 238, Greenland and the Arctic p. 244.*
64 *Halliday, Geoffrey, A Flora of The East Greenland Central Fjord Region 70oN - 77oN (Trollius Publications, 2019). https://www.nhbs.com/a-flora-of-the-east-greenland-central-fjord-region-70n-77n-book (accessed 22 July 2020).*
65 *Military Mountaineering, p. 176.*
66 *Information from Lieutenant Colonel John Muston. Military Mountaineering p. 178/9.*
67 *Military Mountaineering, pp. 196/7.*

Pictured are soldiers of the Royal Signals moving through the wilderness of Greenland during Exercise MIDNIGHT SUN. These soldiers were Territorial Army soldiers taking part in one of the largest TA exercises ever mounted alongside the BT Emergency Response Team (ERT), as part of Defence Career Partnering. ***Photo: Adrian Harlen ABIPP, Crown Copyright***

Muston's final expedition in 1988, as a serving soldier, flew into Constable Pynt and made their way by inflatables the 160 miles to Milne Land.[68] Camp was established on the north side of the Korridoren glacier and a few peaks climbed, but bad weather intervened. With only one working outboard engine, and towing the other inflatables, the expedition made its way slowly back to Constable Pynt through pack ice. On the same C130 flight, both in and out, was a Green Howard's unit expedition led by David Johnson with seven soldiers, which explored Jameson Land.

After almost 10 years absence, King returned in 1989, with Muston, leading an expedition of mainly novices to Liverpool Land.[69] Using inflatables in Hurry Inlet to set up camps on the east of the inlet, forays were made to climb the peaks. King, with Muston, returned to Sondrestrom in 1992 where they climbed a number of peaks.

Since then, with increasing access to Greenland, a new cadre of army climbers and explorers have led unit and other expeditions to Greenland, many, since 1 February 2002, under the auspices of the Adventurous Training Group (Army) - but that is another story.[70]

PRESENT DAY OPPORTUNITIES FOR ADVENTUROUS TRAINING IN GREENLAND

Greenland continues to present wonderful opportunities for adventurous training, whether it is taking unit expeditions to climb the easier mountains,[71] or big wall extreme climbing on Mirror Wall[72], or near Tasermiut Fjord.[73] Sea kayaking in the Greenland seas follows

68 *Information from Lieutenant Colonel John Muston. Military Mountaineering pp. 206/7*
69 *King, Tim, Liverpool Land, Alpine Journal 1990 pp. 142-144.*
70 *See: The Army Mountaineer, Journal of the AMA for details - https://www.armymountaineer.org.uk/Members/Journal/ (accessed 24 July 2020).*
71 *n 3.*
72 *http://www.alpinist.com/doc/web15x/newswire-mirror-wall-greenland (accessed 23 March 2021)*
73 *https://www.planetmountain.com/en/news/alpinism/brazilians-blaze-big-new-climb-ulamertorsuaq-greenland.html (accessed 23 March 2021)*

Pictured is a boat motoring up a fjord as part of Exercise MIDNIGHT SUN. ***Photo: Adrian Harlen ABIPP, Crown***

the Inuit tradition of hunting from seal skin covered kayaks,[74] and cold water diving 'demands strength of character' for those wishing to explore icebergs and ice caves.[75] There are ample opportunities for ski touring or skiing first descents in Greenland.[76]

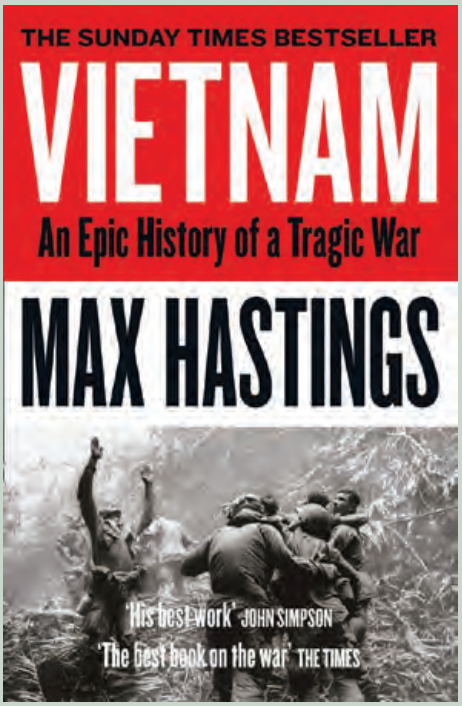
The author thanks Colonel (Retired) Meryon Bridges, formerly Royal Engineers, Lieutenant Colonel (Retired) Jon Fleming, Parachute Regiment, Lieutenant Colonel (Retired) John Muston, Royal Army Ordnance Corps, Major (Retired) Tim King, Royal Army Ordnance Corp and Surgeon Lieutenant Commander (Retired) Noel Dilly, Royal Navy Reserve for information provided and for helpful comments on the article. The views expressed remain those of the author.

74 *https://visitgreenland.com/things-to-do/kayaking/ (accessed 23 March 2021)*
75 *https://visitgreenland.com/things-to-do/diving/ (accessed 23 March 2021)*
76 *n. 2 and https://www.expeditiongreenland.com/ski-touring (accessed 23 March 2021)*

VIETNAM - AN EPIC HISTORY OF A TRAGIC WAR

Max Hastings

Reviewed by ***the late Colonel(Retired) David Benest OBE***



William Collins, 2018
pbk, pp 722,
£9,99
ISBN 9780—00-813301-6

This is probably the best account of Vietnam ever published. The research, of which, 45 pages of notes and references, says much and removes the reader from the bias of very personal histories, such as Kissinger's *The White House Years*, 1979, or from a North Vietnamese perspective, that of Bao Ninh, *The Sorrow of War*, 1998, though both are quoted extensively. I could find few, if any, US reviews but the British accolades are impressive, including the entire serious British national media and eminent historians such as Antony Beevor and Professor Lawrence Freedman. Sir Max Hastings was actually present in Vietnam at the time.

The 28 chapters take the reader through it all, from the collapse of French Indo-China, the immersion of the USA, despair at the internal politics and 'Vietnamisation' to the eventual onslaughts of Tet in 1968, resoundingly defeated militarily yet depicted as a political 'failure' within the western world, and then the offensives of 1972 (LIinebacker).

As when a teenager, (1965 - 72) I barely understood what was going on in south east Asia beyond that this war was somehow 'wrong' but with little advice on either side of the debate. I became a young officer in 2 PARA and to our surprise, the Commanding Officer informed the Battalion in December 1974 that our training for a tour in Northern Ireland in 1975 was to be conducted at the Jungle Warfare School (JWS) in Malaysia. We did so between January and April 1975 and were hugely appreciative of the Australian and New Zealand instructors, especially, 'Kiwi', a Maori jungle scout, fresh, or more precisely, exhausted, from his tour in Vietnam. As young officers we were 're-educated' into 'Aussie' jungle tactics, more or less abandoning the JWS teaching based upon the Malaya Campaign (1948-60). Things had moved on - much to the annoyance of our veteran instructors. In essence, the 'teeth' elements of 16th Parachute Brigade (2 and 3 PARA, plus supporting teeth arms and SAS) were acclimatised and ready to go somewhere hot - but where?

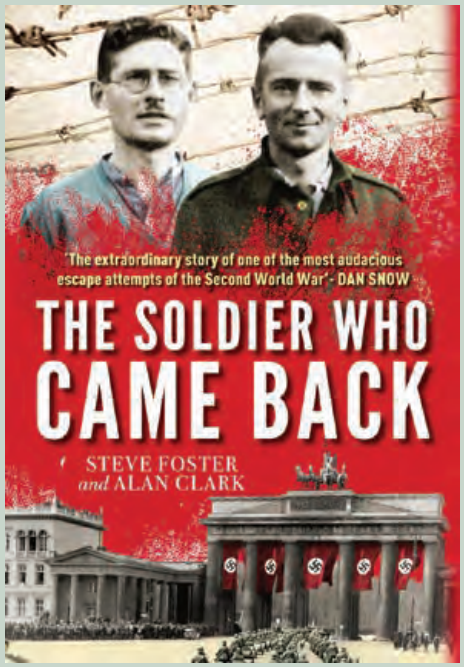
South Vietnam collapsed during that same period and we were sent back to UK and yes, North West Belfast in lieu. The war ended on 30 April 1975, a day after my 21st birthday.

The history of Vietnam deserves close study, not least the manner in which US domestic electoral and foreign policy (USSR and China) decided events. That said, there is very little in the Hastings account regarding the issues of international law that allowed the state of North Vietnam to invade and annex its neighbour, South Vietnam. Nor is there much regarding the British policy of non-intervention. My guess is that had the British stood beside our American, Australian and New Zealand friends, then perhaps others such as the French and Canadians might also have joined the fray, in which case, South Vietnam might today have remained as a sovereign state, as remains the case in the Republic of Korea (ROK). The irony of this terrible war is that North Vietnam, still communist, has more or less accepted that the capitalism of its southern neighbour, is actually a rather better way of life, at a terrible cost in human life and limb. And it is worthy of repetition that the British led forces in Oman between 1970 and 1975 defeated the North Vietnamese murder squads, the 'Adeera' and other communist countries in Dhofar, Oman. Also, that quite a few British soldiers opted for the Australian SAS after the Borneo war was successfully won and also took part in the Vietnam war, whatever Harold Wilson might have said to the contrary. This is essential reading and almost certainly the best we shall see in our time. If in a hurry, focus on the final chapters, *The Last Act and Afterwards*.

THE SOLDIER WHO CAME BACK: THE TRUE ACCOUNT OF A HEART-STOPPING JOURNEY AND A HEART-BREAKING DECISION

Steve Foster with Alan Clark

Review by ***Ian Palmer***



Published by Mirror Books
First Edition 2018
Pbk £8.99 pp 278
ISBN 978-1-912624-01-0

This book is a riveting read, difficult to put down. I thoroughly enjoyed it but do not want to give the game away too much in this review.

It is about an odd couple, Anthony Coulthard and Fred Foster. It is difficult to imagine their meeting outside of either National Service or, as in this case, Total War. It tells a tale of derring-do that would grace any page of a John Buchan novel and would make a cracking film. It is well-researched and well-written. Engaging and poignant, it does what it says on the cover.

Fred Foster was on the up. Instead of entering the building trade as a brickie, he became an articled clerk to a solicitor in Newark. Fred was captured after only 17 days operational service during the ill-fated Norway intervention early in 1940. Somehow, he survived the long and harrowing transit to Nazi-occupied Poland where he was incarcerated for 5 years.

Anthony Coulthard was a gifted linguist who studied German at Oxford. He came from middle-class roots with a clear sense of social inequality and injustice. Anthony for example, spent one of his holidays with a Welsh mining family before the war. Unsurprisingly perhaps, he declined a Commission, enlisting instead in the ranks. Given his linguistic abilities, he was transferred to the Field Security Police, the forerunner of the Intelligence Corps. After a similar period of time on active duty to Fred, whilst seeking his Divisional HQ, he unwittingly drove directly into German-occupied Amiens. His war was over.

Foster and Clark shine a light on the lives and plight of prisoners of war who have often been thought to have had a cushy time, 'safely' out of the firing line. This book explores and highlights the difficulties that these men

encountered and how best they coped in circumstances which tested even the most resilient. Amazingly for example, there was a structure that allowed POWs in Germany to study for British academic qualifications. And the Red Cross had set up an educational book section based on the Bodleian Library at Oxford.

Both were liked by nearly everyone, and they shared the gift of making friends and making the best of things. Whereas Fred was a 'fixer', Anthony brings to mind an eccentric professor who seemed to be kindness personified and never had a bad word for anyone. Were it not for the war there can be little doubt he would have achieved much academically.

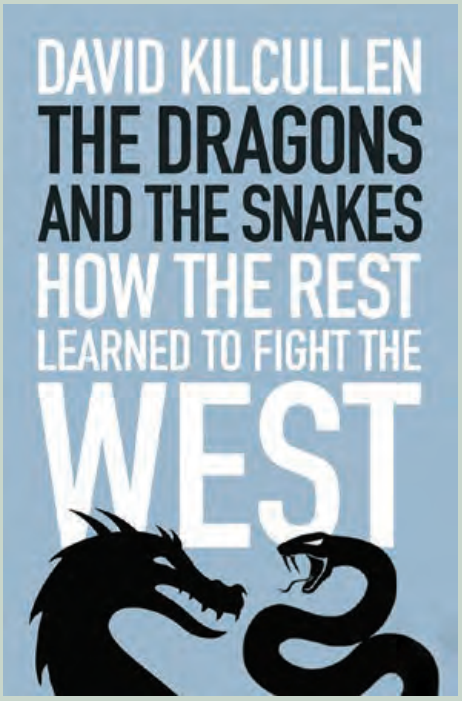
Anthony and Fred became firm friends and hatched an audacious plan to escape. They would confound the German authorities by travelling into Germany and make their way by train to the Swiss border. Meticulous planning was required and Fred had to master German, which he spoke with an East Midlands or Bulgarian accent! This plan called for phenomenal verve and courage. It nearly worked.

The story of Fred and Anthony, its discovery, recording and commemoration is a testament to Steven Foster's determination and endeavours which, with Alan Clark's writerly skills, have succeed in creating a singular tale worthy of wide readership. It is a must read for anyone with an interest in the Second World War.

THE DRAGONS AND THE SNAKES: HOW THE REST LEARNED TO FIGHT THE WEST

David Kilcullen

Review by ***Lieutenant Colonel James Chandler***



Published by C Hurst & Co Publishers Ltd, London, 2020,
Hdbk, £16.99, pp 336,
ISBN-13: 978-1787380981

In 2006, General David Petraeus brought together a group of academics and soldier-scholars to find a new approach to the seemingly intractable conflicts in Afghanistan and Iraq. Together they produced a reinvigorated set of counter-insurgency tactics that the General subsequently put to good effect, initially as commander of the so-called 'surge' in Iraq and thereafter in Afghanistan. Ably assisting him during these missions were special advisers from his original writing team and one such expert was an Australian Army officer called David Kilcullen. Since then, Kilcullen has become an internationally acknowledged expert on strategy, counter-insurgency and international security. Today, he is Professor of International and Political Studies at the University of New South Wales and author of four critically acclaimed books: *Accidental Guerrilla* (2009); *Counterinsurgency* (2010); *Out of the Mountains* (2013) and *Blood Year* (2016). A regular speaker at the UK's Defence Academy, his work has been described as 'disturbingly brilliant'.

His new book is no exception. *The Dragons and the Snakes* is a chilling exposé of the security challenges facing Western states today. At its heart is the proposition that while the USA and her allies became myopically focused on the conflicts in Afghanistan and Iraq, an array of state and non-state actors have adapted and developed to erode the previously dominant global position of Western powers. Kilcullen's argument is that the high-tech, high-precision military model showcased so successfully in the 1991 Gulf War and 2003 Iraq invasion 'is no longer working' (p. 6). Adversaries have established a position of advantage by learning to render Western conventional military superiority irrelevant and by exploiting the geo-political, economic and security vacuum created during Western focus on the 'War on Terror'. Kilcullen's book is an impressive analysis on how and why this has happened.

The book's title is inspired by President Clinton's first Director of Central Intelligence, James Woolsey, who in 1993 described the post-Cold War world by commenting: 'Yes, we have slain a large dragon [the Soviet Union], but

we now live in a jungle filled with a bewildering variety of poisonous snakes'. Kilcullen summarises the decade thereafter as a 'Woolseyan' security environment, where 'threats emanated mostly from weak or failing states and from non-state actors (snakes) rather than capable state adversaries (dragons)' (p. 11). However, after 9/11 and the 2003 Iraq invasion, the West's exclusive focus on just one snake, terrorism, produced two consequences: first, the 'snakes' were forced to learn and adapt, to develop new methods that negated Western military superiority; and second, the 'dragons' were given breathing space to grow and 'the opportunity to watch and learn from our struggles' (p. 18). As a result, non-state threats have become as lethal as the 'dragons' and state adversaries have become as slippery as the 'snakes'.

The main body of *The Dragons and the Snakes* is divided in two. In the first half, Kilcullen uses theories from evolutionary science to explain how the 'snakes' have learned and adapted since 1993. Adopting a Darwinian dialectic, he argues Western counter-terrorism has produced an artificial 'fitness landscape', causing a particularly strong breed of snake to evolve. He illustrates this with reference to the Pakistani Taliban. Kilcullen argues that years of alleged US drone strikes have shaped them from a loose collection of local militias into a unified terrorist group that now poses a significant transnational threat (p. 56). Similarly, Kilcullen explains how the Lebanese group Hezbollah has conducted war-time adaptation in a 'conflict ecosystem' to become more deadly than ever. The Hezbollah 'growth cycle' matured in the Syrian Civil War when it deployed a large expeditionary force to fight alongside Russia in support of the Assad regime. Today, it cleverly combines irregular and conventional methods to operate as a powerful regional actor, 'provoking fears of a coming clash with Israel' (p. 110).

The second half of the book examines two major 'dragons' - Russia and China. Kilcullen explains how Russian adaptation has followed two related pathways. The first is a new strategic approach which Kilcullen dubs 'liminal warfare', from an anthropological term describing people transitioning between two states of being (p. 119). Readers may not thank Kilcullen for introducing yet another term to the already long list describing recent Russian activity - hybrid warfare, grey-zone conflict, Gerasimov Doctrine, etcetera. Nevertheless, 'liminal warfare' provides a useful description of Russia's ambiguous activity, between fully overt and truly clandestine, that create conditions of advantage 'before adversaries can react' (p. 119). Complementing this is Russia's second adaptive pathway: 'the most radical military reforms since the creation of the Red Army' (p. 148). These reforms combined the streamlining and re-equipping of the military with the broadening of its operations to incorporate non-military groups such as cyber militias and organised crime networks. Thus, Russia's evolution has resulted in a resurgent 'dragon' operating with the cunning guile of a slippery 'snake'.

Similarly, China's adaptation has followed comparable pathways. The first is a new strategic approach that adopts a broader interpretation of conflict. This threatens the West with what Kilcullen calls 'conceptual envelopment', where 'non-war' actions such as financial disruption and trade wars are exploited to put adversaries at a strategic disadvantage, making conventional military responses both belated and redundant. This approach, Kilcullen argues, explains why China has purchased real estate overlooking Western naval bases (including Faslane) and the building of artificial islands (or 'unsinkable aircraft carriers') in the South China Sea to dominate these disputed waters (p. 200). Similar to Russia, this conceptual pathway has been complemented by comprehensive military reforms. As a result, China now boasts air and naval forces that emulate the USA's global projection capability and a vast anti-access and aerial denial system (or A2/AD) of anti-ship ballistic missiles and long-range air defences that deter any Western operations in China's sphere of influence.

The Dragons and the Snakes is a compelling analysis of the range of threats facing Western states today. It is essential reading for any military professional seeking to understand the contemporary international security environment. It also raises timely questions regarding military learning and adaptation. After reading *The Dragons and the Snakes*, some may wish to reflect on whether the British Army has conducted sufficient learning and adaptation since its bruising experiences in the 'War on Terror'. Are we as 'match fit' for the modern security landscape as our opposite numbers in Russia, China or even Hezbollah?

Elements of this review first appeared in the Chief of the Air Staff's Reading List 2020/21 and are reprinted here by kind permission of the editor.

THE BATTLE OF THE PEAKS AND LONGSTOP HILL, TUNISIA, APRIL-MAY 1943

Ian Mitchell

Review by ***Chris Buckham, RCAF***

Publisher: Helion, 2019,
Hdbk, pp 352,
Photos/Maps: 26/15,
ISBN: 978-1-911628-93-4

With the passage of time, historical recollection tends to focus upon key events and battles (Kursk, El Alamein, D-Day etc) while the smaller ones recede into the reminiscences of those who were there; ultimately to be lost. This is not to suggest that these battles are any less important or key to those soldiers who fought and died in them. It is for this fact that books, such as the authors, are so important in keeping the memory alive of these events for future generations.

The Peaks and Long Stop Hill were key engagements in the overall Allied strategy of driving the Afrika Korps into an untenable operational position; ultimately resulting in its surrender. A relatively small engagement involving combined infantry and armoured units, the book relates the challenges of operations against dug in, experienced Afrika Korps troops occupying the high ground. Presented in articulate and engaging prose, the author approaches the narrative of the operations holistically, incorporating the efforts of the logisticians and support troops as well as the combat troops involved. It is refreshing to see this emphasis as, all too often, exclusive attention is given to the combat and little or none to the support elements. This provides the reader a deeper appreciation of the difficulties associated with combined arms operations and planning in relatively austere environments.

Mitchell endeavours to situate the operation in the wider context of the Battle for Africa which had been raging for over two years by this point. This 'big hand/small map' inclusion is important in that it shines a light upon the importance of evicting the Germans from their positions in forwarding the Allied strategy. Provided along with the narrative are a series of modern day colour pictures of the region which provide excellent perspective of the operational environment. Additionally, a series of very

high quality maps serve to track each of the significant elements of the battles as they unfolded. Combined with the numerous first hand accounts included in the text from all ranks and both sides, these provide the reader with a much better appreciation of what the troops endured and overcame.

The detail and analysis provided by the author of the individual unit and Brigades actions is very noteworthy as his discussion of the German defensive efforts. The narrative structure of the book and presentation of the planning methodologies (and what influenced the decision-making) is really quite superb. Mitchell closes his work with a comprehensive listing of his source material as well as the locations from which he was able to obtain them. Helion, as always, has provided an absolutely first rate publication. This is an excellent work of research and presentation and a very worthy addition to anyone's library.

MAJOR GENERAL OLIVER NUGENT - THE IRISHMAN WHO LED THE ULSTER DIVISION IN THE GREAT WAR

Nicholas Perry

Reviewed by ***Major General Colin Weir***

Publisher: Ulster Historical Foundation 2020,
Hdbk, pp 320, £19.99,
ISBN: 978-1-909556-82-9

> *'I am not an Ulsterman, but yesterday as I followed their amazing attack I felt I would rather be an Ulsterman than anything else in the world.'*

These words, written on 2nd July 1916, were widely publicised on subsequent days as those of an 'anonymous staff officer'. They continue to fuel the legend of the 36th (Ulster) Division's unique achievement of its objectives on the first day of the Battle of the Somme when it swept all before it, outpacing progress on its flanks and capturing the 'impregnable' Schwaben Redoubt, before having to withdraw under fire from three sides. However, as Nick Perry makes clear in his excellent biography of Major General Oliver Nugent, and as with so much of the narrative that surrounded the Ulster Division, these famous and evocative words were political ones with a political objective.

The 36th (Ulster) Division was borne out of a tumultuous period of Irish politics, and the undoubted suffering, sacrifice and bravery of its men was used to powerful effect in the fraught debate over Irish Home Rule then raging in Dublin Castle and the Palace of Westminster. Nick Perry has thirty years' experience as a senior Civil Servant in the Ministry of Defence, and at Stormont in the Northern Ireland Office and the Executive. His background in policy and politics, along with distinguished service as a British Army Reserve Officer, sees him perfectly placed to consider Nugent's place in the eye of a unique storm where war, Irish politics, and personal relationships collided.

This is a comprehensive and hugely accessible study that draws from public and private records and personal letters. It charts the progress of the man who commanded the Ulster Division through its formation, its evolution through battles on the Somme, at Messines, Third Ypres, and Cambrai, before its virtual destruction under the weight of the German Michael Offensive in March 1918.

Of Anglo-Irish and Unionist stock and of the cadre described as the 'nearest the British had to a German Junker-class', Nugent's early commissioned service was with The Royal Munster Fusiliers where, in Perry's evocative, wry and economic turn of phrase 'he found many of his fellow officers boorish and uncouth and his disapproval of them was cordially reciprocated'. A transfer to the 'smarter' King's Royal Rifle Corps saw ten years' service in India where he accrued formative combat experience on various punitive expeditions including on the Afghan frontier. He then fought in the South African Campaign and was seriously wounded and taken prisoner. Nugent emerges from this series of experiences transformed from the entitled, somewhat self-pitying youth of the Munsters to a combat-hardened practitioner of modern war, a dedicated trainer and one who was consistently demanding of the highest standards of his people. These characteristics were to frame his approach to Divisional command in the Great War, where he embraced new technology and tactics, was fastidious in training and inspection, and was unforgiving of the unforced error. So not a sufferer of fools, but rather a leader dedicated to achieving his mission with the minimum necessary loss of life. Nugent was certainly not one of the 'Donkeys'; he was a man of wisdom, grit and credibility whose letters make clear that he felt the pain of the loss of so many of his soldiers.

After South Africa, Staff College and command of 4 KRRC, he commanded a Territorial Force Brigade in England before returning to Ireland just as the Home Rule crisis appeared to be reaching a climax. Here, despite being a serving officer (albeit on half-pay) he raised and commanded the Cavan Militia, a component of Edward Carson's Ulster Volunteers. From a 21st Century perspective, this Regular Officer's decision to become involved in the U.V.F. might be seen as a curious one, but as Perry points out, the Landed Classes all across Ulster were organising in resistance to Home Rule. The Curragh incident also demonstrated the degree to which the British Army as an institution was conflicted over the Irish Question.

Two years later (with the benefit of hindsight), in a letter to his wife Kitty, Nugent retrospectively justifies his involvement in the U.V.F. in Cavan by describing its purpose as being a solely defensive one. It was also the case that by the time he wrote this letter, the 36th (Ulster) Division - which had emerged from the U.V.F. - had been committed to the crucible of battle on the Western Front and his rather patrician (and perhaps anti-partitionist) politics had started to clash with the uncompromising agenda of Conservative Unionists.

For Nugent the Regular solider, his discomfort at the exploitation of the Ulster Division's ongoing sacrifice to pursue domestic political objectives is evident in Nick Perry's research. Politics were as much an internal challenge for the G.O.C. as they were an external one. Nugent failed to dampen the instincts of several highly politicised members of the Division who exercised an extensive influence network into the highest echelons of Government and the War Office; a cohort of not entirely benign letter-writing wives acted as an accelerant to these machinations. Indeed the 'anonymous' staff officer who was widely quoted in the London press in the aftermath of the Somme attack was one Captain Wilfrid Spender, on Nugent's staff, and while 'not an Ulsterman' he was certainly an uncompromising Ulster unionist. Spender's words were a masterclass in shaping the narrative, but Nugent was deeply uncomfortable; 'I am getting rather worried over the continual mention of us and I am so afraid it is being done for political purposes. I wish they would leave us alone now'. Even where he and Sir Edward Carson agreed, such as on the retention of the 'Ulster' title for the 36th Division after its absorption of large numbers of non-Irish reinforcements, it was for different reasons. For Carson it was political,

but for Nugent it was about the title's value in sustaining the fighting power of a formation that was undergoing a constant cycle of decimation and reconstruction; he understood ethos.

Nugent did not finish the war with the Division but was despatched to India to assume command of the Meerut Division, another two-star command, an unusual move after over two years of largely successful command through the most famous battles of the Western Front. Perhaps promotion did not come because Haig was reportedly not a fan of Nugent since their time together at the Staff College. Perry also recounts that the debate over the Division's 'Ulster' designation played badly with the Commander-in-Chief. Nugent was undoubtedly tactically competent, and it may have been the case that he was just too effective to be sacked. It also demanded a great deal of skill and insight to manage the politics of the 36th (Ulster) Division, so he was likely not easily replaceable. It was also noteworthy that Nugent was the only successful G.O.C. not to have received a Knighthood after the Battle of Messines in 1917, an omission that was rectified in 1922 soon after Haig stepped down.

For those with a focused interest in the great battles of the Great War, Nick Perry's work offers a new and unique perspective. It is also a rewarding study in a much wider sense in that it strips back the many and interconnected layers of relationships that were overlaid on the great clash of arms that was the Western Front. In doing so, it explores the timeless tensions inherent in the execution of high command where politics, policy, personalities and war intersect. It is also a sharp analysis of that consistently live issue of identity in Ireland; Perry's sub-title, 'The Irishman who led the Ulster Division…' beautifully cues the discussion.

It is remarkable that the commander of the 36th (Ulster) Division, which retains such a totemic place in Irish military history, has not yet had more academic attention. Oliver Nugent was overdue a biography of this quality; Nick Perry's nicely paced, appropriately witty, and first-class analysis does him, his Division and his turbulent times great justice.

Major General Colin Weir DSO MBE is a serving British Army officer and is Colonel of The Royal Irish Regiment.

BRITISH ARMY REVIEW

The Review is intended to provide a forum for the discussion of all matters of professional interest to the soldier. Articles and letters are invited from all ranks and from others having a special knowledge of military affairs. Controversy is the lifeblood of any professional journal designed to promote thought and discussion and is therefore welcomed. Descriptions of recent or current operations and imaginative ideas on doctrine, tactics, training or equipment are of particular interest.

PHOTO CREDITS

Contributions for all sections of the journal may be submitted at any time and will be included in the earliest issue possible. Payment: The Editor regrets that no payment can be made for material published.

Contributions, Correspondence and Contact:
All contributions and correspondence should be addressed directly to the Editor, but readers are requested to direct distributions queries to the Army Publications team: publications@hqlf.org

Please do not send surplus copies to the Editor direct them to:
Corporate Document Services (CDS)
18 Faraday Road,
Rabans Lane Ind Est,
Aylesbury,
HP19 8RY

British Army Review No.180 is distributed as a General Staff Publication (AC 74100-80) by CDS.
Scale of issue as directed by CHACR.

BAR 180

SPRING/
SUMMER 2021

ADR009983